

# The effectiveness of fluoride varnish versus pit and fissure sealant for the prevention of caries in children of primary health care

<b>Submission date</b> 15/06/2009	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
<b>Registration date</b> 18/08/2009	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
<b>Last Edited</b> 18/08/2009	<b>Condition category</b> Oral Health	<input type="checkbox"/> Individual participant data <input type="checkbox"/> Record updated in last year

## Plain English summary of protocol

Not provided at time of registration

## Contact information

### Type(s)

Scientific

### Contact name

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## Additional identifiers

### Protocol serial number

SA08I20047

## Study information

### Scientific Title

Comparison of the effectiveness of fluoride varnish versus pit and fissure sealant for the prevention of caries in children of primary health care: randomised controlled clinical trial

### **Study objectives**

The intervention of sealing pits and fissures of once a year application is more effective in reducing the incidence of caries when compared with application of fluoride varnish to 5% every six months, in children with an average age of 6 years for both sexes enrolled in schools in areas of low socioeconomic status and lower-middle of Santiago, Chile, considering clinically significant a reduction of 10% in the incidence of occlusal caries over a period of 12 months of follow-up.

### **Ethics approval required**

Old ethics approval format

### **Ethics approval(s)**

University of Chile Faculty of Medicine Ethics Committee of Investigation in Humans Beings approved on the 8th August 2008 (ref: 065-2008)

### **Study design**

Interventional prospective randomised single-blind controlled multicentre clinical trial

### **Primary study design**

Interventional

### **Study type(s)**

Treatment

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

Occlusal caries

### **Interventions**

The choice of material to be used as a pit and fissure sealant in this project will be based on resin, since its use in primary care and is recommended by the Ministry of Health of Chile.

The sealant to be used in this study is the "Concise", manufacturer 3M, typically used in municipal health centers. The sealants should be given, taking into account the degree of eruption of first permanent molars, which is sufficient for proper application.

The procedure for applying a resin-based sealants must be sequenced according to the rules and recommendations established by the manufacturer. The staff that will be used to implement the experimental maneuver consists of dentists of Primary Health Care, which will be previously trained regarding the application of interventions. If during the execution of the study, a primary care dentist eventually shows little interest or fails to fulfill its tasks, he (or she) will be replaced by a dentist or a student of final year of odontology, previously trained.

The other intervention to be applied is the sodium fluoride varnish 5% (22,600 ppm. fluoride). This branch will be considered the control group. This material is indicated for the prevention of caries in occlusal surfaces of molars and pre molars and in smooth surfaces, and its application is recommended in all patients with moderate and high caries activity or cariogenic risk. The varnish used in this study is called "Duraphat to 5%", of the manufacturer Colgate.

The application is performed according to manufacturer's instructions. Human resources involved in the application of fluoride varnish is the same as the application of sealants. In this work, the varnish is applied, initially at the start of the investigation, and every 6 months, according to the recommendations established by national experts, until the end of the monitoring period, we will seek caries lesions in early stages of the process.

Due to the complexity of clinical trials, and the time at which the outcome is measured, it requires at least 24 months to implement the study. Students in this study will be followed by at least 1 year.

### **Intervention Type**

Other

### **Phase**

Not Applicable

### **Primary outcome(s)**

Early stages of the process of occlusal caries in molars, prior to the formation of cavity with obvious dentine exposure, made on the basis of the criteria proposed by the International Caries Detection and Assessment System Coordinating Committee (ICDAS II).

All outcomes measured in July 2010.

### **Key secondary outcome(s)**

1. Proportion of loss for the pit and fissure sealants in a period of 1 year follow up
2. Partial and total loss of pit and fissure sealants on the occlusal surface of permanent first molars, through visual examination

All outcomes measured in July 2010.

### **Completion date**

01/05/2011

## **Eligibility**

### **Key inclusion criteria**

1. Children of both sexes, 6 years old on average (or already in the process of eruption of first permanent molars)
2. Socio-economic levels belonging to medium-low or low status
3. Presenting at least one of the first permanent molars compatible with the application of materials, and free of clinically detectable caries (with exposed dentine) or fillings at the time of the beginning of the study
4. Who are willing to participate in the study, confirmed that by signing the informed consent letter for parents

### **Participant type(s)**

Patient

### **Healthy volunteers allowed**

No

**Age group**

Child

**Sex**

All

**Key exclusion criteria**

Children that need some kind of special attention, as a procedure under general anaesthesia, presence of systemic disease or neurological limitations that impede their attention by a general dentist.

**Date of first enrolment**

01/05/2009

**Date of final enrolment**

01/05/2011

**Locations****Countries of recruitment**

Chile

**Study participating centre**

Universidad de Chile

Santiago

Chile

8380453

**Sponsor information****Organisation**

Universidad de Chile (Chile)

**ROR**

<https://ror.org/02xtpdq88>

**Funder(s)****Funder type**

Government

## Funder Name

National Commission for Science and Technology, Government of Chile (CONICYT) (Chile) -  
National Fund for Research and Development in Health (FONIS) (ref: SA08I20047)

## Results and Publications

### Individual participant data (IPD) sharing plan

#### IPD sharing plan summary

Not provided at time of registration

#### Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Participant information sheet</a>	Participant information sheet	11/11/2025	11/11/2025	No	Yes