



# Danish endodontic practice-based research network: follow-up data

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## ABSTRACT

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**Objective:** The aim of this prospective, clinical study was to follow-up root canal treatments performed by dentists in the practice-based endodontic research network setting, to assess treatment outcome and factors related to treatment outcome.

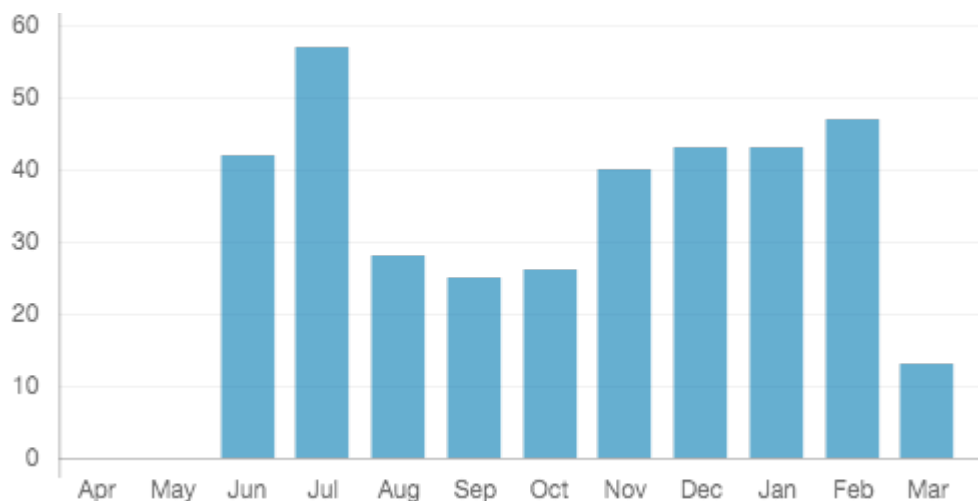
**Material and methods:** Baseline information from 536 teeth was included, follow-up information on 269 teeth (50%) was available. Treatments were performed by 12 dentists during 2017–2018. Follow-up period varied from 3.5 months to 3 years. Treatment outcome was assessed in periapical radiographs using the Periapical Index (PAI). Cases were classified as referred or not. Pre-, intra-, and post-operative variables were recorded by the dentists during treatment and analysed at follow-up in relation to treatment outcome.

**Results:** Periapical status improved or remained healthy in 174 (66%) teeth. If PAI at baseline was 3, 4, or 5, treatment outcome was affected negatively ( $p = 0.049$ ). The length and seal of the root filling was assessed adequate in 75% and 63% of the teeth, respectively. Adequate seal ( $p = 0.02$ ) and length ( $p = 0.03$ ) resulted in improved treatment outcome.

**Conclusions:** When initial periapical status and/or quality of the root filling was good, there was a higher chance of a successful treatment outcome.

## DOWNLOADS

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## REFERENCES

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Ng YL, Mann V, Rahbaran S, Lewsey J, Gulabivala K. Outcome of primary root canal treatment: systematic review of the literature – part 2. Influence of clinical factors. *Int Endod J.* 2008;41:6–31. <https://doi.org/10.1111/j.1365-2591.2007.01323.x> DOI: <https://doi.org/10.1111/j.1365-2591.2007.01323.x>

Burns LE, Kim J, Wu Y, Alzwaideh R, McGowan R, Sigurdsson A. Outcomes of primary root canal therapy: an updated systematic review of longitudinal clinical studies published between 2003 and 2020. *Int Endod J.* 2022;55:714–31. <https://doi.org/10.1111/iej.13736> DOI: <https://doi.org/10.1111/iej.13736>

DeRouen TA, Cunha-Cruz J, Hilton TJ, Ferracane J, Berg J, Zhou L, et al. What's in a dental practice-based research network? Characteristics of Northwest PRECEDENT dentists, their patients and office visits. *J Am Dent Assoc.* 2010;141:889–99. <https://doi.org/10.14219/jada.archive.2010.0289> DOI: <https://doi.org/10.14219/jada.archive.2010.0289>

Nixdorf DR, Law AS, Look JO, Rindal DB, Durand EU, Kang W, et al. Large-scale clinical endodontic research in the National Dental Practice-Based Research Network: study overview and methods. *J Endod.* 2012;38:1470–8. <https://doi.org/10.1016/j.joen.2012.08.002> DOI: <https://doi.org/10.1016/j.joen.2012.08.002>

Sørensen LH, Kirkevang LL. Establishment of a Danish endodontic practice-based research network:

baseline data. *Acta Odontol Scand.* 2021;79:302–8. <https://doi.org/10.1080/00016357.2020.1857434> DOI: <https://doi.org/10.1080/00016357.2020.1857434>

Duncan HF, Kirkevang LL, Peters OA, El-Karim I, Krastl G, Del Fabbro M, et al. Treatment of pulpal and apical disease: The European Society of Endodontology (ESE) S3-level clinical practice guideline. *Int Endod J.* 2023;56:238–95. <https://doi.org/10.1111/iej.13974> DOI: <https://doi.org/10.1111/iej.13974>

Orstavik D, Kerekes K, Eriksen HM. The periapical index: a scoring system for radiographic assessment of apical periodontitis. *Endod Dent Traumatol.* 1986;2:20–34. <https://doi.org/10.1111/j.1600-9657.1986.tb00119.x> DOI: <https://doi.org/10.1111/j.1600-9657.1986.tb00119.x>

Brynolf I. A histological and roentgenological study of the periapical region of human upper incisors. Thesis. *Odontologisk Revy.* 1967;18, suppl.11.

Kirkevang LL, Ørstavik D, Bahrami G, Wenzel A, Vaeth M. Prediction of periapical status and tooth extraction. *Int Endod J.* 2017;50:5–14. <https://doi.org/10.1111/iej.12581> DOI: <https://doi.org/10.1111/iej.12581>

Weiger R, Axmann-Krcmar D, Löst C. Prognosis of conventional root canal treatment reconsidered. *Endod Dent Traumatol.* 1998;14:1–9. <https://doi.org/10.1111/j.1600-657.1998.tb00801.x> DOI: <https://doi.org/10.1111/j.1600-657.1998.tb00801.x>

Kirkevang LL, El Karim IA, Duncan HF, Nagendrababu V, Kruse C. Outcomes reporting in systematic reviews on non-surgical root canal treatment: a scoping review for the development of a core outcome set. *Int Endod J.* 2022;55:1128–64. <https://doi.org/10.1111/iej.13812> DOI: <https://doi.org/10.1111/iej.13812>

El Karim IA, Duncan HF, Cushley S, Nagendrababu V, Kirkevang LL, Kruse C, et al. A protocol for the Development of Core Outcome Sets for Endodontic Treatment modalities (COSET): an international consensus process. *Trials.* 2021;22:812. <https://doi.org/10.1186/s13063-021-05764-x> DOI: <https://doi.org/10.1186/s13063-021-05764-x>

El Karim I, Duncan HF, Cushley S, Nagendrababu V, Kirkevang LL, Kruse CL, et al. An international consensus study to identify ‘what’ outcomes should be included in a core outcome set for endodontic treatments (COSET) for utilization in clinical practice and research. *Int Endod J.* 2024;57:270–80. <https://doi.org/10.1111/iej.14008> DOI: <https://doi.org/10.1111/iej.14008>

Bernstein SD, Horowitz AJ, Man M, Wu H, Foran D, Vena DA, et al. Outcomes of endodontic therapy in general practice: a study by the Practitioners Engaged in Applied Research and Learning Network. *J Am Dent Assoc.* 2012;143:478–87. <https://doi.org/10.14219/jada.archive.2012.0208> DOI: <https://doi.org/10.14219/jada.archive.2012.0208>

Nixdorf DR, Moana-Filho EJ, Law AS, McGuire LA, Hodges JS, John MT. Frequency of persistent tooth pain after root canal therapy: a systematic review and meta-analysis. *J Endod.* 2010;36:224–30. <https://doi.org/10.1016/j.joen.2009.11.007> DOI: <https://doi.org/10.1016/j.joen.2009.11.007>

Tilashalski KR, Gilbert GH, Boykin MJ, Shelton BJ. Root canal treatment in a population-based adult sample: differences in patient factors and types of teeth treated between endodontists and general dentists. *Community Dent Health.* 2006;23:21–5. PMID: 16555715.

Myrhaug TH, Grytten J, Sandvik L, Ørstavik D. Kliniske rutiner ved rotbehandling hos spesialister i endodonti og allmennpraktiserende tannleger i Norge. *Nor Tannlegeforen Tid.* 2011;121:300–4. DOI: <https://doi.org/10.56373/2011-5-10>

Zaugg LK, Savic A, Amato M, Amato J, Weiger R, Connert T. Endodontic treatment in Switzerland. A national survey. *Swiss Dent J.* 2019;130:18–29. <https://doi.org/10.61872/sdj-2020-01-02> DOI: <https://doi.org/10.61872/sdj-2020-01-02>

Lazarski MP, Walker WA 3rd, Flores CM, Schindler WG, Hargreaves KM. Epidemiological evaluation of the outcomes of nonsurgical root canal treatment in a large cohort of insured dental patients. *J Endod.* 2001;27:791–6. <https://doi.org/10.1097/00004770-200112000-00021> DOI: <https://doi.org/10.1097/00004770-200112000-00021>

Fransson H, Dawson VS, Frisk F, Bjørndal L; EndoReCo; Kvist T. Survival of Root-filled Teeth in the Swedish Adult Population. *J Endod.* 2016;42:216–20. <https://doi.org/10.1016/j.joen.2015.11.008> DOI: <https://doi.org/10.1016/j.joen.2015.11.008>

Burry JC, Stover S, Eichmiller F, Bhagavatula P. Outcomes of primary endodontic therapy provided by endodontic specialists compared with other providers. *J Endod.* 2016;42:702–5. <https://doi.org/10.1016/j.joen.2016.02.008> DOI: <https://doi.org/10.1016/j.joen.2016.02.008>

Kirkevang LL. Root canal treatment and apical periodontitis: what can be learned from observational studies? *Endod Topics.* 2011;18:51–61. DOI: <https://doi.org/10.1111/j.1601-1546.2011.00258.x>

Kirkevang LL. A population-based cohort study of changes in endodontic status over a 10-year period, 1997–2008. Thesis. Aarhus University; 2018.

Ng YL, Mann V, Gulabivala K. Outcome of secondary root canal treatment: a systematic review of the literature. *Int Endod J.* 2008;41:1026–46. <https://doi.org/10.1111/j.1365-2591.2008.01484.x> DOI: <https://doi.org/10.1111/j.1365-2591.2008.01484.x>

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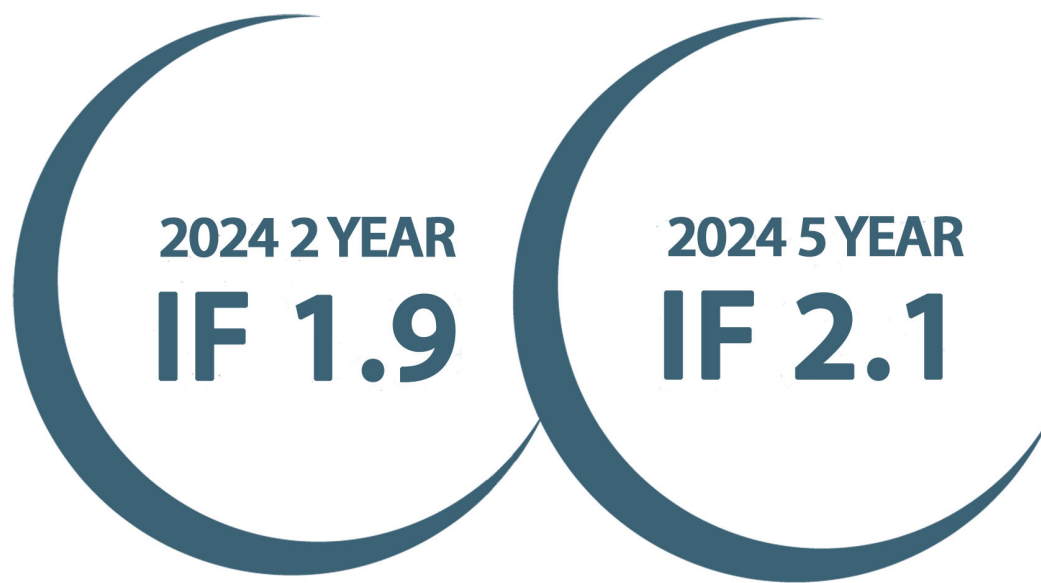
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