

Faculty of Dentistry, Oral & Craniofacial Sciences Blog:  
Professor David Bartlett, Head of the Centre for Oral, Clinical & Translational Sciences

### **Research with impact: how we're helping patients**

Oral, clinical & translational sciences is a broad area that includes many disciplines. That's easily said but can be hard to comprehend. If you spend time talking to Professor David Bartlett, head of this research centre, you begin to understand just how much they've got going on and how their research directly benefits patients.

*"We are very diverse. We've got a lot of staff and most of them are clinically related. They have a variety of interests, but they all fall under the banner of patients and translational science," he explains.*

What makes their research in oral and clinical fields stand out is how it's translating into patient care and treatments. Everything relates to a patient benefit.

The research groups within the centre specialise in caries, tooth wear and erosion, endodontics, facial reconstruction, oral pathology, oral surgery, psychology and laboratory based sciences using tissue engineering and dental materials.

There's a vast range of research going on. Below are just a few examples to show you how this research is having a positive impact on patients and clinicians.

#### **Tooth wear and erosion**

Tooth wear is a common condition that describes the loss of tooth substance by any means other than tooth decay. Typically, that means through dental erosion, tooth attrition, or abrasion.

*"Our group have found the risk factors for tooth wear and we're running epidemiological studies. I've done one in China, we've just finished one in the Middle East and we're starting one in South America. We've also investigated the progression of tooth wear in groups and found that dietary advice can slow the condition," Professor Bartlett says.*

#### **Endodontics**

Endodontics explores diseases and injuries that affect the soft tissues inside a tooth.

*"This is a leading group and they're looking at a whole plethora of clinically related investigations. They've done CBCT imaging too," he notes.*

CBCT is Cone Beam Computerised Tomography. In dentistry it's primarily used when assessing patients for dental implants or other specialist treatment but the group have been at the forefront using it in endodontics.

The endodontics research also feeds directly into teaching within the faculty. That's because endodontics is an important speciality at postgraduate level.

*"We run specialist training in endodontics and prosthodontics, and students carry out projects within both groups in the laboratory," Professor Bartlett adds.*

#### **Facial reconstruction**

Professor Bartlett explains that this is an exciting area that's being driven forward by 3D printing. The research itself looks at rebuilding patients' faces after they've suffered trauma or had cancer treatment.

*"We've just had a series of five new 3D printers installed. Having them will help with our work on understanding and rebuilding faces," he states.*

### **Psychology**

*"This area is really quite unique for a dental faculty,"* Professor Bartlett says. There is a team of psychologists who work within the faculty and the Guy's & St Thomas' NHS Foundation Trust to explore patients' fear of dentists, also known as dentophobia. Their work looks at how that fear affects patients and how they can deal with it. It also goes further by exploring how clinicians can support patients with dentophobia.

### **Caries**

Caries, or tooth decay, is another area of specialism for this research centre. Conducting research isn't the only way in which the team have an impact though. They also have links to charities and promote knowledge sharing.

The Alliance for a Cavity-Free Future is a good example. It's website shares resources for parents and children as well as for dentists and hygienists. Its purpose is to educate people all over the world about the causes of tooth decay and how to prevent it.

### **Our laboratories**

Our laboratories use state of the art techniques to research how engineering might in the future rebuild tissues lost to disease or trauma. We are developing and investigating new materials for dentists to repair patient's teeth,

*For more information on the Centre for Oral, Clinical & Translational Sciences or to republish this blog please contact Laura Shepherd, Communications at the Faculty of Dentistry, Oral & Craniofacial Sciences on [laura.2.shepherd@kcl.ac.uk](mailto:laura.2.shepherd@kcl.ac.uk)*