ABC
Akademiskt barn-tandvårdscentrum
Center for Pediatric Oral Health Research

# ABC Project catalogue

## Revised January 2026

Karolinska Institutet

Folktandvården

Region Stockholm

| No | Core group | ABC-affiliated researchers | Collaborators | PhD-student |
|---|---|---|---|---|
| 1 | OHC | Georgios Tsilingaridis, Göran Dahllöf, Ida Brännemo | KI<br>FTV Stockholm<br>ABC<br>Statistiker Anna Levinsson | Ida Brännemo |
| | **Project title**<br>A telephone-based case-management intervention for caries prevention in children with severe early childhood caries | | | |
| 2 | RUTH | Georgios Tsilingaridis<br>Ida Brännemo, Göran Dahllöf | KI<br>Child Health care Region Of Stockholm<br>ABC | Ida Brännemo |
| | **Project title**<br>Impact of an extended postnatal home visiting program on oral health among children in a disadvantaged area of Stockholm, Sweden | | | |
| 3 | RUTH2 | Georgios Tsilingaridis, Therese Kvist, Ida Brännemo, Jeanette Norman | KI<br>FTV Stockholm<br>Child Health care Region Of Stockholm<br>ABC | Ida Brännemo<br><br>Jeanette Norman (master-student) |
| | Oral health among children participating in an extended postnatal home visiting program | | | |
| 4 | RUTH+ OHC | Georgios Tsilingaridis, Therese Kvist, Ida Brännemo, Maria Anderson | KI<br>FTV Stockholm<br>Child Health care Region Of Stockholm<br>Barnahus Stockholm<br>ABC | Stephanie Ammerman |
| | **Project title**<br>A case-management intervention aimed at reducing Early Childhood Caries in disadvantaged areas – a mixed methods study | | | |
| 5 | PBRN | Annika Julihn<br>Maria Anderson<br>Georgios Tsilingaridis<br>Jessica Tarander, Alfheidur Astvaldsdottir | KI<br>FTV Stockholm<br>Alfheidur Astvaldsdottir (SKaPa)<br>ABC | Jessica Tarander (master-student) |
| | **Project title**<br>Management of deep carious lesions in primary molars | | | |
| 6 | SCS | Maria Anderson | KI<br>FTV Stockholm<br>Malmö University<br>ABC | |

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|---|---|---|---|---|
| | **Project title**<br>Difference in caries development depending on language spoken at home and income level in country of origin of immigrants | | | |
| **7** | TIDENT | Nagihan Bostanci<br>Georgios Tsilingaridis | KI<br>FTV Stockholm<br>ABC<br>SÖS | Jeanette Norman |
| | **Project title**<br>Oral Diseases in Children and Adolescents with Type 1 Diabetes Mellitus | | | |
| **8** | TIPI | Alina Wikström<br>Georgios Tsilingaridis<br>Maria Anderson | KI<br>FTV Stockholm<br>Malin Brundin Umeå Universitet<br>ABC | |
| | **Project title** | | | |
| **9** | EAPD | Georgios Tsilingarids<br>Göran Dahllöf<br>Monica. Barr-Agholme<br>Maria Anderson | KI<br>EAPD<br>ABC<br>FTV | |
| | **Project title**<br>Dental management of long-term childhood cancer survivors: a systematic review+gudielines | | | |
| **10** | TVR | Göran Dahlöf,<br>Robert Schibbye | KI<br>FTV ABC | Robert Schibbye |
| | **Project title** | | | |
| **11** | AI | Gunilla Pousette Lundgren<br>Göran Dahllöf | KI<br>ABC | |
| | **Project title**<br>Crown therapy in young individuals with amelogenesis imperfecta: 10 year follow-up of a randomized controlled trial | | | |
| **12** | SagaSagor | Ida Brännemo<br>Georgios Tsilingarids<br>Tove Hasselblad | KI<br>ABC | Anna Lindström (Masterstudent) |
| | **Project title**<br>Qualitative Evaluation of the Pilot Project 'Saga Stories' as a Tool in Child Dental Care | | | |
| **13** | SELECT | Maria Anderson<br>Georgios Tslingaridis | KI ABC FTV | Shigufta Syed (in progress) |
| | **Project title**<br>Evaluation of selective excavation and stepwise excavation in young permanent teeth with deep dental caries lesions (SELECT). A randomized controlled trial in a practice based research network. | | | |

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| **14** | DedodECC | Franziska Hetrodt<br>Maria Anderson<br>Georgios Belibasakis<br>Nagihan Bostansi | <br>KI<br>FTV<br>ABC | |
| | **Project title**<br>Salivary metaproteome as a prediction tool in early childhood caries | | | |
| **15** | PICTOR | Hajer Jasim<br>Nikolaos Christidis<br>Georgios Tsilingaridis<br>Mathias Lemberger | FTV Stockholm<br>KI<br>ABC | Anna Wislander Fältmars |
| | **Project title**<br>A picture of the oral health and oral illness in children and adolescents and identification of risk-factors for developing oral illness | | | |
| **16** | COM-TDI | Georgios Tsilingaridis | KI<br>ABC | Nitesh Tewari |
| | **Project title**<br>Development and validation of Care-Pathway for Management of Combination of Traumatic Dental In-juries in Permanent teeth | | | |

**Core group**
OHC
**Principal Investigator**
**Georgios Tsilingaridis**
**PhD student**
Ida Brännemo
**Co-investigators**

Göran Dahllöf
Anna Levinsson
Tove Hasselblad

# No Project title

| | |
|---|---|
| **1** | **A telephone-based case-management intervention for caries prevention in children with severe early childhood caries** |

## Project overview

| | | |
|---|---|---|
| **Project start** | 2015 | |
| **Calculated end** | 2021 | |
| **Grants awarded** | | |
| **Source** | SOF | ABC |
| **Year** | 2013, 2016, 2018 | |

## Aim

To evaluate the effect of a phone-delivered, Motivational Interviewing (MI)-based parental support program on caries recurrence, oral health habits, and the associations between parental psychosocial factors, children's caries burden, and oral health-related quality of life (OHRQoL) in children treated under general anesthesia (GA) for severe early childhood caries (ECC)

## Project description

Children treated under general anesthesia for severe early childhood caries (ECC) face a high risk of continued caries progression in the years following treatment. This highlights the need for effective preventive strategies to address underlying behavioral and parental factors contributing to caries recurrence. This project investigates a phone-delivered, motivational interviewing-based parental support program aimed at reducing caries recurrence and improving oral health habits in preschool children treated under general anesthesia for severe ECC.

The two-arm randomized clinical trial includes children under six years of age, treated at pediatric dental departments in Stockholm Region, Sweden. Participants are randomly assigned to either an intervention or control group (allocation ratio 1:1), with outcome assessments blinded. The control group receives standard advice on tooth brushing and sugar reduction, while the intervention group receives bi-weekly phone counseling from an oral health coach for one year, delivered in multiple languages (Arabic, English, Polish, Turkish, and Swedish). Counseling sessions are based on motivational interviewing principles to support parents in fostering positive oral health behaviors.

The primary outcome is caries progression 1- and 2-years post-surgery, assessed using the International Caries Detection and Assessment System. Secondary outcomes include parent-reported daily tooth brushing, dietary

habits, and analyses of parental factors such as stress, dental anxiety, and attitudes toward dental care, as well as the child’s oral health-related quality of life.

## Project status

Completed

## Publications

Brännemo I, Hasselblad T, Levinsson A, Dahllöf G, Tsilingaridis G. Phone-Based Parental Support Program for Caries Prevention in Children: A Randomized Controlled Trial. JDR clinical and translational research. 2024(DOI: 10.1177/23800844241296054).

Brännemo I, Levinsson A, Hasselblad T, Dahllöf G, Tsilingaridis G. Parental psychosocial factors and children's oral health-related quality of life: Data from a caries prevention study with phone-based support. BMC Oral Health. 2025 Jan 18;25(1):94. doi: 10.1186/s12903-025-05446-z.

ABC
Akademiskt barn-tandvårdscentrum
Center for Pediatric Oral Health Research

**Core group**
RUTH

**Principal Investigator**
Georgios Tsilingaridis

**PhD student**
Ida Brännemo

**Co-investigators**
Göran Dahllöf

Fernanda Soares

# No Project title

| | |
|---|---|
| **2** | **Impact of an extended postnatal home visiting program on oral health among children in a disadvantaged area of Stockholm, Sweden** |

## Project overview

| | | |
|---|---|---|
| **Project start** | 2014 | |
| **Calculated end** | 2017 | |
| **Grants awarded** | | |
| **Source** | KI | ABC |
| **Year** | | |

## Aim

To evaluate oral health outcomes and early oral health promotion of children in a Swedish, parental support programme conducted in a collaboration between Child Health Services and Social Services.

## Project description

Methods: The intervention offered first-time parents six home visits from a paediatric nurse and a parental advisor with Social Services. On the fourth visit (infant age 6–8 months), parents received a toothbrush and fluoride toothpaste from non-dental staff. Twice, at child ages 18 and 36 months, a dentist used the International Caries Detection and Assessment System to record caries and conducted a structured interview with the parents on oral health habits. The intervention group (n=72) was compared to a reference group (n=100) from the standard child healthcare programme, which included one home visit.
Results: Significantly, caries prevalence was lower and tooth brushing habits more consistent in the intervention group compared to the reference group in the standard child health programme. The difference was most pronounced at 18 months and had decreased at the 36-month follow up.
Conclusion: The extended postnatal home visiting programme had a positive impact on oral health. Early oral health promotion delivered by non-dental professionals could be a beneficial approach to early caries prevention.

## Project status

Finished. Ongoing collaboration with child health care researcher to further evaluate the home visiting program and its effect on children's oral health

## Publications

Brannemo I, Dahllof G, Cunha Soares F, Tsilingaridis G. Impact of an extended postnatal home visiting programme on oral health among children in a disadvantaged area of Stockholm, Sweden. Acta Paediatr. 2021;110(1):230-6.

# No Project title

| | |
|---|---|
| **3** | **Oral health in children participating in an extended postnatal home visiting program** |

**Core group**
RUTH2

**Principal Investigator**
Georgios Tsilingaridis

**PhD student**
Ida Brännemo

**Co-investigators**
Jeanette Norman

Lene Lindeberg

## Project overview

| | | |
|---|---|---|
| **Project start** | 2019 | |
| **Calculated end** | 2023 | |
| **Grants awarded** | | |
| **Source** | ABC | |
| **Year** | | |

## Aim

To evaluate oral health at 12, 24, and 36 months of age in children participating in the extended home visiting program in Stockholm

## Project description

The research group of Lene Lindberg is responsible on behalf of the Public Health Agency for the evaluation of the Rinkeby extended home visit program for first-time parents (RUTH) in the Region of Stockholm. The evaluation takes place in the form of a cluster randomized study including 9 BVC with 120-130 families in the intervention and control groups respectively. The evaluation includes parent interviews, staff documentation and information from the children's child health care records. In terms of oral health, we intend to follow up the caries development and oral health habits of the participating children. Children in the intervention and reference group will be examined with regards to oral health as well as dietary and toothbrushing habits at 12, 24 and 36 months of age.
As the home visit program has now spread to several areas and child health care units in the region, we have also produced written and visual information material on dental health to support non-dental staff working in the home visit program, in order to secure a clear and unanimously message regarding caries prevention. The material aims to promote collaboration and knowledge exchange about dental health between dental care, child health care and social services' preventive activities. The material is available to staff in the current study's intervention group but also to other Child Health Care units in the region working in the home visit program to broadly promote oral health in children in socioeconomically disadvantaged areas. All child health care units participating in the extended home visiting program are also supported with toothbrushes and toothpaste.

## Project status

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| Completed |

## Publications

Brännemo I, Norman J, Kvist T, Lindberg L, Tsilingaridis G. Oral health among children participating in an extended home visiting programme-a case–control study. Eur Arch Paediatr Dent. 2025 Jun;26(3):517-525.

Master thesis:

Oral health among children participating in an extended home visiting program – a case–control study (Norman 2023)

Akademiskt barn-tandvårdscentrum
Center for Pediatric Oral Health Research

**Core group**
RUTH + OHC

**Principal Investigator**
Georgios Tsilingaridis

**PhD student**
Stephanie Ammerman

**Co-investigators**
Ida Brännemo

Georgios Tsilingaridis

Therese Kvist

Tove Hasselblad

David Ebbevi

Maria Anderson

# No Project title

| | |
|---|---|
| **4** | **A case-management intervention aimed at reducing Early Childhood Caries in disadvantaged areas – a mixed methods study** |

## Project overview

| | | |
|---|---|---|
| **Project start** | 2025 | |
| **Calculated end** | 2032 | |
| **Grants awarded** | | SEK 300000/år |
| **Source** | SOF FoUI-965634, | ALF |
| **Year** | 2026-20 | 2026-2028 |

## Aim

. The overall aim of this research program is to develop effective caries preventive strategies for children living in socially disadvantaged areas of Stockholm. In these studies, we target parents to support the development of health literacy and self-efficacy to make them competent to help their children with caries preventive measures. The main goal is to reduce caries progression rates, to improve children's quality of life and to reduce stress levels.

## Project description

This study aim to test the hypothesis, that a case management intervention directed towards children at high risk for severe early childhood caries could prevent caries development.

Despite improvements in oral health among children in Sweden, children living in areas characterized by low socio-economic status still have a significant disease burden. Special efforts to prevent caries development in this group of children have so far been unsuccessful. Disadvantaged areas in Stockholm are currently offered a parental support program by the Child Health Service and the Social Services through extended home visits up until the age of 15 months. At infants age 8 months, the home visit also includes oral health promotion. The children included in the extra support program has shown reduced caries prevalence and increased tooth brushing, most pronounced shortly after the intervention at 18 months of age but waning with time.

The rationale for this intervention is additional parental support to promote caries prevention in high-risk areas delivered by an oral health coach that immediately follow the extended home visiting program, from ages 18-36 months. It would build on and cooperate with existing social support structures for families in disadvantage areas, enhancing the oral health promotion

initiated by non-dental professionals at an early age. The oral health coaches will keep scheduled contact with the families in the intervention group; telephone coaching, face-to-face meetings and group education, starting at age 18 months when the extended home visiting program has ended and continue until the child is 3 years of age. The oral health coach provides individually adapted information and support based on the situation and needs of the family. During a 3-year follow-up the most important endpoints are new carious lesions, child's oral health related quality of life and stress in the family. To assess the impact on stress, the family's conditions, stressors (e.g., somatic illness), and parents' reaction patterns will also be collected. This information will be collected from the child's medical records and in surveys.

Since traditionally used fluoride-based prevention programs has shown to be ineffective in high-risk groups of children, proactive health coaching has the potential to show real benefits. A qualitative research design will be used to explore and analyze the health coaches' and parents' views on the intervention and oral health. Previous studies on caries prevention have not focused on why the intervention was successful or not. Using a mixed method approach, will help us to better understand how to reach this group of patients. The connection to stress is highly relevant as it strongly correlates with neglect and risk of exposure to violence, which has previously been shown to correlate with the child's oral and dental health and parents' oral health behaviors.

## Project status

Joint information sessions on oral health involving oral health coaches, child healthcare staff, social services, and parents have been conducted with positive outcomes at an open preschool in Rinkeby. Further pilot sessions are planned for spring 2025 in other areas. Furthermore, since the original ethical approval (Dnr 2022-05916-01), collaboration has been established with co-applicant David Ebbevi and the research team at the Child Protection Unit, leading to the inclusion of new secondary outcomes related to children's general health and parental factors in the randomized controlled trial. Following the submission of a request for supplementary approval of these additional study variables, the Swedish Ethical Review Authority recommended submitting a new original application. A new application (Dnr 2024-07025-01) has been submitted, and this process is currently underway

## Publications

Akademiskt barn-tandvårdscentrum
Center for Pediatric Oral Health Research

# No Project title

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|---|---|
| 5 | **Management of deep carious lesions in primary molars** |

**Core group**
PBRN project

**Principal Investigator**
Annika Julihn

**PhD student**
Klicka eller tryck här för att ange text.

**Co-investigators**
Maria Anderson

Georgios Tsilingaridis

Alfheidur Astvaldsdottir

Jessica Tarander

## Project overview

| | | |
|---|---|---|
| **Project start** | 2018 | |
| **Calculated end** | 2020 | 2024 |
| **Grants awarded** | | |
| **Source** | ABC | |
| **Year** | | |

## Aim

The overall aim is to study the management of deep carious lesions in primary molars when performed in a Practice Based Research Network (PBRN) in Region Stockholm.
In a randomized controlled trial, test the hypothesis that partial excavation increases the sustainability of filling and tooth survival significantly compared with complete excavation of deep carious lesions in primary molars.

## Project description

*Study design*:
This study has a prospective, two arms randomized controlled clinical trial design.
*Population*:
Children in the age of 3-8 years, with one or more primary molar teeth in a need of a restoration due to a deep carious lesion on proximal and/or occlusal surfaces were invited to participate in the study.
The participating dental clinics are situated in areas with low, middle and high socio-economic profile within Region Stockholm. Four clinics belonged to Folktandvården Stockholm AB and one clinic consisted of private practitioners. In addition, ten dentists from Region Östergötland were invited to participate in the study.

*Intervention*:
Patients were randomly assigned to either intervention group or to the control group and the allocation into the treatment groups were performed digitally. The treatment was performed after applying local anesthetic according to individual needs. The intervention group received the treatment method; partial removal of the carious lesion, that is, total caries removal in the periphery including the dentino-enamel junction. In the inner part of the lesion, the caries removal was limited to reach leathery or slightly soft dentin by probing. Photographs was used as benchmark. The restorations were placed according

to evidence-based methods and the material used according to the dentist's material of choice.
*Control*:
The control group received the same treatment procedure as the intervention group, but the excavation procedure was complete removal of the carious tissue throughout the cavity. The total caries removal was ensured with hardness on probing and the visual examination. Photographs was used as benchmark.
*Outcome:*
Both in the intervention and the control group the recall visits are scheduled based on individual treatment needs according to the caries prevention program in the county council of Stockholm. Outcomes will be assessed by the treating dentist/dental hygienist at the patient's regular dental visits and finally 24 months after performed treatment.
Primary outcomes:
the restoration lost/the restoration in place, tooth lost/the tooth in place
Secondary outcomes: with or without secondary caries in the case of lost restoration, symptoms from the pulp/no symptoms from the pulp

The data will be collected from the data collection sheet and from dental records.

## Project status

Manuscript in progress.

## Publications

Akademiskt barn-tandvårdscentrum
Center for Pediatric Oral Health Research

# No Project title

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| **6** | **Differences in caries development among children with immigrant backgrounds in Sweden: influence of home language and income level in region of origin** |

**Core group**
SCS

**Principal Investigator**
Maria Anderson

**PhD student**
Klicka eller tryck här för att ange text.

**Co-investigators**
Aron Naomi Akbar

Anna Warnqvist

Maria Chamoun

Gunilla Klingberg

## Project overview

| | | |
|---|---|---|
| **Project start** | 2011 | |
| **Calculated end** | 2024 specific study | 2014 intervention |
| **Grants awarded** | | |
| **Source** | SOF | |
| **Year** | 2014-2016 | |

## Aim

The overall aim of this study was to study the caries risk factor immigrant background more in depth and by using the data about language spoken at home, investigate if language spoken at home and income level in the country of origin, operationalized as low-, middle-, and high-income countries, would be determinants for the development of dental caries.

## Project description

*Study design and setting*
This is a prospective cohort study based on data from children that participated in the Swedish prospective cluster-randomized intervention trial “Stop Caries Stockholm” (SCS). The study was conducted 23 dental clinics in multicultural areas in Stockholm with medium to low socioeconomic status between March 2011 and March 2014. In this study the subjects were followed between 1 and 3 years of age, with annual examinations regarding caries development.
Data collection
The study included longitudinal data collected through a clinical examination and a questionnaire at the 1-, 2-, and 3-year annual examinations.
Outcome measures
The number of tooth surfaces with an ICDAS score of 1 or higher (ICDAS>1), and the other one was number of tooth surfaces with an ICDAS-score of 3 or higher (ICDAS> 3).
*Exposure variables*
The main exposure variable was based on the parental country of origin in seven categories. The parental country of origin was based on the information on language spoken at home, from the questionnaires. If only Swedish was spoken at home, the child was considered to belong to the category Sweden. If Swedish and a second language was spoken at home, the child was considered to belong to the category mixed. If only a foreign language not including Swedish was spoken at home, the language of the child was first linked to a

country and then each country of origin was classified into region (European or non-European countries) and income (low, middle- or high-income countries) based on the gross national income per capita (https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups).
Swedish Ethical Review Authority (Dnr 2016-1240-32)

## Project status

Submitted manuscript rev 2 Caries Research

## Publications

Anderson M., Dahllöf G., Warnqvist A., Grindefjord M. Development of dental caries and risk factors between 1 and 7 years of age in areas of high risk for dental caries in Stockholm, Sweden. Eur Arch Paediatr Dent. 2021 Oct;22(5):947-957

Anderson M, Davidson T, Dahllöf G, Grindefjord M. Economic evaluation of an expanded caries-preventive program targeting toddlers in high-risk areas in Sweden. Acta Odontol Scand. 2019 May;77(4):303-309.

Anderson M., Dahllöf G., Soares FC., Grindefjord M. Impact of biannual treatment with fluoride varnish on tooth-surface-level caries progression in children aged 1-3 years. J Dent. 2017 Oct;65:83-88

Anderson M., Dahllöf, G., Twetman, S., Jansson, L., Bergenlid, A.-C., and Grindefjord, M. (2016). Effectiveness of Early Preventive Intervention with Semiannual Fluoride Varnish Application in Toddlers Living in High-Risk Areas: A Stratified Cluster-Randomized Controlled Trial. Caries Research, 50(1), 17–23.

ABC Akademiskt barn-tandvårdscentrum
Center for Pediatric Oral Health Research

**Core group**
TIDENT

**Principal Investigator**
Nagihan Bostanci

**PhD student**
Jeanette Norman

**Co-investigators**
Georgios Tsilingaridis

# No Project title

| | |
|---|---|
| 7 | **Oral Diseases in Children and Adolescents with Type 1 Diabetes Mellitus** |

## Project overview

| | | |
|---|---|---|
| **Project start** | 2024 | |
| **Calculated end** | | |
| **Grants awarded** | | |
| **Source** | SOF | KI |
| **Year** | 2022-2024, 2026-2028 | |

## Aim

i. examine incidence of T1DM and oral diseases and explore if there is an association and causal inference
ii. elucidate the extent to which good oral health can improve T1DM or if improved glycaemic control can improve oral health
iii. decipher glycaemic/oral health biosignatures in patients with T1DM

## Project description

This project is a high-impact, an innovative project in terms of its objectives and concepts and holistically address the complex issue of medical-dental integrated care in a personalized context in children with T1DM. Insulin deficiency in T1DM can lead to hyposalivation, which increases the risk of dental caries. Despite the necessity for a strict sugar-free diet, frequent carbohydrate consumption to manage hypoglycemia can further compromise oral health. By assessing and improving oral hygiene in adolescents with T1DM, the study aims to mitigate this risk, promoting better oral health, raising awareness among the families and reducing the incidence of dental caries. Utilizing CGM data to monitor glucose levels and correlate these with oral health outcomes provides a comprehensive understanding of how blood glucose control impacts oral health or how controlling oral health can help to improve uncontrolled DM. Educating patients and their families about the importance of oral hygiene and its impact on diabetes management is crucial. Providing resources and support for maintaining good oral hygiene can empower patients to take an active role in their health care. Overall, we aim to fill a crucial knowledge gap: “Is oral hygiene practices an important factor for glycemic control and risk of preventable complications in adolescents with T1DM?” Thus, strengthening of oral health in the context of T1DM management in an integrated care approach, through behavioural changes (at patient-, professional) and new technologies such GCM

## Project status

Ongoing

## Publications

ABC Akademiskt barn-tandvårdscentrum
Center for Pediatric Oral Health Research

**Core group**
TIPI

**Principal Investigator**
Georgios Tsilingaridis

**PhD student**
Alina Wikström

**Co-investigators**
Malin Brundin

Maria Anderson

Nelly Romani

Vestman, Olena Rakhimova

David Lazaro Gimeno

# No Project title

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|---|---|
| **8** | Regenerative treatment of traumatized immature permanent incisors with pulp necrosis: A prospective multicenter study. |

## Project overview

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|---|---|---|
| **Project start** | 2018 | |
| **Calculated end** | 2026 | |
| **Grants awarded** | | |
| **Source** | SOF | ABC, FTV |
| **Year** | 2022-2024 | |

## Aim

The overall aim of this research program is to evaluate if revascularization is an effective treatment method that can be recommended as the first-choice alternative in treatment of traumatized immature teeth with pulp necrosis and open apices in school children. Furthermore, we aim to investigate if all types of root canal dressings have equal disinfection effect in revascularization procedures. We also aim to study if the revascularization technique has a positive impact on oral health related quality of life through shorter treatment time and preservation of the entire tooth.

## Project description

Endodontic management of traumatized immature permanent teeth with pulp necrosis is both a clinical challenge for the dental practitioners and a public health care problem. Even though there are feasible treatment procedures (such as apexification with calcium hydroxide and with Mineral Trioxide Aggregate (MTA)), the long-term survival of these teeth is questionable because none of these techniques can provide continuation of root formation and thickening of
the dentin walls. As a result, the immature tooth is weak and prone to fracture. Recently, regenerative endodontic treatment (RET) have gained much attention as biologically based treatment alternative to the techniques described above, but the scientific evidence is insufficient. These procedures aim to remove necrotic and damaged tissues and replace those with healthy functioning pulp-dentin complex.
We plan to invite 120 patients to participate in this randomized control study. The inclusion criteria will be children between the ages of 7-19 years with traumatized permanent incisors with immature roots and open apices and pulp necrosis. The patients will be treated by specialists in endodontics with regenerative endodontics. Patients will be recruited from specialist clinics in Stockholm, Västerbotten and Norrbotten and will be randomized into two

groups treated with two different root canal dressings: Group 1 – Calciumhydroxide and Group 2 – Chlorhexidine gluconate gel.
During a 5-year follow-up period the most important outcomes are continuous root development, dentinal wall thickness and healing of pulp necrosis.
Severe traumatic dental injuries leading to severe complication that could result in early tooth loss can have a severe impact on oral health related quality of life.
Therefore, regenerative endodontics can have beneficial effect treating these teeth.

Further:
A retrospective longitudinal database from Folktandvården Stockholm on patients aged 7-19 years who have previously undergone root canal treatment in the years 2003-2020. The material consists of 2400 patient records where data has been collected retrospectively from patient records. The outcome measures are tooth loss (tooth extraction), cause of tooth loss and complications.
A total of 679 teeth in 575 individuals have been identified for further analyses. Compilation of the results and preparation of the manuscript are currently ongoing and are expected to be completed during FY 2023. The manuscript is revised and then sent to the journal and published.

## Project status

Completed

## Publications

Wikström A, Brundin M, Romani Vestman N, Rakhimova O, Tsilingaridis G. Endodontic pulp revitalization in traumatized necrotic immature permanent incisors: Early failures and long-term outcomes – a longitudinal cohort study. Accepted in International Endodontic Journal in March 2022

Wikström A, Brundin M, Lopes Ferreira M, El Sayed M, Tsilingaridis G. What is the best treatment modality for immature permanent teeth with pulp necrosis and apical periodontitis? A systematic review. Eur Arch Paediatr Dent. 2021 Jan 8. doi: 10.1007/s40368-020-00575-1. Epub ahead of print

Wikström A, Romani Vestman N, Rakhimova O, Lazaro Gimeno D, Tsilingaridis G, Brundin M. Microbiological assessment of success and failure in pulp revitalization: a randomized clinical trial using calcium hydroxide and chlorhexidine gluconate in traumatized immature necrotic teeth. J Oral Microbiol. 2024 Apr 24;16(1):2343518.

Wikström A, Brundin M, Mohmud A, Anderson M, Tsilingaridis G. Outcomes of apexification in immature traumatised necrotic teeth and risk factors for premature tooth loss: A 20-year longitudinal study. Dent Traumatol. 2024 Dec;40(6):658-671.

Wikström A, Rakhimova O, Călin P, Tsilingaridis G, Brundin M, Vestman NR. Microbial Loads in Traumatized Immature Teeth and Their Impact on the Treatment Outcomes of Regenerative Endodontic Treatment: A Randomized Clinical Trial Comparing Chlorhexidine and Calcium Hydroxide. Dent Traumatol. 2025 Oct;41(5):501-515. 5

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Center for Pediatric Oral Health Research

# No Project title

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| **9** | **Dental management of long-term childhood cancer survivors: a systematic review+ Clinical Guidelines** |

**Core group**
EAPD

**Principal Investigator**
Georgios Tsilingaridis

**PhD student**
Klicka eller tryck här för att ange text.

**Co-investigators**
Göran Dahllöf

Korina. Seremidi

Gizani Sortira

Dimitrios Kloukos

Monica Barr

Maria Anderson

## Project overview

| | | |
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| **Project start** | 2023 | |
| **Calculated end** | 2023 | |
| **Grants awarded** | | |
| **Source** | | |
| **Year** | | |

## Aim

Critically review and summarize existing knowledge on prevalence of oral, dental, and craniofacial side-effects of antineoplastic treatment in childhood cancer survivors (CCS).

## Project description

Methods: A literature search was conducted for studies reporting on children aged 4-19 years treated for any type of malignancy up to the age of 15 years and for whom, at the day of the examination, more than 8 months have elapsed since the end of treatment. Data regarding dental late effects on teeth and craniofacial complex were collected and mean prevalence of each defect was reported.
Results:
From the 800 articles identified, 17 studies fulfilled inclusion criteria and were included. A total of 983 CCS were examined, with the total number of healthy controls being 1266 children. Haematological malignancy was the most prevalent diagnosis with the age at diagnosis ranging between 0-15 years. Multiple antineoplastic protocols were implemented with the elapsed time being 8 months up to 17 years. One third of CCS experienced at least one late effect, with corresponding value for the control group being below 25%. Among the defects identified clinically, microdontia, hypodontia and enamel developmental defects were recorded in ¼ of CCS. Impaired root growth and agenesis were the two defects mostly recorded radiographically. The effect on dental maturity and on salivary glands was unclear.
Conclusion: CCS are at risk of developing dental late effects as a result of their disease and its treatment and therefore, routine periodic examinations are essential to record their development and provide comprehensive oral healthcare.

## Project status

Completed

## Publications

Seremidi K, Gizani S, Dahllöf G, Barr-Agholme M, Kloukos D, Tsilingaridis G. Dental manage-ment of long-term childhood cancer survivors: a systematic review. Eur Arch Paediatr Dent. 2024 Oct;25(5):611-636.

Sermidi K, Gizani S, Anderson M, Dahllöf G, Barr-Agholme M, Parekh S, Tsilingaridis G; European Academy of Paediatric Dentistry (EAPD). Best clinical practise guidance for oral health care management of long-term childhood cancer survivors (CCS): an EAPD policy document. Eur Arch Paediatr Dent. 2025 Aug;26(4):753-757.

ABC Akademiskt barn-tandvårdscentrum
Center for Pediatric Oral Health Research

**Core group**
TVR

**Principal Investigator**
Göran Dahllöf

**PhD student**
Robert Schibbye

**Co-investigators**
Shervin Shanavaz,

Erik Hedman-Lagerlöf

# No Project title

| | |
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| **10** | **Specific phobia in dentistry, prevalence, origin and treatment for children and adolescents.** |

## Project overview

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| **Project start** | 2017 | |
| **Calculated end** | 2026 | |
| **Grants awarded** | | |
| **Source** | ABC, TkMidt | |
| **Year** | | |

## Aim

To scientifically evaluate the occurrence, origin and treatment of specific phobias affecting children and adolescents in dentistry.

## Project description

Development and evaluation of an Internet-based cognitive behavioral therapy for children and adolescents who are afraid (phobic) of dental care and injections. We will evaluate the effects of the treatment compared to a control group and will also do a long-term follow-up. We are also in a population-based longitudinal cohort study, evaluating the prevalence, predictors and comorbidity of dental phobia in young people.

## Project status

A RCT of internet treatment has been published, a long-term follow-up of internet treatment (is in the final stages of manuscript, will be submitted during the year), an article of the prevalence of dental phobia in a 16-year population-based cohort is submitted and finally a qualitative analysis of diagnostic interviews in children with dental phobia is being analyzed and will be submitted during the year

## Publications

Schibbye R, Wichstrøm L, Dahllöf G. Prevalence and Comorbidity of Dental Phobia in a Representative Population of 16-Year-Olds in Norway. Int J Paediatr Dent. 2025 Dec 10. doi: 10.1111/ipd.70065. Epub ahead of print. PMID: 41368949

Schibbye R, Hedman-Lagerlöf E, Kaldo V, Dahllöf G, Shahnavaz S. Internet-Based Cognitive Behavioral Therapy for Children and Adolescents With

Dental or Injection Phobia: 1-year Follow-Up Assessment. JMIR Pediatr Parent. 2025 Sep 17;8:e80376

Schibbye R, Hedman-Lagerlöf E, Kaldo V, Dahllöf G, Shahnavaz S. Internet-Based Cognitive Behavioral Therapy for Children and Adolescents With Dental or Injection Phobia: Random-ized Controlled Trial. J Med Internet Res. 2024 Feb 21;26:e42322.

# No Project title

| | |
|---|---|
| **11** | **Crown therapy in young individuals with amelogenesis imperfecta: 10 year follow-up of a randomized controlled trial** |

**Core group**
Klicka eller tryck här för att ange text.

**Principal Investigator**
Klicka eller tryck här för att ange text.

**PhD student**
Klicka eller tryck här för att ange text.

**Co-investigators**
Klicka eller tryck här för att ange text.

## Project overview

| | | |
|---|---|---|
| **Project start** | 2017 | |
| **Calculated end** | | |
| **Grants awarded** | | |
| **Source** | ABC, ADSS, KI | |
| **Year** | 2024 | |

## Aim

Uppföljning av en RCT studie med tidigt insatt permanent kronterapi (227 kronor) på 27 patienter 9-20 år med grav Amelogenesis imperfecta

## Project description

Uppföljning efter 10 år av tidigt insatt keramisk kronterapi på unga patienter med Amelogenesis imperfecta.
Denna studie är en uppföljning av en RCT studie med tidigt insatt permanent kronterapi (227 kronor) på 27 patienter 9-20 år med grav Amelogenesis imperfecta (AI). Studien är unik och den enda som finns avseende tidigt insatt kronterapi på unga patienter med AI.
Syftet med studien är att tidigt finna en permanent lösning för tandproblemen, att lindra smärta och normalisera tandvårdssituationen för ungdomar, samt främja livssituationen för dessa ungdomar och deras familjer.
Amelogenesis imperfecta är en ärftlig störning på tandens emalj. Emaljen är brungul och/eller avvikande i sin form, och kan partiellt eller helt saknas/falla sönder. Tanden blir mycket känslig för kyla, värme och vissa maträtter.
Tidigare har man rekommenderat tillfälliga fyllningar med plastmaterial för att täcka skadorna, det resulterade i många omgörningar och smärtsamma tandvårdsbesök. Tändernas avvikelser gör att ungdomarna undviker sociala sammanhang, inte törs skratta och le, har svårt att äta och blir utsatta för mobbning. De frekventa tandläkarbesöken har ifrågasatts från skola och föräldrars arbetsgivare. Även inom tandvården har barn och föräldrar ifrågasatts och anklagats för att inte sköta tänderna på rätt sätt.
Den tidiga kronterapin i RCT studien visade få biverkningar, bra hållbarhet, klart mindre smärta från tänderna och en bättre upplevd livskvalitet hos ungdomarna vid kontroll efter 2 år, 5 år. Två djupintervjustudier bekräftade sänkt livskvalitet före kronterapin samt förbättring i livskvalitet efter behandlingen. Tidigt insatt kronterapi visade även kart bättre kostnadseffektivitet än kronterapi vid vuxen ålder. De få biverkningar som sågs

i tidigare studier kunde härledas till trauma mot tänderna och uppträdde på patienter som fick kronterapin i 19-20 årsåldern, den ålder som tidigare har rekommenderats för insatt kronterapi!
Frågor som vi ställer oss idag är om det goda resultatet består och om vi kan rekommendera en ändring av nuvarande gudelines. Studien är viktig för att utreda långsiktiga resultat av behandlingen, både vad avser hållbarhet hos kronorna och påverkan av livskvalitet och smärtproblematik.
Vår uppföljningsundersökning av patienter startar under november 2023. Förutom kvalitetskontroll på kronorna, biverkningar och antal omgörningar, följer vi smärtkänslighet 10 år efter kronterapin jämfört med före behandlingen. Vi frågar även om hur patienten upplevde tidpunkten för insatt kronterapi.

## Project status

Patienterna har lokaliserats, vi har informerat via brev om uppföljningsstudien. 5 patienter har undersökts vid årsskiftet

## Publications

G. Pousette Lundgren, G. Dahllof, Outcome of restorative treatment in young patients with amelogenesis imperfecta. a cross-sectional, retrospective study, J Dent 42(11) (2014) 1382-9.

G. Pousette Lundgren, G.I. Morling Vestlund, M. Trulsson, G. Dahllof, A Randomized Controlled Trial of Crown Therapy in Young Individuals with Amelogenesis Imperfecta, J Dent Res 94(8) (2015) 1041-7.

G. Pousette Lundgren, A. Karsten, G. Dahllof, Oral health-related quality of life before and after crown therapy in young patients with amelogenesis imperfecta, Health Qual Life Outcomes 13 (2015) 197.

G. Pousette Lundgren, A. Wickstrom, T. Hasselblad, G. Dahllof, Amelogenesis Imperfecta and Early Restorative Crown Therapy: An Interview Study with Adolescents and Young Adults on Their Experiences, PLoS One 11(6) (2016) e0156879.

P. Lundgren, G.M. Vestlund, G. Dahllof, Crown therapy in young individuals with amelogenesis imperfecta: Long term follow-up of a randomized controlled trial, J Dent 76 (2018) 102-108.

G. Pousette Lundgren, T. Hasselblad, A.S. Johansson, A. Johansson, G. Dahllof, Experiences of Being a Parent to a Child with Amelogenesis Imperfecta, Dent J (Basel) 7(1) (2019).

G. Pousette Lundgren, T. Davidson, G. Dahllof, Cost analysis of prosthetic rehabilitation in young patients with Amelogenesis imperfecta, J Dent 115 (2021) 103850.
G. Pousette Lundgren, G. Dahllof, Review article: Advances in clinical diagnosis and management of amelogenesis imperfecta in children and adolescents, In manus.

# No

**Core group**
SagaSagor

**Principal Investigator**
Georgios Tsilingaridis

**PhD student**
Klicka eller tryck här för att ange text.

**Co-investigators**
Ida Brännemo

Tove Hasselblad

Anna Lindström

# Project title

| | |
|---|---|
| **12** | **Qualitative Evaluation of the Pilot Project 'Saga Stories' as a Tool in Child Dental Care** |

## Project overview

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| **Project start** | 2023 | |
| **Calculated end** | 2026 | |
| **Grants awarded** | | |
| **Source** | | |
| **Year** | | |

## Aim

The aim of the qualitative evaluation is to explore dental professionals' experiences of using the material in clinical practice and preschool settings, with a particular focus on their perceptions of employing the conversational guide in structured discussions about health/oral health. The evaluation also seeks to determine whether the method support serves as an enhancement of the health-promoting mission of dental care.

## Project description

"Saga Stories in Health Talks" is a material originally based on a Swedish children's book character “Saga” used nationwide in Sweden, recommended through the Child Health Services' National Handbook, to support health discussions with children and parents.  A recent Swedish study found that the material was well-received within child health care, facilitating health discussions with families, with key strengths being its relevant content, focus on healthy habits, and child-friendly illustrations.

Originally developed for child health care, the method has evolved into a comprehensive concept that now includes child oral health, creating a common thread between different arenas that children encounter during their upbringing. This concept allows for follow-up and repeated conversations between adults and children across various settings, fostering a common language surrounding health and lifestyle habits. However, before this material can be effectively implemented within child dental care, its usability and effectiveness must be evaluated. Understanding the perspectives of dental care professionals is important for the successful implementation of "Saga Stories in Health Talks." Therefore, this study aims to explore how dental care professionals perceive the usability of the oral health version of this material. By leveraging these insights, public dental care can enhance health promotion efforts and contribute to improving both oral health and overall well-being in children.

**Research Questions**

- How do dental care professionals perceive the usability the "Saga Stories in Oral Health Talks" material in clinical practice and preschool settings, particularly in structured conversations about health and oral health?
- Does the "Saga Stories in Oral Health Talks" methodological support contribute to reinforcing the health-promoting mission of dental care? If so, how?
- What are the perceived benefits, challenges, and barriers to its implementation in everyday clinical practice?

## Project status

The material will be pilot tested in public dental clinics across several regions of Sweden, including Dalarna, Halland, Sörmland, Västmanland, Västra Götaland, and Värmland, as well as in private practices within Praktikertjänst.

During fall 2024, participating clinics have been invited to an educational session hosted by Generation Pep to become familiar with the project and the material. The clinics have also received the material in the fall of 2024. Following this, the dental professionals will use the material in their health talks with families for at least 3 months before the focus group discussions.

The test group will encompass both urban and rural areas and a variety of socioeconomic contexts. A total of 37 dental clinics, encompassing 49 dental care professionals working with child caries prevention, will be invited to participate.

Swedish Ethical Review Authority : Dnr 2024-06791-01

## Publications

**Core group**
SELECT

**Principal Investigator**
Maria Anderson

**PhD student**
Shigufta Syed (in progress)

**Co-investigators**
Georgios Tsilingaridis

Franziska Hetrodt

Gunilla Lööf

Sandra Lillqvist

# No Project title

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| **13** | **Evaluation of selective excavation and stepwise excavation in young permanent teeth with deep dental caries lesions (SELECT). A randomized controlled trial in a practice based research network** |

## Project overview

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| **Project start** | 2025 | |
| **Calculated end** | 2032 | |
| **Grants awarded** | 1500000 | 150000 |
| **Source** | SOF | ADSS, FTV, ABC |
| **Year** | 2025-2027 | 2025, 2026 |

## Aim

The purpose of this study is to implement recommended treatment methods in dental clinics and assess the outcomes of caries treatment in everyday practice. Through this, the goal is to reduce the number of dental visits (including reducing costs) and alleviate pain and other complications in children, adolescents, and young adults due to deep caries in their permanent teeth.

## Project description

Dental caries in permanent teeth represent a prevalent global health issue, impacting quality of life and consuming a significant portion of healthcare budgets, particularly in developed countries. In Stockholm, Sweden, a substantial porportion of young individuals suffer from caries, with deep restorations being common among adolescents. Traditional methods of complete excavation pose risks of pulp exposure, necessitating root canal treatments.

To address these challenges, less invasive approaches such as stepwise excavation and selective excavation have emerged as viable alternatives. Stepwise excavation, a two-visit procedure, aims to halt the caries process and retain pulp vitality, while selective excavation, a one-visit procedure, leaves soft dentine near the pulp and immediately restores the tooth. Research suggests that both methods offer advantages in terms of cost-effectiveness and pulp preservation.

Guidelines from the Swedish National Board of Health and Welfare recommend both selective and stepwise excavation for deep caries lesions, highlighting the need for long-term evaluations. Patient priorities identified by

the ABC underscore the importance of investigating treatment methods for caries in young permanent teeth.

The aim of the study is to investigate caries treatment outcomes, reduce dental visits, costs, and complications in children and young adults with deep caries in permanent teeth. The primary aim is to compare selective excavation (a one visit) to stepwise excavation (a two visits) in terms of preserving tooth vitality without pain or the need for endodontic treatment. The study will include health economic analyses, Quality of Life assessments, and qualitative analyses of dentist and patient experiences.

The dental treatment will be performed by various dentists at multiple dental clinics within a practice-based research network (PBRN) in Stockholm, targeting children and adolescents aged 8 to 19 years old with deep caries in their teeth. It is estimated that a total of 666 children will participate, with 333 children in each treatment group. One tooth per child will be included in the study, with treatment assignment determined randomly. The treatment outcome will be assessed by the dental clinics 12 months post-treatment, and retrospectively from secondary sources 36 months post-treatment.

The project involves a collaboration between academia, the public dental service, and private clinics in Stockholm through the Center for Pediatric Oral Health Research (ABC) and its PBRNs.

Swedish Ethical Review Authority (Dnr 2024-03717-01, Dnr 2025-05076-02) Clinical trials (Dnr 2024-03717-01)

## Project status

Recruting

## Publications

# No Project title

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|---|---|
| **14** | **Salivary metaproteome as a prediction tool in early childhood caries** |

**Core group**
Klicka eller tryck här för att ange text.

**Principal Investigator**
Franziska Hedrots

**PhD student**
Klicka eller tryck här för att ange text.

**Co-investigators**
Maria Anderson

Georgios Belibasakis

Nagihan Bostanci

## Project overview

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|---|---|---|
| **Project start** | 2025 | |
| **Calculated end** | 2026 | |
| **Grants awarded** | 250 000 | |
| **Source** | ADSS, ABC | |
| **Year** | 2025-2026 | |

## Aim

This project aims to utilize proteomic technologies for analyzing the composition of the saliva in two 3-year-old children cohorts from communities with documented varying caries risks, with the purpose of identifying future molecular diagnostic predictors for ECC.

## Project description

The term early childhood caries (ECC) describes the presence of one or more decayed, missing (due to caries) or filled primary teeth in children aged six years or younger [1]. It has been shown that risk factors for ECC are frequent sugar consumption, inadequate oral hygiene as well as the colonization with cariogenic bacteria, such as the group of mutans streptococci, which are considered to be the main etiological agents of tooth decay in children [2]. Other bacteria, such as Prevotella spp. and Lactobacillus spp., as well as fungus Candida albicans, were shown to be associated to the development and progression of ECC. Proteins in human saliva can influence the viability of oral microorganisms by various innate defense mechanisms, thus affect the composition of the oral microflora. Simultaneously bacteria are producing proteins to enhance various processes, e.g. the production of polysaccharides. While the word proteomics covers the exploration of all proteins from one species [3], metaproteomics relates to the investigation of proteins from microbial communities in interaction with the host, e.g. the host-microbiota crosstalk [4]. Overall, the protein composition in young children's saliva, be it of microbial or human origin, could assist in biomarker implementation for early diagnosis as well as risk assessment of ECC.
The aim of this study is to investigate the overall salivary protein composition in cohorts of 3-year-old children from Swedish communities of varying risk for ECC, using high-throughput proteomics**.**
In brief, 50 3-year-old children will be recruited at two Public Dental Healthcare Centers, Folktandvården Danderyd and Folktandvården Rinkeby respectively. The project is structured in a clinical part (stage 1) and an

analytical laboratory part (stage 2). Stage 1 will entail the recruitment of patients and the formation of the two study cohorts, these processes include even the collection of saliva swab samples as well as the clinical examination for assessing the oral health status of the children, with particular emphasis on the presence of ECC. Stage 2 comprises the molecular analytical part during which the proteomic characterization of the saliva will take place. This includes both host proteomics (human proteins) and metaproteomics (polymicrobial community proteins). This molecular analytical part will take place at the Department of Dental Medicine at Karolinska Institutet, with the support of the respective core facilities (Scaleless).

Swedish Ethical Review Authority (Dnr 2024-07097-01)

## Project status

Recruiting

## Publications

Akademiskt barn-tandvårdscentrum
Center for Pediatric Oral Health Research

# No Project title

| | |
|---|---|
| | **A picture of the oral health and oral illness in children and adolescents and identification of risk-factors for developing oral illness** |

**Core group**
Klicka eller tryck här för att ange text.

**Principal Investigator**
Hajer Jasim

**PhD student**
Anna Fältmars Wieslander

**Co-investigators**
Nikolaos Christidis

Georgios Tsilingaridis

Mathias Lemberger

Maria Anderson

## Project overview

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|---|---|---|
| **Project start** | 2025 | |
| **Calculated end** | 2032 | |
| **Grants awarded** | | |
| **Source** | FTV Stockholm | |
| **Year** | 2025 | |

## Aim

This project aims to provide a general picture of the oral health and oral illness in children and adolescents aged 7-15 years in Sweden as well as to investigate possible risk-factors for developing oral illness. Secondarily, the outcome of this project will also address the treatment need of oral illnesses in children and adolescents within the different odontological specialties in Sweden

## Project description

Oral health in children and adolescents encompasses not only the absence of disease but also pain, functional capacity, and psychosocial well-being. Nevertheless, several prevalent and potentially disabling conditions, such as malocclusions, traumatic dental injuries, temporomandibular disorders (TMD), and dental fear, remain insufficiently investigated in pediatric populations. This underscores the need for comprehensive longitudinal research that integrates clinical findings with psychosocial factors to enable early identification of vulnerable children and to support preventive, child-centred oral healthcare. Against this background, the present project aims to improve the understanding of oral health and oral illness in children and adolescents and to enable early identification of vulnerable individuals and preventable risk factors.
This population-based, prospective study comprises a cross-sectional baseline assessment followed by a two-year follow-up. Children and adolescents aged 7, 9, 11, and 13 years are consecutively recruited during mandatory dental examinations. Clinical assessments include caries, periodontal and endodontic status, orthodontic conditions, including tooth agenesis or aplasia, and TMD, evaluated using the standardized Diagnostic Criteria for TMD (DC/TMD). Immediately after the clinical examination, participants complete validated digital questionnaires corresponding to Axis II of the DC/TMD to measure functional limitations and biopsychosocial aspects related to pain and oral health. Additional instruments assess dental fear and oral health–related quality

of life, while older participants (13 and 15 years) also complete a questionnaire addressing perceived dental aesthetics.
A total of 800 children (200 per age group) will be included. All children attending mandatory dental examinations are eligible, and no exclusion criteria are applied to ensure broad representativeness. The same cohort is re-examined after two years using identical clinical and questionnaire-based protocols, enabling longitudinal analyses of oral health trajectories and potential causal relationships.

## Project status

The project is currently in the baseline data collection phase.
Recruitment started in 2025 and is ongoing at two Public Dental Service clinics in Stockholm.
Approximately 600 children and adolescents have been enrolled and completed the full clinical examination and questionnaire assessment. Data collection is progressing according to the study protocol, and recruitment is expected to be completed in 2026.
Preparations for the two-year follow-up examinations are ongoing, with longitudinal assessments scheduled for 2027–2028.

Swedish Ethical Review Authority (Dnr: 2019-01576).

## Publications

ABC Akademiskt barn-tandvårdscentrum
Center for Pediatric Oral Health Research

# No Project title

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|---|---|
| **COM-TDI** | Development and validation of Care-Pathway for Management of Combination of Traumatic Dental In-juries in Permanent teeth |

**Core group**
Klicka eller tryck här för att ange text.

**Principal Investigator**
Georgios Tsilingaridis

**PhD student**
Nitesh Tewari

**Co-investigators**
Dr. Eva Lauridsen (Rigshospitalet, University of Copenhagen, Denmark)

Dr. Vijay Prakash Mathur (All India Institute of Medical Sciences, New Delhi, India)

Dr. Phaneendra Kumar Yalavarthy (Indian Institute of Science, Bangalor

## Project overview

| | | |
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| **Project start** | | |
| **Calculated end** | | |
| **Grants awarded** | | |
| **Source** | | |
| **Year** | | |

## Aim

The overall aim of the project is to develop and validate a Care-Pathway for Management of the Combination of Traumatic Dental Injuries in Permanent teeth. This shall be achieved after studying the different combinations that have been reported in the literature and in two major cohorts of traumatic dental injuries from Denmark and Sweden and following best practices of qualitative research. An attempt will be made to design a deep learning model based on Natural Language Processing (NLP) and Convolutional Neural Networks (CNN) for predicting the diagnosis of combination dental injuries in patients that report after a delay.

## Project description

Care-pathways are the dynamic prognostic guidance pathways for clinical management of any disease. They are important in the complex disorders such as trauma where multiple structures having different healing potential or treatment strategies are involved. Dental injuries usually do not occur in isolation and affect the tooth/teeth and/or supporting structures in various combinations. Such combinations require management protocols that have been recommended by the International Association of Dental Traumatology or similar evidence-based Guidelines for isolated injury types. As a result, it is often the discretion of a clinician to decide the sequence of diagnostic and treatment steps. This is a grey area as such a paradigm lacks standardization and often result in unpredictable and suboptimal results. The dental traumatology literature has evidenced the causality of immediate and long-term complications of dental injuries, however, there is no clear understanding regarding the role of combinations of various types of traumas in their pathophysiology. Hence this project has been envisaged to identify the various combinations of dental injuries that have been reported in literature, the evidence related to their diagnosis and management protocols, and prognostic evaluation. This pattern shall be compared with the details derived from two major cohorts of traumatic dental injuries in the world and on the backdrop of

this understanding, a care-pathway for clinical management will be developed and validated using best practices of mixed methods research. Finally, an attempt will be made to design a deep learning-based Convolutional Neural Networks (CNN) model for making a diagnosis of combination dental injuries in patients that report after a delay.

## Project status

Ongoing (syst rew)

## Publications