

Alveolar Bone Grafting (ABG) Surgery

Alveolar (al VEE uh ler) bone grafting (ABG) surgery is usually done on children born with a cleft in the alveolus (the ridge of bone that holds the teeth). Grafting replaces the missing bone in the alveolus. This gives enough support for the permanent (adult) teeth, to close any remaining gaps, and to improve the support of the base of the nose.

Diagnosis

Clefts of the alveolus are usually left open after the initial cleft lip and cleft palate repairs. At your first cleft appointment, your child's plastic surgeon will tell you if your child has a cleft of the alveolus that may eventually need bone grafting. Teeth need enough bone to support their roots. Bone grafting helps to support the adult teeth in the cleft area, closes any remaining gaps in the cleft site and provides support for the base of the nose.

Bone grafting needs to occur before adult teeth develop in the cleft area. This timing is based on individual dental development. Your child's surgeon and cleft specialty trained orthodontist monitor this development during your child's annual cleft team visits. These providers use a cone beam computed tomography (CBCT) scan to evaluate your child's developing teeth. These scans typically begin around 6 years of age. Grafting is usually done between 6 and 10 years of age, depending on the child's dental development.

Some baby teeth may need to be removed before alveolar bone grafting. Some children may also need to undergo palatal expansion, or widening of the upper jaw, before the graft. This can help to correct any collapse of portions of the upper jaw and restore normal dental arch width before grafting. In some cases, an acrylic splint for the upper jaw will be made and fitted before surgery. It is recommended that your child undergo a thorough dental cleaning by a dentist within the 30 days before surgery.

About the surgery

Your child's plastic or oral maxillofacial surgeon does alveolar bone grafting. The surgeon will do the procedure in the operating room under general anesthesia, with close monitoring.

Bone is typically taken from the iliac crest (hip bone). The surgeon makes a small incision in the hip area, then removes some of the spongy bone from the inside of the hip bone. Incisions are then made in the gums at the cleft site, and the spongy bone is placed into the alveolar cleft. Dissolvable stitches will be placed to close the incisions inside the mouth and to hold the graft in place. The surgeon will close the incision in the hip with dissolvable stitches. A dressing will be placed over the hip incision. Do not pull this off. It will fall off on its own after 2 to 3 weeks.

After surgery

Your child will stay in the hospital for at least one night to monitor pain and the surgical site, as well as to ensure that they are eating and drinking enough.

Your child will have swelling after surgery. It may be worse 2 to 3 days after surgery. Swelling is usually worse after sleeping or lying down. Keeping your child's head elevated after surgery helps to keep the swelling down. Swelling will gradually improve over several days.

Your child will not be able to brush their upper teeth for 3 weeks. Lower teeth can be brushed with a toothbrush with help or supervision from a parent. After meals or snacks, your child should gently rinse their upper teeth with a solution of one part water to one part Peridex[®] or mouthwash rinse.

Your child also may have a removable acrylic splint or retainer in their mouth. The splint may be on the upper or lower teeth. The splint helps to keep the teeth stable and to maintain any palatal expansion as the bone graft heals. Your child should wear the splint as the surgeon instructs. Remove the splint, then wash with dish soap and water after meals and before sleep at night.

Your child's mouth and hip will be mildly painful after surgery. They will have a prescription for pain medicine and antibiotics to use at home. Although your child should be able to walk normally, they should avoid strenuous activity.

Your child will have a special diet prescribed to allow for proper healing. Your child's surgeon and cleft specialty orthodontist will monitor the surgical sites to be sure they are healing properly. Your child will undergo a CBCT or other dental x-rays 3 to 6 months after surgery to be sure the graft was successful.

What to do and watch for at home

Please call your child's surgeon if you notice any of these things:

- Bleeding from the nose or gum line
- Oozing or drainage from the gum line
- Opening of the incisions in the mouth or hip
- Drainage or redness at the hip surgery site
- Pain that is not controlled by the medicines prescribed
- Fever of 101 degrees F or higher

If you need to speak to a doctor from 8:00 AM to 4:30 PM, please call the Plastic Surgery clinic at (614) 722-6229. After hours and weekends, call (614) 722-2000 and ask for the Plastic Surgeon on call.

Dr. Larsen's patients: Please call Oral and Maxillofacial Surgery clinic (614-292-5144). After hours and weekends, call 614-517-7178 and ask for the Oral Surgeon on call.

Activity and diet

- ☐ Your child should not swim or soak their hip in a bathtub or hot tub for 3 weeks. It is OK to shower after the doctor or nurse removes the bandage on the hip.
- ☐ No strenuous sports or activities for 4 to 6 weeks.
- ☐ Your child also may have an acrylic splint or retainer in their mouth. This retainer helps to keep the teeth stable as the bone graft heals. Remove and wash the splint with dish soap and water after meals and before sleep at night.

For the first 24 hours after surgery your child will be on a liquids-only diet (no straws allowed). After the 24 hours, they will eat a soft diet for 3 weeks. **Please see pages 5 and 6 for a list of foods allowed and not allowed after surgery.** Your child should not use any straws or eat any foods on a stick, or any foods with seeds or hard chunks.

Follow-up appointments

- ☐ Your child's follow-up appointment is on (date) _____ at (time) _____ in the (place) _____.
- ☐ Write down all your questions as you think of them. Bring this list with you when you see the doctor.

☐ Be sure to call your doctor if you cannot keep the appointment.

Other information (Write on another sheet if needed.)

Feeding Guidelines after ABG Surgery

Food Groups	Foods Allowed	Foods to Avoid
Meats and Other Protein	Deli meats (thin deli slices) Broiled fish Peanut butter Cottage cheese Soft cheeses Yogurt Eggs Hummus Tofu Sloppy joe meat	Hard cheeses Bacon Nuts or seeds Steak Chicken breast/nuggets Meatballs Hamburger Hot dog
Breads	Bread (without nuts, fruits or seeds) Pancakes Donuts Waffles French toast Muffin (without nuts or fruits)	Hard or crunchy breads Breads with nuts or seeds English muffins Bagels
Cereals	Cream of wheat Cream of rice Farina Oatmeal Grits	Hard or crunchy cereals "Cold" cereals (Cheerios)
Fruits	Canned or well-cooked fruit Well-ripened bananas Smooth applesauce	Hard or crunchy fruit Fruits with seeds or skin (berries, kiwis, grapes, etc.)
Vegetables	Canned or well-cooked vegetables	Hard or crunchy vegetables Vegetables with seeds, pulp or skins (tomatoes, green beans, peas, corn, etc.)
Potatoes and Starches	Mashed white or sweet potatoes Well-cooked noodles (pasta, mac & cheese)	Hard or crunchy toppings on potatoes or noodles Sauces with chunks Rice Whole grains such as barley, quinoa, kasha, buckwheat

Desserts	Pudding JELL-O® Ice cream or frozen yogurt without toppings Milkshake Smoothie	Any of the listed desserts with pieces of fruit, nuts, seeds or hard toppings Popsicles with sticks
Miscellaneous	Uncrustables® SpaghettiOs®	Chips Pretzels Fruit snacks Crackers (Goldfish®) Granola bars