Upfront

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Dental X-rays Accurately Predict Osteoporosis Risk

Ordinary dental x-rays may help to identify women at risk for osteoporosis, said a European research team who have devised a computer software program that analyzes bone formation found in dental x-rays.

This technique uses novel computer software developed by the Imaging Science and Biomedical Engieering Division of Manchester University in England. Specifically, the software is used to analyze bone characteristics, including thickness and fragmentation, in routine dental x-rays. The research team believes this information may point to trouble elsewhere in the body.

The study enrolled 651 women, with an average age of 55 years, at 4 clinical centers throughout Europe. The participants first underwent conventional bone mass density (BMD) measurements of the femur, hip, and spine, which are bones often affected by osteoporosis. Researchers also analyzed a small area of dental x-rays that showed a certain type of bone.

The researchers found that the examination of dental records was able to predict osteoporotic risk to the same degree as traditional BMD measures.

Osteoporosis, a disease in which bones become fragile and more apt to break, affects nearly 45 million older women worldwide. Until menopause, healthy bones maintain a fine balance between formation and resorption (breaking down). However, after menopause, bone breakdown outpaces bone formation, resulting in bone loss.

The incidence of the disease increases as women age, affecting 15% of women in their 50s, 22% of women in their 60s, and 38.5% of women in their 70s. Although women are 4 times more likely to develop the disease, men suffer from osteoporosis as well.

According to the study, wide-scale screening for the disease is costly and difficult to implement. The authors point out that this strategy requires no extra cost or time on the part of the dentist.

"Individuals will be given a probability that they have osteoporosis at the hip and spine based on radiographic and clinical information," said study author Hugh Devlin, a researcher with Manchester University's School of Dentistry. "The radiographic information currently used is the width of the mandibular cortex."

Devlin is now working to expand the computer search capability and the ability to diagnose osteoporosis to include other features of the dental x-ray.

Special Diet may Help Smokers Quit

What do yogurt, a glass of water, and a plate of broccoli have in common? According to new research, consuming any of these foods seems to diminish the taste of cigarettes. Researchers at Duke University also found that cigarette taste is enhanced after eating meat or drinking alcohol or other caffeinated beverages. Taken together, the discoveries raise the possibility of devising a so-called "smoker's diet," which could help make quitting easier.

"Smoking is not just about the nicotine addiction, it's also about taste and sensory qualities of smoking," said study author F. Joseph McClernon, an assistant professor in the department of psychiatry and behavioral sciences at Duke University Medical Center in Durham, NC. "So, anything we find that can disturb or disrupt the smoking experience might make it easier for a smoker to quit."

McClernon and his colleagues administered an open-ended questionnaire to 209 smokers asking for reports of foods or beverages that worsen or enhance the taste of cigarettes. On average, the participants smoked 22 cigarettes a day and had been smoking for a little more than 21 years.

Almost 45% of the smokers mentioned some kind of food that worsened cigarette taste, while nearly 70% identified foods that improved taste. Commonly reported categories that worsen the taste of cigarettes were fruits/vegetables, noncaffeinated beverages, and dairy products. Commonly reported categories that enhance the taste of cigarettes were caffeinated and alcoholic beverages, and meat products. Regression analyses indicated that increased sensitivity to both taste worsening and enhancing were associated with smoking nonmenthol cigarettes.

Participants reported that specific situations also had a taste-diminishing impact, including taking medicines, hot weather, or smoking too much or too fast. Stale cigarettes and a smoky environment also dampened cigarette taste.

The researchers also found that younger smokers were more susceptible to foods that worsened tastes, whereas those who smoked fewer cigarettes were more susceptible to taste-enhancing foods.

"There's really no harm in smokers trying some of these things now," McClernon said. "Try drinking skim milk or other dairy products, drinking more water, eating fruits and vegetables before stopping smoking-and see if that makes smoking less pleasurable."

McClernon said that further research is needed to figure out exactly how foods affect cigarette taste and whether altering a diet might improve quitting success. "Any kind of clue that has the potential to lead to new treatments is important in dealing with the leading preventable cause of death and disability in the US."