

## Documents

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**Assessment of the Prevalence of Radix Entomolaris and Distolingual Canal in Mandibular First Molars in 15 Countries: A Multinational Cross-sectional Study with Meta-analysis**

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**Abstract**

**Aim:** The aim of this study was two-folded: i) to assess the prevalence of Distolingual Canal (DLC) and Radix Entomolaris (RE) in Mandibular First Molars (M1Ms), using Cone Beam Computed Tomography (CBCT) images and ii) to assess the impact of sociodemographic factors on the prevalence of these conditions worldwide. **Methods:** CBCT images were scanned retrospectively and the ones including bilateral M1Ms were included in the study. The evaluation was performed by 1 researcher in each country, trained with CBCT technology. A written and video instruction program explaining the protocol to be followed step-by-step was provided to all observers to calibrate them. The CBCT imaging screening procedure consisted of evaluating axial sections from coronal to apical. The presence of DLC and RE in M1Ms (yes/no) was identified and recorded. **Results:** Six thousand three hundred four CBCTs, representing 12,608 M1Ms, were evaluated. A significant difference was found between countries regarding the prevalence of both RE and DLC ( $P < .05$ ). The prevalence of DLC ranged from 3% to 50%, and the overall prevalence was 22% (95% CI: 15%–29%). RE prevalence ranged from 0% to 12%, and the overall prevalence was 3% (95% CI: 2%–5%). There were no significant differences between left and right M1Ms or between genders for either DLC or RE ( $P > .05$ ). **Conclusion:** The overall prevalence of RE and DLC in M1Ms was 3% and 22%. Additionally, both RE and DLC showed substantial bilaterally. These variations should be considered by endodontic clinicians during endodontic procedures in order to avoid potential complications. © 2023 The Authors

**Author Keywords**

CBCT; Distolingual canal; Endodontics; Prevalence; Radix entomolaris; Root canal anatomy

**Index Keywords**

cone beam computed tomography, cross-sectional study, dental pulp cavity, diagnostic imaging, female, human, male, mandible, meta analysis, molar tooth, prevalence, procedures, retrospective study, tooth

root; Cone-Beam Computed Tomography, Cross-Sectional Studies, Dental Pulp Cavity, Female, Humans, Male, Mandible, Molar, Prevalence, Retrospective Studies, Tooth Root

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