

The transplant process



This image shows a full page of blank, lined paper. It features approximately 28 horizontal blue lines spaced evenly across the page, typical of standard notebook paper. The lines are thin and light blue, set against a plain white background. There are no margins, text, or other markings on the page.

Getting ready for transplant







What happens when your doctor refers you to Cook Children's for a stem cell transplant (not necessarily in this order):

Schedule appointment with transplant doctors at Cook Children's	<ul style="list-style-type: none">• Your first appointment usually lasts two to four hours.• You should include the patient and a brother or sister if they have been identified as the donor.• Staff will discuss the transplant process and answer your questions.
Insurance provider	<ul style="list-style-type: none">• We will call your insurance provider to be sure that your transplant is covered.• You may also call the member services phone number on your insurance card for information about your benefits.
Donor search	<ul style="list-style-type: none">• We may start an unrelated donor search if there is not a related match.
Help with travel plans if you are from out of town	<ul style="list-style-type: none">• Our social worker may contact you to help with travel plans.• We may work with your local social worker to help make arrangements for travel and housing.• Your insurance representative can also tell you what your benefits cover on prescriptions, travel and lodging costs.
Your child's medical care	<ul style="list-style-type: none">• Your child will continue to receive treatment from your current doctor until it is time to come to Fort Worth.



Getting ready for transplant

One month before your child comes to transplant, we will schedule a lot of tests to check all body systems to see how they are doing. This is called the “pre-transplant work-up.”

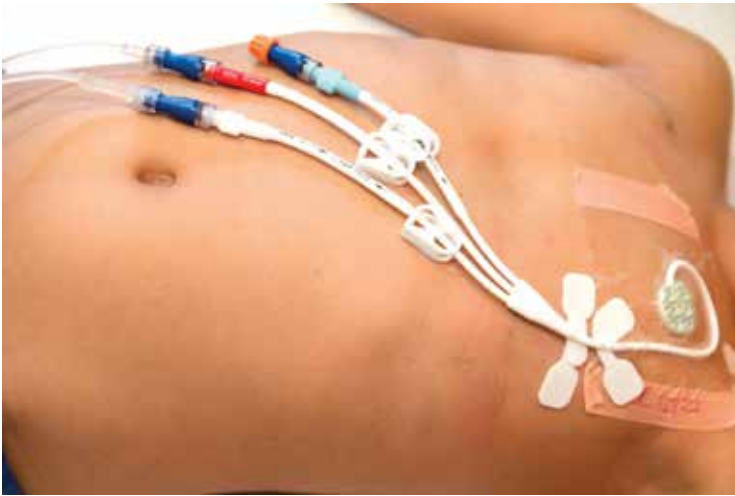
We will work with your child’s current doctor to have as many of the tests as possible done in your hometown if you do not live in the Fort Worth area.

Organ	Test	How long this test will take	Other test information
Heart 	Echocardiogram	20-30 minutes	
	Electrocardiogram (EKG)	10-15 minutes	
Lungs 	Pulmonary function test (PFT)	15-20 minutes	
	Chest X-ray	5-10 minutes	
Kidneys 	Glomerular filtration rate (GFR)	All day (with break for lunch)	Your child may need: <ul style="list-style-type: none"> • Two IVs • Urine catheter (if they cannot empty the bladder when asked) • Potassium iodide drops (SSKI) will be taken by mouth prior to this test to protect your child’s thyroid
Liver 	Blood tests	A few minutes	
Brain 	Neurocognitive testing	Half-day	
	Developmental testing	Half-day	
Teeth 	Dental exam	30-40 minutes	
	Dental cleaning	30-40 minutes	

Getting ready for transplant

Organ	Test	How long this test will take	Other test information
Tumor disease evaluation 	Bone marrow aspirate	30-40 minutes	
	Lumbar puncture	10-15 minutes	
	CT scans, MRI or other specific tumor scans	CT scan: 30-40 minutes MRI: 30-60 minutes	<ul style="list-style-type: none"> • Potassium iodide drops (SSKI) may be taken prior to some of these tests to protect the thyroid as directed by your transplant coordinator • If your child will need a PET scan, a special diet will need to be followed for 24 hours prior to the scan
Infections 	Blood tests for virus infections	A few minutes	

Central venous line (CVL)



1. During the stem cell transplant and afterward, children often need a lot of intravenous (IV) support for:
 - Nutrition
 - Blood products
 - Frequent blood tests
 - Medicines
2. A central venous line (CVL) is an intravenous (IV) line placed under the skin in the chest area.
 - A CVL is also known as a BROVIAC.
 - Your child will need a central line with two or three lumens.
 - Your child may also need an implanted port-a-cath or mediport.
 - The tip of the catheter is in a large vein in the chest.
 - The CVL is usually placed in the operating room just before starting the transplant conditioning regimen.
 - We will remove the CVL a few months (around Day +100) after your child's discharge from the hospital.
 - A mediport is a small disc made of plastic or metal approximately the size of a quarter, which sits just under the skin. A soft, thin tube called a catheter connects the port to a large vein.
3. The most common problems seen with CVLs are :
 - Blood clots in the line.
 - Infection where the catheter comes out of the skin.
 - Infection inside the catheter tubing. This can sometimes lead to an infection in the blood.
4. If a blood clot happens, we may need to:
 - Remove the catheter.
 - Give medicines that dissolve the blood clots.
 - Sometimes replace the catheter.
 - Treat infections with antibiotic medicines.
 - Sometimes remove and replace an infected line.

Getting ready for transplant

Prepare your child

Talking to your child

- This is one of the most important things to do. This procedure is scary.
- Learn as much as you can about what a stem cell transplant is like. This will help you and your child feel more comfortable.
- Tell your child what they will see and hear.
- Use words they understand.

Child Life specialist

- This is the best way to prepare your child and family.
- A Child Life specialist can explain information in a way that your child will understand.

One week before admission

Final conference

You and your child will have one last conference visit with your transplant doctor to review and discuss all of the tests that your child has completed and schedule any remaining tests.

Consents and forms

We will meet with you to review and sign all consents for your child's transplant. This may be done at the same time as the final conference visit.

Radiation therapy

If your child needs radiation, you will meet with your radiation doctor to discuss the procedure.

Getting ready for transplant

Checklist

What to bring to the medical center

Clothes

- ☐ Comfortable clothes. You must be able to machine wash all clothes and dry them in a hot dryer.
- ☐ Slippers/socks.
- ☐ Laundry detergent for washing clothes.
- ☐ Make sure the nurses can easily access your child's central line.

Blankets

- ☐ You may bring a favorite blanket if you want, but it must be washed or wiped down daily.
- ☐ All sheets and pillows will be provided by the hospital and changed daily.

Toys

- ☐ Stuffed animals.
 - ☐ Video games.
 - ☐ Tablets.
 - ☐ Laptops.
 - ☐ DVDs.
- *NOTE: All toys must be wiped down with a special cleaner provided at the hospital

Room

- ☐ We encourage you to bring photos and posters to decorate your child's hospital room.

Parents

- ☐ Comfortable clothes.
- ☐ Books, magazines.
- ☐ iPad, cellphone, etc.

Life in the transplant unit

Visitors and visiting

Visitors are limited, but we ask you to have someone with your child at all times.

Prior to entering unit	<ul style="list-style-type: none"> • We screen all visitors and caregivers at the check-in desk before they enter the Bone Marrow Transplant Unit.
Current flu vaccine	<ul style="list-style-type: none"> • All visitors entering the transplant unit must have received the current annual flu vaccine. • There are no exceptions to this rule. • Visitors must receive the flu shot and NOT the flu mist.
Only healthy visitors	<ul style="list-style-type: none"> • Visitors who have had live vaccines or known chickenpox exposure may not enter the Bone Marrow Transplant Unit. • Visitors or caregivers with fever, cough, rash or other symptoms of infections may not enter the Bone Marrow Transplant Unit. • Any exception to these rules will require a doctor's order, and the visiting time will be limited.
Visitor's age	<ul style="list-style-type: none"> • No one under 5 years old can enter the Bone Marrow Transplant Unit (not even siblings). • Only caregivers and siblings over 5 years old may go into the patient's room. • Visitors over 5 years old may visit in the hallway outside the room. • Visitors under 18 years old must be accompanied by an adult at all times.
Number of visitors	<ul style="list-style-type: none"> • Only five caregivers (including parents) are allowed in your child's room during their whole stay in the transplant unit. Once these five caregivers are chosen, they may not be changed. • Only two caregivers may be in the room at one time. • Only one caregiver may spend the night.

Life in the transplant unit

Visitors and visiting

Visitors are limited, but we ask you to have someone with your child at all times.

Parents	<ul style="list-style-type: none">• Both parents may stay with their child during the day.• One parent must stay at night.
Hallway guidelines	<ul style="list-style-type: none">• Patient doors must remain closed, even during hallway visits.• No more than two caregivers and two visitors can be in the hallway at one time.• No hallway visiting is allowed when other patients are in the hallway. It is OK if the patient is in the playroom.
Playroom	<ul style="list-style-type: none">• No visitors allowed in the Bone Marrow Transplant Unit playroom.
Gifts visitors can bring	<ul style="list-style-type: none">• No flowers or plants in the Bone Marrow Transplant Unit. They are a risk for infection.• All toys must be wiped down with special cleaning wipes once in the Bone Marrow Transplant Unit.

Life in the transplant unit

Daily routines in the transplant unit

Always wash your hands

Transplant patients are at a higher risk for catching infections. It is very important for patients and caregivers to wash their hands frequently.

- Hand washing must include at least 30 seconds of friction.
- You may use either:
 - Soap and water
 - Hand sanitizer
- Always wash hands before eating.
- Always wash your hands after using the bathroom.
- Always wash hands when entering the room.
- Always wash hands when entering the transplant unit.
- Be sure to use a paper towel to dry hands after washing.



Before entering the Bone Marrow Transplant Unit

Anteroom

- Entry/exit to the transplant unit must always be through the anteroom.
- The anteroom is not a waiting room.
- Visitors not allowed in the unit are welcome to wait in the seating area by the elevators down the hall from the unit.

Clean clothes

- Your clothes and shoes need to be clean.
- Lockers are in the ante room if you need to change and store clothing or shoes.

Please remember

- Visitors under 5 years old are not allowed in the unit at any time.
- All visitors must have the current annual flu vaccine to enter the unit.

Patient out-of-room guidelines

Patients must be fever-free for 24 hours and not in isolation to come out of their room.

1. Only one patient at a time is allowed out of their room and in the hallways of the unit.
2. Only one patient at a time is allowed in the playroom of the transplant unit.
3. Patients will wear a mask any time they leave their rooms.

Life in the transplant unit

Electronics

Some electric items are not permitted in the Bone Marrow Transplant Unit because they can be a fire risk. Your child's safety is our number one priority.

- An electric device is anything that plugs into an electric outlet.
- Approved electrics include:
 - Laptop computer
 - Computer tablet
 - Telephone charger
 - Hair dryer
 - Radio

All electrical items may be subject to inspection by hospital staff.



Life in the transplant unit

Eating and drinking in the Bone Marrow Transplant Unit

Intake: All foods and fluids you eat and drink.

Output: Includes urine, bowel movements or vomiting.

- It is important to save all urine, stool or vomit to show your nurse.
- We need to see and measure everything before we can throw it out.
- Patients will have speci-hats, urinals and basins in their rooms.
- We change these every two days.



Patients in the Bone Marrow Transplant Unit are on a low-bacteria diet.

Food Services: Phone number (5-FOOD) (5-3663)	<ul style="list-style-type: none">• Patients can order a special prepared food tray for breakfast, lunch and dinner.• Please order food only when you are ready to eat.• Remember: We must throw out any food that you do not eat within 30 minutes of delivery.
Food trays	<ul style="list-style-type: none">• Delivered to the patient's room via a Food Services representative.• Patient's tray is wrapped in plastic.• You can unwrap the tray when it is in your room.
Drinking water	<ul style="list-style-type: none">• Patients only use bottled water and ice made from bottled water.• After 30 minutes, any remaining drink must be thrown out.

Caregiver: One food tray per meal will be delivered to a caregiver if requested.

Caregiver food trays	<ul style="list-style-type: none">• Please do not allow patients to eat anything from the caregiver's food tray.• Caregiver trays are prepared and packaged differently. They may have items that are not recommended for your child to eat while on a low-bacteria diet.
Kitchen	<p>The Bone Marrow Transplant Unit has its own family lounge with a full refrigerator, microwave and ice/water machine.</p> <ol style="list-style-type: none">1. Food for the caregivers may be stored in the refrigerator in the family lounge.2. Be sure to label all food containers with your name, room number and date.3. Caregivers ONLY may drink water and get ice from the ice machine in the lounge.

Life in the transplant unit

Daily hygiene in the Bone Marrow Transplant Unit

Patients will take a bath or shower every day.

We will help with daily hygiene for your child and also check that daily hygiene is done each day.

Bath	<ul style="list-style-type: none">• This is a doctor's order.• Chlorhexidine (CHG) wipes MUST be used every day.
CHG wipes (chlorhexidine gluconate)	<ul style="list-style-type: none">• We use these daily for every patient with a central line, unless the patient is allergic or the doctor writes an order not to use the CHG wipes.
Full shower or bath	<ul style="list-style-type: none">• Your child will need to take a full shower or bath using soap and water at least once a day.• The soap and water bath/shower must be done two hours before the CHG bath.

Caregivers will take a bath or shower every day.

Bath	<ul style="list-style-type: none">• Caregivers must shower and change clothes each day.• Caregivers are welcome to use the restroom and shower in the patient's room.• You are welcome to use the shower in the patient's room, however, it must be cleaned prior to your child's use.• Environmental Services cleans the room/bathroom one time a day.
Public restroom	<ul style="list-style-type: none">• We also have a public restroom on the back hallway of the unit.• Caregivers can use this public restroom.

Life in the transplant unit

Bed linens and laundry room

Linens must be changed every day and as needed.

Bed linens	<ul style="list-style-type: none"> • We will give you fresh linens each day. • Please place dirty linens and towels in the blue dirty linen hamper found in the hallway in the transplant unit.
Laundry room	<ul style="list-style-type: none"> • A washer and dryer are in a little room right outside of the BMT Unit. These machines are for the families of the BMT Unit and 5 North Tower. • You may check out a laundry room key from the unit secretary (typically found at the desk by the 5 North Tower doors). • We do not provide detergent and fabric softener, so please bring your own supply. • We highly encourage you to use a hypoallergenic detergent for sensitive skin.

Mouth care

Your child needs to do mouth care four times each day.

Mouth care	<ul style="list-style-type: none"> • This is a doctor's order. • Your child will not be able to use a toothbrush. We will provide them with special sponges to clean teeth during transplant.
Mouthwash	<ul style="list-style-type: none"> • Your child will need to use a mouthwash and a fluoride gel four times a day, every day. • Your nurse will bring this in when it is time to use it.

Monitors/emergency equipment

- Each patient room is equipped with emergency equipment including oxygen, suction, a bag-valve-mask and a vital signs monitor.
- We may also use the vital signs monitor continuously during some IV infusions.

Daily lab and X-rays

Daily lab

- Most labs are drawn in the early morning, around 4 a.m.
- We draw the blood from your child's central line.
- Your doctor may order other lab tests drawn during the day.

Scans and X-rays

- We always try to bring the X-ray machine to your child's room.
- If your child has to leave the unit, they will wear a mask and a gown to protect them from germs while they are off the unit.

Day 0 – transplant day

You do not need surgery for a stem cell transplant.

1. The transplant will take place one or two days after the end of the conditioning chemotherapy/radiation therapy.
2. Depending on how we process the stem cells, they will come in a bag that looks like a bag of blood or platelets. (see image to right).
3. We give stem cells through an intravenous (IV) infusion, just like a blood transfusion.
4. The stem cell infusion can last from 15 to 30 minutes up to four hours.
5. Once the stem cells enter the vein, the blood carries them to the bone marrow space.
6. The new stem cells plant themselves in the bone marrow just like seeds.
7. Soon they will start to grow into new healthy white blood cells, red blood cells, platelets or infection-fighting cells.



The stem cell infusion

Before the stem cell infusion:

1. We give your child medicines to help prevent possible reactions to donor stem cells.
2. We will give your child extra IV fluids.

During the stem cell infusion, your child will need to:

1. Stay in bed.
2. Be on a cardiac monitor and pulse oximeter.
3. Have vital signs taken often.

After the stem cell infusion:

Your child will receive extra IV fluids.

Stem cell transplant

Possible side effects

1. Reaction during infusion of stem cells

- Most infusions are well-tolerated, but your child may experience nausea, vomiting, high blood pressure, low blood pressure, hives, dark-colored urine, shortness of breath or fever.
- We will give medicine before the stem cell infusion to try to decrease the risk of a reaction.

2. Bone marrow suppression

By Day 30 after transplant, we should see signs that donor stem cells are starting to grow.

- Sometimes this takes more time, and sometimes it takes less time.
- Every child is different.
- While we are waiting for the new stem cells to start working, your child will receive red blood cell and platelet transfusions.
- Your child will also receive a medicine to stimulate the stem cells to produce white blood cells, which help fight infection.

3. Graft-versus-host disease (GVHD)

GVHD happens when donor cells recognize your child's body as foreign and launch an attack.

- GVHD can only happen in patients who received an allogeneic transplant (if your child received an autologous transplant, GVHD will NOT be a possible side effect).
- If GVHD occurs early after the transplant, it is called acute GVHD.
- If GVHD occurs later after transplant, it is called chronic GVHD.
- Symptoms of acute GVHD may include:
 - Skin rash.
 - Changes in the liver (pain, swelling of the liver).
 - Changes in intestines (abdominal cramping, diarrhea, loss of appetite, nausea or vomiting).
- To help prevent these reactions, your child will receive medicines called immunosuppressants for several weeks or months after transplant.
- Chronic GVHD occurs most commonly in patients who have had acute GVHD, but may occur in patients who did not have any acute symptoms.
- Chronic GVHD may cause lingering symptoms for years or may go away completely.
- Infection is a major risk in patients with chronic GVHD. This is because the immune system often does not return to normal.

Stem cell transplant

Possible side effects

4. Interstitial pneumonia

Some patients will get severe lung problems from either a viral infection or a reaction to chemotherapy.

- This type of pneumonia can result in bleeding in the lungs.
- Although treatments are available, this form of pneumonia can be fatal.

5. Veno-occlusive disease (VOD), also known as sinusoidal obstruction syndrome (SOS)

This can occur as a result of chemotherapy, radiation, prolonged transfusion therapy or combination of all of these.

- Symptoms include jaundice (yellowness of the skin and eyes), liver dysfunction, weight gain and extra fluid in the abdominal cavity.
- Often, it is managed successfully and can completely resolve.
- However, complications can arise that can be fatal.

6. Serious infections

Full and complete recovery of the immune system may take several months to years.

- During this time, there is an increased risk of infection.
- Your child will take antibiotics to help decrease the possibility of infection.
- We may give other medicines (either by mouth or IV) to help decrease the possibility of a serious virus or fungus infection.
- If your child gets a fever, your doctor may change antibiotics, and we may give them by IV.
- Usually we can control an infection with the antibiotics, but sometimes it can become serious or even life-threatening and we may need to admit your child to the hospital.
- Remember: If your child has any signs of fever, call your doctor immediately.

7. Graft failure

Most donor stem cells will start to grow within 30 days.

- It's rare that stem cells fail to grow.
- When this happens, it is called graft failure.
- If the cells fail to grow, we perform a second transplant using additional cells from the same donor or from a new donor.

Stem cell transplant

Possible side effects

8. Mucositis and diarrhea

Large doses of chemotherapy and radiation can damage the lining of the mouth and intestines (called mucositis).

- This can result in painful mouth sores and diarrhea.
- Pain medicine is generally required when mucositis is severe.
- Mucositis gets better when the white blood cell count starts to rise and engraftment occurs.

9. Unexpected organ damage

Life-threatening heart, lung, kidney or liver damage may occur as a result of this therapy.

- We will explain any problems that occur.
- We will discuss the new plan of treatment.
- Rarely, multiorgan failure (such as lung and kidney failure) may occur. This can be fatal despite intensive care management.

10. Capillary leak syndrome

This may occur as a result of chemotherapy and radiation.

- Blood vessels become “leaky,” and fluid may enter the abdominal cavity and tissues.
- Patients may gain water weight, and their urine output may fall.
- Capillary leak syndrome can be difficult to manage if extra fluid enters the lungs. This can cause difficulty breathing.
- Patients may die if fluid continues to collect in the lungs.

Bone Marrow Transplant diet (BMT)

Diet guidelines for immunosuppressed patients

People with weak immune systems are at increased risk of getting a food-related infection.

Purpose of this diet: To help avoid specific foods likely to contain infection-causing organisms while allowing maximum healthy food choices.


- This diet should be followed before and after all conditioning therapy (chemotherapy/radiation).
- Your doctor and dietitian will let you know when you no longer need to follow this diet.


How long does my child need to follow these guidelines?


Autologous transplant:	Undergoing chemotherapy only: Follow this diet for the first three months after transplant.
Allogenic transplant:	Follow the diet until your child is off all immunosuppressive therapy, such as cyclosporine, prednisone, tacrolimus, sirolimus or mycophenolate mofetil


Before the end of this time


Please talk to your doctor and dietitian to find out if your child needs to continue any part of the diet.


Food Group	Good food choices	NOT recommended
Dairy 	<ul style="list-style-type: none">• All pasteurized, grade "A" milk/milk products• Commercially packaged cheese and cheese products made with pasteurized milk (Ex: cheddar, mozzarella, Parmesan, Swiss, etc.)• Pasteurized yogurt• Dry, refrigerated and frozen pasteurized whipped topping• Ice cream, frozen yogurt, sherbet, ice cream bars, homemade milkshakes• Commercial nutritional supplements and baby formulas, liquid and powdered• Commercially pasteurized eggnog	<ul style="list-style-type: none">• Unpasteurized or raw milk, cheese, yogurt and other milk products• Cheese with molds (Ex: blue, Stilton, Roquefort, Gorgonzola)• Soft cheeses made from unpasteurized (raw) milk: brie, Camembert, feta cheese, queso fresco, blue-veined• Cheese from delis• Frozen yogurt or ice cream from soft-serve machines


Food Group	Good food choices	NOT recommended
Fruits Nuts 	<ul style="list-style-type: none">• Canned and frozen fruits and fruit juices• Well-washed raw fruit• Dried fruits• Canned roasted nuts, shelled• Nuts in baked products• Commercially packaged peanut butter	<ul style="list-style-type: none">• Unwashed raw fruits• Unroasted raw nuts• Roasted nuts in the shell• Unpasteurized fruit and vegetable juices




Food Group	Good food choices	NOT recommended
Meat Fish Meat substitutes 	<ul style="list-style-type: none"> • All well-cooked meat or canned meats (beef, pork, lamb, poultry, fish, game, ham, bacon, sausage, hot dogs) • Well-cooked eggs (white cooked firm with thickened yolk is acceptable) • Canned and commercially packaged hard smoked fish (refrigerate after opening) • Cooked tofu • Cooked shellfish • Reheated hot dogs, luncheon meats, bologna, etc., until steaming hot or 165°F 	<ul style="list-style-type: none"> • Raw and undercooked meat, fish, poultry eggs, hot dogs, sausage, bacon, tofu • Any deli meats or hot dogs not reheated • Uncooked fish and shellfish (sushi) • Cold smoked fish (salmon), lox • Tempe (tempeh) products • Raw or undercooked eggs and egg substitutes

Food Group	Good food choices	NOT recommended
Vegetables 	<ul style="list-style-type: none"> • Washed fresh vegetables, except sprouts • Cooked vegetables 	<ul style="list-style-type: none"> • Unwashed fresh vegetables • Sprouts of any kind

Food Group	Good food choices	NOT recommended
Breads, Grains, Cereal products 	<ul style="list-style-type: none"> • All breads, rolls, crackers, sweet rolls, and pastries, muffins, pancakes, waffles, bagels, French toast, doughnuts • Potato chips, corn chips, tortilla chips, pretzels, popcorn • Cooked pasta, rice and other grains • All cereals, cooked and ready to eat 	<ul style="list-style-type: none"> • Unrefrigerated, cream-filled pastry products (not shelf-stable) • Raw grain products (uncooked flours)

Food Group	Good food choices	NOT recommended
Entrees Soups 	<ul style="list-style-type: none"> • All well-cooked soups and frozen entrees 	<ul style="list-style-type: none"> • All miso products (Ex: miso soup)

Food Group	Good food choices	NOT recommended
Beverages 	<ul style="list-style-type: none"> • Commercially bottled water (distilled, purified or reverse osmosis-filtered) • Canned, bottled and powdered beverages • Instant and brewed coffee and tea • Cold-brewed tea made with boiling water • Brewed herbal teas using commercially packaged tea bags • Commercial nutritional supplements (liquid and powdered) 	<ul style="list-style-type: none"> • Well water • Cold-brewed tea made with warm or cold water • Unpasteurized fruit and vegetable juices • Mate tea • Ice made from unpurified water or public machines • Tap water and ice made from tap water • Fountain drinks

Food Group	Good food choices	NOT recommended
Fats 	<ul style="list-style-type: none"> • Butter and vegetable oil • Commercial, shelf-stable mayonnaise and salad dressings (including cheese-based salad dressings); refrigerate after opening 	<ul style="list-style-type: none"> • Fresh salad dressings containing aged cheese (Ex: blue, Roquefort) or raw eggs, stored in refrigerated case
Food Group	Good food choices	NOT recommended
Desserts 	<ul style="list-style-type: none"> • Refrigerated commercial and homemade cakes, pies, pastries and puddings • Refrigerated, cream-filled pastries • Homemade and commercial cookies • Shelf-stable cream-filled cupcakes (Ex: Twinkies®, Ding Dongs®), fruit pies (Ex: Pop Tarts®, Hostess Fruit Pies®) and canned pudding • Popsicle®-like products 	<ul style="list-style-type: none"> • Unrefrigerated, cream-filled pastry products (not shelf stable) • Icees® from a machine • Frozen yogurt or ice cream from soft serve machines
Food Group	Good food choices	NOT recommended
Other 	<ul style="list-style-type: none"> • Salt, granulated sugar, brown sugar • Jams, jellies and syrups (refrigerate after opening) • Commercial honey (heat-treated and/or pasteurized), after 12 months of age • Ketchup, mustard, BBQ sauce, vinegar, soy sauce and other condiments (refrigerate after opening) • Pickles, pickle relish, olives (refrigerate after opening) • Pepper, added during cooking • Candy, gum 	<ul style="list-style-type: none"> • Raw or non-heat-treated honey; honey in the comb • Herbal and nutrient supplements • Brewer's yeast, if eaten uncooked • Pepper, added after cooking

Restaurants and take-out foods

Patients should not eat food from outside restaurants while admitted to the BMT unit.

Please remember that foodborne illnesses can cause serious infections. It is very important to follow the sanitation guidelines to keep your food and kitchen safe.

1. Cook Children's Camelot Court (including Chic-fil-A®): All "freshly prepared food" is approved for patients in the BMT.
2. After you go home: Your health care providers will tell you when it's safe to eat out.
3. Stay safe: Make sure the restaurant is clean. Only eat freshly prepared food. Ask the server if you are not sure.

These instructions are only general guidelines. Your health care providers may give you special instructions. If you have any questions or concerns, please call your health care providers.

Going home

The stay in the transplant unit is four to six weeks. You will be able to leave the medical center when:

1. Your child has no infections.
2. Their white blood cell count is recovering.
3. If graft-versus-host disease occurred, it is now under control before discharge.
4. Your child can take all medicines by mouth.

Going home for the first time after your child's transplant can be exciting, but it can also raise a lot of questions. Your transplant team will help you get ready for all these things before you are discharged:

1. What medicines your child will take.
2. What your child can eat.
3. What your child cannot eat.
4. How long your child will have to finish an open glass of water.
5. What places your child can go.
6. What places your child should avoid.
7. How to care for your child's central line.
8. What to expect for clinic visits after transplant.

We will prepare you for your child's departure with the following education:

Central line class: The patient/family educator will give you and your child classes about central line care. During these classes, you will have a hands-on chance to practice your skills on our teaching doll, such as changing the central line dressing, changing the central line caps and flushing the central line.

Discharge review class: Your patient/family educator will also spend time with you to talk about life at home after transplant: ways to protect your child from infections, ways to keep food safe and other important things to remember when you are home. This review class will give you a chance to ask questions that you may have about life after transplant.

Rooming in: It is very important for you to practice giving your child their medications before leaving the medical center. You will learn about your child's medications, why they are important and how to give them. Before you leave the medical center, you will give your child their medications for two days all by yourself. A nurse will watch you give the medications in case you have questions or if you need help.

Once your child is discharged, you will need to stay in the Fort Worth area for an extended time, ranging from weeks to months. This stay depends upon the type of transplant and how well your child is doing. Staff will closely monitor your child for the first two to three months for any problems related to the transplant. Later, your child will need a yearly examination to monitor for any long-term effects of their treatment.

Kitchen sanitation guidelines

After your stem cell transplant,
you are at increased risk of getting a foodborne illness.

Foodborne illness: Infection of the gastrointestinal tract caused by food or fluids that contain harmful bacteria, viruses or parasites. Foodborne illnesses can cause serious infections. It is important to follow these guidelines to keep your kitchen as safe as possible.

Sanitize: Using a diluted bleach solution (see below) to lessen and even kill harmful germs on surfaces and items. This will make the surfaces and items safe to use. It is important to sanitize objects that come in contact with raw meat.

Wash: Use hot, soapy water to wipe off items that touch ready-to-eat-foods. These are foods that do not need to be cooked.

Diluted bleach solution

Effective in preventing and killing bacteria, viruses and parasites

Regular bleach is highly toxic.

1. Keep away from children and pets.
2. Store in a safe place.
3. May be irritating to skin. Wear gloves when sanitizing items.
4. Check expiration date. Do not use if out of date.
5. Bleach solution is only effective for 24 hours. Make a fresh solution each day.



Suggested mixture: $\frac{1}{4}$ cup bleach and $2 \frac{1}{4}$ cups of water.



$\frac{1}{4}$ cup of bleach

$2 \frac{1}{4}$ cups of water

1. Carefully pour unscented household bleach into a spray bottle or jar.
2. Then add the water.
3. Mixing solution in this order will prevent bleach from splashing up on you.

When to Sanitize

Kitchen counter	After each use
Microwave, blender, can opener	After each use
Refrigerator: Inside and out Shelves and drawers. Also outside of refrigerator, especially door and handle.	Weekly

Always wash your hands: Wash hands with soap and warm running water for 20 seconds.

- Wash before and after every step in food preparation.
- Wash hands before eating, after using the bathroom, changing diapers, handling garbage and touching pets.
- Dry hands on a clean paper towel.



Cleaning supplies

Paper towels	If possible, use paper towels to clean kitchen surfaces. Bacteria, viruses and parasites can grow on wet or dirty towels and sponges
Cloth <ul style="list-style-type: none"> • Dish towels • Dish cloth 	Use a clean dish towel/cloth every day Wash in hot, soapy water
Sponge	Squeeze out all of the water after each use Sanitize daily <ul style="list-style-type: none"> • Soak in bleach solution for five minutes • Heat one minute in microwave • Put through dishwasher on hot/high or sanitize cycle
Liquid soap <ul style="list-style-type: none"> • Hand soap • Dish soap 	Use liquid hand soap for washing hands Use liquid dish soap when washing dishes, pans and utensils
Produce brush	Clean every two to three days Place in dishwasher or wash with hot, soapy water
Storage of cleaning solutions	Do not store chemicals and cleaning solutions near food supplies
Other	

Work surface and area

Counter	Keep free of food particles, dust and clutter Wash with hot, soapy water after preparing each food item
Sink Garbage disposal	Keep sink clean Keep garbage disposal empty
Under sink	Keep clean and dry Do not store food supplies under the sink
Stove Refrigerator	Dust and clean under and behind stove and refrigerator
Trash can with lid	Keep lid closed. Empty frequently
Other	

Kitchen appliances

Two cutting boards	<p>Have two cutting boards: Use one board for produce. Use a separate board for raw meats, poultry and seafood.</p> <ol style="list-style-type: none"> <u>Produce Board: Ready-to-eat foods such as fruits and vegetables</u> <ul style="list-style-type: none"> Wash board daily with warm soapy water Sanitize weekly <u>Raw Meats Board: Includes poultry and seafood</u> <ul style="list-style-type: none"> Sanitize after each use <p>Sanitize Cutting Board: Use bleach solution or put through hot or sanitize dishwasher cycle</p> <p>Replace worn cutting board: Includes boards with cracks or grooves</p>
Blender	<ul style="list-style-type: none"> Wipe mixer blades off before using Always remove blender blades and bottom when washing jar
Toaster	Keep clean and check frequently for crumbs
Can opener	<ul style="list-style-type: none"> Wipe off blade before use Sanitize after each use
Coffee maker	<ul style="list-style-type: none"> Empty grounds daily Wash reusable filter daily
Microwave	<ul style="list-style-type: none"> Remove any splattered food after each use Sanitize after each use
Refrigerator	<ul style="list-style-type: none"> Keep refrigerator clean and clean spills immediately Sanitize shelves and doors weekly Maintain refrigerator temperature between 34 and 40 degrees F Maintain freezer temperature below 2 degrees F
Food in refrigerator	<p>Store all food in a covered and dated container after cooling:</p> <ul style="list-style-type: none"> First cool hot foods in an uncovered container and place in the refrigerator Cover storage containers after cooling Make sure that covers seal tightly <p>Discard Food:</p> <ul style="list-style-type: none"> Discard all prepared food after 72 hours or three days Discard eggs with cracked shells Discard freezer-burned foods Discard entire food packages or containers with any mold present, including yogurt, cheese, cottage cheese, fruits, vegetables, jelly, bread and pastry products



Cupboards and pantry

Storage	<ul style="list-style-type: none"> Make sure food storage areas remain clean Rotate food stock so older items are used first
Food	<ul style="list-style-type: none"> Monitor expiration dates. Do not use foods past expiration dates Throw away and do not open any bulging, leaking or cracked cans Do not use any cans with a deep dent in the area you open Wipe tops of cans before opening

Safe food guidelines

After your stem cell transplant,
you are at increased risk of getting a foodborne illness.

Foodborne illness: Infection of the gastrointestinal tract caused by food or fluids that contain harmful bacteria, viruses or parasites. Foodborne illnesses can cause serious infections. It is important to follow these guidelines to keep your kitchen as safe as possible.

Perishable foods: Foods that you need to refrigerate or freeze to slow or stop bacteria from growing. Includes meat, poultry, fish, milk, eggs and many raw fruits and vegetables. All cooked foods are considered perishable foods.

Never taste food that looks or smells strange! Avoid tasting free samples!

Always wash your hands:

Wash hands with soap and warm running water for 20 seconds.

- Wash before and after every step in food preparation.
- Wash hands before eating, after using the bathroom, changing diapers, handling garbage or touching pets.

Tap water and well water

- If using city water service: Tap water and ice made from tap water is safe.
- If using a water service other than city water service: Recommend using boiled or bottled water.
- If using well water: Bring tap water to a rolling boil and boil for 15 to 20 minutes. Store boiled water in the refrigerator. Discard any water that is not used within 48 hours (two days).

Fruits and vegetables

- Do not eat any types of raw vegetable sprouts.
- Do not purchase produce that has been cut at the grocery store if it will not be cooked before eating.
- Rinse produce thoroughly under clean, running water before use, including produce that is to be peeled or cooked.
- Rinse under running water packaged lettuce, slaw mixes and other prepared produce, even when marked "pre-washed."
- Refrigerate fruits and vegetables.
- Do not use soap, detergent or bleach solutions to wash fruits and vegetables.
- Throw away fruits and vegetables that show signs of mold or are slimy.

When taking cyclosporine, AVOID these fruits and juices:

- Grapefruit and grapefruit juice
- Pineapple and pineapple juice
- Papaya and papaya juice

Purchasing foods

- Purchase frozen and refrigerated foods last, especially during the summer months.
- Store groceries promptly; never leave food in a hot car.

Grocery shopping

<u>Check before buying</u>	What to check for
Each food item	Dates for "Sell by" and "Use by"
Cans	Cans damaged, swollen or deeply dented
Packaged foods and boxes	Seals all closed, no openings
Fruits and vegetables	No bruises
Package of fresh meats, poultry, seafood	Odor, mold, insect contamination
Eggs	Refrigerated, no cracks

Avoid these foods

<u>Check before buying</u>	What to check for
Delicatessen foods	Includes prepared salads, sliced meats, cheeses
Bakery	Unrefrigerated cream and custard containing deserts and pastries
Foods in self-serve bulk containers	Example: candy, soup

Yogurt, milkshakes and ice cream dispensed from soft-serve machines

Storing foods (refrigerator)

- Date all foods placed in refrigerator.
- Store raw meat separate from ready-to-eat foods.
- Perishable foods: Never leave out of the refrigerator for more than two hours.
- Egg-, cream- and mayonnaise-based foods: Do not leave out of the refrigerator for more than one hour.

Freezing and thawing

- Thaw meat, fish or poultry in the refrigerator or microwave. Place in a dish to catch drips.
- Use thawed or defrosted foods right away.
- Do not refreeze meats once thawed.

Cooking

See attached recommended minimum cooking temperatures for meats and poultry.

Meats:

- Cook meats until there is no remaining pink and the juices run clear.
- Thoroughly heat until steaming (165 degrees F) all hot dogs and ready-to-eat luncheon meats, cold cuts and deli-style meats before eating.

Eggs: Cook eggs until the whites and yolk are firm.

- Do not eat uncooked foods containing raw or undercooked egg products.
- Cook red meats to an internal temperature of 160 degrees F and poultry to 165 degrees F.
- Cook ground meats until well done (gray or brown with no pink remaining).

Microwave cooking

Microwave cooking can leave cold spots where bacteria can survive.

- If no turntable: Rotate dish a quarter turn twice during cooking.
- When heating leftovers, use a lid or vented plastic wrap for thorough heating.
- Stir several times during reheating

Leftovers

- Cool hot foods in a shallow, uncovered container. Place in the refrigerator.
- Cover storage container after cooling. Make sure the seal is tight.
- Throw away all prepared food after 72 hours (three days).

Dining out

Your doctor will let you know when it is safe to dine out.

Restaurants	<p>Pick restaurants that have a reputation for cleanliness.</p> <ul style="list-style-type: none"> • Check general condition of restaurant • A well-maintained dining area often reflects a well-maintained kitchen area
Avoid these restaurants	Sidewalk vendors, food trucks, delicatessens, buffets
Avoid raw fruits and vegetables	<ul style="list-style-type: none"> • Uncooked fruits and vegetables depend on the cleanliness of the handler and preparation area • To be safe, it's best to avoid these food items
Fresh food preparation	<ul style="list-style-type: none"> • Ask for food that is prepared fresh • Avoid food that has been sitting around • Avoid salad bars and potlucks
Avoid assembly line food	Example: Subway®, Taco Bell®
Condiments	<ul style="list-style-type: none"> • Only use single-serving packages • Do not use self-serve bottles or commercial dispensers
Avoid self-serve machines	Example: Soft-serve ice cream or yogurt, milkshakes, fountain drinks, coffees

These instructions are only general guidelines. Your health care providers may give you special instructions.
If you have any questions or concerns, please call your health care providers.

Recommended minimum cooking temperatures

Eggs, egg dishes and casseroles

Eggs	Cook until yolk and white are firm
Casseroles	160 degrees F
Foods containing eggs, custards and egg sauces	160 degrees F

Veal, beef, pork, lamb, rabbit, goat, game

Whole pieces meat	Cook until yolk and white are firm
Ground veal, beef, lamb, pork, rabbit, goat, game	160 degrees F

Poultry (chicken, turkey, duck, goose)

Chicken and turkey: whole bird and dark meat (leg, thigh, wing)	180 degrees F
Breast, roast	170 degrees F
Ground chicken, turkey	165 degrees F
Stuffing (Always cook in separate container outside of bird)	165 degrees F
Fresh (raw)	160 degrees F
Precooked (to reheat)	160 degrees F

Seafood

Fin fish (such as salmon, cod, halibut, snapper, sole, bass, trout)	Cook until opaque and flakes easily with fork.
Shrimp, lobster, crayfish, crab	Should turn red and flesh should become pearly opaque.
Scallops	Should turn milk white or opaque and firm.
Clams, mussels, oysters	Cook until shells open (may be high-risk food for people with low white count or who are immunosuppressed)

Leftovers, hot dogs, luncheon meats

Leftovers	165 degrees F
Hot dogs, luncheon meat	Steaming hot

Table 1 from Nutrition Care Criteria, Seattle Cancer Care Alliance, 2012[®]