

# Effectiveness of different cleaning agents for retainers

<b>Submission date</b> 19/10/2020	<b>Recruitment status</b> No longer recruiting	<input checked="" type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
<b>Registration date</b> 02/11/2020	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
<b>Last Edited</b> 18/04/2024	<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

Current plain English summary as of 23/02/2022:

### Background and study aims

After the completion of orthodontic treatment, patients undergo a retention phase to maintain the results. During this phase, an orthodontic retainer is used. The retainer is worn 24 hours a day except when eating, drinking, brushing and playing sports. Without adequate cleaning, retainers can accumulate plaque and bacteria, leading to gingival (gum) inflammation and disease. A study showed that saliva quantity and composition is affected during orthodontic treatment. A variety of alternative cleaning agents have been discussed of which were mostly tested on acrylic orthodontic appliances and prostheses. To date, however, few studies have been performed to investigate the effects of cleaning agents on thermoplastic retainers and changes in the oral environment. The aim of this study is to assess the effectiveness of different cleaning agents for retainers.

### Who can participate?

Adults over the age of 18 who are fitted with a thermoplastic retainer

### What does the study involve?

Participants are randomly allocated to one of three groups. Those in the first group are asked to clean their retainers using tap water. Those in the second group are asked to clean using a provided toothpaste and the third group are asked to clean using Retainer Brite to clean their retainers. A detailed explanation, demonstration and written instructions will be provided. The study lasts 12 months in total. Participants saliva will be assessed during retainer fit and at 6 months and 12 months follow up. Participants also complete an assessment form during the 6 months and 12 months follow up appointment.

### What are the possible benefits and risks of participating?

There is no risk of participating in this study as it is carried out during the regular follow up of treatment. The results of this study will benefit individuals, researchers, and the community with the advancement of knowledge and orthodontic practice. It will also show if the different cleaning agents influence saliva parameters and the patients' experience. It will also be

beneficial to practitioners to know the best cleaning agent with the least amount of bacteria which will support the recommendations for cleaning methods of orthodontic retainers in the future.

Where is the study run from?

Universiti Teknologi Mara (UiTM) (Malaysia)

When is the study starting and how long is it expected to run for?

September 2019 to December 2022

Who is funding the study?

Universiti Teknologi Mara (UiTM) (Malaysia)

Who is the main contact?

1. Dr Iman binti Azmuddin

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2. Dr Saraswathy Devi Sinniah

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Previous plain English summary:

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1. Dr Iman binti Azmuddin  
imanazmuddin@gmail.com  
2. Dr Saraswathy Devi Sinniah  
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## Contact information

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## Additional identifiers

**EudraCT/CTIS number**  
Nil known

**IRAS number**

**ClinicalTrials.gov number**  
Nil known

**Secondary identifying numbers**  
Nil known

## Study information

**Scientific Title**  
Effectiveness of thermoplastic retainer cleansing agents and patient-reported outcome: a randomized controlled trial

**Acronym**  
ETRCA

**Study objectives**

1. There is no significant difference in the presence of Mutans Streptococci (MS) between three cleansing agents
2. There is no significant difference in salivary parameters in unstimulated saliva
3. There is no significant difference in patient-reported outcome with different cleansing agents

**Ethics approval required**

Old ethics approval format

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

Approved 29/09/2020, UiTM Research Ethics Committee (Research Management Centre (RMC), Office of Deputy Vice Chancellor (Research & Innovation) Universiti Teknologi MARA, Level 3, Bangunan Wawasan, 40450 Shah Alam, Selangor, Malaysia; +60 (0)355442049; recsecretariat@uitm.edu.my), ref: 600- TNCP1(5/1/6)

### **Study design**

Single-center interventional single-blind randomized controlled trial

### **Primary study design**

Interventional

### **Secondary study design**

Randomised controlled trial

### **Study setting(s)**

Other

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

Prevention

### **Participant information sheet**

Not available in web format, please use contact details to request a participant information sheet

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

Prevention of caries in patients wearing a thermoplastic retainer

### **Interventions**

Current intervention as of 23/02/2022:

This trial is a randomized controlled trial with three parallel arms. Patients will be randomly allocated to either group A (tap water), group B (toothpaste), or group C (Retainer Brite). The list of randomisation will be generated using SPSS statistical software.

A detailed explanation, demonstration, and written instructions will be provided. The study lasts 12 months in total. Participants' saliva will be assessed during the retainer fitting and at 6 months and 12 months follow up. Participants also complete an assessment form during the 6 month and 12 month follow-up appointments.

Previous intervention:

This trial is a randomized controlled trial with three parallel arms. Patients will be randomly allocated to either group A (tap water), group B (toothpaste) or group C (Retainer Brite). The list of randomisation will be generated using SPSS statistical software.

A detailed explanation, demonstration and written instructions will be provided. The study lasts 6 months in total. Participants saliva will be assessed during the retainer fitting and at 3 months and 6 months follow up. Participants also complete an assessment form during the 3 months and 6 months follow up appointment.

## **Intervention Type**

Other

## **Primary outcome measure**

Current primary outcome measure as of 23/02/2022:

Bacterial count of Mutans Streptococci (MS) measured using colony counting method at retainer fit, 6, and 12 months post retainer fit

Previous primary outcome measure:

Bacterial count of Mutans Streptococci (MS) measured using colony counting method at retainer fit, 3 months and 6 months post retainer fit

## **Secondary outcome measures**

Current secondary outcome measures as of 23/02/2022:

1. Saliva parameters (hydration, viscosity, pH and quantity) during retention measured using time and visual assessment of the transparency, volume and pH test strip indicator at retainer fit, 6, and 12 months post retainer fit
2. Patient-reported outcome measured using assessment form at 6 and 12 months post retainer fit

Previous secondary outcome measures:

1. Saliva parameters (hydration, viscosity, pH and quantity) during retention measured using time and visual assessment of the transparency, volume and pH test strip indicator at retainer fit, 3 months and 6 months post retainer fit
2. Patient-reported outcome measured using assessment form at 3 months and 6 months post retainer fit

## **Overall study start date**

27/09/2019

## **Completion date**

28/12/2022

# **Eligibility**

## **Key inclusion criteria**

1. Patients fitted with thermoplastic retainer
2. Over 18 years old
3. Caries free
4. Healthy periodontal status

## **Participant type(s)**

Patient

## **Age group**

Adult

## **Lower age limit**

18 Years

**Sex**

Both

**Target number of participants**

30

**Total final enrolment**

33

**Key exclusion criteria**

1. Pregnant
2. Patients on medication
3. Smokers
4. Patients with systematic disease
5. Prosthetic tooth in retainer

**Date of first enrolment**

18/01/2021

**Date of final enrolment**

28/08/2021

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

Malaysia

**Study participating centre**

Universiti Teknologi Mara  
Department of Orthodontics  
Faculty of Dentistry  
Jalan Hospital  
Sungai Buloh  
Malaysia  
47000

**Sponsor information****Organisation**

Universiti Teknologi MARA

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**Sponsor type**

University/education

**Website**

<http://www.uitm.edu.my/index.php/en>

**ROR**

<https://ror.org/05n8tts92>

## **Funder(s)**

**Funder type**

University/education

**Funder Name**

Institute of Research Management and Innovation, Universiti Teknologi MARA

**Alternative Name(s)**

Institute of Research Management & Innovation, IRMI, UiTM

**Funding Body Type**

Private sector organisation

**Funding Body Subtype**

Research institutes and centers

**Location**

Malaysia

## **Results and Publications**

**Publication and dissemination plan**

Planned publication in a high-impact peer-reviewed journal

**Intention to publish date**

28/04/2025

**Individual participant data (IPD) sharing plan**

The datasets generated and/or analysed during the current study during this study will be included in the subsequent results publication



## **IPD sharing plan summary**

Available on request, Published as a supplement to the results publication