



PATIENT & CAREGIVER EDUCATION

About Your Microvascular Reconstruction Surgery Using Free Tissue Transfer

This information will help you learn about microvascular reconstruction surgery using free tissue transfer and how to care for yourself after it.

About Your Surgery

After surgery to remove a tumor, you may have space in your body where the cancer used to be. Microvascular reconstruction surgery using tissue transfer is a surgery done to repair the space left in your body. This is done by transferring tissue from one part of your body (donor site) to the area that needs to be reconstructed or repaired (recipient site).

Your primary surgeon will remove the tumor, bone, and soft tissue. Your reconstructive surgeon will take a free flap (block of skin, tissue, muscle, or bone) from the donor site and attach it to the recipient site. They will use a microscope to see and connect the tiny blood vessels in the free flap with the blood vessels at the recipient site. Very thin sutures (stitches) are used to join the

blood vessels together.

Sometimes, a vein is needed to connect the free flap to the recipient site. In that case, your reconstructive surgeon will make a small incision (surgical cut) and take a vein from your arm or leg.

You may also need a skin graft to cover the donor or recipient site. This is skin that's usually taken from your buttock or thigh.

This surgery can be done in different ways. Some of the information in this resource may not apply to you. Be sure to ask your surgeon or nurse if you have any questions.

Before Your Surgery

- You will meet with your primary surgeon who will give you more information about your surgery.
- You will have a consultation with your reconstructive surgeon. After your consultation, your surgeon may decide that you should have:
 - A medical clearance visit. Your safety is our top concern. This visit will help your surgeon plan your care to lower any risks you may have with surgery.
 - A test to check your heart and lungs.
 - A test to check the blood vessels in your legs (angiogram).
 - Other tests such as a computed tomography (CT) scan,

magnetic resonance imaging (MRI), and x-rays.

- If you're having head and neck surgery, you will need a consultation with a dentist from our Dental Service. You may have a dental x-ray and dental impressions.

Presurgical testing (PST)

Before your surgery, you will have an appointment for presurgical testing (PST). The date, time, and location of your PST appointment will be printed on the appointment reminder from your surgeon's office. You can eat and take your usual medications the day of your PST appointment.

During your appointment, you will meet with a nurse practitioner (NP) who works closely with anesthesiology staff (doctors and specialized nurses who will give you medication to put you to sleep during your surgery). Your NP will review your medical and surgical history with you. You will have tests, including an electrocardiogram (EKG) to check your heart rhythm, a chest x-ray, blood tests, and any other tests necessary to plan your care. Your NP may also recommend you see other healthcare providers.

Your NP will talk with you about which medications you should take the morning of your surgery.

It's very helpful if you bring the following with you to your PST appointment:

- A list of all the medications you're taking, including patches and creams.
- Results of any tests done outside of MSK, such as a cardiac stress test, echocardiogram, or carotid doppler study.
- The name(s) and telephone number(s) of your doctor(s).

About drinking alcohol

The amount of alcohol you drink can affect you during and after your surgery. It's important that you talk with your healthcare providers about your alcohol intake so that we can plan your care.

- Stopping alcohol suddenly can cause seizures, delirium, and death. If we know you're at risk for these complications, we can prescribe medication to help prevent them.
- If you use alcohol regularly, you may be at risk for other complications during and after surgery. These include bleeding, infections, heart problems, and a longer hospital stay.

Here are things you can do to prevent problems before your surgery:

- Be honest with your healthcare provider about how much alcohol you drink.
- Try to stop drinking alcohol once your surgery is planned. If you develop a headache, nausea, increased anxiety, or can't

sleep after you stop drinking, tell your doctor right away.

These are early signs of alcohol withdrawal and can be treated.

- Tell your healthcare provider if you can't stop drinking.
- Ask us any questions you have about drinking and surgery. As always, all of your medical information will be kept confidential.

About smoking

People who smoke can have breathing problems when they have surgery. Stopping even for a few days before surgery can help. If you smoke, your nurse will refer you to our Tobacco Treatment Program. You can also reach the program at 212-610-0507.

Purchase Hibiclens® skin cleanser

Hibiclens is a skin cleanser that kills germs for 24 hours after using it (see Figure 1). Showering with Hibiclens before your surgery will help lower your risk of infection after surgery. You can buy Hibiclens at your local pharmacy without a prescription.



Figure 1.
Hibiclens
skin
cleanser

Other information

Your nurse will give you the resource *Getting Ready for Surgery*

(www.mskcc.org/pe/getting_ready_surgery). It tells you what you need to do to prepare for your surgery. Your nurse will also give you any other resources that you may need.

The Morning of Your Surgery

Things to remember

- Don't put on any lotion, cream, deodorant, makeup, powder, or perfume.
- Don't wear any metal objects. Remove all jewelry, including body piercings. The equipment used during your surgery can cause burns if it touches metal.
- Leave valuables, such as credit cards, jewelry, or your checkbook at home.
- Before you're taken into the operating room, you will need to remove your hearing aids, dentures, prosthetic device(s), wig, and religious articles.
- Wear something comfortable and loose-fitting.
- Bring a small pillow or towel with you to make you more comfortable on your way home after your surgery.
- If you wear contact lenses, wear your glasses instead.

Shower with Hibiclens

The morning of your surgery, shower using Hibiclens.

1. Use your normal shampoo to wash your hair. Rinse your head well.
2. Use your normal soap to wash your face and genital area. Rinse your body well.

3. Open the Hibiclens bottle. Pour some solution into your hand or a washcloth.
4. Move away from the shower stream to avoid rinsing off the Hibiclens too soon.
5. Rub the Hibiclens gently over your body from your neck to your feet. Don't put the Hibiclens on your face or genital area.
6. Move back into the shower stream to rinse off the Hibiclens.
7. Dry yourself off with a clean towel after your shower.
8. Don't put on any lotion, cream, deodorant, makeup, powder, or perfume after your shower.

After Your Surgery

When you wake up after your surgery, you will be in the Post Anesthesia Care Unit (PACU).

You will receive oxygen through a thin tube that rests below your nose called a nasal cannula. A nurse will be monitoring your body temperature, pulse, blood pressure, and oxygen levels.

You may have a urinary catheter in your bladder to monitor the amount of urine you're making. The catheter is usually removed in 3 to 4 days after your surgery. You will also have compression boots on your lower legs to help your circulation.

You may have a Jackson-Pratt® drain. This is a soft catheter (thin, flexible tube) that is inserted near your incision to drain

extra fluid. The drain is usually removed about 5 to 10 days after your surgery. Your nurse will teach you how to care for the drain before you leave. For more information, read *Caring for Your Jackson-Pratt Drain*

(www.mskcc.org/pe/caring_jackson_pratt).

You may have a pain pump called a patient-controlled analgesia (PCA) device. For more information, read *Patient-Controlled Analgesia (PCA)* (www.mskcc.org/pe/pca). If you don't have an epidural catheter, your pain medication will be given through an IV line.

You will stay in the PACU overnight. After your stay in the PACU, you will be taken to your hospital room. Soon after you arrive in your room, you will be helped out of bed and into a chair.

Your nurse will tell you how to recover from your surgery. Below are examples of ways you can help yourself recover safely.

- You will be encouraged to walk with the help of your nurse or physical therapist. We will give you medication to relieve pain. Walking helps reduce the risk for blood clots and pneumonia. It also helps to stimulate your bowels so they begin working again.
- Use your incentive spirometer. This will help your lungs expand, which prevents pneumonia. For more information,

read [How to Use Your Incentive Spirometer](#).

What to Expect with Specific Types of Reconstruction

Reconstruction in the head and neck area

- After your surgery, you may have:
 - Swelling around your recipient site
 - Difficulty breathing
 - Trouble swallowing
- You may have a tube in your neck to help you breathe. This is called a tracheostomy tube. It will stay in until the swelling goes down.
 - If you have a tracheostomy tube, you won't be able to speak. Your nurses will ask you "yes" and "no" questions about how you feel and whether you have any pain. You'll be able to nod your head or write on a pad of paper if you need or want something.
 - You will have a humidifier collar near your tracheostomy tube. This will moisten the air you breathe and prevent drying of the tissues that line your trachea (windpipe).
 - Your nurses will clear out your tracheostomy tube. Over time, they may teach you how to do this.
 - The tracheostomy tube is usually removed 7 to 10 days after

your surgery.

- Your surgeon may insert a feeding tube through your nose into your stomach. This will help you receive the right amount of nutrients.
 - The tube will stay in until the swelling from your surgery goes down.
 - You will receive high-protein liquid feedings and your medication through this tube.
- Before you're allowed to eat and drink, a specialist may check to make sure it's safe for you to swallow. This is usually done 10 to 15 days after your surgery.
- You may be told to sleep without pillows and with your head elevated. This is to prevent further swelling. Your surgeon will tell you how long you must sleep this way.

Reconstruction on your arm or leg

- You must keep your arm or leg elevated at all times. Your surgeon or nurse will tell you when you can stop.
- You may get a cast, splint, or sling to prevent the surgical site from moving. It's usually removed or changed 5 to 7 days after your surgery.
- You may have some limitations on your physical activities. Your surgeon or nurse will discuss this with you.
- A physical therapist (PT) will work with you while you're in the

hospital to make sure you're safe and strong enough to go home.

- If your free flap or skin graft is on your legs or feet, your surgeon or nurse will tell you when you can dangle your legs or walk. This may not be for 1 to 3 weeks or more after your surgery.

Reconstruction of your lower back and buttock or vagina

- You may have a loose surgical binder put on you in the operating room to hold your dressings in place.
- You may be placed on a bed that has a special air mattress. This prevents direct pressure on the surgical sites and incision.
- You may be told to lie on your sides or on the side opposite your incision. This is to prevent direct pressure on your incision.
- You may be allowed to walk starting 2 or 3 days after your surgery.
- You may not be able to sit until several weeks after your surgery. Your surgeon will let you know when you may begin to sit for short periods after your surgery. This is to keep you from putting tension on your incisions.

Monitoring Your Free Flap

For the first week after your surgery, your doctors and nurses will monitor the blood supply to your reconstructed site and nearby tissues using a Doppler[®] ultrasound machine. The machine is noisy, but the ultrasound is painless.

They will also check the temperature and color of your free flap. These exams are very important and will continue during your hospital stay.

Caring For Yourself After Your Surgery

Caring for your donor site

The care of your donor site will depend on how the wound was closed. It may have been closed:

- By bringing the edges of the skin together. This will look like a line of sutures.
- With a skin graft. If a skin graft was used, it will have a large dressing on it. The dressing is usually removed 5 to 7 days after surgery. Your nurse will explain how to care for it when you go home. For more information, ask your nurse for the resource *About Your Split-Thickness Skin Graft* (www.mskcc.org/pe/split_thickness).

If your donor site is on your abdomen (belly), elevate your knees in bed, by placing a pillow below your knees. When you're out of bed, sit with your feet on a stool. Your PT will show you how to do this.

No matter how the donor site is closed, avoid tension or pulling on the site.

Removing your sutures

- Your sutures will likely be removed 7 to 10 days after your surgery.
- If you're having radiation therapy to your surgical sites, your sutures may stay in place for 2 to 3 weeks or longer.

Limits on physical activity

After your surgery, you may need to avoid certain exercises and movements. This is to make sure you don't create any tension on the newly reattached blood vessels. These limits depend on the location and the type of free flap you have had. Your doctors and nurses will give you specific instructions.

If your donor site is on your upper back, your doctor may limit how much movement above the shoulder you should do for 1 to 2 weeks after your surgery. Your PT will explain this to you.

Diet

Most people can eat a regular diet when they go home. If your surgery was in your mouth, you will most likely go home on a full liquid or puréed diet. A puréed diet is one in which all your food is processed in a blender. Your dietitian or nurse will review this with you. For more information about following a puréed diet, read *Eating Guide for Puréed and Mechanical Soft Diets*

(www.mskcc.org/pe/pureed_mechanical_soft_diets).

Clothing

- When you leave the hospital, wear comfortable and loose-fitting clothing. Don't wear anything that directly presses on your free flap. This can affect the blood supply to your free flap.
- If you want to cover the surgical area of your free flap, try a scarf, hat, or shawl. Your nurse will help you choose clothing that is best for the type of surgery you had.
- If a car seat belt falls across your incisions, place a small pillow or folded towel under the seat belt on top of the incision.

Caring For Your Surgical Sites At Home

- Don't apply direct pressure to your free flap.
 - This includes wearing a tight belt, neck tie, or tight bra.
- Don't place direct heat or cold on the surgical sites. Your surgical sites may be numb and you can easily hurt yourself without knowing it.
 - This includes hot water bottles, heating pads, electric blankets, and ice packs.
- Don't put anything on your incisions until they are completely healed, including:
 - Makeup

- Perfume and cologne
- After-shave
- Moisturizer
- Don't shave over your incisions while your sutures are still in place. When your sutures are removed, use an electric razor on and around the free flap or reconstructed area.
- Avoid taking baths or using hot tubs and swimming pools until your incisions are completely healed. This is usually 4 to 6 weeks after your surgery.
- Avoid sun exposure to your surgical sites. After your incisions have completely healed, use a PABA-free sunscreen with an SPF of 30 or higher.
- Check with your doctor or nurse before doing any strenuous exercise, such as running, jogging, and lifting weights.

Dealing with Permanent Changes

You may have temporary or permanent changes in the areas of your surgery. You may have permanent changes in your:

- Appearance (such as scars at the donor and recipient sites and skin color changes). Your free flap may be a different color than your surrounding skin.
- Lifestyle, including not being able to do all of the things you could do before your surgery. This depends on the location of

the flap.

- Ability to swallow.
- Ability to eat some types of foods.
- Speech if your surgery was in your mouth.
- Ability to speak if your surgery was on your voice box (larynx).
- Sensation on the skin at your surgical sites. You may have numbness or tingling at the sites. These improve over time but they will always feel number than normal skin.

Follow-up Appointments

Both of your surgeons will need to see you after you leave the hospital. Call each surgeon's office to schedule an appointment. It's very important that you go to these follow-up appointments. Write down any questions you may have and bring them with you to your appointments.

Support Resources

After surgery, you may have new and upsetting feelings. Many people say they felt weepy, sad, worried, nervous, irritable, and angry at one time or another. You may find that you can't control some of these feelings. If this happens, it's a good idea to seek emotional support.

The first step in coping is to talk about how you feel. Family and friends can help. Your nurse, doctor, and social worker can

reassure, support, and guide you. It's always a good idea to let these professionals know how you, your family, and your friends are feeling emotionally. Many resources are available to patients and their families. Whether you're in the hospital or at home, the nurses, doctors, and social workers are here to help you and your family and friends handle the emotional aspects of your illness.

MSK support resources

Counseling Center

646-888-0200

Many people find that counseling helps them. We provide counseling for individuals, couples, families, and groups, as well as medications to help if you feel anxious or depressed.

Resources for Life After Cancer (RLAC) Program

646-888-8106

At MSK, care doesn't end after active treatment. The RLAC Program is for patients and their families who have finished treatment. This program has many services, including seminars, workshops, support groups, counseling on life after treatment, and help with insurance and employment issues.

If you have any questions, contact a member of your healthcare team directly. If you're a patient at MSK and you need to reach a provider after 5:00 PM, during the weekend, or on a holiday, call 212-639-2000.

For more resources, visit www.mskcc.org/pe to search our virtual library.

About Your Microvascular Reconstruction Surgery Using Free Tissue Transfer - Last updated on January 5, 2021

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