Meetings & Events Australia has “biological gradient” effect with tanned drinks however. The study found no association between the condition and drinking alcohol or caffeine. Smoking was positively linked to cigarette smoking. The study, said that hypodontia active and passive smoking during pregnancy increases the risk of prematurity, 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.

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 premature 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.

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. Themed “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.

“Strategies for predictable regeneration—Today and tomorrow” was held on 2 and 3 June at the Arthur Streeton Auditorium in Melbourne. 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 of Indians might differ from those of other ethnicities, and hence, they may require adapted care during root canal therapy. The study, which began two years ago, is being jointly conducted by researchers at two local dental colleges, Terna Dental College and the Government Dental College in Mumbai.

Under the supervision of college deans Drs Shishir Singh and 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 canal, often seen in European, Thai and Japanese populations was 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, Singh told The Times of India. "The students study the specimens under special halogen lighting and the root canal anatomy is classified using internationally accepted classifications," Singh explained regarding the research method.

The study is ongoing and 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 calcined dental plaque of Neandertals—the 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 Neandertal sites found in Belgium and Spain. The findings revealed the complexity of Neandertal behaviour, including knowledge of plant-based medication and dietary differences.

According to the researchers, DNA preserved in the dental plaque of Neandertals 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 Neandertals 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.

"Dental plaque traps microorganisms that lived in the mouth and pathogens found 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 Weyrich, Australian Research Council Early Career Research Fellow at the Australian Centre for Ancient DNA (ACAD) of the University of Adelaide.

She added, "One of the most surprising finds, however, was an Neandertal from El Sidrón, who suffered from a dental abscess visible on the jawbone. The plaque showed that he also had an intestinal parasite that causes acute diarrhoea, so clearly he was quite sick. He was eating poplar, which contains the painkiller salicylic acid (the active ingredient of aspirin), and we could also detect a natural antibiotic mould (Penicillium) not seen in the other specimens."

Furthermore, dietary differences were associated with a general shift in the oral microflora, suggesting that meat consumption contributed to substantial variation in this regard. "Not only can we now access direct evidence of what our ancestors were eating, but differences in diet and lifestyle also seem to be reflected in the communal bacteria that lived in the mouths of both Neandertals and modern humans," said co-author Prof Keith Dobney, from the University of Liverpool. "Major changes in what we eat have, however, significantly altered the balance of these microbial communities over thousands of years, which in turn continue to have fundamental consequences for our own health and well-being."

The study, titled "Neandertal behaviour, diet, and disease inferred from ancient DNA in dental calculus", was published on 20 April in the Nature journal. It was conducted by ACAD in collaboration with the University of Liverpool in the UK and the University of New South Wales in Sydney, Australia.
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 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 product, first launched in 2014, at Dental Expo South in Christchurch in New Zealand, where the company signed a new distribution deal. Dental Tribune had the opportunity to talk with Shamardi about noise pollution in the dental practice and the unique technology used in the DI-15 earplugs.

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 cleaners, laboratory machines and model trimmers all cause damage.

Sounds that are 85 dB and above result in hearing damage and are directly related to the duration and frequency of exposure, among other factors. Thus, extreme noise exposure for short periods can be as damaging as mild exposure for prolonged periods.

The dental literature shows values for dental equipment that clearly exceed 85 dB and in many cases even 100 dB. Noise standards further illustrate that, at these ranges, as little as 15 minutes per 2 hours of exposure daily can lead to permanent damage; thus, it is no surprise that we all know colleagues with hearing issues as a result.

The dental practice environment is a serious problem that has not been recognised. Thus, extreme noise exposure for short periods can be as damaging as mild exposure for prolonged periods. Considering that as dental professionals our average careers are 35 years long and typically 40 hours a week, our exposure time spent in this chronic noise environment is substantial.

The digital 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!

What does user 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. At first, I noticed them and had a brief period of adaptation, but now I do not notice they are there, yet 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.

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Thank you very much for the interview.

Dr Sam Shamardi is a periodontic 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 can be ordered worldwide at a cost of US$99, including a hard travelling case, all tips and accessories and a pack of ten batteries. More information can be found at www.dentalinnovationsllc.net.

Dental professionals are bombarded from the first day of university when sitting with 35-45 of their classmates in a room practising for hours, not including regular noisy daily activities outside of the dental setting. Thus, the earlier one starts, the more of one’s hearing can be preserved. The world is becoming a noisier place each year, so protection and prevention are essential.

Think of them almost as smart earplugs: damaging sounds are instantaneously identified, isolated and compressed to safer 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 did you see the need 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, and the only options, 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 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. Thus, extreme noise exposure for short periods can be as damaging as mild exposure for prolonged periods. Considering that as dental professionals our average careers are 35 years long and typically 40 hours a week, our exposure time spent in this chronic noise environment is substantial.

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