Research in the School of Dentistry

Ranked first in the country for Dentistry in terms of 4* and 3* research, academics have joined forces with leading global industry names such as Unilever, Philips and Mars to trial new products which will have health impacts far beyond dental issues, including in diabetes and heart disease. The research has also led to a number of disease assessment tools being launched for high- street dentists, and low-cost tests to help people to stop smoking. In 2015, following significant investment, the **first new dental hospital in the UK for 40 years (/university/building/dental.aspx)** will open as the new home for the University's School of Dentistry.

Oral infectious and inflammatory diseases are the most common human diseases worldwide and cause significant morbidity, impacting upon general health, wellbeing and mortality rates. Their impact on the economy is substantial. Our research is making significant inroads into understanding their pathobiology and translating this into novel treatments.

Oral cancer is currently the 6th most common form of cancer with survival rates of only 60% and we aim to impact significantly upon these statistics through our collaborative research activities. Our interdisciplinary research excellence in the field of tissue repair, regeneration and rehabilitation draws upon multi-disciplinary expertise in the biological, physical and biological sciences to improve current, and develop future, therapeutic solutions.

Our clinician-basic science partnerships provide broad expertise and enable us to exploit our findings through clinical trials of novel diagnostics and therapeutics in collaboration with our NHS partners. While our state-of-the-art purpose built laboratories and associated clinics house cutting-edge technologies enabling us to explore disease mechanisms, improve our understanding of pathogenic processes, and formulate new healthcare solutions.

The strengths of our internationally-leading teams centre on developing a sound understanding of disease mechanisms to underpin novel diagnostic, tissue regenerative and engineering therapeutic strategies for periodontal diseases, caries and oral cancer; and are enhanced by strong local, national and international (Europe, North/South America, Far-East, Asia) collaborations.

Our focus on the scientific basis of oral and dental disease is providing innovative solutions to important problems significantly impacting the population and is helping us to deliver our vision for improving oral and general health.

Research themes in the School

Biomaterials (/research/activity/mds/domains/dentistry/biomaterials/index.aspx)

This theme area seeks to develop novel biomaterials and tissue engineering approaches for application in dental and broader body organ contexts and to relate their clinical performance to studies of their mechanical and biological properties.

Public Health & Clinical Epidemiology (/research/activity/mds/domains/dentistry/primary-dental-care/index.aspx)

In this research area, there is a strong focus on epidemiological oral health surveys of UK and international patient populations. This has helped identify disease trends and healthcare needs and thus strongly impacts upon healthcare policy and delivery. Importantly, our novel analyses have now identified significant relationships between oral and systemic diseases, including associations between periodontal diseases and cardiovascular disease and rheumatoid arthritis.

Tissue Injury & Regeneration (/research/activity/mds/domains/dentistry/tissue-injury-and-regeneration/index.aspx)

This theme area seeks to understand molecular and cellular processes underlying tissue injury and health (periodontitis, endodontics & caries and oral cancer) to develop novel and improved approaches to diagnosis, prevention and therapy.

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