

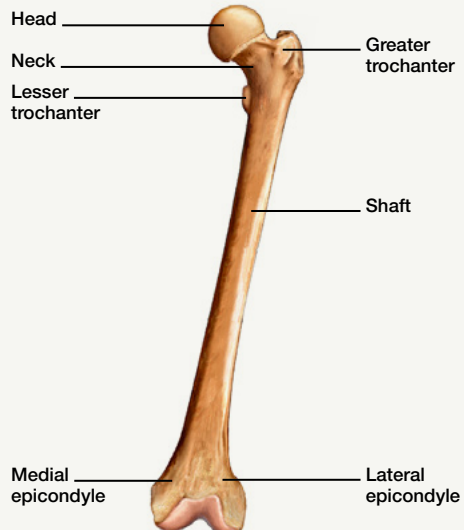


# Hip Spica Cast for Femur Fracture Management

## A GUIDE FOR PARENTS

The femur is the longest bone in the body. It begins at the hip joint and ends at the knee. A femur fracture is typically sustained from high-energy impact such as a motor vehicle collision, falls from playground equipment, falls from furniture or resulting from a twisting mechanism. Children who have sustained a femur fracture are hospitalized on the Surgical/Trauma Unit in order to receive appropriate medical, nursing and rehabilitation care.

### FEMUR (thigh bone)



# FEMUR FRACTURE MANAGEMENT

The pediatric Orthopedic Surgeon will assess your child in order to determine the optimal treatment method. Treatment goals include: achieving proper bone realignment, rapid healing, and the return to normal daily activities. The treatment method chosen is primarily based on the child's age but also taken into consideration are: fracture type, location and other injuries sustained if applicable. Prior to the surgery, your child may be placed in skin traction. This will ensure the bone is in an optimal healing position until it is surgically repaired. Occasionally, traction may be used for a longer period of time. The surgeon will determine if this management is needed based on the specific fracture type and/or location.

## HIP SPICA CAST

A hip spica is a large cast which extends from the mid-chest down to the ankle of the broken leg. It also covers the other leg slightly above the knee. A bar may be placed between the legs in order to help reinforce the cast and prevent breakage. An area around the groin is left open in order to facilitate toileting.

The cast is typically made of fiberglass however in some cases a plaster cast is applied as per the treating physician.

Once applied a fiberglass cast dries within a few hours however it may take up to 48 hours for a plaster cast to dry completely.

During the cast drying period, it is important that the cast remains uncovered. In order to expedite the drying process, turn your child frequently onto his stomach and/or side.



## CARE AT HOME

Throughout your child's hospitalization, the Trauma Coordinator/Nurse/Physiotherapist will help you prepare for your child's discharge home. Your child will be discharged when deemed medically appropriate and when his safety and comfort at home is assured.

### Cast Care

- Keep the cast clean and dry.
- Never submerge the cast in water.
- Never put anything into the cast.
- Do not use lotion or powder around the edges of the cast. This will soften the cast and irritate the surrounding skin.
- Inspect the cast daily for cracks and/or softness. If the child is able to move his/her joints the cast requires repair.
- Waterproof plastic tape will be applied to the cast surrounding the edges to help prevent the cast from being soiled or disintegrating. Replace the tape as needed.

### Circulation

Verify the blood flow circulation of the casted legs:

- Color – your child's feet and toes should remain their normal skin color.
- Warmth – your child's feet and toes should feel warm to the touch.
- Sensation – your child should be able to feel you touching his feet and toes.
- Movement – your child should be able to move his feet and toes.

Verify the circulation every four hours for the first 24 hours, then twice daily for the remainder of the time.

### Pain, Spasms and Itchiness

Children may experience pain, discomfort, spasms, and/or itchiness following application of the hip spica cast.

You will be provided with a prescription for pain medication. Give the medication as prescribed and instructed by the doctor and/or nurse.

It is strongly recommended that you give the medication on a regular basis for the first 24-48 hours. This will help ease your child's pain and/or discomfort.

- Spasms: The thigh muscles may suddenly contract causing the leg or body to "jump" when your child is lying down and/or sleeping. Spasms may be painful and can often startle children. Provide appropriate pain relief medication as prescribed and reassure your child. Spasms are a common side effect following a femur fracture. Spasms most often occur in the first 24-72 hours post injury and then usually subside.
- Itchiness is typically caused by wound healing and/or moisture on the skin. Medication can help to reduce itching and is available over the counter without a prescription. Using a hair dryer on the cool setting, blow air into the opening of the cast.

## **Bathing**

- Give your child a sponge bath daily. Be sure to avoid getting the cast wet.
- Verify beneath the edges of the cast for signs of skin irritation, redness, blistering, open areas or pressure sores daily.
- Do not use anything inside the cast to scratch the skin as it may cause skin irritation and infection.
- Do not use powders, lotions or oils beneath the cast or around its edges. It will soften the skin and may increase risk of skin irritation. To facilitate shampooing hair, place your child on a surface equivalent to the height of the sink. A spray attachment may also be fitted on the tap or simply use a cup to rinse hair.

## **Clothing**

A hip spica cast can be bulky therefore wearing larger clothing is necessary. Loose clothing such as sweatpants and a sweatshirt is recommended.

Socks or booties should be worn to keep feet warm.

## **Diapering and Toileting**

Proper positioning of the diaper will help keep the cast clean and dry. Keep your child in a slightly upright position in order to allow urine and stool to drain away from the cast.

## **Diapering for Infants & Toddlers:**

- Use disposable diapers only. Tuck the edges of the diaper inside the edges of the cast as instructed by the nurse during your hospitalization.
- A sanitary napkin, incontinence pad or cotton balls can be placed inside the diaper for extra absorption.
- Tuck in a smaller than usual sized diaper inside the cast and put on a larger diaper over the cast.
- Frequent and regular verifications must be made (at least every 2 hours during the day and every 4 hours during the night) to ensure that the pad/diaper is as dry as possible. Change the pad/diaper as soon as it is either wet and/or soiled. This will help to prevent skin irritation and soiling of the cast.

## **Bedpan and Urinal use in Older Children:**

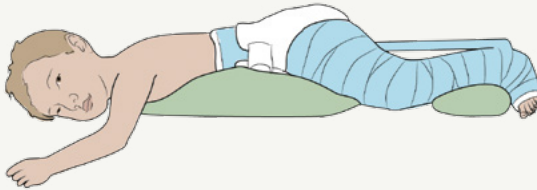
- Turn your child onto his side and place the bedpan under the buttocks.
- Turn your child back onto the bedpan. Ensure that the bedpan is properly positioned by verifying its position between your child's thighs. Place a cloth or a piece of toilet paper on the back of the bedpan to absorb moisture.
- Placing a piece of toilet paper in between the legs will also help absorb urine.
- Bedpans and urinals can be purchased at a pharmacy or medical supply store.

## POSITIONING

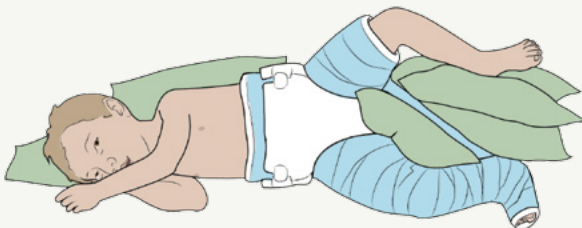
- Your child must be positioned properly and turned regularly to prevent pressure sores and to allow for maximum comfort.
- Prior to your child's discharge from the hospital, the Physiotherapist and/or Nurse will teach you how to change position and lift your child.
- Position your child with the head and upper body slightly elevated at all times.
- Reposition your child with pillows at least every three to four hours, including during the night.
- Use pillows, cushions or blankets to support the cast and make your child more comfortable.



**BACK** position pillows under the head, neck and legs. The heels should be free of pressure.



**STOMACH** place pillows under the stomach and make sure the toes are not touching the mattress by placing a pillow or rolled towel beneath the ankle of the cast leg.



**SIDE** place a pillow under the head, one behind the back to prevent rolling, and one between the legs to support the cast.

## Transport

- Children in a hip spica cast must be properly restrained while riding in a car.
- Babies typically fit in their car seat, however a specialized car seat or adapted transport is required for older children.
- Under no circumstance should your child travel in a vehicle with his seat reclined. The seat belt must remain in contact with your child's body in order to properly secure him.
- It is illegal to place your child in the back of a panel van or station sedan as there are no safety restraints. Doing so would pose a risk for the child and any other occupants of the vehicle in the event of sudden braking.
- The Physiotherapist will determine which travel option is optimal and will provide you with teaching if applicable.



A specialized travel car seat can be borrowed from the Trauma Program. Subject to availability.

## Mobility

- Your child can be placed in a stroller or wagon if the cast size permits. For a larger child, a reclining wheelchair with elevated leg rests is recommended.
- Use pillows, cushions or blankets to support the cast and make your child more comfortable.
- A playpen is a safe place to play. Your child can also be placed on a rug or blanket on the floor in a safe area of the room.
- Remember to use proper safety measures at all times: side rails on beds, seat belts, and safety straps appropriate for age and size.

### Use proper techniques when lifting your child:

- **Hold your child as close to you as possible.**
- **Bend your knees and keep your back straight.**
- **Lift by straightening out your legs.**
- **Do not twist your waist, instead pivot your legs.**

## School

- Homebound teaching should be arranged for school-aged children. Arrangements are made by the parents with the school. The Trauma Coordinator will provide the required medical certificate.

## Safety

- Never leave a young child alone.
- Always protect your child from the risk of rolling or falling by keeping him strapped in his wheelchair, chair, stroller and car seat.

## Diet

- Avoid introducing new fruit juices or foods that may potentially cause loose stool.
- If age appropriate, ensure your child drinks plenty of fluids and eats a variety of fruits, vegetables and whole grains to prevent constipation.
- Eat small meals frequently to help prevent stomach cramps or pain.
- Prior to eating, place a large towel, bib, or shirt over your child in order to prevent food and crumbs from being lodged in between the skin and cast.

## Activity

- Keeping your child busy and distracted is important, but remember, your child should never stand or walk while wearing the cast.
- Keep a variety of toys within your child's reach.
- Include your child in family activities, encourage friends to visit and take your child on outings, but always ensure that your child is properly secured.

## Common Reactions

- Given their active imaginations, children between 2-6 years old may perceive an injury as a form

of punishment for their actions. It is essential to reinforce to your child that the injury is not his fault and that the spica cast is not a form of punishment. Also explain this to any siblings. You may need to reassure your child often.

- Nightmares related to the incident are common.
- Establish a developmentally appropriate daily schedule to reinforce normal functioning and routine. When possible, seek help from within your family/friend network in order to schedule breaks for yourself. Six weeks is a long time and caring for your child during this time can be challenging.
- Your child may demonstrate signs of regression (Using a pacifier, "baby talk", bed wetting). Although this reaction is normal, continue to encourage and model developmentally appropriate behaviours.
- Your child may be more irritable during this time. Provide your child with opportunities to play through his frustration such as:
  - Clay/Play Doh
  - Throwing a ball
  - Finger painting
  - Foam Lego
  - Drawing
  - Playing musical instruments (drums, piano)
- Tapping, hitting and pounding through play will help your child release negative emotions as well as frustration in a safe manner and secure manner.

## PREVENTING COMPLICATIONS

COMPLICATION	PREVENTION
<b>Stomach pain Cramps</b>	<ul style="list-style-type: none"><li>• Avoid overeating</li><li>• Encourage frequent small meals</li></ul>
<b>Constipation</b>	<ul style="list-style-type: none"><li>• Encourage a well-balanced diet of vegetables and fiber</li><li>• Encourage fluid intake</li><li>• Give a mild laxative as directed by your doctor</li></ul>
<b>Itchiness Discomfort</b>	<ul style="list-style-type: none"><li>• Ensure your child is cool during periods of hot weather</li><li>• If itchiness is persistent, consult a doctor or pharmacist</li></ul>
<b>Sores beneath the cast</b>	<ul style="list-style-type: none"><li>• Do not let your child put anything inside the cast</li><li>• Keep the cast clean</li><li>• Do not pull out the padding</li></ul>
<b>Boredom Depression</b>	<ul style="list-style-type: none"><li>• Involve your child in family activities</li><li>• Encourage friends to visit</li><li>• Take your child on outings when possible</li></ul>

### I SHOULD CALL MY DOCTOR IF...

- Persistent numbness or tingling despite change of position
- Red or blue toes
- Swelling which increases or does not resolve
- Decreased mobility in the foot or toes
- Pain not relieved with medication or position change
- Persistent fever for more than one day
- Foul odour or drainage from the cast
- Severe, persistent itchiness
- Soft, cracked or broken cast
- Severe skin irritation or rash around cast edges
- An item is lodged in the cast



## CAST REMOVAL AND POST-CAST CARE

- Your child's cast will be removed once the bones have healed, typically six weeks following the injury. Important to note: Healing time is variable depending on several factors one of which being the child's age.
- The cast will be removed using an electric plaster saw. The saw functions using vibrations only therefore it cannot cut the skin. The saw is large and noisy, your child may become frightened. Talk with your child prior to coming to the hospital about getting the cast removed. Reassure your child that the saw cannot cut his skin.
- The Cast Technician will slide the saw on both sides of the body from the waist down to the end of the cast.
- The skin beneath the cast will likely be brown, dry, flaky and odorous due to the accumulation of dead skin. The skin will be very sensitive therefore gentle handling is necessary. Do not rub the affected area. The dry skin will gradually fall off. Wash the area with warm soapy water followed by applying a non-scented lotion. Repeat daily.
- Do not pick or pull at the loose skin. This will cause bleeding and can lead to an infection.
- In older children, there may be an unusual amount of hair present on the skin following cast removal. The extra hair will fall out on its own within several weeks.
- Younger children commonly return to walking by regressing to earlier developmental skills. They will move around the bed more freely, be it by crawling or using furniture as aids to lift themselves up and to move around until they feel safe (cruising). Older children will gain confidence slowly. Do not worry they will gradually return to their normal walking pattern.
- If medically indicated, your child will be seen by a Physiotherapist in the Orthopedic Clinic. You will be given the necessary guidance and follow-up as required.
- Once the cast has been removed, follow your doctor's instructions regarding return to physical activity.

## **IMPORTANT CONTACT INFORMATION**

### **Surgical/Trauma Unit**

Available at all times

514-412-4400, extension 22433

### **Trauma**

Monday to Friday – 8 am to 4 pm

514-412-4400, extension 23310

### **Pediatric Orthopedic Clinic**

Monday to Friday – 8 am to 4 pm

514-412-4265

### **Physiotherapy Department**

Monday to Friday – 8:30 am to 4 pm

514-412-4407