



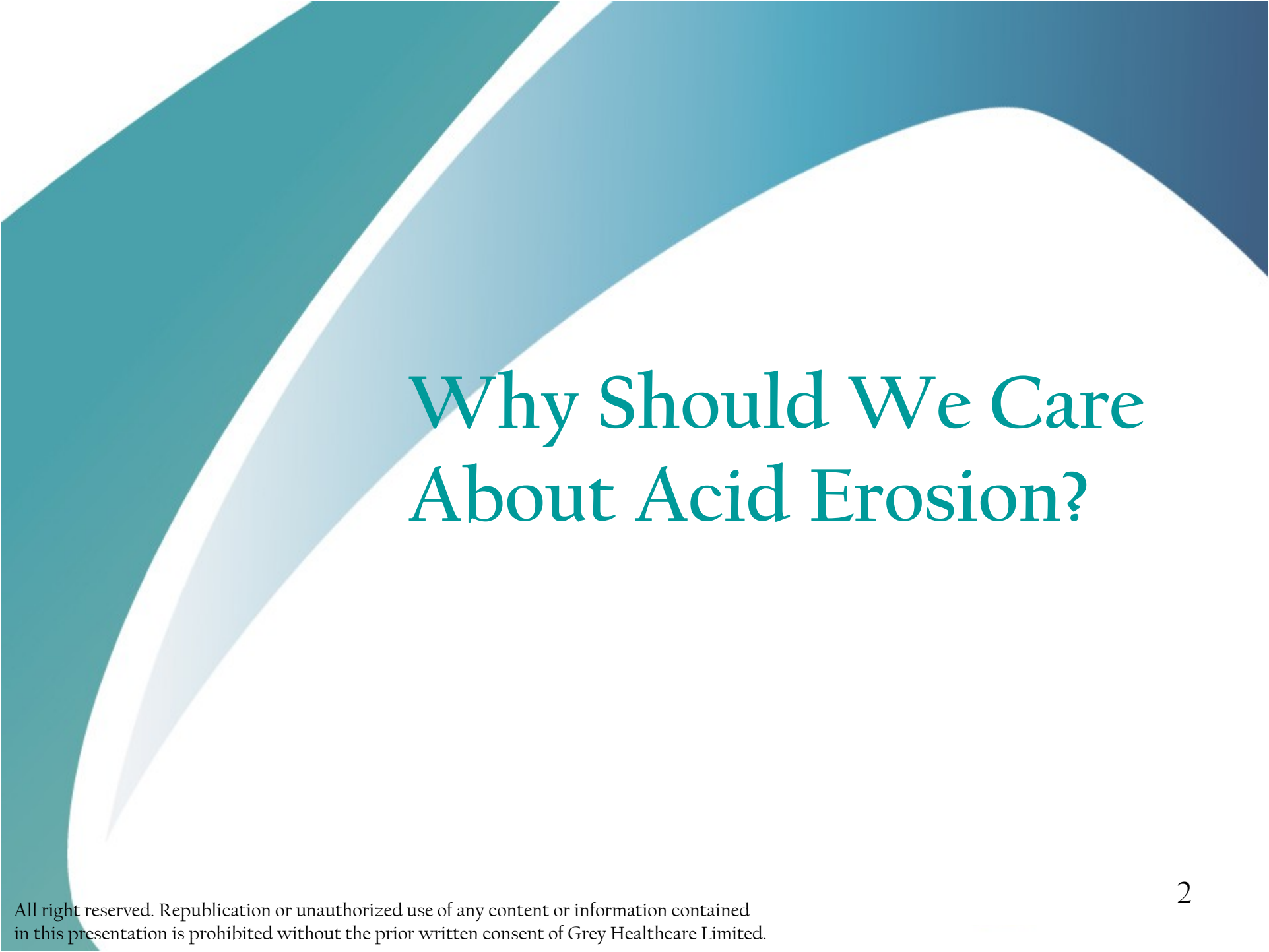
# Reharden Enamel, Combat Acid Erosion

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March 17, 2008



# Why Should We Care About Acid Erosion?

# 90% young people in Hong Kong are affected by acid erosion

- ◊ Acid erosion is the major cause of teeth wear-off
- ◊ Certain factors are intensifying the problem in rich countries: better living standard, more choices of food, change of diet habit, etc.
- ◊ A Swiss research found that:
  - Serious acid erosion is found in
    - 30% of people aged 26-30
    - 43% of people aged 46-50
  - Average number of affected teeth:
    - 3.2 among people aged 26-30
    - 3.9 among people aged 46-50
- ◊ The latest survey conducted by HKUPOP also revealed that 92% respondents aged 25-45 have shown symptoms of acid erosion

\* Source: Dental erosion in a population of Swiss adults. Lussi A, Schaffner M, Hotz P, Suter P. Community Dent Oral Epidemiol 1991, 19:286-90



# What is Acid Erosion?

# What is Acid Erosion?

- ◊ The hard surface ( the enamel ) is soften when in touch with acidic food & drinks
- ◊ Wearing off of teeth results from abrasion or frequent exposure to acidity
- ◊ Symptoms like yellowish teeth, glossy teeth, thinner teeth, cracks on the biting edge of teeth, sensitive teeth etc will occurs.





# Symptoms of Acid Erosion

# Early Symptoms of Acid Erosion

## ◊ Discoloration

Teeth will turn into slight yellowish as enamel becomes thinner and dentine exposed

## ◊ Rounded Teeth

A rounded 'sandblasted' look on the surface and biting edges of the teeth

## ◊ Sensitive Teeth

Feeling of slight twinge when consuming hot, cold, sweet or sour foods and drinks

**However, it is hard to be aware in this early stage!**

# Symptoms at the Advanced Stage

## ▷ Severe Discoloration

Teeth may show a deeper yellowish colour or yellowish patch

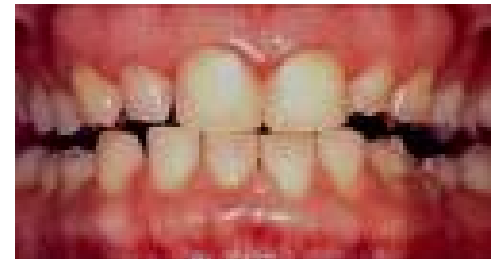
## ▷ Translucency

Teeth may appear “glassy” or “translucent” around the biting edges

## ▷ Cracks

Small cracks and indentation may be noticed at the edges of the teeth

## ▷ Severe Sensitive Teeth





# Severe Case



# Adverse Consequences

- ▷ Yellowish teeth makes one look old
- ▷ Problem of malocclusion leads to loss of appetite and depression
- ▷ Loss of the softened enamel, teeth shrink
- ▷ In severe cases, teeth may crack and indent, affecting both the appearance & self confident of the patient
- ▷ Intense pain due to exposure of the pulp



## Severe case

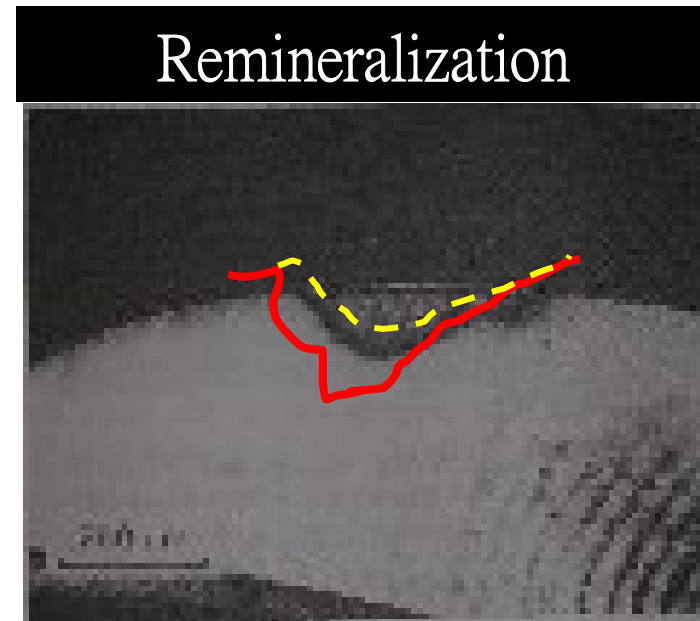
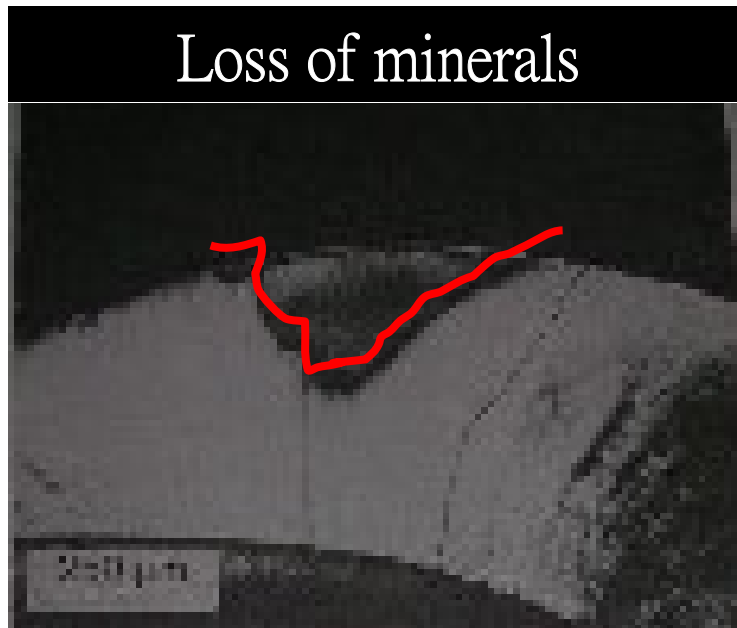
- In some serious cases, enamel on the surface of teeth can be dissolved in just 12 months time
- Damage caused by acid erosion is non-reversible. The loss of enamel cannot be restored or regenerated. At the advanced stages of acid erosion, expensive and complicated treatment may be required to resume the outlook of the teeth.
- Therefore, it is essential to understand the problem and make appropriate preventive measures.



# Is Acid Erosion Inevitable?

# Remineralization

Calcium and phosphorus in saliva help recover erosive lesions

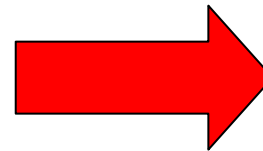


It requires 1-2 hours for neutralization and remineralization to take place. Frequent intake of food may interfere the above process.



# Dietary Habits That May Lead to Acid Erosion

# Frequent Consumption of Acidic Food/Drinks



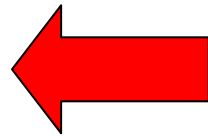
# A Study on pH Values of Soft Drinks by HKU

- ◊ Coke 355ml
  - pH 2.3
  - Ingredients: carbonated water, sugar, color, acidity, flavorings
- ◊ Lotte Lemonia 241ml
  - pH 3.4
  - Ingredients: concentrated lemon juice, citric acid
- ◊ Tao Ti Mandarin Lemon Juice Drink 500ml
  - pH 2.8
  - Ingredients: sugar, Mandarin Lemon Juice
- ◊ Gatorade 615ml
  - pH 2.8
  - Ingredients: sugar, glucose, citric acid
- ◊ Nestle Lemon Tea 500ml
  - pH 3.4
  - Ingredients: sugar, lemon juice, citric acid
- ◊ Tao Ti Shan Chz Oolong Tea 500ml
  - pH 3.5
  - Ingredients: Oolong tea, Shan Chz, citric acid

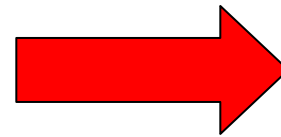


# Undesirable Way of Eating

Holding acidic food or drinks  
in the mouth for a long time



# Brushing Teeth Immediately after Consumption of Acidic Food/Drinks or Brushing Teeth too Hard





# Acid Erosion: Are You One of the Affected?

## A Checklist for Acid Erosion

- ✓ Teeth turns yellowish?
- ✓ Glossy surface of teeth?
- ✓ Cracks at the edge of teeth/  
teeth become thin?
- ✓ Slight twinge upon consumption  
of cold/hot food?
- ✓ Brush teeth within an hour  
after meal?
- ✓ Frequent consumption of acidic fruits?
- ✓ Drink from time to time?

**Take Action Today  
to Combat Acid Erosion**

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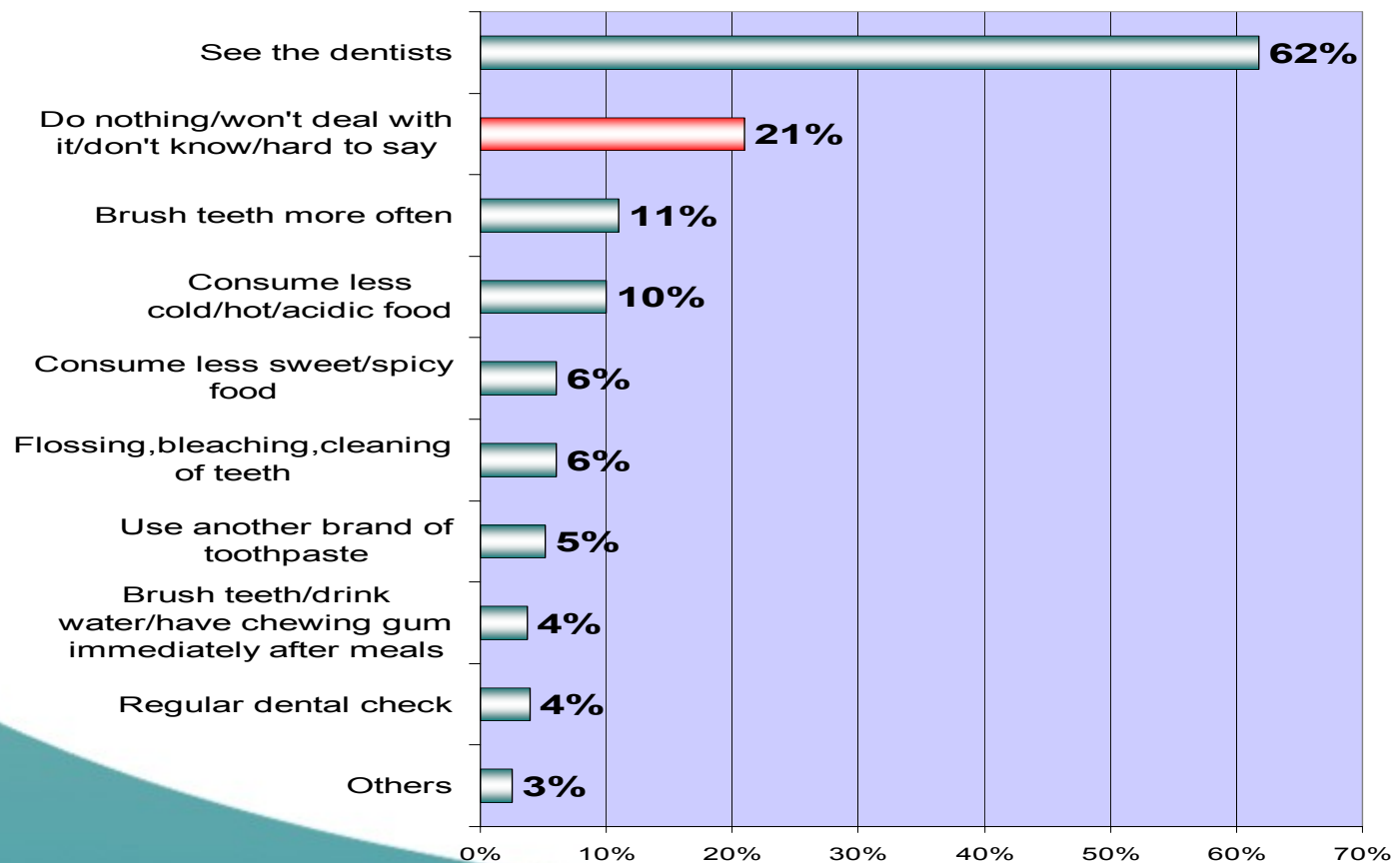


# Treating Teeth with Acid Erosion

## 21% Respondents

# Don't Treat/ Don't Know How to Treat Acid Erosion

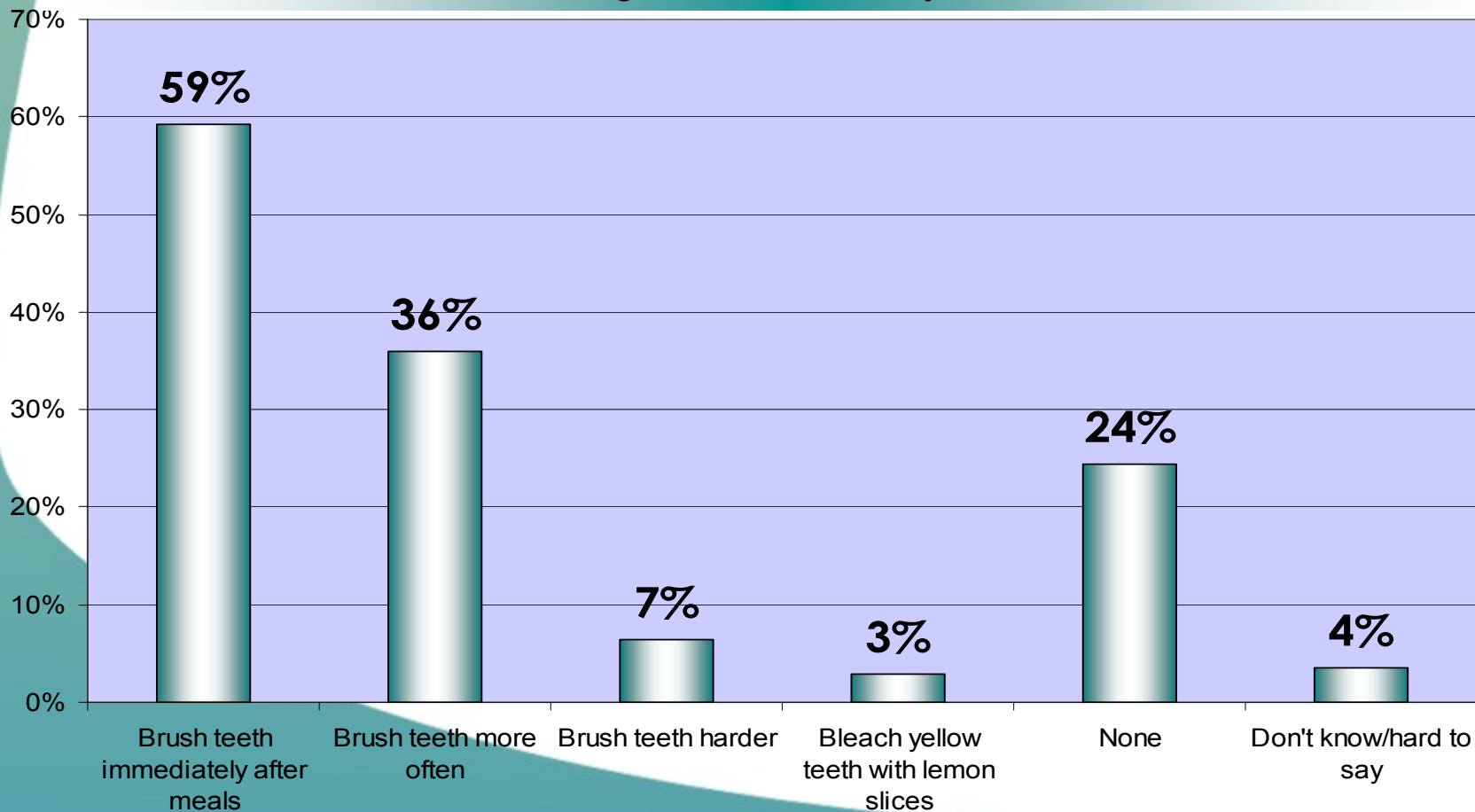
Q: How do you treat acid erosion?



Successful Samples : 516 22

# Nearly 60% Respondents Believe that Brushing Teeth Immediately after Meals Can Help to Prevent Acid Erosion

Q: Which of the following is a correct way to treat acid erosion? ?



# How do Dentists Treat Acid Erosion

- In mild cases, dentists would apply high fluoride-content materials on the surface of teeth
- In severe cases, expensive and complicated treatments may be required to resume the outlook of the teeth.



# Preventive Measures

- ◊ Avoid brushing teeth immediately after consuming acidic food or drinks. It is best to wait at least 1 hour before brushing teeth
- ◊ Drink water, milk or other non-acidic beverage to neutralize the acidity
- ◊ Drink acidic drinks quickly - sipping or holding acidic drink in the mouth should also be avoided. May consider using a straw.
- ◊ Brush teeth gently with a soft toothbrush
- ◊ Use low abrasive fluoride toothpaste for daily dental care.
- ◊ Have regular dental check-ups and seek professional advice from dentist.



# The Latest Anti- Acid Erosion Solution

# The Latest Anti- Acid Erosion Solution

- Previous studies are mainly on the efficacy of fluoride toward tooth decay prevention
- The latest study focuses on the efficacy of fluoride toothpaste to reharden enamel, making it more resistant to acid erosion
- Study confirmed that a latest fluoride formula enables high enamel fluoride uptake, together with its low abrasivity, can help to reharden the enamel, and protect the teeth from acid erosion.



# Conclusion

# Tooth acid erosion is very common amongst Hong Kong people

- ◊ Modern healthy lifestyle such as regular intake of healthy food including fruits, juice and salad, drinking red wine for heart protection, poor eating habit by retaining food in mouth for prolonged period...all are risk factors of acid erosion.
- ◊ According to a recent survey, 92% of the respondents aged 25-45 are suffering from acid erosion. On average, people start to develop acid erosion at the age of 28.
- ◊ Survey also revealed that many local people know very little about the cause and the preventive measures of the disease, as well as using the wrong means to resolving it, is worrisome

# Adverse consequences of acid erosion

- People may not be aware of the early symptoms.
- Unavoidably, the tooth enamel will be softened and dissolved as a result which ends up in dental problems. The patient's teeth will turn yellowish, become thin, develop cracks & shrink in size... etc, which will affect the patient's appearance and confidence, or may induce other severe dental problems.
- In severe cases, the tooth pulp will be affected, resulting in intense pain, loss of appetite and depression.
- In fact, enamel can be dissolved in just 12 months, for severe cases.
- The damage caused by tooth acid erosion is non-reversible. Expensive and complicated treatment may be required to resume the outlook of the teeth at the advanced stage of tooth acid erosion.
- Thus taking preventive measures is crucial and protecting enamel is important.

# Conclusion

- The latest studies focus on the efficacy of special formulated fluoride toothpaste on rehardening of enamel to fight against acid erosion.
- Data shows that the new toothpaste which enables high enamel fluoride uptake, together with its low abrasivity, can help to reharden the teeth, and provide protection against tooth acid erosion.
- The public should not treat tooth acid erosion lightly. One should consult dentists if there are early symptoms such as yellowish or thinner teeth, so as to minimize the long term damage.