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Editorial

The Vision

The vision of the founding members of IADH was to improve the oral health and quality of life for persons with special needs to an optimal level. IADH is the only global organisation representing the oral health interests of special care patients.

Forty years later, several steps are moving us nearer to the fulfilment of that vision. Special Care Dentistry is now recognised as one of the specialties in Dentistry, in a significant number of countries around the world. The journal you are reading, now in its 15th year, is the tip of the sword of IADH and one of the major tools to guarantee improvement in knowledge, and consequently in care. We should therefore acknowledge the efforts of Prof June Nunn, first Editor and Prof Sussumu Uehara and the generous donations of the Japanese Society back in 1998 that gave birth to the journal. IADH, hoping to disseminate knowledge in Special Care Dentistry worldwide, funded and stood behind the DINO project, a first effort in e-learning and a very innovative project at the time. As the availability of Continuing Dental Education became easier in our ever expanding electronic world, the IADH Executive Committee wisely decided to move to targeted projects and by forming a special Education Committee brought to fruition the curriculum for undergraduate and postgraduate education, putting IADH on the map of strong educational organisations like the Association of Dental Education in Europe (ADEE) in Europe.

Vision for the future

Any organisation must have a well-developed and positive growth strategy. Its visibility, strength and significance depend on that strategy. IADH is no exception to this requirement. It must grow not only geographically, including all countries in its membership, but with significant partnerships to continue to spread the vision of the founding members to the four corners of the world. These partnerships need to be diverse and durable, composed of international foundations, philanthropic organisations and with industry, aligned with IADH's goals.

The Council, the representatives of the diverse societies that form IADH is the locomotive in front of IADH driven by the Executive Committee. The challenge is to find the

right body of people to put the train in the right direction, develop a strong meaningful strategy and at the same time, harness the enthusiasm for new initiatives from its members, old and new. This body should provide a sense of direction, encourage good leadership, encourage collaboration and allow initiatives and new ideas to flow through our organisation. I would call this body a special strategic committee with key persons outside our specialty providing the advice to the leadership (the Executive Committee) and in turn to Council representatives, necessary to ensure the association's relevancy in this age of information and competing societies. Such a committee will help also raise our profile, and the profile of Special Care oral health towards international organisations such as the WHO, national medical and dental societies and other partners in the health care sector.

Research

Oral Health care for people with disabilities needs to be evidence based. To this end, research is necessary, and although there has been a significant increase in the number and quality of publications addressing this need in recent years, more work is necessary. Further, most academic institutions do not actively support research in this area, or have academic chairs in Special Care Dentistry.

As we grow as a specialty, it is important to form a group of clinicians and researchers that can potentially collaborate and work together to provide evidence based approaches and pool patient numbers for research opportunities, generously sharing expertise and mentoring our member countries where there is scant opportunity for training. Local research networks amongst clinical practitioners are a model that has been used successfully in several countries.

Prof June Nunn wrote in an editorial in 2008 in the *Journal of Disability and Oral Health* "In an increasingly competitive world, if we are serious about the specialty and its distinct place amongst other disciplines, we need as individuals and groups to enhance our research efforts. We must now publicise the increasing evidence-base for what we do - that means robust science and high quality papers. Good research does not happen overnight, it takes years in planning and execution. As well as general career support from those well established in the field of Special Care Dentistry, aspiring

young researchers need focused mentoring from those with experience in research.”

Research networks is to a great extent the way that our medical colleagues, facing the same challenges, manage an impressive research output when dealing with medically complex and challenging patients. IADH has already been making its first steps towards this end by organising a research project between several universities and researchers on the attitudes of young dentists towards Special Care Dentistry.

Berlin 2014, the 22nd biennial congress of the IADH, is around the corner (www.iadh2014.org). This is an important forum –to update our knowledge, to give exposure to new research findings, to enable young researchers to present their work in a relevant context and above all, a time for meeting up with old friends and making new ones. I hope that it will inspire us all to work hard for the next exciting era of IADH.

Dimitris Emmanouil
President IADH

Welcome address of the Chair of the Scientific and Organising Committee for the IADH congress 2014 in Berlin

Dear IADH members and colleagues with interest in Special Care Dentistry!

Oral health care and therapy for patients with special care needs represents a huge challenge for dentists and dental teams and requires a great degree of interdisciplinary coordination and cooperation with many medical and non-medical disciplines.

In the view of the Scientific and Organisational Committee of the IADH congress 2014 in Berlin, this meeting will contribute to the maintenance and improvement of the oral health of special care patients in three main fields: firstly, prevention will be acknowledged much more so than previously, secondly, the professional exchange of knowledge between dentists and physicians will be intensified and thirdly, important scientific information about restorative procedures performed under modalities such as general anaesthesia will be provided.

By looking at the list of the invited speakers of the IADH congress 2014 in Berlin you will realise that four main lectures are about prevention, while in several sessions the main lectures will be presented not only by dentists and orthodontists but also by physicians.

It has to be emphasised that not only persons with intellectual disabilities or multiple disabilities are in need of Special Care Dentistry also those patients with rare or severe diseases, as well as patients with syndromes. Therefore, there will be key presentations from healthcare disciplines for rare diseases such as sclerodermia and ectodermal dysplasia. Furthermore, some main lectures will be dedicated to the themes of dental therapy for special care patients under general anaesthesia and diagnostics of pain.

I would like to emphasise that scientific meetings have of course not only the goal to disseminate expert knowledge by invited speakers and by discussion with colleagues, but also enable presentations and discussion of scientific investigations as well as interesting clinical cases.

I would like to take this opportunity to thank the German Association of Oral Surgeons (BDO) for supporting energetically the IADH conference 2014. Without them it would have been almost impossible to organise this international conference. Furthermore, I am very grateful

that the IADH congress in Berlin will take place under the auspices of the German Dental Association (Bundeszahnärztekammer).

It is a great pleasure for the Scientific and Organising Committee to welcome the congress participants on the opening ceremony of the 22nd IADH conference on the 2nd October 2014 in Berlin. We wish all participants to have fruitful discussions and to receive many ideas how to improve the dental care and oral health of patients with disabilities!

With best wishes

Prof. Dr. Andreas G. Schulte

President of the 2014 IADH Congress in Berlin



Invited Lecture Abstracts

22nd Congress of the International Association of Disability and Oral Health (IADH), 2nd–4th October 2014, Berlin, Hotel Estrel

Oral Health of Special Olympics athletes in Europe and Eurasia

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Aim: The aim of this study was to examine the oral health of Special Olympics athletes from Europe and Eurasia.

Methods: A retrospective longitudinal study was performed with data collected through standardised screening forms and procedures from consenting 15,941 athletes from the annual Special Olympics held in 49 countries, from Europe and Eurasia, between 2007 and 2012. The global Special Olympics Special Smiles protocol was used that was developed in collaboration with Centre for Disease Control (CDC), Atlanta, USA (1998). The use of the data has been approved by the medical ethical committee of Ghent University hospital (Belgium 2013). The data were compiled and transferred to an SPSS data file to be analysed with One-Way ANOVA test and Chi-Square test. The level of significance was predetermined at a p value < 0.05.

Results and Conclusions: Although differences per individual country are found throughout the European/ Eurasia data, the present data suggest that there is a high prevalence of gingival signs among individuals with special needs. In 20 countries over 50 % of the athletes showed gingivitis. Moreover high numbers of clinically visual diagnosed caries and dental trauma are found. The findings indicate a serious need for education and oral health preventive programmes for the patients, their parents and caregivers and a serious need for oral health intervention and treatment by the dentist. **Acknowledgement:** Special thanks to all Special Smiles National Clinical directors in Europe/ Eurasia for the contribution in the study presented.

Children with Autism Spectrum Disorder in dentistry

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Autism spectrum disorders (ASD) are severe neurodevelopmental disorders characterised by impairments in social interaction and communication as well as restricted and repetitive behaviour patterns persisting throughout the lifespan. ASD have a detrimental impact on the well-being of affected children and their families. In addition to studies showing an increased prevalence of psychiatric comorbidity such as social anxiety disorder, depression, attention-deficit/hyperactivity disorder and oppositional-defiant disorder, some data document an increased psychosocial burden upon parents and siblings of children with ASD. Affected persons regularly experience severe difficulties especially in interpersonal relationships, unusual perceptions, and information processing, as well as impairments in emotional regulation. Furthermore, recent studies confirm that, even in people with ASD and good cognitive abilities, social skills remain significantly behind the cognitive level, thus leading to considerable impairment in everyday life. Current research results concerning aetiology, diagnosis and therapeutic interventions will be presented. Based on a short history of ASD, some case vignettes, diagnostic criteria etc., practical relevant information will be provided. Special emphasis will be placed on the treatment of children with ASD in dentistry and the specific features of these patients.

Behaviour management for children with special needs during oral care

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Children with disabilities and chronic health conditions are as unique individuals as healthy children. Their ability to cope with oral care is influenced by the development, cognitive maturity, personality, emotions, temperaments,

communication skills and behaviour of each patient. There is a great variety of oral health related conditions reported in these special children and poor oral health is determined by various barriers. To deal with the health inequalities, these children require specialised health care. Emphatic attitude, respect, knowledge and practical competencies of the dental team are important prerequisites for providing oral care and developing a trustful patient-dentist-relationship. Long lasting oral health after dental treatment in sedation and/or general anaesthesia is impossible without implementation of evidence based preventive strategies, especially in children with intellectual disability and severe multi-disability. Non pharmacologic behaviour management techniques - tell-show-do, positive reinforcement, voice control, humour and protective stabilization - are the armamentarium to carry out professional tooth cleaning, application of fluoride preparations and fissure sealants regularly. This short overview will illustrate the preventive care of special care children by using these non-invasive behaviour management techniques.

Ethical aspects of Special Care Dentistry

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Aim(s): The presentation focuses on the vulnerability in dentistry and on the identification of so-called “vulnerable patients” and their special needs in dental practice.

Methods: The lecture is based on an analysis of the implications of “principlism” that means respecting the four moral principles of (1) autonomy (free-will or agency), (2) beneficence (to do good), (3) nonmaleficence (not to harm, “nihil nocere”) and (4) justice (social distribution of benefits and burdens), but also on further concepts such as the best-interest standard. **Results:** There are two different groups of vulnerable patients: First, there are people that are not (fully) capable of taking decisions (e.g. minors, disabled people, sufferers of dementia, some persons of advanced age, mentally ill people and people suffering from phobias of treatment). Secondly, there are patients that are socially vulnerable (e.g. people in need of care, elderly inmates, socially stigmatised people, homeless or destitute patients). They all need special care in dentistry. **Conclusions:** In dealing with vulnerable patients, dentists have to adhere to certain values – such as the four principles, but also standards of best-interest, anti-ageism, anti-stigmatization, empathy, solidarity and responsibility. Those values are indispensable, especially with regard to patients who are not capable of arranging their own needs.

Disability, oral health and health politics in Germany - concepts to tackle the challenges

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Aim: To give an overview of the organisation of health care for people with disabilities. How oral health care is organised, what works well and what does not? The German “political approach for improving the oral health of people in

need of care and of disabled people” will be introduced.

Facts: While efforts made in dental prevention for children in Germany are a success story with caries reduction (80% over the last 30 years and one of the lowest figures reported worldwide), 7.4 million people (9% of the population) were officially recognised as having severe disabilities. And 2.5 million people have the official “status of care dependency”. We observe that people with disabilities or frail adults in nursing homes have a poorer oral health than the general population. We still observe deficits in the provision of prevention measures for patients with special needs.

Political approach: To reduce these inequalities, the German Dental Authorities have developed a health political concept entitled “Oral health despite handicap and old age” in 2010. The objective was to improve oral health of people in need of care and of disabled people on a population level.

Current State: Two laws were passed: New item “fees for visiting immobile patients” has been included in the scale of fees of the public sick funds. Special funded contracts between dentists and nursing homes are possible. This can be regarded as first steps towards the implementation of the dental concept. But there are always restrictions due to limited financial resources. However, in practice, regional differences exist in the volume of dental services and projects provided. Some examples of good practice are Team Werk (Munich), mobile dental units (Pomerania) or Group prophylaxis for the disabled adults (Berlin).

Can we generate missing teeth?

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Due to the excellent accessibility to the oral cavity, the progress in dental developmental biology and general technologies in stem cell technology, stem cell research in dentistry has been booming during the last few years. Beside embryonic and induced pluripotent stem cells mainly adult stem cells are increasingly in the focus of this research. Pluripotent stem cells can nowadays be isolated from nearly all dental and craniofacial tissues. Especially the dental pulp and non-erupted third molars contain diverse stem cell niches. The application of these cells in combination with genetic and tissue engineering methods has led to innumerable experimental cell and tissue therapies not only for teeth and oral tissues, but also for extracranial organs, including neuronal regeneration. The application of bone stem cells for oral and maxillofacial surgical purposes has almost become clinical routine. In dentistry, stem cell technologies will lead to a biologisation of regenerative techniques in combination with scaffolds or traditional dental materials. Probably the production of autogenous dental hard tissues for conservative dentistry, the use of stem cell layered membranes in periodontology, or the induction of new supporting tissues around oral implants may be possible therapeutic tools in the near future. Although already realised in animal experiments, the de novo regrowing of functioning new teeth in vivo is still a questionable matter for humans. However, stem cell based regenerative techniques will surely represent therapeutical options treating orofacial malformation, and age or disability related oral diseases in the future.

Periodontal and other risk factors for patients with a severe form of epilepsy where dental implants are desired

H Strooker

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At the SEIN (Stichting Epilepsie Instellingen Nederland Foundation for seizure institutions the Netherlands) in Heemstede patients are seen with a therapy resistant form of epilepsy with multiple physical limitations and mental impairment where many types of anti-epileptic drugs are taken simultaneously. These patients suffer many dental traumas, in particular to the incisors but also loose fitting prosthetics are damaged by biting at great force. Fixed prosthetics are desired for this patient group which can often only be realised with oral implants. For example a patient who uses clonazepam which results in a sialorrhoea and her full denture frequently falling due to spastic mouth movements. There are several problems to consider. Most anti-epileptic drugs give a decreased bone density because of a vitamin D deficiency; trauma to the front teeth on implant supported dentures could fracture the alveolar process; bruxism and clenching can occur during a seizure; high doses of carbamazepine give an increased chance of peri-implant bone loss. While phenytoin gives gingival overgrowth it hardly causes any peri-implant bone loss but periodontal screening is important in the case of mediocre and poor (unpredictable) dental hygiene. Since 1991 in the SEIN institution we have surgically implanted 83 patients with 178 dental implants. An evaluation from 2009 based on known criteria for screening implants resulted in that this patient group dental implants are a realistic option for treatment, provided that the risk factors are known.

Orthodontics in patients with special needs – cases and literature

A Hohoff

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Aims: To present current literature and treatment sequences on the subject of patients with craniosynostosis in order to demonstrate diagnostic particularities, therapeutic pitfalls that can occur and results that can be reached realistically. **Methods:** In September 2014 the term craniosynostosis AND orthodont* was searched in Pubmed. **Results:** A total of only 102 articles were found, most of them were case reports; only one was a systematic review and another a report of a consensus conference. **Conclusions:** As the evidence of our daily work concerning this group of patients is quite limited, multi-centre studies should be initiated to improve our knowledge.

Oral health prevention in living homes for people with special needs

I Kaschke

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Although structured preventive programmes in Germany helped to improve oral health generally, people with special

needs did not benefit to the same extent from this development. People with physical and/or learning disabilities still belong to the high-risk group for caries and periodontal disease, because of their reduced motor and/or intellectual ability to carry out adequate oral hygiene measures. All carers ought to be aware of the dental problems of these groups and should be sufficiently trained to deal with them. Therefore a programme for oral health prevention was established in living homes in Berlin in 2005, aiming at educating carers and residents about dental diseases and motivating them to improve oral hygiene behaviour. An evaluation took place three times: 2006, 2009 and 2014. The results showed an improvement of health care measurements over this period. The evaluation of the long term impact of the programme established, that better oral health behaviour yields significant long-term effects. There was a correlation between programme participation and oral health behaviour. The group prophylaxis measurements have been shown to improve both dental health behaviour of people with special needs and attitudes in carers. At least half-annual follow-up instruction sessions are a promising means to sustainably and to permanently improve oral health and quality of life in patients with special needs. A project of the Berlin group for special care dentistry.

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Autologous blood injection for treatment of recurrent temporomandibular joint dislocation in the patient with disabilities

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Aims: Patients with neurological disorders are often associated with recurrent temporomandibular joint (TMJ) dislocation, and surgical procedures are most efficient for the treatment. This approach, however, is sometimes difficult in patients who cannot tolerate general anesthesia and surgical operation. The purpose is to evaluate the effects of autologous blood injection on recurrent TMJ dislocation of physically disabled persons. **Methods:** Subjects were two patients who had recurrent bilateral condyle dislocation. One patient was a 87-year-old female who suffered dementia and Parkinson syndrome, and another patient was a 66-year-old male who has hemiplegia after cerebral infarction. Under local anesthesia, a 21-gauge needle was inserted in the superior compartment of TMJ, and 2.5 ml of fresh autologous blood was injected in the compartment and 2 ml in the pericapsular tissue. After this, an elastic bandage was applied and left for the first 24 hours. The procedure was repeated twice for the first patient, and three times for second patient. **Results:** Postoperative courses were uneventful. Dislocation of condyle did not reoccur during the follow-up period after latest procedure. **Conclusions:** Autologous blood injection is an alternative treatment for recurrent TMJ dislocation, particularly in patients suffering neurological disorders and for whom surgical procedures are not preferable.

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The home visit for dwelling elderly with special needs of undergraduate curriculumJ Chimruang,^(*) P Nhorchai, T Potthidee, R Chansamat

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Aims: The purposes of this study were to provide undergraduate students with the knowledge, skills and attitude towards the elderly with special needs and develop a community collaborative practice model - dentistry's role in interdisciplinary care delivery. **Methods:** The participants were the sixth-year undergraduate students. In 2012, the learning objectives described medical, social and environmental factors and designing oral health education for individual patients and their caregivers. In 2013, the learning objectives were assessment, providing oral health education and dental prevention, and recognising the value of teamwork in the care management. **Results:** Thirty six undergraduate students leaned home care by group discussion with educators, and home healthcare team including family physician, nurse practitioners, and dental nurses. Participants discussed case-reports and referred care for patients with more complex needs. "INHOMESSS" assessment and feedback was a key to providing humanised health care awareness and an holistic approach in dental students. Self-reflection was effective in assessing learning outcomes of students. The role of oral health care also was raised significantly to the general health condition in caregivers and practitioners. **Conclusions:** The home visit practice should group both dental and medical students as teamworkers to arrange for primary health care management seminars for elderly with special needs in community.

771 Poster

Prevalence and microbiological profile of periodontal disease in patients with rheumatoid arthritisT Ferraryi,^(*) M Calvano,¹ M Armadai, M Echaide,¹ G Scagneti,¹ M Landi,¹ B Orman³

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Rheumatoid arthritis (RA): chronic multisystem inflammatory disease, unknown aetiology. Periodontal disease (PD): infectious disease spreading immuno-systemically. Distribution of microorganisms in subgingival dental plaque depends on geographic areas, race, etc. No literature in Argentina analysing periodontal microflora in patients with RA. **Aim:** to estimate prevalence of PD in RA compared with control group and describe microbiological profile of PD patients with RA in Argentina. **Methods:** 106 patients with RA were included. Clinical evaluation was conducted. Presence and severity of periodontal disease (attachment level, pocket depth, bleeding index) 50 patients were assessed as a control group without RA. PCR technique applied. **Results:** Significant difference between RA patients and controls were observed regarding prevalence of severe generalised chronic and moderate periodontitis. PCR techniques determined

prevalence of periodontopathic markers in groups: Aa: 12.5%, 17.6%, 18.6%, Fn: 31.25%, 64.71%, 40.68%, Pg: 43.75%, 16.66%, 54.24%, Td: 62.5%, 29.41%, 35.59%, Tf: 31.25%, 47.06%, 38.98%, respectively. **Conclusions:** Patients with RA have higher prevalence of severe and moderate chronic generalised periodontitis compared to controls. Association between microbial markers and periodontal disease was observed, also differences in microbiological profile of patients with RA treated with MTX or biologicals.

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Oral rehabilitation in a Down syndrome patient. A case report

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Aim: Achievement of oral health with prosthetic rehabilitation treatment resulting in a stable occlusion. **Methods:** 27 year-old female patient with Down syndrome, mild intellectual disability, hypothyroidism and a good behaviour in the dental clinic reported. She presented persistence of 52/53/62, impacted teeth (23, 13 and third molars) and hypodontia of 12 and 22. Mesial relationship with anterior crossbite that produced periodontal trauma by occlusion on 11 and 21. Our interdisciplinary team including a maxillofacial surgeon decided to keep 13 and 23 because they are nearby the upper incisors' roots and have the possibility to injure them. Extraction of primary teeth and crowded premolar (15), orthodontic treatment with a removable appliance using lingual springs on central incisors (during 6 months and 2 months for retaining), upper overdenture to increase vertical dimension and composite veneers in 11/21 was performed. **Results:** After 2 years of treatment, a stable and functional occlusion that removed periodontal trauma on 11 and 21 was managed. Dentofacial aesthetics have been improved in the maxilla by an overdenture that replaced missing teeth while achieving the goals of intermaxillary suitable relationship. **Conclusion:** Combining dental-care interventions and interdisciplinary work with patients and families enabled the creation of a stable, functional and aesthetically acceptable occlusion.

774 Poster

Interdisciplinary care in a patient with Noonan syndrome – presentation of a clinical caseM Álvarez,^(*) A Alisio, M Armada, C Calvano, G Quintana, G Scagnet, T Ferrary

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Noonan syndrome (NS) is a genetic disorder with a mutation on chromosome 12, causing one of the most common congenital heart defects. **Aim:** To sensitise the patient and family about the importance of oral health and subsequent acceptance of prosthetic rehabilitation. **Methods:** A 35 year old patient with NS presenting moderate intellectual disability, whose behavioural characteristics are clumsiness, irritability

and high level of anxiety . He used to behave with great concern and poor cooperation in the dental office. Behavioral observations were performed using the query space for Anxiety Rating Scale Frank's behaviour, along with an observation sheet. Psychological interviews were implemented together with their parents in order to gain acceptance of dental care and become a factor enabling collaboration with subsequent procedures. **Results:** Oral rehabilitation and an attitudinal change which favoured the bond of the same with respect to the field of dental care achievement. **Conclusion:** Interdisciplinary work with the inclusion of interventions in the accompanying family group allows not only the resolution of the case and its complaint, but constitutes an important element to promote further consultations achieving attitudinal change that can be sustained over time.

775 Poster

Corpus callosum dysgenesis with obstructive hydrocephaly - a case report

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Aim: Treatment of a patient with corpus callosum dysgenesis - a partial alteration of the development of the corpus callosum - without sedation, but with progressive motivation in an interdisciplinary treatment approach. **Methods:** A 27 year old patient presented at the first dental appointment with a dysgenesis of the corpus callosum, hydrocephaly with ventriculo-peritoneal shunt at 9 days from birth, maturation delay, and previously presented afebrile seizures. Dental examination revealed the persistence of multiple fragments of primary teeth, severe tooth wear, enamel-dentine fracture of tooth 41 and the absence of several permanent teeth. A panoramic x-ray and treatment plan consisting of progressive motivation were performed, which reached the 'approval' of invasive procedures and removal of the deciduous teeth. Tooth extractions were performed in every session leaving a month in between. A grinding teeth guard was installed in order to avoid bruxism. **Results:** The patient gradually accepted the dental treatment, which improved his behaviour, adapting every session to different procedures, without sedation. Permanent teeth erupted after the removal of the primary teeth. The pain was inhibited with the grinding teeth guard. **Conclusion:** A complex clinical case was resolved with a progressive and interdisciplinary treatment plan, including the eruption of the impacted teeth and reducing of the bruxism symptoms by insertion of a grinding teeth guard.

779 Oral presentation

Wrong site extraction - risks in special care dentistry

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Aims: To investigate the incidence and causes of wrong site extraction and to consider effective preventive procedures to

reduce the risks in Special Care Dentistry. **Methods:** A root cause analysis was conducted following an error within the Special Care Dental team, which resulted in the wrong extraction of a tooth on an elderly, medically compromised patient with a physical disability. A review of the literature was conducted to ascertain the incidence of wrong site surgery and extraction, and the common risk factors. Consideration was also given to the effective measures which had been put in place to reduce the risks in future.

Results: The majority of errors in wrong site surgery were found to be due to systems failure rather than individual negligence or misconduct. **Conclusion:** Prevention in future should be focused on standardising systems, providing training at appropriate levels and improving communication within the dental team.

780 Poster

Effect site concentrations of propofol for dental treatment under deep sedation in intellectually disabled patients

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Aim: Evaluation of the adequate propofol target concentration (TC) for dental treatment in severely intellectually disabled patients. **Method:** We undertook retrospectively a review of sedation records of severely intellectually disabled patients who underwent dental treatment under target-controlled infusion with propofol sedation from January 2009 to May 2012. We evaluated the initial TC, stabilised concentration of propofol and monitored vital signs, including BIS score using sedation records: 73 patients (40 male and 33 female patients) were included in the study. **Results:** Every participant was severely intellectually disabled. The mean sedation duration was 72.5 ± 19.8 (40-145) minutes. The initial propofol TC infusion amount was 3.0 ± 0.6 (1.5-5.0) mcg/ml. The propofol effect site concentration (Ce) was 2.9 ± 0.7 (1.0 - 5.0) mcg/ml. The average value of BIS was 57.2 ± 13 (28-82). During the treatment period, there were no severe complications.

Conclusion: The propofol Ce for deep sedation in intellectually disabled patients was higher than that for sedation in healthy adults during dental treatment. However, propofol Ce for loss of consciousness was lower than that of mentally healthy patients.

781 Poster

Does dental treatment under general anesthesia improve oral health related quality of life of intellectually disabled patients?

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Aims: To assess parental perception of the oral health related quality of life of patients with severe intellectual disabilities before and after dental treatment under general anaesthesia. **Methods:** Self-questionnaires were given to 117 parents or

family members of the patients that received dental treatment under general anaesthesia due to severe intellectual disabilities. Reduced forms of the Child Oral Health Impact Profile (COHIP) and the Family Impact Scale (FIS) were used under patients' circumstances. The Seoul National University Dental Hospital Institutional Review Board approved the study. Cronbach's α was used to determine the internal reliability of the reduced COHIP and FIS subscales. Wilcoxon signed rank test was applied to assess the difference of scores. Results: Follow-up data were obtained from 102 participants (87%). The COHIP and FIS significantly improved after treatment ($p < 0.05$). The baseline COHIP scores and changes differed according to the patients' demographic characteristics (age, disabilities, meal types, cooperation levels, caregivers, etc.) ($p < 0.05$). Conclusions: Based on the parental perception related to oral health of intellectually disabled patients, the quality of life of patients can be improved by dental treatment performed under general anaesthesia.

782 Poster

Oral health status of children with Trisomy 21 living in Riyadh, Saudi Arabia

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Aim: To assess the oral health status amongst children with and without Trisomy 21 (T21) in Riyadh, Saudi Arabia. **Method:** A case-control study recruited 192 children between 7-15 years of age, both with ($n=93$) and without T21 ($n=99$). After parents were informed about the study and consent was obtained, groups were matched for age and gender. The children were examined with the aid of standardised tools to report the prevalence of dental caries, plaque, gingivitis, malocclusion and trauma using WHO indices. **Results:** There was no statistically significant difference between the two groups with regard to mean DMFT (2.66 for T21, 3.11 for control group). Gingivitis was statistically significantly more prevalent in T21 children (46%) than in those without T21 (29%). There were no group differences in the prevalence of plaque (72% in T21, 69% in control group). Children with T21 were more likely to have incisal fractures (24.73%) than those without T21 (4.95%). There were highly significant group differences concerning prevalence of malocclusion as T21 children had Class III increlat (45%) compared to control (8%) and a Class III molrelat (50%) compared to controls (8%). **Conclusion:** Preventive measures such as oral health programmes are needed to encourage and motivate children with T21 to maintain good oral hygiene and to reduce gingival inflammation. Also, parents of T21 children should be informed about an increased risk of dental trauma and a need for future orthodontic treatment.

784 Oral presentation

Osteoporosis, is it a risk factor for development of Periimplantitis?

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Introduction: The relationship between osteoporosis and periodontitis has been widely studied in the literature, and in the last 30 years there has been a big controversial between the relationship of both diseases, but in the latest surveys it is shown that both diseases are not linked. Unfortunately there is almost no evidence about the possible relationship between osteoporosis and periimplantitis. **Aim:** To investigate the possible relationship between osteoporosis and periimplantitis. **Materials & Methods:** In this retrospective study we evaluated the panoramic radiographs of 65 patients who were treated with implants during the masters degree in special care in dentistry of the University of Seville. A total of 181 implants were examined. Osteoporotic level of patients was assessed with Mandibular Cortical Index, a radiomorphometric index that allows evaluation the osteoporotic level of patients by observing the shape of mandibular inferior cortex. Periimplantitis was assessed according to the method described by Lagervall *et al.* which allows evaluation of the periimplantitis level of an implant in a panoramic radiograph. **Results:** there was no significance evidence that could link both diseases, periimplantitis and osteoporosis in the studied sample. **Conclusions:** In this survey it has been shown that osteoporosis is not a risk factor for the development of periimplantitis

785 Poster

Outreach model of care for patients in assisted accommodation

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Aim: To improve oral health care in assisted accommodation. **Methods:** Oral hygiene has been assessed visually by three calibrated dentists using Silness and Loe index. A multidisciplinary approach is supported by dietician-hygienist team. SCD staff liaises with facility managers from 44 group homes to monitor oral hygiene care. For carers, in-house continuous interactive training as well as full day workshops are held twice a year. Outreach team visits weekly 1-3 facilities in order to cover all of them annually and refer their residents for appropriate management. Improved patient personal oral hygiene care is encouraged through sustained mentoring of all patients and carers. **Results:** At base line in 2002-2003 50% of the residents had good oral hygiene. Through outreach sustained intervention in 2004-2014 we achieved 75% of residents having good oral hygiene care. Outreach team assess annually 712 residents and educate 448 carers. 90% of carers expressed increased confidence in oral hygiene care

provision post-education compared to 50% pre-education. **Conclusion:** It is paramount for special needs population in our area to be continuously supported by dental professionals and allied health. We believe that this model of care may be successfully applied to other oral health services.

786 Oral presentation

Implants in immuno-deficient patients revisited – a routine treatment or exception?

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Aim: To assess treatment outcome of implant-prosthetic rehabilitation in HIV-positive patients: of 15 smokers, 7 revealed HIV-associated compromised medical history undergoing implant-prosthetic rehabilitation, receiving a total of 48 implants. The median observation period was 33 months. **Material and Methods:** Retrospective analysis of treatment courses of 11 HIV-positive patients (2 female patients; median age 52 years; median duration of HIV-positive status 21 years; median CD4 cell count: 413). Results: One female patient revealed a history of pseudomembranous candida-infection, no other patient suffered from HIV-associated oral lesions. No bleeding complications were found. Two smokers revealed early dehiscences above the augmentation barrier membranes and implant cover screws. Two implant failures were noted. In three patients, at least one success criterion (1) was not met. Cumulative implant survival rate was calculated by 90.9 %. Cumulative success rate was 85.3 %. In 10 patients, implant-prosthetic treatment could be performed as planned and is still in function, in one patient the treatment plan had to be modified. **Conclusions:** HIV-positive immunologically stable patients adhering strictly to HAART / ART might undergo implant-prosthetic treatment under close interdisciplinary cooperation, considering regular check for HIV-associated oral lesions, CD4 cell count and viral load.

787 Oral presentation

Tourette syndrome and procedures related to dental treatment - review of the literature

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Aim: Patients with Tourette syndrome (TS) may present special challenges, if there is a need for dental treatment, sedation, or general anaesthesia (GA). The aim was to systematically review the literature regarding procedures and precautions in the dental treatment of patients with TS with emphasis on perioperative procedures involving sedation and GA. **Methods:** Literature searches were performed in PubMed and Embase to identify relevant papers concerning TS in combination with dental treatment, sedation, and/or GA with the purpose to study outcomes regarding co-

morbidity, perioperative complications, and drug interactions. **Results:** The literature search identified 64 papers, and of these six publications addressed the topic. All included publications were case reports or series, and thus the overall evidence level for the selected topic was low. This review found no unexpected adverse effects or drug interactions in relation to sedation or GA in patients with TS, and no perioperative complications were reported. **Conclusion:** The available literature concerning the dental treatment of TS patients is scarce, and more knowledge is needed on how to handle dental care in TS patients, especially when sedation and GA are needed.

791 Poster

Oral care of a leukaemia patient under mechanical ventilation: a case report

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Aims: After bone marrow transplantation (BMT) for acute leukaemia, mucosal lesions are induced as a symptom of graft versus host disease, which may result in respiratory disorders due to mucous oedema in the air way. Here, we report oral care of a 63 year old male patient subjected to mechanical ventilation with multiple ulcers in the oral cavity. **Methods:** He was given a diagnosis of acute leukaemia and BMT was conducted after chemotherapy. Three days after BMT, the patient complained of nausea, pharyngeal pain and dysphasia. Ulcers were observed in the soft palatal with bleeding. Ten days after BMT, the patient was conveyed to the intensive care unit, where he was mechanically ventilated because of respiratory disorder. As oral manifestations, xerostomia of the lips and multiple gingival ulcers were observed with persistent bleeding. The mucosa and gingivae were cleaned with wet sponge sweepers topped with moisturisers. Soft tooth brushes were used for cleaning the tooth surfaces, avoiding gingival trauma provoking bleeding. For controlling bleeding, petrolatum was applied to the bleeding sites. **Results:** Three weeks later, the patient recovered from serious conditions and mucous lesions were improved. He remains in remission and is subjected to regular periodontal management. **Conclusion:** Oral care may be helpful to improve the oral environment for leukemia patients.

792 Oral presentation

Treatment need of Children with Special Health Care (CSHCN)

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Aims: Data on dental treatment need of CSHCN in Germany are sparse. Hence, this retrospective case-based study provides information about dental treatment need of CSHCN with regards to 1) general anaesthesia (GA) treatment or 2) without GA/sedation. **Methods:** Patients' records of CSHCN treated

from January 2004 to December 2012 were screened for treatment need and recall-visit. **Results:** A total number of 795 CSHCN (m:f =1.3:1; mean age: 6.8y) were treated initially. Whereas 43.6% (347/795) did not receive GA initially, 56.4% (448/795) of patients were treated under GA from the beginning. Additionally, 16 of the chair-side patients needed treatment under GA, increasing cases to 58.4% (464/795). Of these patients, 188 participated in regular recall-visits after chair side treatment and 255 after GA. Out of these 464 patients needing treatment under GA, 50 patients needed a 2nd(50/795;6.3%), only 7 patients (7/795;1%) needed a 3rd treatment under GA over the observation period. **Conclusion:** Overall treatment need under GA was high, though almost half of the patients could be treated without. Recurrent treatments under GA are necessary, but are reduced by a regular participation into recall-visits. **Acknowledgement:** A vote by the Ethical Committee of the Medical Faculty was obtained prior to the investigation (Project-No. 031-13).

794 Oral presentation

Teaching Special Needs Dentistry to undergraduate students in rural communities: an Australian experience

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Aims: To investigate current teaching in Special Needs Dentistry to undergraduate dental students and Oral Health students as recommended by the iADH Education Committee and other institutions and to investigate how this model may be applied and adapted to the idiosyncrasies of providing and delivering SND training to students in rural and remote campuses. **Methods:** Special Needs Dentistry training courses from domestic and international institutions have been reviewed for their didactic content and clinical teaching. A review of the current experiences of undergraduate students in Special Needs Dentistry will be undertaken. A review of how well prepared these students are for the challenges needed to deal with patients who have special needs and reside in rural and remote locations will be assessed. **Results:** A survey of students' attitudes and experiences will be used to contrast and measure their experiences and preparedness as new graduate dentists. **Conclusions:** From a group of undergraduate Dental and Oral Health Therapy students the delivery of Special Needs Dentistry training is assessed for appropriateness in preparing the newly graduated practitioner to manage patients who have special needs in rural and remote settings. **Supported by:** Dental Health Services Victoria.

795 Oral presentation

Case Report: Oromandibular Dystonia (OMD) – Meige's syndrome

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Oromandibular Dystonia (OMD) is a rare condition of unknown cause. OMD may manifest as early-onset

generalised dystonia. It is characterised by repetitive spasms of masticatory, facial or lingual muscles. This may cause dysphagia, dysphonia, breathing difficulties, and clenching of the teeth. OMD combined with blepharospasm is known as Meige's Syndrome. **Aim:** To discuss the aspects of the clinical manifestations, neurological mechanisms and treatment options for OMD. **Case Report:** A 60 year old Caucasian female with OMD has been under our care for the past 10 years. She has carious lesions and multiple restorations due to fractured teeth from clenching. She was diagnosed with OMD at the age of 45. She receives an 8 weekly dose of Botox (BTX) type A (600 units around her neck, and 80 units around each eye). BTX binds to presynaptic cholinergic terminals and blocks the release of acetylcholine at the neuromuscular junction. BTX helps to control spasmodic torticollis and blepharospasm. Other treatments for OMD may include local anaesthetic blocks, dental appliances, behavioural medication, physiological support and denervation procedures. **Conclusion:** Dental treatment for OMD patients is challenging due to orofacial involuntary spasms that can be triggered by stress and anxiety. A good rapport between the dentist and patient is essential. Excellent oral hygiene and regular dental visits are paramount to maintain good oral health.

796 Poster

Characteristics of feeding behaviour in weaning period of autism-model rat pups

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Aim: To identify the characteristics of daily meal intake in children with ASD by measuring the amount of food intake throughout the weaning period in autism-model rats. **Methods:** Six male autism-model SD rats and 6 healthy male SD rats were nursed with their mothers until 11th day after birth. Then, the pups were divided into the following three groups and reared in separate cages without their mothers: group A, two model rats; group B, a model rat and a control rat; group C, two control rats. The daytime was from 8:00am to 8:00pm, and the night-time was 8:00pm to 8:00am. Numbers of meal intake at one time and contacts with other rat pups at mealtime in each cage were counted from the 13th day to the 21st day. During the period, the body weight of each rat and amount of food intake of day-time and night-time were also measured. **Results:** There were no remarkable differences in body weight gain and the amount of food intake among the three groups. In group A, there was no significant difference between the amount of food intake of day-time and night-time. However, the amount of food intake of night-time in group B and C were significantly greater than the amount of day-time. **Conclusion:** These findings indicate that the rat pup models of autism displayed some characteristic feeding behaviours and the circadian variation in feeding behaviour could be different between the autism-model rats and the healthy rats.

797 Oral presentation

Special Needs Dentistry in Malaysia: The development of an idea into realitySZ Hamzahi,⁽¹⁾ N Yahaya²

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Aims: To share the experience and knowledge of Malaysian pioneer specialists in Special Needs Dentistry (SND) in the development of a new SND service and clinical set up. However, this new adventure has happened not without challenges. **Methods:** No specific method has been used but the model of good care from the existing dental specialties in Malaysia has become an official reference document to develop the service. The process started with the documentation of clinical core competencies in SND followed by the development of a referral guideline to create a patient pool in each of the two initial SND centres. With an allocation of some budget from the Ministry of Health, a brief of requirements of the facility for SND service and standard list of equipments were listed to assist in the planning of the establishment of the new units. **Results:** This judicious effort has resulted in a compilation of these basic documents which has set a new benchmark and framework for its future development. **Conclusion:** This resource is to facilitate the development of a new SND clinical set up. It will certainly benefit members of the SND fraternity and other relevant stakeholders from ministries, non-government organisations (NGOs), academia, industries and consumer groups locally and internationally. **Supported by:** *Oral Health Division, Ministry of Health Malaysia*

798 Poster

Evaluation of dental treatment adaptability for patient with pervasive developmental disorder (PDD)Y Kori,¹⁽¹⁾ K Ueda¹, A Yamamoto,¹ H Nakagawa,¹ M Yoshioka,² T Iwamoto²

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Aims: To establish a simple evaluation method of dental treatment adaptability for the patient with PDD. **Methods:** We asked the patient's parents to answer a questionnaire consisting of 26 items in eight categories (age, experience, accommodation, cognitive ability, communication, sensibility, persistence, and impulsiveness). The salivary amylase level in each patient was measured. 16 patients (12 males and 4 females, 6-19 years of age) participated in this study and were divided into 2 groups: need the special treatment or not. Then, we compared 2 groups on the evaluation items and the salivary amylase level. Statistical analyses were conducted using the Mann-Whitney's U test. **Results:** Regarding the 2 categories including cognitive ability and sensibility, there were a significant difference at $<0.01^{**}p$. The significant difference was also seen in both the category of auditory and the salivary amylase level at $<0.05^{*}p$. **Conclusion:** It might be

suggested that our questionnaire and the salivary amylase level are useful simple evaluation methods for the dental treatment adaptability of patient with PDD. **Supported by:** *JSPS KAKENHI Grant No number 24653296.*

799 Oral presentation

Using pictorial support to prepare children with communicative disability for dental careÅ Mogren,⁽¹⁾ L Bengtsson

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Aim: The purpose of this study is to investigate the effects of using an invitation letter with pictorial support to increase participation and reduce anxiety before and during dental clinical assessment. The study is part of a larger multidisciplinary project - the KomHIT project aiming to improve the communicative rights of children with disabilities during hospital and dental care. **Method:** Within the frames of the KomHIT project different hospital clinics and the dental clinic Mun-H-Center were provided with knowledge about communication, communicative rights and augmentative communication. The ongoing evaluation in this study involves the dental clinic Mun-H-Center. An invitation letter with pictorial support was designed for the dental assessment. Staff and parents to children with communicative disability were asked about their opinions of the communicative support that was provided using questionnaires. **Results and conclusion:** Preliminary results indicate that pictorial support presented before visiting the clinic can reduce anxiety and support the child's ability to participate in dental assessment. The results of questionnaires in this study will be shared during the presentation. Some of the tools that were used will also be demonstrated.

800 Oral presentation

Jaw function and oral motor exercises – a case studyÅ Mogren⁽¹⁾

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Aims: To describe the impact of jaw function on speech, chewing, saliva control and tongue protrusion in a child with orofacial dysfunctions. **Method:** A 5 year old girl was referred to the clinic due to an open bite, speech difficulties, chewing difficulties, reduced saliva control and tongue protrusion. A team consisting of an orthodontist and a speech-language pathologist made the clinical assessment. She was found to have low tone and strength in her orofacial muscles and instability and weakness in the jaw musculature, more pronounced on her right side. A training program focusing on jaw function was developed. Daily exercises were carried out at home by her parents. She was seen for evaluations at the clinic at 3, 8, 14, and 17 months after the initial assessment. **Result:** Already after 3 months of regular oral motor training the girl showed some improvements and after 8 months there was less tongue protrusion, more effective chewing, improved saliva control, competent lip

closure and improved speech. The functions continued to improve over the following months. **Conclusion:** Oral motor exercises that focus on jaw stability can be a significant complement to speech therapy and orthodontic treatment. Improved intelligibility, chewing ability and saliva control could be expected to improve participation in communicative situations and the general quality of life. A research project is designed to study aspects of jaw stability and control in a larger sample of children both with and without orofacial dysfunction.

801 Oral presentation

The oral health status of Special Olympics athletes in India

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Aim: To investigate the oral health status of Special Olympics athletes in India and understand oral health inadequacies. **Methods:** A prospective cross sectional epidemiological survey was performed in India. In 2013, on the National Special Olympics dental data were obtained by trained dentists from 381 athletes aged 9 to 48 years.

Results: 321 (84.25%) athletes exhibited no pain, however eight (33.3%) athletes from one Indian state reported maximum pain. Six athletes (1.6%) were edentulous and none had a prosthesis. Restorations were found in 16 (8.8%) athletes while 167 (43.8%) had untreated decay in molars and eight (0.02%) had decayed anterior teeth. The majority of the 47 (12.3%) athletes with missing teeth had missing molars (n=36, 72.3%) and a small proportion (n=11, 23.4%) had missing anterior teeth. Only two athletes had fissure sealants. Fluorosis was seen in 43 study participants (11.3%) but 179 (46.9%) had signs of gingivitis. Ten persons (41.7%) had injured maxillary anterior teeth. The need for urgent treatment was observed in 52 (32.6%) athletes.

Conclusions: Barriers to achieve or maintain optimal oral health need to be explored to reduce oral health inequalities. The official Special Olympics Screening form (HAS) should be modified by including history of dietary habits and previous dental attendance. This could help to ascertain if oral health has improved since the last check on a previous Special Olympics event.

802 Oral presentation

Oral health – what information does ICF-CY provide in addition to ICD-DA?

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Aim: To describe oral health in children with disabilities receiving pediatric specialist dental care with focus on differences in registration between the International Statistical Classification of Diseases and Related Health Problems, Dental Application (ICD-DA) and the

International Classification of Functioning, Disability and Health – Children and Youth (ICF-CY). **Methods:** ICD-DA was retrieved from dental records. Oral health data using ICF-CY was determined through interviews. Descriptive data analysis was performed. Results: 99 children were included. Orthodontic anomalies (30%) and congenital tooth disturbances (20%) were the most common ICD-DA diagnoses and plaque/calculus (19%), tooth wear (12%), gingivitis/periodontitis (11%) and caries (7%) the most acquired oral health conditions. Impairment in structure of teeth was the most cited oral structure within ICF-CY component Body structure (45%) followed by impairment in palate (23%) and tongue (19%). Body function impairments of the oral functions concerning food intake dominated.

Conclusion: While the ICF-CY is not specific enough to fully describe oral health in this group it is useful to assess children's oral functioning, disability, and health from a biopsychosocial perspective. A dental ICD diagnosis alone is not enough to determine the consequences of oral conditions.

803 Poster

Oral health among students with special health care needs in Thuringia, Germany

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Aim: Assessment of the oral health status among students with special health care needs (SHCN) in Thuringia, Germany. **Methods:** Of 1,283 students with SHCN aged 6-23 y, 983 (77%) were included in a cross-sectional survey conducted in 2010-2011. Caries was scored according to WHO criteria. For scoring odontogenic infections the pufa/PUFA index was used. Fissure sealants (FS) were recorded in all permanent molars. Periodontal health was assessed with the Periodontal Screening Index (PSI). Data were analysed in the age groups 6-8 y, 9-10 y, 11-13 y, 14-16 y and >16 y with SPSS Statistics 20.0. Mann-Whitney-U-test and chi-square test were used to compare data between the groups. Level of significance was set at $p \leq 0.05$. **Results:** Caries prevalence and experience was 16% and 0.4 DMFT in 6-8-y-olds; it increased significantly to 71% and 4.5 DMFT in >16-y-olds. Pufa prevalence decreased significantly from 17% in 6-8-y-olds to 4% in 11-13-y-olds. Prevalence and mean number of FS increased significantly from 6-8-y-olds (17%/0.5) to >16-y-olds (53%/2.2). From the youngest to the oldest group the care index increased significantly from 27.5% to 63% and the PSI score 3-4 from 0% to 3% as well.

Conclusions: The oral health status of SHCN students indicates the need for a preventive orientated dental care approach at early age.

804 Oral presentation

Profiles of orofacial dysfunction using the Nordic Orofacial Test-Screening (NOT-S)B Bergendali,⁽¹⁾ M Bakke,² A Mcallister,³ L Sjögren,⁴ P Åsten⁵

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Aims: To review results from international publications and compile NOT-S data as orofacial dysfunction profiles.

Methods: Results of nine reports were used to form dysfunction profiles based on the prevalence of dysfunction in each domain of NOT-S. **Results:** The review compiled data from 336 individuals with various diagnoses and 333 healthy controls, and all studies reported differences between individuals with diagnosed disorders and control subjects. The NOT-S data measured treatment effects and provided dysfunction profiles characterizing the patterns of orofacial dysfunction in various diagnoses. **Conclusions:** NOT-S gives a comprehensive view of orofacial function. This review corroborates previous results finding that the NOT-S differentiates well between patients and healthy controls, and can also track changes in individuals after treatment. NOT-S could be used as a standard instrument to assess orofacial dysfunction, evaluate the outcomes of oral habilitation and rehabilitation, and improve comparability in clinical practice and research. Supported by the Nordic Association for Disability and Oral Health.

805 Oral presentation

Guidelines for improving the oral health of people with dysphagiaG Kelly,^{1,2} V Jones,¹ R Davies³

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Aims: To provide standards for the dental team, to provide appropriate oral health care for children and adults with dysphagia, using current evidence and expert opinion.

Methods: A guideline development group was formed by the All-Wales Special Interest Group (SIG) in Special Oral Health Care to investigate current evidence on mouth care for people with dysphagia. Electronic databases and journals were searched of publications after 2000, to update the British Society for Disability and Oral Health dysphagia guidelines. The SIG group and a focus group, including speech and language therapists, produced evidence-based mouth care recommendations for people with dysphagia. **Results:** Recommendations include dysphagia-specific oral health risk assessments, proposed multi-disciplinary care pathways and dental team educational resources including mouth care algorithms, oral care products, dysphagia dental risk assessments and easy-read educational leaflets for people with dysphagia and health care professionals on safer mouth care provision. **Conclusion:** There is a paucity of publications on oral health and dysphagia. Dental teams

need training for provision of safer dental care for this patient group. Multi-directional care pathways and interdisciplinary dysphagia management protocols are needed to improve the quality and safety of patient care. Further research is required to support these recommendations.

806 Poster

Oral health from the perspective of a psychiatric institution's professional teamL V Galvão Moreira,^{1(*)} M C Fontoura Nogueira Da Cruz,²

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Studies have demonstrated a connection between the development of psychiatric disorders and an increased predisposition to develop oral diseases. Taking into account all the social, behavioural and economic contexts rooted to mental illness, it is well known that the control of this situation demands the performance of the family and a multidisciplinary team. **Aim:** To evaluate the oral health knowledge's level and awareness of the health professionals of a psychiatric public hospital in São Luís, Brazil. **Methods:** Descriptive and cross-sectional study; the survey consisted in interviewing 23 volunteers using a specific questionnaire containing 25 questions. The data were analysed by using descriptive statistics. **Results:** The respondents demonstrated a little grounded knowledge based on their answers, however satisfactory, as most of them reported not having counted prior with the referred subjects, suggesting that there is a shortage in the disclosure of such information. **Conclusions:** Although interviewees seem to understand the relevance of oral health in the patients' welfare, they do not contribute towards to solve the related problems. Further studies including similar institutions and professionals should be carried out.

809 Poster

Community-liaison clinical pathways to improve the Oral Health-related QOL of individuals with disabilitiesM Egusai,^(*) T Mori,¹ M Hosotubo,¹ Y Nojima,¹ Y Kondo,² J Omori,² T Miyawaki³

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Aims: The development and application of community-liaison clinical pathways (paths) to support the provision of optimal dental services at minimum cost to individuals with disabilities. **Methods:** 1. Development of a community-liaison clinical pathway, 2. Determining methods of IT-based information provision and sharing and creating a website, 3. Trial application of the developed path in the Kurashiki District. **Results:** The path was applied in the Kurashiki District. **Conclusions:** For the development of community-based medicine, liaison between community-based dental service providers and advanced medical institutions may be necessary. In order to enable patients to visit nearby facilities

for treatment, and smoothly refer them to other institutions, it may be particularly important to increase the number of dental service providers who can competently treat individuals with disabilities. Acknowledgements: Ethics Committee for Okayama University (approval number: 925). This study was conducted with a Grant-in-Aid for Scientific Research 2012-14 from the Ministry of Education, Culture, Sports, Science, and Technology (No. 24593151).

811 Oral presentation

Speech, eating and saliva control in rare diseases – A database study

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Aim: To investigate the background and the manifestations of impaired speech, eating disorders and drooling in rare diseases. **Methods:** In 1996-2008, 1,703 individuals with 169 rare diseases, 3-67 years, answered a questionnaire about general health and orofacial function and 1,614 participated in a clinical examination. A control group of 135 healthy children, 3-14 years, was included in the study. Oromotor function was assessed by a speech-language pathologist. The participants with rare diseases were recruited via family/adult programs at Ågrenska National Competence Centre, referrals to the clinic as well as research projects, while the controls were randomly selected from a Swedish municipality. **Results:** Oromotor impairment was a frequent finding (43%) and was absent among the controls. About half of 3-6 year-olds had moderate/severe speech difficulties and one third in the other age groups. Most frequent eating difficulties were related to chewing and were found in 20% of the study group. Artificial nutrition was most common in children 3-6 years (9.2%) followed by children 7-12 years (4.9%), adolescents 13-19 years (3.3%) and adults (1.4%). In total, 31.2% were drooling. **Conclusions:** Orofacial dysfunction is common in individuals with rare diseases. There is a strong correlation between oromotor impairment and speech, eating and saliva control in this patient group.

812 Poster

Prevention of postdental treatment infections in a patient with agammaglobulinaemia

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Aim: Agammaglobulinemia is one of the most common primary immunodeficiencies and is characterised by the absence of immunoglobulins. Agammaglobulinemia leads to frequent infections of the respiratory tract, skin, sinuses, and lung, but can often be controlled by intravenous gammaglobulin treatment. The purpose of this study was to describe a case of successful prevention of postdental treatment complications, such as pneumonia and other

bacterial infections, in a patient with Down syndrome and agammaglobulinemia. **Methods:** A 43-year-old man with Down syndrome presented to our clinic for tooth extraction. He described a history of recurrent pneumonia and untreated agammaglobulinemia. In order to reduce the risk of postoperative infections, the gammaglobulin treatment was scheduled before the dental procedure. Further, the dental treatment, including filling and extraction, was conducted under general anesthesia under the supervision of a hematologist. **Result:** The dental procedures were successfully performed without any postoperative infections. Now, the patient is receiving follow-up care. **Conclusion:** Close liaison between the dentist and physician is important for dental treatment of patient with systemic diseases.

813 Oral presentation

Oral health status of German Special Olympics athletes

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Aims: To describe and evaluate the oral health and treatment needs changes of Special Olympics® Special Smiles® participants in Germany between 2006 and 2013. The data will also be compared with European and international data. **Methods:** The cross-sectional study data were available from ten national and regional games. The data were collected from non-random samples through interviews and clinical examinations by trained dental examiners. The consent was obtained by the subjects themselves or by parents/legal guardians. In total 3,053 subjects were screened. Dropped-out were 179 thereof due to their non-athletes status, age (<12yrs), and unknown gender. To analyse the remaining 2,874 subjects, frequency analyses, chi-squared tests, and logical regressions were used. **Results:** The overall mean age was 26.3yrs (SD 11.7, range 12 – 71). 1,861 (64.8%) subjects were male. 855 (29.7%) of all subjects had untreated decay, thereof 574 (67.1%) men. 120 (26.0%) subjects of National Games in 2006 had untreated decay. 79 (65.8%) men were concerned. In 2008 140 (38.5%) athletes had untreated decay. More men (85, 60.7%) were concerned. In 2010 47 (43.9%) subjects were determined to have decay. There were 37 (78.7%) men. In 2012 213 (30.0%) subjects were diagnosed with decay. Again more men (146, 68.5%) were concerned. **Conclusion:** The summary of Special Smiles screenings within the European Union (EU) between 2007 and 2011 (3,846, 44.7%) indicates that the untreated decay percentage of German athletes who took part in the selected screenings, is below the EU average.

814 Poster

The effect of Hydrolyzed Protamine on gingival inflammationY Tananka,⁽¹⁾ M Yaguchi, M Hishinuma, E Inomata, T Nomoto

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Aims: It is known that oral infection may affect the pathogenesis of systemic diseases like cardiovascular disease, bacterial pneumonia and diabetes. Most studies have indicated that oral microbes induce critical systemic disease in individuals with disability, immunodeficiency and oral dysfunction. Therefore, it is important to prevent infection of oral bacteria and to establish useful anti-inflammatory agent to recovery from chronic inflammation. Hydrolyzed protamine HAP-100 (ROHTO Pharmaceutical Co., Ltd. Japan) derived from natural materials prevents the biofilm formation of oral pathogen. However, the effectiveness of HAP-100 to gingival inflammation induced by microbial stimuli is not clear. Therefore, we investigated the effectiveness of HAP-100 against gingival inflammation.

Methods: GF were stimulated with Interleukin-1alpha and HAP-100. After various incubation periods (0-24 hrs) and various concentrations of IL-1alpha and HAP-100, Interleukin-6 (IL-6) and Interleukin-8 (IL-8) productions in cell cultured supernatant were measured by ELISA and mRNA expression levels were quantified by using real time PCR. **Results:** The productions and mRNA expression levels of IL-6 and IL-8 were enhanced by IL-1alpha in GF. And those were decreased by HAP-100. **Conclusion:** It was considered that HAP-100 could be candidate peptide as anti-inflammatory agent.

815 Poster

The Role of university hospital with dysphagia rehabilitation therapy in JapanT Jinushi,⁽¹⁾ E Inomata, S Mitamura, T Nomoto

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Aims: Every person is entitled without discrimination to appropriate dental service, regardless of disability status. There are several dimensions; availability, acceptability and geographic accessibility to evaluate the accessibility to oral health care service. For the disabled, geographic accessibility may present an important barrier of access to dental service which is guaranteed continuous oral health care including dysphagia rehabilitation. We studied geographic accessibility to dental service for the disabled to clarify the university hospital role as an advanced care facility. **Methods:** Data were collected from medical records of new enrolled outpatients in dysphagia rehabilitation therapy in Nihon University School of Dentistry at Matsudo for 5 years (2008-2013). We analysed: Age at the initial visit, disorder, residential environment, distance, medical referral letter.

Results: The total number of patients was 317. Following toddlers, the most common age bracket is 7-12 years old. The common disorders are head and neck cancer and Down syndrome. Most patients visited from within a radius of 15

km. Twenty percent of age group of 7-29 years old visited from outside 20 km radius. **Conclusion:** It was considered that support system was insufficient for the younger bracket in rural areas. To establish the system of regional medical cooperation is our duty as University hospital.

816 Poster

The effect of PepD on gingival fibroblasts and bronchial epitheliumM Hishinuma,⁽¹⁾ Y Tanaka,² M Yaguchi,² E Inomata,² T Nomoto²

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Aims: Periodontal disease is associated with systemic diseases such as aspiration pneumonia. *Porphyromonas gingivalis* (*P. gingivalis*) is a major causative pathogen and produces virulence factors, endotoxin and protease. Most studies have focused on Lipopolysaccharide (LPS) as a major pathogenic factor. *P. gingivalis* is an asaccharolytic anaerobe that relies on the fermentation of amino acids to generate metabolic energy. Dipeptidase PepD plays a role in the final breakdown of the peptide fragments produced by other peptidases during the protein degradation process. PepD is essential factor for growth of *P. gingivalis*. However, the function of PepD in inflammatory process is poorly understood. We studied the effect of PepD to gingival fibroblasts (GF) and bronchial epithelium (BEAS-2B cell). **Methods:** GF and BEAS-2B cell were stimulated with PepD derived from *P. gingivalis*. After various incubation periods (0-24 hrs) and various concentrations of PepD, Interleukin-6 (IL-6) and Interleukin-8 (IL-8) production in cell cultured supernatant were measured by ELISA and mRNA expression levels were quantified by using real time PCR. **Results:** The production and mRNA expression levels of IL-6 and IL-8 were enhanced by PepD in both cells. **Conclusion:** It was considered that PepD also plays a crucial role as a virulence factor in the periodontal inflammation and bronchial inflammation.

817 Poster

The effect of hydrolyzed protamine on gingival fibroblasts stimulated with *C. albicans*M Yaguchi,⁽¹⁾ Y Tanaka,¹ D Hirose,² R Kano,³ Y Kosuge,² S Murayama,² T Nomoto¹

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Aims: *Candida albicans* (*C. albicans*) is a common pathogen that causes aspiration pneumonia in hosts with immunodeficiency and in the elderly. As oral health care is important for the prevention of *C. albicans* infections, several strategies have been adopted. Hydrolyzed protamine HAP-100 (ROHTO Pharmaceutical Co., Ltd. Japan) derived from natural materials prevents the biofilm formation of *C. albicans*. However, the effect of HAP-100 on gingival fibroblasts (GF) stimulated with *C. albicans* is not clear. We investigated the effect of HAP-100 against gingival inflammation by *C. albicans*. **Methods:** GF was incubated

with *C. albicans* and HAP-100. The cell cultured supernatant was harvested for measuring productions of Interleukin-6 (IL-6) and Interleukin-8 (IL-8) using ELISA and mRNA expression levels of IL-6 and IL-8 were quantified by real time PCR. **Results:** The production and mRNA expression levels of IL-6 and IL-8 were enhanced in GF stimulated with *C. albicans* and those were decreased by HAP-100.

Conclusion: It is considered that HAP-100 could be a candidate peptide for prevention of biofilm formation of *C. albicans* in the oral region and for inhibiting gingival inflammation by *C. albicans*. Supported by Nihon University Multidisciplinary Research Grant for 2013

818 Poster

How can we support safe and tasty feeding of people with disabilities?

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It has been reported that some people with intellectual disability or dementia show eating disorders such as rapid pacing and/or excessive volume of bite size. It can lead to cramming or poor chewing and in worst scenarios it could induce risks of aspiration or choking. These symptoms should be considered not only in the behavioural context but also from the perspective of sensory impairment. **Aim:** The purpose of this study was to reveal how people recognise a solid in oral cavity and how it is affected by temperature and/or texture of the solid. **Methods:** The subjects of this study consisted of 27 healthy young adult volunteers. Cylindrical resin pieces of three different temperatures were placed in the oral cavity of the subjects who were 'blinded' of visual information. The subjects were asked first to feel the object for 7 seconds and then to draw the cross section of the cylinder in the size that they felt. The procedure was repeated with soft resin. **Results:** Every resin piece was recognised smaller than it is; the effect of temperature was not significant; soft pieces are recognised smaller than hard pieces. **Conclusions:** The sensory ability is effective mostly on a relative level, and objects tend to be felt smaller than their actual size. Therefore, the recognition and selection of the object at the anticipatory stage is imperative to the input of accurate information.

819 Poster

Introduction of a support apparatus in dental treatment for patients with disabilities

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Aims: It is necessary to treat carefully persons with disability who panic easily. We developed a support apparatus (that can be used in a touch panel while explaining treatment

scene with pictures) and to explain the appliance to the disabled patient during the whole treatment procedure, thereby reducing the discomfort of the treatment. We evaluated the usefulness of new apparatus in clinical facilities. **Methods:** We asked three clinicians to use this apparatus during the dental treatment of a person with a disability and carried out a questionnaire about the usefulness of this apparatus to the clinic staff and a patient attendee. This questionnaire was about 'impression after use'. **Results:** According to the questionnaire, the most frequent opinion 'The photograph made or choose or take by patients is easy to use and modified by themselves', 'It was easy to operate' from the medical staff. In addition, the opinion from the patient attendee was 'my child was interested to use it'. **Conclusion:** The evaluation as a new support apparatus was good while we used it in the clinical facility. The examination will be necessary about the improvement of the apparatus and the function of the apparatus for easier handling by patients in future.

820 Poster

Oral health in German Special Olympic athletes – comparison of regional data

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Aim: Comparing oral health of Special Olympics (SO) athletes with intellectual disabilities in two German regions. **Methods:** 516 athletes aged 10-64 years (mean age: 27.4±11.0 years) participating 2011-2013 in 5 regional SO events in North Rhine-Westphalia (NRW) and Thuringia (TH) were examined according to WHO criteria by dentists. Data about oral hygiene habits and accommodation were collected with the aid of a standardised questionnaires. The Jena University Hospital ethics committee approved the study. **Results:** Mean caries prevalence was 86.2% (95% CI=0.8-0.9) and did not differ in TH and NRW. The mean DMFT was 7.7±6.8 and SIC-Index was 14.8±4.3. Significant higher DMFT was found in athletes with gingivitis (8.3 ±6.5 vs. 7.0 ±7.1; p=0.02), without fissure sealants (8.9 ±7.0 vs. 3.8 ±6.2; p=0.00) and those performing oral hygiene without assistance (7.8±6.9 vs. 4.7±5.4, p=0.01). 9.0% (95% CI=0.8-0.9) of the athletes were plaque free. The mean plaque index (Silness & Loe) was 1.2±0.8 with significant differences between TH (1.1±0.7) and NRW (1.5±0.8; p=0.003) regardless of gender, age, accommodation, assistance in oral hygiene or toothbrush. **Conclusions:** In athletes with intellectual disabilities plaque prevalence is high in Germany with regional variances. Caries experience was rather influenced by lacking assistance in oral hygiene, lacking fissure sealants or presence of gingivitis than by geographic region.

821 Poster

Investigation of skeletal muscle mass and relevant factors in the elderlyK Sagawa,^{1(*)} H Tashiro,² H Furuya,¹ M Sugama,² M Yoshida,² F Tamura,² T Kikutani²1. Nippon Dental University Graduate School of Life Dentistry,
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Aim: The aim of this study was to evaluate the health status of elderly persons using the skeletal muscle mass index (SMI), and to clarify the SMI-related factors. **Methods:** The subjects were 374 elder people under home care (mean age: 84.2 years) and 129 healthy elder people (mean age: 74.6 years). The general condition, oral function, and nutritional status of each subject were evaluated. We measured the SMI using InBodyS10[®]. Furthermore, the SMI-related factors were investigated. **Results:** Using the variables that showed a significant difference in univariate analysis as explanatory variables, multivariate analysis was performed in each of the three groups of healthy elderly persons, ADL-maintained subjects and ADL-decreased subjects. As significant explanatory variables of SMI, gender and presence/absence of molar region occlusal support were identified in healthy elderly persons, gender, age and BI were identified in ADL-maintained subjects, and gender and age were identified in ADL-decreased subjects. **Conclusion:** This study suggested that not only ageing but also a decrease in physical activities is related to decreased muscle mass in the elderly under home care. *This study was supported by a Grant-in-Aid from the Ministry of Health, Labor and Welfare (#H24-tyoujyuu-ippan-003).*

822 Poster

A comprehensive case study of Regional Odontodysplasia including electron microscopyS Junge,^{1(*)} S Nietzsche,²R Heinrich-Weltzien¹

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Aims: Investigation of the ultra-structural abnormalities of dental hard tissues obtained from a case of Regional Odontodysplasia (RO). **Methods:** Clinical, radiographic and histological findings of RO in a 3-year old Caucasian boy were presented. All maxillary deciduous and permanent teeth of the right quadrant were affected. One of the exfoliated primary teeth was available for scanning electron microscopic examination. After embedding, cutting, and polishing backscattered electron imaging and energy dispersive X-ray spectroscopy were performed. **Results:** In this study many different methods were combined to get a comprehensive sight on an individual case of RO. Furthermore, it was possible to follow the progression of the anomaly over more than two years. The electron microscopic examination revealed several kinds of disturbed hard tissue and different grades of mineralisation. Based on the microscopic structure of the hard tissue new aspects of the development of the anomaly are suggested. **Conclusions:** The RO-related disturbances in the dental development start

during pregnancy. At an early stage, teeth are mineralised normally. The development of the disturbed hard tissue is correlated with the vascularisation of the enamel organ and dental follicle. Finally, a proposal for the therapeutic treatment of the presented case is discussed.

823 Poster

Preparation of dental prosthesis and oral rehabilitation in a patient with swallowing disorder due to crossed hemiplegiaH Shindo,^{1(*)} T Aritomo,² H Furuya,¹ Y Yajima,¹ T Kikutani,¹ F Tamura²

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Aim: We experienced an edentulous patient whose eating activities were improved by preparation of a dental prosthesis to both jaws and oral rehabilitation, in a crossed manner after brain-stem hemorrhage, resulting in disorder of oral function and inability to use dental prostheses. **Methods:** A fast, simple evaluation of eating/swallowing functions was performed. Considering the sensory paralysed side, dental prostheses with relatively thick prostheses floors were prepared. Once completed, lingual resistance training using Pecopanda (JMS Inc.) was performed with reference to the lingual pressure measured using a lingual pressure meter (JMS Inc.). To treat the decrease in skilled lingual activities, intraoral transfer training using test foods was performed. In accordance with the changes in function due to training, dental prostheses were continuously adjusted. **Results:** Lingual pressure was increased and skilled activities of the tongue and lips were improved, enabling the patient to ingest a regular diet. **Conclusion:** This case suggests that the use of dental prostheses suitable for the oral function and continued rehabilitation can contribute to improvement of patients' quality of life.

825 Poster

A case of swallowing disorder probably caused by psychological burdenT Tohara,^{1(*)} F Tamura,¹ T Kikutani,^{1,2}

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Aim: We report a case of swallowing disorder caused by psychological burden due to excessive swallowing rehabilitation. **Method:** The patient was a girl in her late teens. She developed cerebellar hemorrhage in M 20YY. In hospital, she underwent swallowing rehabilitation by oesophageal entrance dilation with a 10 mL balloon 10 times a day. However, since her swallowing function did not improve, she was admitted to this clinic in M+7 20YY to evaluate swallowing function and perform swallowing rehabilitation. **Result:** VE test was performed at the first visit. Physiological saline (3 mL) remained entirely inside the pharynx and entirely flew back into the oral cavity. VF test confirmed that swallowing showed a vomiting-like motion. Ten days later, her

mother reported that she had become able to drink cocoa smoothly the night before. Furthermore, VF test performed 3 days later showed complete disappearance of the lack of coordination of swallowing motion, with return of normal swallowing. From that day, she has taken all meals orally.

Conclusion: This case shows that in performing swallowing rehabilitation, an excessive physical and psychological burden to patients may rather inhibit the recovery of swallowing function, and that it is necessary to select a rehabilitation method suitable for the individual patient.

826 Poster

Cervical outline detection method for measuring laryngeal movement – detection of differences in food textures

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Aim: To evaluate whether it was possible to detect differences in the duration of laryngeal elevation (DLE) due to differences in food texture using the 'Cervical Outline Detection Method'. **Methods:** Subjects of this study were 14 healthy adult male volunteers. Each subject drank both water and thickened water, and high-speed sequential photographs (60 frames/sec; 3 sec) were taken while either one of the liquids was swallowed. These photographs were analysed by use of a computer program that detects the outline of the neck, identifies the position of the thyroid/annular cartilages, and plots the positions of these cartilages to generate a laryngeal motion curve (LMC). The data were compared by using the paired t-test. **Results:** In 9 (64.3%) subjects, it was possible to obtain two LMCs, one for water and the other for thickened water. The DLE for the former was 0.143±/−0.107(mean ±/− SD) sec; and that for the latter, 0.289±0.131 sec. There was a significant difference between these DLEs ($p < 0.01$). **Conclusions:** The 'Cervical Outline Detection Method' could detect the difference in LMC between two different food textures. This method is probably useful for evaluation of swallowing exercises.

828 Poster

Masticatory performance in rehabilitating stroke patients

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Aims: To investigate the characteristics of masticatory performance in post-stroke patients. **Methods:** Masticatory performance, biting force and Posterior occlusal support were assessed in 11 post-stroke patients (aged 30–76 years) who underwent rehabilitation in Morinomiya Hospital. Masticatory performance was measured by using 10-grade masticatory score (MS) for evaluating the state of comminution of a gummy jelly. Posterior occlusal support (OS) was classified

into three categories; complete, partially impaired and lost. The protocol was approved by the institutional ethics committee. **Results:** Patients were divided into two groups according to the average MS for each OS category in healthy adults; four with higher/average MS and seven with lower MS. No significant difference was found between two groups in age, gender, days after stroke onset, NIH stroke scale and functional independent measure. Higher/average MS patients had complete OS and higher biting force than lower MS patients ($P < 0.05$). Three lower MS patients with complete OS were suspected to be affected by severe sensory and/or motor paralysis. **Conclusion:** The stability of Posterior occlusion affects masticatory performance in stroke patients. Enduring stroke-related oral impairment may have a significant effect on masticatory performance.

829 Oral presentation

An Irish perspective; conscious sedation as an adjunct to the dental treatment of patients requiring special care dentistry

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Aims: To outline the training, regulation and application of operator-sedationist conscious sedation in general dental practice in Ireland for patients requiring special care dentistry. **Methods:** Appropriate training of operators including dentist and dental nurse was performed according to Irish Dental Council guidelines. This report details the treatment of four patients requiring special care dentistry and the form of conscious sedation selected in each case. Pre-operative assessment and preparation of the patient, peri-operative monitoring and recording and post-operative care of the patient was recorded in all cases. **Results:** Successful rehabilitation of the oral health of all four patients was achieved. In addition the patient's overall levels of dental anxiety were reduced enabling future preventative care possible without the need for conscious sedation. **Conclusion:** Operator-sedationist conscious sedation with an appropriately trained team should be considered as viable method of providing high quality, safe dental treatment for patients requiring special care dentistry in general dental practice. This will allow for treatment of these patients in the community and reduce the overall demand on general anaesthetic services.

830 Poster

Van der Woude Syndrome: a family case report

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Aims: We report a familial case of partial Van der Woude syndrom (VWS). **Methods:** A routine examination revealed labial fistulas in a 7-year-old girl. The intraoral examination did not show an orofacial cleft or dental anomalies of shape or number. The aspect of the lesions, centered on a semilunar depression covered with normal mucosa, was evocative of

congenital fistulas of the lip. Similar lesions were observed on the father and sister of the patient, which confirmed our hypothesis. **Results:** The VWS is a rare congenital malformation, described by Van der Woude in 1954. It is characterised by congenital fistulas of the lower lip, associated or not with an orofacial cleft and dental anomalies of number or shape. The frequency of partial forms where there are only congenital fistulas as in our case is probably underestimated because of its asymptomatic nature. **Conclusions:** VWS is a genetic disorder with autosomal dominant transmission showing a wide variability of clinical expression.

831 Poster

Dysphagia therapy for Rett syndrome patients

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Aims: The purpose of this study was to document the Rett Syndrome patients' eating problems and report on their progress when enrolled in dysphagia therapy. **Methods:** Subjects were 9 females (2- to 46-years old) with Rett syndrome, who were treated for dysphagia for a period of one year. Patients' data, eating functions and regimens for dysphagia were obtained from their medical chart. **Results:** Only 2 of the 9 patients could eat independently. Three patients had severe dysphagia. One of them was fed by NG tube. 6 of the 9 have received the dysphagia therapy continuously. Among them, a suspected Rett syndrome case exhibited dysphagia that rapidly deteriorated during adolescence. **Conclusions:** Patients with severe type (those with rapid progression) often cannot eat as they transition into adulthood. Therapy plans must be individualised and should focus on prevention of any adverse consequences that might develop from their dysphagia. *This study was supported by a Research Grant for the Ministry of Education, Culture, Sports, Science and Technology, Japan (Grant # 23593106).*

832 Poster

Prevalence of enamel hypoplasia and oral motor dysfunction in premature babies

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Aims : To determine the prevalence of enamel hypoplasia and orofacial dysfunction in premature babies. **Methods:** This is a prospective study in which 50 premature babies (delivered before 37 weeks), with low weight, were examined while attending a rehabilitation center in Lima, Peru. After parents' consent, they gave through an interview, information regarding childrens' medical history. An expert clinician examined the children and data were analysed with SPSS program. **Results:** 39 (78 %) had orofacial motor dysfunction, 35 (70 %) presented enamel hypoplasia, 32 (64 %) of the babies had orofacial motor dysfunction and abnormal

enamel, 7 (14%) showed orofacial motor dysfunction and unaltered enamel, 3 (6%) had enamel defects without orofacial alteration, 8 (16 %) had no change or alteration of the enamel or orofacial dysfunction. References to variables in the chi square test with a confidence level of 95% indicates that the variables orofacial dysfunction and enamel hypoplasia relate to the study being done. The variables and weeks of birth have a high level of relationship. **Conclusions:** Extreme premature babies are more affected by orofacial alterations and enamel hypoplasia than babies born in a term pregnancy . We need to establish preventive programmes for premature babies.

834 Poster

Oral status and care conditions of the disabled who reside at home

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Aims: To report the oral health status and oral care conditions among disabled persons with long-term care needs who reside at home in Taiwan. **Methods:** Sixty-six persons with disability were selected by Kaohsiung City Government Public Health Bureau between January and September 2013. Data were obtained through structural questionnaires and by oral health status examinations. The questionnaires were completed by the caregivers or by persons with disability themselves. Statistical methodology included descriptive statistics and Chi-square test. **Results:** Forty-one people (62%) presented with physical disabilities and multi-disabilities. The average age was 77.05±12.20 years. The number of conscious and non-communicative people was 34 (52%), and in 35 (53%) persons there was a history of pneumonia. The proportion of persons presenting with ingestion disorders and dysphagia was 67%. The mean number of missing teeth was 15.55 teeth per person, and the rate of edentulous was 17%. Twenty percent of the sample had high plaque index score; 61 persons (92%) often needed help with their oral care. **Conclusions:** This study has shown a lot of oral health problems among the elderly with disability, including poor oral hygiene, plaque, missing teeth and edentulism.

835 Poster

Green teeth associated with neonatal hyperbilirubinemia: review and case report

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Aims: To present a case of green pigmentation in primary teeth caused by hyperbilirubinemia during the neonatal period. **Methods:** The patient is a 3-year-old Filipino boy with a chief complain of having 'green teeth'. The medical records reveal that the patient was born with Patent Ductus Arteriosus, imperforated anus and club foot. The chemical analysis at 8 days of life revealed large amounts of bilirubin. Clinical examination at 3 years of age revealed green staining on all

erupted teeth. On the cervical third of canines and second molars the stains were less evident. This suggests that there was interruption of the hyperbilirubinemia period as can be seen clinically were some molars and canines exhibited a scant green pigmentation on the cervical area. The pigmentation may have occurred at the prenatal period. **Results:** Green pigmentation may be seen through the translucent enamel and, presumably, is the result of a reaction of the developing tooth to the blood supply, which is rich in bilirubin serum. The degree of pigment deposition may be proportional to the serum concentration of bilirubin and may disappear gradually. **Conclusions:** The clinical characteristics of teeth may help in the diagnosis of present current or past systemic diseases.

836 Poster

Factors that influence oral resident bacterial count in healthy elderly persons

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Aims: Resident bacteria existing in the oral cavity might cause lethal diseases such as pneumonia. The objective of this study is to investigate the factors that influence oral resident bacterial count (ORBC) in healthy elderly people. **Methods:** The sample was 2,044 healthy elderly patients (mean age: 73.3 years). The following data were recorded: sex, age, masticatory efficiency, intraoral wettability, number of remaining teeth, ORBC, oral hygienic habit, and periodontal disease status. We measured ORBC of the subject using DEPIM method. **Results:** The factors showing a significant correlation with ORBC were age ($p < 0.01$), masticatory efficiency ($p < 0.01$) and number of remaining teeth ($p < 0.072$, $p < 0.01$). As a result of partial correlation analysis using age as a covariate, a significant correlation was found for the number of remaining teeth ($r = < 0.064$, $p < 0.01$) and masticatory efficiency ($r = < 0.05$). **Conclusions:** The ORBC in saliva increases when the number of remaining teeth is small and masticatory efficiency is low. *This study was supported by Grant-in-Aid from the Ministry of Health, Labor and Welfare (H24choujyu-ippan-002)*

837 Poster

Intraoral bacterium counter (Bacterium Counter®): from development to clinical application

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Aims: Oral care intervention methods and their effects were investigated using Bacterium Counter® (Panasonic Healthcare Co., Ltd). **Methods:** 187 elderly persons (mean age: 88.0 years) who live in care centres and need nursing care were examined and divided into two groups: 56 persons

(mean age: 89.2 years) are in high risk of pneumonia. The intervention group received oral care intervention by dental hygienists once a week. The non-intervention group received regular oral care by the centre staff. As an index of oral care, we measured oral resident bacterial count in saliva samples of the subject using DEPIM method. **Results:** In the intervention group, the bacterial count decreased significantly ($p < 0.05$) 6 months later. Conversely, in the non-intervention group, the bacterial count did not change ($p = 0.46$). **Conclusions:** This study showed a decrease in intra-oral bacterial count through oral care intervention performed once a week (four times a month) by a dental hygienist in persons with a high risk of development of pneumonia. *Supported by an Education, Culture, Sports, Science and Technology Science Research Grant (Young-Researcher Fund B: Investigation of oral care intervention effects in patients with gastric fistula, Project No. 24792367).*

838 Oral presentation

CEREC as an alternative to conventional impression in patients with Epidermolysis Bullosa

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Aims: To describe the advantages and difficulties of using CEREC with Omnicam - a powder-free digital impressions intraoral camera - in a group of patients with Epidermolysis Bullosa. **Methods:** Six patients with Epidermolysis Bullosa, aged 11, 19, 25, 31, 35 and 47 years, received comprehensive dental care, including 11 fixed crown restorations. **Results:** All 11 impressions were taken with the intraoral camera. There was no damage to the mucosa, as the camera did not get in contact to the mucosa and there was no need to use powder. Microstomia still remains a challenge for the clinician to take impression for the posterior teeth. **Conclusions:** The use of CEREC with Omnicam is a safe technique to take impressions for fixed oral rehabilitation in patients with Epidermolysis Bullosa.

840 Poster

Oral health programme in a special needs school

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Aims: In Japan, every school has a school dentist whose main work is oral examination only a few times a year. The purpose of this study is to review and to introduce our project which is carried out in cooperation between a special school and a school dentist. **Methods:** The goal was to promote oral health during the first 3 years. The first step was to organise a survey to reveal students' oral status through oral examination and questionnaire. The 2nd step

was a scheduled seminar to remind tooth brushing technique on a monthly basis and the 3rd step was to publish informations regarding oral health in the school journal which is distributed to every family. In course of the next 6 years in cooperation with local dental association and Showa University, diet instructions were given during lunch time on individual basis every month. In addition, workshops for the schoolteachers and parents were held several times per year. **Results:** The number of decayed teeth and frequency of gingivitis declined. Teachers informed each other about a balanced diet according to the instructions. The postgraduate institute was informed in order to support people with disability. **Conclusions:** Oral health promotion at a special needs school is an essential part of lifelong support.

842 Oral presentation

Improving the oral health of renal patients in Wolverhampton, UK

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Aims: To collaborate with renal colleagues to screen and address the oral health needs of Wolverhampton renal patients. **Method:** A staged intervention was developed through service collaboration. Targeted patient cohorts were Haemodialysis (HD), Home therapies (peritoneal dialysis: PD) and pre-dialysis. A dental Care Pathway and renal-specific oral health leaflets were created. A dental screening questionnaire and a free dental examination were offered to all patients. **Results:** Screening uptake (HD, n=131; PD, n=61): 69 (53%) HD and 40 (65%) PD patients reported having a dentist; 60 (46%) HD and 26 (42%) PD patients had not seen a dentist for over two years. Examination uptake (HD, n=58; PD, n=10): 33 (57%) HD and 1 (10%) PD patients examined perceived a need for dental treatment, while 55 (86%) HD and 8 (80%) PD patients had an actual need for dental treatment. **Conclusions:** Actual dental treatment need was higher than perceived need, highlighting the importance of regular screening in groups whose medical needs may prioritise access to dental care. On-unit screening for HD was more effective than telephone screening for PD. Dental involvement at earlier stages of renal disease reduces health and financial costs: initial renal consultations should feature dental screening questionnaires. Collaboration enables planned, safe dental care tailored to renal patients' medical and social needs.

843 Poster

Acute kidney injury caused by severe calculus?

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Aim: To report a case of acute kidney injury caused by acute periodontitis. **Methods:** A 38-year-old female with intellectual disability suffered from oral ulceration and poor

oral food intake for weeks and was admitted to the nephrology ward under the impression of hypernatremia, sepsis, and acute kidney injury. She was further referred to our special needs dentistry department due to facial swelling, halitosis and oral ulcer. **Results:** Oral candidiasis, severe acute periodontitis and intense calculus depositions on the labial side of the upper left first molar were found. The patient was sent for full mouth scaling under general anesthesia and medication was given for infection control. After treatment, the patient started the oral food intake without any problem, and her BMI increased from 12.5 to 15 within two weeks. **Conclusions:** Poor oral health may lead to severe malnutrition, chronic infection and associated-organ injury. Therefore, oral care should not be ignored when it comes to total patient care, especially for patients with disabilities.

844 Poster

Dental treatment in a patient with Beckwith-Wiedemann syndrome under general anaesthesia

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Beckwith-Wiedemann syndrome comprises multiple congenital anomalies with a risk of development of childhood tumors. Macroglossia is the predominant finding in Beckwith-Wiedemann syndrome and other findings include postnatal somatic gigantism, abdominal wall defects, nevus flammeus of the face, congenital heart defects, and cleft palate. The aim of this case presentation is to describe the dental treatment of a child with Beckwith-Wiedemann syndrome. A 3-year-old boy with Beckwith-Wiedemann was referred to the Seoul National University Dental Hospital for dental evaluation and treatment. Due to the multiple caries and poor cooperation, we planned to perform the dental procedure under general anaesthesia. Anaesthesia was induced with sevoflurane inhalation and the airway was stably maintained during mask ventilation. General anaesthesia was maintained with desflurane, nitrous oxide and oxygen. The dental procedure was successfully performed. There were no airway complications after extubation. He was discharged after two hours without any complication. The patient with Beckwith-Wiedemann syndrome was successfully treated under general anaesthesia. This case suggests that general anaesthesia may be useful for the patient with uncooperative Beckwith-Wiedemann syndrome, since macroglossia and laryngomalacia may exacerbate airway compromise during dental sedation.

845 Poster

Management for the medically compromised dental patients: a case of arteriovenous malformation

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Introduction: When treating a patient with systemic diseases, dentists must consider not only his physical condition, but also psychological status. **Case report:** This 56-year-old female is a patient with arteriovenous malformation (AVMS) combined with a history of asthma and seizure attack. Patients with AVMS are at a higher risk of intracranial haemorrhage, especially those with seizure history. Because of her medical condition, several general dental practitioners refused to treat her. She then neglected her dental needs for more than 15 years. When she finally presented to our outpatient department, she had been having toothache for months. Intraoral examination revealed several teeth with caries and poor periodontal status. During the first appointment, the patient appeared tense, anxious and sensitive to pain. We first built a trusting relationship to lower her stress and anxiety before initiating invasive procedures such as dental extraction, paying close attention to the physical status with oxygenation supply monitoring, careful injection and medication during the whole period. **Conclusions:** To achieve complete patient care requires knowledge of the patient's background and emotional status combined with medical knowledge, especially for patients with special needs.

846 Poster

Orthodontic, prosthodontic and periodontal treatment of a patient with Asperger syndrome

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Aims: To present a case of a patient with Asperger syndrome treated multidisciplinary. **Methods:** A 17-year-old patient with Asperger syndrome and mild mental retardation came to the dental clinic because of the loss of the right central incisor due to a trauma. The patient had a rotated right lateral incisor, presented with a mesofacila pattern and Angle skeletal class I, overbite, and a centred maxillary and mandibular midline. There was no pathology at the temporomandibular joint. **Results:** Orthodontic treatment was performed with fixed appliances in both arches for one year. After that, a conventional fixed bridge was provided. At the end of the prosthodontic treatment gingivitis was present, so scaling of teeth was performed. **Conclusions:** Parents and patient could collaborate in a satisfactory way so that a multidisciplinary treatment is a good option for this kind of autistic patients.

847 Poster

Dental health trends of Romanian Special Olympics athletes between 2005-2013

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Aim: To assess dental health trends of Romanian Special Olympics (SO) athletes since Special Smiles (SS) was implemented. **Methods:** Dental status data (DMF-T, restoration index $RI = [(F/F+D) \times 100]\%$) collected during the first SS event in Romania (2005, n=71, age 10-34y, mean 16.9 [4.21]) was compared to corresponding data recorded during SO National Games (2013, n=231, age 8-61y, mean 20.8 [9.01]). **Results:** In 2005, 4.2% of the subjects were caries free, versus 7.8% in 2013. DMF-T was 8.15 [5.49] in 2005 (95% CI 6.94-9.5) and 8.65 [6.09] in 2013 (95% CI 7.91-9.43). RI significantly increased ($p < 0.01$) from 11.90 (95% CI 6.76-18.48) to 21.76 (95% CI 18.05-25.64). The percentage of subjects with $RI \geq 80\%$ was 4.4 in 2005, versus 9 in 2013. 73.2% of the SO athletes screened in 2005 had $RI \leq 10\%$, compared to only 57.6% in 2013. **Conclusions:** Romanian SO athletes still have relatively poor dental health and limited access to dental treatment. Their treatment needs tend to be better managed now than in the past. SS programs may help raise awareness regarding the importance of oral health in the bigger picture of general health of people with intellectual disabilities.

848 Poster

Challenges in maintaining regular oral hygiene, a case report

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Aims: To identify and discuss the difficulties and challenges of regular maintenance of oral hygiene in a difficult case of a patient with congenital rubella syndrome. **Methods and Results:** This is a case of 25-year-old female with congenital rubella syndrome. She had been living in institutionalised care for a long time since childhood. Her carers referred her to the community dental service with concerns regarding her oral health. Various oral problems were identified including gingivitis and trauma to the gingival tissues. Current national guidelines were followed and best interest meeting was set up to achieve the optimal treatment plan and to develop an appropriate oral hygiene (OH) care plan. Her behaviour (self-harming) and lack of cooperation were the primary causes of not maintaining regular OH. However, this was further complicated by lack of communication between her family and carers. **Conclusion:** Despite the wealth of evidence of the importance of maintaining regular OH and abundance of guidelines, there still appears to be a need to further educate carers and to offer them support and training to achieve the best outcome for the patient.

850 Poster

Phelan McDermid syndrome: a case reportH Yli-Urpo⁽¹⁾

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Aim: Phelan McDermid syndrome is a rare disease with 600 reported cases worldwide. In Finland there are at the moment two children diagnosed with this syndrome, which is known to arise due to the deletion of a part in the chromosome 22. The symptoms include delayed motoric development, hypotonia of muscles, speech disorders, variations in facial shape and morphological anomalies of the teeth. The aim of this study was to investigate the tooth anomalies of a 2.5 year old Phelan McDermid-child. **Method:** The clinical and radiographic examinations were done under general anaesthesia treatment procedure. **Results:** The oral findings in this case included early eruption of the deciduous teeth and morphological anomalies: supernumerary cusps in deciduous canine and molar teeth. Upper incisors had hypomineralised enamel. Radiographic findings confirmed early teeth development. Pulp stones were found in the lower incisors. **Conclusions:** Early determination of the dental problems is especially important for Phelan McDermid syndrome. The patients should receive a thorough oral examination as soon as the deciduous teeth have erupted. Good oral hygiene with regular follow-ups in the hospital dental clinic is needed to avoid early loss of the teeth due to the poor oral condition. Long-term treatment plan should be established including oral-motor therapy to be able to assist the function of the tongue and oral muscles. More publications and research are needed to be able to determinate the assumable dental anomalies of this syndrome.

851 Poster

Anaesthetic management during dental treatment for a patient with congenital asplenia syndromeK Shinohara,¹⁽¹⁾ T Shirase,² K Nakamura¹

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Aims: Asplenia syndrome is a disease characterised by congenital spleen deficiency, complex cardiac malformation, and malpositioning of the viscera. The aim is to present the anaesthetic management during dental treatment for a patient with asplenia syndrome. **Methods:** A 33-year-old male Japanese patient suffered from congenital asplenia syndrome-related complex cyanotic congenital heart disease (pulmonary artery stenosis, common atrioventricular valve regurgitation II°, aortic insufficiency I°) and chronic heart failure. **Results:** The dental examination revealed multiple carious lesions. The dental treatment involved tooth extraction, pulpectomy and pulpotomy for numerous teeth. Because of his medical record we sedated the patient and performed completely painless treatment to alleviate the patient's stress and avoid the use of exogenous catecholamines. Therefore, prior to commencing treatment, we intravenously injected 2 g of amoxicillin, after which local anaesthesia combining 4 ml of 0.75% ropivacaine as an

inferior alveolar block with 3.6 ml of 3% mepivacaine infiltration anesthesia under intravenous sedation using 0.075 mg of fentanyl and 1 mg of midazolam. **Conclusions:** Numerous teeth were treated safely with no particular intraoperative or postoperative complications, and no problems with the anaesthetic management of the patient.

852 Oral presentation

Universal Design for special care patients with dentures as measurements for comfortable oral rehabilitationR Leesungbok⁽¹⁾

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Aims: The purpose of this study is to show the improvement of the satisfaction of special care patients with dentures using measurements of a specific 'Universal design'. **Methods:** A case study was conducted with 192 patients over the age of 65, who have been wearing all types of prostheses at least over 5 years, in Kyung Hee University Dental School Hospital at Gangdong (Department of Biomaterials and Prosthodontics). A study was carried out with specific treatment protocols over a period of 8 years (2006-2013). **Results:** The specific measurements were applied in 101 cases (52.6%) according to the 'Universal design'. Patients with two additional implants with a self-adjustable type magnetic attachment, placed in the edentulous areas, showed higher satisfaction and functional performance, compared to patients with conventional dentures. The placement of dental implants on the partial edentulous sites gives the opportunity to change the conventional treatment method for removable partial dentures. That could be lead to a new treatment paradigm: natural teeth and implants can co-exist in the same oral cavity. **Conclusions:** The term and methods of the 'Universal design' refer to specific measurements for a comfortable oral rehabilitation with dentures. The barrier-free designed devices can be used easily for the comfortable oral rehabilitation with dentures for all patients especially for people with special care needs.

853 Oral presentation

Special Care Dentistry curriculum: Are we training them right?J John,⁽¹⁾ R Esa, V Joshi, S Mani, A Gomez, R Zain

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Aim: Although general dental practitioners manage the basic dental care of Patients with Special Needs (PWSN), little is known about Special Care Dentistry education and training, including communication skills, in Asian dental schools. This study investigated the preparedness of dental undergraduate students to care for PWSN. **Methods:** During the final semester of the 2012- 2013 academic year, the authors surveyed 74 final year dental students at University of Malaya, Kuala Lumpur, assessing relevant knowledge, experiences, attitudes, and their sense of preparedness to care for PWSN. Participants were invited to complete a self-administered questionnaire. **Results:** 58/74 responses were received (78.4%). Although 78% of the students were willing to treat PWSN in the future, only 13% felt prepared by their education in the

selected competencies: 52% had treated patients with medical complication but only 3% and 5% had experience managing children with special needs and the marginalised community respectively. Students were most confident managing physically disabled patients (81%). Female students were more confident than their counterparts in treating PWSN ($p=0.008$).

Conclusions: These students reported little training and low self-perceived comfort and skill with important elements of oral health care for PWSN. This study demonstrates support for development of a formal curriculum on oral health care for PWSN, and emphasises the importance of clinical exposure to various categories of PWSN to prepare dental students to provide quality oral health care. *Supported by University of Malaya – Ministry of Higher Education, Malaysia, High Impact research grant. UM.C/HIR/MOHE/DENT/07*

854 Oral presentation

Effects of oralmotor treatment after radiation and surgery of temporomandibular (TM) joint- a case report

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Aims: To evaluate effects of oralmotor training on chewing ability, mimic function, articulation, oral hygiene and limited jaw opening after surgery. **Methods:** The patient had a rhabdomyosarcoma in the right glandula parotis region and multiple lung metastases at 3-years-of-age. Radiation therapy and cytostatic drugs were acquired. Bilateral coronoidectomy was performed at the age of 18 years due to limited jaw opening (15-20 mm). One month after surgery, the jaw opening was reduced to 10 mm and problems with mastication, speech and orofacial pain had occurred. Therefore, a second surgery six months later was necessary. A multidisciplinary pre- and post-operative intensive orofacial training program was initiated. Therapy included jaw stretching methods, sensory stimulation (i.e. ad modum Castillo Morales), oral motor exercises, correction of posture and an oral hygiene programme. **Results:** Two months after surgery jaw opening was 14 mm. The patient reported improved chewing ability, mimic function, articulation and oral hygiene. There was, however, variability from day to day. Chewing efficacy was compromised due to lack of occlusal contacts and dental pain. **Conclusion:** Multidisciplinary treatment and individualised training programmes may be essential for improvement and maintenance of orofacial function after radiation therapy and temporomandibular joint surgery.

855 Oral presentation

Outpatient dental treatment of a patient with thrombocytopenia

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A 60 year old female presented to the dental school special care clinic with a history of cirrhosis of the liver with portal hypertension, chronic leukopenia and thrombocytopenia,

CAD, degenerative disc disease, ulcerative colitis, and chronic respiratory failure with hypoxia. Her platelet count was 38,000/mm³. Her dental treatment included full mouth extractions. This case presentation will discuss the dental management given her complex medical history.

857 Poster

A protocol for patients undergoing dental treatment and taking new oral anticoagulants

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Aims: To devise a local protocol to outline the management of patients undergoing dental treatment and taking new oral anticoagulants (NOACs). **Methods:** NOACs have recently been developed for the treatment and prevention of thromboembolic disorders and include dabigatran, a direct thrombin inhibitor, rivaroxaban and apixaban, direct factor Xa inhibitors. These drugs have predictable pharmacokinetics but there are currently no antagonists to reverse the effects. There is limited advice regarding the dental management for patients taking NOACs. Following collaboration with the local haematology team and review of current literature, a protocol was developed. **Results:** The protocol: 1. Assess risk of bleeding from dental procedure. Regional block, lingual infiltration, subgingival scaling, extractions and minor oral surgery are considered to carry a bleeding risk. 2. Discontinue NOACs. Rivaroxaban and apixaban should be discontinued 24 hours prior to planned dental treatment. Patients on dabigatran should have a renal function test and the medication stopped accordingly. In complex cases, seek advice from medical practitioners or local haematology teams as required. 3. Recommence NOACs once adequate haemostasis has been established using local measures. **Conclusion:** This protocol outlines the process in managing patients taking NOACs and undergoing a dental procedure in a primary care setting.

858 Poster

Caries patterns of children with developmental delay in Southern Taiwan

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Aims: To investigate the caries patterns (according to the 4 proposed caries patterns of primary dentition by Psoter et.al) among children with developmental delay in Southern Taiwan. **Methods:** This cross-sectional study was conducted on 200 children with developmental delay. Purposive sampling method was used to recruit children below the age of 5 years from early intervention centres, Dec. 2013-Mar. 2014. Oral examination was conducted by four trained dentist examiners. The inter-examiner agreement between the examiners is good, with the Kappa coefficient from 0.80-0.83. A self-administered questionnaire was completed by

the caregiver. The KMU IRB approved this study and parental consent was obtained from each subject. Chi-square and Fisher's exact test were used to analyse the results.

Results: There were 120 boys and 80 girls (mean age 3.19 ± 0.85). The deft index was 2.7 ± 3.9 , caries prevalence was 43.8%. The prevalence of the caries patterns were any maxillary incisor surface caries 29.2%; first molar occlusal surface caries 25%; second molar pit and fissure surface caries (occlusal, maxillary lingual and mandibular facial surfaces) 28.1%; smooth surface caries (other than maxillary incisors) 20.8%. **Conclusion:** Children with developmental delay are more susceptible to caries. The most prevalent caries patterns is any maxillary incisor surface caries.

859 Poster

Use of CHX 0.20% and CHX 0.20% + chlorobutanol after extractive surgery

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Aims: the study aimed to evaluate the clinical efficacy, the incidence of stains and the lenitive effect of a mouthwash containing CHX 0.20% and chlorobutanol 0.5%, when compared with a mouthwash of CHX 0.20%, after tooth extraction. **Methods:** A controlled, parallel, randomised and triple-blind clinical study performed on 64 patients visiting a dental centre. The variables examined were: FMPS, FMBS, stain index, VAS pain scale. Inclusion criteria were: healthy patients, giving their consent, at least 18 years old, non or light smokers (<15/day) and good oral hygiene. **Results:** 59 patients concluded the observational period. For FMPS, FMBS and staining index no statistically significant differences between the two groups were founded. For the evaluation of the lenitive effect, only the patients that declared to have suffered of pain at the first rinse were included. For mouthwash M (only CHX), there wasn't a statistically significant difference for VAS scale before and after the rinse. For mouthwash N (CHX + chlorobutanol), there was a significant statistical difference comparing before and after the rinse. **Conclusions:** Mouthwash N is a valid choice for post-extractive pain.

861 Oral presentation

One year survival, acceptability and feasibility of ART restorations in people with disabilities

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Aims: One-year follow-up of ART restorations to assess survival, acceptability and feasibility compared to conventional restorations in people with disabilities.

Methods: 66 patients (13.6 ± 7.8 years) were included with 16 medical disorders and were treated by two dentists. Results: 43 patients and/or caregivers initially preferred the ART

approach (hand instrumentation & high-viscosity glass ionomer). Conventional treatment (rotary instrumentation/resin composite) in the clinic (CRT/clinic) was chosen by 15 respondents but only proved feasible for 5. The ART approach was feasible for 47 patients (71.2%) and optimal placement of restorations was possible for 79% of these. 14 patients received conventional restorations under general anaesthesia as treatment in the clinic was unfeasible (CRT/GA). In all, 298 dentine carious lesions were restored in primary and permanent teeth, 182 (ART), 21 (CRT/clinic) and 95 (CRT/GA). The 1-year survival rates and jackknife standard error of ART and CRT restorations were $97.8 \pm 1.0\%$ and $90.5 \pm 3.2\%$, respectively ($p=0.01$). **Conclusions:** The results of the present study show that ART is a feasible, acceptable and effective approach to restorative treatment in patients with disabilities, many of whom have difficulty coping with conventional treatment.

862 Poster

Oral health status and treatment needs in children with disabilities in Sana'a, Yemen

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Aim: This study assessed the oral health status and the treatment needs of children with disabilities attending special schools in Sana'a, Yemen. **Methods:** This cross-sectional study involved 401 children with different disabilities aged between 6 and 14 years. DMFT/dmft indices were assessed in accordance with WHO criteria. The plaque index (PI) and the gingival index (GI) were used to assess oral hygiene and gingival health status, respectively. **Results:** The mean age of the study subjects was 10.15 years (SD 2.41). One hundred and fifty (37.4 %) showed mental disability, 81 (20.2%) physical disability, 92 (22.9%) deafness, 50 (12.5%) blindness and 28 (7%) compound disabilities. Mean dmft and DMFT scores of the total population were 4.27 and 1.90 respectively, with no significant differences between genders ($p>0.05$). Children with physical disabilities had the highest dmft mean: 4.68 (SD 3.30), followed by those with deafness: 4.37 (SD 3.11). On the other hand, subjects with compound disabilities had the highest DMFT mean: 2.85 (SD 1.98), followed by those with mental disabilities: 2.37 (SD 2.59). The mean PI and GI scores of the total population were 1.37 (SD 0.60) and 1.39 (SD 0.68) respectively. Among the disability types, those with blindness had the highest PI and GI scores, and those with deafness had the lowest. Most of the subjects required restorative care. **Conclusions:** Children with disabilities show high prevalence of dental caries and poor oral hygiene.

863 Poster

Oral health care needs in Special Olympics athletes in BelgiumM De Decker,^{1(*)} C Fernandez,² D Declerck,³ L Marks²

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Aims: To evaluate the oral health condition and treatment needs of the participants of the Special Olympics Special Smiles (SpSm) programme during the national games Belgium 2013. **Methods:** A convenience sample of 627 Belgian SpSm athletes, with an age range of 4-67 years, was clinically examined by trained dentists, using the international CDC SO SpSm guidelines. **Results:** Oral pain was reported in 13.7% of the participants; 79.3% athletes reported that they brushed the teeth at least once a day. A history of trauma with impact on the maxillary incisors, was recorded in 16.3% of the athletes; 44.2% of the athletes had signs of gingival inflammation and 27.1% presented with untreated caries. Of the athletes 20.9% were referred to a dentist for the treatment; 11.8% of them needed an urgent dental visit indicating a need for preventive and curative care. **Acknowledgement:** *This screening was supported by GABA BeNeLux and WTB-VVT.*

864 Oral presentation

Oral health in adult athletes participating in the national German Special OlympicsA Bissar,^{1(*)} I Kaschke² A G Schulte¹

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Aim: The aim for this survey was to evaluate the development of oral health in 18-24-year- and 35- 44-year-old athletes with intellectual disabilities participating in the national German Special Olympics of 2008, 2010 and 2012. **Methods:** Dental examinations were performed according to WHO criteria by trained dental clinicians in athletes taking part voluntarily in the Special Smiles programme. **Results:** 2,384 athletes took part in these oral examinations during these 3 events. About two third of the participants were males. Caries prevalence decreased from 79.7% to 65.5% in the 18-24-year-olds, but remained stable in the 35-44-year-olds (between 94.2% and 98.9%). A similar development was seen with regard to the mean DMFT: a decrease from 4.4 to 3.4 in the 18-24-year-olds and stable values in the 35-44-year-olds (between 13.4 and 13.8). Mean MT was between 4.1 and 4.4 in 35-44-year-olds. About half of the participants showed signs of gum inflammation. **Conclusion:** Compared to the general population in Germany, persons with intellectual disabilities have still a poorer oral health because more teeth had to be extracted. More specific prevention programs seeking close cooperation with parents, custodians and caretakers should be developed and financed for this population.

868 Poster

Girl with an erupted first permanent molar at 3.5 years - an unknown syndromeT K Poulsen,^{1(*)} M Burstedt,² J-E Nyman,³ P Lif Holgerson³

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Aim: To present biological deviations with emphasis on the dental ones in a young girl with a so far unknown genetic variation. **Methods:** A full term born girl, presented at 3-years-of-age with a congenital diaphragmatic hernia, developmental delay, Posterior rotated and slightly low-set ears, hypertelorism, prominent nasal bridge, epicanthus fold left eye, irregular lower eye-lids bilaterally, multiple rows of eye-lashes, clinodactyly as well as syndactyly. Her dentition in the upper jaw was at the age of 3.5 years adequate, in contrast to the lower jaw that showed two erupted extra primary incisors. Radiographic examination at 5 years of age showed two supernumerary permanent mandibular incisors and a missing lower premolar. One lower first permanent molar had erupted at 3.5 years, and the other one was fully erupted at the age of five. She has a frontal crossbite. **Results:** No possible syndrome diagnosis could be confirmed based on presented clinical findings and chromosome screening. SNP-array, EEG, MR-brain and ultrasound did all came out with no pathological findings. **Conclusions:** This presentation will hopefully lead us forward in the diagnostic process. **Acknowledgments:** *County council of Västernorrland, Sweden.*

873 Poster

The relationship between dry mouth condition and medication among dependent Japanese elderlyM Endoh,^{1(*)} A Kubota,¹ J Kubota,¹ T Muramatsu,² Y Kakinoki¹

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Aims: Influence on dry mouth associated with medication has been reported, but there are few reports on the relationship between the kind or administration period of medicines. The aim of this study is to investigate the relationship between drymouth and medication. **Methods:** We conducted a cross-sectional study involving 104 dependent Japanese elderly people (72-103 years) at two long-term care facilities in 2012. Medicines associated with dry mouth were examined by multiple logistic regression analysis. The dry mouth was defined as diagnosed by tongue dorsum moisture. **Results:** The mean age of the participants was 89.4 ± 6.5 years and the ratio of dry mouth was 51.9%. According to multiple logistic regression analysis, taking antiplatelet agent, antihypertensive and expectorant were significantly associated with dry mouth. **Discussion:** Our result suggests that the antihypertensive significantly causes dry mouth. In contrast, the expectorant rather significantly

prevents dry mouth and the effect is further increased by taking it continuously. The significantly highest dry mouth risk was the antiplatelet agent.

874 Poster

Supporting system of feeding instructions for schoolchildren in a special needs school

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Aim: The Nerima Dental Association has been engaged in a supporting system of feeding instructions in a special needs school since 2008 commissioned by Tokyo Metropolitan. In this study, the background and the development of the system will be introduced, and the evaluation of the activities during the last 5 years will be presented. **Methods:** The feeding instructions contain the feeding consultation during the school lunch and a yearly workshop for the schoolteachers and the parents supported by the staff of the Showa University. To evaluate the activities of these approaches, we carried out a questionnaire survey to schoolteachers and parents involved in the supporting system of feeding instructions. **Results:** In 2013, in a total number of 95 schoolchildren, 48 of them who consulted with dentists as to feeding received instruction mainly including food modification and support of self-feeding. The results of the questionnaire showed that 78% of schoolteachers could improve their abilities on daily feeding instruction for schoolchildren and 93% of parents thought the contents of feeding instruction useful for daily diet of their children at home. **Conclusion:** We have been continuing the supporting system of feeding instruction with the cooperation of schoolteachers, parents and the dentists for 5 years, and it passes smoothly and safety.

877 Oral presentation

Toothbrushing Training Programme for Adolescents with Intellectual Disabilities

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Aims: The literature reports poorer oral hygiene and greater severity of periodontal disease in people with intellectual disabilities (ID) compared to the general population. Toothbrushing is a complex task and it may be delegated to others who may not necessarily value oral health. This study evaluates an evidence based pilot-intervention designed to develop the toothbrushing skills of adolescents with ID to realise their potential to maintain good oral health whilst supporting their right to independent self-care. **Methods:** Four individualised, stepwise, 20 minute hands-on training sessions were conducted over four weeks. A letter and DVD of training were sent home to inform caregiver supervision and reinforcement. Evaluation included 4 week and 6 month follow up with structured assessment of video-recorded

brushing technique and a questionnaire to rate parental perception of the effectiveness and acceptability of the intervention. Results: 14 individuals (aged 12-18) with poor brushing skills took part in the programme. At 6 months, 6 pupils were deemed capable of effective toothbrushing with minimal direction. Four pupils were judged to have potential to develop better brushing skills over time while 4 pupils were not. All parents strongly agreed that training was worthwhile and the DVD was a useful motivator.

Conclusion: This programme, if targeted at those with capacity to develop their toothbrushing skills, can promote oral health and independence in adolescents with ID. Ongoing evaluation of outcome is required.

878 Poster

Diploma in Special Care Dentistry

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Background: People with impairment and disability often suffer from poorer oral health and have greater difficulty accessing care. It is important to have a highly skilled workforce to meet the needs of these people. With this in mind the Royal College of Surgeons of England (RCS) run a distance learning Diploma in Special Care Dentistry (DSCD). **Aim:** The DSCD aims to assess knowledge, understanding and competence in the planning and delivery of Special Care Dentistry (SCD). **Methods:** DSCD is a flexible, self-directed programme with mentor support and consists of two parts: Part A consisting of written assignments; and Part B consisting of a portfolio of experience, an examination, a written paper, a case presentation and an oral exam. **Conclusion:** Being a distance learning programme, DSCD is ideal for those working outside the UK and for those undertaking specialist training.

880 Poster

Improving dental care and oral health among Adults with Special Health Care Needs (ASHCN)

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Introduction: Oral health care for people with disabilities is still insufficient because of many factors such as the lack of barrier-poor dental offices, deficiencies in the health care system, limited expertise in SCD and a low level of willingness in a demanding, but poorly remunerated treatment of ASHCN. Pain management takes mostly place under general anaesthesia (GA), whereas preventive measures fail to appear. Therefore it is common that patients suffer from a very poor oral status. One way of overcoming these barriers is to establish departments for SCD. **Methods:** A department for SCD was built in 2012 at the dental clinic of LMU. A dental team takes care of ADHCN 5 days a week. The structural conditions offer unrestricted access and spacious facilities. Treatment takes place in a restful, stress free surrounding with a familiar treatment team. **Results:** In 2013 136 of ADHCN

(degree of disability $\geq 80\%$) could be treated chair-side (136/145; 93.8%). Only 9 (9/145; 6.2 %) had to be referred to GA. **Conclusion:** Realising and dealing with any obstacle or anxiety the patient has, enhances the collaboration and thus can prevent treatments under GA even for severely disabled patients. This enables regular dental attendance for ASHCN with prophylactic, restorative and prosthetic care and avoids costs and risks caused by GA. Health insurances should invest more money in following up these efforts, because SCD should be a right rather than a privilege.

881 Poster

Oral health status of children with different disabilities from Erfurt, Germany

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Aim: Comparison of oral health status of children with (CwD) and without disabilities (CwoD) from the city of Erfurt. **Methods:** 328 children aged 6-18 years with mental retardation (MR), physical disability (PD) and hearing impairment (HI) were examined according to WHO standard. 400 age matched CwoD were used as controls. Data analysis was performed for 6-12 and 13-18 year-old CwD and CwoD. **Results:** Caries prevalence of 6-12 year-old CwD was significantly higher than in CwoD (68.7% vs. 57%; $p=0.019$). Caries experience of CwD was 2.3 dmft/ 0.5 DMFT and 1.6 dmft/ 0.4 DMFT of CwoD. In children with PD fewer cavities were restored compared to the other CwD ($p\geq 0.023$). Caries prevalence and caries experience among 13-18 year-old CwD (51%; 1.9 DMFT) and CwoD (59%; 2.1 DMFT) did not differ significantly. In both age groups children with MR had a lower prevalence of fissure sealants and less sealed teeth ($p\leq 0,042$) and their periodontal health was worse compared to other age matched CwD. **Conclusion:** Children with MR revealed the most oral health inequalities. Therefore preventive measures should be intensified to compensate their oral health neglect.

884 Oral presentation

Relationships between oral complications and days to death in palliative care patients

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Aims: We investigated the relationships between the incidence of oral complications and days to death in palliative care patients. **Methods:** Eighty-seven patients who were admitted to the palliative care units in our hospital in 2013 participated in this study. All the subjects received assessments of the oral mucosa and tooth brushing ability at the time of admission. The subjects are divided into two groups by the days to death: short group, less than 30 days from the time of dental

assessment to death, and long group, more than 30 days. The incidence of oral complications was statistically compared between two groups. **Results:** Dryness of the mouth and the abnormalities of the tongue were observed more in the short group than in the long group ($p < 0.03$). Tongue coating or candidiasis had no statistical difference between two groups. Assistance in oral health care was needed in 80% of the short group but 56% of the long group ($p=0.01$). **Conclusions:** Our findings suggest that, in palliative care, oral complications appear more frequently when days to death are less than 30 days. The oral mucosa and self-brushing ability would be useful indicators when considering the timings of oral care intervention for palliative care patients.

885 Oral presentation

Glanzmann thrombasthenia: about dental care and oral surgery management in 15 patients

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Aim: Evaluation of a hemostasis protocol efficiency using recombinant activated factor VII (rFVIIa) for dental care and oral surgery in patients affected by Glanzmann Thrombasthenia (GT). **Methods:** This 5 years retrospective study was led on 15 patients affected by type I and II GT. Data were issued from dental and medical patient files. Protocol included preliminary dental and medical consultations. Hemostasis protocol was the following one: 5 mg of rFVIIa injected 10 minutes before the surgery, 5 mg 2 hours after the surgery and 5 mg 2 hours later according to patient's weight and bleeding. Antifibrinolytic agent was also prescribed one day before the surgery and for 6 days. Extractions were realized under local anesthesia and completed by an intra-alveolar hemostatic agent and sutures. **Results:** Nine men and six women were chosen for this study and presented GT. The mean age was 33 years (range 20 to 50). Eighty nine extractions and nine scaling procedures were performed along 40 sessions. Only 3 minor bleeding episodes were observed and needed rFVII prolongation for one or two days. **Conclusion:** Recombinant activated factor VII combined with tranexamic acid and local measures appear as a very safe protocol in preventing bleeding from invasive dental procedures in patients with GT.

887 Poster

A paediatric case of congenital pseudobulbar palsy wherein swallowing and tongue habilitation enabled oral ingestion

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Aim: Pseudobulbar palsy is a motor nerve palsy that occurs in organs involved in eating and swallowing, because of damage to the upper motor neurons of the medulla oblongata. We report a case of pseudobulbar palsy in a child

who was diagnosed with the condition shortly after birth and underwent long-term eating and swallowing habilitation.

Subjects: The patient was a 16-month-old boy who presented with postnatal respiratory problems and had clear trismus, dysphagia, and muscle hypertonia in the limbs. Owing to difficulty in oral ingestion, he visited our department. We used his medical records, to report case details. **Results:** At the first visit, Videofluoroscopic swallowing examination (VF) of the patient showed pulmonary aspiration as well as a swallowing reflex with partial expectoration ability. Therefore, we provided swallowing-facilitation training to the patient. After 4 months, training was conducted using gelatin jelly because VF showed a reduction in aspiration. At 6 years of age, VF showed no aspiration. The patient is currently able to ingest paste food. **Conclusion:** The patient was incapable of oral intake at birth, but long-term and appropriate habilitation for eating and swallowing was effective. Considering the patient's general physical condition, direct training led to an improvement in swallowing function and partially enabled oral intake.

888 Oral presentation

Implantology in case of handicapped people

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Introduction: Demographics, linked with continuous medical progress, increasingly the challenge us in treating patients with impediment and/or nursing needs. According to the Federal Statistical Office of Germany (2011) there are about 7.3 millions officially approved severely disabled person people in Germany (approx 8.9 % of the population). More than one quarter (29.2 %) of this group is 75 years and older, scarcely half (45.8 %) belongs to the age group 55 to under 75-year-old. This is compared to just 4% among 25-year-olds. The number of the severely disabled person people has risen in between 2009 and 2011 by 2.6 % and compared with 2001 the number of the severely disabled person people has risen in 2011 by 8.6 %. **Methods:** Retrospective consideration of the challenge of implant treatment in the above group, with the help of treatment records in a defined period was carried out. Special challenges to the treatment of handicapped people / of nursing destitute (immobility of the patients, limited cooperation ability, interaction of medication, multi-morbidity), evaluation of the used anaesthesia procedures (general anaesthesia, sedation, local anaesthesia, stand-by). **Results:** Representation of the implant therapy in supplement of complicated tooth-receiving and reconstructive measures under suitable anaesthesia procedures with patients with mental or physical impediments. Aim is a complete rehabilitation of the oral system taking into account the special challenge with abovementioned patients group.

894 Poster

Dental management of Hemophilia A with Amelogenesis Imperfecta: A case report

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Aims: Dental rehabilitation of Amelogenesis Imperfecta of a 17-year-old severe hemophilia patient with inhibitors. **Methods:** Initial treatment included preventative advice and the root canal treatment of the first right mandibular molar in the paediatric dentistry department after consultation with the paediatric hematology department. Composite resin reconstruction of permanent teeth (upper first and second molars, upper first and second premolars, upper canines, upper central and lateral incisors, lower first and second molars, lower first and second premolars, lower canines) with caries lesions was completed under factor replacement therapy. As the patient complained about open bite and teeth colour, a prosthodontic therapy using full mouth metal ceramic crowns except the four wisdom teeth was performed. **Results:** Every 6 months, the patient came to our clinics for a routine control. After 7 years of follow up, clinical and radiographical examinations showed good results. **Conclusion:** This case report shows the important role of interdisciplinary approach for treating a patient with hemophilia with inhibitors who was suffering from amelogenesis imperfecta.

895 Oral presentation

A comparison of sedation procedures in healthy (ASA I) and compromised patients (ASA II + ASA III) - a retrospective study

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Moderate Operator Sedation procedure proved to be a safe and reliable method of pain and anxiety control in the healthy ASA I and compromised Patient Group ASA II & III patients. Only minor side effects occurred with no significant difference between the healthy and the medically compromised patients.

896 Poster

A trial of evaluation of stress caused by dental treatment in severe motor and intellectual disabilities and autistic persons

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Aims: We focused on the relationship between the activity level of α -amylase in saliva and stress. Stress assessment tests were conducted during dental treatments among persons with severe motor and intellectual disabilities (SMID) and autistic persons (AUT). **Methods:** The subjects included 40 SMID and 40 AUT, for a total of 80 people. We used the Saliva Amylase Monitor[®] (NIPRO) to simply, quickly and noninvasively measure the activity level before and after examination. **Results:** In SMID patients, the activity level of α -amylase in

saliva was remarkably high before and after the examination. In AUT group, the level was initially relatively high but fell significantly lower after the examination. In SMID patients, both before and after examination, activity levels were significantly lower among those who received medical care compared to those who did not. Language comprehension and expression were significantly lower among AUT patients compared to the other groups. The acceptance of stress in dental care differs between SMID and AUT patients.

Conclusions: These results suggest an association between the activity level of α -amylase in saliva and stress reaction characteristics of SMID and AUT patients. We conclude that stress assessments during dental treatments may be useful.

898 Poster

Caries experience in children with haemophilia in Lithuania

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Aim: To examine the dental health and its determinants in Lithuanian children with haemophilia and to compare these findings to the general population. **Methods:** In this case-control study, the census sampling was used to recruit cases (n=27) and a control group (n=30) matched with cases based on gender, age and place of residence was chosen randomly from the general population. Dental health was assessed by one examiner employing the WHO Criteria for Oral Health Surveys. The data were collected November 2011-March 2013. The study was approved by the Vilnius University Research Ethics Committee. Parental consent was obtained for each child. Bivariate statistical analyses were performed. **Results:** Children with haemophilia had lower overall caries experience (mean 2.6 ± 2.6) in deciduous dentitions as compared to healthy children (mean 6.1 ± 2.5) ($P=0.003$). Higher bacteriological counts were found in controls (n=13; 43.3%) than in haemophiliacs (n=5; 18.5%) ($P=0.019$). Healthy children were from higher socio-economic status families (n=16; 53.3%) than haemophiliacs (n=6; 22.2%) ($P=0.004$). There was a statistically significant difference ($P=0.005$) in flossing with a higher proportion of children in the healthy group (n=10; 33.3%) than in the cases group (n=1; 3.7%) reporting daily flossing. **Conclusions:** Better dental health in deciduous dentitions was observed in children with haemophilia as compared to their healthy counterparts.

899 Poster

IADH History, Historical Review of the IADH, through the outlook on the nature of structure and presentations at the 22nd Congress

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Aim: IADH will host the 22nd Congress, which marks a 43 years journey from the initial meeting in Atlantic City. This presentation goal's is to show how the Congress has grown

by inspecting the nature of presentations and the evolution of form of the Congress. **Methods:** Published Congress programmes and proceedings are subjected for this review. Types of presentation made are classified into categories and the changing features of the nature of presentation are compared. **Results:** Topics of presentations have changed over the years, showing a demand for solutions to the care needed over time. By doing so, the presentations have shown the growing professional interest in this field. **Conclusions:** The names of invited speakers are given in this poster with brief backgrounds of them, so new members will know how IADH was successful on inviting such speakers. Special Invited Lecturers at the congresses are also listed to show how IADH has good contact with prominent speakers in every era, and the names of pioneers of this field who have also played important roles at the congresses.

901 Oral presentation

French translation of the IADH undergraduate curriculum in Special Care Dentistry

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Aims: Teaching in Special Care Dentistry has been little studied in France. The International Association for Disability and Oral Health (IADH) has recently published a recommended 'Undergraduate Curriculum in Special Care Dentistry'. This project aimed to translate this document into French following rules of good practice. **Methods:** The document was translated into French by an expert committee and then back-translated by an independent translator. The original document and the backtranslation were compared, all discrepancies were identified and the French translation corrected by consensus. **Results:** A validated French version of the IADH document 'Cursus de formation initiale en soins spécifiques en odontologie' was produced. **Conclusion:** This document could serve as a base for the evaluation of teaching in special care in dentistry in France.

902 Poster

Factors related to decrease in ADL in elderly persons under home care

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Aims: The objective of this study was to analyse factors that may cause a change in activities of daily living (ADL).

Methods: In 511 elderly persons under home care, ADL, cognitive function and other factors were examined. Follow-up examination was performed one year later. Subjects who could not be followed up because of hospitalisation, death, etc. were excluded. The subjects were 337 persons (mean age

83.6 ± 7.7 years) with a Barthel index score of not less than 21 points at the start of observation. The change in Barthel index score in the one-year period was analyzed in relation to oral function and other basic data of the subjects. **Results:** Barthel index score decreased by 5.8 ± 16.9 on average. The change in Barthel index score showed no correlation with sex or age, but showed a correlation with the presence/absence of swallowing disorder ($p < 0.05$) and the molar-region occlusal support status ($p < 0.01$). **Conclusion:** It was suggested that loss of occlusal support causes a decrease of ADL in elderly persons under home care.

903 Oral presentation

A vision of the future of Special Needs Dentistry in Japan based on the path to date of the JSDH

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Aims: A retrospective look at changes during the 41 years history of The Japanese Society for Disability and Oral Health (JSDH) to build a vision for the future of dental services for the disabled patients in Japan. **Method:** Presentations made at each year's congress from 1973 to 2012 and the articles which have appeared in the JSDH's Journal from 1980 were classified into various categories. Also trends in society that seemed to influence social welfare issues and our activities were listed in order to guide our future vision. **Result:** Dental services for disabled patients in Japan began on a voluntary basis, and led to the foundation of the 'Japanese Society of Dentistry for the Handicapped' in 1973. Since then, for 41 years, dental services for disabled patients in Japan developed Japan's unique culture influenced by politics, the public welfare system and by the medical care system. During this time, based on the activity of JSDH, there has been a nationwide expansion of dental services for disabled patients and the organisation has grown in scale to reach over 4,600 members at present, and become firmly established as the organisation which performs the key role of the dentistry for disabled patients in Japan. **Analysis & Conclusion:** In the last 41 years, looking at the development of dental treatment for disabled patients and study of dentistry for disabled patients, we can have a hint of the need to see beyond theory and technical skills and consider the position in society and need for warm and tender support for oral care in the daily life of disabled patients.

905 Oral presentation

Upgrading access and delivery of dental services to a Homeless population

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Aim: To increase access for homeless people, to dental services in Dublin, considering the barriers to accessing care. **Method:** This pilot service delivery project carried out

weekly dental screenings at various homeless services in the city, to provide information, to establish rapport, to provide assistance with medical card application, to determine their dental need and provide relief of pain. Suitable patients were referred for treatment to General Dental Practitioners and a Clinical Dental Technician. Emergency and comprehensive dental care remains available through dedicated homeless services. **Results:** The total number of Homeless patients accessing services during the 6 month pilot period was 289. The average number of clients per working session (am/pm) was six. Compared with previous years' figures 279 patients were treated in a 12 month period with an average of 2.8 patients per working session. The dedicated dental services for Homeless people provided 88 (30.4%) patients with treatment. Of the 34 patients that were supported in their application for their medical card 10 patients (29%) received their medical card. Following referral to GDP and CDT, 47 out of 130 (36.2%) and 8 out of 12 (66.7%) completed their treatment. **Conclusions:** More clients can be cared for with this multi disciplinary approach. The administration is labour intensive and a dedicated team remains a necessity. **Acknowledgement:** Triona Meredith HSE for data collection.

906 Oral presentation

Implementation of Oral Health Education (OHE) for Children with Autism Spectrum Disorder (ASD)

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Aims: To determine: if OHE is taught to children with ASD in special schools in Singapore; teachers' attitudes, dental knowledge and perceived barriers to their teaching of OHE, and; if teachers' dental knowledge can be modified via an oral health talk. **Methods:** Teachers from ASD-specialised schools were recruited. A pre-talk questionnaire evaluating dental knowledge and perceived barriers to care was administered prior to an oral health talk. Participants then completed a post-talk questionnaire. Results were analysed and compared. **Results:** Extent of OHE taught to students was significantly related to teachers' perceived importance of dental health ($p = 0.009$); presence of professional dental training ($p = 0.022$); availability of teaching materials ($p = 0.001$); teachers' self-perceived level of dental health ($p = 0.012$) and receptiveness of students towards OHE ($p = 0.022$). Level of baseline knowledge was significantly negatively associated with levels of perceived overall ($p < 0.001$) and personal ($p < 0.001$) barriers to delivery of OHE. There was a significant increase in questionnaire scores following the talk ($p < 0.001$). **Conclusion:** OHE is taught to a limited extent in the curriculum of children with ASD. Barriers to the incorporation of OHE are related to inadequate training by dental professionals. Dental talks are effective in delivering dental information to teachers but should be supplemented by teaching materials.

908 Poster

Dental caries prevalence and enamel hypoplasia in children with Chronic Kidney Disease: a pilot studyA Misztalewska,^{1(*)} I Gokce,² B Durmus,¹
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Aim: To evaluate the caries prevalence and enamel hypoplasia of children with Chronic Kidney Disease (CKD) undergoing treatment at Department of Pediatric Nephrology of Marmara University. **Methods:** The study sample consists of 7 children having CKD including stage I CKD [GFR \geq 90 ml/min/1.73m² - with normal kidney function but urine finding on structural abnormalities] to stage V CDK [GRF < 15 ml/min/1.73 m² - patients undergoing dialysis] and 7 healthy children of matching age and gender as a control group. Anamneses and an interview including questions on oral hygiene habits comprise the first step in the study, followed by intra-oral examination. DMFT and dmft scores and enamel hypoplasia scores of both groups were recorded. All examinations made were visual and non-invasive. **Results:** The mean age of the children was 9.43 \pm 2.41. There were 6 males (42.9 %) and 8 (57.9%) females. The mean dmft and DMFT in CKD was 0.14 \pm 0.38 and 1.29 \pm 1.7 respectively while that of the control group was 3.57 \pm 4.65 (p=0.074) and 1.14 \pm 1.95 (p=0.822). Enamel defects affecting the permanent teeth were observed in 57% of the CRF children compared with 28.5% of the controls. Hypoplasia mean in CDK was 2.86 \pm 2.54 while in the control group it was 1.29 \pm 0.49 (p=0.197). All of the records were not statistically significant. **Conclusion:** The systemic complexities of CKD and its several oral manifestations require special considerations regarding dental awareness, prevention and precautions. It will also aid in modification of treatment options and priorities.

909 Oral Presentation

Art in dentistry for children with disability. Alpha-amylase and salivary cortisol analysisM J P Dos Santos,^(*) D G Bernabé, S H P Oliveira,
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Aims: The use of art and its segments as a source for inclusion of children with disability in dentistry and alpha-amylase (sAA) and cortisol levels analysis in children with Global Developmental Delay (GDD). **Methods:** Artistic activities divided in: Session of Socialisation, Art and Complementary Activities were applied to 313 participants, prior to their dental care treatment at Centre of Dental Care for Person with Disability (CAOE). Morning salivary cortisol levels and activity of sAA of 33 children aged 6 to 12 years with GDD, were evaluated before and after dental care and compared to 19 healthy children. The behaviour of all children during dental care was assessed by the Frankl scale.

Results: GDD children showed increased levels of sAA (but not cortisol) prior dental treatment as compared to post-treatment. Control group showed similar results with sAA higher values. GDD children with less favourable behaviour during dental care had higher sAA and salivary cortisol levels than GDD children with more favourable behaviour, but only the sAA results were significant. There was significant decrease only in salivary cortisol levels after artistic activities. **Conclusions:** Art can contribute to behavioural control, favour the inclusion to dental care environment, the decrease of anxiety prior treatment, being a model of humanitarian assistance, promoting alteration in cortisol level.

911 Poster

Could ethical tensions revealed by mentally disabled patients explain dental needs?A Blaizot,^(*) O Hamel, M Folliguet, C H Hervé,
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Aims: Exploring ethical tensions in dental care management reported by mentally disabled patients, and confirming these tensions and defining with caregivers the specific points that should be developed in a future overview of ethical tensions in dental care management among dentists. **Methods:** Participatory research was conducted with focus groups involving mentally disabled patients (G1), family caregivers (G2) and professional caregivers (G3) in 2013 in France. The verbatim transcript of G1 was analysed by thematic content analysis, and information obtained from G2 and G3 was directly included in a list of topics for a future study among dentists. **Results:** G1 attached importance both to the dentists' technical competencies and to their human qualities. The attitude of the dentist towards the patient was the area most frequently raised with 31 references to expected qualities that appeared infrequently encountered. **Conclusion:** The gap between the human qualities expected and those encountered could partly explain multiple attempts to find the 'right' dentist or to the care being abandoned. The intention underlying this research was, by starting from the ethical tensions revealed by patients and caregivers, to subsequently bring practitioners to reflect on their practice, and then encourage changes in the organization of special care dentistry in France.

914 Poster

Epidermolysis Bullosa. A case reportN Tomaçoğlu,^(*) İ Tanboğa, M Hyder Soomro

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Epidermolysis bullosa (EB) is a heterogeneous group of genetically determined, mechanobullous disorders characterised by blister formation in response to mechanical trauma. Three major subgroups, simplex, junctional, and dystrophic EB, contain more than 20 genetically and clinically distinct subtypes. Epidermolysis bullosa dystrophicainversa (DEB-I), which is a rarely seen form of

epidermolysis bullosa, shows autosomal recessive inheritance and it is characterized by bulla formation and erosions on flexural areas, frequently affecting the oral and esophageal mucosa. Blistering rash occurs in the newborn period, which in early childhood heals with atrophic scars. DEB-I is rarely seen in adults period, with only a few case reports in the literature. A 7 year old boy with a known diagnosis of epidermolysis bullosa dystrophica inversa (DEB-I) was admitted to the Marmara University Hospital, Department of Pediatric Oncology. In the present case, we described a patient diagnosed with epidermolysis bullosa dystrophica inversa due to presence of typical clinical features and malign mediasten tumor.

915 Oral Presentation

Investigation of caries prevalence and BMI correlation in Down syndrome children

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The objective of the study is to determine prevalence of dental caries and oral hygiene status and the correlation to the Body Mass Index (BMI) in Down syndrome children in comparison to healthy children. A cross sectional study will be conducted. About thirty Down syndrome individuals attending rehabilitating centres and schools in İstanbul, Turkey will be examined for dental caries (utilizing the İCDAS II criteria), oral hygiene status and BMI (utilising the WHO criteria). Data will be gathered through the use of a questionnaire including dental and medical records of the children and clinical observation. The same questionnaire and clinical observation will be used in the control group of health children at the same age, attending the paediatric dentistry department of Marmara University / İstanbul. Additionally the patients will be separated into two groups. This cross sectional study will be carried out in children (2-11) in the prepuberty phase and (11-18) puberty phase. The aim of this study is to investigate the caries prevalence and BMI correlation in Down syndrome children in comparison to healthy children.

917 Poster

An observational behavior coding system and rating scale of children dental fear

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Aims: To establish an objective observational coding system and rating scale for better evaluation of dental fear in children. **Methods:** This clinical observational study of 60 children (2-12 y/o) was held from Nov 2012 to Oct 2013 in Kaohsiung Medical University Hospital. CFSS and VAS were completed by children with the help of caregiver. Each dental procedure was recorded and transcribed into observational record and established a rating scale. **Results:** There were 36 boys and 24 girls (mean age 5.36±0.85). The most treated problem was caries (53.3%). In WBFPRS questionnaire, 60% experienced no pain. Mean behavioral rating score was

15.23, and mean CFSS-DS score was 27.8. According to our rating scale, 22 of the children had dental fear. Correlation analysis show high significant relationship between observational total score and CFSS total score, age, number of behavior treatment type and Frankl score. **Conclusion:** We developed a behavior coding system and rating scale for interactive behaviors between child, caregiver and dentist. Compared to other rating scale, it has shown some strengths and limitations. The rating scale is objective and suitable for dentist to be used as behavior assessment tool. Further modification is needed and inter- and intra-coder reliability needs to be tested in the future.

918 Poster

Oral and dental health of children with phenylketonuria

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Aims: To evaluate the oral health of children with phenylketonuria (PKU), secondly to investigate the correlation between caries experience and cariogenic bacteria, and finally to assess the genotypes of the plaque microorganisms. **Methods:** A total of 48 children with PKU and 30 healthy children aged 5-16 years were included. DMFT, DMFS, dft, dfs values were scored. Plaque pH, salivary buffer capacity and Streptococcus mutans (SM), lactobacilli levels were measured. Plaque SM counts were determined in cultures. AP-PCR analysis was performed and results were analysed using Phoretix 1D software (TotalLab, UK). Ege University Ethics Committee approved the study. Statistical analyses were performed using chi2-test. **Results:** The prevalence of salivary SM, lactobacilli colonisations and dfs values were found lower in PKU group (p<0.001). There was no significant difference in plaque pH, salivary buffering capacity, DMFS values and plaque SM colonizations between groups. By investigation of the cluster analysis with UPGMA method in matrix generated by dissimilarity of the healthy and patient individuals, SM found in group with PKU is not genotypically different from in the healthy group. **Conclusion:** Although children with PKU are dependant on a diet rich in carbohydrates the caries levels and SM, lactobacilli levels were found to be low, however the SM genotype was not different.

919 Poster

Oral health and Down syndrome: Parents' views on dental care in Belgium

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Aims: To evaluate the views and knowledge, regarding dental care, of parents who have a child with Down syndrome (DS). **Methods:** Parents of children with DS were invited to fill in a questionnaire. They were recruited by the Flemish Organization for DS, by schools for children with

special needs and by four multidisciplinary medical DS teams at four university hospitals. Study approval was obtained from the Ethics Committee of the Ghent University Hospital. Chi-square tests were used and statistically significant results were defined as $p < 0.05$. **Results:** Questionnaires related to 100 children (55 boys, 45 girls) with a mean age of 10.1 years old (SD: 5.3) were considered as valid. Oral health was indicated as rather good by 53% of the parents. Of the children, 66% went to a dentist within the last six months. Most of the children (64%) received a dental examination. In 53% of the cases, parents decide to visit the same dentist for their child with DS and their other child(ren) without DS. 83% of the parents are pleased with their dentist. Children aged 10 years or younger get significantly more help with tooth brushing (79%) than children older than 10 years (36%). However 20% of the parents never received any oral hygiene instructions for their child with DS. **Conclusions:** Prevention is the most frequent act that was done by the dentist. Parents seem to be pleased with the dentist who treats their child with DS.

920 Poster

Treatment options for patients with disabilities in general anaesthesia

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Aims: To show concepts for the treatment of patients with disabilities in general anaesthesia within a general dental practice setting. **Methods:** Narrative review of more than 30 years experience in oral treatment of patients with disabilities. **Results:** The experience has shown that it is very important to find a solution that fits the individual need and expectation of the patient regarding oral health. That includes the assessment of the individual possibilities (motor ability, intellectual, social and financial) to gain a certain level of oral health. As a result the better solution for some patients might be an amalgam filling instead of a composite filling. Dentures should be made easy to clean and, if possible, expendable. A lot of patients with disabilities cannot handle removable dentures, and then the goal should be to get it fixed. Other patients are heavy grinders, when priority should be given to functional rehabilitation (e.g. metal occlusal surfaces) over more esthetic solutions. To enhance oral health care of patients with periodontal diseases, professional cleaning of all natural teeth and deep scaling under general anaesthesia might be necessary on a regular basis. Also it is important to instruct and motivate the nursing staff or caring relatives in oral hygiene, especially daily tooth brushing. **Conclusions:** The maxime in our practice is it, to keep the treatment in general anaesthesia as 'simple, safe and solid as possible'. Each patient has to be assessed individually, and the selection of treatment options is based on need and possibilities.

921 Poster

Oral health and treatment of persons with disabilities – a retrospective study

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Aim: The aim of this study was to assess oral health and provided dental treatment of patients with disabilities. **Method:** Dental records of 202 institutionalised patients with disabilities were retrospectively analysed within two timeframes, 1998-2009, and 2011-2012. Oral health was defined using modified criteria of the WHO. **Results:** There were 124 male and 78 female patients between 13 and 53 years of age with average age of 22.94 ± 10.81 . Mean DMFT was 10.62 ± 7.60 , with decayed teeth as the main component (48.54%). 92.08% of patients were diagnosed with gum disease, mostly plaque induced, while tooth fractures were observed in 23.37%. During 1998-2009 amalgam was the most frequent restoration (66.67%), while in 2011-2012 composite (53.84%) followed by glass-ionomer (26.92%). The most prevalent dental procedure provided up to year 2009 was tooth extraction (43.37%), while in the 2011-2012 period it was removal of dental plaque (31.11%). Ratio of preventive vs. curative interventions changed from 1998-2009 19.8% : 80.2% (1998-2009) to 63.7% : 36.3% (2011-2012). **Conclusion:** Patients with disabilities have a higher DMFT, frequent caries complications and diseases of oral soft tissues. Although the treatment needs remain high in this group of patients the number of urgent and radical interventions can be minimised with the more preventive based approach.

922 Poster

The roles and activities of dental hygienists at house call

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Aims: The purpose of this research was to reveal activities performed by dental hygienists in the house call treatment for elderly people. **Methods:** The subjects were 66 elderly patients who require care from nursing home and house. We collected their chief complaints, general condition, the level of care and their prognosis. We analysed which complaint was performed by dental hygienists or dentists. **Results:** The study comprised 66 patients (men: 16, women: 50), whose average age was 84.8 ± 7.4 years. Their medical history were, dementia: 35, cerebrovascular disease: 10, heart or lung or liver disease: 3. Number of chief complaints were about dentures: 31, oral health care: 17, tooth pain: 12. Six patients requested oral hygiene management and rehabilitation of swallowing disorder. Regardless of the request, all the patients needed oral health care. From these treatment needs, the dental hygienists mainly performed oral health care and oral rehabilitation. **Conclusions:** These results show that elderly patients in nursing homes and houses need continuous oral health care.

923 Oral Presentation

The barriers of unmet dental needs among children with developmental delayY-C H Yeh,^{1(*)} H-Y Liu,² R-S H Tang,² S-Y Hsiao,³ S H-T Huang^{1,3}

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Aim: To evaluate the barriers of unmet dental needs among children with developmental delay (CDD) in Taiwan.**Methods:** 101 parents of CDD, less than six years old, were invited to complete a self-administered questionnaire related to dental needs and barriers by purposive sampling. The validation rate was 95.05%. Informed consent was obtained from the participants' parents and the study was approved by the Institutional Review Board of Kaohsiung Medical University Hospital. The descriptive frequencies were used for statistical analysis. **Results:** There were 61.39% (n=62) male and 38.61% (n=39) female participants; 74.26% (n=75) CDD had visited a dentist before, 70.41% (n=64) had regular dental visits during last year. 70.41% (n=69) parents thought their child didn't have unmet dental needs. The reasons of parents not taking children to the dentist are: 1. Hard to find special needs dentists nearby (47.48%, n=47). 2. Cannot arrange proper and convenient appointment (41.24%, n=41). **Conclusion:** There are still barriers of unmet dental needs in CDD. Training more qualified special needs dentists and improve dental accessibility for CDD are the most important goal for Taiwan society.

925 Oral Presentation

The oral habits and occlusal status of children with developmental delayC H-W Yen,^{1(*)} H-Y Liu,² R-S H Tang,² S-Y Hsiao,³ S H-T Huang,^{1,3}

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Aim: To investigate the oral habits and occlusal status of children with developmental delay (CDD). **Methods:** In this cross-sectional survey were included 91 one to five-year-old (3.48 ± 1.09) CDD. Those children recruited from 8 early intervention institutions in Taiwan by purposive sampling were examined by trained dentists between Dec. 2013 and Mar. 2014. The occlusal status was recorded by inspection and a questionnaire, including oral habits, was completed by the care giver. Informed consent was obtained. This survey was approved by the Institutional Review Board of Kaohsiung Medical University Hospital. The chi-square and Fisher's exact tests were performed for statistical analysis. **Results:** The top-three oral habits among the CDD were bruxism (n=23, 25.26%), pacifier sucking (n=14, 15.39%), and finger/thumb sucking (n=12, 13.19%). The prevalence of anterior open bite was 16.48% (n=15), which was the most common malocclusion. A highly significant association between pacifier sucking habit and anterior open bite was found (p=0.0002). **Conclusion:** CDD who had a pacifier sucking habit had highly significant prevalence of anterior open bite.

926 Poster

Removable denture fabrication for a cerebral palsy patient using FGP technique – case reportS Hanatani,^(*) C Ohkubo

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Aims: A cerebral palsy patient shows extreme bruxism, excessive occlusal force and unstable intercuspal position. For these reasons, we usually face much difficulty in fabrication of prostheses. **Methods:** A 29 year old male with cerebral palsy, autism, and epilepsy had been previously delivered many attempts of prosthetic treatment. However, the denture lacked fitness and durability. A metal structure denture was fabricated using FGP technique (FGP technique is the method which records the pathway of opposing teeth. It makes a new denture adjustment the minimum) to improve fitness and durability. **Results:** After titanium framework which metal teeth and metal skeleton was connected by laser welding, the FGP was recorded under intravenous sedation. The new denture did not need any occlusal adjustments and it showed excellent fitness. **Conclusions:** Although it is very difficult to record the FGP pathway under intravenous sedation, the occlusal adjustment without any sedation would be more difficult. A disabled person can accept a denture which has the highest possible function, ethical consideration remain at minor importance.

927 Oral Presentation

Microbiological effects on surgery in cleft lip-palate infants during primary dentitionM A Durhan,^{1(*)} N Huroglu,¹ E Ozgentas,³ G Kulekci,² İ Tanboğa¹

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Aim: The purpose was to define the effect of lip and palate surgery on oral microflora in babies with cleft lip palate (CLP). **Methods:** 21 CLP infants were included and followed for 3 years. Intra-oral saliva samples were taken after birth, one month after lip surgery, at complete eruption of first primary tooth (PT), one month after of palate surgery and at eruption of first primary molars (PM) respectively. Subgroups were created: 1) PT eruption and lip surgery coincided. 2) lip surgery and first PT eruption at a different time. 3) PM eruption and palate surgery coincided. 4) palate surgery and first PM eruption at a different time. Mutans streptococci (MS), Lactobacillus (L), Candida Albicans (CA) and S.Aureus(SA) colonies were calculated as CFU/mL using stereoscopic microscopy. Relation between the timing of the surgery and the microorganism presence was analyzed using Chi square and Fisher's exact tests. **Results:** There was no statistically significant difference regarding the presence of microorganisms between group 1 and 2, nor between group 3 and 4. Within three years the number of babies with MS increased after surgeries. The number of infants with L/CA/SA increased after lip surgery but decreased after palate surgery. **Conclusion:** The decrease in the number of infants infected with caries related microorganisms may be related to the separation of oral and nasal cavities.

928 Oral Presentation

Periapical and endodontic state in type 2 diabetes mellitus Spanish population

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Aim: The aim of this study was to investigate radiographically the prevalence of missing teeth, fillings, deep caries lesions, radiolucent periapical lesions (RPL), root remnants and root-filled teeth (RFT) amongst patients with type II diabetes. **Methods:** This cross-sectional study included adult patients reporting a history of type 2 diabetes mellitus (DM) attending for routine dental treatment at the University of Barcelona, Faculty of Dentistry between 2011 and 2013. The patients answered a structured questionnaire and underwent glycemic and glycosylated haemoglobin laboratory tests. For each patient, a full-mouth set of periapical radiographs was taken. The radiographs were analysed and periapical status of all teeth was assessed using the periapical index score. Statistical analysis of data was performed using Student's t test, chi-square test and logistic regression analysis. The criterion for statistical significance was set at 5%. **Results:** 106 patients (51 male, 55 female; mean age, 66.7 years \pm 10.9) participated. The average number of teeth per patient was 19.7 \pm 7.4, without significant differences between groups. RPLs in one or more teeth were found in 66 patients (62.0%, 95% CI = 53% - 71.4%), and 34 patients (32.0%, 95% CI = 23.1% - 40.9%) had at least one RFT. **Conclusions:** In adult patients, type 2 DM was not significantly associated with the presence of RPL and RFT.

929 Oral Presentation

Design of a protocol for oral implant rehabilitation in hemophilic HIV-positive patients

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Aim: Establish a medical protocol to control bleeding represented a significant challenge. Haemostasis had to be optimal because any bleeding would have compromised the osseointegration of the implants. The protocol for the oral implant rehabilitation of two Haemophilic HIV-positive patients with type C Hepatitis is reported. **Methods:** Two patients suffering from severe haemophilia A, HIV infection and chronic hepatitis C. Oral examination revealed edentulous sections, and treatment plan included implant-supported prostheses and fixed-bridges after radiological examination. Following consultation with their haematologist, a protocol was carry out in order to realise

the treatment plan including factor VIII replacement concentrate, and oral antifibrinolytic therapy (tranexamic acid). **Results:** The patients did not show postoperative complications. After implant placement, the patients followed scheduled review appointments. After a three month period of osseointegration, the prostheses were placed. **Conclusions:** Although in these cases the treatment proved successful two years after rehabilitation, we need long-term prospective studies to evaluate the implant success rate in haemophilic patients.

930 Poster

Relationships between oral problems and QOL in palliative care patients

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Aims: Terminal stage cancer patients have various oral problems. Hypofunction of the oral cavity directly affects QOL, such as communication and dietary intake. The aim of this retrospective study was to examine the effect of oral problems on QOL decrease. **Methods:** Oral screening at the time of admission to the palliative care unit was performed within one week on 102 patients (64 male, 46 female; age 74 \pm 11 years; mean \pm SD). Data regarding oral symptom as dry mouth and oral pain, candida, hair loss, tongue, tongue coating, mucous membrane abnormality, gingiva and difficulty swallowing and difficulty speaking, difficulty eating from the point of view of QOL were recorded. **Results:** The most common symptom was dry mouth in 60 patients. Mucous membrane abnormality was observed in 30 and candida in 9. Regarding QOL, difficulty in swallowing was found in 26, difficulty in speaking in 19 and difficulty in eating in 25 patients. **Conclusions:** The most frequent oral symptom affecting oral health related quality of life in palliative care patients was dry mouth. Treating dry mouth symptoms can contribute to enhance dietary intake and communication.

931 Oral Presentation

Ethical issues raised by dental care to the mental disabled persons

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Aim: To gather problems encountered by practitioners faced with therapeutic decisions during treatment in mentally retarded patients. An interview was conducted with 12 practitioners working in Handident PACA dental health network. **Methods:** A questionnaire was developed on four aspects: reception, information, attitudes and different effects estimated by practitioners. **Results:** Results show that 10 practitioners will seek the patient himself, 12 greet first, 5 try to be more careful and 3 choose distraction. The information

is either parents or the child or imaged by simple words. Nine use tell - show - do and the blanket. The advice of parents is collected to assess anxiety and pain as well as questioning live. A reassuring attitude is adopted. The ethical dilemma appears in the case of refusal of care and care under stress, practitioners necessarily promote one ethical value (autonomy, beneficence and non -maleficence) in medical decision. **Conclusions:** There is a wide range of practical steps but no consensus. Post-decision reflection is needed. It is therefore necessary to find new communication media and information tools.

932 Oral Presentation

Oral health changes in Belgian Special Olympics athletes between 2012 and 2013

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Aims: Special Olympics (SO) Special Smiles (SpSm) is an initiative created for data collection and education in oral hygiene for athletes with an intellectual disability (ID). The aim of this study was to evaluate the changes of the oral health parameters in the same group of athletes who participated in SO Belgium 2012 and 2013. **Methods:** A retrospective longitudinal study was performed with data collected through standardised screening forms and procedures from consenting 132 athletes. Oral hygiene habits, treatment urgency and reports of oral pain, gingival signs, sealants, untreated caries, missed and filled teeth were recorded. These data were analysed with SPSS. **Results:** McNemar's test and Chi-square test revealed that there was no statistically significant difference in the proportion of all compared parameters. Although presence of sealants and prevalence of filled teeth increased reflecting preventive care, there was a small increase in the prevalence of gingival problems, oral pain, untreated decay, and missing teeth. Moreover no statistical differences were found regarding oral hygiene habits and treatment urgency. **Conclusion:** In addition to SpSm interventions continuous efforts for preventive and restorative oral health care are needed for this population.

933 Oral Presentation

Successful microsurgical reconstruction for huge ameloblastoma in a schizophrenic patient

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An ameloblastoma is one of the most common odontogenic tumors among oral and maxillofacial lesions. A huge ameloblastoma can cause large cortical expansion and gross anatomical destruction. For these massive tumors, mandibular resection is the most widely used treatment and N immediate microsurgical free flap is necessary to aid

mandibular reconstruction. We report a successful microsurgical fibula free flap reconstruction for a huge ameloblastoma in a schizophrenic patient. A 29 year old female patient had a breakdown in thinking and poor emotional responses, including low social and economical status. She was homeless and not could afford any medical care on her first visit in 2009. During four years she could not receive proper medical care both psychiatric and medical, so that her schizophrenia would be severe. In 2013, she was hospitalised and her schizophrenia could start to be controlled. In 2014, she got social welfare foundation and could undergo surgery. Under surgery almost the whole mandible was resected and immediately reconstructed with a fibula free flap. Vessel anastomosis was done under microscope. After surgery, near-normal appearance and function including speech and mastication were observed. In addition, we review our national welfare system and medical system for homeless people. *This research was supported by Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education (NRF-2010-0012214).*

934 Poster

Drug-induced gingival enlargement in post brain damage patients. A case report

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Aim: Gingival overgrowth is frequently observed in patients taking certain drugs such as calcium channel blockers, anticonvulsants and immunosuppressant. The management of gingival overgrowth seems to be directed at controlling gingival inflammation through a good oral hygiene regimen. However in severe cases, surgical excision is the most preferred method. **Methods:** In this case, the patient suffered a car accident 2 years previously with brain damage and is now bedridden with NG feeding. Chief complaint is gingival overgrowth that makes bleeding gums, pus and mild cellulitis at LR jaw with mild fever. With over reaction to light, sound, water, etc. Uncorporative to any dental procedure so that no any dental treatment performed after car accident. The surgical treatment is our definitive therapy. Direct cut with electric knife is our choice. **Results:** All overgrowth was removed after the first surgery. Post-surgery follow up shows that gingiva shape is good. In 2nd post surgery follow up, this case ceased using the NG tube and began oral feeding. **Conclusion:** Surgical treatment is often the most reliable option of drug induced gingiva overgrowth. With the combination of a special care patient, gingivectomy was still needed.

935 Poster

The 25-year evolution of special needs dentistry in a medical centre in Taiwan

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Aims: The evolution of special needs dentistry in a medical centre in Taiwan. **Methods:** The 1st decade from 1985-1994: Treatment of children with disabilities commenced at the Department of Paediatric Dentistry, Kaohsiung Medical University Hospital in 1985. The dental health status of children with disability was very poor, being sedated for dental treatment with a frequency of one case/week. The 2nd decade from 1995-2004: In 1996, the Department of Health financially supported five medical centres to establish the sedation/GA room in dental clinics. The National Health Insurance system was introduced from 1995, the dental visit of children with disabilities started to increase. At this time, most of those children with disability were treated under sedation/GA in Paediatric Dentistry with a frequency of six cases/3 days/week. The 3rd decade from 2005-2014: In 2010, the Department of Health supported us to expand to individual special needs dentistry. The care pattern has changed from treatment-orientated to prevention-orientated. The frequency of sedation/GA was expanded to 10 cases/5 days/week. **Conclusions:** Prevention and health education has dramatically improved the oral health status of people with disability. Oral health promotion for long-term care needs patients is our next goal.

936 Poster

A study of intravenous sedation in a centre for special needs dentistry

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A clinic-statistic survey was carried out on dental patients treated with IV sedation in the Centre for Special Needs Dentistry, Department of Dentistry, Kaohsiung Medical University Hospital during the period of 2005 to 2013. The number of cases subjected in this survey was 981 (male: 617, female: 364). All of the cases were treated on an outpatient basis. The agents used for IV sedation were propofol and midazolam. We found that the number of IV sedations were showing an increasing trend, as the number of patients in 2013 was approximately 5 times greater than in 1995. As for the age distribution, the age group of > 18 years old increased predominately in 2010 to 2013 (58.57%, 60.34%, 56.34% respectively). As reasons for that increase, we consider that IV sedation has become more well-known by both clinicians and patients, and that the prevalence is increasing along with the ageing of society in Taiwan. The most dominate type of disability in this study was people with intellectual disability

(43.83%). It also showed that the more severity of people with disability, the more needs of IV sedation.

939 Poster

Dental treatment considerations for a rare case of Hutchinson-Gilford progeria syndrome

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Aims: To present the dental treatment considerations of a rare case with Hutchinson-Gilford Progeria Syndrome (HGPS). **Methods:** HGPS is an extra-rare genetic syndrome with incidence of one per eight million live births. The disorder is characterised by premature ageing, severe growth retardation, with an average age of death of 13, usually due to complications of severe atherosclerosis. Characteristic facies, with receding mandible, narrow nasal bridge and pointed nasal tip develop. Dental manifestations include delayed and abnormal tooth eruption and multiple caries. Due to open mouth limitation, potential anaesthetic difficulties and ongoing deterioration in the medical condition, the dental treatment considerations are complex. **Result:** This case report describes a 6 year old male with HGPS, multiple caries and two comprehensive dental treatment sessions under general anaesthesia. Due to a high caries risk and uncooperative behaviour, all posterior teeth were covered by stainless steel crowns. Progressive ongoing medical compromise with increasing age and anaesthetic difficulties would seem to mandate early intervention for oral pathosis. **Conclusion:** Full-coverage crowns are suitable dental treatments for reduction the risk of secondary caries of early approach in the HGPS case.

940 Poster

The oral health of children with multiple disabilities: Contribution of hospital multidisciplinary consultation

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Aim: Oral diseases are common among patients with multiple disabilities. Dental pain can cause a change in behaviour or a refusal to supply and generate significant state of health changes. The objective of this study was to investigate possible links between oral disease with diet, aetiology of disability, as well as membership in the network of dental health 'Handident'. **Methods:** At the Timone Hospital in Marseille, a dental check-up was established in multidisciplinary consultation organised every 6-8 months by the paediatrician neurologists; 52 children received consultations. **Results:** 31 children had dental plaque, even those who were continuously enteral feeding. Children fed normally have no caries but bruxism, while children fed

mixed and with continuously enteral feeding are caries and bruxism (10 have caries and 10 have dental plaque). Children with antenatal disability have presented most dental problems. The fact of joining the Handident network improves access to care, but did not reduce caries. The participation of dentists in multidisciplinary consultation allows better coordination and exchange between professionals and parents to meet the overall monitoring of their child. **Conclusion:** Access to effective oral hygiene remains to be improved for children with multiple disabilities.

941 Poster

Dental management of patients with muscular dystrophy: presentation of two cases

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Aims: To present dental management of two different cases of children with muscular dystrophy. **Methods/Background:** Muscular Dystrophies (MD) are a heterogeneous group of inherited neuromuscular disorders characterised by muscle necrosis and progressive muscle weakness with varying clinical expressions and severity. Facial weakness is one of the earliest and most constant features. Muscular weakness has been shown to have an impact on oral health in various ways. **Results/Case presentation:** Two children, a 9 year old male and 13 year old female, came to the postgraduate department of Paediatric Dentistry, University of Athens, after a previous diagnosis of Duchene's and Facioscapulo-humeral muscular dystrophy respectively for dental rehabilitation. Clinical and radiographic examination revealed excessive plaque accumulation, gingivitis and multiple carious lesions in primary and permanent teeth. Treatment plan included behavior modification, application of an individualised preventive programme, restoration of affected teeth, extractions and three months follow-ups. **Conclusions:** It is important for oral healthcare providers to be familiar with MD as special considerations are necessary to provide appropriate and safe dental care for these medically complex patients. Scheduled follow-ups in short intervals are essential to maintain oral health in acceptable level during lifetime. **Acknowledgements:** postgraduate student Reppa Christina is scholar of the State Scholarships Foundation.

942 Poster

How are treatment planning decisions made for dental treatment provided under general anaesthesia in adult Special Care patients?

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Aims: To explore how treatment planning decisions are made for special care patients under general anaesthesia (GA) in Ireland, and what factors affect the decision making process. To find out which dental treatments are provided, which techniques are used, and how and why these

treatments are chosen. **Methods:** A purposive sample used all Irish dentists who routinely provide dental treatment for adults under GA. Sixteen eligible candidates were sampled, with a response rate of 14/16 (87.5%). Qualitative semi-structured interviews were carried out with all participants using a single interviewer. Interviews were recorded, transcribed and data from was thematically analysed.

Results: Themes identified in the treatment planning process included personal experience and training in this area, medical risk of GA and need to avoid future treatment under GA, predictability of future home care, and service limitations. All participants acknowledged differences in treatment planning under local and general anaesthesia, but it was apparent that the treatment planning process is highly individualised. **Conclusions:** This study highlighted the factors that are considered by individual dentists during treatment under GA, and highlighted the need for further research in this area. **Acknowledgements:** Thanks to Dr. Alison Dougall for her advice during this project.

943 Poster

Orbital prosthesis using dental implant in the eyeball exenteration patient

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In 2012-2013, we performed implant surgical procedures in the case of orbit rehabilitation and would like to report a good result. In June 2011, a 75 year old man was diagnosed with squamous cell carcinoma. He experienced mass excision, partial maxillectomy, Rt supraomohyoid neck dissection, reconstruction with free forearm flap. And In February 2012, further hemi-maxillectomy, orbital floor excision and exenteration were performed. We thought that he needed to have a prosthesis in order to protect infection in the operative site. After 6 months, he underwent an implant surgical procedure. A preoperative 3D CT scan was obtained and performed to assess bony support of the orbital wall. We planned placement of three implants for the support of the substructure and the orbital prosthesis in the lateral-supra orbital rim site. The template was then adapted to fit the bony defect as precisely as possible to obtain an ideal and implant positioning. The patient was very satisfied, and magnetic retained prosthesis with the implant provided the best cosmetic and functional results. In the future implants using magnetic retention can be applied to various treatment options for maxillofacial prosthesis. *This research was supported by Basic Science Research Program through the National Research Foundation of Korea(NRF) funded by the Ministry of Education (NRF-2010-0012214).*

944 Oral Presentation

Oral health status related quality of life with removable prosthesesN Yazdanie,^{1(*)} B Ahmad,² A M Butt³

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Aims: To assess the oral health related quality of life (OHRQoL) in partially dentate/edentulous patients before/after insertion of removable prostheses. **Methods:** 60 partially dentate, 100 edentulous patients with equal distribution of gender and age ranging from 20-60 years were included. Oral health impact profile OHIP-14 was used for the OHRQoL measurement. Likert scale responses were made. The OHIP-14 questionnaires were completed before and after provision of dentures. **Results:** Functional limitation, pronunciation, sense of taste, physical disability, mastication, unsatisfactory diet, interrupted meals, psychological discomfort & social disability improved after insertion of RPD. Physical pain, handicapped less satisfying life and total inability to function were significantly reduced. Pre-treatment responses in OHIP-14 were high indicating the negative impact of tooth loss and effects of increasing age on the OHRQoL. The post treatment responses showed a significant improvement. The study suggested that provision of CD had positive impact on OHRQoL. **Conclusions:** Negative impacts of OHRQoL on all domains of OHIP before provision of removable dentures. OHRQoL significantly improved entire domains of OHIP, not influenced by age and gender. Frequently reported oral health negative impact was related to physical pain after provision of removable dentures.

945 Poster

Obesity and consciousness: the body mass indices of our patients?D Coffey, M Clarke^(*)

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The usual classification of obesity is a BMI 30.0 and previously was limit for patients to receive sedation in an out-patient setting. Those with a BMI of 40.0 are considered morbidly obese and fall under ASA classification III. **Aims:** To determine the BMI of patients being treated in the sedation unit. To quantify the number of patients in the underweight, normal weight, overweight and obese grouping. To determine the ASA classification of the patients. To identify if patients were obese had any particular difficulties pre, intra or post operatively. **Methods:** We examined all the electronic records from 1st October 2012 to 31st March 2013 listed for oral surgery treatment under intravenous sedation. Consent and ethical approval was obtained for the study. **Results:** 301 patient charts were reviewed, with patients ranging in age from 12-80: 41.5% (176) of the patients were female and 58.4% (125) were male. A total of 2.3% (7) were underweight, with an equal gender distribution: 48.8% (147) were of normal BMI status: 26.6% (80) were overweight (25-30): 15.3% (46) were moderately obese (30-35) :5.6% (17) were severely obese (BMI 35-40

and 1.3% (4) were very severely obese with a BMI 49-45 (75% female). There was equal distribution between ASA Classification Groups. **Conclusion:** Over 50% of our patients were outside of a normal BMI reading with 2% underweight. No sedation difficulties were encountered.

Acknowledgements: Student summer grant obtained from GlaxoSmithKline to assist with this project.

946 Poster

Dental management of patients with ectodermal dysplasia: presentation of two casesC Reppa,^(*) R Pitrou, D Emmanouil

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Aims: To present the dental management of two different cases of children with ectodermal dysplasia.

Methods/Background: Ectodermal dysplasias (ED) are a large group of heritable conditions characterised by congenital defects of one or more ectodermal structures such as: hair, nails, teeth, and sweat glands. Disturbances in tooth development are common and can appear as tooth agenesis, variations in size and shape of teeth, defects in the mineralised tissues, and problems in tooth eruption. **Results/Case presentation:** Two, 4 year old children, male and female, came to the postgraduate department of Paediatric Dentistry, University of Athens for dental rehabilitation. Clinical and radiographic examination revealed abnormalities in teeth size and shape, congenital absence of primary and permanent teeth consistent with a previous diagnosis of ED. There was no presence of caries. Treatment plan included behaviour modification, application of a preventive programme, prosthetic rehabilitation with removable appliance and follow-up. **Conclusions:** A multidisciplinary approach of these cases is required in order young patients to reach adulthood with minimal problems. Pediatric dentist, Prosthodontist and Orthodontist are essential for planning a long-term treatment schedule. **Acknowledgements:** postgraduate student Reppa Christina is scholar of the State Scholarships Foundation.

947 Oral Presentation

Dental health education for children with intellectual disabilityS Lesmana,^(*) E Ananta, R R Darwita

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Aims: To give better understanding in brushing teeth steps to children with intellectual disability (ID) in Budi Waluyo Special Primary School, Jakarta, Indonesia. **Methods:** 34 children from the school were given dental health education for four days in August 2013. Each grade (grade 1-6) were given the same steps everyday: (1) They performed their ability to brush the teeth with a phantom; (2) We teach each person the steps to brush the teeth based on Bass methods; (3) They brush their teeth and we accompany each person to do the right steps. For number (3), we evaluate the 3 steps: (a) Put the pea-sized toothpaste on the toothbrush; (b)

Gargle and spit the water; (c) Brush the teeth based on Bass method. We give score 0 if they can't perform it well and 1 if they can perform it well. All data were analysed with Wilcoxon test. **Results:** On day 1, 8.82% children can show the steps to brushing teeth with a phantom, 44.1% children can place the toothpaste on the toothbrush, 97.06% children can gargle, and 14.71% children can brush the teeth based on Bass method. On day 4, 88.24% children can show the steps to brushing teeth with a phantom, 94.12% children can put the toothpaste on the toothbrush, 100% children can gargle, and 85.29% children can brush the teeth based on Bass method. **Conclusion:** Children with ID can understand the steps to brush the teeth but they need repeated dental health education to learn it slowly and step by step.

948 Poster

Prevalence of malocclusion in people with disabilities

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Aim: To investigate the prevalence of malocclusion in patients with disabilities. **Methods:** 101 patients of Centre Dental Care for People with Disabilities, CAO, Araçatuba, UNESP, Brazil who had a previous diagnosis of disability were evaluated and divided into three groups: Mental Retardation (MR), Cerebral Palsy (CP) and Down syndrome (DS). They were evaluated according to Angle's malocclusion classification, Posterior and anterior crossbite. **Results:** Class II was more frequent in the three groups (CP 42.86%, MR 39.58% and DS 50%) but it was not statistically significant CP ($p=0.2263$), DS ($p=0.3114$) and MR ($p=0.6456$). The posterior crossbite was more prevalent than anterior crossbite in all groups and it was statistically significant CP ($p=0.0348$), DS ($p=0.0325$) and MR ($p=0.0017$). The Statistical analysis of the data was performed using the chi-square test at 5% significance level ($p<0.05$). **Conclusion:** Despite Class II being more prevalent than Class I and III, it was not statistically significant. Furthermore, Posterior crossbite was more frequent than anterior crossbite and statistically significant.

949 Oral Presentation

Dental erosion in patients with Down syndrome

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Aims: To compare the severity and aetiology of dental erosion in Down syndrome population with the healthy individuals. **Methods:** Two groups of subjects (Down syndrome group and a control group) were clinically examined for tooth wear and recordings were made using the simplified tooth wear index by Smith and Knight. A

general health questionnaire was taken from the parents that included medical/dental history and oral habits. A '3-day diet diary' was also included to questionnaire to determine the impact of diet. **Conclusion:** The multifactorial aetiology of dental erosion and its associations with other dental conditions such as enamel hypoplasia and caries in Down syndrome individuals makes the diagnosis, prevention and management complex. An evaluation of the cause can not only specify necessary prevention but also improve the results of management. These findings are of undoubted importance to individuals with Down syndrome and their carers, as well as to health professionals, including dentists.

950 Poster

Tooth loss and prosthetic treatment in dependent and functionally impaired individuals

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Aims: To study the prevalence of tooth loss and prosthetic treatment in dependent functionally impaired individuals. **Methods:** In this cross-sectional study, data collected from 250 subjects were sampled from a register covering dependent functionally impaired individuals in Sweden. Matched sample controls were drawn from a register of dental records covering the general population in the same county and matching was based on gender and age. The collected variables included number of teeth, tooth loss and prosthetic treatment in the different jaw regions. The Regional Ethical Committee in Umeå Sweden approved the study. **Results:** The study group had a lower mean number of teeth and a higher proportion of complete tooth loss compared to the general population. Gender-based differences in the patterns for tooth loss were also apparent. Dentures were more common and introduced earlier in the study group compared to fixed prostheses, including dental implants in the control group. **Conclusions:** More effort must be laid on preventive measures and research in oral rehabilitation for the functionally impaired. *Supported by the Swedish Orofacial Association, Karolinska Institutet funding for odontological research and Norrbotten County Council.*

952 Poster

Development of bisphosphonate related osteonecrosis of the jaw (BRONJ) model

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This study is to develop a rat model of BRONJ and to find the specific findings of BRONJ. We used 25 male Sprague-Dawley (SD) rats, 7 weeks old. The both maxillary and mandibular molars were extracted after intraperitoneal injection of Panoram[®] (disodium pamidronate) 3mg/kg/day

with Dexamethasone® (dexamethasone sodium phosphate) 1mg/kg/day during 3 weeks. Rats in group I were sacrificed at 0, 2, 4, 6, 8 weeks after molars extraction; rats in group II extracted molars 1 week later than group I, and sacrificed. We evaluated alkaline phosphatase (ALP) and complete blood count. Specimens were studied by H&E, Masson's trichrome stain and micro-CT. In the results, ALP decreased significantly 2-4 weeks after BP drug injection. The level of inflammation is the highest at the 3 weeks of injection period then declined continuously after extraction. Osteonecrosis, Bone remodeling was observed from 2, 4 weeks after molars extraction. In micro-CT, a little new bone rose in the empty socket as time passes. This study may useful to confirm the occurring period of BRONJ, and to prevent BRONJ. *This study was supported by a grant of the Korea Health Technology R&D Project, Ministry of Health & Welfare, Republic of Korea (A120822).*

953 Poster

Validity of self report measures and salivary hemoglobin level for screening of periodontitis for disabled people

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Aims: Evaluating the validity of new screening methods for high risk periodontal disease in disabled patients using self-report measures, salivary haemoglobin level, and combined model with age. **Methods:** The study included 195 disabled patients 18 years old and upwards in Seoul Dental Hospital for the Disabled, Korea in 2012. We calculated ROC, sensitivity and specificity for evaluation of predicting the prevalence of Community Periodontal Index (CPI) over code 3 or 4 by self-report measures, salivary haemoglobin levels, and combined model with age. Self-reported questions for predicting periodontitis to the National Health and Nutrition Examination Survey protocol adding alcohol intake and smoking were used. **Result:** The prevalence over CPI 3 (pocket of ≥ 4 mm probing depth) was 76%, and CPI 4 (pocket of ≥ 6 mm) was 38%. Combined model with self-report measures, salivary haemoglobin, and age was most useful in predicting the prevalence of deep pockets (CPI4: AUC 0.807, sensitivity 81.3%, specificity 71.3%). **Conclusion:** Multivariable model of specific self-report periodontal health measures, salivary haemoglobin level, demographic risk factor variables (age) showed significant screening potential as an alternative to CPI.

955 Poster

Oral characteristics of Noonan syndrome. Case series of 11 patients

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Aim: To examine the oral findings of individuals with Noonan syndrome (NS). NS is a developmental disorder, caused in some cases by PTPN11 gene mutations on the chromosome 12 or mutations usually in the KRAS gene. **Methods:** Eleven NS individuals (5 ½ -27 years old) were examined by a paediatric dentist and a periodontist. Concerning medical history, emphasis was placed upon congenital heart defects, coagulation disorders and DNA sequence analysis for possible mutations confirming the diagnosis. Periodontal status, caries experience and occlusal abnormalities were evaluated. **Results:** None of the 11 young patients exhibited periodontitis. The mean scores of plaque and gingival indices were 50.4% and 38.1%, respectively. The mean DMFT/dmft score was 6.3. Occlusal abnormalities were prevalent, including high arched palate, crowding, malalignment of teeth and Posterior crossbite. A prolonged retention of deciduous teeth was found. Congenitally missing teeth, a finding described in the literature, were not observed. **Conclusion:** The clinical results were similar to previous reports with the exception of the periodontal status, the lack of congenitally missing teeth and the presence of multiple caries. Further research is required in order to generalise the aforementioned results in NS patients.

956 Poster

The quality of life of Greek children with hypodontia

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Aim: Hypodontia is the most common developmental anomaly of the permanent dentition (prevalence of 3.5-6.5%) causing functional limitations and affecting young patients' way of living. Although the condition of hypodontia is well-investigated, literature concerning the impact of hypodontia on children's quality of life is lacking. This study investigates hypodontia's functional and psychological effects on the children's quality of life. **Method:** 20 children with hypodontia and matching controls, age 4 to 12 years old from the Post-graduate Dept. of Paediatric Dentistry and Orthodontics were studied. Two questionnaires were used to evaluate the quality of life of children and their families: ECOHIS (Early Childhood Oral Health Impact Scale) and CPQ (Child Perceptions Questionnaire). Children that have been treated either with removable prosthetic devices or orthodontics, filled in the questionnaires again after three months. **Results:** Statistically significant differences were

found in several questions of the ECOHIS (chewing difficulty, smile avoidance, parents feeling guilt) as well as several from the CPQ. Treatment improves quality of life in more than one area. **Conclusion:** Results clearly show that children with hypodontia experience substantial functional and psychosocial problems and early rehabilitation reverses many of the problems.

957 Poster

Dental anomalies in patients with Down syndrome

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Aim: To investigate the prevalence of dental anomalies in patients with Down syndrome. **Methods:** The sample consisted of 100 panoramic radiographs obtained from the medical records of patients with Down syndrome (57 male and 43 female), treated in the Centre of Dental Care for People with Disabilities (CAOE) at the School of Dentistry, UNESP, Araçatuba, Brazil. The age range was from 7-42 years. The occurrence of anomalies was investigated only in permanent teeth and the radiographs were evaluated by two examiners. **Results:** Dental anomalies were observed in 42 (42%) of the sample. The dental anomalies found were hypodontia 14 (14%), taurodontism 10 (10%), microdontia 10 (10%), supernumerary teeth 6 (6%), macrodontia 3 (3%), conical teeth 1 (1%) and root dilaceration 1 (1%). In 5 (5%) of the sample, more than one dental anomaly were present. **Conclusion:** Patients with Down syndrome presented a high prevalence of dental anomalies. This outcome reinforces the importance of dental care for these patients, since dental anomalies may have clinical implications in both aesthetic and functional aspects.

958 Poster

Identification of an undiagnosed Kabuki Make-up Syndrome Patient

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Introduction: This case shows the diagnostic process of a syndrome which had not been diagnosed until the patient was 5-years old. The orofacial features of the syndrome are very typical and important for diagnosis. **Case:** A 5 year old boy came to our dental clinic for treatment of dental caries under sedation. He had a history of surgery for heart disease and cleft palate. Upon radiographic dental examination, it was found that six teeth were missing congenitally, including upper lateral incisors and all of the lower incisors. His medical history did not indicate any serious illness, but the congenital absence of the entire set of lower incisors was considered rare. Therefore, a syndrome or a genetic disorder was suspected. Although some syndromes were candidates, certain clinical features of the patient differed from those of

the candidates. We consulted a pediatric endocrinologist and a specialist of genetic diseases. As they listed his clinical features, clinical diagnosis of Kabuki make-up syndrome was made. Genetic test showed mutations on MLL-2 gene, responsible for the Kabuki make-up syndrome, confirming the diagnosis. **Conclusion:** Since orofacial features are included in the clinical diagnosis criteria of the syndrome, dentists would be able to contribute to the identification of the undiagnosed children with mild form of the syndrome.

959 Poster

Hyper-IgE syndrome (HIES): Relations between oral infections and physical conditions

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Introduction: HIES is a rare form of primary immunodeficiency that is characterised by extremely elevated IgE serum levels, triad of eczema, recurrent skin and lung infections. Dental anomalies such as prolonged retention of the deciduous teeth, delayed eruption of the permanent teeth, or double dentition are often features. Severe cavities and gingival inflammation are also reported. The aim of this study is to report three patients with HIES for their oral conditions and the treatments provided. **Cases:** Case 1, 16 year old boy, was hospitalised because of a lumbar fracture, fever and skin abscesses. Case 2 was 7 year old boy and Case 3 was 6 year old boy. We took medical histories, reviewed records, performed dental examinations. Case 1 had severe cavities on 16 and 21, (16 needed extraction and 21 root canal treatment). After treatment the physical conditions improved. This case also showed delayed eruption of the permanent teeth. Cases 2 and 3 had severe cavities in deciduous molars, prolonged retention of the deciduous teeth and a double dentition. **Conclusions:** Hyper-IgE syndrome shows many oral anomalies and thus the dentist should provide appropriate dental treatment to prevent infection complications or malocclusion.

960 Poster

Dental management of a female child diagnosed with Opsoclonus-Myoclonus-Ataxia Syndrome (Dancing Eye-Dancing Feet Syndrome)

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Introduction: Opsoclonus-Myoclonus-Ataxia Syndrome (OMS) is a rare autoimmune condition, which is characterised by opsoclonus, myoclonus, and ataxia. The syndrome is usually accompanied by behavioural abnormalities and developmental impairment. It is frequently associated to low-grade neuroblastoma in children (50% of the cases), but it may also be triggered by infections.

Treatment employs steroids, immunosuppressive agents, or other anti-inflammatory therapies. **Case:** A 6.5 year old female child was referred to the postgraduate department of Paediatric Dentistry, University of Athens, after a previous diagnosis of OMS for dental rehabilitation. The patient had received in the past three years intravenously and then orally cortisone. She presented with speech problems but her behaviour was good. Clinical examination revealed medium oral hygiene level, dental caries and hypoplastic second primary molars. Radiographic examination revealed internal root resorption in right lower second primary molar. Treatment plan included application of a preventive programme, treatment of carious teeth, extraction of right lower second primary molar and application of lingual arch as space maintainer. **Conclusions:** Medical history and the treatment consisting of corticosteroids makes the dental treatment of these children challenging. **Acknowledgements:** *Postgraduate students Reppa Ch. and Tzouanaki A. are scholars of the State Scholarships Foundation.*

961 Poster

Dental treatment of 283 Greek patients with special health care needs

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Aims: To register information about the oral health care provided to patients with special health care needs at the Postgraduate Paediatric Dental Clinic, University of Athens. **Methods:** A descriptive study was performed among 283 patients (3-23 years), between March 2012 and March 2014. Data were collected from the dental records of the Postgraduate Paediatric Dental Clinic. **Results:** The majority of patients consisted of: variety of genetic syndromes (66 patients -23.3%), autism (38-13.4%) and intellectual disability (34-12%). Other medical problems included: cancer; cardiovascular and autoimmune diseases; bleeding and neuropsychiatric disorders. Dental treatment consisted mostly of: composite restorations for 161 patients (56.9%), extractions for 107 (37.8%) and stainless steel crowns for 40 (14.1%). Only 5 patients (1.8%) underwent orthodontic treatment and dental trauma was relatively low (2%). It is noteworthy that only 11 patients (3.9%) were treated under general anesthesia. In a total of a 1000 appointments in the clinic, the majority was performed by behavior management techniques and only 5% with nitrous oxide sedation and 20% with protective stabilization. **Conclusions:** Even though oral health care needs of these patients were extensive and required special considerations, behaviour management techniques were effective in the majority of the above treated cases.

962 Poster

The change of clinical examination's data between pre- and post-operation for dental treatments under general anesthesia

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Introduction: We surveyed data of blood test and urinalysis between pre- and post-operation under general anaesthesia according to the time of operation for dental treatments of patients with disability. **Methods:** We carried out the dental treatments of 143 patients under general anaesthesia during 11 years from January, 1999 to December, 2010, then studied 105 cases who underwent complete clinical examinations with data of pre- and post-operation. All patients were classified into the following categories: A group within 2 hours of operation time (22 patients), B group between 2 and 4 hours (33 patients), C group between 4 and 6 hours (32 patients), D group of more than 6 hours (19 patients). The contents of clinical examination were blood tests, biochemical test and urinalysis. **Results:** There were significant differences pre- and post-operation compared with the blood test as well as significant difference according to the time of operation. There were significant differences of clinical examinations data according to the time of operation. We noted high clinical examination data in 11 cases of pre-operation and 48 cases of post-operation in CPK. The differences in urinalysis were not significant. **Conclusions:** In this study longer time of operation caused worse liver function and electrolyte abnormality. We suggest that liver function was easy to decrease by long-term taking epilepsy medicine and common use medicine in the patients with disability.

963 Poster

Critical pathway on dental conscious sedation for the disabled children

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Aims: Critical pathway (CP) defines the optimal care process, sequencing and timing of intervention by multidisciplinary health care teams for a particular diagnosis and procedure. The aim of the study was to investigate the satisfaction of patients and medical/dental staff after implementation of a critical pathway for the dental treatment of disabled children under conscious sedation. **Methods:** Thirty patients were divided in two groups (Pre-CP and CP) at the Department of Paediatric Dentistry, Pusan National University Dental Hospital. The satisfaction levels of patient guardians and the staff members were collected by questionnaire. **Results:** The parents' satisfaction was significantly improved after the implementation of CP. Also, medical/dental staff members were highly satisfied with its usefulness. **Conclusions:** The application of a critical pathway for the dental treatment of disabled children under conscious sedation could be effective and satisfy both patients' guardians and the staff members.

964 Poster

Long-term impact of oral health intervention for adults with intellectual disabilitiesI Olmos,^{1(*)} I Kaschke²¹Freie Universität Berlin; ²Special Olympics Deutschland, Deutschland. olmosmai@zedat.fu-berlin.de

Aims: To evaluate the long term impact of an oral health intervention programme for adults with intellectual disabilities living in housing institutions. **Methods:** During the original study 193 adults with intellectual disabilities participated in an oral health programme implemented in 31 sites. The programme aimed to motivate and educate caregivers and to improve the oral health of the residents. There was a significant improvement in the duration of tooth brushing, the usage of chlorhexidine mouthwashes, and the usage of triple-headed tooth brushes. Caregivers also modified the schedule for tooth brushing from before to after breakfast. Annual follow-up instruction sessions were recommended. Five years after the intervention programme, 41% (N=80) of the participants completed a follow-up questionnaire on dental care behaviour. The resulting data were analysed, utilising descriptive and multivariate statistics. **Results:** Better oral health behaviour yields significant long-term effects. Among other variables the usage of dental cleaning implements increased ($\chi^2=11.8$, $d=6$, $p<.05$), and the usage of fluoride supplements was maintained ($\chi^2=11$, $d=4$, $p<.05$). There was a correlation between programme participation and oral health behaviour. **Conclusions:** An inexpensive and comprehensive group prophylaxis programme produces long-term oral health results. Follow-up instruction sessions can improve the quality of life and oral health outcomes for people with special needs. *A project of the Berlin group for special care dentistry.*

965 Oral Presentation

Ten years of surgical and interceptive treatment of a cleidocranial dysplasia patientS Chi Ngai Leung^(*)

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Aims: To provide a stable occlusion to facilitate interceptive orthodontic treatment for a patient with cleidocranial dysplasia, using the Jerusalem Approach. **Methods:** In this case report, surgical exposure on unerupted 46 was performed to provide a stable occlusion with anchorage so as to facilitate the future interceptive orthodontic treatment. A total of 11 supernumerary teeth were extracted during the developing permanent teeth so as to prevent physical barriers to their eruption. The Jerusalem Approach was used in this case study employing the 'incisor-erupting' arch wire technique. Subsequent surgical treatments were conducted in different sextants to complete the removal of all supernumerary teeth. Following on, orthodontic traction was used to manage the remaining unerupted permanent dentition into both the maxilla and mandible. **Results:** This patient's permanent dentition erupted and an improvement

in mastication and also both dental and facial aesthetics was achieved. **Conclusions:** Patients with a syndrome such as cleidocranial dysplasia, where multiple supernumerary teeth can impede eruption of permanent teeth, can be managed using the Jerusalem Approach as interceptive orthodontic treatment and ultimately improves mastication, dental and facial aesthetics. The functional and aesthetic change of the patient can be achieved with an early diagnosis of the oral conditions, comprehensive treatment planning and a multidisciplinary approach.

966 Poster

Dental Management for Sotos syndrome: A report of 5 casesZ Nakamura,^{1(*)} H Izumikawa,¹ A Yoshino,¹ J Morishita,¹ A Tanaka,¹ F Yoshikawa,² K Ishikawa,⁴ S Hironaka,⁴ H Fujita,³ H Fukayama²

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Introduction: The purpose of this report of five cases is to review the clinical manifestations, oral health management and dental treatment under general anaesthesia of Sotos syndrome. Sotos syndrome, also known as cerebral gigantism, is a congenital genetic disorder characterised by early and excessive growth, acromegalic features, mental retardation, advanced bone age, and a distinctive facial appearance. Few common characteristics besides them are known regarding the syndrome because of its low incidence, approximately 1 in 20,000 births. **Cases:** They were 8 y.o. male, 14 y.o. male, 17 y.o. male, 24 y.o. male and 32 y.o. female. The oral findings seen in these patients included: premature eruption of teeth (2/5), high arched palate (3/5), pointed mandible (4/5), supernumerary teeth (2/5) and prognathism (3/5). In addition, the 32 y.o. female patient had multiple cementomatosis. Two patients needed dental treatment under general anaesthesia due to noncooperation. **Conclusions:** Their ranging ages (from 8 to 32 years) and the oral findings suggest that positive dental approaches from an early stage of life are required for good oral health. For example, continuous check-ups are recommended to ensure appropriate oral care and dental treatment.

967 Poster

Oral health status for patients of hospitalised Prolonged Traumatic Brain DysfunctionJ Yasuda,^{1(*)} K Gen,¹ Y Fukuta,² T Hashimoto,¹ Y Katagawa,¹ D Koganezawa,¹ E Ota¹

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Aims: The purpose of this study was to investigate the oral health of unresponsive wakefulness syndrome (UWS) patients with mental disorders. **Methods:** We performed oral health examination on 32 hospitalised patients with UWS patients in Chubu Medical Center for Prolonged Traumatic Brain Dysfunction. **Results:** The subjects ranged in age from

15 to 64 years, with an average of 36.9. The patients consisted of 20 males (62.5%) and 12 females (37.5%). The daily intake of medication per person was 6.0 ± 2.4 medications. The caries experience index was (DMFT) 13.1; for decayed 2.0 ± 2.0 , missing 3.1 ± 5.0 , and filled teeth 8.0 ± 6.5 . The supplementation methods were; gastro gavage 24 person (75.0%), oral intake 4 person (12.5%) and tube feeding 4 person (12.5%). The oral mucosal moisture measured using Moisture Checking Device (MUCUS) on the lingual mucosa showed there were; normal group 5 person (15.6%), slight group 3 persons (9.4%), moderate group 10 person (31.3%), severe group 14 person (43.8%). A simple method to measure Candida was conducted using a diagnostic test called 'STOMASTAT'. They were a positive group 5 person (15.6%), pseudo-positives/light group 15 persons (46.9%), negative group 12 persons (37.5%). **Conclusions:** Dentists and dental hygienists should provide support oral care for UWS patients who are hospitalised.

968 Oral Presentation

Clinical and genetic studies in families with tooth agenesis

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Aims: To describe the pattern of clinical presentation, mode of inheritance and establish the mutations in candidate genes responsible for tooth agenesis in the studied population. **Methods:** 84 subjects from families with two or more affected individuals in their extended family were involved. The clinical examination of the affected individuals tested their Oral Stereognostic and Oral Motor Ability. Three generation pedigree would be drawn and the mode of inheritance established. For molecular genetic analysis, blood samples from the affected person, parents and at least one normal sibling were used. DNA will be extracted. Micro satellite markers tightly linked to the target genes (MSX1, PAX9, AXIN2) will be amplified using PCR. Analysis of the PCR products will be performed on non-denaturing poly acrylamide gel electrophoresis. DNA sequencing will be performed in the affected individuals. Primers to amplify the exons of the respective genes will be designed from the intronic sequences using primer 3 software. Bio Edit V 3.0.1 will be used for analysis of sequencing data. **Results:** The study will reveal the clinical and genetic profile of the disease condition in our local population. **Conclusions:** Study will add to the knowledge about the clinical presentation and pathogenesis of tooth agenesis in the studied population. This in turn will assist in establishing clinic-pathological and molecular diagnosis and genetic counselling facilities for the affected patients and families.

970 Oral Presentation

Management of patients with intellectual disabilities from a dental care network

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Aims: The objective of this study was the assessment of the oral health management of patients with intellectual disabilities from a dental care network: to establish the oral health needs of this population and investigate the efficacy of some dental management strategies. **Methods:** 96 patients, followed-up between 2010 and 2014 in private practice, as a part of a dental care network, were included. For each of them, an index card recapitulating general information, medical data and care's progress was constituted. Data were analysed to characterise this specific population, to review the types of care, the techniques used and to describe the follow-up of these patients from first consultation to maintenance. **Results:** 51% required care at first consultation, 43% benefited from preventive and restorative care, 7% from extraction and 49% from tooth cleaning. For the approach of care: 56% required only habituation training, 10% required oral premedication, 24% nitrous oxide/oxygen inhalation at least once and 10% premedication in combination with nitrous oxide/oxygen inhalation. 9% failures were noticed. Average number of appointments by patients was 3.8. **Conclusions:** This study shows: the necessity to double efforts in prevention and follow-up for these patients; the possibility to take care of them with habituation training; the interest of the premedication and/or nitrous oxide/oxygen inhalation, allowing conservative care and avoiding general anaesthesia.

971 Oral Presentation

Comparison of two general anaesthesia techniques used for the dental treatment of special care patients

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Aims: To identify a general anaesthetic technique which is easy to apply, safe and at reduced cost in cases of severe mental disability where this is the treatment of choice. These patients may present with multiple anomalies of the face, oral cavity and upper airways making intubation and ventilation very difficult. **Methods:** Two different anaesthetic procedures were examined. The first was applied since 1985 to 7.850 patients at three hospital facilities and clinics of the Italian NHS. The technique used inhalation of the volatile drugs sevoflurane and desflurane for induction, avoiding the stress of venipuncture. The second technique has been applied since 2009 at the Clinica della salute di Santa Maria Capua Vetere treating 2.458 patients. The procedure involved a naso-tracheal intubation using flexible fiberoptic

bronchoscope in patients who had first been sedated, intermittent oxygen through the channel of the bronchoscope followed by intravenous general anaesthesia. **Results:** There were no significant differences in the two procedures. **Conclusions:** The first technique allows for a less invasive procedure, without the stress of venipuncture. The second ensures sweet and fast induction, possibility to modulate the depth of anaesthesia, long duration without increased risk. This technique could be adopted for use in specialist clinics.

972 Poster

Papillary atrophy of the tongue of elderly persons

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Aims: Atrophy of the papillae and dorsum of the tongue are considered classical signs of nutritional deficiencies. We studied the tongues of elderly persons in order to study the incidence of atrophy of tongue. **Methods:** One hundred and forty subjects living in nursing homes (96 women, 44 men; age, 64-99 years; average age 82.1 years) and 20 healthy adults (10 women, 10 men, 23-29 years; average age 26.9 years) as controls were studied. To express the degree of atrophy of the lingual papillae, pictures of their tongues were taken using a digital camera and were classified by an expert dentist into three groups: Atrophy, Moderate and Normal. **Results:** In elderly persons, 17 (12.1%) were classified Atrophy group, 69 (49.3%) were classified Moderate group and 54 (38.6%) were classified Normal group. There was no significant association between degree of atrophy of tongue and age. All healthy adults were classified in the Normal group. The incidence of atrophy of tongue in the elderly persons was significantly more than in the healthy adults ($p < 0.01$). **Conclusions:** The present results indicate that as a method to evaluate atrophy of the tongue of elderly persons using photos was objective.

973 Poster

Dental treatment in a patient with tuberous sclerosis

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Aims: Tuberous sclerosis (TS) is a dominantly inherited neurocutaneous disorder caused by a dysfunction in the synthesis of proteins derived from information linked to chromosome 9 or 16, which causes abnormalities in the control mechanisms of the cells responsible for regulating cell growth involving many organs. Lesions typical of TS may also exhibit variable degrees of severity and in some cases compromise the life of the patient. For the clinician it is important to know the organs affected and the clinical implications as well as the drugs typically used to control the disease and the classic oral manifestations in order to treat them in the most appropriate manner. This paper describes

the typical clinical signs of TS and the most appropriate intervention. **Methods:** From 20 patients treated with TS at Medical Team Rome with varying degrees of mental retardation, a patient was selected with extreme gingival hyperplasia under general anaesthesia. Surgery was performed for the removal of fibrous gingiva. Healing was observed after 3 - 6 - 12 months. **Results:** After surgical removal of fibrous tissue, gingiva returned to its healthy state with no signs of recurrence. **Conclusions:** Removal of fibrous gingiva is needed to maintain the level of hygiene and gingival health of patients with TS. The surgical technique can be traditional or use of laser without any obvious differences in the mechanisms of healing and recurrence.

974 Poster

Implant-prosthetic rehabilitation of patients with Fragile X syndrome

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Aims: Fragile X syndrome (Martin -Bell syndrome or FRAX) is a human genetic disease caused by mutation of the FMR1 gene on the X chromosome. Males with the full mutation have characteristic physical traits compared with only half of the females, the most frequent of which are learning disability with variable degrees of mental retardation (mild to severe), and different orofacial morphological alterations. The behavioral characteristics may include stereotypic movements, atypical social development. Some individuals with FRAX are also included in the diagnostic criteria for autism. There is a direct connection between the above-mentioned clinical abnormalities and diseases such as caries and severe periodontal disease. **Methods:** Among the patients with FRAX from the Medical team practice in Rome one was selected who showed positive response to oral hygiene education as well as motivation of family members to help restore oral function. The patient was partially edentulous and radiographic examination revealed adequate bone for implant placement. **Results:** The patient has been rehabilitated through implant and prosthesis interventions performed partly in the operating room and partly in the dental clinic. Two years later the implants are stable with an acceptable level of oral hygiene. **Conclusions:** Even a patient FRAX properly approached and prepared, through a process that includes collaboration and training of the family can be rehabilitated in the traditional way.

975 Oral Presentation

The oral health status of Special Olympics Athletes in Greece

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Aim: To investigate the oral health status of Special Olympics athletes in Greece and compare it with that of athletes from other countries. **Methods:** Data were obtained by direct screening of athletes by trained dentists at the

Special Olympics World Summer Games in Athens, 2011. A total of 3,081 athletes were screened, 375 of which were Greek. **Results:** 57 (15.2%) of Greek athletes exhibited pain in the mouth, compared to 13.5% of the total number of athletes from all other countries: 204 (54.4%) Greek athletes had untreated decay compared to 46.5% of all athletes: 134 Greek athletes (15.7%) had missing teeth, compared to 31.9% of all athletes. Gingival signs were observed in 70.7% of Greek athletes compared to 61.1% of all athletes. The number of athletes with need for urgent dental treatment was 10.9% for Greeks compared to 15.0% for athletes from other countries: 218 Greek athletes (58.1%) had filled teeth, only 32 (8.5%) had sealants and 62 (16.5%) had injured teeth. **Conclusions:** Compared to the total data, Greek athletes exhibit more untreated decay, gum disease, and dental pain but fewer missing teeth and less need for urgent dental treatment. This might indicate good attendance of an emergency nature for Greek patients. However the higher levels of untreated decay and gum disease indicate the possible lack of interest or financial means in completing the necessary treatment.

976 Oral Presentation

Improving the care pathway for special care patients in Cardiff Dental Hospital

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Aims: To improve the care pathway for special care patients who are referred to the Examination & Emergency Unit of Cardiff University Dental Hospital from various different specialties within the University Hospital of Wales. **Methods:** It was recognised that patient care was being compromised by an inadequate and inefficient referral system within the unit. Discussions took place with the consultant leading the unit and the dental nursing staff who were responsible for accepting the telephone referrals. Following this, a new referral acceptance form was devised and piloted within the unit for two months. Feedback was received from clinical staff on the new referral acceptance form and appropriate changes were made before definitive implementation within the unit. **Results:** The new referral acceptance form has improved the efficiency of the care pathway within the Examination & Emergency Department of Cardiff University Dental Hospital. Data collection of referrals for a 6 month period will also be presented. **Conclusions:** A relatively small change within the department has led to a significant improvement in the efficiency of the care pathway and the delivery of seamless integrated care. The new referral forms have also allowed collection of data identifying which medical specialties referrals originate from, thereby facilitating and targeting future service development and integration into clinical networks.

977 Poster

Results of a collaboration: Public Dental Service in Berlin-Pankow with the Stephanus-School

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Aims: Presentation of the results of the collaboration between the Public Dental Service in Berlin-Pankow and the Stephanus-School are given. Data were described for the period from 2002/03 to 2013/14: 4-5 school-visitations are offered per year. Legal basis for the work of the public dental service is § 21 SGB V. **Methods:** The children at Stephanus-School, which is specialised in the enhancement-focus of mental development, are between 6 and 19 years of age. In the period from 2002/03 to 2013/14 on average 70 children were examined. **Results:** In the given period the number of dental restoration slightly decreased from 23% to 22%. The DMF/T fell from 0.90 to 0.48. However, in the same period dmf/t increased from 0.84 to 0.96. In 2013/14 65% of children were caries-free compared to only 59% in 2002/03. In 2002/03 the number of children in need of dental treatment declined from 18% to 12% in 2013/14. The number of children receiving orthodontic treatment increased from 15% in 2002/2003 to 20%. **Conclusion:** Results of our work suggest that a regular and continuous collaboration between the Public Dental Services Berlin-Pankow and Stephanus-School has proved to be successful in terms of children's dental health.

978 Poster

Malocclusions in patients with disabilities or chronic illness

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Aims: To evaluate the prevalence of malocclusions in children and adolescents with disabilities and chronic illness from the Wielkopolska Province (Poland). **Methods:** Oral examination was performed in 204 patients (78 females – 38.24%, 126 males – 61.76%) with moderate, severe and profound intellectual disability, suffering from cerebral palsy and epilepsy, aged 6-20 years, attending institutions for people with disabilities. The Poznan University of Medical Sciences Ethics Committee approved the study and parental consent was obtained. The data were helpful in evaluating the prevalence of malocclusions (vertical, horizontal and lateral), as well as diastema and crowding. Statistical analysis of the data was performed. **Results:** In the total population, 51 (25.00%) individuals had mixed and 153 (75.00%) permanent dentition. Horizontal malocclusion was the most frequent (in 18 patients with mixed - 35.29% and 35 with permanent dentition - 22.87%). Diastema was observed in 3 (5.88%) patients with mixed and in 13 (8.50%) with permanent dentition while crowding was found in 14 (27.45%) and 50 (32.68%) individuals, respectively. **Conclusions:** The study showed common occurrence of malocclusion in patients with disabilities and chronic

illness. *Research project “Epidemiological evaluation of oral health of disabled and chronically ill children” (507-02-02207319-03158), commissioned by the Ministry of Health.*

979 Poster

Clinical time required to provide dental care for patients with learning disabilities compared to healthy patients

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Aim: To compare the clinical time required to provide dental care for patients with learning disabilities and healthy patients. **Methods:** Prospective case control study. A total of 174 clinical sessions (87 with learning disabilities / 87 healthy patients) were timed. The times to perform equivalent dental treatments were compared and analysed using t test analysis (parametric) and Wilcoxon test (nonparametric variables). **Results:** Patients with learning disabilities required 1.47 times more clinical time than healthy patients to receive equivalent dental treatment. A significant difference was observed when taking medical history ($p = 0.001$), dental examination ($p = 0.001$), oral hygiene instruction ($p = 0.001$), anesthesia ($p = 0.04$), operative dentistry ($p = 0.001$), surgery ($p = 0.001$), giving postoperative instructions ($p = 0.26$) and the total duration of the clinical session ($p = 0.001$). Similar times were measured during oral examination ($p = 0.11$), scale and polish ($p = 0.12$), fissure sealants ($p = 0.07$), and fluoridation ($p = 0.33$). **Conclusion:** Patients with learning disabilities require longer clinical sessions than healthy patients. This information needs to be taken into account by clinicians and managers when planning a dental service that provides dental care for patients with special needs.

980 Poster

Health-promoting behaviours and dental status of special-care schoolchildren

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Aim: To assess the dental health status, hygiene and dietary habits of special-care schoolchildren from Poznan (Poland). **Methods:** Oral examination was carried out by a trained dentist in 367 schoolchildren (168 females – 45.8% and 199 males – 54.2%) with mixed and permanent dentition, aged 6–20 years, with intellectual disability (from mild to profound). The Poznan University of Medical Sciences Ethics Committee approved the study and parental consent was obtained. The data were helpful in evaluating the dental caries prevalence, dmfs+DMFs and DMFs indices. Questionnaire survey was performed in 264 parents/caregivers. Closed-ended questions concerned oral hygiene and dietary habits of children. Statistical analysis of the data was performed. **Results:** DMFs was 9.7 and dmfs+DMFs amounted to 10.1. The highest caries prevalence

was in the mildly disabled group with mixed dentition (96.4%) whereas the lowest was in profoundly and severely disabled individuals with permanent dentition (72.4%). In mildly disabled, 74.4% ate snacks between meals. Mostly parents of severely and profoundly disabled patients always helped their children in teeth cleaning (85.5%). **Conclusion:** The study showed common occurrence of dental caries in disabled schoolchildren. In the severely and profoundly disabled people, incorrect dietary habits were limited and parents most often helped their children in toothbrushing. *Poznan University of Medical Sciences grant 501-01-02207319-08716.*

982 Oral Presentation

The parental/ caregiver perspectives of the Oral Health Related Quality of Life of special needs children in relation to orthodontics

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Oral health related quality of life (OHRQoL) is a concept that describes the impact of the oral health or disease on individual's overall QoL. In dentistry, qualitative measurements of OHRQoL are being used more frequently. Children with special needs are at increased risk for dental disease, parental /caregiver perceptions based questionnaires have been shown to be one of the most useful instruments to assess OHRQoL. **Aims:** The baseline study aimed to gain understanding of daily functioning and OHRQoL of pediatric patients with special needs with orthodontic concerns, from the perspective of their parent/caregiver. **Methods:** Thirty special needs paediatric patients with orthodontic concerns were recruited. Motivation interviewing (MI) techniques were incorporated into OHRQoL questionnaire and conducted at one of two offices in London, Ontario. Inductive content analysis was performed on transcripts from the interviews and techniques used to ensure data accuracy. **Results:** Majority of patient's OHRQoL was well at home and outside of their comfort zone. Sensory issues were identified as a common theme that impacted on patient's OHRQoL in multiple ways. Oral health was of high importance to parents, however, the factors of importance differed with respect to the office where the parents were interviewed. **Conclusion:** The study encourages better understanding of OHRQoL of paediatric patients with special needs with orthodontic problems, assisting in decision making for impact and outcomes of their dental treatment.

983 Oral Presentation

A study on the influence of colours in dental practice on the child's behaviour

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Aim: Dental anxiety in children is very common. Very few studies address the influence of colours on the child's behaviour in the dental practice. Two calming colours are green and blue. Green is a calming, natural colour having a

soothing impact on a child as it is an anxiety reducing colour. Blue has the opposite affect of the colour red and decreases feelings of anxiety. Children who experience tantrums or other behavioural problems may appreciate the soothing effects of a blue room. **Methods:** 350 patients ages 4 to 10 were randomly selected from those referred to Child Dental Centre in Muscat for treatment under general anaesthesia (GA) due to fear and anxiety. Modified Dental Anxiety Scale (MDAS) questionnaires were completed by patients and their parents. Children and their parents were divided into two groups. One group was seen in a garden green theme dental operatory and the other, in a water blue theme one. MDAS questionnaires were obtained from parents post-operatively. Behaviour of children was observed on the 1st, 2nd and third visit. **Results:** 82% of parents said their children were anxious coming to the dental clinic in their first interview. Less children showed disruptive behaviour after the first visit in a themed dental operatory. No significant difference was noted between the two themed operatories. 51% of the children were managed without the need of GA. **Conclusion:** The colour of the operatory affects the behaviour of the child. Other factors related to the atmosphere like smell and noise, contributing to anxiety triggering, should be investigated.

984 Oral Presentation

Optimisation of sedation protocol for dental care delivery in mentally disabled patients

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Aims: To compare sedation protocols for dental care delivery in persons with mental disability. **Methods:** Double-blind, cross-over clinical trial including mentally disabled residents (≥ 18 yrs, needing pharmacological support for dental care) at a nursing home. Procedural sedation using oral midazolam (15mg) (A) was compared to established protocols (already used in these patients); lorazepam (B1) or a mix of diazepam, biperideen, dehydrobenzperidol and atropine (B2). The test sequence was determined using randomisation tables. Patient's level of cooperation during dental prophylaxis was scored independently (Van Grunsven scale) by the dentist, dental assistant and patient supervisor. Comfort level and side-effects afterwards were recorded by nursing staff (24h). The study received ethical approval and informed consent was obtained from guardians. **Results:** 15 patients (7 in B1, 8 in B2) were enrolled (7 male, 8 female; 20-59 yrs). When compared to B1, cooperation when using A was better or equal in 5 and worse in 2 cases; compared to B2, cooperation was better or equal in 5 cases and worse in 3 cases. Comfort afterwards was comparable or higher for A than B1/B2 (12 out of 15 cases). **Conclusions:** Preliminary results remain inconclusive but are indicative of increased comfort after the procedure for midazolam. Patient recruitment is ongoing.

985 Poster

Case report of treatment of a 7 year old child with severe maxillary deficiency due to trauma

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Aim: Severe maxillofacial injuries in children involved in car accidents are a common cause of midface fractures and lacerations and may become a life changing event. An interdisciplinary team of maxillofacial and plastic surgeons, paediatric dentist, prosthodontist, speech therapist, physiotherapist and psychologist provide treatment at different stages. **Methods:** A 7 year old boy was referred for specialist paediatric dental care, following surgical management at the University Department of Oral and Maxillofacial Surgery, 6 months after a life threatening car accident. He sustained a horizontal comminuted maxillary down-fracture with bone loss and loss of the majority of upper primary and permanent teeth, resulting in a severe anterior maxillary deficiency. The child presented with loss-denial of speech, difficulty in walking, swallowing and eating; the Post Traumatic Stress Disorder also included complete refusal to cooperate with the dentist. **Results:** Dental treatment plan performed under general anaesthesia was restoration of carious lesions and a partial denture to improve function and psychological support. A new denture was fabricated every year due to progressive resorption of alveolar bone. **Conclusion:** After 2 years of treatment the child regained his speech and gaiety. The multidisciplinary and immediate approach is essential to eliminate the impact of the accident in everyday life of the child.

986 Oral Presentation

Developing a special care service for special needs children. Have we achieved our goals?

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Aims: To investigate if the special care service set up for special care children in 2006 has archived its remit and is now meeting the needs of its patients. **Methods:** Telephone interviews were conducted with forty parents of original patients referred to the service in 2006. **Results:** The study has revealed the service is an overwhelming success. **Conclusion:** Moving forward; the service will be rolled out to new localities. The current format will be adjusted to incorporate improvements suggested from the study.

987 Poster

Multidisciplinary dental treatment of two children with Goldenhar syndromeD Emmanouil, E Birpou, D Lyratzopoulou⁽¹⁾School of Health Sciences, Faculty of Dentistry, University of Athens, Greece.
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Aim: Goldenhar syndrome (GS) is a rare congenital anomaly also known as oculo-auriculo-vertebral syndrome or hemifacial microsomia. GS is associated with unilateral abnormal development of the first and second branchial arches. As a result, facial asymmetry, cleft lip and palate and anomalies of the eye, ear, teeth, vertebrae and heart may develop. **Methods:** Two cases with GS, 4 and 9 year old females were referred to the graduate clinic of Paediatric Dentistry at University of Athens for dental treatment. Extraoral clinical examination revealed facial asymmetry, hypoplasia of the mandible and left ear deformity. The main intraoral clinical findings were poor oral hygiene along with multiple carious lesions. **Results:** Treatment plan included an individualised preventive programme, oral rehabilitation with composite resin restorations, stainless steel crowns, pulpotomies and extractions and early orthodontic treatment to promote growth of the hypoplastic side of the mandible. **Conclusion:** GS is a rare syndrome presented in children with oral manifestations and facial deformities. Paediatric dentists should be a part of the multidisciplinary team required for the management of these children in order to apply individualised preventive programmes during the long duration of orthodontic treatment.

988 Poster

How well do accompanying persons know our special patients? A focus study.F O'Mahony,⁽¹⁾ J Simpson, A Adkins, V Brookes

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Aim: To measure how long accompanying adults had known the patients with whom they were attending and to ascertain their knowledge levels with regard to essential information such as medical history and next of kin. **Methods:** A questionnaire was designed and distributed to accompanying adults attending the Special Care Dentistry Department at Lancashire Teaching Hospitals. Only accompanying adults attending with patients who were assessed as lacking capacity were included in the study. Data were collected between October 2013 and February 2014. A sheet was also completed by the examining dentist to confirm accuracy of results. There was a 100% response rate as all questionnaires were completed during the dental appointment. No accompanying adult refused to participate in the study and 49 forms were returned. **Results:** 18 (37%) patients who lacked capacity were accompanied by an adult who knew them for less than 6 months. Only 22% of accompanying adults who knew a patient for less than 6 months had a full knowledge of a patient's medical history. In 18 (37%) cases, it was deemed necessary to contact a patient's general medical practitioner to clarify details of a patient's medical history. **Conclusion:** Accompanying adults who know patients for

greater than 5 years or whom were related knew more details of a patient's medical history than carers who know patients for less than 6 months.

990 Oral Presentation

Dental care to patients in advanced stages of Alzheimer's disease under intravenous sedation with midazolamAO Filho,¹⁽¹⁾ A M A Veiga,² G S Costa³

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Patients in advanced stages of Alzheimer's disease present many difficulties in maintaining an adequate standard of oral hygiene. Decayed teeth, periodontal disease and fractured teeth are found frequently and are very difficult to treat as some patients have difficulty in cooperation with treatment. **Aim:** To discuss alternative intravenous sedation performed by an anaesthetist. **Methods:** Surgical risk and careful clinical evaluation is carried out by a geriatrician who accompanies the patient and an anaesthesiologist, this may lead to the choice of providing intravenous sedation for treatment. The setting where the treatment is to be carried out will depend on the medical condition, the type and extent of proposed intervention and therefore the risk and the appropriate surgical setting. All factors must be considered in the balance between risks and benefits. **Results:** Of the benzodiazepines, midazolam is currently considered the drug of choice in outpatient dental treatment, for its pharmacokinetic and pharmacodynamic characteristics and has a greater amnesic effect, than other drugs in the same group. In advanced stages of Alzheimer's disease, the intention is to provide palliative care, which aims to avoid pain and discomfort, to promote dignity and quality of life until the end of life, rather than full oral rehabilitation. **Conclusion:** Using sedation it was possible to perform clinical and surgical procedures safely for patients with advanced stages of Alzheimer's disease.

992 Poster

Oral manifestations of alpha-mannosidosis in a 12-year-old boyD Emmanouil, S Flame, L Papadopoulou⁽¹⁾School of Health Sciences, Faculty of Dentistry, University of Athens, Greece.
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Aim: Alpha-mannosidosis is a rare storage disease with distinct biochemical, clinical, histological and ultrastructural features. **Methods:** A 12 year old boy with pain in the upper gingivae was referred to the graduate clinic of Paediatric Dentistry from the graduate Orthodontic clinic at the University of Athens. The medical history included Von Willebrand disease type 1 (mild 38%), G6PD deficiency, retinal detachment (ocular disease), hepatosplenomegaly, mitral valve deficiency and mild intellectual disability. Extraoral clinical examination revealed inflamed gingivae palatally to the upper anterior teeth. The treatment plan included providing an individualised preventive programme, blood analysis, partial biopsy and histological examination. **Results:** Blood tests were normal. The gingival connective tissue was filled by macrophage cells confirming a diagnosis

of Lysosomal storage disease compatible with alpha – mannosidosis. Treatment was non-specific providing a proactive approach, searching for emerging complications and a rigorous oral hygiene programme. During the last 7 months the lesion has remained stable. **Conclusion:** Alpha Manosidosis is a rare disease and differential diagnosis is very important to provide the right management.

993 Oral Presentation

Developing a post-graduate curriculum in Special Care Dentistry – by consensus

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Aim: IADH initiated an international consensus process to develop guidance for the core elements for post-graduate programmes in Special Care Dentistry (SCD). **Methods:** Using methodology that formulated guidance at undergraduate level, a 3-round e-Delphi process continued into a face-to-face consensus meeting to establish the essential knowledge and skills to include in a post-graduate programme. **Results:** 44 experts from 17 countries submitted 548 topics for consideration. These were combined and reduced following agreed criteria by two independent researchers, the resultant 37 items were resubmitted to the expert panel during the online consensus process. There was a zero attrition rate of the Delphi panel during ranking and by round 3, 100% of 44 experts agreed or strongly agreed that 13/37 items should be included in a post-graduate programme, and 95% agreed or strongly agreed on inclusion of 33/37 items. Following statistical analysis presented to those 29 members of the panel able to attend a consensus meeting, it was agreed by all to recommend that those 33 items be retained. **Conclusion:** High level agreement was established from the expert panel as to the core requirements of a post-graduate programme to guide educators in learning outcomes that can be used flexibly to develop modules for certificates, diplomas, masters and doctorate programmes in SCD.

994 Oral Presentation

Orthognathic surgery in osteogenesis imperfecta: challenges and possibilities, a case report

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Aim: To discuss and consider the possibilities of surgical interventions for facial corrective treatment in patients with OI. **Methods:** A female 18 year old patient presented with a diagnosis of Osteogenesis Imperfecta at birth. Facial aspect revealed type III standard facial deformity and deficit in the

maxilla at the anteroPosterior and vertical portions and also mandibular prognathism. Intraoral examination revealed normal mucosa and complete permanent dentition, with dentinogenesis imperfecta. The patient underwent orthodontic treatment followed by orthognathic surgery with advance and lower repositioning of the maxilla and also with mandibular setback. **Results:** The partial results, at 6 month follow up, showed that this group of patients have been able to have corrective treatment of facial deformities with combination of orthodontic treatment and orthognathic surgery, as the bisphosphonates have been discontinued before treatment. **Conclusion:** The case related showed the importance of interrelationship between the various areas of dentistry: special care, orthodontics and maxillofacial surgery, and the importance of medical knowledge in order to provide a successful intervention.

995 Oral Presentation

Traumatic injury treatment in a young transplanted patient in an intensive care unit: a case report

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Aim: To highlight the importance of a dentist in the multidisciplinary team at a intensive care unit for transplanted patients. **Method:** A 16 year old male patient presented with recent successful kidney transplant. In the post operative period, the patient had abdominal trauma and cardio respiratory arrest, having been admitted to ICU with decreased level of consciousness and neurological sequelae. The dentist team was called due to an episode of intraoral bleeding. On examination, major trauma was seen on the tongue, with loss of structure and almost complete rupture of anterior third. The patient developed a chronic and recurring habit of biting part of the tongue and it was also caused by convulsions. To minimise the trauma, two silicone plates were obtained by simple shaping of the arches. A protocol for oral hygiene with 0.12 % chlorhexidine was established and low laser therapy sessions were conducted daily. **Results:** After 14 days the tongue was totally healed, and patient became more stable without need of sedation and anticonvulsant drugs. **Conclusion:** The case shows the importance and role of the dentist in multidisciplinary teams in ICUs for complete care and excellence in service provided, especially in the immunosuppressed transplanted patients. Dental support provides a valuable contribution for critical patient care and improves the quality of life.

996 Poster

The University Extension Project 'Playing and Smiling'

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Aims: 'Playing and Smiling', a University Extension Project (PSP) aims to stimulate or recover disabled children's suitable behaviour to dental treatment and to train dentists to perform these procedures. **Methods:** Children with intellectual deficiency are exposed gradually to symbolic visual and audio stimuli of the dental office in a room set to prepare them psychologically for dental care. Subsequently, they participated in a game that reproduces the context of dental treatment. Proper behaviours were stimulated whilst playing. Parents and / or caregivers also played the game at home. Undergraduate students from the School of Dentistry conducted the PSP and were monitored by the CAOEs' inter and multidisciplinary team. **Results:** The clinical results showed that the strategies used by PSP were enjoyable and effective in increasing the child's understanding, tolerance, confidence and enabling them to better cope with dental treatment. Undergraduate students reported that PSP provided satisfaction and integrated knowledge from different fields. **Conclusion:** Based on clinical experience, it is concluded that the project 'Playing and Smiling' uses effective methodology to stimulate or recover disabled children's suitable behaviour to dental treatment and to train dentists to perform these procedures.

998 Poster

Oral health for people with disabilities

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Aim: To investigate the dependency level of patients with disabilities for oral hygiene procedures. **Methods:** Data available from the Oral Health Promotion Project for Disabled People from Center for Dental Care of Persons with Disabilities, CAOEs, School of Dentistry of Araçatuba, UNESP, Brazil were used from a sample of 1,155 patients with different types of disabilities. At the first appointment the dependence, independence or partial dependence on the brushing and flossing procedures were evaluated. **Results:** 444 (38.45 %) patients were dependent, 693 (60%) independent and 18 (1.55%) presented partially dependent. The motor disorder were 205 (46.2%) dependent and 07 (38.9%) partially dependent. The intellectual disabled patients were more independent 297(43%). **Conclusion:** The results showed that more than half of patients with disabilities have to perform cleaning independently, however, the care centres for disabilities should develop assistive devices, guidelines and

periodic follow-ups for health maintenance. The patients with motor disorder need more care.

999 Poster

Dental approach in a hospitalised patient with Wilson's disease in the Intensive Care Unit: a case report

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Aim: To show the contribution of a dentist in a multidisciplinary team in syndromic patient care. **Methods:** Male, 24 year old patient, leucoderma with Wilson's disease admitted to ICU due to problems in the central nervous system. After 30 days of hospitalisation, the dentist was asked to evaluate oral bleeding in mouth. Examination showed lower lip with two ulcers of 1.5 cm diameter, with a deep necrotic centre, covered with yellow-white pseudomembrane, regular edges, swollen and hardened sides almost connecting. The left labial mucosa had ulcers of various sizes, some coalesced, circumscribed by an erythematous halo and covered in pseudomembrane. Diagnostic hypothesis was factoid injury caused by self-injury to lip ulcers on right side and herpes simplex to the left side. Removal of trauma was planned with installation of silicone bite plates, laser therapy protocol 2J/cm, topical steroid and reinforcement of instruction of oral hygiene. **Results:** After 14 days, significant improvement of the ulcer was noted, with healing and reduction of self-injury to lower lip. **Conclusion:** Clinical improvement and hemodynamic stability suggested that disruption of habit and ulcer treatment helped reduce risk of secondary infection, and overall recovery of the patient. A dental care protocol in intensive care units is relevant to neuropathic patients, to improve quality of life, prevention and treatment of inflammatory infectious and painful processes.

1000 Poster

Meckel Gruber Syndrome: Interrelation between medicine and dentistry for improvement in quality of life in syndromic patients

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Aim: To demonstrate the contribution of dentistry in multidisciplinary treatment of syndromic patients. **Methods:** Case report of a 22 month old male child admitted to ICU with leucoderma, parched lips with extensive crust and significant ulcer in the left lingual edge, 2 cm diameter covered with pseudomembrane that was swollen and hard on palpation and over 6 months of irregular margins, according to the mother. Patient had Meckel - Gruber syndrome, with frequent episodes of convulsions. The diagnosis was traumatic ulcer probably caused by teeth 75 and 65 which were recently erupted with sharp cusps. Dental treatment was removal of causative factor then treatment of ulcer. **Results:** The child was monitored daily and showed significant improvement in oral clinical picture. According to medical staff and mother,

the patient became calmer and happier, with less frequent medical interventions. **Conclusion:** Meckel-Gruber syndrome is a rare and lethal condition, with a few months of survival and poor quality of life. The longest survival reported in the literature by Ramadan (1992) was 28 months old. It is characterised by occipital encephalocele, postaxial polydactyly and renal cystic dysplasia and also fibrotic liver injury, bile ductular proliferation, cleft lip and palate and microcephaly. Many newborns die within hours or days, and incidence of stillbirth is high. The case presented describes approaches for greater survival and the importance of a multidisciplinary approach in the treatment of syndromic patients seeking improved quality of life.

1004 Poster

Development and pilot testing of a mobile health solution for main oral manifestations and oral health care in patients with special needs

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Aims: To present a new resource for quick review about the main oral manifestations related to special needs patients and the required care for oral health for dental students and professionals. **Methods:** The pilot project was developed to verify the validity of the proposal, and was created by the Teledentistry Department of the Dental School – FOU SP. There were 5 dentists and 2 IT professionals involved in the project. The prototype has been structured according to the following stages: content development, formatting and lay out, software development and choice, applicative store indexing (iOS, Android and Windows Phone) and applicability evaluation. **Results:** The project has been divided in two parts: website construction (information storing), and the transfer of those contents for the mobile applicative. The contents will cover the main oral manifestations and the required care associated with systemic disorders (kidney failure, diabetes, cardiopathy, infectious diseases, transplants and oncology patients), mental or neurological disorders, syndromes and physical disabilities. **Conclusion:** The investigation about the use of information/communication technology for dental students /professionals has been necessary in order to improve the quality of information / communication and optimise the use of mobile technology in dentistry.

1005 Poster

Knowledge and perception of oral health in a population of emotionally challenged adolescents

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Aim: To determine the knowledge and perception of oral health in a selected population of emotionally challenged adolescents in Lagos, Nigeria. **Methods:** The cross sectional

study was carried out in four correctional institutions for boys and girls. A questionnaire was used to obtain information about oral health practices, previous dental visits and perception of their oral health needs. Oral examination was also carried out on each participant in the study after approval from the school authorities and the Lagos State Ministry for Youth and Social Development. **Results:** There were 200 subjects, 43 (21.5%) females and 157 (78.5%) males. Over 40% had received oral health education, mostly from teachers and parents, followed by doctor/dentist. Only 41 (20.5%) had been to the dentist. More than 60% did not know the cause of bleeding gums and tooth decay. Mean OHI-S was 2.1 in the females and 1.98 in the males, while DMFT was 0.09 in females and 0.33 in males. More males (17.8%) than females had experienced injury to their anterior teeth all of which were untreated. However, more than 80% claimed they did not have problems with their teeth. **Conclusion:** The subjects who participated in this study did not have adequate knowledge of their oral health in spite of many oral health problems. It is recommended that regular dental visits and constant motivation should be provided for this group of children.

1006 Oral Presentation

A suitable protocol for dental care visits in uncooperative adult patients

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Aim: To propose suitable protocol for dental care in uncooperative and anxious adult patients with special needs in a dental school setting. **Methods:** This study involved 18 adults with special needs who received full range of dental treatment in a special care unit in the Advanced General Dentistry program at Nuevo Leon University, Mexico. A range of behavioural management techniques such as systematic desensitisation (SD) along with physical restriction (FR) and oral midazolam conscious sedation (OMCS) were available. Faculty ethics committee approved the study and each parents/caregiver gave informed written consent. **Results:** In a total of 55 visits. SD was effective alone for 23(41.8%) of visits and was combined with other techniques for the remaining 32 (58.2%) visits; 21/32 (65.6%) of those visits included the use of FR to provide care safely and 22/32 (68.7%) also included the use of OMCS with 14/22 (63.6%). In 4/22 visits (18.1%) dental treatment was aborted due to ineffective sedative effect and the patients were re-appointed accordingly. **Conclusions:** Behavioural management techniques are effective in special care adult patients but may need to be supplemented with other adjuncts such as physical restraint and conscious sedation.

1007 Oral Presentation

Fifteen-year follow up and dental treatments of a patient with Angelman syndrome: A case reportM L Chiang,⁽¹⁾ H L Su, M Y Chou

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Aims: To present a case with 15 years of dental follow up and treatments of a patient with Angelman Syndrome. **Methods:** Angelman syndrome (AS) is a rare neuro-genetic disorder that occurs in one in 15,000 live births. The main clinical characteristics of this syndrome are delayed neuropsychological development, severe intellectual disability, speech impairment, movement or balance disorder, and a behavioural uniqueness. The syndrome has oral manifestations such as tongue thrusting, sucking/swallowing disorder, mandibular prognathism, a wide mouth, and bruxism. Individuals with Angelman syndrome require life-long care. **Results:** This case report describes a 27-year-old female with Angelman Syndrome. Since she has been 12 years-old three times of comprehensive dental treatment took place under general anaesthesia. **Conclusions:** Due to the difficulty in oral care for patients with Angelman syndrome, a periodic 2 months recall of oral care should be considered.

1009 Poster

Evaluation of special needs curriculum: paediatric dental residents' knowledge, satisfactionV Bhoopathi, R Ocanto⁽¹⁾

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Aims: The purpose of this study was to determine 1) the effectiveness of the didactic component of the curriculum on paediatric residents' knowledge on treating and managing children with Autism Spectrum Disorders (ASD), and 2) residents' opinions and level of satisfaction with the curriculum's didactic and clinical components. **Methods:** De-identified data is being collected from 2011. The didactic curriculum was organised into series of lectures focusing on major domains, characteristics, needs and dental office behaviour guidance of ASD children. To achieve objective 1, pre and post-tests were administered right after lectures. To achieve objective 2, a 13-item impact survey was administered just before graduation to assess curriculum satisfaction. Paired t-tests were used to measure the mean change in class knowledge. Significance level was $p < 0.05$. To achieve objective 2, quantitative and qualitative analysis were performed. **Results:** A significant difference in mean knowledge and percent change in knowledge ($p < 0.05$) during the post-tests for each domain was observed among residents. 100% strongly agreed/agreed that the didactic curriculum increased their knowledge on treating and managing ASD children and that clinical exposure increased their confidence in treating these children. **Conclusions:** The didactic and clinical curricula enhanced paediatric dental resident competencies in meeting the dental care needs of ASD children.

1010 Oral Presentation

Oral health of children with special health care needs: multidisciplinary working collaborationR A Ocanto⁽¹⁾

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Aims: NSU-CDM, Joe DiMaggio Children's Hospital (JDM) and the Mailman Segal Centre (MSC) established a partnership to develop and implement a collaborative oral health education and training programme for children with Special Health Care Needs (SHCN). **Methods:** The programme has three major components: didactic, clinical training, and increased access to care. Didactic education is provided to paediatric dental residents on oral diseases and conditions associated with paediatric SHCN. An oral health curriculum was developed with the participation of medical providers at the hospital, the MSC and members of the paediatric dentistry department. On-site training at two different dental clinics is supervised by faculty members. Residents perform preventive and comprehensive dental care, and a more effective referral and OR scheduling have been established with the hospital for those children requiring treatment under general anaesthesia. **Results:** More than 4,000 children have been treated in these centres since operations started in January 2009. Due to the various medical conditions, residents are now able to treat these children in collaboration with other health care providers. **Conclusions:** We firmly believe the success of the project is largely due to ongoing collaborations. Having different groups working as equal partners has enabled us to implement didactic and clinical programs that benefits underserved children with the least access to oral care.

1013 Oral Presentation

The Ambonese Banana Stem Sap Gel Effectivity in Rat Gingival Wound Healing.Masytah Dyah Asti,¹⁽¹⁾ Nur Permatasari² Diah³

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Aims: To determine the effect of Ambonese banana stem sap gel in the gingival wound healing, considering thickness of rat gingival epithelium post gingivectomy. **Methods:** In this experiment with randomised groups post test only design, 32 male rats were divided into one control and three treatment groups. Gingivectomy was made at the labial gingiva of the mandible with 1 x 0.5 cm wide and half a round diamond bur in depth. The wounds in the treatment groups were given banana stem sap gel with each dose serially 50%, 75% and 100% and in the control group no material was given. Four rats from each group were sacrificed on the 3rd and 7th day after being wounded. The wounded tissues were processed for histological preparations and stained with Hematoxylin Eosin. The thickness of the gingival epithelial tissues was measured by a digital ocular micrometer and the data were analysed using one-way Anova test. The Brawijaya University Ethics Committee approved this research.

Result: There were significant differences between the treatment and control groups on 3rd and 7th day after being wounded. The most significant dosage is 75%. **Conclusion:** The addition of Ambonese banana stem sap gel can accelerate the increase in the thickness of the epithelial layer in the process of rat gingival wound healing on the 3rd and 7th day post gingivectomy.

1014 Oral Presentation

What type of dental sedation should I offer this special needs patient or do we need an anaesthesiology team for this case?

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Aims: To clarify which behaviour management strategies should be applied to individual special needs patients, including techniques employed by dentists such as: verbal coaching, nitrous oxide, oral and intravenous sedation or techniques performed by anesthesiologists such as: general anaesthesia. **Methods:** This presentation will give an overview of current research, expert opinion and legal ramifications of minimal, moderate and deep sedation as opposed to general anesthesia in patients with disabilities. Dentists will receive guidance in deciding which patients would benefit from the various sedation techniques routinely administered by the dental team and which patients require an additional anesthesiologist to secure the best possible outcome. Case studies of patients with a variety of underlying disorders will offer practical examples on how to integrate the presented information into routine clinical care. **Conclusion:** Dentists perform a wide range of sedation techniques for behaviour management. Matching the right patient to the right sedation technique is critical in achieving optimal results for dental procedures and equally guaranteeing the highest level of patient safety in this important population.

1015 Oral Presentation

The experience of twin block in Iraq

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Aims: To explore three different clinically represented class II malocclusion cases treated with twin block and/or fixed appliances (case report). **Methods:** Three cases (two females and one male) with class II division one malocclusion at the appropriate age were treated using this appliance and the time elapsed of the treatment of them were different depending on the cooperation of the patient. **Results:** Successful results were obtained with the use of twin block appliance for the three cases with class II division one malocclusion, one of them was treated solely by twin block appliance while the others were treated in a combination with pre adjusted fixed appliance. **Conclusion:** Twin block appliance proved to be a real functional appliance since it allows the patient to perform most of the oral functions

during usage, furthermore it enhances the cooperation of the patient when compared with others like Monoblock or Frankle appliance.

1016 Poster

Preliminary evaluation of dental student's perception of the degree of difficulty of the ICF in the Special Care Dentistry

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Aim: To explore the degree of difficulty of the International Classification of Functioning, Disability and Health (ICF) in Special Care Dentistry perceived by dental students and dentists as a pedagogical step in this field. **Methods:** A convenience sample of 20 undergraduate students and 12 postgraduate students from the Department of Special Care of Dentistry at the Universidade Paulista (São Paulo - Brazil) was invited to participate. To evaluate the participant's perception of the degree of difficulty and usability related to the ICF, a questionnaire was created with the main topics of learning in this theme. Both groups participated in 8-hour theoretical and practical activities (lectures and laboratory) about the classification using the ICF, before and after this training the questionnaire was applied. A second step was practice, previously one gold examiner selected 4 cases to be assessed with ICF in the Dental Clinic of Department of Special Care Dentistry – Universidade Paulista, and the participants evaluated one of this case with the ICF and after was applied another questionnaire. **Conclusion:** The great relevance of this finding in this study will be to know what impact the ICF can provide about the various stages of learning which can be introduced.

1017

Periodontal evaluation in patients with kidney transplants under immunosuppressive therapy

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Aim: To identify the presence of periodontal disease (PD) associated with immunosuppressive therapy (IT) in transplant patients. **Methods:** A cross-sectional study was performed among 70 renal transplant patients undergoing dental treatment in the Universidade Paulista. Among these, 48 kidney transplant patients under regular use of IT were included in the study. Patients were divided into 4 groups: G1, 12 patients treated with cyclosporine; G2, 12 with azathioprine; G3, 12 with tacrolimus; and G4, 12 patients controlled with Myfortic, Tacrolimus and Prednisone. Questionnaires (demographic, pharmacological, socioeconomic and systemic diseases (DS) domains) were filled. Then, the evaluation of PD comprising plaque index, gingival index, calculus index and probing depth was performed. **Results:** The proportions of gingival hyperplasia

found were: G1, 47%; G2, 8%; G3, 15% and G4 5%. The interdental papillae and gingival margins in the region of the anterior teeth were the worst affected areas, with a significant correlation between the degree of severity and sanitizing. The main DS found were: hypertension 67%, 39% anemia and diabetes 27.9%. **Conclusion:** Although the results show higher prevalence with Cyclosporine, measures must be taken to protect the periodontal health of patients under use of IT.

1018 Oral Presentation

What should dental services for people with disabilities be like?

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Aim: This study generated prioritised goals for oral health services for people with disabilities in Ireland. **Methods:** This study used a modified three round e-Delphi design, involving dental service professionals and people with disabilities or their representatives. Three rounds were completed online using SurveyMonkey™. The initial round asked: "List what you think dental services for people with disabilities in Ireland should be like." Items for subsequent rounds were generated from responses to Round 1. Rounds two and three used 5 point Likert scales to rank these items by priority: "Rank statements according to the level of priority that you think each should hold for dental services for people with disabilities, using the following 5 point scale". The options included 1.No Priority; 2.Low Priority; 3.Not Sure; 4.High Priority and 5.Top Priority. The level of agreement (High or Top Priority) for consensus was set at 80% and stability between rounds was measured using Wilcoxin's Ranked Sum. A consensus meeting concluded the process. **Results:** Sixty one panelists started and 48 completed the survey, producing a final list of 83 items grouped into 17 themes. Levels of consensus were high on most items. **Conclusion:** This process produced agreement on a list of prioritized goals for dental services for people with disabilities in Ireland and creates a foundation for building evidence based service models.

1019 Oral Presentation

Dentinogenesis imperfecta and other oral findings in 72 patients with osteogenesis imperfecta

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Aims: To describe the manifestation of dentinogenesis imperfecta (DI) in patients with various types of osteogenesis imperfecta (OI), a disease of the connective tissue causing marked bone fragility. **Methods:** A total of 72 patients with a medically confirmed diagnosis of OI were recruited from Aarhus University Hospital, Department of Medical Endocrinology, Denmark. A clinical examination and a full-

mouth periapical survey with digital intraoral radiographs using GX 1000 dental Xray®, as well as a digital panoramic radiograph using Planmeca Promax® were performed. Patients had clinical photos taken. In the evaluation of the dental hard tissues, signs of obliteration of pulp chambers, reduced length of roots, presence of pulp stones, taurodontism, and cervical constriction were assessed. **Results:** Among a total of 72 patients with OI, 20 (27.8 %) had DI. Obliteration and cervical constriction were frequently found among DI patients and almost absent in the non-DI group of OI patients (90.0 % vs. 5.7 % and 60 % vs. 1.9 %), whereas findings as short roots, pulp stones and taurodontism were relatively rare in both groups (20.0 %, 5.0%, 0.0% vs. 3.8% 23.5%, 7.8 %). **Conclusion:** The prevalence of DI was 27.8 % and lower than in many previous studies. Signs of obliteration were the most pathognomonic finding for DI.

1020 Poster

Oral health of patients with Mucopolysaccharidosis in Amazonas State

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Aims: To evaluate the stomatognathic system and oral conditions in patients with mucopolysaccharidosis attending at one of the three centres in Amazonas State. **Methods:** Cross-sectional and observational study of patients with mucopolysaccharidosis attending Fundação Hospital Adriano Jorge's ambulatory in Manaus, Amazonas. The inclusion criteria were the existence of a biochemical or molecular diagnosis of any type of MPS and the agreement to participate in the study by signing the free and informed consent term. 9 patients were evaluated with different types of MPS, through clinical history and dental examination. **Results:** Evaluated patients: with MPS I (33,33%), MPS II (22,22%) and MPS VI (44,44%). Regarding oral conditions: 33.3% presented caries; 33.3% presented other oral problems (agenesis, fracture, exfoliation); 22.2% presented periodontal disease and 11.1% did not present with any problems. Changes in at least one item from each of the stomatognathic system structures of the evaluated patients were observed. The most frequently compromised structures were, respectively, dental arch, tongue and the lips. **Conclusions:** Changes in dental conditions and in the stomatognathic system are prevalent in individuals with mucopolysaccharidosis, even under enzyme replacement therapy. Dentists should be part of the multidisciplinary team caring for better quality of life of these patients.

1021 Poster

Study on change of the stress degree in oral careE Arikawa,^{1(*)} N Shoji,² M Endoh,³ A Kubota,³ K Hidaka,¹ Y Kakinoki³

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Objectives: Many studies have shown that the oral environment of elderly persons requiring long-term care is closely related to general state of health and their QOL improvement. On the other hand, almost all of them cannot keep their oral health condition themselves. As poor oral environment is associated with the onset of pneumonia, systemic oral care is needed for dependent elderly patients. Therefore, this study aimed to investigate whether the dependent elderly patient with tube feeding feel stresses of oral care. **Methods:** Nineteen elderly patients with tube feeding at nursing home participated. A dental hygienist (DH) and a student of DH carried out oral care on different dates. The study was examined using salivary amylase activity (SAA), facial express analysis, questionnaire survey and oral findings **Results:** SAA value after oral care was significantly higher ($p < 0.02$) than before. SAA value was not related with facial expression and oral findings. In the questionnaire, all of 6 people answered “pleasant” regardless of the SAA values. **Conclusions:** The results of this study suggest that an appropriate stimulation with oral care is good stress for the patients with less stimulation to their oral cavity always.

1023 Oral Presentation

Oral health and behavior management in children with mental disordersK Schmied,^{1(*)} R Heinrich-Weltzien²

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Aim: Comparison of oral health between children with mental disorders (MD) and mental healthy (MH) peers and the development of a communication evaluation procedure based on video-recordings of the dentist-patient-interaction to figure out efficient behavior management techniques in dental treatment of children with MD. **Methods:** Oral health of 57 children with MD (ICD-10 F90-F98) and MH aged 13.3 years was assessed. The video-based communication analysis was performed among 46 children with MD and 23 MH children. **Results:** Children with MD had a significantly higher prevalence of caries, dental trauma and molar-incisor-hypomineralisation (MIH) and a significantly lower care index compared to MH children. There was no difference in oral hygiene but the status of gingival inflammation was significantly poorer in children with MD. The video-based communication analysis showed, that the communicative effort in children with MD regarding time, frequency of spoken words and interacts as well as the use of different techniques of behavior guidance was significantly larger than in MH children. **Conclusions:** Children with MD should be

characterised as dental risk group who require specifically interdisciplinary care of paediatric dentists with special competences in behaviour guidance.

1025 Oral Presentation

Correlation between pH and Buffer of Saliva with DMF-T Index of people with intellectual disabilitiesA I Ahmad Faris,^(*) W Retno, R Fatkhur, L Z Zakiyah

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Aim: To determine the correlation between salivary pH and buffer with DMF-T index of people with intellectual disabilities. **Methods:** The study was performed with a cross-sectional method including 11 persons with intellectual disabilities. The examination of DMF-T index included the calculation and summation of tooth decay, missing and filled teeth. The measurement of pH was done by using a tool called pH meter. The measurement of salivary buffer was carried out by measuring concentration of bicarbonate using buffer test strips. **Results:** The DMF-T index showed a value of 5.6 in the high category. The value of salivary buffer was 7 in the low category. Saliva pH was normal with a value of 7.4. The analysis showed no significant correlation between salivary pH and buffer with DMF-T index. **Conclusions:** This study did not show any correlation between salivary pH and buffer with DMF-T index for a group of persons with intellectual disabilities. The results showed that other causes could be interacting in the correlation between salivary pH and buffer and DMF-T. There are several factors that could be affected the results: The cognitive abilities, disorders of movement, different abnormalities in growth or development, mineralisation of the teeth, parent's factors or dental care.

1027 Oral Presentation

Dental elder abuse and neglect: building a dental advance care planN Archer,¹, L Watts²

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Aims: To investigate dental elder abuse and neglect and develop tools to create dental advance care plans. **Methods:** The Dental Elder Abuse Response (D.E.A.R) Project was a joint pilot project of Archer Dental and the Canadian Centre for Elder Law. Research methodology included doctrinal research and expert consultation on linkages amongst geriatric oral health, advance care planning, substitute decision-making and elder abuse and neglect. A workshop and supporting tools were developed addressing these issues were then piloted. Workshop survey participants included older adults, family members, caregivers and others who work with older adults. **Results:** The study concluded that overwhelmingly dentists were the preferred contact person for dental advance care planning issues, that advance care planning was rare in the dental field, and that older adults want to do advance care planning to prevent elder abuse and neglect. **Conclusions:** Older adults, dentists, family

members, caregivers and others overwhelmingly believe that dental elder abuse and neglect is a serious issue and that making advance dental care plans are an important part of the prevention or response to elder abuse and neglect. This pilot project has prompted further research into dental advance care planning. There is significant interest in scaling this project to a national and international level.

Acknowledgements: *Institute for Life Course and Aging, University of Toronto.*

1028 Poster

The control of dental fear and anxiety in a deaf child – case report

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Objectives: The aim of this case report is to show a pleasurable way to help deaf children face the challenges of dental treatment by the use of sign language and psychological strategies to control dental fear and anxiety behaviours. **Methodology:** A deaf child was exposed gradually to symbolic visual stimuli of the dental office (pictures and toys) in a room preparing the young patient for dental treatment. Sign language was also used. Subsequently, they participated in a play “make-believe” that reproduced the context of dental treatment. Proper behaviours were stimulated during playing. **Results:** The clinical results showed that the use of sign language and psychological strategies were pleasurable and appropriate for the understanding and acceptance of the deaf child, which could make it able to cope to dental treatment with tranquility. **Conclusion:** Based on clinical experience, it is concluded that the use of sign language and psychological strategies can be effective to control dental fear and anxiety behaviors in deaf children.

1030 Oral Presentation

Making sense of consensus: a focus group with people with disabilities asking what should dental services be like?

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Aims: To include a group of people with cognitive and communication disabilities in a consensus process to agree goals for dental services for people with disabilities in Ireland. **Methods:** A single focus group with six people with communication and cognitive impairments was held using specifically designed accessible picture based communication aides adapted from the results of a Delphi Panel online consensus process, which prioritised goals for dental services for people with disabilities. This list was reviewed and re-ordered by the group. The group generated a list of priorities for dental services based on their expert view. The session was video recorded and transcribed. Analysis was based on prioritised lists generate and thematic analysis. **Results:** The group generated a list of priorities for dental service planners

under four headings: Access; Treatment; Quality of Care; Information and Cost. **Conclusions:** The inclusion of service users with communication and cognitive impairments presents a barrier to inclusive service oral health service design. This research project shows that this group can easily be included in this process and hold views not represented by those who advocate on their behalf.

1031 Poster

Phenotype, genotype and dental management of Kohlschütter-Tönz syndrome: a case series study

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Aims: To describe the phenotype and the dental management of patients affected by Kohlschütter-Tönz syndrome (KTSZ; MIM 22675), an extremely rare autosomal recessive disorder characterised by intellectual impairment, spasticity, epilepsy, and amelogenesis imperfecta (AI). The condition is caused by mutations in the ROGDI gene.

Methods: Four cases of KTSZ from three families, were investigated; their medical and dental data were registered in D[4] Phenodent database. **Results:** Seizures started early in childhood, mental retardation, and severe AI were shared by all patients, with other clinical features variably present. Two girls displayed autistic behaviour. Patient 1 was composite heterozygous with 2 different ROGDI mutations, patient 2 had an homozygous mutation c.117 + 1G>T of ROGDI; molecular diagnosis is in process for the 2 other patients. In all cases, dental treatment was performed under sedation and under general anaesthesia (GA) for comprehensive rehabilitation. Improving aesthetics, occlusion and restoring function were achieved with a fixed prosthetic rehabilitation under GA for the young adult patient 1. **Conclusions:** Early diagnosis and multidisciplinary approach are critical for KTSZ patients.

1032 Poster

Desmoplastic ameloblastoma

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Desmoplastic ameloblastoma (DA) is a rare histologic variety of ameloblastoma with clinical, radiological and histologic specificity. A characteristic feature is an almost equal distribution in location between the maxilla and mandible. DA may occur in all age groups with more cases in the 4th to 5th decade and is seen equally in males and females. A 50 year old female presented to her dentist with a right mandibular swelling which had been evolving for six months. The patient had no particular medical history. The examination showed a right facial asymmetry without nodes. The intraoral examination revealed a swelling which was firm

and painless at the palpation. The panoramic radiograph showed an undefined multilocular lesion with a honeycomb appearance. The canine and premolar which were in front of the lesion were displaced. Axial CT and multiplaner reconstruction showed a well demarcated osteolytic image with radiopaque partitions blowing the outercortical. Treatment consisted of curettage of the lesion. The pathological examination revealed the diagnosis desmoplastic ameloblastoma. The three month control showed a bone during healing. DA is a locally aggressive tumor with rapid growth and recurrences. It requires early care and regular monitoring. The differential diagnosis includes myxoma, ossifying fibroma, fibrous dysplasia and chondrosarcoma.

1033 Poster

Dentistry for palliative care patients – Brazilian experience

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Aim: Four dental professionals in four different institutions of palliative care described their services by answering the following questions: type of institution, main oral diseases found in their patients, proposed treatments and oral care protocols. The institutions were: a Long Term Care Facility (LTCF), home care, an Intensive Care Unit and a General University Hospital. In the LTCF the patients have the sequelae of neurological diseases and most of them have an inability to perform daily living activities including oral hygiene. The major clinical signs were self-injury lesions, xerostomia, missing teeth, periodontal disease, ill-fitting dentures and caries. The experience of palliative care in home care for the frail elderly is related to situations with chronic diseases that restrict them in bed. The purpose of this service is to maintain their ability to eat. The dental care to patients admitted to the intensive care unit in palliative care, are targeted pain relief and maintenance of oral hygiene. In the general hospital, patients with head and neck cancer have severe restrictions of oral functions. The symptoms include oral and extraoral lesions, dental and periodontal diseases, ulcers, opportunistic infections and fungating wounds, especially in these patients where there are multiple sources of pain. In all institutions the treatment is based on the removal of infection foci in the oral cavity, pain relief, oral mucosal hydration, protection from injury of self-injury and the institution of a protocol of daily oral hygiene for patients incapable of such activity.

1034 Poster

Dental treatment in renal transplant patients at a private university

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Aims: To outline the profile of kidney transplanted patients and to evaluate the presence of periodontal disease.

Methods: Thirty-two renal transplant patients evaluated in

Center of Studies and Treatment for Patients with Special Needs of Paulista University from August 2013 to April 2014 were divided into two groups: G1, 22 (68.8 %) renal transplanted patients without periodontal disease; G2, 10 (31.2 %) renal transplanted patients with periodontal disease (probing depth higher than 3 mm). **Results:** G1 was composed of 68.2 % of male patients with average age of 44.2 years, while G2 consisted of 70 % of women patients, average age of 41.8 years. The mean time elapsed since transplantation amounted to 76.8 months (G1) and 64.8 months (G2). The most commonly used immunosuppressive therapy in both groups was azathioprine, tacrolimus, and prednisone (G1- 36.9%; G2- 30%), followed by addition of mycophenolate sodium, tacrolimus, prednisone (G1 - 31.5%; G2 - 30%). The most prevalent disease was hypertension in both groups (G1-77, 2%; G2-80%) followed by anaemia (G1-36,4%; G2-40%) and diabetes (G1-27,2 %; G2 -30%). The G2 patients had a higher number of periodontal pockets, and those patients were also suffering from metabolic diseases (diabetes, hypothyroidism) and infectious diseases (hepatitis C). **Conclusion:** There were different kind of patients, there is a relationship between periodontal and systemic disease.

1035 Poster

Epidemiological diagnosis of oral conditions and prevention methods of renal transplanted patients

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The oral cavity can host local and systemic diseases in renal transplanted patients under the influence of immunosuppressive therapy. **Aims:** To evaluate oral conditions of renal transplanted patients and methods adopted by them to control oral diseases. **Methods:** Twenty-four patients evaluated at the Center of Studies and Treatment of Patients with Special Needs at Paulista University, were asked about oral hygiene methods applied, data were collected and calculated such as plaque index, bleeding index, salivary flow rate and buffering capacity. **Results:** No opportunistic injury occurred in these patients, bad breath was reported by 75% of patients, 58.5 % reported having bleeding gums, and 66.6 % reported pain in the gums. Most patients (83.3 %) had received oral hygiene guidelines and used a soft- bristle brush, other resources were not used for cleaning, brushing frequency was twice a day (58.3 %). The average for the plaque index and bleeding was 41.7 % and 23.5 %, respectively. The salivary flow rate and buffering capacity were normal in these patients. **Conclusion:** Despite renal transplant patients being susceptible to opportunistic infections, the study showed that they are oriented about hygiene, but there is a need to conduct educational programmes to achieve change and awareness of healthy oral habits to maintain satisfactory oral health.

1036 Poster

Periodontal disease in HIV genotypic HAART resistanceE M Giovani, G Araujo Noro-Filho,
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Periodontal disease is directly related to the presence of biofilm and associated with the host immune response. Moreover, highly active antiretroviral therapy (HAART) is the only treatment for HIV patients for improving the immune system. **Aims:** To evaluate periodontal disease in HIV patients with or without failing HAART. **Methods:** Eighteen HIV patients with chronic periodontitis were divided in HIV without failing HAART (control group n=9) and in the test group (HIV genotypic HAART resistance n=9). We evaluated the clinical periodontal parameters such as full-mouth plaque score (FMPS), full-mouth bleeding score (FMBS), probing pocket depth (PPD), gingival recession (REC), clinical attachment level (CAL) at baseline. Even though systemic parameters (CD4 cell counts and HIV viral load). **Results:** No difference in any of the investigated periodontal parameters was observed at baseline between the two groups. In the test group PPD was 3.34 ± 0.77 mm compared with the control group was 2.88 ± 0.45 mm and CAL in the test group was 3.74 ± 0.82 mm when compared with control group 3.29 ± 0.73 mm ($p > 0.05$). Furthermore, control group presented significantly higher CD4 cells counts (643.56 ± 199.43) compared to the test group (392.33 ± 274.20) ($p < 0.05$). **Conclusions:** No difference in periodontal markers was observed, but HIV patients with failing HAART present decreasing numbers of CD4 cell counts and photodynamic therapy in periodontal disease could prevent infection. *Supported by FAPESP – Fundação de Amparo à Pesquisa.*

1038 Oral Presentation

Caries status of patients with intellectual disabilities in MexicoE Luengas-Quintero,^{1(C)} I Hernández-Monroy,²
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Aims: To measure the severity, prevalence and risk factors for dental caries in people with disabilities. **Materials and Methods:** A cross-sectional survey was conducted in 113 athletes selected by convenience in three regions of Mexico during Special Olympics events. Informed consent was obtained. The participants were divided in 3 groups: 6 to 10 (A), 11 to 19 (B) and ≥ 20 years old (C). The DMFT was determined by two calibrated examiners (intraexaminer Kappa > 0.83 , interexaminer Kappa > 0.96) following the WHO caries criteria. Stimulated saliva was collected according to the manufacturer's instructions. Saliva was cultivated and bacteria counts were performed. 10^5 CFU's per ml saliva were regarded as indicator for high caries risk. **Results:** Mean DMFT was 0.67 in A (n=43), 1.49 in B (n=43) and 4.04 in C (n=27). The proportion of persons with high salivary bacteria counts was 51.4% in A, 50.0% in B and

71.4% in C. **Conclusions:** Although persons with intellectual disabilities are vulnerable to oral diseases, this study shows that caries severity is low in children or adolescents and moderate in adults when applying the WHO caries criteria.

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1039 Poster

Evaluation of the activity of the dental unit at the department of cardiology CHU Ibn Rochd Casablanca between 2009 and 2013S Haitami,^(C) H Oulammou, L Benamour, L Kissi,
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In Morocco, in 2008, the Ministry of Health estimated 23% of the attributable deaths to be caused by diseases of the circulatory system. These estimations place the kingdom as a country at high cardiovascular risk. The creation of a dental unit within the cardiology department of the University hospital centre Ibn Rochd of Casablanca allowed shortening of delays in treatment, to improve the communication with the cardiologists and to adopt ambulatory protocols of preparation and treatment that allowed more free beds for patients requiring a hospitalisation for reasons other than dental treatment by adopting ambulatory protocols of preparation and treatment. **Aims:** To estimate the correspondence of the management of the patients of the dental unit of cardiology of Casablanca with regard to repository North American and European through a retrospective cross sectional study from September 2009 till February 2013 and to define the met complications. **Results:** The total of the patients having consulted in the dental unit of the cardiology department amounted to 554: 55.2% of the patients had a prescription of anti-vitamin K, which was maintained in 57.2% (according to the last recommendations of the SFCO). The results of our study showed a very weak incidence of the complications estimated to be less than 10% and 6% of them were bleedings. **Conclusion:** A decline of hospitalisations caused by dental problems was observed and a rate of complications comparable to the literature was found.

1040 Poster

Evaluation of dental caries, oral hygiene and drooling status of cerebral-palsied childrenV Tzifa,^{1(C)} M H Somroo,¹ I O Kalyoncu,¹
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Aims: To evaluate the presence of drooling, dental caries and oral hygiene in cerebral-palsy individuals and to define or quantify the treatment needs of these patients in comparison to the general population. **Methods:** The study included the examination of an equal number of 52 non-disabled patients and 52 cerebral palsy patients (study group) all aged from 4

to 20 years old. An examination of the individual's teeth was performed in both groups, including the Oral Hygiene Index (OHI-S) and DMFT-dmft index. Drooling severity and drooling frequency was assessed by a questionnaire-based scoring system. **Results:** The CP group had statistically significant higher caries prevalence and oral hygiene scores compared to the non-disabled group. Moreover the caries prevalence and the oral hygiene scores seemed to be affected by the type of the nutrition of the CP group in a statistically significant way. Drooling was prevalent in 23% of the CP group. There was not any significant correlation between the caries, the oral hygiene and the drooling. Also the type of CP did not affect the outcome for drooling; however the presence of seizures increased its risk. **Conclusions:** CP individuals are at more risk for caries and drooling than the general population. Therefore, they have increased need for prevention and dental treatment and the importance of conducting a multidisciplinary team for the cerebral palsy individuals is essential for their quality of life.

1041 Oral Presentation

What are the fears, thoughts, and barriers to oral health care for children with disabilities in Ireland? A parents' perspective

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Aims: To explore the parents' perceived needs and experiences in providing oral care for the child with special needs and to use this information to design a health promotion package. **Methods:** A purposive sample of parents of 0-6 year old children with disabilities assigned to two Early Intervention Centres in Ireland took part in the focus group discussions. Three focus group discussions were recorded, transcribed and analysed. **Results:** The dental professional is the only healthcare worker not involved in this age group of patients. Despite a range of healthcare workers from dieticians to speech therapists to public health nurses, no healthcare worker has ever discussed the oral health of their child except dental emergencies. Parents admit that oral health is important to them but due to more immediate commitments of nutrition, communication, and mobility oral health is placed down the list of priorities. Parents are concerned that they have no point of contact regarding dental queries. Most parents felt that their child would need specialist care in the future. **Conclusions:** This study highlights the need for dental collaboration with the healthcare team starting with an Early Intervention team that would then be carried through to the adult life. Introducing this team early would reduce parents' fears and avoid neglect of oral health issues. This should reduce the unnecessary pressures on the specialist dental lists as parents and patients will be introduced to oral health promotion and prevention.

1065 Oral Presentation

Dental health of recipients of Special Care Dentistry in Denmark

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Aims: To compare the dental health of citizens attending the Special Care Dentistry (SCD) programme with the dental health of the general population. **Methods:** All 25-, 40- and 65-year-olds, undergoing an oral examination in Denmark, have their dental health status reported to the National Board of Health. The municipalities offer SCD to citizens with physical and/or mental handicaps or severe psychiatric disorders. This study comprised citizens attending the SCD programme in the four largest municipalities and in two regions in Denmark. The study population included the age groups 24-26, 39-41 and 64-66 years. Data on number of teeth, DF-teeth and sound teeth were obtained. The same data from the general population were drawn from the registers. **Results:** In all age groups and all areas the SCD patients had a lower mean number of teeth than the general population. The number of DF-teeth was higher than in the general population in the youngest, comparable for the intermediate and lower in the oldest group. The difference between the SCD patients and the general population in the mean number of teeth increased with age. **Conclusions:** The study indicates that SCD patients have poorer dental status than the general population and that the difference in number of teeth is increasing with age. This underlines the importance of regular dental care and early diagnosis in this group.

1066 Oral Presentation

Management of persons with an autistic spectrum disorder in general dental practice

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Aims: Management of patients with an autistic spectrum disorder in general dental practice might seem to be a difficult challenge. If the session is well prepared and structured, however, and the particularities of each individual patient are respected, treatment can be undertaken successfully for the majority of patients. **Methods:** The principles of preparation, structure, maintaining contact, using stereotypical behaviour in our favour, maintaining standards, assimilation and feedback are followed for the management of patients with an autistic spectrum disorder. **Results:** Video evidence illustrates these guiding principles and successful treatment of persons with an autistic spectrum disorder in a general practice setting. **Conclusions:** Guidelines may aid general practitioners to structure the management of patients with an autistic spectrum disorder.

1067 Oral Presentation

An oral health preventive programme at nursing homes in Copenhagen City, DenmarkB Hede,^{1,2(*)} J E Poulsen,¹ E Nielsen¹

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Aims: To evaluate the effect of an oral health preventive programme based on the concept of situated learning implemented in five different nursing homes in Copenhagen City, Denmark. **Methods:** The eligible study population included all residents at the five nursing homes. Prior to the principal intervention theoretical teaching was given to the nursing staff. Thereafter the intervention was implemented, which was based on scheduled visits at the nursing homes by dental assistants to deliver situated learning to the nursing staff by bedside learning. Gingival bleeding and denture hygiene were recorded for all participants at baseline as well as at 3, 6 and 9 months after start of the intervention.

Results: 605 nursing home residents were invited to participate. Of these 65 (12%) did not participate. The proportion of edentulous participants was 35% (212), and 25% (133) was estimated to be able to take care of their oral hygiene themselves. At baseline 17-41 % of the participants (depending on the individual nursing home) revealed no bleeding when probing. This proportion increased to 65-83 % after 9 month of intervention. The corresponding figures considering denture hygiene were 14-39% without visible deposits at baseline and 77-89 % after nine month of intervention. **Conclusion:** It is possible to make considerable improvements in the oral hygiene of residents of nursing homes by a concept based on situated learning.

1068 Poster

Clinical report of Elejalde disease: description of its oral conditionsT M C Silva,^(*) S M P A C Vieira, L A C Alves, R C Souza, A L Ciamponi, M H Gallottini

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Aims: Presentation of a rare case of Elejalde disease (ED) (OMIM 256710). **Methods:** ED is a rare neuroectodermal melanolyosomal disorder with autosomal recessive inheritance. It is characterised by psychomotor dysfunction, hypotonia, involuntary movements, seizures, generalised hypopigmentation, silver-coloured hair from early in life and respiratory complications. Severe neurological involvement results in feeding disorders and gastrostomy tube fed (GT-fed) is frequently placed. This study describes a clinical case of an Elejalde patient (ACAP, six years old) with emphasis on the oral conditions, including description of gingival, periodontal and occlusal conditions, medical prescriptions and its correlation with general health conditions. GT-fed procedure was placed and multiple drugs had been used since birth (phenytoin, fenobarbital and benzodiazepine), including the use of folic acid. **Results:** The 6 year old patient is in a mixed stage dentition without caries. The gingival index (Löe&Silness) was score 2, the calculus surface index

was score 3 and oral hygiene index (Greene and Vermillion) was score 2. In terms of occlusion, the patient has an anterior open bite and teeth wear due to bruxism. She is also a mouth breather. **Conclusions:** One of the benefits of follow up dental visits is control of calculus accumulation that may reduce the risk of aspiration pneumonia, which is one of the possible diseases related to respiratory complication in these patients.

1100

Factor V Leiden thrombophilia with associated Protein C and Protein S deficiency: Literature review and dental treatment considerationsE Farmakis,^{1(*)} K Tosio,³ E T Farmakis,² E Pantelis⁴

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Aim: Genetic thrombophilias are a heterogeneous group of disorders associated with a predisposition of venous thromboembolism. Factor V Leiden is the most common hereditary form of thrombophilia. Several other protein molecules (such as Protein C and Protein S) are involved in the complex processes of blood clot formation and regulation. If the clotting process continues longer than usual, the chance of developing abnormal blood clots rises. Most patients with thrombophilia are asymptomatic. While some relevant articles were found in the literature, no specific dental protocol was found. **Methods:** We present a case of a 27-year-old Caucasian male with a combination of Factor V Leiden Thrombophilia with associated Protein C and Protein S deficiency, in need of dental treatment (scaling, restorative treatment, endodontic treatment, prosthetic treatment and extractions). **Results:** The patient received anticoagulant therapy in collaboration with the patient's haematologist. Whenever possible, quadrant dentistry was performed to keep the number of visits to the minimum while providing the maximum amount of dental work in the least amount of time. **Conclusion:** Close collaboration with the patient's haematologist guarantees a successful treatment outcome.

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