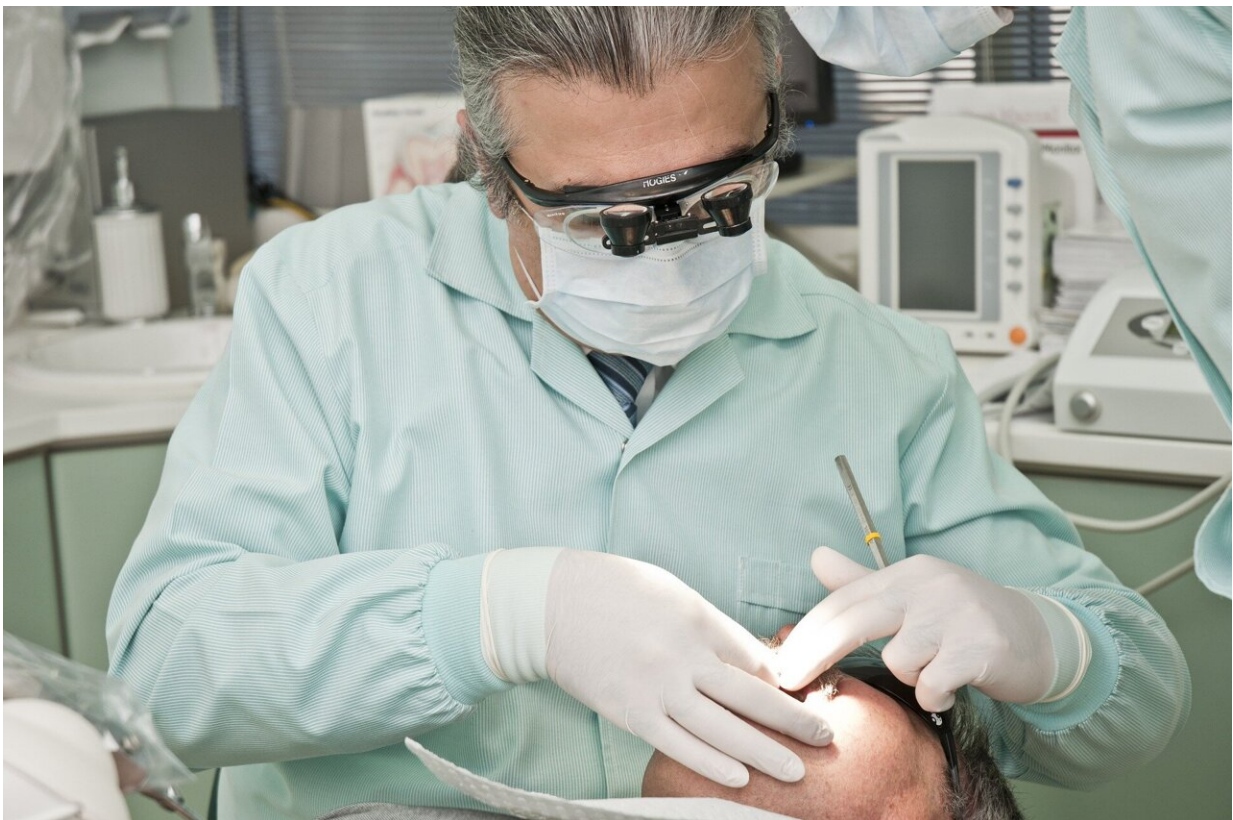


Common diabetes drug could treat gum disease and help with healthy aging, study claims

October 10 2023



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A new method of controlling inflammation and sugar levels for oral and systemic disease prevention using a common diabetes drug has been

discovered by a team of researchers at King's College London.

In their latest publication in the [*Journal of Translational Medicine*](#), a team of researchers at the Faculty of Dentistry, Oral & Craniofacial Sciences have found new ways of stopping periodontal (gum) disease and potentially reducing the incidence of diabetes and obesity. This new approach focuses on controlling inflammation and sugar levels in both the mouth and body with a common type 2 [diabetes drug](#), Metformin.

Periodontal (gum) diseases are strikingly common across the globe and are strongly associated with systemic conditions such as diabetes and obesity. Lifestyle choices such as increased sugar intake are a common cause of [gum disease](#), as well as diabetes and obesity. Diabetes, obesity and gum disease all develop over our lifetime, but gum disease has the potential to be picked up first as it can start at as early as 30 years old.

The only treatment strategy currently available to tackle gum disease is to deep clean the teeth to rid the mouth of bacteria, as well as prescribing antibiotics. But this treatment does not protect against the continuation and development of systemic associated diseases, such as diabetes and [obesity](#).

Metformin, a pharmaceutical agent capable of modulating sugar metabolism, is a drug commonly used for the management of diabetes, but it is not typically used in dentistry. The researchers found that Metformin led to significant prevention of bone-loss during induced [periodontal disease](#) and age-related bone-loss in vivo (in living mice). The research team tested the use of this drug in patients with gum disease without [diabetes](#) in the first ever clinical trial. The trial showed improved clinical outcomes in the gum disease treatment, and control of sugar levels and inflammation in the mouth and body, even in high levels of bacteria.

The use of this new method of gum disease prevention would also help control weight gain and sugar levels, potentially proving to be a new solution to prevent systemic and [oral disease](#) in one. Metformin is a cheap drug in the U.K. and around the world and costs £0.04 per tablet at market price. Researchers say this treatment could be implemented at an even lower cost if supplied by the NHS.

Lead author Dr. Vitor Neves, academic clinical lecturer and periodontology registrar says, "Our patients do not often have any tools to fight against gum disease other than brushing their teeth, but for the first time we have a potential tool that can help not only with gum disease, but overall health.

"Metformin is readily available around the world and is cheap, therefore allowing the drug to be used as a [preventive medicine](#) for oral and systemic diseases that could be adopted on a global scale. This would help many to age healthier—all starting from taking care of their mouths."

More information: Vitor C. M. Neves et al, Repurposing Metformin for periodontal disease management as a form of oral-systemic preventive medicine, *Journal of Translational Medicine* (2023). [DOI: 10.1186/s12967-023-04456-1](#)

Provided by King's College London

Citation: Common diabetes drug could treat gum disease and help with healthy aging, study claims (2023, October 10) retrieved 29 April 2024 from <https://medicalxpress.com/news/2023-10-common-diabetes-drug-gum-disease.html>

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