

◀ to the inheritance and variation of DNA.

Dr Rathmann said: 'Dental traits can be used in population genetic studies when DNA is not available'. Teeth are the hardest tissue in the human body and individuals' dental remains are often well preserved, even when associated skeletal and DNA preservation is poor.

'Most human dental traits probably arose by chance as a result of genetic drift. That is an evolutionary process that is considered to be neutral, having no particular advantages or disadvantages for individuals or the population.'

By contrast, it has also been proposed that some traits evolved in a non-neutral manner as a result of natural selection

and adaptation, perhaps in response to chewing behaviour or environmental factors.

Dr Reyes-Centeno said: 'Teeth that evolve neutrally are useful for inferring genetic relationships and can be highly informative for reconstructing the human past'. In order to disentangle the neutral and non-neutral evolutionary mechanisms, the researchers compared the variation in dental traits to the variation in neutrally evolving DNA across various populations around the world.

The researchers developed an algorithm that could compare DNA data against commonly used dental traits and all the possible combinations of these traits.

They performed extensive calculations and looked at more than 130 million possible combinations of dental traits.

This enabled them to identify a set of highly informative trait combinations that preserve neutral genetic signals best – making them the most useful for reconstructing genetic relationships.

The findings could be applied in many different contexts, including the identification of unknown individuals in forensic cases, the investigation of mobility of ancient populations in archaeological studies, and the reconstruction of the origin and evolution of our species using human fossils in paleoanthropological research.

#### Reference

1. Rathmann H, Reyes-Centeno H. Testing the utility of dental morphological trait combinations for inferring human neutral genetic variation. *Proc Natl Acad Sci U S A* 2020; DOI: 10.1073/pnas.1914330117.

#### PERSONAL ACCOUNT

## 'We are still awaiting clarification on many things'

By Mike O'Reilly, *BDJ* reader panel, South Cheshire, UK

I noticed my day list becoming quieter in February 2020, then in March everything changed. Huge gaps appeared in my appointment book and for the first time in 20 years working at my practice, I had time to go home for lunch. We were getting wind of a possible mask shortage from our suppliers along with having to back order alcohol hand gels; something serious was happening.

Then on the evening of Monday 23 March, Boris Johnson addressed the nation with grave warnings, his final sentence being 'And therefore I urge you at this moment of national emergency to stay at home, protect our NHS and save lives'. I decided at that moment to go into the practice at 6 am the next day to change the answerphone message and put posters up to advise patients that we were now only treating emergencies. I bought a cheap SIM card and used an old iPhone for triage and only went into the practice if I felt it was a genuine emergency.

The lack of clear guidance at that time and from the powers that be confused

the situation. Some colleagues kept their practices running as normal and others closed completely apart from an emergency service. I decided to set up a WhatsApp group, inviting dental friends and colleagues I have known over the years to join to try and get some kind of grip on what was going on and what everyone was doing in this unique situation where we were basically making it up the best we could without direct guidance.

There were, and still are many worries. NHS payments were still to be made to practices, but there was confusion regarding mixed NHS/private practices and how to furlough staff, and concerns for associates as to how they would be paid. Fully private practices seemed to be offered very little support. At the time of writing, we are still awaiting clarification on many things.

The BDA set up a coronavirus hub on their webpage which was very useful, providing updates on any changes throughout the day on the fast-changing fluid situation.



A local hospital put out a request for practices to donate supplies of surgical masks, disinfectant wipes and many dentists gave up their stock.

As March ended and April began, guidance was coming out of NHS England advising dentists that routine dentistry should be suspended. Dental emergency hubs were to be set up to treat suspected COVID-19 patients (hot hubs) and patients displaying no symptoms of the virus (cold hubs). These hubs would be manned by dental teams with the promise of correct PPE equipment being provided such as properly fitted FFP3 masks. Dentists and their teams were also asked to volunteer to be deployed into the wider NHS to help in the fight against the pandemic. Again, at the time of writing, this is still unclear, with dental teams worried about what they may be asked to do, but wanting to help out in any way they can. ■