

Dunedin Multidisciplinary Health & Development Study Concept Paper Form



Provisional Paper Title: Third molar outcomes to age 45: Findings from the Dunedin Multidisciplinary Health and Development Study
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Objective of the study:

The purpose of this study is to describe the changes in the clinical status of 3rd molars from age 18 to 45.

The specific objectives are:

- (i) to investigate whether the impaction status of 3rd molar teeth at age 18 is associated with measurable differences in the clinical outcomes of those teeth by age 45 years:
- (ii) to investigate the extent to which tooth-level factors (impaction, tooth orientation) and person-level factors (sex, height, loss of other teeth) modify those associations.

Data analysis methods:

The status of maxillary and mandibular third molar at age 45 will be reported descriptively. We will then model the status of each third molar at age 45 by person and tooth-level predictors. The model will be run separately for the maxillary and mandibular arches, although the presence/absence of opposing teeth may be included as a risk factor in the model.

Variables needed at which ages:

Data will be required from assessments conducted at ages 18, 26 and 45 years.

The data required for this study include the clinical status of the 3rd molar teeth (tooth numbers 18, 28, 38, and 48):

- Status at age 18 years
 - o Absent (not visible on OPG radiograph, no history of extraction)
 - o If present but unerupted, Winter's angulation (mesioangular, vertical,

- distoangular, or horizontal), as measured radiographically
- Extracted due to dental caries
- Extracted due to other reasons
- If present & erupted, caries status (sound, decayed, filled, or filled and decayed)

Additional participant characteristics we require include:

- Sex
- Height and weight
- Total number of teeth lost due to caries
- Total number of teeth lost due to other reasons

Significance of the Study (for theory, research methods or clinical practice):

Many third molars are impacted (1) and can be associated with other dental other pathology (2). Abundant literature exists on 3rd molar teeth, and existing guidelines offer contradictory recommendations on their management. Some evidence suggests that early intervention may prevent complications, while other literature suggests that prophylactic extractions of 3rd molars cause unnecessary risk (2, 6-8). A recent Cochrane intervention review of removal versus retention of asymptomatic impacted wisdom teeth found insufficient evidence to recommend a management strategy (9). The authors concluded, *“high quality, long-term prospective cohort studies may provide valuable evidence in the future.”*

This research will update earlier Dunedin Multidisciplinary Health and Development Study findings on third molar outcomes from age 18 to 26 (10). These findings will have significance for clinical practice guidelines on management of 3rd molar teeth, as well as help identify subgroups that may benefit from more or less conservative management, and to examine impacts on quality of life for a cohort followed to age 45.

References:

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