SDM's Dr. Thikriat Al-Jewair Leads Study: Obstructive Sleep Apnea Tied to Weaker Bones and Teeth in Adults

Thikriat Al-Jewair, Asst. Dean Equity, Diversity & Inclusion, Assoc. Professor, Director of the Advanced Education Program in Orthodontics,
Department of Orthodontics

Obstructive sleep apnea may be linked to low bone mineral density in adults, according to University at Buffalo-led research.

"The findings are crucial for individuals with sleep apnea, as low bone mineral density is an indicator of osteoporosis – a condition in which bones become weak and brittle. In addition to increasing the risk of fractures, low bone mineral density also impacts oral health, causing teeth to become loose and dental implants to fail," says senior author Thikriat Al-Jewair, DDS, associate professor of orthodontics in the UB School of Dental Medicine and director of the school's Advanced Education Program in Orthodontics.

The study was published in November in The Journal of Craniomandibular and Sleep Practice. The researchers used cone beam computed tomography (CBCT) – a type of X-ray – to measure bone density in the head and neck of 38 adult participants, half of whom had obstructive sleep apnea.

When controlling for age, sex and weight, the participants with obstructive sleep apnea had significantly lower bone mineral density than the participants without the condition.

"Obstructive sleep apnea, which is characterized by difficulty breathing while asleep, can cause hypoxia (low levels of oxygen in the body), inflammation, oxidative stress and shortened breathing patterns. Each of these symptoms may have a chronic negative effect on bone metabolism and, ultimately, bone density," says Al-Jewair.

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UB's School of Dental Medicine Receives Grant to Improve Vital Pulp Therapy, a Root Canal Treatment Alternative

Hacer Aksel, Clinical Asssistant Professor, Department of Periodontics and Endodontics

UB researcher Hacer Aksel has received a grant from the American Association of Endodontists' Foundation for Endodontics to investigate a potential biomarker to support the success of vital pulp therapy, an alternative to root canal treatment that aims to preserve and maintain the healthy pulp tissue in damaged teeth.

The minimally invasive treatment is dependent on the inflammatory status and healing capacity of dental pulp. The enzyme, matrix metalloproteinase (MMP)-9, has been suggested as a potential biomarker for predicting these factors, but it's effects on cellular functions remains unknown, says Aksel, clinical assistant professor of periodontics and endodontics in the School of Dental Medicine.

The research will investigate the effects of MMP-9 on multiple types of cells involved in the pulpal healing process, including dental pulp stem cells, inflammatory cells and endothelial cells — the cells that line blood vessels.

"Findings from the study will aid development of novel biomaterials for regenerative vital pulp therapies," says Aksel.

“This project will provide a basis for designing a new approach and treatment modality for vital pulp therapies,” she says. “The long-term goal is to explore immunomodulatory hydrogel-based biomaterial to resolve pulpal inflammation while maintaining cellular functions to repair and regenerate the pulp-dentin complex during the treatment of deep caries. This novel approach may open new avenues to treat other MMP-associated inflammatory diseases.”

This Year's Strut for Smiles Fashion Show B

Video created by Madeline Harvey, `23

Each year the University at Buffalo School of Dental Medicine ASDA Chapter hosts a school-wide Fashion Show Fundraiser. This year, the UB SDM Chapter of the American Association of Developmental Medicine and Dentistry (AADMD) took on the exciting role of planning this meaningful event for our UB Community! The program took place on Saturday, January 28th at the Greenhouse Room, located in the Lafayette Hotel, Buffalo N.Y.

UBSDM AADMD Chapter presidents, Simone DeBellis, `24  and Tyler Lyons, `24, worked with the AADMD student executive board to create a magical night of inclusion by hosting the first ever UB SDM Fashion Show in which individuals with intellectual and developmental disabilities participated in all of the activities of the evening! Students, faculty, and friends walked the runway to show off their personalities, style, and unique cultures!

Throughout the fashion show, there were opportunities for participants to showcase their incredible talents as performers and display their artwork in a student art gallery. This year, over 200 students, faculty, and guests came together to raise funds for Miles for Smiles of Oishei's Children's Hospital as well as Special Smiles of the WNY Special Olympics.

If you have any news you would like to share, please contact Kelli at natale@buffalo.edu.

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