

How your mouth bacteria can harm your lungs

By Ana Sandoiu | Published Friday 17 August 2018

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New research now published in the journal *mSphere* examines the effects of poor dental hygiene on the respiratory health of elderly Japanese people. The recent results shed light on the importance of the tongue microbiota for our respiratory health.

The new study was carried out by a team of Japanese-based scientists affiliated with the Kyushu University in Fukuoka.

Dr. Yoshihisa Yamashita, from the Division of Oral Health, Growth, and Development in the Faculty of Dental Science at Kyushu, is the corresponding author of the study.

As Dr. Yamashita and his colleagues explain in their paper, the oral microbiota is important for overall health because the bacteria we ingest affect every aspect of our health.

Medical News Today have reported on a number of studies highlighting the link between the gut microbiota and cancer, obesity, heart conditions, depression, anxiety, and other conditions.



Good oral hygiene is particularly important for seniors' respiratory health, suggests a new study.

Also, explain the authors of the new research, not only do the bacteria in our tongue microbiota reach our guts, but seniors are also particularly likely to inhale some of these microorganisms.

Problems such as difficulty swallowing and cough reflux may cause the elderly to accidentally inhale bacteria that could lead to pulmonary infections such as pneumonia.

The link between oral health and pneumonia

In order to investigate the effect of dental hygiene on seniors, Dr. Yamashita and team examined the tongue microbiota composition of 506 community-dwelling seniors aged 70–80 years.

The seniors were residents of Hisayama, Japan, and they had received a dental examination in 2016.

Using an advanced technique of genomic sequencing called 16S rRNA genetic sequencing, the researchers determined the composition and density of the seniors' microbiota.

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The main bacteria identified were *Prevotella histicola*, *Veillonella atypica*, *Streptococcus salivarius*, and *Streptococcus parasanguinis*.

Previous studies, say the researchers, have linked these microorganisms with a higher risk of death from pneumonia.

These bacteria were found predominantly in seniors with more plaque, more cavities, and fewer teeth. Additionally, the study found more fungi in these seniors' microbiotas, as well as among those who wore dentures.

"These results," conclude the authors, "suggest that elderly adults with poorer oral health swallow a more dysbiotic microbiota formed on the tongue."

Dysbiosis describes microbial imbalance either in the gut or tongue. Microbial imbalance in the gut, for example, has been associated with several diseases that involve the immune system, such as inflammatory bowel disease.

In elderly people, such an imbalance in the tongue microbiota was also linked with a higher risk of pneumonia-related death in previous studies.

Dr. Yamashita summarizes these findings, saying, "Fewer teeth, poorer dental hygiene, and more dental caries (cavities) experience are closely related to dysbiotic shift in the tongue microbiota composition, which might be harmful to the respiratory health of elderly adults with swallowing problems."

The study highlights the importance of dental health. "Careful attention should be given to the tongue microbiota status in elderly adults with poorer dental conditions," says Dr. Yamashita.

In the United States, over 540,000 seniors were hospitalized and diagnosed with pneumonia in 2015. Almost 52,000 people died as a result.

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