

« unusual passage into medicine, his first degree having been in graphic design. He recalls the day he picked up a copy of *Gray's Anatomy* and was inspired to change career. This involved going back to evening college to add science A-levels before applying to St Mary's, Imperial College, to study medicine. 'During my medical degree, I recall wondering several times when we were going to learn about dentistry and the mouth. Traditional medical education teaches us that the mouth is not important, and that poor oral health is merely coincidental to poor general health. This is evidently not the case.'

Radiology was the obvious specialism for him because it requires a detailed knowledge of anatomy. As part of his medical elective, he studied radiology educational websites. Later he wondered if he could use his design skills to improve on the resources already available. He decided to try and, having taught himself web coding, in 2007 he founded Radiology Masterclass<sup>1</sup> which has become a leading online resource in medical imaging education, visited by millions of medical students and healthcare professionals globally.

'I feel I have come full circle, combining my training in design, my interest in education and my expertise in radiology.'

His role as a medical imaging educator and his drive to understand the mechanisms of disease means he is constantly looking for answers, as if his students are sitting on his shoulder asking: why does COVID-19 cause this distinct pattern of disease?

In February 2021, he first published his hypothesis about the potential for passage of SARS-CoV-2 from the mouth to the lungs via the blood on Radiology Masterclass. This hypothesis was further developed in collaboration with Professor Chapple and formally published in the *Journal of Oral Medicine and Dental Research*.<sup>2</sup>

In his work as a radiologist, he routinely works in a collaborative way, consulting with specialists from multiple disciplines to assist with diagnosis and treatment planning for patients with a wide range of conditions. He experiences a sense of frustration that information about the conditions of the mouth is separate from a holistic anatomical view of the body. 'It is strange that I can view the previous X-rays and scans of any part of a patient's body, but I do not have access to their dental X-rays. It as if the mouth has been amputated from the body. The disciplines of dentistry and medicine have been historically divorced from one another, both in terms of training and healthcare provision. This has to change if we are to further our understanding of the connections that clearly exist between poor oral health and development of systemic diseases.'

His work on COVID-19 inspired his hospital, Salisbury, to introduce guidance relating to mouthcare specifically for patients with acute COVID-19. Dr Lloyd-Jones is also leading a hospital-wide quality improvement project to improve mouthcare for all patients.

'To this day,' he says, 'poor oral health and the oral systemic link are

overlooked as potential mechanisms in the development of multiple systemic diseases. Important messages need to be learned by medical students, doctors of all specialities, health policy makers, and by those determining public health messages or patient-facing medical communications. We need to learn that gum disease and oral dysbiosis are killing us.'

Dr Lloyd-Jones calls for medical researchers to ensure that poor oral health becomes a consideration in understanding the development of systemic diseases and encourages doctors to seek education from experts in oral medicine.

He has called for collaboration at the highest level to gain an interdisciplinary understanding of how diseases develop, especially new diseases like COVID-19.

'Nowhere in the world is there a formal organisation or a system for building an understanding of new diseases. This is something the whole of humanity is lacking. It is massively frustrating as it means that important messages are hidden in siloes of medical research and have been ignored by many investigating COVID-19. The most disconnected branch of medicine is dentistry, and, in my view, the mouth is where many of the answers about COVID-19 are to be found.' ■

## References

1. Radiology Masterclass. COVID-19 discussion pages: COVID-19 resources page. Available at: <https://www.radiologymasterclass.co.uk/tutorials/covid-19/covid-19-resources> (accessed January 2023).
2. Lloyd-Jones G, Molayem S, Pontes C C, Chapple I. The COVID-19 Pathway: A proposed oral-vascular-pulmonary route of SARS-CoV-2 infection and the importance of oral healthcare measures. *J Oral Med Dent Res* 2021; 2: 1–25



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