

# DENTAL TRIBUNE

The World's Dental Newspaper • Asia Pacific Edition



PUBLISHED IN HONG KONG

www.dental-tribune.asia

VOL. 18, No. 04



## DENTAL GUIDANCE

The Inclusion Designlab in Melbourne, Australia has recently published a guide on oral health and intellectual disability for dental practitioners.

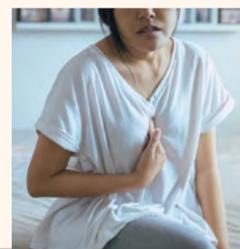
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## 526 TEETH REMOVED

Doctors at the Saveetha Dental College and Hospital in India have reportedly removed 526 teeth from the posterior region of the lower jaw of a 7-year-old boy.

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## REFLUX ASSOCIATED

An international team of researchers from China and the US have found that gastro-oesophageal reflux (GERD) is associated with temporomandibular disorder (TMD).

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# ISDH 2019 provides stimulating programme on evidence-based practice

By Brendan Day, DTI

**BRISBANE, Australia:** From 15 to 17 August, dental professionals from all around the world came together for the 21st International Symposium on Dental Hygiene (ISDH) in Brisbane. The event attracted 1,135 attendees, representing 34 countries, who were engaged by an exciting mix of scientific presentations by leading international dental experts and new product launches by the exhibiting companies.

The Dental Hygienists Association of Australia, in collaboration with the International Federation of Dental Hygienists (IFDH), hosted the event under the theme of "Leadership, Empowerment, Advances,

Diversity" or LEAD. The symposium opened with a welcome-to-the-country ceremony featuring members of the local indigenous community and this was followed, after lunch, by keynote presentations by Drs Ron Knevel and Dagmar Else Slot, among others.

The next day, Ann Battrell, CEO of the American Dental Hygienists' Association (ADHA), and Matt Crespino, President of the ADHA, together delivered a well-received presentation titled "The wise investment: Strategic dental hygiene leadership development." A gala dinner was held at the picturesque Howard Smith Wharves that night,

with a live band providing attendees with a welcome opportunity to let their hair down.

Anh Do, a Vietnamese-born Australian comedian, writer and artist, delivered the keynote speech on the final day of the ISDH. Do's humorous and heart-warming presentation, which focused on his journey from refugee to becoming one of Australia's most loved entertainers, was extremely well received by attendees.

Corrie Jongbloed-Zoet, a past President of the Dutch Dental Hygienists' Association, delivered her inaugural address as the newly in-



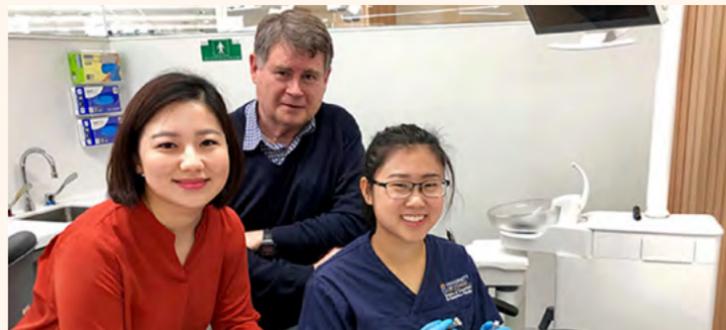
The recent International Symposium on Dental Hygiene was hosted under the theme of "Leadership, Empowerment, Advances, Diversity" or LEAD. (Photograph: International Federation of Dental Hygienists)

# Research compares cooling ability of high-speed handpieces

By DTI

**OTAGO, New Zealand:** Not all dental practitioners may be aware of the finer details of dentistry equipment. Helene Chua, a 21-year-old fourth-year University of Otago Bachelor of Dental Surgery student, has recently made headlines with her research into the cooling efficiency of different numbers of water coolant ports on high-speed handpieces. Her findings point to the potential for significant savings for dentists around the world.

Chua received the Otago Medical Research Foundation's 2018/19 Summer Research Scholarship for her research. She compared four-port high-speed handpiece systems to single-port systems to see which produced better cooling results. Her results indicated that four-port systems led to better cooling, but no statistically significant difference was found. Chua believes this finding may help improve handpieces and make them more comfortable in the future.



Dr Joanne Choi (left), and Associate Professor Neil Waddell have been impressed with dental student Helene Chua's research which demonstrated that multi-coolant-port high-speed handpieces do not offer statistically significant cooling improvements over single-coolant-port varieties. (Photograph: Otago University)

The findings could also mean significant savings for practitioners, as a four-coolant-port handpiece costs around NZ\$1,800, compared with the single-port variety, which costs around NZ\$800. "Not many dentists know about the specifics of the tools they are using, and this research gives them information for choosing what to buy and use," said Chua.

"Opportunities like this give undergraduate students a taste of research, and that can encourage them to pursue postgraduate studies and possible future academic careers. It also lets students understand the importance of research-informed teaching and research-based practice as a dental professional," said research supervisor Dr Joanne Choi.

stated President of the IFDH, a position that she will hold until 2022. Jongbloed-Zoet takes over from Robyn Watson, who held the position from 2016 to 2019.

The next ISDH will take place in 2022 at the Convention Centre Dublin in Ireland. Those interested in receiving updates regarding this symposium can sign up here.

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# Improving oral health of people with intellectual disability

By DTI

MELBOURNE, Victoria, Australia: People with intellectual disability face various social, conceptual and other

challenges that affect their overall health and well-being. Some of these challenges may also affect oral health.

In order to educate dental practitioners on the issue and to improve access to dental care for individuals

with intellectual disabilities, the Inclusion Designlab has published a guide that is aimed at fostering col-

laboration between medical providers, key support professionals, accommodation services and families, and identifying and subsequently treating oral health diseases more effectively.

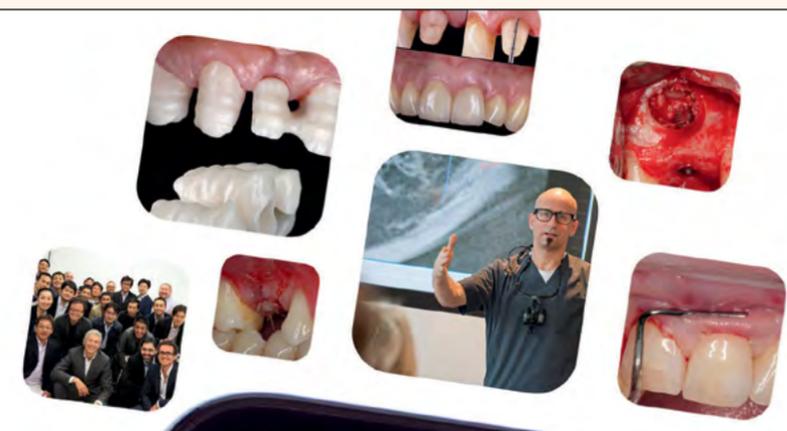
According to the Australian Federation of Disability Organisations, almost one in five Australians reported living with disability in 2015 and a child was diagnosed with an intellectual disability every 2 hours. Having an intellectual disability may affect a person's participation in the community, financial status, level of education attained, employment opportunities and intellectual functioning. According to the National Institute of Dental and Craniofacial Research, a branch of the US National Institutes of Health, people with intellectual disability also suffer from untreated dental caries and a high prevalence of gingivitis. Other oral health problems include a higher risk of malocclusion, missing permanent teeth and poor oral health habits.



The Inclusion Designlab has recently published a guide on oral health and intellectual disability for dental practitioners. (Photograph: anatoliy\_gleb/Shutterstock)

The guide for dental practitioners was developed by Inclusion Melbourne, Monash Health's Centre for Developmental Disability Health, the Australian Dental Association, the Australian Society of Special Care in Dentistry and other representatives from the health sector. It details main components, protocols and recommendations for health professionals and family members that pertain to oral health and intellectual disability. Besides offering general information on the disorder, the guide offers dental practitioners clear guidance on how to behave during a dental visit, informs them about the possible conditions that could be detected in patients with intellectual disability and recommends suitable treatment pathways and strategies to achieve desirable health outcomes.

As individuals with intellectual disability may not always be able to communicate and express themselves clearly, the guide also recommends how to facilitate and improve communication between dental practitioners and people with disability. Finally, it includes forms that aid effective planning between support professionals, dentists and medical practitioners.

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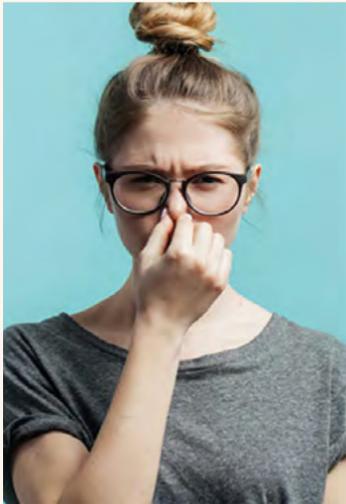
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# New research highlights relationship between scent and disease

By DTI



Researchers in Japan have developed a gas imaging system that can detect compounds linked to some illnesses. (Photograph: UfaBizPhoto/Shutterstock)

**TOKYO, Japan:** Bad breath can be caused by any number of things, including an illness. When there is more to it than just an overload of onions and garlic, it can be difficult for practitioners to make an accurate diagnosis. For the first time, researchers in Japan have developed a highly sensitive gas imaging system ("sniff-cam") that can detect low diagnostic levels of some disease biomarkers.

Building on previous versions of their sniff-cam that can detect volatile organic compounds (VOCs), scientists from Tokyo Medical and Dental University have recently developed a device that can detect compounds linked to illnesses such as diabetes, lung cancer and Parkinson's disease.

Speaking to Dental Tribune International, lead researcher Prof. Kohji Mitsubayashi said they had developed three types of gas imaging systems and that the latest version uses an ultraviolet (UV) ring light, UV filters and a camera.

Mitsubayashi explained how the UV ring light was placed in the vicinity of the charge-coupled device (CCD) lens for real-time gas imaging from the target object. An enzyme mesh is placed between the CCD and the target object. As the ring light irradiates the enzyme mesh, the CCD is able to take a gas image from the direction of the UV irradiation. The novel bio-fluorometric gas imaging system performs well, demonstrating real-time gas imaging, high sensitivity, gas selectivity and a short response time to the gaseous chemical coming from the target object.

To test the effectiveness of the sniff-cam, researchers worked with a group of male subjects who had not consumed food or drink for a certain period. The device detected miniscule levels of gaseous ethanol in their breath. According to Mit-

subayashi, results show that the device can detect a broader range of VOC levels than other devices

and may aid in the further study of the relationship between scent and disease.

The study, titled "Ultrasensitive sniff-cam for biofluorometric-imaging of breath ethanol caused by metabo-

lism of intestinal flora", was published online on 9 July 2019 in *Analytical Chemistry*, ahead of inclusion in an issue.

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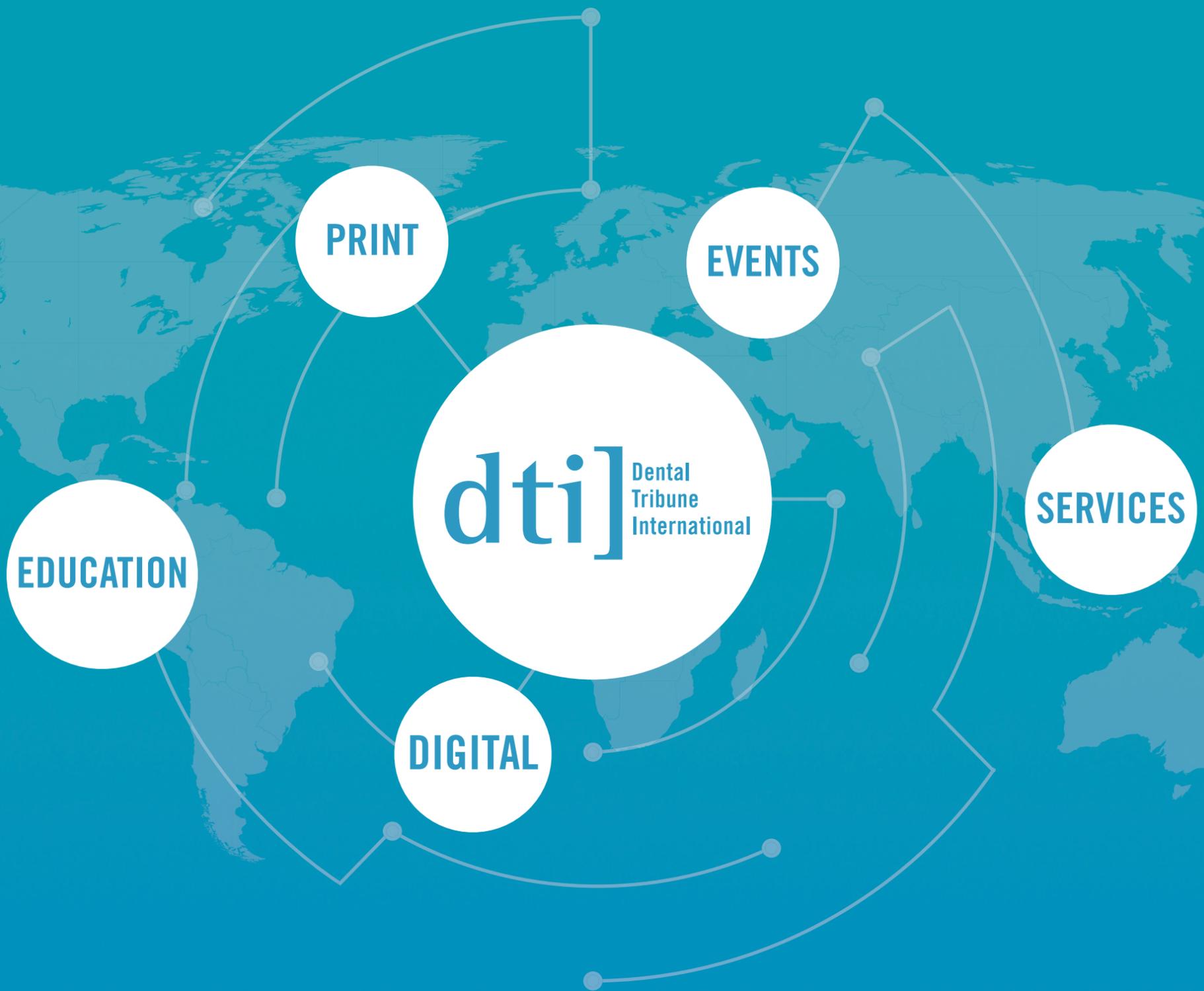
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# Indian dentists extract 526 teeth from boy's mouth

By DTI

**CHENNAI, India:** In a remarkable 2-hour operation, doctors at the Saveetha Dental College and Hospital have reportedly removed 526 teeth from the mouth of a 7-year-old boy. The teeth were discovered inside a sac embedded in the posterior region of his lower jaw. Dentists are unsure whether the cause was genetic or environmental.

Ramani commented that, surprisingly, the boy was barely in any discomfort. "The only thing which

was bothering him was that the tooth on that side had not erupted, it was empty, and [he had] occa-

sional pain, and there was slight swelling that was increasing in size," she added.

The boy, who now has just 21 teeth, was discharged from the hospital after three days and is recovering well.



A 7-year-old boy in India who had complained of pain and swelling in his jaw has had 526 teeth removed. (Photograph: sebra/Shutterstock)

The boy was brought into the hospital after complaining of pain and swelling in his jaw. It was discovered that he was suffering from compound composite odontoma. "The tumour-like growth prevented permanent molar teeth growth in the boy in the affected side," said Dr P. Senthilnathan of Saveetha Dental College and Hospital's Department of Oral and Maxillofacial Surgery in an interview with the *New Indian Express*. "X-ray and CT scan showed multiple, rudimentary teeth in a bag-like tissue. It took 5 hours to remove all the minute teeth from the bag-like structure. The weight of the growth was 200 grams."

At the age of 3, the boy had been taken to a nearby hospital when his parents had noticed slight swelling in the same area, but he did not undergo any procedures, partly because of his youth. To the knowledge of the hospital, the total of 526 teeth removed from the boy's mouth is unmatched by any other case, though a 17-year-old boy in Mumbai had 232 teeth removed in 2014.

"The teeth were of variable sizes that ranged from smallest at 0.1 mm to largest 3 mm. They had a small crown, enamel and a small root," said Dr Pratibha Ramani, head of the hospital's Department of Oral and Maxillofacial Pathology, in an interview with *The Guardian*.

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# Reflux associated with temporomandibular disorder, a recent study finds

By DTI

**XIAN, China:** Reflux is an uncomfortable condition that can have negative effects on a patient's oral

health. In a recent study, researchers have established that temporomandibular disorder (TMD) is as-

sociated with gastro-oesophageal reflux (GERD). Other factors such as anxiety and poor sleep contrib-

ute to this correlation. The authors of the study have noted that physicians need to be aware of the as-

sociation and consider instituting multidisciplinary management programmes to help patients.

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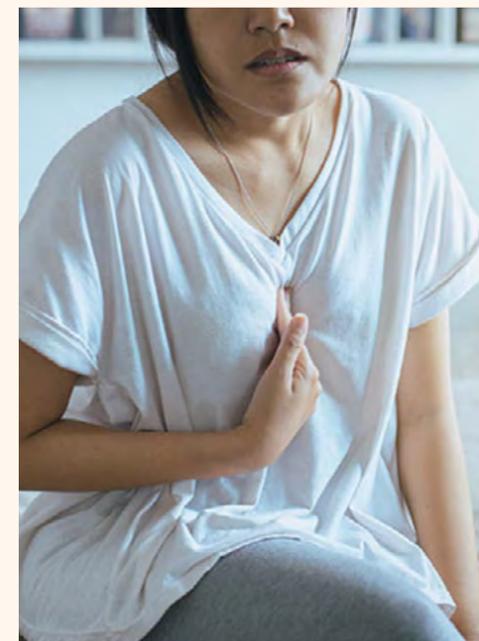
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An international team of researchers looked at data from two separate hospitals in China on 1,522 patients aged between 18 and 70 years old with chronic TMD. They set out to understand the connection between the disorder and GERD and to determine whether anxiety, somatisation and depression influence the association.

In the study, co-author Dr Jihua Chen, from the Air Force Military Medical University in Xian, noted that the relationship between chronic musculoskeletal diseases, gastro-intestinal diseases, mental disorders and sleep problems is complicated. "There is evidence to support the bidirectional nature of the associations among these comorbidities," Chen said. He explained that patients may be stuck in a cycle that undermines sleep. Somatization and anxiety exacerbate the pain, and this pain can lead to sleep problems and mental disorders.



An international team of researchers from China and the US have found that gastro-oesophageal reflux is associated with temporomandibular disorder. (Photograph: GBALLGIGGSPHOTO/Shutterstock)

According to the results of the study, symptomatic GERD is a risk factor for TMD, and people with a longer history of GERD have a higher risk of TMD than those with a shorter history. "Patients with both chronic TMD and reflux symptoms may be underdiagnosed, resulting in deferred effective treatment and a prolonged disease course," said Chen.

The study, titled "Associations among gastroesophageal reflux disease, mental disorders, sleep and chronic temporomandibular disorder: A case-control study", was published on 19 August 2019 in the *Canadian Medical Association Journal*.

# Survey shows number of UK adults seeking orthodontic treatment remains high

By Dental Tribune UK



A new survey has found that UK adults are increasingly likely to opt for orthodontic treatment. (Photograph: Phoenixns/Shutterstock)

**LONDON, UK:** Though orthodontic treatment was once thought to be something only for teenagers, its generally non-invasive nature has led to it becoming something that

adult patients increasingly request. A new survey of orthodontists by the British Orthodontic Society (BOS) has confirmed this, as an increase in adult private patients

was reported by 75% of the respondents.

The survey, conducted last month among BOS members, was designed

to gather new data about orthodontics and patient choices in the UK. The results revealed that adult patients are more likely to be female, in the 26–55 years age range, and primarily treated with fixed orthodontic appliances with clear aesthetic brackets or with clear aligners.

According to the BOS, 60% of the respondents said that the increase in their number of adult private patients was due to a heightened awareness of adult orthodontic options. More than 10% of orthodontists added that celebrities and bloggers can influence their adult patients.

Dr Peter McCallum, BOS Director of External Relations, commented: "It's interesting to see the number of adults interested in orthodontic treatment remains high. Our members, specialists and dentists with a special interest, offer a range of options for adults, enabling them to provide a solution to any kind of orthodontic problem. The value of informed choice cannot be overestimated."

# USC researchers seek to understand craniofacial abnormalities

By DTI

**LOS ANGELES, U.S.:** Most birth defects involve the face and skull and scientists are still unable to explain this phenomenon. The University of Southern California (USC) has recently received a substantial grant for a project that is aimed at collecting data, DNA samples and images related to abnormalities of the head and facial bones. The research data will help gain a better understanding of the issue and foster interdisciplinary collaboration between medical experts.

Orofacial clefts are fairly common birth defects. If the cleft extends through the upper gingivae, it may affect tooth development. The National Institute of Dental and Craniofacial Research awarded the USC Herman Ostrow School of Dentistry and the USC Viterbi School of Engineering a \$12.5 million (€11.4 million) grant for their project FaceBase III Data Management and Integration Hub. The project will connect experts who have thorough knowledge and expertise in the area, and its aim is to help improve treatment outcomes.

"To accelerate the science and better serve families at risk for these conditions, we need a comprehen-



Researchers from the University of Southern California's dentistry and engineering schools have recently received financial support for their research project. (Photograph: Rungruedee/Shutterstock)

sive and systematic understanding of how faces form in healthy children and what goes wrong to cause common malformations," said Dr. Yang Chai, George and MaryLou Boone Professor of Craniofacial Molecular Biology, Director of the Center for Craniofacial Molecular Biology and Associate Dean of Research at the dental school.

The FaceBase project consists of three phases. The first phase was launched in 2009 and focused on

the middle region of the face, which includes the nose and mouth, and examined genetic developmental disorders. The second phase started in 2014 and focused on the expansion of the database to include other genetic disorders and on the development of the craniofacial complex. The third and final phase seeks to effectively organize data collection and storage and encourage researchers to share their findings.

"We're trying to create a commu-

nity of researchers around the exchange and organization of data, and transform the way craniofacial research is done," said Prof. Carl Kesselman, Dean's Professor of Industrial and Systems Engineering and Professor of Industrial and Systems Engineering, Computer Science, and Preventive Medicine at the engineering school. "This could be an exemplar. Not many dental schools have access to the largest computer science research institute in the country," he concluded.

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