

Non-invasive, ultrasound-based approach for pocket depth measurements

26 July 2018

At the 96th General Session of the International Association for Dental Research (IADR), held in conjunction with the IADR Pan European Regional (PER) Congress, Jesse Jokerst, University of California, San Diego, USA gave an oral presentation titled "Non-Invasive, Ultrasound-based Approach for Pocket Depth Measurements." The IADR/PER General Session & Exhibition is in London, England at the ExCeL London Convention Center from July 25-28, 2018.

Provided by International & American Associations for Dental Research

Periodontal probing is a useful diagnostic tool to assess [periodontal disease](#) but it is limited by systematic and random errors. Jokerst and co-author Ching-yu Lin, also at the University of California, San Diego, USA, used photoacoustic imaging in tandem with a food grade cuttlefish contrast agent to specifically measure pocket depths in swine models. The researchers then compared those measurements to measurements from a periodontal probe.

Jokerst and Lin demonstrated for the first time that pocket depths could be measured with photoacoustic imaging. The results showed that the [photoacoustic imaging](#) approach offered 0.01 mm precision and could cover the entire pocket versus the probe-based approach that is limited to only a few sites. The gingival thickness can also be precisely measured via the ultrasound mode data.

The values gathered with this novel technique matched that of the top periodontal probe approach but were more precise and covered all areas of the tooth. Future work will use models of periodontal disease as well as automated algorithms to collect and process the data.

This research was presented as part of the Keynote Address; Instruments and Equipment oral session that took place on Thursday, July 26 from 8 a.m. - 9:30 a.m. at the ExCeL London Convention Center in London, England.

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