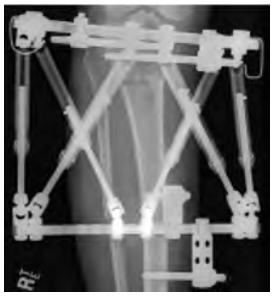
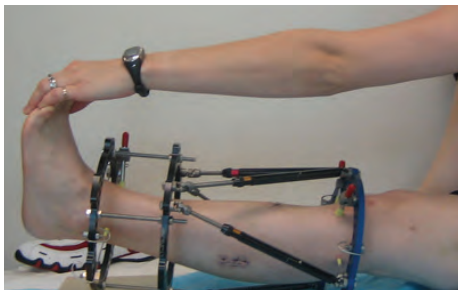
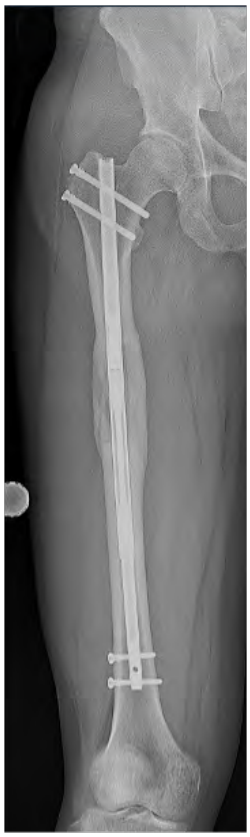
HSS

RECOVERY GUIDE

Limb Lengthening and Complex Reconstruction Surgery







Austin T. Fragomen, MD, Service Chief
S. Robert Rozbruch, MD, Chief Emeritus
Taylor J. Reif, MD, Education Director
Jason S. Hoellwarth, MD, Research Director

Connect with us!

To learn more about the Limb Lengthening and Complex Reconstruction Service, visit our website hss.edu/LSARC

< SCAN HERE

To learn more about the Osseointegration and Limb Replacement Center, visit our website hss.edu/osseointegration-limb-replacement.asp

< SCAN HERE

Follow us on social media!

S. Robert Rozbruch

@limblengthening

@solutionformylimb7279

@Limblengthen

Dr. Austin Fragomen

@Limbdeformity

Dr. Jason Hoellwarth

@allfororthо

Dr. Taylor J. Reif

@reifmd

Limb Lengthening and Complex Reconstruction Surgery

Welcome to the family of the New York Limb Lengthening and Complex Reconstruction Surgery (NYLLCRS) Services at Hospital for Special Surgery (HSS). Our goal is to provide you and your family and friends with the knowledge and support needed to ease the surgery and recovery process. Our team is a group of dedicated professionals, specializing in your condition. We will guide you through your journey toward a better, more mobile, balanced and fulfilled life.

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Our Team

S. Robert Rozbruch, MD, FAAOS

Dr. Rozbruch is Professor of Clinical Orthopedic Surgery at Weill Cornell Medical College, President of ***New York Limb Lengthening and Complex Reconstruction Surgery (NYLLCRS), Director of the Osseointegration Limb Replacement Center***, and Chief Emeritus and founder of the ***Limb Lengthening and Complex Reconstruction Service (LLCRS***) at Hospital for Special Surgery (HSS). He is actively engaged in several national medical societies, including fellowship in the American Academy of Orthopedic Surgeons (AAOS) and ASAMI — The Limb Lengthening & Reconstruction Society of North America, of which he was president (2012-2013). He has presented his clinical and research work at numerous national and international medical meetings, and has authored over 250 articles in medical journals and chapters in orthopedic textbooks. He edited two authoritative textbooks on limb lengthening and reconstruction. Dr. Rozbruch was educated at the University of Pennsylvania, graduating magna cum laude in 1985, and he attended Weill Cornell Medical College of Cornell University, from which he graduated with honors in research in 1990. Residency training at HSS in orthopedic surgery (1991-1995) was followed by two fellowships. He did specialized training in trauma as an AO fellow at the University of Bern in Switzerland. Additional training in adult and pediatric limb lengthening followed at the Maryland Center for Limb Lengthening & Reconstruction.

Austin T. Fragomen, MD, FAAOS

Dr. Fragomen is the Service Chief and Fellowship Director of the ***Limb Lengthening and Complex Reconstruction Service (LLCRS)*** and at Hospital for Special Surgery (HSS). He attended medical school at the State University of New York Downstate College of Medicine. He excelled through a very hands-on surgical internship at Montefiore and Jacobi medical centers in the Bronx. He launched into his orthopedic residency training program, under John R. Denton, MD, at the Saint Vincent Catholic Medical Centers. As chief resident, he took a strong interest in fracture care, limb reconstruction and joint preservation surgery. He then relocated to San Francisco, California, to dedicate himself to learning advanced techniques in surgery of the shoulder and knee with pioneer and innovator Eugene M. Wolf, MD. He returned to HSS to help start the fellowship in limb lengthening and reconstruction surgery. He is committed to clinical and biomechanical research, and enjoys his busy clinical practice. Dr. Fragomen is a clinical Professor of Orthopedic Surgery, and he has presented his clinical and biomechanical research at medical meetings and has authored articles for numerous orthopedic journals and textbooks. He served as the president of the LLRS-ASAMI North America from 2019-2021 and remains on the board. He is a member of the AAOS board of subspeciality societies. Dr Fragomen is skilled in limb lengthening surgery as well as limb salvage projects. Dr. Fragomen takes pride in resolving the previously “unsolvable” problems from which his patients suffer, and he welcomes collaboration with other HSS surgeons who have complementary skill sets in an effort to guarantee that all of his patients are treated by the best of the best.

Our Team *(continued)*

Taylor J. Reif, MD, FAAOS

Dr. Reif is a member of the LLCRS at HSS. He specializes in the comprehensive surgical care of limb deformities, limb length discrepancies, amputation reconstructions, and musculoskeletal tumors. He has particular clinical and research interest in amputation reconstruction via osseointegration, applying technologic advancements to deformity correction and living bone reconstruction of tumor-related bone loss. Dr. Reif attended Northwestern University, obtaining a degree in biomedical engineering. He was awarded Kappa Theta Epsilon honors for his engineering cooperative work at Procter & Gamble. He earned his medical degree from the Northwestern University Feinberg School of Medicine, achieving acceptance into the Alpha Omega Alpha medical honor society. He completed his orthopedic surgery residency at the Loyola University Medical Center in Chicago. He completed two orthopedic fellowships: the Enneking fellowship in orthopedic oncology at the University of Florida Shands Cancer Center and the Limb Lengthening and Complex Reconstruction Fellowship at HSS.

Dr. Reif grew up in Colorado hiking the Rocky Mountains with his family and understands the joys of life that come from activity and the people we share it with. He strives to see patients achieve their functional and rehabilitation goals to restore an active lifestyle.

Jason S. Hoellwarth, MD

Dr. Hoellwarth is the Research Director of the LLCRS. He grew up in Chicago and studied biochemistry and psychology at Case Western Reserve University. He completed medical school at the Keck School of Medicine at the University of Southern California, where he led the student-run free clinic and two high school mentoring programs, and he completed a year of research in pediatric orthopedic surgery at Boston Children's Hospital. Following orthopedic residency at the University of Pittsburgh Medical Center, he completed four successive fellowships to diversify the care he can provide. The first was with the Osseointegration Group of Australia, led by Munjed Al Muderis, where he learned how to perform transcutaneous osseointegration for amputees, which provides a permanent skeletal connection between the bone and the prosthetic limb. He then completed his pediatric orthopedic fellowship at Baylor College of Medicine in Houston, focusing on traumatic injuries, hip dysplasia, and osteogenesis imperfecta. Dr. Hoellwarth then trained at the Paley Institute, concentrating on stature and limb deficiency, including achondroplasia (dwarfism), hypochondroplasia, and hemimelia (a deficiency of the femur, fibula and tibia). His final fellowship was with his current Limb Lengthening and Complex Reconstruction partners at HSS, where he solidified his skills with external fixation and hexapod techniques, minimally invasive osteotomies, osseointegration, joint replacement and managing complex deformity problems such as soft tissue and bone infection, nonunion, malunion, osteochondromas, nerve compression and chronic pain related to bone and joint disorders.

Dr. Hoellwarth is the most published American surgeon in amputee osseointegration and is dedicated to caring for children and adults with complex concerns regarding their limbs.

Our Team *(continued)*

Zachary Edelman, PA-C

Zachary is a Physician Assistant (PA) at the LLCRS. His love of medicine was fostered at a young age as a volunteer EMT in his hometown in New Jersey. After receiving surgery at HSS during his undergraduate studies, he knew he had found his niche in orthopedic surgery. Zachary is a proud graduate of Wagner College in Staten Island, where he completed the dual-degree BS/MS five-year PA program. During his course of studies, Zachary especially enjoyed the medical mission trips to Guatemala and Peru, where he provided care and training to people in remote villages. Zachary is passionate about helping his patients live their lives to their full potential and enjoys working together with the talented surgeons on the LLCRS team to make that a reality. In his free time, Zachary enjoys woodworking, hiking, trying new foods and spending time with his family and friends.

Bridget Ford, PA-C

Bridget is a Physician Assistant at the LLCRS. She attended Towson University in Baltimore, where she graduated with a bachelor's degree in biology. On weekends and during the summer, she frequently traveled back home to New Jersey to volunteer as an EMT, which fostered her interest in medicine. She later graduated from Marist Physician Assistant Program with a master's in medical science. Her love of orthopedics was cemented when she did a clinical rotation working with Division 1 and professional team physicians in Denver. Bridget joined HSS in 2021 as an inpatient PA, and she quickly gained interest and experience with NYLLCRS and knew that she wanted to further her career in the specialty. In her free time, Bridget is an avid reader and enjoys learning to cook, exploring New York City and visiting the beach in her hometown in the warmer months.

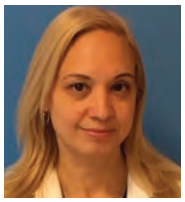
Maxine Goyette, PA-C

Maxine is a Physician Assistant at the LLCRS. She attended UC Santa Barbara, where she ran Division 1 cross country and track and field and graduated with a bachelor's in physiology. Between undergraduate and graduate school she worked as a physical therapy aide and an EMT, shadowed an orthopedic surgeon, and volunteered in the local hospital emergency department. These experiences, combined with her background in athletics, led Maxine to pursue a career as a PA with a strong interest in orthopedic surgery. She graduated from Weill Cornell Physician Assistants Program with a master's in medical science. As a student at Cornell, she had the opportunity to complete several orthopedic surgery clinical rotations, including one at HSS. After rotating at HSS with an insight into NYLLCRS, Maxine was convinced this was where she wanted to take her career. Outside of work, Maxine enjoys running, biking, CrossFit, traveling, and spending time with friends and family.

Our Team *(continued)*

Erica Lenihan, RN

Erica Lenihan, RN is the Nurse Clinician for the Limb Lengthening and Complex Reconstruction Service (LLCRS). She began working at HSS after graduating from Dominican College with her bachelor of science degree in nursing. She transitioned to the NYLLCRS after working on the adult and pediatric inpatient floor at HSS for six years. Her interest and dedication to limb lengthening patients gives her the desire to improve and enhance their experiences whenever possible.

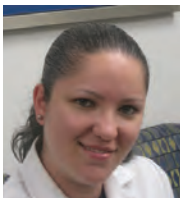


Nancy Maguire, LPN

Nancy is the licensed practical nurse for the LLCRS. She facilitates the day-to-day patient flow and provides direct patient care in the office. She joined HSS with 12 years of previous experience in geriatric care, long-term care, subacute rehabilitation and sports medicine. She is currently working on her bachelor's degree in nursing and has a strong interest in nutrition and well-being. Her background, expertise and motivation make her an integral part of our team.

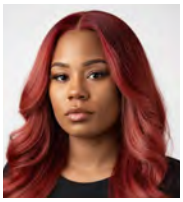
Omaira Dean

Omaira is the Office Manager and Executive Assistant to Dr. Rozbruch. Omaira attended NYCT in Brooklyn, New York. She began working at HSS in 1998 and joined Dr. Rozbruch in 2001. As the manager of LLCRS, she is an essential member of the team.



Kathiria Torres

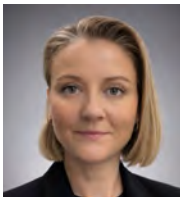
Kathy is the Office Manager for the LLCRS for Dr. Fragomen. She attended St. John's University with a business major. She joined Dr. Fragomen in 2007 and plays a significant role in his practice.



Rosa Mora

Rosa is the Assistant Office Manager for Dr. Rozbruch's team at the LLCRS. Rosa attended John Jay College of Criminal Justice with a liberal arts major. She transferred to Hostos Community College to continue her education in liberal arts. She joined the service in July 2008 and has remained devoted to providing excellent service ever since.

Our Team *(continued)*



Cindy Venables

Cindy joined Hospital for Special Surgery (HSS) as a registrar in October 2021 and was appointed Practice Manager for LLCRS in October 2025. With over 20 years of experience in healthcare administration, Cindy has built a strong foundation working as a receptionist and secretary across multiple specialties, including OB/GYN, physiatry, physical therapy, and orthopedic surgery. For the past 12 years, her focus has been in orthopedic surgery, where she has developed extensive expertise in patient coordination and office operations. Her professional goal is to maintain a highly efficient office environment while prioritizing exceptional patient care and overall wellbeing.

Shantel Robertson

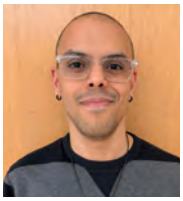
Shantel Robertson has joined LLCRS as a Surgical Coordinator. As a HSS employee since 2015, her skill sets have contributed to many orthopedic specialists and physical /occupational therapists. Shantel is a universal lover of music and enjoys crime documentary. With a BS in Healthcare Administration, she looks forward to sharing and furthering her education to the public health.

Wilma Cortez

Wilma is the Billing Manager for the LLCRS. She has worked as a billing professional since 2000. She has a bachelor's degree in business administration, summa cum laude in business management. She works with patients and their insurance carriers to get the best possible reimbursement. She takes pride in her job and the service she provides.

Karina Dacto

Karina joined the LLCRS in 2022 as an Assistant Medical Biller. She has always been passionate about working in the medical field and finally had the ambition to step out of her comfort zone to excel in the industry. In August 2021, Karina attended ABC Training Center and obtained her certificate of completion in medical billing and coding. Her work consists of following up with insurance claims and communicating with patients to ensure that payments are received. Karina considers herself very lucky to work with this extraordinary group of professionals.



Jonathan Torres

Jonathan is an experienced office clerk with a strong background in managing medical records, scanning and organizing documents, and supporting the workflows of multiple providers. In his current role, he handles records for four medical providers while ensuring accuracy, confidentiality, and efficient document management. Jonathan also brings hands-on experience with secretarial duties, including administrative support, scheduling, and general office coordination, making him a reliable member of the team.

MyHSS

Your MyHSS account is just a click away!

Your personal connection to world-class care.

MyHSS is HSS's secure online portal that allows you to access your medical information anytime, anywhere, from any device.

MyHSS makes it easy for you to prepare for your visit, stay connected to information about your care and communicate with your healthcare team.

With the **MyHSS** online patient portal, you are able to:

- Complete your visit pre-check
- Manage your appointments
- Request prescription refills
- Access your test results
- View your health summary
- Communicate with your healthcare team

Download the MyHSS app.

Manage your care, speak to your doctors and access your health information now.

Scan the QR code or visit **hss.edu/myhss**

Planning For Your Surgery

We use a multidisciplinary approach to your medical care. You will be referred to an HSS medical doctor for medical clearance 7 to 14 days prior to your surgery. Medical clearance is not permitted by an outside physician, unless you are undergoing ambulatory surgery. The HSS doctor will order and perform any and all tests needed to ensure that your medical safety is maintained. This doctor will follow you throughout your hospitalization and organize, maintain and establish any and all medical treatments.

You may come to our office for a pre-op visit. At this time, you can meet with a member of our staff and discuss what to expect before, during and after your surgery. With your consent, preoperative photographs may be taken. The risks, benefits and expectations of the surgical process will be reviewed at this time. Postoperative care and expectations will also be reviewed. You will sign consent forms and be given time to ask any questions. It is recommended that you bring a friend or family member to this visit. Although you will receive paperwork and documentation of everything discussed, there is a lot of information to remember. We also encourage you to come prepared with any questions.

You should plan on remaining in the hospital for 2 to 4 days after surgery in most cases. Keep in mind the clothing adaptations that you will need to make. If you will have an external fixator, plan on wearing loose clothing that will fit over the frame (basketball pants with side snaps work well). If you are undergoing arm or shoulder surgery, plan on wearing a button-up shirt.

Research Studies

Medicine is always changing. We are constantly performing research studies for evidence-based practice. If you meet the criteria, you may be asked to participate in one of our studies. These studies are critical to the development of our specialty. Participation is not mandatory, and you can rest assured that being part of a study will never jeopardize your treatment or clinical outcome.

Sleep Apnea and CPAP or BiPAP

Patients with sleep apnea generally require an overnight stay in the recovery room to be monitored and observed following surgery. If you use a sleep apnea device, bring your mask and a list of your machine settings. Do not bring the CPAP/BiPAP machine. You will be followed by a respiratory therapist throughout your hospitalization.

Smoking

Smoking cessation is extremely important prior to any surgery, especially orthopedic surgery. Smoking decreases the body's ability to heal and impedes bone healing. Smoking increases your risk for infections, delayed healing, bone fractures and amputations. We encourage you to contact your primary doctor for assistance with smoking cessation.

Medications Prior to Surgery

Certain medications and supplements can cause serious problems after surgery. These include prescription medications, herbal supplements and over-the-counter (OTC) products. You can be at higher risk of bleeding, issues with your heart function, tiredness, decreased immunity, and worse or altered bone healing. It is very important that you tell us if you take any of these medications. The following lists are not all-inclusive. **Please tell your HSS provider ALL of the medications and supplements you take and we will confirm which of your supplements/herbals need to be stopped or can be continued.**

Herbal Supplements

You will likely be asked to stop taking most supplements before your surgery. This is due to limited evidence of both the benefits and risks surrounding your surgery. Taking calcium, vitamin D, and iron is thought to be generally safe to continue. The following herbal products and supplements are known for their potentially harmful complications during and after surgery and should generally be stopped 2 weeks before surgery (list is not all inclusive):

- Diet aids
- Echinacea
- Ephedra
- Feverfew
- Fish oil
- Garlic
- Ginkgo
- Ginseng
- Green tea
- Kava
- Licorice
- Saw palmetto
- St. John's wort
- Valerian
- Vitamin E
- Willow bark

Over-the-Counter and Prescription Medications

Some medications can complicate surgery and the healing process. No prescription medicine should be stopped unless instructed by a physician. It is very important to get and follow directions from your doctor on when and how to stop a medicine. Products with aspirin thin the blood, which can cause too much bleeding during surgery. The following are common products that have aspirin. Please check any combination products that you take because these may also have aspirin.

- Enteric coated aspirin
- Alka Seltzer
- Low-dose (aka "baby") aspirin1
- Excedrin
- Cough & cold products that may contain aspirin

A note for patients who take daily aspirin: Decrease daily regular doses of aspirin (325 mg) to low-dose aspirin (81mg) 7 days before surgery unless otherwise instructed by a physician.

If you take baby aspirin (81 mg) daily for your heart, you should continue this up to the day of surgery.



Medications Prior to Surgery *(continued)*

Nonsteroidal anti-inflammatory (NSAIDs) can increase bleeding and interfere with bone healing and bone growth. The following are a few examples of NSAIDs. Please check any combination products that you take because these may also contain an NSAID:

- Ibuprofen (Advil, Motrin, ibuprofen products)
- Naproxen (Aleve, Naprosyn, Naproxen products)
- Meloxicam (Mobic)

All NSAIDs should be stopped 7 days before surgery.

Anticoagulants/Antiplatelets thin the blood and require close monitoring. These must be stopped before surgery. The following medications are used for anticoagulant or antiplatelet therapy:

- Aspirin/extended release dipyridamole (Aggrenox)
- Fondaparinux (Arixtra)
- Betrixaban (Bevyxxa)
- Dabigatran (Pradaxa)
- Edoxaban (Savaysa)
- Dalteparin (Fragmin)
- Enoxaparin (Lovenox)
- Pentoxifylline (Pentoxil)
- Dipyridamole (Persantine)
- Clopidogrel (Plavix)
- Cilostazol (Pletal)
- Apixaban (Eliquis)
- Prasugrel (Effient)
- Ticagrelor (Brilinta)
- Ticlopidine (Ticlid)
- Vorapaxar (Zontivity)
- Rivaroxaban (Xarelto)
- Warfarin (Coumadin)

Please consult with an HSS provider on how to stop anticoagulants/antiplatelets prior to surgery.

The following types of medications may also cause surgical complications. Please speak with a physician on how to manage these medications before surgery. Do not stop taking these unless instructed to do so by your physician:

- Bisphosphonates
- Growth hormones
- Anti-seizure medications
- Anti-diabetic medications
- Rheumatoid products including biologics
- Smoking-cessation products
- Glucagon-like peptide-1 (GLP-1) receptor agonists
- Opioid agonists and antagonists
- Steroids
- Weight-loss medications
- Monamine oxidase inhibitors (MAOI)
- Hormone replacement therapy (HRT) and contraceptive therapy including estrogens, selective estrogen receptor modulators (SERMS) and testosterone

YOUR DIET AND PREPARING FOR SURGERY

PRE-SURGICAL DIET GUIDELINES

The pre-surgical diet guidelines below are for general purposes only. Your physician or surgeon may require you to follow an alternative plan. In that case, follow your physician's instructions rather than the guidelines below.

FOURTEEN DAYS PRIOR TO SURGERY

- Stop all nutritional and herbal supplements (vitamins/minerals/herbals)
- EXCEPTIONS – the following are OK to continue: calcium, iron & vitamin D

THE DAY BEFORE SURGERY

- Follow your regular diet

THE NIGHT BEFORE SURGERY

- Drink at least 20-24 oz (3 cups) of allowed clear fluids
- Do not eat any solid food after midnight (CLEAR FLUIDS ONLY after midnight)

THE DAY OF SURGERY

- Continue CLEAR FLUIDS ONLY. Do not eat any food.
- Drink at least 20-24 oz (3 cups) of allowed clear fluids up to 3 hours before your surgery.
- If instructed, drink carbohydrate-rich drink (Ensure Pre-Surgery®, 10 oz) 3 hours before surgery, COMPLETING PRIOR to your ARRIVAL AT THE HOSPITAL

Important:

- STOP DRINKING 3 HOURS PRIOR TO YOUR SURGERY
- NO DRINKING AFTER ARRIVING AT THE HOSPITAL

CLEAR FLUID DIET (ANY MEAL)

ALLOWED

- Water
- Apple, Cranberry & Grape Juice
- Gatorade
- Black Coffee or Tea
- Clear Broth
- Ginger ale and Seltzer
- Jello and Italian Ice
- Chewing gum – **DO NOT SWALLOW**

NOT ALLOWED

- Milk or Dairy Products (including in coffee and tea)
- Citrus Juices
- Prune Juice
- Juices with Pulp
- Any food or beverage not listed in the "allowed" column

YOUR DIET AND PREPARING FOR SURGERY

PRE-SURGICAL DIET GUIDELINES FOR GLP-1 USERS

These guidelines apply to patients taking the following GLP-1 agonists:

Trulicity (dulaglutide); **Byetta and Bydureon** (exenatide); **Saxenda, Victoza** (liraglutide), **Adlyxin** (lixisentatide); **Ozempic, Wegovy and Rybelsus** (semaglutide); **Mounjaro and Zepbound** (tirzepatide); **Xultophy** (insulin degludec and liraglutide); and **Soliqua** (insulin glargine and lixisenatide). If you are taking Xultophy or Soliqua, contact your endocrinologist or provider in case adjustments are needed regarding your insulin.

Your medical clearance provider may also adjust your specific fasting guidelines for the day of surgery.

FOURTEEN DAYS PRIOR TO SURGERY

- Stop all nutritional and herbal supplements (vitamins/minerals/herbals)
- EXCEPTIONS – the following are OK to continue: calcium, iron & vitamin D

THE DAY BEFORE SURGERY

- Do not eat any solid food after 8am (CLEAR FLUIDS ONLY after 8am)

THE NIGHT BEFORE SURGERY

- Drink at least 20-24 oz (3 cups) of allowed clear fluids

THE DAY OF SURGERY

- Continue CLEAR FLUIDS ONLY. Do not eat any food.
- Drink at least 20-24 oz (3 cups) of allowed clear fluids up to 4 hours before your surgery.

Important:

- STOP DRINKING 4 HOURS PRIOR TO YOUR SURGERY
- NO DRINKING AFTER ARRIVING AT THE HOSPITAL

CLEAR FLUID DIET (ANY MEAL)

ALLOWED

- Water
- Apple, Cranberry & Grape Juice
- Gatorade
- Black Coffee or Tea
- Clear Broth
- Ginger ale and Seltzer
- Jello and Italian Ice
- Chewing gum – **DO NOT SWALLOW**

NOT ALLOWED

- Milk or Dairy Products (including in coffee and tea)
- Citrus Juices
- Prune Juice
- Juices with Pulp
- Any food or beverage not listed in the “allowed” column

Surgery

A nurse from the hospital will call you the day or night before your surgery. Last-minute instructions and the time to report to the hospital will be provided. The nurse will inform you which, if any, of your own medications should be brought into the hospital. In general, all medications must be dispensed by the hospital's pharmacy. A patient's own medications brought from home are generally not allowed to be administered (but specific exceptions can be made on occasion). If any controlled substances are brought into the hospital, they will be returned to a family member to be brought home. If your own medications are needed, be sure to bring them in their original bottles. Leave all narcotics at home.

Unless otherwise instructed, you are not permitted to eat or drink anything after midnight on the night before your surgery. Important medications should be taken the morning of surgery, including blood pressure and heart medications, unless advised otherwise by the doctor.

Please be certain to provide a list of all your medications, including any and all over-the-counter supplements to the operating room staff on the day of surgery. Please refer to pages 11 and 12, and notify us if you take any of the listed medications.

When you arrive at the hospital, you must register. Once registered, you will go to the holding area. At this time, you will meet with nurses and physicians, including your surgeon and anesthesiologist. This is where you will be prepped for surgery. From the holding area, you will go into the operating room.

After Surgery

After your surgery is complete, you will be brought into the recovery room. The recovery room has different visiting hours from the rest of the hospital. You will be permitted visitors, but only during certain times. Depending on the type of surgical procedure you have, you will either be transferred to the inpatient unit or discharged home. If you are discharged home following surgery, you must be accompanied by someone else. The hospital will not allow you to leave alone.

Preventing Blood Clots:

Following surgery, there is a risk that you may develop a blood clot, called a deep vein thrombosis (DVT). Development of a DVT is not likely, and we take full precautions to minimize the incidence of blood clots. To prevent DVTs following surgery, a small, massaging machine will be placed on your legs. This mechanical device enhances blood flow to the veins in your legs, which helps prevent blood clots. You will also be prescribed medication to minimize the risk of blood clots.

Case Management:

Every patient in the hospital has a case manager who assists with discharge planning and home services. If you are being admitted after surgery, you will meet your case manager during your admission. At this time, you should advise them of your discharge needs (e.g., going home versus to a rehabilitation center, transportation, home equipment, home nursing services).

External Fixator Care:

Reconstructive surgery usually requires stabilization of the bone. This is accomplished with either internal fixation (plates, rods, screws) or external fixation (a scaffold outside of the limb). All external fixators require daily care and maintenance. Pin care will need to be done on a daily basis, beginning two days after surgery, until the fixator is removed. While you are in the hospital, our nursing staff will educate and assist you with pin care. You are encouraged to have someone who will be able to assist you at home learn how to do pin care as well. You may also refer to the Patient's Guide to Pin Care on the next page. If you are going to a rehab facility, the nursing staff may use this pamphlet as a reference for proper care. If you are being discharged home, any family or friends assisting you may use it as their guide as well. A prescription for pin care supplies will be provided. Certain pharmacies perform medical supply orders, but most do not. In most cases, your insurance company can direct you to a medical supply company within your insurance network. It usually takes a couple of days to obtain your supplies. The discharging nurse will supply you with the necessary equipment needed for those couple of days at home.

You are permitted and encouraged to take a daily shower. This may begin four days after surgery, unless we advise otherwise. It is best to clean the frame and limb on a daily basis with a mild soap and freshly laundered washcloth. Keep the pin sites clean by using a washcloth around the pins, similar to the way in which you floss your teeth. Johnson's baby shampoo is a good choice if you have sensitive skin. **You may not take a bath, use a hot tub or swim in a lake, ocean or pond while wearing an external fixator.**

A Patient's Guide to Pin Care

Obtaining Pin Care Supplies:

You will be provided with a prescription for pin care supplies at your preoperative appointment. If home care has been arranged, your supplies are typically obtained through the home care agency assigned to your case. If not, you can have your local pharmacy or medical supply store order the supplies. If you are unable to obtain the supplies in this manner and have insurance coverage for wound care supplies, contact your insurance carrier for a list of medical supply companies that can be used. A small amount of supplies will be provided by the hospital upon discharge.

Why:

Pin care is important for the prevention of infection for circular and monolateral frames.

Supplies Needed:

- Supplies Needed:
- Sterile Cotton Swabs
- Gauze Wrap
- Sterile Sodium Chloride (sterile normal saline)

Frequently Asked Questions:

- **Can I take a shower?**
  In most cases, yes. In fact, a daily shower is recommended as part of the proper pin care procedure.
- **What kind of soap should I use?**
  A mild soap should be used to clean the frame and the surrounding area. Allow the water to run on the frame.
- **How often should pin care be done?**
  Once-daily pin care should be done immediately following a shower.
- **Where do I get the supplies to do my pin care?**
  The hospital will give you supplies for a couple of days to get you started and a prescription for supplies for the remainder of your pin care. (Insurance may or may not reimburse for supplies.)
- **How long do I continue to do my pin care?**
  Pin care must be done until the first follow-up appointment. It is recommended that the pins continue to be wrapped thereafter and that pin cleaning (with cotton swabs) be done only if a pin infection is present.
- **How often should I change the pin care solution?**
  A new solution should be poured on a daily basis.

Steps for Pin Care:

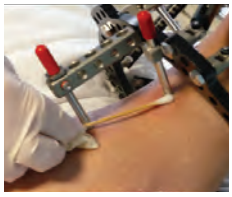
Variations and other interventions should to be made by the doctor only.

Step

1 Wash hands and apply gloves. Remove gauze dressing.

2 Shower daily using mild soap or Johnson's baby shampoo on a clean washcloth on frame area. Run water on frame and skin. Stitches can get wet and soapy (do not cover).

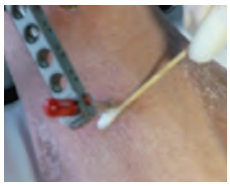
3 Pour a small amount of steril normal saline/sterile sodium chloride into a clean cup.



4 Place sterile cotton swabs in the solution.

5 Use only 1 cotton swab per pin site.

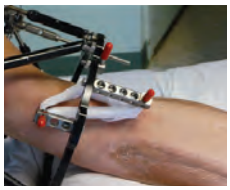
6 Apply cotton swab to pin site with moderate pressure, never leaving the site.



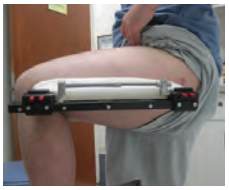
Go around pin site and then up pin.

If contact is lost with pin site (where the pin enters the skin), use new cotton swab. Once cotton swab is drawn up pin, don't go back down.

Do not use the same cotton swab on another pin.



7* Wrap pins in groups with gauze wrap.



***Monolateral Frame Exception to Step 7**

Gauze should be wrapped around frame from upper pins to lower pins, positioned between skin and frame.

A Patient's Guide to Pin Care *(continued)*

Do's

- ☑ Follow the pin care directions exactly, using proper pin care technique.
- ☑ Call the doctor's office for a follow-up visit.
- ☑ You may go into a chlorinated pool after 4 weeks, after seeking your doctor's approval.
- ☑ Call your doctor at the first sign of infection (see below).

Dont's

- ☒ You are not allowed to go into an ocean, pond, hot tub or lake.
- ☒ Don't allow animals to lick the frame area.
- ☒ Don't use the same cotton swab on more than one pin site.
- ☒ Don't use the same cotton swab if contact is lost with the pin site (where the pin enters the skin). Use a new cotton swab.
- ☒ Once the cotton swab is drawn up the pin, don't draw it back down to where the pin enters the skin.

SIGNS OF INFECTION

- Increase in pain
- Redness or heat on the skin
- Drainage (some bleeding from the pin site is normal during the first week)
- Fever
- Numbness or tingling

Contact your doctor immediately if you exhibit any of these signs.

Precice External Remote Control Guide

ERC 3P QUICK REFERENCE GUIDE

For complete instructions, refer to the PRECICE® ERC 3P Patient Manual.

IMPORTANT - Before Starting

- **Do not** use if you or someone around you has a pacemaker or other electronic implanted device.
- **Do not** have an MRI scan taken or have the ERC near an MRI scanner.
- **Remove** the following items from yourself and within **1 foot** of you:
  - All loose metal items including: keys, jewelry, watches, magnetic credit cards, etc.
  - Wireless devices and small electronics such as cell phones, laptops, iPads, etc.
- **Always** follow the prescription from your doctor.
- **Ensure** you can understand the language on the screen.

Power On & Set-Up

1. Plug in ERC to power on.
2. Keep in case.
3. Press green Go button to start initialization.
   (NOTE: This step is only applicable if your doctor has turned on the coupling sensor.)

Performing a Session

1. Review patient summary.
2. Press Go button and alignment light turns on.
3. Align ERC on leg by:
   - Pointing ERC towards feet as indicated on screen.
   - Use alignment window and center over implant and mark on your leg.
   - Align with lines on sides of purple handles and base of ERC.
4. Press Go button to start lengthening.
5. Keep ERC on leg until it stops and screen shows completion.
6. Press green button to finish the session.

Finishing Session

1. Unplug when session is complete.
2. Place in case.
3. Close case using latches.

Smart Technology Icons

Icon	Meaning	What to Do
ERC connected with implant 	The ERC is connected with the implant magnet.	Continue with your session.
ERC not connected with implant (code 12) 	The ERC is not connected with the implant magnet.	Reposition and realign, then press Go until  icon indicates ERC is connected to the implant.
Implant stall (code 13) 	The ERC is not lengthening properly.	Realign the ERC using the mark on your skin and the viewing window, alignment lines on the ERC. If the error code continues to display, please contact your physician.

NuVasive Specialized Orthopedics

Osseointegration Limb Replacement Surgery

This guide is designed to help you take care of your aperture following your osseointegration limb replacement surgery. It provides you with a daily routine as well as tips to help you perform this new routine well.

A Patient's Guide to limb and aperture care

Avoid unnecessary touching

- The skin and implant are not fragile, but like any body opening is susceptible to irritation or infection with repeated touching
- Most important: avoid touching with your fingers! Except in the specific setting of having washed your hands to perform hygiene care (below)

Daily care

- Wash the limb/aperture every day with warm water and a basic unscented soap.
  - Baby shampoo is our default recommendation
  - Antibacterial soap, carbolic soap, tea tree or similar drying cleansers are not recommended as they often irritate the skin.
- Using sterile 4x4 gauze pad, washed hands or freshly laundered wash cloth, gently wash the end of the limb with soap and water. At the very end, make sure to rinse the inside of the aperture well.
- Treat the skin like how you would wipe the edges of your eyes: carefully but deliberately.
- To remove dried blood and discharge around the aperture, the implant, and the dual cone, you can use a soft-bristle brush (such as a toothbrush for babies). It is very important that the brush's bristles do not come loose. Do not press hard.
- Make sure to gently remove any dead skin around the aperture.

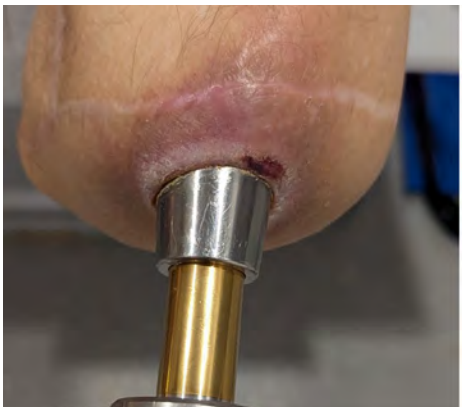
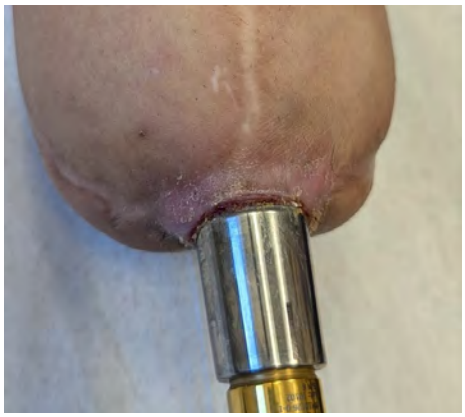
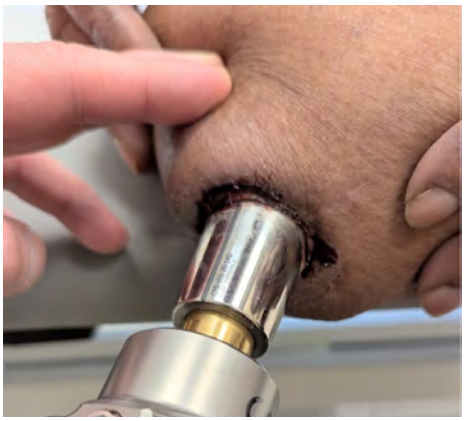
After Shower

After you shower, let the aperture and the limb air-dry rather than wiping with a towel which can introduce bacteria. If this is not an option, dry the aperture and the limb by gently dabbing with a freshly opened gauze pad (do not rub).

Good aperture health

Secretions and discharges

It is normal to have mucous secretions or discharge around or in the aperture for the first few months after surgery. These are natural secretions from the body similar to mucous secretions from the eyes or nose. This discharge's normal color will change from mostly bloody soon after surgery and trend toward golden yellow or clear. In most patients around 3 months after surgery the skin stabilizes in a dry manner. Slight or intermittent discharge long term can happen but is generally not a concern.

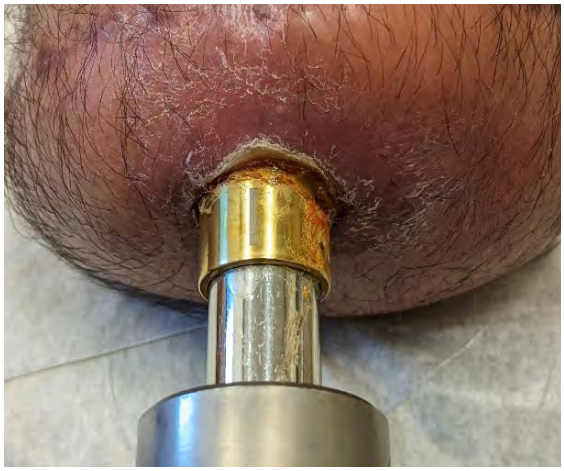

After activity

In some scenarios, after periods of intense activity, you may experience the following symptoms. These are generally normal and not concerning and resolve with tapering the activity level or returning to normal hygiene routines:

- Irritation of the aperture
- muscular pain in the limb
- an increase in secretions/discharge
- swelling at the end of the limb

This is a normal reaction to high-intensity physical activity. Relax, elevate the limb, and put ice on it for 10 minutes every 2 hours, as needed.

Dry Skin



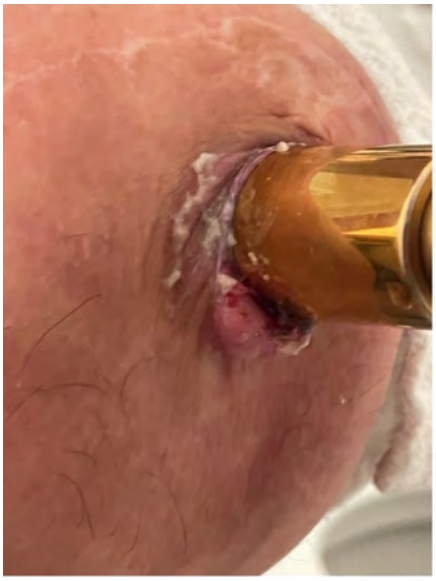
You may experience some discomfort or pain around the aperture, which is often caused by dryness of the surrounding skin. To help with this, you can apply a gentle lotion such as aloe. Be sure to use a clean applicator—either a freshly washed one or a disposable option like a single-use Q-tip. Avoid using your fingers to apply the lotion. Do not apply lotion inside the aperture or within half an inch of it. However, products like Neosporin or Aquaphor can be safely used around the area if needed. Dry skin is commonly linked to harsh cleansers or dry environments, especially during winter when indoor heating is in use. For cleansing, we recommend using mild options like baby shampoo or Softsoap

Possible signs of infection

- Continued abnormal pain in or around the aperture apert
- Significant pain when you put weight on the prosthesis
- Pain that makes walking difficult
- Abnormal redness or heat that progresses around the aperture
- A notable increase of the drainage amount or odor

Hypertrophic Granulation Tissue

Most patients stabilize the skin with a gentle and stable opening similar to a large earring might look. However, any skin opening might form granulation tissue, which is red/pink beefy tissue, and the bodies attempt to heal. This in itself is not a concern. Small areas of it can be treated with silver nitrate swabs at our office. Over time, this tissue may morph into skin. In rare situations the granulation tissue can continue to increase and can become sensitive. If this becomes bothersome to you, please discuss it with your surgeon. In some situations, a simple surgery can be recommended to resolve the hypergranulation tissue.



Strut Adjustments

If you have an external fixator, and if warranted, you will be given an adjustment schedule and taught how to do adjustments. It is imperative that this schedule is not completed all at once during the day. Moving bone via the struts is best done slowly and regularly. It hurts less, creates better bone, and is better for the soft tissues.

Strut Change-Outs

Change-Out	Strut	Overlap Interval		Strut Change	
		First Day	Last Day	From	To
a	Strut 3	01/05/2025 2	01/11/2025 8	SMART STANDARD - Short 71075210	SMART STANDARD - Medium 71075220

Prescription

		Strut 1	Strut 2	Strut 3	Strut 4	Strut 5	Strut 6
Day 0 **01/03/2025** Fri		171.00	163.00	112.00	142.00	203.00	215.00
Day 1 **01/04/2025** Sat		171.00	163.00	112.50	142.25	202.75	214.50
		170.75	163.00	112.75	142.75	202.50	214.00
		170.75	163.00	113.25	143.00	202.25	213.75
		170.50	163.00	113.50	143.50	202.00	213.25
Day 2 **01/05/2025** Sun		170.50	163.00	114.00	143.75	201.75	212.75
		170.50	163.00	114.50	144.25	201.50	212.25
		170.25	163.00	114.75	144.50	201.25	212.00
		170.25	163.00	115.25 (a)	145.00	201.00	211.50
Day 3 **01/06/2025** Mon		170.00	163.00	115.50 (a)	145.25	200.75	211.00
		170.00	163.00	116.00 (a)	145.75	200.50	210.50
		170.00	163.00	116.50 (a)	146.00	200.25	210.25
		169.75	163.00	116.75 (a)	146.50	200.00	209.75
Day 4 **01/07/2025** Tue		169.75	163.00	117.25 (a)	146.75	199.75	209.25
		169.75	162.75	117.75 (a)	147.25	199.50	208.75
		169.50	162.75	118.00 (a)	147.50	199.25	208.50
		169.50	162.75	118.50 (a)	148.00	199.00	208.00
Day 5 **01/08/2025** Wed		169.50	162.75	119.00 (a)	148.25	198.75	207.50
		169.25	162.75	119.25 (a)	148.75	198.50	207.00
		169.25	162.75	119.75 (a)	149.00	198.25	206.50
		169.00	162.75	120.25 (a)	149.50	198.00	206.25

- Strut adjustments start on the date for “Day 1” as shown in the picture on the prior page.
- Go slowly!! You will be taught strut adjustments during your stay in the hospital. (You may also refer to the website video.)
- Turn each strut only the amount indicated on the schedule. The goal is gradual, so if you miss a day, don’t try to make it up. That would be “anti-gradual”. If you miss a day, simply continue the schedule one day behind and address at the next office visit.
- If you fall two days or further behind, call the office for further direction.
- The highlighted column in the above picture (yellow) indicates that a strut needs to be changed. Your appointment needs to be on a day that is highlighted. The strut will be changed in the office.
- The highlighted column in the picture on the previous page indicates that a strut needs to be changed. Your appointment needs to be on a day that is highlighted. The strut will be changed in the office.

Important notes

Unintended strut movement can occur! Especially the back struts in contact with couch/bedding/etc. So even after completion of strut adjustments, all strut numbers and connections **should be checked daily** to ensure the proper end settings are maintained.

You may be provided with a foot plate/night splint or darco shoe (surgical walking shoe). The foot plate will aid in maintaining your foot in a neutral position. A darco shoe would be used while walking and bearing weight. These should be removed 2-3 times per day for 30 minutes at a time for skin rest. The foot plate should be cleansed daily. This will reduce the likelihood of any skin irritations.

Sutures and Staples

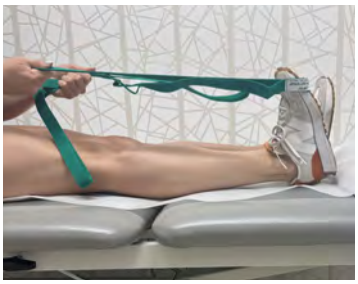
You will be discharged from the hospital with either sutures or staples. If you are discharged from the hospital with the original operative dressing, remove the dressing 2 days after surgery. Follow the earlier directions if you have an external fixator. If your surgery does not include an external fixator and you are discharged with staples or sutures, you may shower 4 days after the date of surgery. Staples and sutures will be removed at your first postoperative visit in the office 2 weeks after surgery. Please remember to call the office to schedule your post operative visit.

Physical Therapy

Stretching the joints after surgery is important. Exercise for range of motion of the joints above and below the bone cut is critical. For example, the knee and ankle must be exercised when having a tibia procedure. As the adjustments are being done, the bone is growing longer. We want to ensure that the soft tissue also stretches. Range of motion exercises for those undergoing ankle distraction surgeries is also imperative. You will be taught basic stretches and exercises by our physical therapists while in the hospital. Physical therapy will be ongoing at home and continues with out-patient therapy after your first postoperative visit.

Visit the HSS Rehabilitation National Network site to find recommended physical therapy providers near you.

Tibia

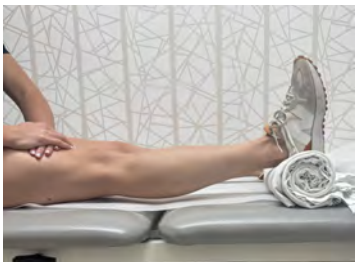


Calf Stretch:

Sit on bed as shown, with the knee on your operative leg straight. Use your green strap to pull your foot toward you.

Hold for __10__ seconds.

Perform __15__ repetitions __4__ times a day.



Passive Knee Extension With Hand:

With the foot on your operative leg on a towel roll or pillow, use your hands to gently press down above your knee to help flatten it on the bed.

Hold for __10__ seconds.

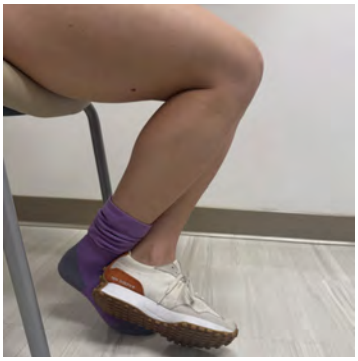
Repeat __15__ repetitions __4__ times a day.

Knee Flexion Step 1:

Sit in a chair on a hard floor with socks on.

Slide the foot on your operative leg backward as far as you can tolerate to allow bending of your knee.

Perform __15__ repetitions __4__ times a day.



Knee Flexion Step 2:

Cross your legs at the ankle and use your nonoperative leg to push your leg backward to feel more of a stretch.

Then slowly return to the starting position.

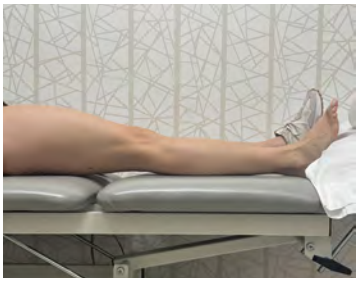
Perform __15__ repetitions __4__ times a day.

Active Assistive Knee Extension:

Sit in a chair. Put your nonperative leg behind your operative leg at the ankles.

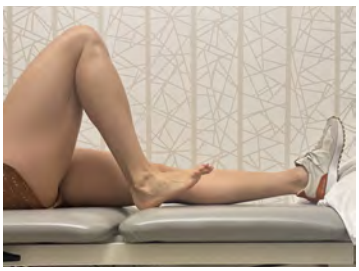
Use your nonperative leg to help straigthen your operative leg until your knee is straight.

Perform __15__ repetitions __4__ times a day.



Heel Slide Step 1:

Start with your operative leg straight on the bed.



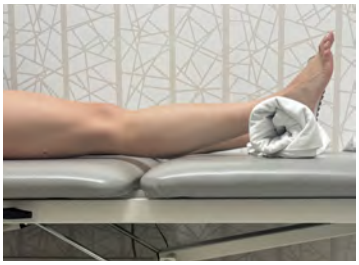
Heel Slide Step 2:

Slide the heel on your operative leg back toward your buttocks.

Then slide back to the starting position.

Be sure to control the entire movement smoothly.

Perform __15__ repetitions __4__ times a day.

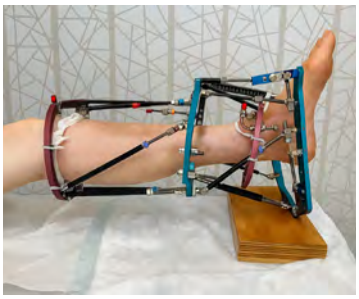


Proper Resting Position Type 1:

Place a towel roll under the ankle for your operative leg.

Gently relax your operative leg to allow your knee to slowly lower to the bed.

Do throughout the day when not walking.



Proper Resting Position Type 2:

Place a towel roll under your operative leg ankle.

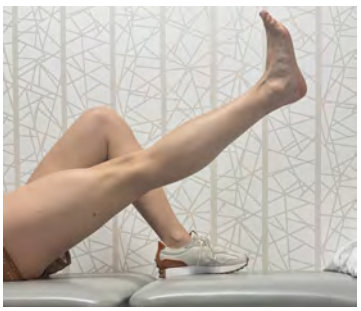
Gently relax your operative leg to allow your knee to slowly lower down to the bed.

Do throughout the day when not walking.

Straight Leg Raise Step 1:

Gently squeeze the knee on your operative leg toward the bed.

Bend the same foot back toward you.



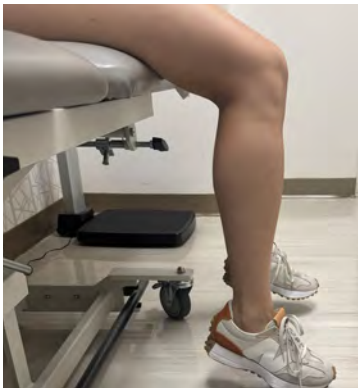
Straight Leg Raise Step 2:

Keeping your knee straight, lift your operative leg 12 to 18 inches off the bed.

Hold for __10__ seconds.

Perform __15__ repetitions __4__ times a day.

Femur

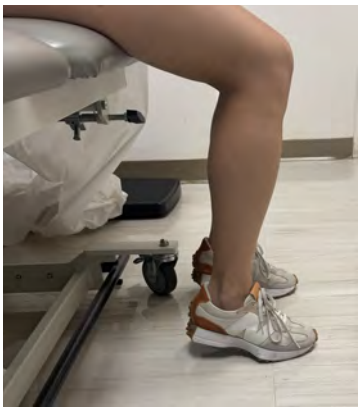


Knee Flexion Dangle:

Sit in a chair or on the edge of your bed and let your operative leg hang down. The operative leg can be supported by the other leg.

The goal is a right angle (90 degrees).

Perform __15__ repetitions __4__ times a day.



Knee Flexion Step 1:

Sit in a chair or on the edge of your bed.

Knee Flexion Step 2:

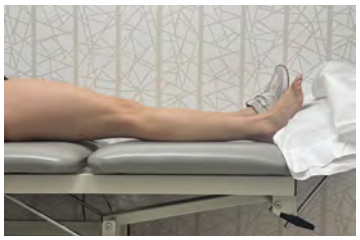
Slide the foot on your operative leg backward as far as you can tolerate to allow bending your knee. Use your nonoperative leg to assist your operative leg further backward for a greater stretch.

The goal is a right angle (90 degrees).

Then slowly return to the starting position.

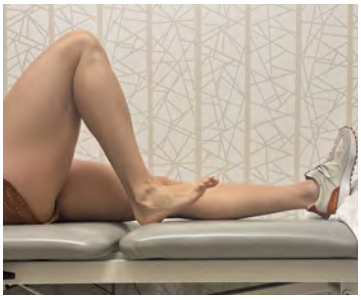
You may want to put your foot on a towel to allow the foot to slide easier.

Perform __15__ repetitions __4__ times a day.



Heel Slide Step 1:

Start with your operative leg straight on the bed.



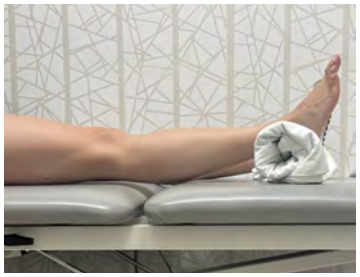
Heel Slide Step 2:

Slide the heel on your operative leg back toward your buttocks.

Then slide back to the starting position.

Be sure to control the entire movement smoothly.

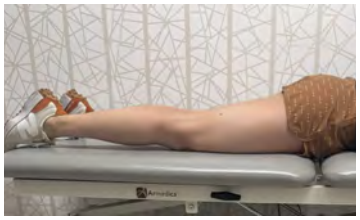
Perform __15__ repetitions __4__ times a day.



Passive Knee Extension:

Place a towel roll under the ankle on your operative leg to allow your knee to become as straight as possible.

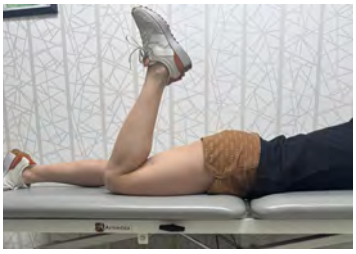
This is a good resting position and should be used throughout the course of the day.



Prone Lying:

Lie on your stomach __4__ times a day for __10__ minutes at a time.

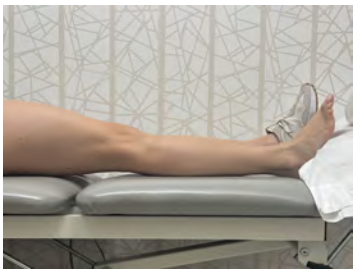
This will allow for stretching your hip flexors.



Prone Knee Flexion:

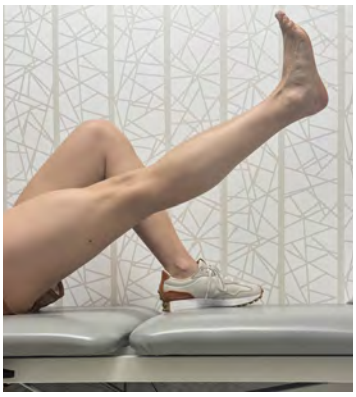
Lie on your stomach and slowly bend the knee on your operative leg as shown.

Perform __15__ repetitions __4__ times a day.



Straight Leg Raise Step 1:

Gently squeeze the knee on your operative leg down toward the bed.



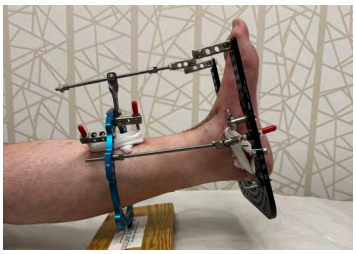
Straight Leg Raise Step 2:

Keeping your knee straight, lift your operative leg 12 to 18 inches off the bed.

Hold for __10__ seconds.

Perform __15__ repetitions 4 times a day.

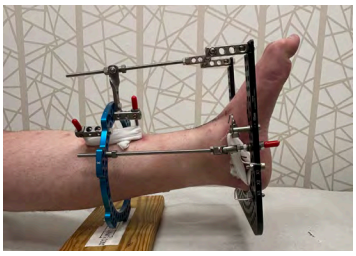
Hinged Foot/Ankle



Ankle Active PF/DF Step 1:

Unlock frame as instructed by your Physician. Place firm object under top ring so your foot ring cab clear the bed.

Bend your operative leg foot back towards you as far as possible.

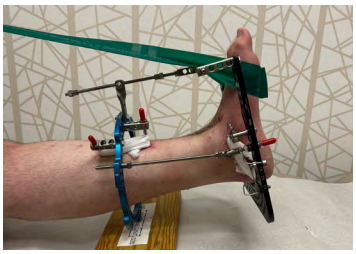


Ankle Active PF/DF Step 2:

Slowly push your foot away for your body and try to point your toes towards the opposite wall.

Perform repeatedly in a slow fashion so your foot goes all the way towards you then away from you.

Perform __15__ repetitions __4__ times a day.



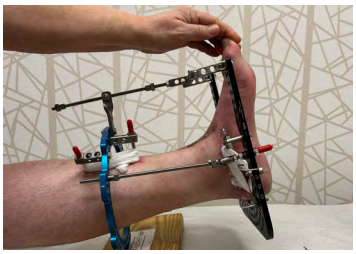
Calf Stretch With Strap:

With your frame unlocked.

Place your green strap around the ball of your foot as shown. Gently pull the strap so your foot bends back towards you.

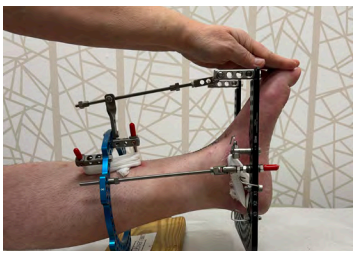
Hold for __10__ seconds.

Perform __15__ repetitions __4__ times a day.



Great Toe ROM Step 1:

Gently use your hands to stretch your toes back towards your body. If you cannot reach, have someone perform for you.

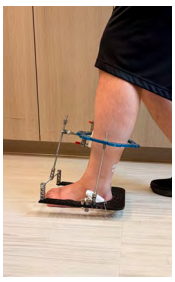


Great Toe ROM Step 2:

Gently use your hands to stretch your toes away from your body. If you cannot reach, have someone perform for you.

Perform __15__ repetitions __4__ times a day.

Hinged Foot/Ankle *(continued)*

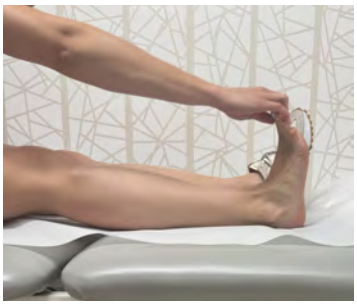



Passive Ankle Range of Motion

Unlock frame as instructed by your physician. With the operative leg in front and back leg slightly bent. Slowly rock back and then forward to stretch ankle and the calf. Make sure the operative foot is planted and heel remains touching the floor. Perform repeatedly in a slow fashion.

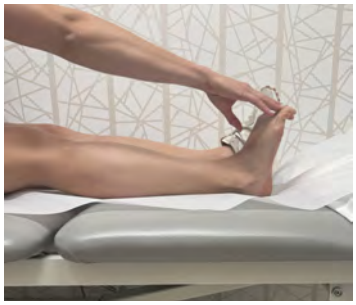
Perform __15__ repetitions __4__ times a day.

Fixed Foot/Ankle



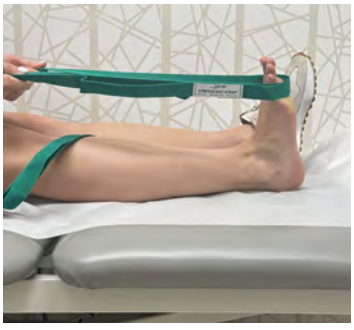
Great Toe ROM Step 1:

Gently use your hands to stretch your toes back towards your body. If you cannot reach, have someone perform for you.



Great Toe ROM Step 2:

Gently use your hands to stretch your toes away from your body. If you cannot reach, have someone perform for you.



Forefoot Stretch with Strap:

Place your green strap around the top portion of your foot as shown. Gently pull the strap back towards your body so your forefoot bends back as well.

Hold for __10__ secconds

Perform __15__ repetitions __4__ times a day.

Nutrition

The food you eat greatly impact your recovery and healing. You can have a nutrition consultation can while you are in the hospital. Proper nutrition can prevent complications such as poor wound healing, delayed bone healing, and constipation. Focusing on whole grains, whole foods (i.e., fruits and vegetables) and proteins is important. Whole grains and whole foods will assist in preventing gastrointestinal problems in addition to supplying your body with vitamins and minerals. Your body will require ample amounts of protein for healing. Good sources of protein are meats, fish, beans, nuts, and dairy products, including milk and cheese. We also recommend a daily probiotic for those on antibiotics.

Certain medications can be inhibited by some foods and alcohol. For example, alcohol intake can significantly inhibit the effectiveness of antibiotics. Alcohol should be avoided if you have been prescribed antibiotics. Alcohol can have a fatal interaction with narcotics.

Vitamin D, Calcium and Vitamin C Supplementation:

Vitamin D is required for bone growth and remodeling. If indicated, blood work will be done to determine the dose of vitamin D for your surgery. Based on this blood level, the proper dosage of vitamin D supplementation will be prescribed. Vitamin D cannot adequately be absorbed by the body without calcium.

Adequate amounts of calcium are required for the body to function and heal. **Calcium citrate** is recommended over any other calcium supplement. If it is necessary for you to take calcium for your surgery, you will be advised to take Citracal Maximum, 2 tablets by mouth two times a day for 12 weeks. Calcium supplements can interact with different prescription medications, including antibiotics (doxycycline), bisphosphonates (these should be stopped before surgery) and high blood pressure medications. You may need to take the calcium supplements a few hours before or after taking the prescription medications. Ask your pharmacist about the possibility of any interactions. Depending on your past medical history or blood work results, an endocrinology consultation may be needed to improve your healing ability.

Our protocol also consists of vitamin C supplementation. **Vitamin C** assists with collagen formation. If it is necessary for you to take vitamin C for your surgery, you will be advised to take vitamin C at 500 mg per day for 12 weeks. Continuation of these supplements, beyond the initial 12 weeks prescribed, may be needed.

External Fixator Removal

When your external fixator is ready for removal, a date will be scheduled for removal in the operating room. Once the external fixator is removed, the bone has lost its support. You will need to take a step back and limit weight bearing to 50% while returning to the use of crutches for about two weeks. This may be modified on a case-by-case basis. We recommend that you continue to be active during this time, but do not push yourself too hard. If a brace is prescribed, it can be removed for gentle range of motion exercises. **After the removal of the external fixator, you must leave the hospital with a friend or family member.**

> **Follow-up:**
>
> Call to schedule a follow-up appointment in the office about two weeks after surgery. At that time, your cast (or brace) will be removed and a new cast applied. You will typically be allowed to progress to full weight bearing at this time and be given a prescription for physical therapy.

Cast and Brace Care

A cast or brace may be used after surgery to support and protect the bones and soft tissue. They reduce pain, swelling and muscle spasms. Swelling can occur within the cast. It is very important to prevent excessive swelling. Remember to elevate the limb with the cast, preferably above the level of your heart. Moving your toes (or fingers) will help reduce swelling. It is extremely important **not** to stick anything into the cast. If you become itchy underneath the cast, **if and only if** your incisions are healed, you may use a hair dryer on the **cool** setting and blow air into the cast. This will reduce the moisture and help relieve the itchiness. In severe cases of itchiness, low doses of Benadryl may be taken. Keep the cast dry. Use a bag to cover the cast when showering.

Contact our office immediately if any of the following occur:

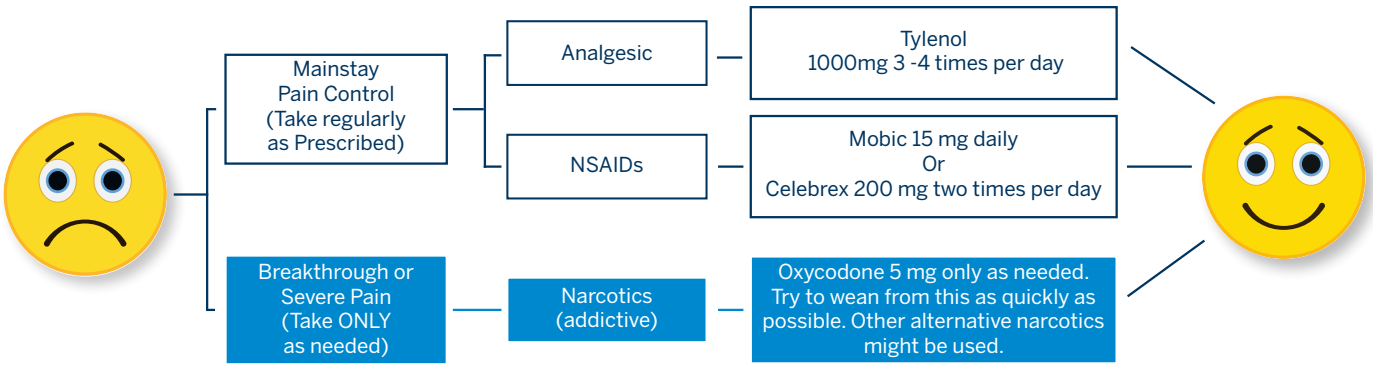
- Increased or abnormal pain
- Numbness or tingling in your toes or fingers
- Burning or stinging
- Excessive swelling below the cast
- Loss of movement of the toes or fingers
- Skin discoloration (pale, blue or dusky color)
- The cast gets very wet

Prescriptions

It is best if refills are prescribed during follow-up appointments. Refills are electronically prescribed to pharmacies that have the capability of accepting e-prescriptions. If a refill is needed prior to your next appointment, please contact the office one or two days prior to completion of the medication. If a prescription has to be mailed, contact us one week prior to completion to allow time for first-class mailing. We do not send prescriptions overnight via alternative mail carriers.

Physical therapy (PT) and occupational therapy (OT) prescriptions will also be provided at follow-up appointments. If a PT or OT prescription renewal is required prior to your next appointment, please provide the office with either a fax number or mailing address.

LLCRS Multimodal Pain Management



Pain Management and Pain Management Referral:

Your recovery and rehabilitation are greatly affected by the management of your pain. Your pain management requires specialized care. There are situations when patients will be referred to a pain management physician. A pain management physician is a doctor who specializes in pain management. These physicians have leading-edge techniques to control your pain. They will manage and adjust your current pain medication regimen and construct a regimen that suits your individual pain needs. They will also provide you with your pain medication prescriptions. In addition, when the time comes, they will create a plan of care for medication discontinuation. Those previously treated by a pain management physician will automatically be referred back to them. We recommend, but do not limit you to, using a physician here at HSS.

Following your surgical procedure, you can anticipate postoperative pain. Patients experience pain differently, and the amount of medication needed varies substantially. The vast majority of patients are able to control their pain with above following medication regimen or less. This list of medications is the maximum dosage of pain medication our office will provide.

Pain typically decreases during the first week after surgery. If you are making gradual adjustments to an external fixator or intramedullary lengthening nail, pain typically decreases when adjustments are completed.

You should continually be working toward decreasing the dosages of your pain medication. Some patients do not require narcotics at all. Always work toward that goal. If you are discharged on a prescription regimen that is in excess of the above prescription guidelines, it is understood that you should gradually reduce your discharge dosage to the above dosage for pain management.

If you are unable to gradually reduce the dosage you will need to be followed by a pain management specialist (either at HSS or locally) to obtain pain medication in excess of the above regimen.

X-Ray, Medical Record And Hardware Requests

X-Ray Requests:

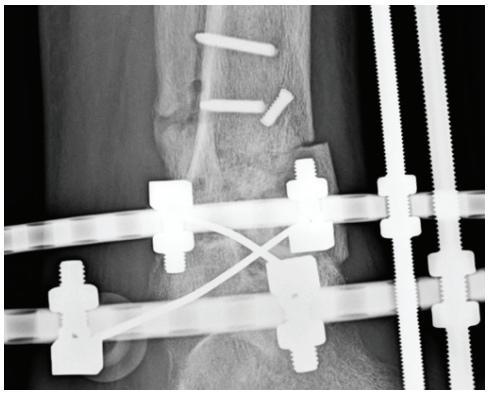
Copies or CDs of X-rays or any radiological exam taken at the office or hospital may be obtained through the raadiology department by calling 212.606.1135. Office personnel are not permitted to dispense these requests.

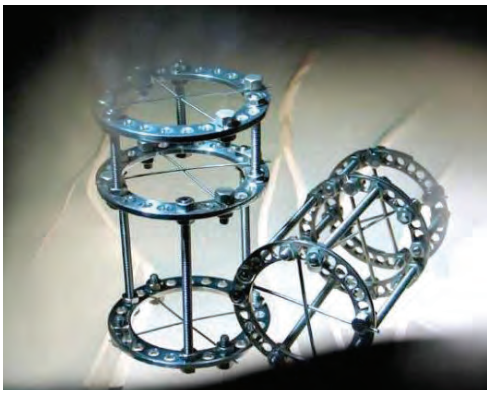
Medical Records Requests:

Copies of office-dictated notes, medical reports and test results may be obtained with a written request. The request must indicate the patient's name, date of service requested and address or fax number to send the record. Please allow ample time for the request to be completed and sent. Inpatient medical record requests may be obtained through the hospital's medical record department by calling 212.606.1254. Please allow ample time for all medical record requests.

Hardware Requests:

Removed internal and external hardware may be obtained for personal possession. The request for external hardware should be conveyed to your surgeon prior to its removal. Internal hardware requests should be conveyed to the office staff. Internal hardware requests must be in writing on a designated form. Internal hardware may take months to be obtained following processing through the hospital.





Forms, Letters and Paperwork

We are happy to assist you with any forms, letters or paperwork that you may need. It is best if you draft the letter or complete as much of the paperwork as possible for the office staff. This will ensure complete and correct transmission of information. We will edit the forms and letters appropriately. Please ensure that you give us ample time to complete whatever it is that you need.

The Recovery Shop

These recommended products may be beneficial in your recovery. These products have been reviewed by our staff and are specific to your recovery needs.

They are optional and not covered by health insurance but may be purchased with an HSA credit or debit card. To streamline the ordering process for these products, we have partnered with The Recovery Shop.

If you plan to purchase any of these products, try to do so as soon as possible. You will need them right after your surgery.

If you need assistance placing your order, have product related questions, or need help with a product return, please contact The Recovery Shop directly:

Phone: 860.500.5020

Email: info@shop-recovery.com

To purchase these products, please follow these steps:

- Please go to **shop-recovery.net/NYLimb** or scan the QR code below
- Review Recommended Products
- Select products
- Check out and pay
- Receive products in 1-3 business days

THE RECOVERY SHOP

shop-recovery.net/nylimb

		
Nice Ice Machine	Shower Chair	Raised Toilet Seat
		
Compression Socks	Silicone Scar Sheets	BioCorneum Scar Cream
		
Even Up Shoe Lift	Knee Scooter	Mend Repair and Recover
		
Waterproof Cast Cover	ADL Kit	Forearm Crutches

Doctors:

S. Robert Rozbruch, MD
Email: RozbruchSR@hss.edu
Phone: 212.606.1415
Fax: 212.774.2744

Austin T. Fragomen, MD
Email: FragomenA@hss.edu
Phone: 212.606.1550
Fax: 212.606.1552

Taylor J. Reif, MD
Email: ReifT@hss.edu
Phone: 212.606.1637
Fax: 212.774.7348

Jason Hoellwarth, MD
Email: HoellwarthJ@hss.edu
Phone: 212.606.1097
Fax: 917.260.4397

Secretaries:

To reach a secretary please call MD's number, and Select option 1

Rosa Mora
Email: MoraR@hss.edu

Cindy Venables
Email: VenablesC@hss.edu

Shantel Robertson
Email: Robertsonsh@hss.edu

Medical Records/Assistant Secretary
Jonathan Torres
Email: TorresJon@hss.edu

Clinical Support Staff (PA/RN)

Erica Lenihan, RN
Email: LenihanE@hss.edu
Phone: MD number, Option 3 then 1

Bridget Ford, PA-C
Email: FordB@hss.edu
Phone: MD number, Option 3 then 2

Zachary Edelman, PA-C
Email: EdelmanZ@hss.edu
Phone: MD number, Option 3 then 3

Maxine Goyette, PA-C
Email: GoyetteM@hss.edu
Phone: MD number, Option 3 then 4

Surgical Coordinators

Omaira Dean (Surgical Coordinator to Dr. Rozbruch)
Email: DeanO@hss.edu
Phone: 212.606.1415
Select: Option 2

Kathiria Torres (Surgical Coordinator to Dr. Fragomen and Dr. Hoellwarth)
Email: TorresK@hss.edu
Phone: 212.606.1550 (Dr. Fragomen)
Phone: 212.606.1097 (Dr. Hoellwarth)
Select: Option 2

Shantel Robertson (Surgical Coordinator to Dr. Reif)
Email: Robertsonsh@hss.edu
Phone: 212.606.1637
Select: Option 2

Billing

Wilma Cortez
Email: Cortezwi@hss.edu
Phone: MD number, Option 4

Karina Dacto
Email: Dactok@hss.edu
Phone: 646.714.6175

Important Hospital Telephone Numbers

Access Private Nursing Service	212.774.7187
Admitting	212.606.1241
Belaire Guest Facility/Hotel	212.606.1989
Call Center	212.606.1710
Case Management	212.606.1271
Coast to Coast	212.606.1921
Family Atrium/Waiting Room (4th Floor)	212.774.2201
HSS Main	212.606.1000
International Center	212.606.1186
Medical Records	212.606.1254
MyHSS Help Desk	844.269.4509
Pastoral Care	212.606.1757
Radiology Records/Copies	212.606.1134

Notes

Notes


HSS