

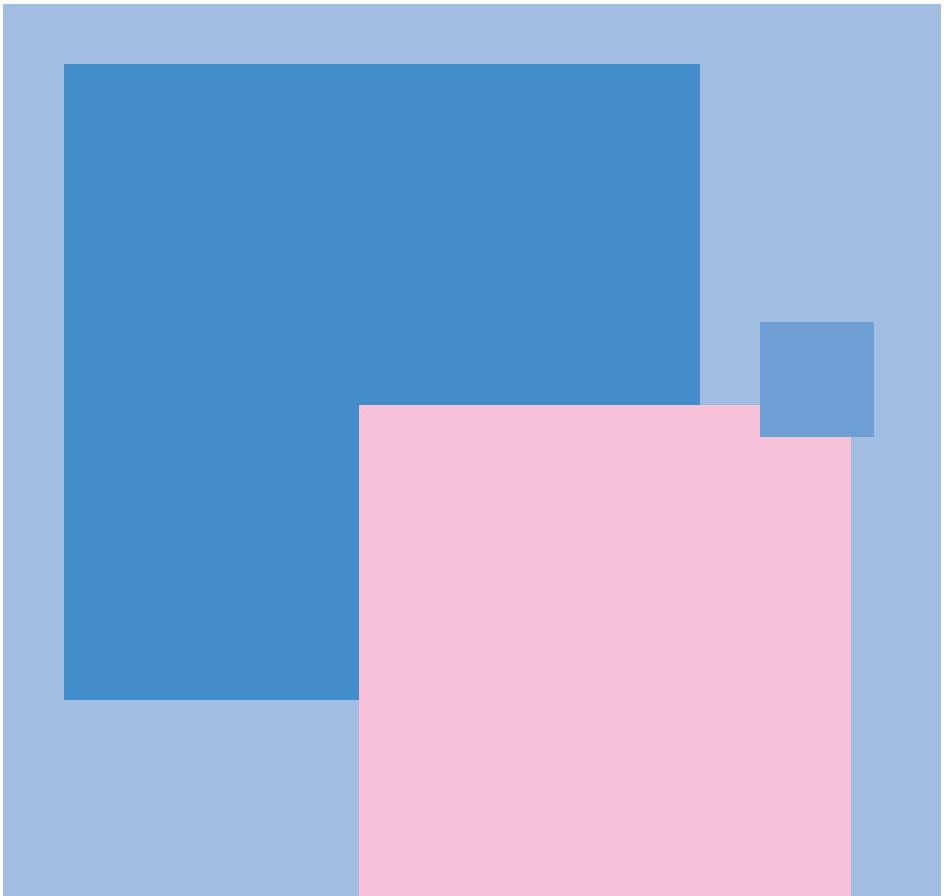


KK Women's and  
Children's Hospital  
SingHealth

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Cleft & Craniofacial Centre

# Caring For My Alveolar Bone Graft (ABG)



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PATIENTS. AT THE HEART OF ALL WE DO.®

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## What is an Alveolar Bone Graft (ABG)?

The alveolus is the bone under the gums that holds your teeth. The alveolus is made of **alveolar bone**.

**Bone Graft** is bone taken from one part of the body to another.

Some children born with a cleft lip and palate may have a gap in the alveolus and gum. This gap is called an alveolar cleft and may extend from near the teeth all the way up to the nose.

During an ABG, your Plastic Surgeon will fill the alveolar cleft with spongy bone from your hip.

Your gum is carefully stitched over the bone graft to let it heal.

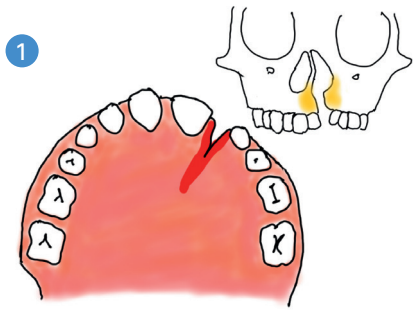
## Why do I need an ABG?

Teeth need to be anchored in bone to grow properly and stay healthy. If there is an alveolar cleft, your teeth may grow in the wrong position which may be more difficult to treat when you are older. Food may also get trapped in the alveolar cleft causing decay and gum disease.

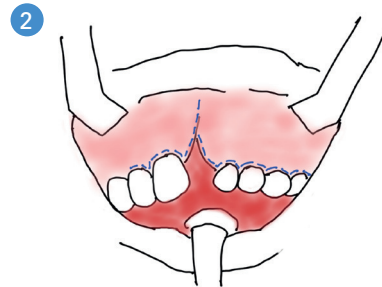
The ABG will provide:

- Bone support for teeth to develop and grow
- Continuity and better appearance of the gum
- Better support for the base of the nose
- Closure of any fistulas (abnormal connections) between the mouth and nose

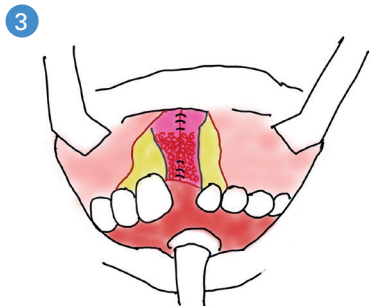
What happens during an ABG?



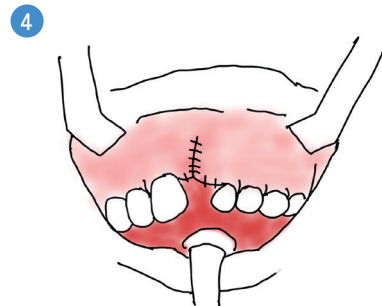
This picture shows the alveolar cleft (in red) and missing bone (in yellow)



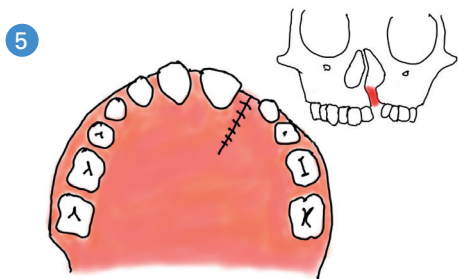
A cut is made on the upper gum along the cleft



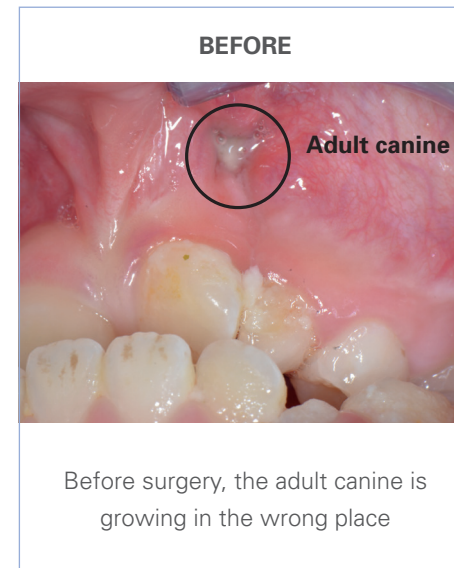
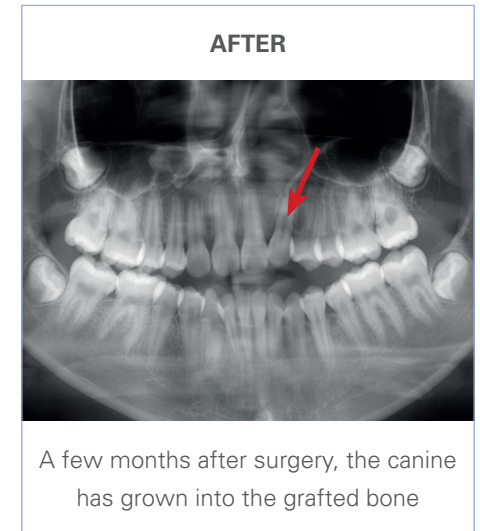
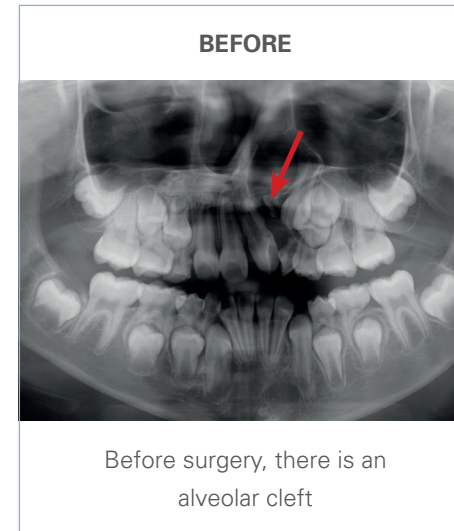
Bone from the hip is grafted into the gum



The wound is stitched up



After surgery, the gum wound is completely closed

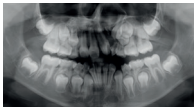


## ■ When will I have the ABG?

- 1 When the **adult canine** is about  $\frac{3}{4}$  **developed**
- 2 The procedure is usually done between **nine and 14 years old**
- 3 The best time will be decided by your Plastic Surgeon and Orthodontist (Dentist who corrects the position of your teeth and jaw)
- 4 You will be admitted to the hospital for two to three days for the procedure

## ■ How will my Orthodontist and Surgeon help me prepare for the ABG?

### Six months – one year before surgery:



- **Photos and X-rays** of your teeth will be taken to help your Surgeon plan for the surgery
- Your Orthodontist will put braces on your teeth. **Braces** help to move your teeth to make space for the bone graft.



### One to two weeks before surgery:



- Your dentist will do a **dental cleaning** so that your teeth and gums are in the best condition for surgery

### One week after surgery:

- Your Surgeon and Orthodontist will **review** your wound to assess how the bone graft is healing
- Appointments for braces will continue as usual

### Three months after surgery:

- **X-rays** will be taken to assess the status of the bone graft

## ■ What are some side effects?

You may experience **some common side effects** which are normal, and symptoms usually wear off after a few days. These include:

### 1. Anaesthesia related

- Headache, dizziness, or vomiting as the anaesthesia wears off

### 2. Gum – Surgical site

- Soreness in your mouth, and a slight swelling of your face

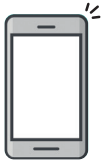
### 3. Hip – Donor site

- Mild soreness over your hip and pain when walking
- Mild bruising over your hip

Rarely, there are risks of serious complications that may occur. You may discuss these further with your Surgeon:

1. When taking bone from the hip, there is a small risk of **damaging a nerve** that supplies sensation to the side of the thigh. If it does occur, it is usually temporary.
2. In the first two weeks after surgery, new blood supply to the bone graft develops. **If your mouth is not kept clean, the bone graft may become infected.** A repeat surgery may be required after the infection settles.
3. The **bone graft may be damaged** from hard impact, or biting and chewing hard foods.
4. An oronasal fistula is an abnormal connection between the nose and the mouth. In most children who need an ABG, there will be a fistula in front of the teeth. In some cases, there may be a fistula behind the teeth. Sometimes the original fistula is very large and may not be able to be repaired during the surgery. **Even if the fistula is repaired, it may re-open and require another surgery.**

## Who can I speak to if I am nervous or afraid about the ABG?



You may contact the

**CCRC Clinical Coordinator** at **9100-3978**.

The CCRC Coordinator can connect you with

- A Psychologist
- The CHAMPs team (comprising Child Life Therapists, Art Therapists, and Music Therapists)

## How should I care for myself after the ABG?

**Follow these instructions for four to six weeks to ensure your wounds (gum and hip) heal well.**

### What do I need to take note of?



- Sleep with head raised at 30° or on two pillows to reduce facial swelling
- Open your mouth when sneezing



- **NO** blowing or rubbing of nose
- Avoid contact sports (e.g., basketball, football, Taekwondo)

## How should I keep my wounds clean?

- **Maintain good oral hygiene**
- Drink water, and **gargle with salt water** after every meal / drink / medication. Spit out after gargling.

### Salt water preparation:

- Add 1 teaspoon of salt to 500ml of cool boiled water
- Throw away after 24 hours from preparation

- **Gargle with diluted Chlorhexidine** as instructed by the nursing / medical team. Spit out after gargling.

### Diluted Chlorhexidine mouthwash preparation:

10ml Chlorhexidine to 1 cup of water

- Check cleanliness of the gum after each meal using a torch light
- **Gentle brushing of teeth** using a soft bristle toothbrush
- Stitches over the gum will drop off within four to six weeks
- Keep wound dressing on hip dry and intact

## What medication do I need to take?

- Take prescribed pain medicine as instructed for about three to five days
- Complete the course of prescribed antibiotics

## What about eating and drinking after the ABG?

When you wake up after the surgery, you will only be allowed to drink clear liquids that day.

### Soft Diet

The day after the surgery, you will need to eat a soft diet for about **six to eight weeks** to help your wound heal well.

**1. Food should be soft.** Too much chewing or slurping may damage the bone graft.



#### Food should be:

- Cut 1 – 2 cm in length (noodles, pasta, shredded meat)
- Cut in 0.5 – 1 cm cubes (meat, vegetables, fruits)
- 1 portion of rice / pasta / noodles mixed with 2 portions of strained soup / broth
- Easily mashed with a fork or spoon
- Easy to swallow



#### Avoid hard, crunchy, chewy foods



Chips / Tidbits



Biscuits / Cookies



Fried chicken



Candy / Sweets

**2. Food should not be sticky OR contain small bits / powder.** These may get stuck in the wound, worsen oral hygiene, or cause an infection and delay wound healing.



#### Food should slide off the spoon completely when:

- Tilted sideways
- Given a gentle flick



#### Avoid sticky foods



Peanut butter

#### Avoid foods with residue



Milo with undissolved powder;  
Soup with bits of pepper and spices

**3. For foods with seeds (e.g., winter melon), try to remove as many seeds as possible.**

#### Video Resource



Scan here to view the video on the KKH Alveolar Bone Graft (ABG) Soft Diet





<https://tinyurl.com/ABGsoftdiet>

## Food list

Please refer to the food list below for examples. This serves as a guide and is not exhaustive. A Plastic Surgery Nurse can guide you if you need any clarifications.

**Food allergy note: If you have a food allergy or special dietary requirement, please seek advice from our Plastic Surgery Nurse.**

Food Group	Recommended Foods	Foods to Avoid
<b>Rice and alternatives</b> 	<ul style="list-style-type: none"> <li>Rice mixed with strained soup; watery rice porridge (e.g., Teochew porridge)</li> <li>Pasta with tomato sauce / clear soup</li> <li>Cut-up kway teow, macaroni, bee tai mak noodles mixed with clear soup</li> </ul>	<p><i>Sticky:</i></p> <ul style="list-style-type: none"> <li>Thick porridge (e.g., congee)</li> <li>Oats, cereal drinks</li> <li>Mashed starchy vegetables (e.g., potatoes and sweet potatoes)</li> </ul> <p><i>Dry or requires chewing:</i></p> <ul style="list-style-type: none"> <li>Biscuits</li> <li>Bread, buns, croissants, scones, bagels, pancakes</li> <li>Chappati, idli, roti prata, thosai</li> <li>Sushi</li> </ul>
<b>Meat and alternatives</b> 	<ul style="list-style-type: none"> <li>Soft-cooked shredded meats (e.g., beef, pork, mutton, chicken)</li> <li>Steamed egg, omelette, scrambled egg, boiled <b>egg white</b></li> <li>Silken tofu, egg tofu</li> <li>Steamed fish</li> <li>Cut-up fish cake, fish ball, ham</li> <li>Cut-up mock meats (not chewy, not wrapped in seaweed)</li> </ul>	<p><i>Dry or requires chewing:</i></p> <ul style="list-style-type: none"> <li>Dry, chewy meat</li> <li>Minced meat</li> <li>Deep fried, crispy meats</li> <li>Boiled <b>egg yolk</b></li> <li>Shellfish (e.g., prawn, crab)</li> <li>Nuts and seeds</li> <li>Sausages, nuggets</li> </ul>



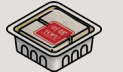


Food Group	Recommended Foods	Foods to Avoid
<b>Vegetables</b> 	<ul style="list-style-type: none"> <li>Soft-cooked cabbage, lettuce, carrots, cauliflower</li> <li>Soft-cooked, skinless melons, cucumbers, zucchinis, tomatoes (remove as many seeds as possible)</li> </ul>	<ul style="list-style-type: none"> <li>Vegetables that require chewing or tend to fall apart and get stuck in the wound (e.g., thin leafy vegetables, broccoli)</li> <li>All vegetables with pods, beans, or kernels (e.g., long beans, french beans, sweet peas, corn)</li> </ul>
<b>Dairy products</b> 	<ul style="list-style-type: none"> <li>Ready-to-drink formula milk</li> <li>Ready-to-drink milk, i.e., fresh milk, UHT milk (plain or flavoured, skimmed, low fat or full cream)</li> <li>Yoghurt drinks</li> <li>Yoghurt without fruit pieces</li> </ul>	<p><i>Has undissolved powder / residue that tend to get stuck in the wound:</i></p> <ul style="list-style-type: none"> <li>Milk or formula drinks prepared from powder</li> </ul> <p><i>Sticky:</i></p> <ul style="list-style-type: none"> <li>Cheese</li> </ul>
<b>Fruits</b> 	<ul style="list-style-type: none"> <li>Soft, fruit cubes (e.g., mangoes, papayas, bananas, watermelon)</li> <li>Stewed / steamed / scraped apples, pears</li> <li>Cut-up grapes without the skin</li> <li>Puréed fruits (e.g., honeydew)</li> </ul>	<p><i>Dry or requires chewing:</i></p> <ul style="list-style-type: none"> <li>Crunchy fruits (e.g., apples, pears)</li> <li>Fruits with small, hard seeds (e.g., kiwis, dragon fruits)</li> <li>Dried fruits</li> <li>Fruits with skin (e.g., blueberries)</li> <li>Citrus fruits (e.g., oranges, pomelos)</li> </ul>
<b>Drinks</b> 	<ul style="list-style-type: none"> <li>Fruit juices without fruit pieces / pulp</li> <li>Strained barley water, herbal teas / drinks, chrysanthemum tea</li> <li>Soy milk</li> <li>Packet / canned malted drinks (e.g., Milo and Ovaltine, not made from powder)</li> <li>Nutritional supplements (e.g., Ensure® Plus, Resource® Plus)</li> </ul>	<p><i>Facilitates wound breakdown:</i></p> <ul style="list-style-type: none"> <li>Fizzy / carbonated drinks</li> <li>Effervescent tablet drinks</li> <li>Sour / acidic fruit drinks</li> </ul>

Food Group	Recommended Foods	Foods to Avoid
<b>Soups and gravies</b> 	<ul style="list-style-type: none"> <li>Strained soups</li> <li>Packet / canned smooth cream soups (not made from powder, no meat pieces)</li> </ul>	<p><i>Requires chewing or has food particles that tend to get stuck in the wound:</i></p> <ul style="list-style-type: none"> <li>Soups with lumps</li> <li>Sauces with nuts (e.g., satay sauce)</li> </ul>
<b>Fats and oils</b> 	<ul style="list-style-type: none"> <li>All types of cooking oil</li> <li>Butter / margarine (soft or melted)</li> </ul>	<p><i>Has food particles that tend to get stuck in the wound:</i></p> <ul style="list-style-type: none"> <li>Butter / margarine with small pieces of herbs / garlic</li> </ul> <p><i>Sticky:</i></p> <ul style="list-style-type: none"> <li>Peanut butter</li> <li>Fruit jam</li> <li>Nutella</li> <li>Kaya</li> </ul>
<b>Desserts and snacks</b> 	<ul style="list-style-type: none"> <li>Ice cream without nuts, dried fruits, or fudge</li> <li>Soy bean curd</li> <li>Frozen yoghurt without toppings</li> <li>Soft pudding or soft jelly with no fruit pieces</li> </ul>	<p><i>Dry, sticky or requires chewing:</i></p> <ul style="list-style-type: none"> <li>Cookies</li> <li>Chips, keropok</li> <li>All chocolates</li> <li>Popcorn</li> <li>Cakes, muffins, pastries, doughnuts</li> <li>Firm jelly (e.g., agar agar, konnyaku jelly)</li> <li>Candy / sweets</li> </ul>
<b>Spices and seasonings</b> 	All others	<ul style="list-style-type: none"> <li>Dried and fresh herbs</li> <li>Spices that tend to cause coughing</li> <li>Contains seeds (e.g., chilli with seeds, cumin seeds)</li> </ul>

## Sample meal plans

You are encouraged to **take a variety of foods from the different food groups** to ensure adequate nutrition.

### SAMPLE MEAL PLAN 1

Meal	Food Group	Suggested Food Item
Breakfast	Meat and alternatives	Scrambled egg with cut-up turkey ham 
	Drinks	Packet Milo
Morning snack	Desserts and snacks	Soft pudding
Lunch	Rice and alternatives	Macaroni with clear soup
	Meat and alternatives	Cut-up mock meat
	Vegetables	Soft-cooked cabbage
	Fruits	Cut-up mango (with fibrous parts removed) 
Afternoon snack	Dairy products	Milk
Dinner	Rice and alternatives	Rice with clear soup / watery gravy
	Meat and alternatives	Egg tofu with watery gravy 
	Vegetables	Soft-cooked, skinless winter melon
	Fruits	Puréed honeydew melon 
Supper	Drinks	Soy milk 



## SAMPLE MEAL PLAN 2

Meal	Food Group	Suggested Food Item
Breakfast	Rice / meat and alternatives	Shredded chicken in watery rice porridge
Morning snack	Dairy products	Yoghurt without fruit pieces or toppings 
Lunch	Rice and alternatives	Rice and rasam broth
	Meat and alternatives	Indian fish curry (watery gravy, passed through strainer to remove food bits or powder)
	Vegetables	Soft-cooked cauliflower
	Fruits	Puréed watermelon
Afternoon snack	Desserts and snacks	Soy bean curd
Dinner	Rice and alternatives	Pasta with tomato sauce
	Meat and alternatives	Soft-cooked shredded beef 
	Vegetables	Soft-cooked carrot cubes 
	Fruits	Steamed apple cubes
Supper	Drinks	Packet Ovaltine

## Tips for safe eating and drinking



- **Minimise chewing.** When required, **chew with your back teeth, on the opposite side to your wound**
- Cut up or peel your food in pieces, then place it in your mouth



- **DO NOT bite food off with your front teeth**



- **DO NOT use straws / chopsticks** as they may poke / injure your gum and wound
- Avoid talking or laughing while eating or drinking



- Avoid distractions or moving around during meal times



## ■ Follow-up appointments

Appointments with your Surgeon, Plastic Surgery Nurse, and Orthodontist will be scheduled **one week after your hospital discharge**.

## ■ When should I contact the Plastic Surgery Nurse?



After discharge, please contact the

**Plastic Surgery Nurse** at **9180-0186**

immediately if you encounter any of the following:

- Worsening redness, pain, and swelling of, or bleeding from wounds (gum / hip) suggesting infection
- Fever of 38.5°C and above
- Any other abnormal or prolonged symptoms that may cause concern

## Useful telephone numbers

Cleft & Craniofacial Centre

6394-1521

Central Appointments

6294-4050



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