

# (2022-167) Ultrasonographic detection of gingival biomarkers for periodontal diagnosis

Tech ID: 33521 / UC Case 2021-Z08-1

## BACKGROUND

## TECHNOLOGY DESCRIPTION

Researchers from UC San Diego and USC have developed a patent-pending method for the detection and measurement of alveolar bone level, gingival height, and gingival thickness for diagnosis of periodontal health.

The periodontal examination provides critical information such as probing pocket depth (PPD; current periodontal health) and clinical attachment loss (CAL; cumulative destruction)<sup>9</sup>. PPD, CAL, and other clinical parameters form the basis of periodontal diagnosis. Radiography offers excellent sensitivity to hard tissue (bone, enamel, etc.) but cannot discriminate between healthy and diseased gingiva or map disease within soft tissue; it also has a small but non-negligible dose of ionizing radiation.

Ultrasound imaging has the benefits of being a portable and low-cost alternative to radiography that is noninvasive and free of ionizing radiation, and can measure the thickness of the gingiva, which is deemed difficult with radiographic imaging modalities.

## APPLICATIONS

Chairside clinical evaluation by dentists and periodontists.

## ADVANTAGES

## STATE OF DEVELOPMENT

UC San Diego is seeking companies interested in commercializing this patent-pending technology.

## INTELLECTUAL PROPERTY INFO

## RELATED MATERIALS

- Moore CA, Law JK, Retout M, Pham CT, Chang KCJ, Chen C, Jokerst JV. High-resolution ultrasonography of gingival biomarkers for periodontal diagnosis in healthy and diseased subjects. Dentomaxillofac Radiol. 2022 Sep 1;51(6):20220044. doi: 10.1259/dmfr.20220044. Epub 2022 May 12. - 05/12/2022

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## OTHER INFORMATION

### KEYWORDS

oral imaging, noninvasive,  
diagnostics, ultrasonography, gingiva,  
periodontitis

### CATEGORIZED AS

- **Imaging**
  - Medical
  - Other
- **Medical**
  - Devices
  - Diagnostics
  - Imaging
- **Sensors & Instrumentation**
  - Medical

### RELATED CASES

2021-Z08-1

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