

# **Root Canal Treatment in a Swedish Public Dental Service**

## **Studies of indications and results**

Akademisk avhandling

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av

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### **Avhandlingen baseras på följande delarbeten**

- I Wigsten E, Kvist T, Dawson VS, Isberg PE, EndoReCo, Fransson H. Comparative analysis of general dental practitioners' fees and scheduled fees for root canal treatment and coronal restorations in the adult population of Sweden: a 5-year follow-up of data from the Swedish Dental Register. *Int Endod J*. 2018;51(2):141-7.
- II Wigsten E, Jonasson P, EndoReCo, Kvist T. Indications for root canal treatment in a Swedish county dental service: patient- and tooth-specific characteristics. *Int Endod J*. 2019;52(2):158-68.
- III Wigsten E, EndoReCo, Kvist T. Patient record assessment of results and time related resources spent during one year after initiation of root canal treatment in a Swedish public dental organisation. *In manuscript*.
- IV Wigsten E, Al Hajj A, Jonasson P, EndoReCo, Kvist T. Patient satisfaction with root canal treatment and outcomes in the Swedish public dental health service: A prospective cohort study. *Int Endod J*. 2021;54:1462–72.
- V Wigsten E, Kvist T, Jonasson P, EndoReCo, Davidson T. Comparing Quality of Life of Patients Undergoing Root Canal Treatment or Tooth Extraction. *J Endod*. 2020;46(1):19-28 e1.

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# Root Canal Treatment in a Swedish Public Dental Service

## Studies of indications and results

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### Abstract

Despite the marked overall improvement of oral health in Sweden, root canal treatment is still a common procedure in general dental practice. The reasons are unclear. Few studies of root canal treatment have been undertaken in general dental practice and there are no studies which monitor treatment from the initial appointment to completed root filling. There are moreover, few studies which take patients' perspectives into account. The main objective of this thesis was to broaden overall understanding of factors which influence the outcomes of root canal treatment undertaken in general dental practice. The studies are based on three patient cohorts. In **Study I** (cohort 1) information was retrieved from the Swedish Social Insurance Agency's data register, in order to estimate fees associated with root canal treatments. In 2009, root fillings were registered in approximately 250,000 teeth. The fees for all root fillings, including any further related treatment in the subsequent 5 to 6 years, were estimated to be approximately SEK 1,600 million (SEK 6,400/tooth). **Studies II-IV** (cohort 2) were based on a sample of 243 patients who started root canal treatment, during a recruitment period of 2 months, at 20 different public dental clinics in the Public Dental Service of the Region Västra Götaland. Study II revealed that most root canal treatments were initiated in symptomatic (65%), previously non-root filled teeth (93%). Almost half were molars (48%). In Study III, the status of these teeth, one year later, was registered from the patients' dental records. In 70% of cases, the root filling had been completed. However, 13% of the teeth had been extracted and in 16% root canal treatment was not yet completed. The least favorable outcomes were for molar teeth: not only had more molars been extracted, but root canal treatment was as yet not completed in significantly more molars than in the other tooth groups. Study IV is based on a questionnaire 1-3 years after the start of treatment. Half the patients reported symptoms. Of the patients whose root filling had been completed, the majority (87%) responded that they did not regret their decision to choose root canal treatment. **Study V** (cohort 3) is based on 85 patients treated in 6 public dental clinics, who had either started root canal treatment or had a tooth extracted. The aim was to study quality of life and QALY weights (quality-adjusted life year). A questionnaire, comprising the instruments OHIP-14, EQ-5D-5L and questions about the root canal treatment, was issued at the initiation of treatment and again after one month. There was some improvement in the health-related quality of life of the patients who had started root canal treatment. Patient satisfaction was generally high. The results of these five studies confirm that root canal treatment was most often initiated because of toothache. In the 12 months since the initial appointment, the root filling had been completed in only 70% of cases. A large proportion of patients reported pain after 1 year. Although root canal treatment has a positive effect on quality of life, it is unclear whether it is cost-effective compared with the alternative (extraction), especially in molar teeth.

**Keywords:** coronal restoration; dental fees; dental records; general dental care; pain intensity; patient satisfaction; quality of life; questionnaire; test-retest reliability analysis; tooth extraction

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