# Differential learning and oral hygiene

Submission date	Recruitment status No longer recruiting	<ul><li>Prospectively registered</li></ul>		
30/05/2016		Protocol		
Registration date	Overall study status Completed	Statistical analysis plan		
31/05/2016		[X] Results		
<b>Last Edited</b> 12/03/2018	Condition category Oral Health	[] Individual participant data		

#### Plain English summary of protocol

Background and study aims

Toothbrushing to remove dental biofilm (bacteria) is important to prevent oral diseases. Accurate brushing techniques are necessary to improve biofilm removal compared to habitual toothbrushing, but are difficult to adopt. This study aims to analyse the effect of differential learning on the adoption of a toothbrushing technique.

Who can participate? Healthy children aged 6 to 9

#### What does the study involve?

Participants are randomly allocated to three groups. The intervention lasts for 15 days, and all children receive the same toothbrush and toothpaste during the whole study. In the control group, the children are asked to brush their teeth with their habitual brushing technique. In the second group, the brushing technique is instructed once a day by verbal instruction and demonstration models. In the third group, the brushing technique is instructed once a day according to the differential learning approach (one variation per day, 15 variations in total). Oral hygiene is assessed before the intervention and 21 days, 42 days and 63 day after the beginning of the intervention.

What are the possible benefits/risks of participating?

The participants might improve their personal oral hygiene. No side effects are expected.

Where is the study run from?

Department of Preventive Dentistry, Periodontology and Cariology, University Medical Center Göttingen (Germany)

When is study starting and how long is it expected to run for? December 2015 to June 2016

Who is funding the study?

Department of Preventive Dentistry, Periodontology and Cariology, University Medical Center Göttingen (Germany)

## Contact information

### Type(s)

Public

#### Contact name

Prof Annette Wiegand

#### Contact details

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### Additional identifiers

#### Protocol serial number

13/1/16

# Study information

#### Scientific Title

Effect of differential learning on the oral hygiene status of 6- to 9-year-old children

#### Study objectives

The null hypothesis is that there is no significant difference in the oral hygiene status (Quigley-Hein plaque-index and papilla bleeding index) of children brushing:

- 1. With the habitual technique
- 2. After instruction of a brushing technique
- 3. After instruction of a brushing technique with the differential learning approach at 21, 42 and 63 days after the start of the study

#### Ethics approval required

Old ethics approval format

#### Ethics approval(s)

Ethics committee of the University Medical Center Göttingen, 24/02/2016, No:13/1/16

#### Study design

Single-centre randomised controlled trial

#### Primary study design

Interventional

#### Study type(s)

Prevention

#### Health condition(s) or problem(s) studied

Oral hygiene

#### **Interventions**

This single-center study is conducted by the Department of Preventive Dentistry, Periodontology and Cariology at the Primary School Drispenstedt, 32235 Hildesheim, Germany. Approximately fifty children are randomly allocated to three groups:

- 1. Control: No treatment, habitual toothbrushing with standardized toothbrush and toothpaste
- 2. Instruction of brushing technique: Toothbrushing technique is instructed, toothbrushing is performed with standardized toothbrush and toothpaste
- 3. Instruction of brushing technique and differential learning: Toothbrushing technique is instructed, toothbrushing is performed with standardized toothbrush and toothpaste while applying differential learning

#### Intervention Type

Behavioural

#### Primary outcome(s)

- 1. Quigley-Hein plaque index at day 21, 42 and 63
- 2. Papilla bleeding index at day 21, 42 and 63

#### Key secondary outcome(s))

None

#### Completion date

10/06/2016

# **Eligibility**

#### Key inclusion criteria

Healthy children aged 6 to 9 years

#### Participant type(s)

Healthy volunteer

#### Healthy volunteers allowed

No

#### Age group

Child

#### Lower age limit

6 years

#### Upper age limit

9 years

#### Sex

All

#### Key exclusion criteria

Toothpaste allergy

#### Date of first enrolment

14/03/2016

#### Date of final enrolment

06/04/2016

# Locations

#### Countries of recruitment

Germany

### Study participating centre

University of Göttingen (Germany)

Department of Preventive Dentistry, Periodontology and Cariology 37075

# Sponsor information

#### Organisation

University of Göttingen (Germany)

#### **ROR**

https://ror.org/01y9bpm73

# Funder(s)

#### Funder type

Hospital/treatment centre

#### **Funder Name**

University Medical Center Göttingen (Germany)

# **Results and Publications**

# Individual participant data (IPD) sharing plan

**IPD sharing plan summary**Not expected to be made available

# **Study outputs**

Output type	Details	Date created Date adde	d Peer reviewed?	Patient-facing?
Results article	results	01/07/2018	Yes	No
Participant information sheet	Participant information sheet	11/11/2025 11/11/202	5 No	Yes