Adapted for patients of OrthoBalance PT from Move Forward; American Physical Therapy Association

Physical Therapist's Guide to Femur Fracture

A femur fracture is a break, crack, or crush injury of the thigh bone. It is sometimes referred to as a "hip fracture"; or "broken hip" if the break is in the upper part of the bone near the hip-joint area. Femur fractures that are simple, short cracks in the bone usually do not require surgery. However, fractures that break completely through the bone, or cause the bone to be displaced or crushed, usually require immediate surgery.

What is a Femur Fracture?

A femur fracture is a break in the thigh bone, or femur. The femur can be fractured in 3 areas: the head/neck of the bone (the upper end, near the pelvis), the main shaft of the bone, or the lower end near the knee. Injury occurs when a high-force blow hits the thigh bone. This can be caused by either the body weight of the person (as in a fall) or a collision with an object (as in a car accident).

The most common causes of femur fracture are:

- High-speed trauma, such as a motor vehicle or motorcycle accident, a fall from a high place, or an injury during extreme or contact sports
- A preexisting bone disease that weakens the bone, such as a tumor, Paget disease, bone cysts, or osteoporosis

How Does it Feel?

A femur fracture causes extreme pain in the upper leg area. You may experience:

- An inability to move the leg or stand
- Swelling in the hip area
- Bleeding from an open wound if the bone breaks through the skin
- A change in the shape (deformity) of the thigh bone area
- Hematoma (a localized collection of blood causing discoloration) or severe bruising in the area of the fracture
- Muscle spasms in the thigh
- Numbness, tingling in the thigh or leg

Caution: A fractured femur may be life-threatening. Death can occur following a femur fracture from complications such as blood clots, pneumonia, or infection. Symptoms of life-threatening injury include:

- Heavy or uncontrollable bleeding
- A bone fragment protruding through the skin
- Confusion or loss of consciousness

People above 60 years of age with femur fractures that do not penetrate through the skin have a death rate of 17% and a complication rate of 54%. Only about 25% of those people who suffer a femur fracture return to the same level of activity they had before the injury.

How Is It Diagnosed?

A femur fracture is a serious injury that is diagnosed by a physician, usually in an emergency room. The doctor will check for all the signs and symptoms of a fracture as listed above. An x-ray or CT scan will help confirm the fracture. The fracture can be a simple crack or severe enough to break the femur into pieces that can separate or even pierce through the skin.

Treatment of a femur fracture usually involves immediate admission to the hospital and surgery, as well as extensive treatment in the hospital or a rehabilitative facility. The majority of people who suffer a femur fracture receive specialized treatment in a long-term nursing or rehabilitation facility.

Full recovery from a femur fracture can take anywhere from 12 weeks to 12 months; however, most people begin walking with the help of a physical therapist in the first day or two after injury and/or surgery.

How Can a Physical Therapist Help?

Your physical therapist will design a specific treatment program to speed your recovery**.** This program includes exercises and treatments you should do at home to help you return to your normal life and activities.

Physical therapists help you recover by helping you improve your:

- Pain level
- Leg, hip, and back motion
- Strength
- Standing balance
- Walking ability
- Speed of healing
- Speed of return to activity and sport

The First 24-48 Hours

Following injury or surgery, your physical therapist will help you:

- Get up out of bed to stand and walk. Early mobilization (walking, standing, moving around) will help prevent blood clots and other complications.
- Learn to use crutches or a walker.

Reduce Pain

Your physical therapist may use different types of treatments and machines to control and reduce your pain**.** These treatments may include ice, heat, ultrasound, gentle electrical stimulation, taping, exercises, and special skilled treatments performed with the hands called "manual" techniques.

Improve Motion

Your physical therapist will choose specific activities and treatments to help restore normal movement in the leg and hip. These might start with passive motions that the therapist applies to your leg and hip joint, and progress to active exercises and stretches that you perform yourself.

Improve Strength

Certain exercises will benefit your healing at each stage of recovery, and your physical therapist will design a unique treatment program just for you. He or she will choose and teach you the appropriate exercises that will restore your strength, power, and agility. These may include using free weights, stretchy bands, weighted pulleys, cardio machines, and weight machines.

Speed Recovery Time

Your physical therapist is trained and experienced in choosing the treatments and exercises to help you heal, get back to your normal life, and reach your goals faster than you might be able to on your own.

Return to Activities

Your physical therapist will collaborate with you to decide on your recovery goals, including return to work and sport, and will design your treatment program to help you reach those goals in the safest, fastest, and most effective way possible. Your physical therapist will use machines, manual techniques, exercises, work re-training activities, and sport-specific techniques and drills to help you achieve your goals.

Prevent Future Reinjury

Your physical therapist can recommend a home-exercise program to strengthen and stretch the muscles around your hip, upper leg, and core to help prevent future problems. These may include strength and flexibility exercises for the quadriceps, adductor, abductor, hamstring, and core muscles.

Can this Injury or Condition be Prevented?

Femur fractures can be prevented by avoiding the following risk factors:

- Driving while under the influence of alcohol or drugs
- Not wearing a seat belt while in a car
- Driving a motorcycle aggressively or in inclement weather
- Developing osteoporosis
- Participating in contact or extreme sports without minding safety protocols or using safety equipment

Additionally, strengthening bone and muscles with weight-bearing exercises can also help reduce risk of fracture.

Real Life Experiences

Mabel, a 51 year old woman, was driving home from the grocery store when another car hit her car from the side. She felt immediate, severe pain in her left leg above the knee and could not move her leg or get out of the car. Bystanders called 911, and rescue workers arrived minutes later. They cut the door away, applied a neck collar and slid her out of the car on a spine board. Before moving her further, they checked her for injuries and found her left thigh was deformed. Mabel’s pain was excruciating. The medics applied a traction device to her leg, and she felt some pain relief. They quickly brought her to the local trauma emergency room, where x-rays confirmed she had a fractured femur.

Mabel underwent surgery that night and received an internal plate and screws in her leg to properly align the femur bone.

The next morning, Mabel was groggy but in less pain. A physical therapist visited her right after breakfast and helped her sit up, and then stand on both legs. Mabel's arms were not strong enough to use crutches, so the physical therapist gave her a walker she could lean on. The physical therapist helped her walk 10 feet to the bathroom and then back to bed. The physical therapist visited Mabel every day for the next week while she was in the hospital, and each day helped her walk farther. By the end of the week, Mabel could walk slowly down the hall 50 feet.

Mabel was transferred to a rehabilitation center where she stayed for 2 more weeks. She participated in physical therapy sessions twice a day, during which she worked on leg strength, balance, and flexibility. By the time she was discharged to go home, Mabel could walk 1,000 feet, get in and out of the shower, and stand up long enough to cook a meal.

Mabel's neighbor drove her 3 times a week to her physical therapy sessions at a nearby clinic, for 3 more months. She regained the ability to climb stairs, walk her dog for 10 minutes, vacuum her house slowly, and even start driving short distances. After 4 months, Mabel was discharged from physical therapy and started going to her gym around the corner to continue independently exercising, well on her way to rejoining her pals in spin class.

What Kind of Physical Therapist Do I Need?

All physical therapists are prepared through education and experience to treat femur fractures. However, you may want to consider:

- A physical therapist who is experienced in treating people after femur fractures. Some physical therapists have a practice with an orthopedic focus.
- A physical therapist who is a board-certified orthopedic clinical specialist. This therapist has advanced knowledge, experience, and skills that may apply to your condition.

You can find physical therapists who have these and other credentials by using Find a PT, the online tool built by the American Physical Therapy Association [www.APTA.org] to help you search for physical therapists with specific clinical expertise in your geographic area.

General tips when you're looking for a physical therapist (or any other health care provider):

- Get recommendations from family and friends or from other health care providers.
- When you contact a physical therapy clinic for an appointment, ask about the physical therapists' experience in helping people who have femur fractures.
- During your first visit with the physical therapist, be prepared to describe your symptoms in as much detail as possible, and say what makes your symptoms worse**.**

Further Reading

The American Physical Therapy Association (APTA) believes that consumers should have access to information that could help them make health care decisions and also prepare them for their visit with their health care provider.

The following articles provide some of the best scientific evidence related to physical therapy treatment of a femur fracture. The articles report recent research and give an overview of the standards of practice both in the United States and internationally. The article titles are linked either to a PubMed* abstract of the article or to free full text, so that you can read it or print out a copy to bring with you to your health care provider.

Auais MA, Eilayyan O, Mayo NE. Extended exercise rehabilitation after hip fracture improves patients' physical function: a systematic review and meta-analysis. Phys Ther. 2012;92:1437–1451. Article Summary on PubMed.

Laflamme GY, Rouleau DM, Leduc S, et al. The Timed Up and Go test is an early predictor of functional outcome after hemiarthroplasty for femoral neck fracture. J Bone Joint Surg Am. 2012;94:1175–1179. Article Summary on PubMed.

Beaupre LA, Jones CA, Johnston DW, et al. Recovery of function following a hip fracture in geriatric ambulatory persons living in nursing homes: prospective cohort study. J Am Geriatr Soc. 2012;60:1268–1273. Article Summary on PubMed.

Kneiss JA, Houck JR, Bukata SV, Puzas JE. Influence of upper extremity assistance on lower extremity force application symmetry in individuals post-hip fracture during the sit-to-stand task. J Orthop Sports Phys Ther. 2012;42:474–481. Free Article.

Hung WW, Egol KA, Zuckerman JD, Siu AL. Hip fracture management: tailoring care for the older patient. JAMA. 2012;307:2185–2194. “http://www.ncbi.nlm.nih.gov/pubmed/22618926”>Article Summary on PubMed.

Pfeifer R, Zelle BA, Kobbe P, et al. Impact of isolated acetabular and lower extremity fractures on long-term outcome. J Trauma Acute Care Surg. 2012;72:467–472. Article Summary on PubMed.

Sipilä S, Salpakoski A, Edgren J, et al. Promoting mobility after hip fracture (ProMo): study protocol and selected baseline results of a year-long randomized controlled trial among community-dwelling older people. BMC Musculoskelet Disord. 2011;12:277. Free Article.

Hayes WC, Myers ER, Morris JN, et al. Impact near the hip dominates fracture risk in elderly nursing home residents who fall. Calcif Tissue Int. 1993;52:192–198. Article Summary Not Available.

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