

# Traumatic dental injuries and general unintentional injuries in children and adolescents in the Swedish BITA study

Akademisk avhandling

Som för avläggande av odontologie doktorsexamen vid Sahlgrenska akademien, Göteborgs universitet kommer att offentligens försvaras i hörsal Arvid Carlsson, Academicum, Medicinargatan 3, Göteborg, den 9:e februari 2017, klockan 9:00

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## Avhandlingen baseras på följande delarbeten

- I. Oldin A, Lundgren J, Nilsson M, Norén JG, Robertson A. Traumatic dental injuries among children aged 0-17 years in the BITA study – A longitudinal Swedish multicenter study. *Dent Traumatol* 2015;31:9-17.
- II. Oldin A, Lundgren J, Norén JG, Robertson A. Temperamental and socioeconomic factors associated with traumatic dental injuries among children aged 0-17 years in the Swedish BITA study. *Dent Traumatol* 2015;31:361-7  
Corrigendum for Temperamental and socioeconomic factors associated with traumatic dental injuries among children aged 0-17 years in the Swedish BITA study. *Dent Traumatol* 2016;32:166-7.
- III. Oldin A, Lundgren J, Norén JG, Robertson A. Individual risk factors associated with general unintentional injuries and the relationship to traumatic dental injuries among children aged 0-15 years in the Swedish BITA study. *Dent Traumatol* 2016;32:296-305.
- IV. Oldin A, Arnrup K, Lundgren J, Nilsson M, Norén JG, Robertson A. Dental fear and pain associated with traumatic dental injuries in children aged 3-17 years in the Swedish BITA study. *Submitted for publication in Int J Paediatr Dent*.

**SAHLGRENKA AKADEMIN  
INSTITUTIONEN FÖR ODONTOLOGI**



# Traumatic dental injuries and general unintentional injuries in children and adolescents in the Swedish BITA study

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## Abstract

The aims for this thesis were to investigate which children and adolescents, in the Swedish BITA study, encountered traumatic dental injuries (TDI) and general unintentional injuries (GUI), their injury etiology, and the socio-economic and individual risk factors. Furthermore, to explore if the experience of dental injuries affects the child's fear and cooperation in the dental situation.

The BITA study (**B**arn **I** **T**Andvården, which means children in dental care) was a longitudinal study in collaboration with seven dental clinics in the Region Västra Götaland and five in the Region Örebro County. During five years, 4 age cohorts (aged 3, 7, 11, and 15 years at study start) were followed, with 2363 children/adolescents included with an even distribution between the genders. Data was collected at the dental clinics by the regular dental personnel using structured interviews, questionnaires and clinical examinations. Retrospective data regarding TDI was collected via dental records.

The yearly incidence for TDI was 2.8%. The prevalence for TDI was 37.6%, with 27.8% having encountered multiple occasions of TDI, and no differences between the genders. 24% had encountered a general injury requiring medical attention. By the age of 7, more boys than girls were assessed by their parents to be injury-prone. Parents, who assessed their children to be injury-prone, had children with more TDI and GUI reported. Most of the reported GUI occurred at home. The most common etiological factor for TDI was due to a fall, and most common among the youngest. Children with TDI were associated with more occasions of GUI. Shy, 3-year-olds had less TDI and GUI, hyperactive/inattentive 7-year-olds had more GUI, and 15-year-olds with a social temperament had more TDI and GUI. Parents born outside of the Nordic countries had children with fewer TDI reported. Children, whose mothers had a low education level encountered more injuries. Pain and fear could be experienced by children during treatment for TDI, despite that most of the children fully cooperated during treatment and at the follow-up treatment. Children's self-rated fear, at the regular dental examination, showed that children with multiple occasions of TDI were more fearful than children with only one occasion of TDI.

This study showed that just over one-third of the children in the BITA study had encountered TDI. Children with TDI were associated with more occasions of GUI. The etiological factors for injuries varied for the different age groups, and the socio-economic and individual risk factors for injuries changed with age. Pain and fear during treatment for TDI or at follow-up treatment did not affect the child's ability to cooperate to any great extent. Children with multiple occasions of TDI were more fearful in connection with dental care.

**Keywords:** age, children, cooperation, dental fear, dental trauma, etiology, gender, general unintentional injuries, incidence, pain, prevalence, socioeconomic risk factors, temperament