

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

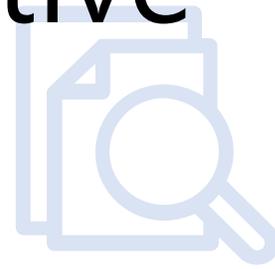


4 Ito Iwasaki Koba Mizoguchi

※ swallowable 飲み込む

oral hygiene 口腔環境

1. Background & Objective



2. Methodology

3. Results & Discussion



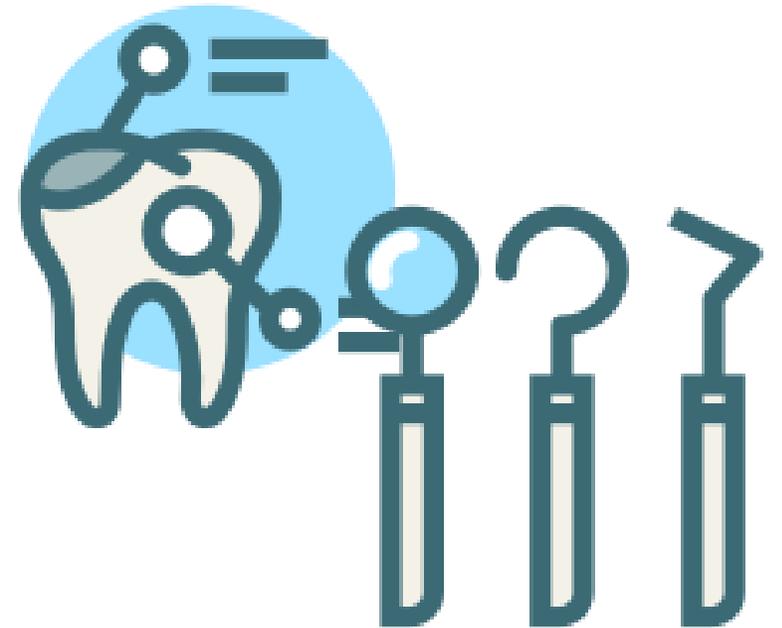
4. Conclusion

1. Background & Objective



2. Methodology

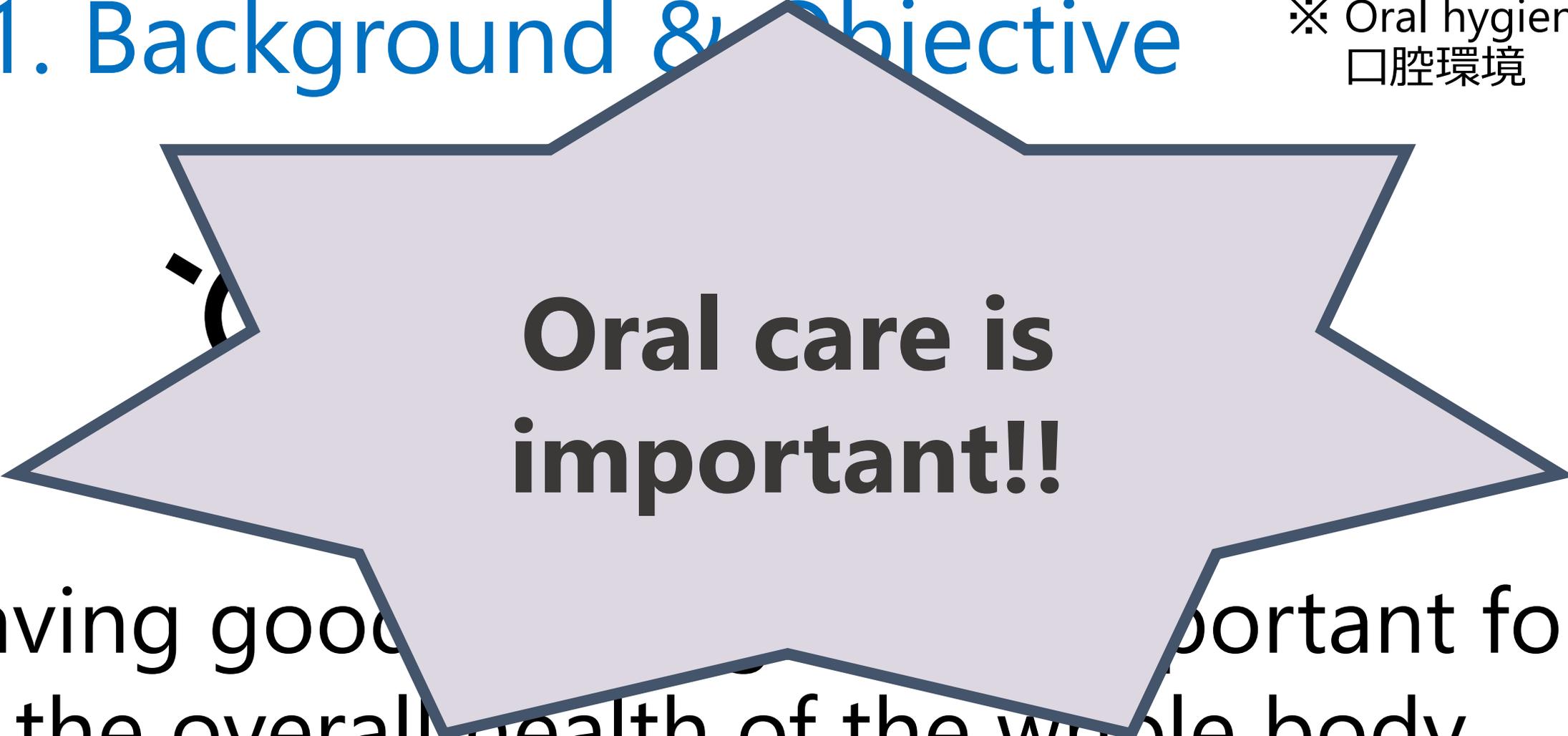
3. Results & Discussion



4. Conclusion

1. Background & Objective

※ Oral hygiene
口腔環境



**Oral care is
important!!**

Having good oral care is important for
the overall health of the whole body.

1. Background Objective

Water Shortage



People in developing countries



Difficult to brush their teeth

ut 6 L)

1. Background & Objective

OBJECTIVE

**To improve oral hygiene
in developing countries**

1. Background & Objective

Problems about oral hygiene



※ Oral hygiene 口腔環境

Water Shortage



Develop and spread oral care with less water

1. Background & Objective

Oral Care with less Water

Gum works well

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

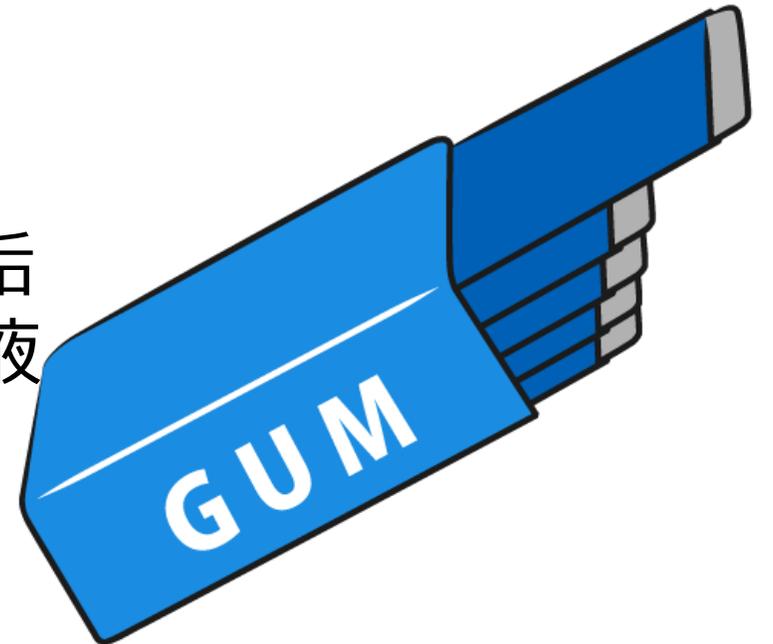


※ plaque 歯垢
saliva 唾液

Swallowable gum

※ 飲み込める

→ Safer!



1. Background & Objective

Research Questions

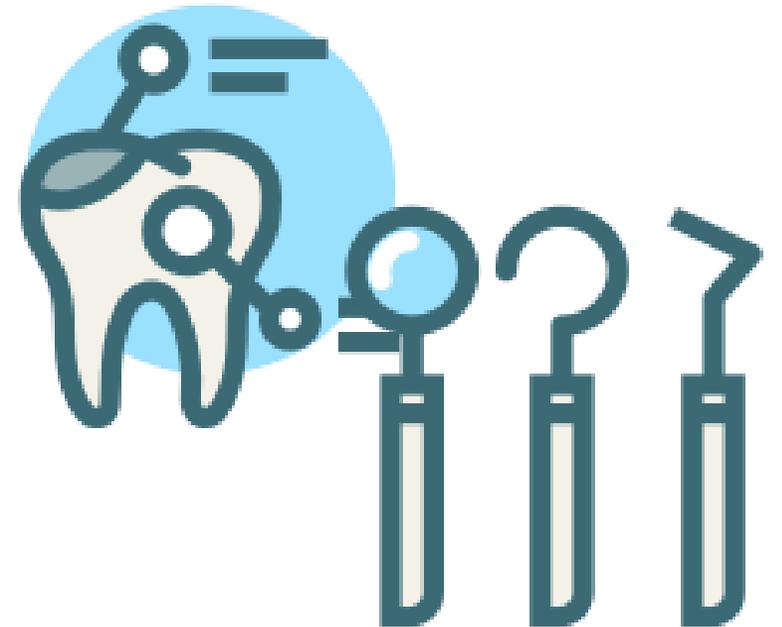
- (1) Does making gum need less water than brushing teeth?**
- (2) Can the swallowable gum remove as much plaque as store-bought gum?**
- (3) Can the swallowable gum increase the amount of saliva to the ideal amount?**
- (4) How to spread the information of the gum to developing countries.**

1. Background & Objective



2. Methodology

3. Results & Discussion



4. Conclusion

2. Methodology

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

<How to make the swallowable gum>

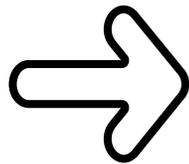
Ingredients

- Bread Flour 50g
- Water 20cc

①



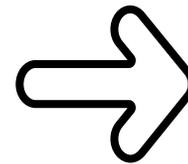
Mix bread flour and water



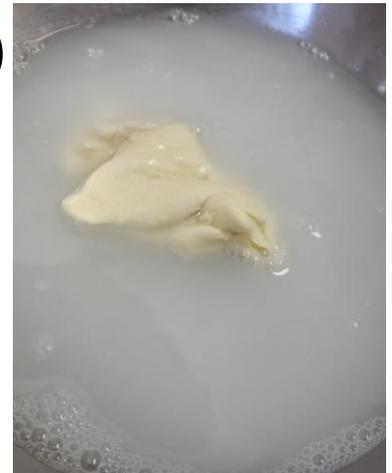
②



Let it rest in a plastic bag



③



Wash it

2. Methodology

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

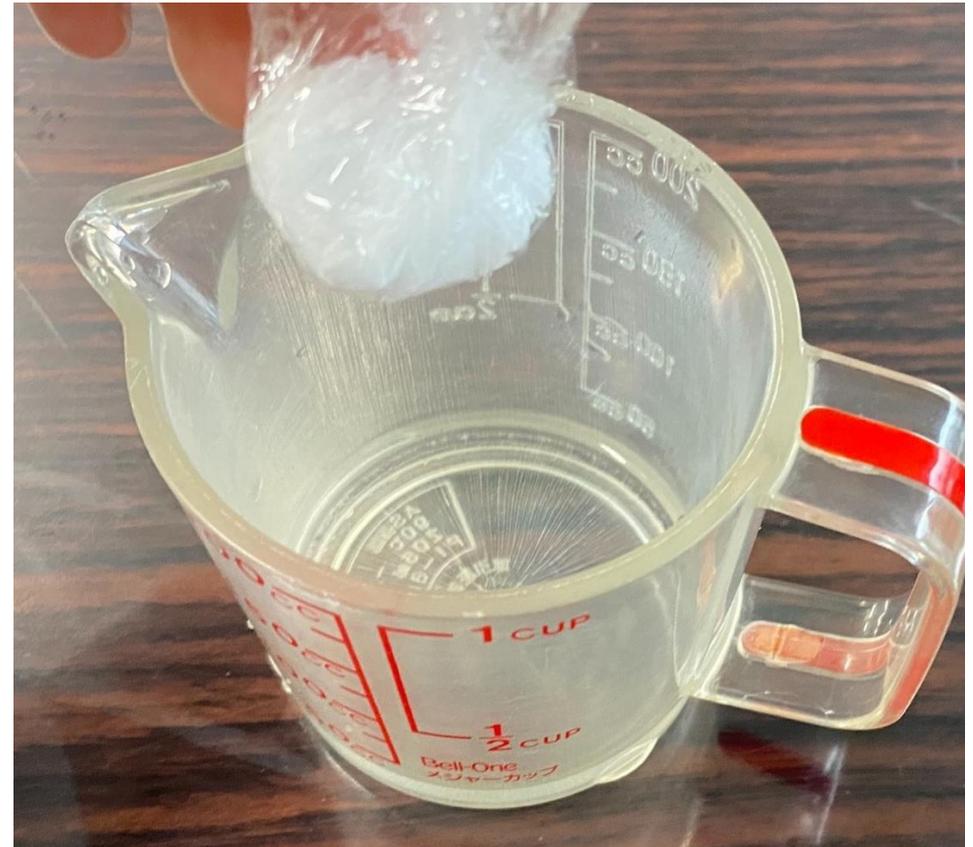
The different point

Add 4 grams of **salt**



Increases **elasticity**

※ elasticity 弾力性



2. Methodology

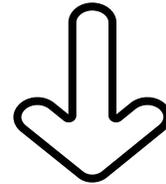
(2) Can the swallowable gum remove as much plaque as store-bought gum?

※ store-bought 市販の

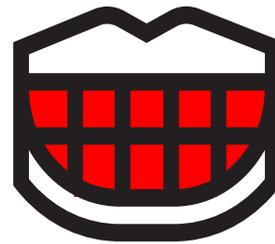
Plaque Checker



Plaque



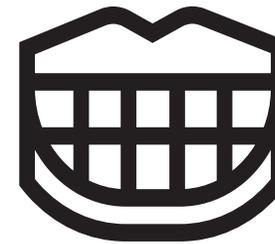
Teeth are **RED**



No Plaque

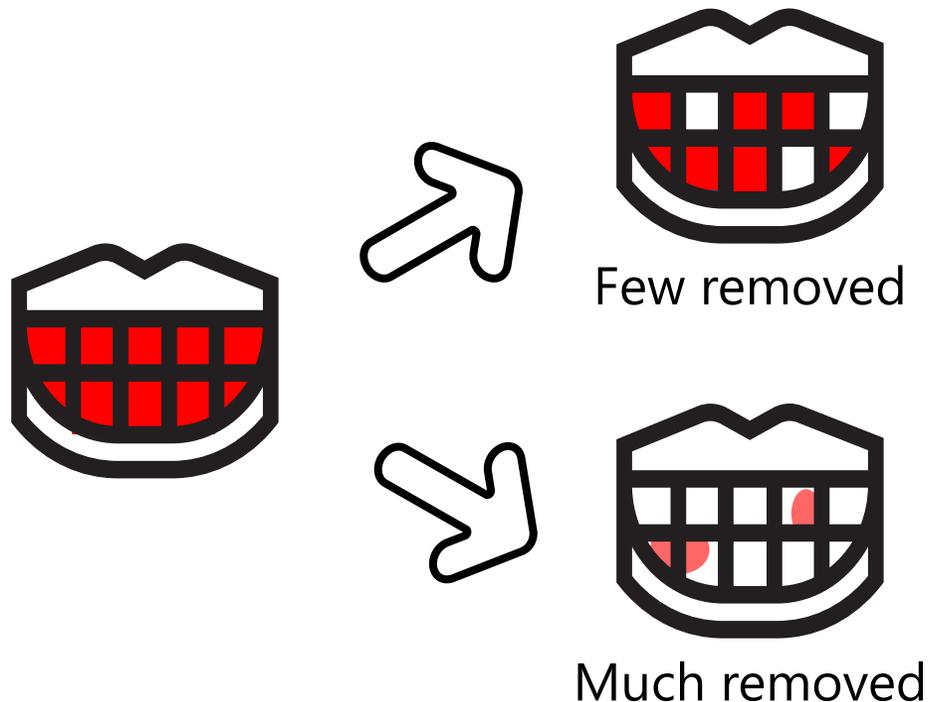


No color change



2. Methodology

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



Compare how the gum work

Swallowable

VS

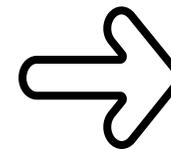
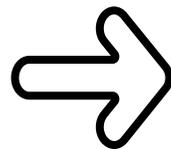
store-bought



2. Methodology

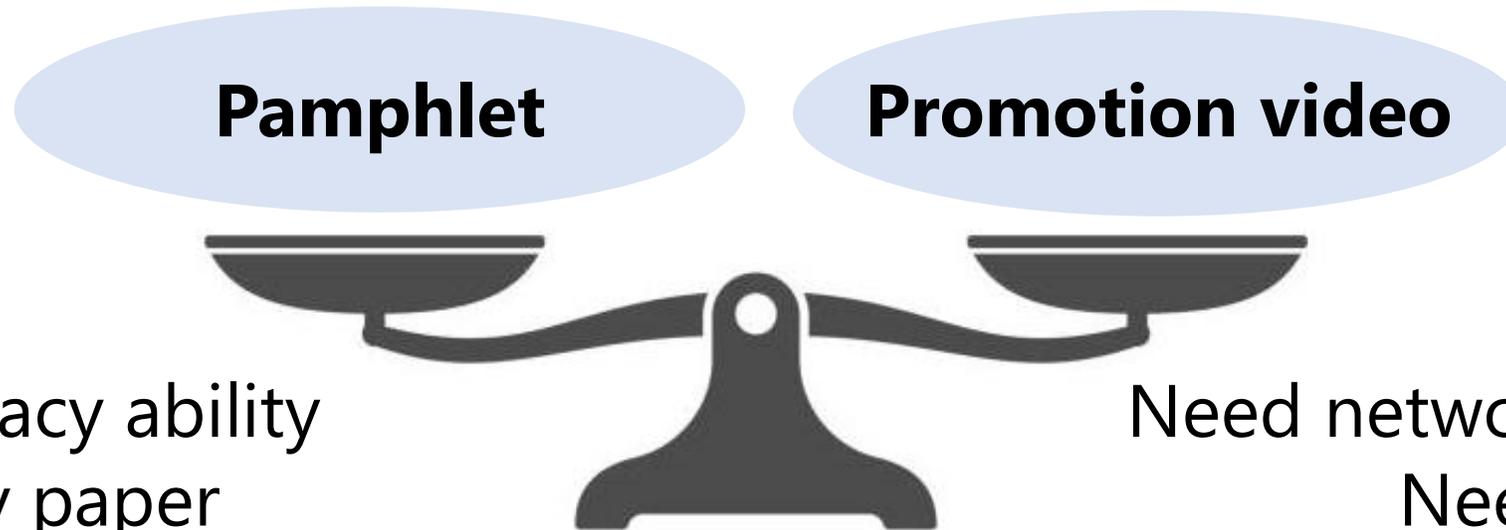
(3) Can the swallowable gum increase the amount of saliva to the ideal amount?

Compare the amount of saliva before with after chewing



2. Methodology

(4) How to spread the information of the gum to developing countries.



Need literacy ability
Need only paper
Doesn't need network system

Need network system
Need devices
Doesn't need literacy ability

2. Methodology

(4) How to spread the information of the gum to developing countries.

Pamphlet

Promotion video

Need literacy ability
Need only paper
Doesn't need network system

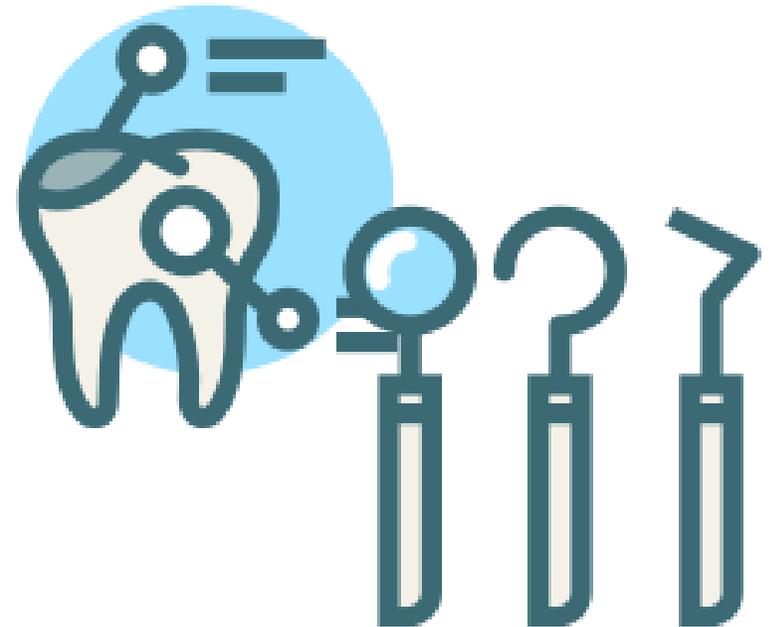
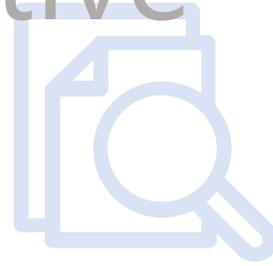
Need network system
Need devices
Doesn't need literacy ability

1. Background & Objective

2. Methodology

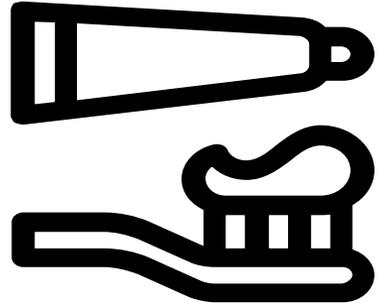
3. Results & Discussion

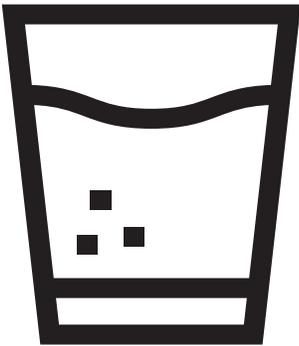
4. Conclusion



3. Results & Discussion

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

 Once =  6L

 × 1 piece =  0.13L

3. Results & Discussion

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

Adding salt



The flour easily gathered well.



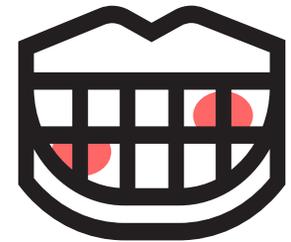
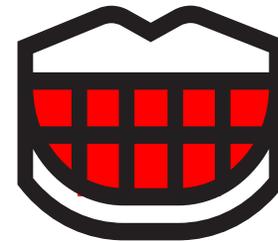
The amount of **water** used to wash the gum **decreased**



3. Results & Discussion

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

swallowable $\stackrel{!}{=}$ store-bought



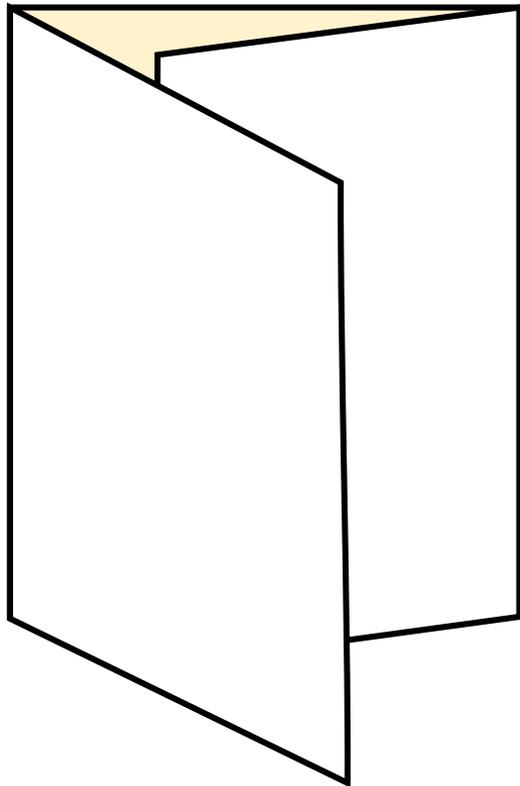
(3) Can the swallowable gum increase the amount of saliva to the ideal amount?

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



3. Results & Discussion

(4) How to spread the information of the gum to developing countries.



Three-fold type

※ 三つ折りタイプ

All in English

What is the swallowable gum?

The wrap-around page [Explanation of swallowable gum]

Removing plaque

Plaque is cause of tooth decay.
Gum can stick plaque on itself and remove plaque.

Strengthening jaw

Chewing many times strengthens our jaw. Strong jaw is important for our health. Gum promotes chewing a lot.

※ wrap-around page
巻き込み面

To swallow ordinary gum is very dangerous because it is not digested. The swallowable gum is made from bread flour, so it's safe to swallow.

The back page [school name]



Japan

Nagasaki Higashi High School

The front page [Title]

Introduction of
The Swallowable Gum



Gum for Oral Care

Why is it important to keep oral hygiene clean ?

1 Big impact on the whole body

Oral hygiene has a big impact on our whole body. Having good oral hygiene is important for the overall health of the whole body. Bad oral hygiene has bad impact on the body like significant diseases, and good oral hygiene has good impact on body.

The importance of oral care



2 Strengthening our body

Oral care not only clean our mouth but also can make our body stronger. Many people in the world die of infections. Oral care can lead immunity powerful, so by doing oral care regularly, you can fight against infections.

Let's make swallowable gum!

Making gum is so easy that anyone can make.

ingredients (for 15 pieces)

bread flour 50g water 20cc (+2.0L) salt 4g

- ✧ This gum can be eaten for a week.
- It doesn't mean that you don't have to do any other oral care like brushing.

Chew the gum
Clean oral hygiene
and you can get strong body

Step 1



Mix all the ingredients.

How to make the swallowable gum

Step 2



Rest the dough for an hour.

Step 3



Wash it until water becomes transparent.

Step 4



Cut and divide the gum into 15 pieces. (15g/1piece)

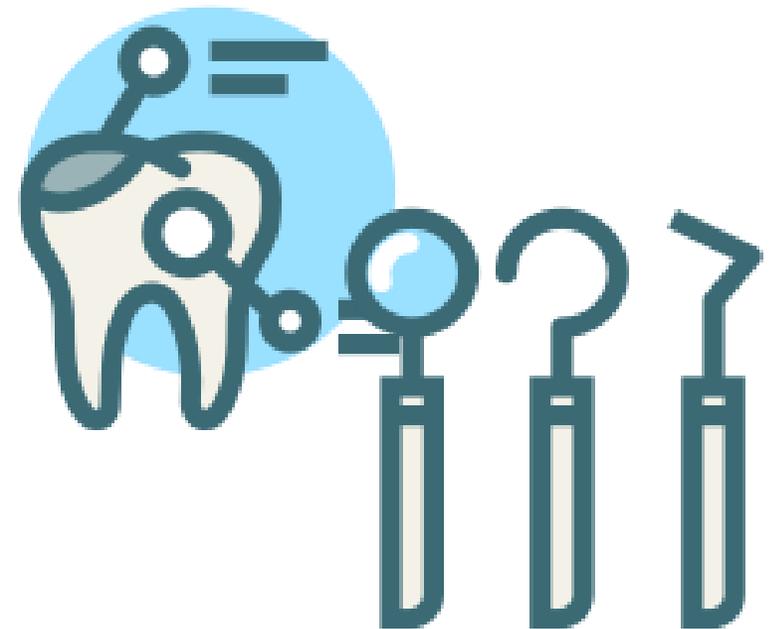
COMPLETE

1. Background & Objective



2. Methodology

3. Results & **Discussion**



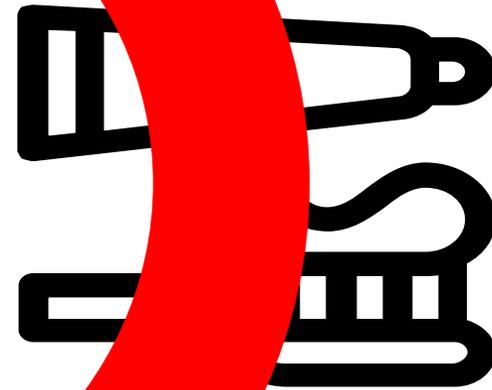
4. Conclusion

3. Results & Discussion

1. Does making gum _____ than brushing teeth?



The gum :



...ning : 6.0L

3. Results & Discussion

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

The gum works as well as store-bought gum.

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

The gum can increase the amount of saliva.



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

3. Results & Discussion

(4) How to spread the information of the gum to development areas.

Why is it important to keep oral hygiene clean ?

1 Big impact on the whole body
Oral hygiene has a big impact on our whole body. Having good oral hygiene is important for the overall health of the whole body. Bad oral hygiene has bad impact on the body like significant diseases, and good oral hygiene has good impact on body.

2 Strengthening our body
Oral care not only clean our mouth but also can make our body stronger. Many people in the world die of infections. Oral care can lead immunity powerful, so by doing oral care regularly, you can fight against infections.

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Chew the gum
Clean oral hygiene
and you can get strong body

Step 1 Mix all the ingredients.

Step 2 Rest the dough for an hour.

Step 3 Wash it until water becomes transparent.

Step 4 Cut and divide the gum into 15 pieces. (15g/1piece)

COMPLETE



NO opinion and **NO** advice



Haven't sent it to the target area

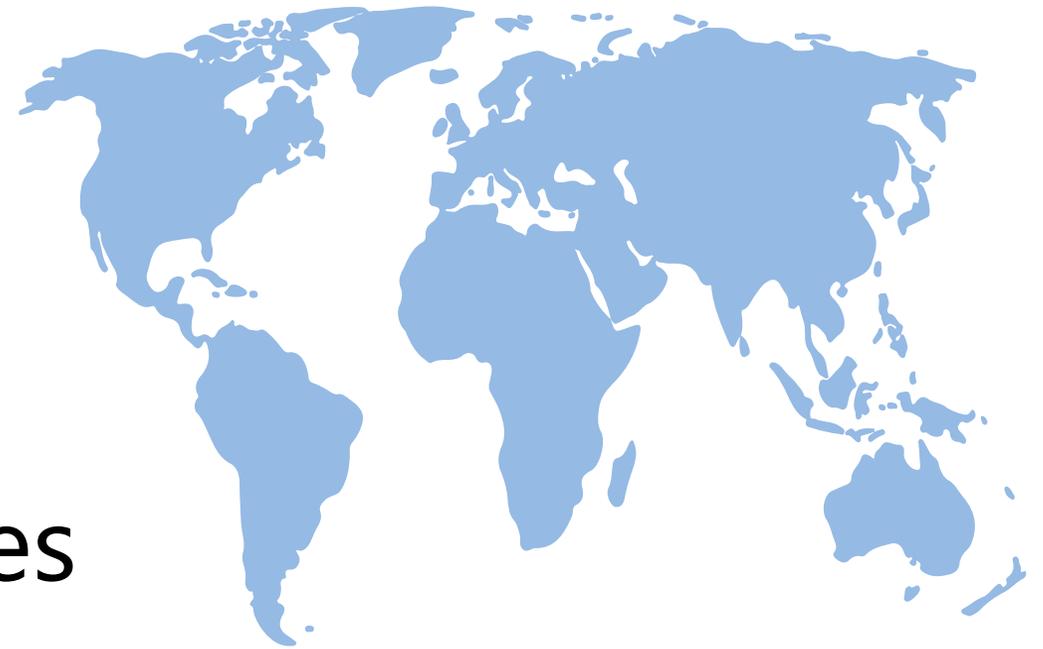
3. Results & Discussion

(4) How to spread the information of the gum to developing countries.

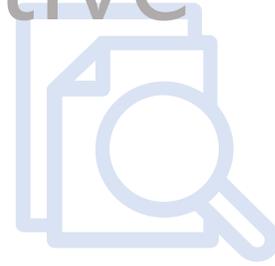
All in English



Adapt to many countries

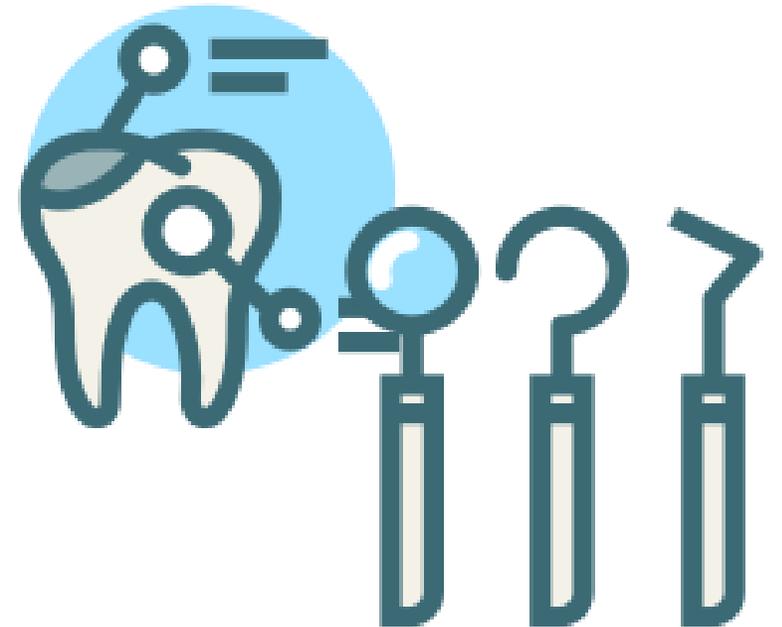


1. Background & Objective



2. Methodology

3. Results & Discussion

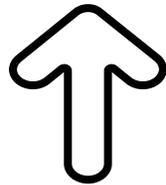


4. Conclusion

4. Conclusion

OBJECTIVE

To improve oral hygiene in developing countries



The swallowable gum
oral care with less water

HOWEVER



✗ spread

4. Conclusion

Remaining tasks

Improve
the pamphlet



Send
the pamphlet to
the target area

Thank You for listening!



References

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