

New award set to inspire next generation of NHS leaders

NHS clinicians and managers are invited to apply for a new annual award designed to help and inspire the NHS leaders of tomorrow to improve services for patients.

The Sir Peter Carr Award is a £30,000 award which will be made to a clinician and manager partnership to invest in their professional development over a year to support the delivery of a shared improvement objective. Both the winners and partnerships shortlisted for the award will also receive access to a range of support including mentoring, networks, personal development and improvement skill-building and opportunities to attend events during the year.

The award has been inspired by Sir Peter Carr, who supported and fostered innovation in the NHS during his 25 years of service. His pioneering work made the NHS a better service for millions of patients who rely on it and tens of thousands of staff who work for it.

The award is open to clinician and manager partnerships working in NHS trusts and foundation trusts in England. Applications will need support from the trust's chief executive and trusts will only be able to submit one application.

For further details visit <https://improvement.nhs.uk/resources/sir-peter-carr-award/>. Applications close on 14 March 2017.

FGDP(UK) takes step towards independence

The Faculty of General Dental Practice (UK) (FGDP[UK]), the professional body representing general dental practice, and The Royal College of Surgeons (RCS) and its Faculty of Dental Surgery (FDS) have announced that FGDP(UK) is taking the first step towards becoming an independent organisation.

FGDP(UK) was established as a faculty of the RCS in 1992. Since then the Faculty has built a professional home for the general practice dentistry community in the UK.

As the Faculty celebrates its 25th anniversary, the Board of FGDP(UK) has decided its aspirations are best served as an independent organisation, whilst remaining in close partnership with the Royal College of Surgeons and its Faculty of Dental Surgery. Over the coming months it plans to lay the foundations of that organisation for the benefit of patients and the profession.

FGDP(UK) delivers world leading courses in implantology, minor oral surgery and restorative care. With a membership approaching 5,000, and with an international reach, FGDP(UK) also publishes the highly respected *Primary Dental Journal* and produces clinical guidelines written by dentists, for dentists.

The world leading dental examination in the UK, the MJDF, which is administered jointly between the FGDP(UK) and FDS, will continue to be the leading qualification for the dental profession.

Defective tooth enamel is conducive to caries development



Researchers from the University of Zurich have demonstrated that mutated genes lead to defects in tooth enamel, which can therefore encourage the development of caries.¹

The researchers wanted to find out why some people develop caries even though they always brush their teeth carefully, while others are less stringent yet do not have any holes. Ultimately, both types of people have bacteria on the surface of their teeth which can attack the enamel; however, if the outer layer of the teeth is defective, caries can strike.

The researchers have now pinpointed a gene complex for the first time that is responsible for the formation of tooth enamel. Two teams from the Centre of Dental Medicine and the Institute of Molecular Life Sciences used mice with varying mutations of the enamel proteins involved in the so-called Wnt signalling pathway. Thanks to this transmission route, human and animal cells respond to external signals and specifically activate selected genes in the cell nucleus. The signalling pathway is essential for embryonal development and also plays a pivotal role in the development of cancer or physical malformations.

'All mice with mutations in these proteins exhibit teeth with enamel defects,' said Pierfrancesco Pagella, one of the study's two first authors. 'Therefore, we demonstrated that there is a direct link between mutations in the genetic blueprints for these proteins and the development of tooth enamel defects.'

The team of researchers was the first in the world to use modern genetic, molecular and biochemical methods to study tooth enamel defects in detail.

The hardness and composition of the tooth enamel can affect the progression of caries. 'We revealed that tooth decay isn't just linked to bacteria, but also the tooth's resistance,' says Thimios Mitsiadis, Professor of Oral Biology at the Center of Dental Medicine. Bacteria and their toxic products can easily penetrate enamel with a less stable structure, which leads to carious lesions, even if oral hygiene is good.

Understanding the molecular-biological connections of tooth enamel development and the impact of mutations that lead to enamel defects opens up new possibilities for the prevention of caries.

1. Cantù C, Pagella P, Shajiei T D *et al.* A cytoplasmic role of Wnt/ β -catenin transcriptional cofactors Bcl9, Bcl9l, and Pygopus in tooth enamel formation. *Sci Signal* 2017; **10**: pii: eaah4598. DOI: 10.1126/scisignal.aah4598.