Smoking linked to hypodontia

By DTI

OTAGO, New Zealand: A study conducted by researchers at the University of Otago has found that women who smoke more than ten cigarettes a day while pregnant may negatively impact the development of their children’s teeth. The study looked at 83 children with hypodontia—defined in the study as the developmental absence of up to five permanent teeth—and compared them with 253 children without the condition. The children’s mothers reported their levels of exposure to active and passive smoking during pregnancy, along with their caffeine and alcohol intake.

Prof. Mauro Farella, who led the research, said that hypodontia was positively linked to cigarette smoking. The study found no association between the condition and drinking alcohol or caffeinated drinks however. “There was a suggestion of a biological gradient effect with tobacco,” said Farella, who is head of orthodontics at the University of Otago’s Faculty of Dentistry. “The more cigarettes a mother reported smoking during pregnancy, the greater the likelihood was of her child having hypodontia.”

“Though more research is needed to confirm the association we found between maternal smoking and the condition, a plausible explanation is that smoking causes direct damage to neural crest cells in developing embryos,” he explained.

The findings are in line with a growing body of evidence that smoking while pregnant can have an unborn baby. Various studies have shown that smoking during pregnancy increases the risk of pre-maturity birth, a low birth weight or stillbirth. The study, titled “Maternal smoking during pregnancy is associated with offspring hypodontia,” was published online on 23 May in the Journal of Dental Research.

Facial features

Researchers in the US have found that genetics that shape dental and thus facial features might also increase the likelihood of specific handiness. In a recently published study, people with slender faces were found to be predominantly left- rather than right-handed. The findings of the study were based on three national health surveys, with a total of 13,516 participants, that were conducted in the US in the 1960s and 1970s. In a review of these, researchers at the University of Washington School of Dentistry found that bilateral retrognathism—the dental marker for a convex facial profile, slender jaws and overbite—was associated with 25 per cent increased odds for left-handedness in the study population. They further stated that prevalence of bilateral retrognathism in all three surveys was significantly higher among European Americans than African Americans.

Australasiasymposium

MELBOURNE, Australia: For the first time in the Osteology Foundation’s history, Melbourne played host to one of the three Asia-Pacific symposiums in 2017. Titled “Strategies for predictable regeneration—Today and tomorrow”, the scientific programme delved intensively into the current status of knowledge and research in oral tissue regeneration, discussing new trends and techniques in the field.

Held on 2 and 3 June at the Arthur Streeton Auditorium in Melbourne, the two-day event was one of four symposiums taking place over the next 12 months. Other host countries are Japan, China and Russia. In addition to such national events, the non-profit organisation holds its international symposium in the Côte d’Azur in Monaco every three years.

More information can be found at www.osteology.org.
**Unique root canal anatomy patterns in Indian population**

By DTI

NAVI MUMBAI, India: Provisional findings of an Indian study have suggested that the root canal anatomy is more complex than that of teeth from other ethnicities. For example, the investigators found that the extra mesiobuccal canals, often seen in European, Thai and Japanese populations, are rare in the Indian maxillary molars examined. In addition, Indian teeth showed root canal anatomy patterns that were different from those seen in American and African teeth. Consequently, the researchers concluded that Indians might require special care during dental treatment in order to ensure treatment success.

Explaining the tooth preparation process, Singh said that the teeth are cleaned and disinfected before the root canals are accessed and dye is injected into them. After drying and decalcification, the specimens are dehydrated in ascending concentrations of methanol so clearly he was quite sick.

Dental plaque traps microorganisms that lived in the mouth and pathogen resided in the respiratory and gastrointestinal tract, as well as bits of food stuck in the teeth—preserving the DNA for thousands of years,” said lead author Dr Laura Dobney, from the University of Liverpool in the UK.

The researchers hope to make further findings Singh said.

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The researchers hope to make further findings Singh said.

**Neanderthal used natural analgesics, calculus shows**

By DTI

ADELAIDE, Australia/LIVERPOOL, UK: Ancient DNA in the calcified dental plaque of Neanderthals—their nearest extinct relative to humans—has provided new insights into their behaviour, diet and evolutionary history. An international team of researchers has analysed 42,000- to 50,000-year-old dental plaque DNA samples from four Neanderthal specimens found in caves in Belgium and Spain. The findings revealed the complexity of Neanderthal behaviour, including knowledge of plant-based medication and dietary differences.

According to the researchers, DNA preserved in the dental plaque of Neanderthals is a notable source of information about the behaviour and health of ancient hominins specimens. From analysing the dental plaque DNA samples, the researchers learnt that the Neanderthals from the cave sites of Spy in Belgium consumed woolly rhinoceros, European wild sheep and wild mushrooms. In contrast, those from El Sidrón cave in Spain appeared to have a vegetarian diet, including moss, mushrooms, pine nuts and tree bark, but no evidence of meat was found. These findings demonstrate that these two groups had very different diets.

Mansingh Pawar, about 20 students involved in the research project have been investigating 5,000 teeth that were provided by dental colleges and hospitals in the region.

The results showed that the anatomy of the mandibular canines and second premolars was more complex than that of teeth from other ethnicities. For example, the investigators found that the extra mesiobuccal canals, often seen in European, Thai and Japanese populations, were rare in the Indian maxillary molars examined. In addition, Indian teeth showed root canal anatomy patterns that were different from those seen in Americans.

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Australia: Royal Flying Doctor Service receives funding boost

By DTI

CAIRNS, Australia: The Royal Flying Doctor Service of Australia (RFDS) has long provided much-needed medical assistance to many of the expansive country’s most remote communities. Dr David Gillespie, Assistant Minister for Health, has announced that the Australian federal government will commit A$11 million in funding to the not-for-profit organisation so that it can continue to offer dental services to these regions.

Established in 1928 by Rev John Flynn, the RFDS utilises its fleet of 66 aircraft to offer both emergency and essential health care to Australian residents who are unable to access these services via more common modes of transport. It is funded through a combination of donations and financial support from the Australian government’s RFDS programme. It holds an important place in Australia’s medical services sector and was described by former Prime Minister Sir Robert Menzies as “perhaps the single greatest contribution to the effective settlement of the far distant country that we have witnessed in our time”.

“The Royal Flying Doctor Service is well-placed to provide these essential mobile outreach dental services in rural and remote Australia,” said Gillespie in a statement. “Today we deliver on our election commitment to ensure people outside our major cities have better access to high-quality dental services.”

Martin Laverty, CEO of RFDS, welcomed the funding and took the opportunity to highlight the disparity in dentist numbers between urban and remote areas.

“There are only one-third the dentists in remote areas, with 72 dentists per 100,000 people in major cities, and less than 23 per 100,000 people in remote areas,” said Laverty. “When people from remote areas visit the dentist, they are more likely to require acute intervention—1 in 3 had a tooth extraction in a year, compared with less than 1 in 10 in metropolitan areas.”

“This funding from the Federal Government will enable the Flying Doctor to expand its dental outreach programme to start tackling the disparity that exists between city and the bush—and for that we are very, very thankful,” he added.

The Royal Flying Doctor Service provides emergency and essential health care to many of Australia’s remote communities.
“The world is becoming a noisier place, so protection and prevention are essential”

An interview with Dr Sam Shamardi, developer of noise reduction dental earplugs

By Kristin Hübner, DTI

Although noise exposure in dentistry may appear to be minimal, the potential for noise-induced hearing loss is an issue in the field. Various studies have shown that a significant number of dental professionals are affected each year. Aiming to address this matter is US dentist Dr Sam Shamardi, who developed noise reduction earplugs especially designed for use in the dental office. He recently introduced the DI-15 earplugs: electronic earplugs can be ordered online, or from your local dental supply retailer. They provide protection against all damaging sounds in the dental environment, as needed, while still allowing for 100 per cent clear hearing. Thus, one’s ability to communicate clearly with patients and staff is not compromised, and hearing damage is prevented.

Think of them almost as smart earplugs: damaging sounds are instantaneously identified, isolated and compensated to safe levels, while normal sounds pass through naturally, as if nothing is in one’s ears. Imagine the sound of a blasting radio in the car: now picture turning the volume down to a comfortable setting; one still hears everything but without the strain!

What gave you the idea to develop them?

It was not long after starting to practise that I recognised the irritation and additional stress I experienced from the shrill of the handpiece and, even more, the high-pitched shrieks from the suction, it can truly drive one nuts. I also noticed how many of my colleagues complained of tinnitus symptoms and hearing difficulties, and I knew there was a serious problem that was not being recognised.

Once I started looking for solutions, I realised that nothing existed, such as foam earplugs, were not practical because sounds were muffled and I could not speak with my patients or staff. Thus, I started looking into technologies that could address this issue and wanted to tailor a product that would focus on the sounds and frequency exposures in dentistry. Fortunately, after much research and testing, I was able to team up with the pioneers of in-ear technology to create the DI-15.

Should dentists and their assistants start wearing the earplugs from early on?

Dentistry is known as the field of prevention, yet when it comes to protecting our hearing, we have completely ignored our motto.

As an interview with Dr Sam Shamardi, developer of noise reduction earplugs

What do users report about the comfort of the earplugs—does one have to get used to them?

Our users have had no issues wearing them, and the comfort and function of the DI-15 earned top marks in an extensive two-year American Dental Association Professional Product Review paper.

DI-15 earplugs are extremely comfortable because they come standard with six different pairs of tips and thus can accommodate any ear. In addition, for those with unique canals or who prefer a custom fit, our product can be customised via an ear mould from an audiologist and a custom sleeve made by a laboratory. All requirements are covered!

Getting used to wearing earplugs reminds me of the initial adjustment to wearing loupes; at first, I noticed them and had a brief period of adaptation, but now I do not notice they are there, yet I can instantly feel the difference when I am not wearing them. The earplugs are small and fit comfortably within one’s ears, so even my patients do not notice I am wearing anything unless I show them.

Thank you very much for the interview.

Dr Sam Shamardi is a periodicontal specialist at Boston Center for Oral Health and a part-time clinical instructor at the Harvard School of Dental Medicine, both in the US.

Editorial note: The DI-15 high-fidelity electronic earplugs are revolution- ary and the first of its kind in dentistry. They utilise patented advanced circuitry in a tiny microchip that provides protection against all damaging sounds in the dental environment, as needed, while still allowing for 100 percent clear hearing. Thus, one’s ability to communicate clearly with patients and staff is not compromised, and hearing damage is prevented.

Dr Shamardi, what sounds in the dental office are damaging to hearing?

All of them! We as dental professionals are exposed to constant dangerous levels of noise that have a long-term, permanent effect on our hearing. Most usually identify with the high-speed handpiece, but high-speed suction, ultrasonic instruments and even the speed handpiece, but high-speed suction, ultrasonic instruments and even the speed handpiec...