

# Early signs of arthritis can be found in the mouth

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This is a hand afflicted by rheumatoid arthritis. Credit: The University of Manchester

A common gum disease may indicate a person's risk of developing rheumatoid arthritis later in life, according to a University of Adelaide dental expert.

Professor Mark Bartold, Director of the University's Colgate Australian Clinical Dental Research Centre, says multiple processes that occur in the body when someone develops periodontal (gum) disease serve as an indicator of possible development of [rheumatoid arthritis](#) later in life.

"Periodontitis (the progressive loss of bone and tissue around teeth) is highly prevalent and is a major public health problem in both developed and developing countries, with up to 60% of adults suffering from the condition world-wide," says Professor Bartold says.

"When people start to show signs and symptoms of gingivitis or early [periodontitis](#), their bodies may have already been experiencing a process of modification of proteins (called citrullination and carbamylation) and the production of auto-

antibodies to these altered proteins. This process can occur quite early in life – anywhere from mid-20s to early 30s.

"Both citrullination and carbamylation also occur in people with rheumatoid arthritis, a painful chronic disease that sees the body's immune system attack tissue in the joints.

"Because rheumatoid arthritis doesn't usually start to affect people until after 35, identifying these processes in people with periodontitis may indicate they will develop rheumatoid arthritis later in life," he says.

Professor Bartold says not all people with periodontitis will get rheumatoid arthritis and vice versa.

"Rheumatoid arthritis is a lot less common than periodontitis, affecting only 1% of the population," Professor Bartold says.

"This finding suggests that those who are susceptible to both conditions have already been "primed" for the arthritis through what's happened in their gums," he says.

Professor Bartold says more research is needed but this is a significant finding and could lead to new diagnostic tools and therapies for rheumatoid arthritis.

"The next stage of the research will look at ways to block the processes of citrullination and carbamylation and see how that impacts the development of rheumatoid arthritis," Professor Bartold says.

This research was published in the journal *Medical Hypotheses*.

Provided by University of Adelaide

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