

Dental X-rays can predict fractures

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It is now possible to use dental X-rays to predict who is at risk of fractures.
Credit: Photo: University of Gothenburg

It is now possible to use dental X-rays to predict who is at risk of fractures, reveals a new study from researchers at the Sahlgrenska Academy reported in the journal *Nature Reviews Endocrinology*.

In a previous study, researchers from the University of Gothenburg's Sahlgrenska Academy and Region Västra Götaland demonstrated that a sparse bone structure in the trabecular bone in the lower jaw is linked to a greater chance of having previously had [fractures](#) in other parts of the body.

X-rays investigates bone structure

The Gothenburg researchers have now taken this a step further with a new study that shows that it is possible to use dental X-rays to investigate the bone structure in the lower jaw, and so predict who is at greater risk of fractures in the future. Published in the journal *Bone*, the results were also mentioned in both *Nature Reviews Endocrinology* and the *Wall Street Journal*.

Linked to risk of fractures

"We've seen that sparse bone structure in the lower jaw in mid-life is directly linked to the risk of fractures in other parts of the body, later in life," says Lauren Lissner, a researcher at the Institute of Medicine at the Sahlgrenska Academy.

Study started 1968

The study draws on data from the Prospective Population Study of Women in Gothenburg started in 1968. Given that this has now been running for over 40 years, the material is globally unique. The study included 731 women, who have been examined on several occasions since 1968, when they were 38-60 years old. X-ray images of their jaw bone were analysed in 1968 and 1980 and the results related to the incidence of subsequent fractures.

For the first 12 years fractures were self-reported during followup examinations. It is only since the 1980s that it has been possible to use medical registers to identify fractures. A total of 222 fractures were identified during the whole observation period.

One out of five in higher risk

The study shows that the bone structure of the jaw was sparse in around 20% of the women aged 38-54 when the first examination was carried out, and that these women were at significantly greater risk of fractures.

The study also shows that the older the person, the stronger the link between sparse bone structure in the jaw and fractures in other parts of the body.

Applies for both sexes

Although the study was carried out on women, the researchers believe that the link also applies for men.

"Dental X-rays contain lots of information on [bone structure](#)," says Grethe Jonasson, the researcher at the Research Centre of the Public Dental Service in Västra Götaland who initiated the fractures study. "By analysing these images, dentists can identify people who are at greater risk of fractures long before the first fracture occurs."

More information: The article "A prospective study of mandibular trabecular bone to predict fracture incidence in women: A low-cost screening tool in the dental clinic" was published in *Bone* in October.

Provided by University of Gothenburg

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