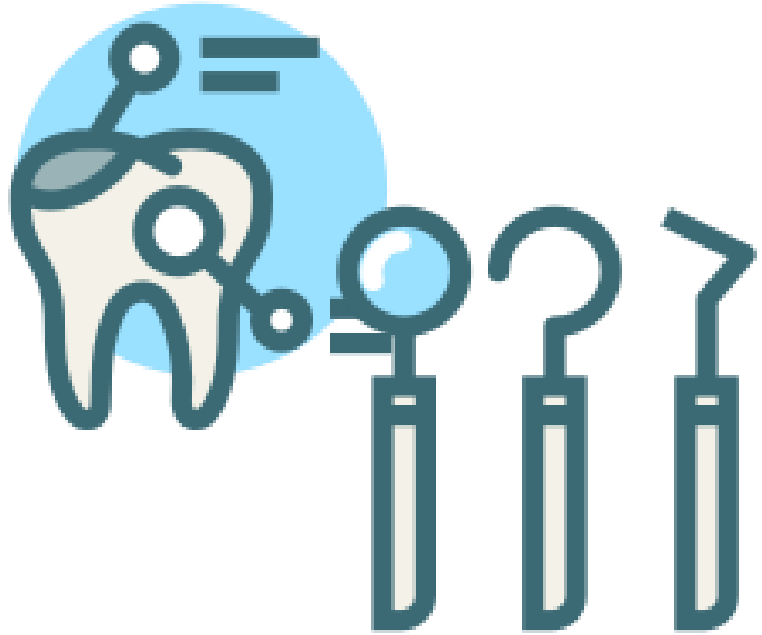
Can **swallowable gum** improve **oral hygiene** in **developing countries**?

Nagasaki Higashi High School

1. Background & Objective
2. Methodology
3. Results & Discussion
4. Conclusion



1. Background & Objective

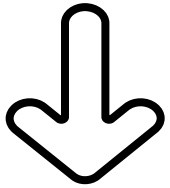
OBJECTIVE

To improve oral hygiene in developing countries

1. Background & Objective

Problems about oral hygiene in developing countries

Water Shortage



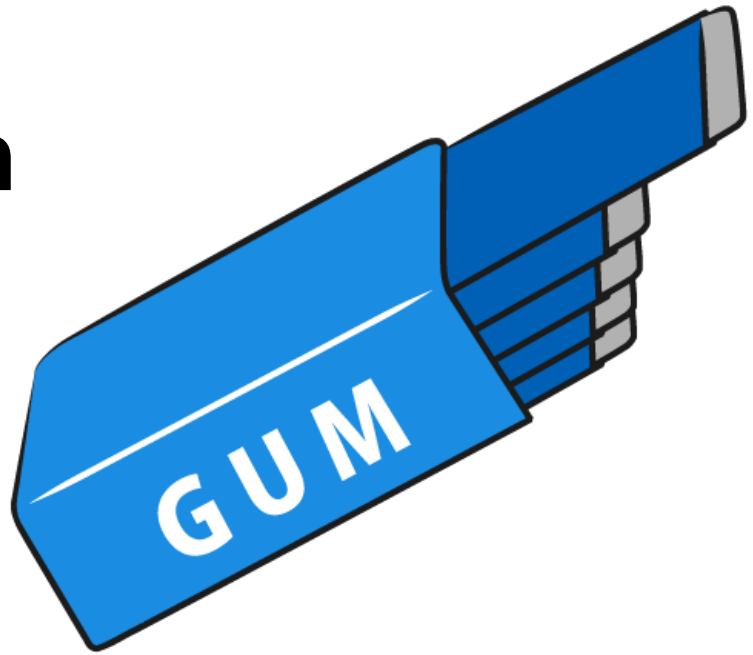
To develop oral care
with less water and spread the information
to developing countries

1. Background & Objective

Oral Care with less Water

Gum works well

- remove **plaque**
- increase the amount of **saliva**



Swallowable gum

→ Safer!

1. Background & Objective

Research Questions

(1) Does making gum need less water than brushing teeth?

(2) Can the swallowable gum remove as much plaque as store-bought gum?

(3) Can the swallowable gum increase the amount of saliva to the ideal amount?

(4) What is good material for the gum to work better?

(5) How to spread the gum to developing countries.

2. Methodology

(1) Does making gum need less water than brushing teeth?

<How to make the swallowable gum>

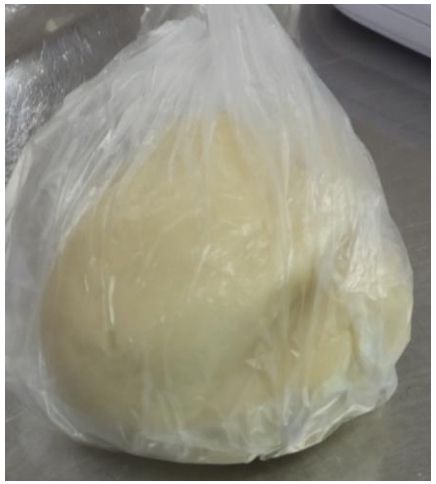
Ingredients

・Bread Flour 50g ・Water 20cc

①

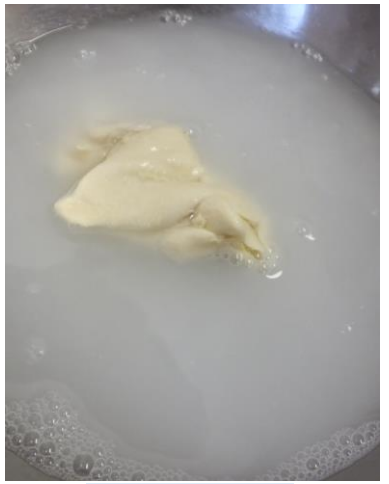
Mix bread flour and water

②



Let it rest in a plastic bag

③



Wash it

2. Methodology

(2) Can the swallowable gum remove as much plaque as store-bought gum?

Plaque Checker

Plaque ⇩ Teeth are **RED**

No Plaque ⇩ No color change

Subjects→5 high school students

2. Methodology

(2) Can the swallowable gum remove as much plaque as store-bought gum?

Swallowable gum

VS

store-bought gum

How gum works

2. Methodology

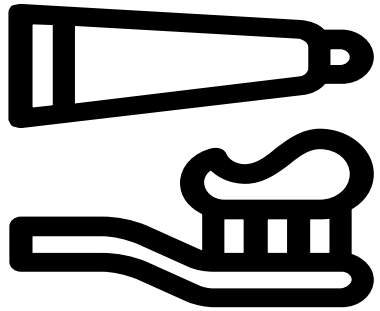
(3) Can the swallowable gum increase the amount of saliva to the ideal amount?

We compared the amount of saliva before and after chewing.

Subjects→3 students

3. **Results** & Discussion

(1) Does making gum need less water than brushing teeth?



Once ＝

6L

×1 piece ＝

0.13L

3. **Results** & Discussion

(2) Can the swallowable gum remove as much plaque as store-bought gum?

The swallowable gum can remove **as much plaque as** store-bought one.

(3) Can the swallowable gum increase the amount of saliva to the ideal amount?

Increased to **2.7g** on average（**2.0**g is ideal.）

3. Results & **Discussion**

1. Does making gu than brushing teeth?

3. Results & **Discussion**

(2) Can the swall… remove as much pla…e as store-b…ght gum?

The gum works … well as store-bo…ht gum.

(3) Can the sw…lowable gum i…ease the amount …saliva to the…eal amount?

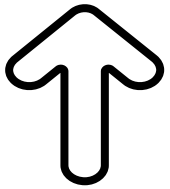
The gum can increas… …nt of saliva.

Swallowable gum can be one way to maintain good oral hygiene.

4. Conclusion

OBJECTIVE

To improve oral hygiene in developing countries



The swallowable gum is one oral care with less water

However

Haven’t spread the information the gum yet

4. Conclusion

Remaining Research Questions

(4) What are effective materials
for the gum to work better?

(5) How to spread the gum to developing countries.

Thank You for listening!

References

Azuma Miyuki(2018), Hamigaki Kakumei!(Brushing Reform!), Bunkeido

Shishubyou kara yuhatu sareru 6tsuno byoki(6 Diseases from Bad Teeth), Medical Corporation Tokushinkai Group, 2021.6.13
https://www.tokushinkai.or.jp/periodontal/periodontal-disease-6sick/

Hamigakino tokini tsukau mizunoryoha?(How Much do we use water when we are brushing our teeth?), Panasonic library of wonder, 2021.6.13
https://www.panasonic.com/jp/corporate/sustainability/citizenship/pks/library/005water/wat010.html

Kishiritoru ni tsuite(About Xylitol), Theme park 8020, 2021.07.26
https://www.jda.or.jp/park/prevent/xylitol_03.html

Gamu no tsukurikata(How to make gum), The group of Pensioners, 2021.07.26
http://www.gc-net.jp/nenkinnokai/90-35gamu.htm