REPLY

Predictive diagnostic tests in periodontal diseases

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We appreciate the opportunity to discuss predictive diagnostics for periodontal diseases further than was possible in our original Primer (Periodontal diseases. *Nat. Rev. Dis. Primers* **3**, 17038 (2017))¹ by responding to the recent correspondence by Hernández and colleagues (A quantitative point-of-care test for periodontal and dental peri-implant diseases. *Nat. Rev. Dis. Primers* **3**, 17069 (2017))².

Quantitative diagnostic tests, such as the one the authors propose, which measures the levels of activated matrix metalloproteinase 8 (aMMP8) as a biomarker of active periodontal disease, are welcome new tools and could enhance screening for periodontal disease as well as aid diagnosis and prognostic assessment. However, more-extensive independent verification and a plausible biological argument that supports the role of the selected biomarker in the

aetiopathogenesis of periodontal disease are needed before these tests can be recommended for clinical practice³. Molecular diagnostics in periodontal disease are to be encouraged, but not prematurely adopted, as occurred with the IL-1 genotype-based diagnostic test^{4–6}. The IL-1-based genetic test was heavily marketed despite multiple studies that questioned its diagnostic utility^{3,4} and weak and contradictory elements in the supporting literature⁶. MMP8 is a ubiquitous inflammatory molecule, and inflammation contributes to both disease initiation and the healing process. Thus, aMMP8 would have a pivotal role in all phases of inflammation, which would hinder its predictive value³. Despite the many potential markers and tests that exist, only a few have verified clinical usefulness, and the Primer provides a balanced overview of those with proven utility or promise.

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Competing interests

The authors declare no competing interests.

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