

FOR IMMEDIATE RELEASE

Oral health may prevent severe Covid-19 disease

Brussels, 22 April 2021. The potential for healthy gums to reduce the severity of Covid-19 disease is outlined in a paper recently published in the *Journal of Oral Medicine and Dental Research* (1).

The paper follows evidence published earlier this year in the *Journal of Clinical Periodontology*, the official publication of the European Federation of Periodontology (EFP), that patients with Covid-19 were three times more likely to experience complications if they also had gum disease (2). Gum disease, also called periodontitis, is a common condition affecting up to half of all adults worldwide (3).

The authors compiled existing evidence to propose a pathway by which the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is transmitted to the lungs, where it causes Covid-19 lung disease.

They suggest that the virus enters the body through the upper airways (nose and mouth), collects in the saliva in the mouth and enters dental plaque under the gums. It then crosses the gums into the blood vessels, where it travels to the arteries in the lungs – rather than travelling to the lungs via the airways. The biological basis for this route of infection is outlined. In addition, the authors put forward the idea that diseased or damaged gums could weaken the mucosal barrier in the mouth and allow the virus to more easily enter the bloodstream.

“If confirmed, this hypothetical model may provide a rationale for understanding why some individuals develop Covid-19 lung disease and others do not,” states the paper. “It would also fundamentally change the way Covid-19 is managed, providing a new line of exploration into treatments targeted at the source of the viral reservoir, the mouth.”

The authors add that, if correct, “simple antimicrobial oral healthcare measures could be implemented not only with the aim of reducing the risk of transmission between individuals” but also as “a means of mitigating the risk of developing lung disease, and therefore the most severe form of the disease.”

First author Dr Graham Lloyd-Jones, a radiologist at Salisbury District Hospital, UK said: “Research suggests that the virus first infects the upper airways (nasal passage and mouth), forms a reservoir in the saliva in the mouth, then passes to the lungs – but without visibly causing inflammation of the airways. Thinking anatomically, it seems straightforward that the virus in the saliva could be leaking across the gums, into the blood vessels, and is delivered directly to the lungs, exactly to the areas we see are affected by Covid-19 lung disease on chest X-rays and computed tomography (CT) scans.”

Co-author Professor Iain Chapple of the University of Birmingham, UK said: “Dental plaque contains billions of microbes and needs to be removed daily. Otherwise, the gums become inflamed and small ulcers that communicate directly with the bloodstream form between the gums and teeth. These allow microbes like viruses to enter the bloodstream. The plaque under the gums forms a biofilm, a complex mixture of bugs, proteins, and sugars, which acts as a self-protective environment for many microbes to survive and prosper. Given the high SARS-CoV-2 viral load in saliva, this blood-borne route of transfer to the lungs is highly plausible.”

Professor Lior Shapira, EFP president, said: “This novel paper establishes the biological plausibility of the observation that Covid-19 patients with gum disease have more severe complications than periodontally healthy individuals (2). Evidence suggests that inflammation in the gums may open the vascular system to the virus, resulting in lung dysfunction. The paper emphasises the importance of periodontal health in general, and particularly during the ongoing pandemic.”

Professor Nicola West, EFP secretary general, said: “More research is needed to substantiate this theory, but in the meantime, it seems sensible to take extra care in looking after our teeth and gums, get regular check-ups and undergo treatment when needed.”

The paper concludes: “Until proven or refuted, daily oral hygiene and other measures for plaque control, together with oral healthcare should be prioritised for the general public, since these measures not only improve oral health and wellbeing but could also be potentially lifesaving in the context of the pandemic.”

What you can do to prevent gum disease

- Brush your teeth carefully more than once a day using a manual or powered toothbrush.
- Clean between your teeth daily using an interdental brush (or floss if the gaps are too tight).
- Specific mouth rinses or toothpastes can be used on top of cleaning to reduce inflammation.
- Don't smoke, maintain a healthy weight, eat a balanced diet, exercise, reduce stress.
- If you have diabetes, control your blood sugar.

On a related note, the EFP has recently edited the short animated film ‘Gum disease and Covid-19 complications’, that is publicly available at the EFP’s YouTube channel at <https://bit.ly/3mx8-TRK>.

EFP, the global benchmark in periodontology

The European Federation of Periodontology (EFP, www.efp.org) is a non-profit organisation dedicated to promoting awareness of periodontal science and the importance of gum health. Its guiding vision is “periodontal health for a better life.”

Founded in 1991, the EFP is a federation of 37 national periodontal societies that represents more than 16,000 periodontists, dentists, researchers and oral-health professionals from Europe and around the world. It supports evidence-based science in periodontal and oral health, and it promotes events and campaigns aimed at both professionals and the public.

The EFP organises EuroPerio, the world’s leading congress in periodontology and implant dentistry, as well as other important professional and expert events such as Perio Master Clinic and Perio Workshop. The annual Gum Health Day on May 12, organised by the EFP and its member societies, brings key messages on gum health to millions of people across the world.

The EFP also organises workshops and outreach campaigns with its partners: projects to date have covered the relationship between periodontal disease and diabetes, cardiovascular disease, and caries, as well as women's oral health during pregnancy.

The EFP's *Journal of Clinical Periodontology* is the most authoritative scientific publication in this field. The federation also publishes *JCP Digest*, a summary of research which is published monthly in seven languages, and the *Perio Insight* and *Perio Life* magazines, which respectively offer expert views on issues in clinical practice and give voice to alumni of the EFP-accredited postgraduate programmes in periodontology. Online, the EFP has developed its EFP Virtual strategy for continuing education, which includes the Perio Sessions webinars, the EuroPerio Series presentations, and the Perio Talks interactive chats on social media.

The EFP's work in education is also highly significant, notably its accreditation programme for postgraduate education in periodontology and implant dentistry.

The EFP has no professional or commercial agenda.

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Notes for editors

Media contact:
press@efp.org

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