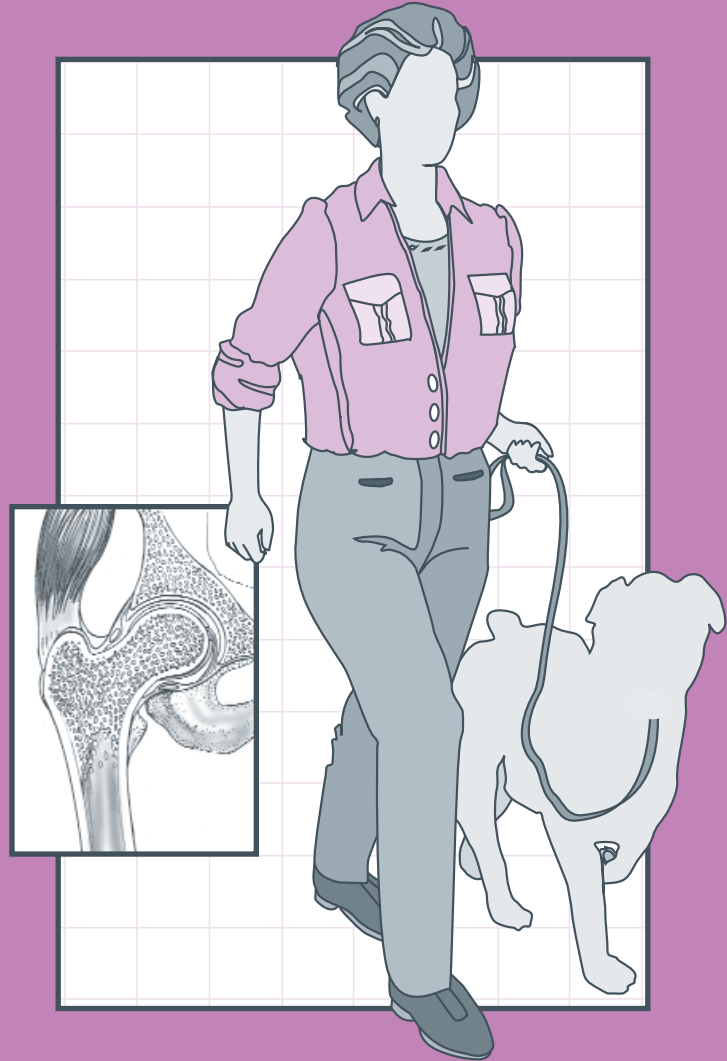


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*Taking Care Of Your*

# *HIP*

*A Physical Therapist's Perspective*



*American Physical Therapy Association*

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# *Taking Care Of Your Hip*

**C**ompared to such complex areas of the body as the back and the knee, the hip region is a model of straightforward sturdiness. It takes great force to seriously damage a healthy hip, and the large, strong muscles of the thighs and buttocks (which help support and move the hips and knees) are usually able to withstand more than their share of abuse. Sports-related injuries and problems do occur, however, particularly in women runners, and there are problems specific to young men and pregnant women. Elderly people are subject to the most serious problems: life-threatening hip fractures that often are due to osteoporosis, the disease that causes brittle bones.

In this booklet you will learn:

- The basic anatomy of the hip;
- Common ailments of the hip region;
- Ways to reduce the risk of injury;
- Exercises to do at home; and
- Physical therapy treatments.

In addition, we will discuss some important information that is of special interest to people who have had a hip replacement or may have one in the future.

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## The Anatomy of the Hip and Pelvis

The hip is a ball-and-socket joint. This means that the round head of the **femur** (thigh bone) glides and rotates within the **acetabulum**, a deep, scooped-out cavity within the **pelvis**. The hip joint, like all joints in the body, also has a **synovial lining**, which produces small amounts of lubricating fluid to aid in the friction-free movement of the joint.

The pelvis itself is composed of two large, arching bones connected to the spinal column by the **sacrum**, a fusion of small vertebrae at the base of the spine.

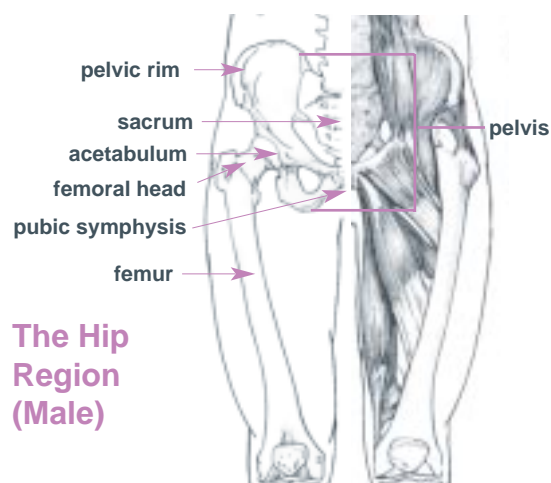
There are significant differences in the male and female pelvic structures. Among other differences, the female pelvis is wider (to accommodate child-bearing) and the bones are lighter and less bulky. The angle of the **pubic symphysis** is also much wider in the female pelvis.

The motion and support of the hip is controlled largely by the muscles of the thighs and lower back. The muscles of the groin, buttocks, and abdomen are also involved in the functioning and stability of the hips.

## What Can Go Wrong

The tightly constructed hip joint is exceptionally stable. While a handful of overuse and sports injuries are associated with the hip, the majority of hip problems are associated with aging, disease, and fractures in the elderly. A few growth-related hip problems are found mainly in male adolescents; women may also face pelvis- or hip-related difficulties during pregnancy.

Though not as common as in other areas of the body, the muscles and tendons of the hip and groin region are subject to wear and tear and overuse injuries. Runners and other athletes are



The Hip Region (Male)

especially vulnerable to stretching and microscopic tearing of the muscles (**muscle strain**) and tendons (**tendinitis**). The usual causes of muscle strain and tendinitis are inadequate warm-up and stretching before physical activity, or a burst of exercise after being sedentary. The results are minor aches, pains, and stiffness. This pain is often reported to physical therapists and physicians as pain in the groin or buttocks.

Women runners are more likely than men to suffer pain and muscle strain in the groin area. This is because the wider structure of the female pelvis demands that a woman turn her foot inward (*pronate*) more than a man does during the heel strike phase of the gait cycle—i.e., at the moment when her foot first hits the ground while she's running. This tendency to overpronate can overstretch the muscles that run across the hip, resulting in a pulled muscle. A pulled muscle is likely to be sore or painful, and it may limit mobility until the tissue heals.

A **hip pointer**—usually a football-related injury—is a blow to the rim of the pelvis that results in internal bleeding (bruising of the bone and soft tis-

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sue). In addition to causing swelling and nasty-looking bruises, hip pointers are very sore to the touch.

Sometimes the **iliotibial (IT) band**—the belt of fibrous tissue that runs along the outside of the hip to the knee—becomes too tight and rigid. When the knee is flexed, the IT band grates against the edge of the hip bone, causing an irritation known as **iliotibial band syndrome**.

The **sciatic nerve** is implicated in many cases of hip pain (as well as lower back and leg pain).

**Sciatica**—characterized by shooting or radiating pain from the lower back into the back of the legs—is caused by compression, pinching, or irritation of the sciatic nerve, the longest and widest nerve in the human body. The sciatic nerve starts in the lower back, runs underneath the buttock muscles, between the tiny rotator muscles of the hip (the **piriformis**), and down into the legs. Damage to the sciatic nerve can mimic hip pain or pain from a hip injury. One of the most common and easily corrected causes of sciatica in the hip is sitting on your wallet for an extended period. A physical therapist can identify the exact source of the pain.

The bursa sacs and other soft tissue around the hip can also become inflamed and painful. This is called **bursitis**. A common problem in the shoulder, knee, and elbow as well as the hip, bursitis may be caused by a repetitive motion injury or a traumatic blow. Bursitis can also be triggered when legs are of different lengths (a condition that is surprisingly common). Rarely visible to the naked eye, a difference in leg length can be enough to disturb the gait cycle—the sequence of motions that the body goes through while walking or running. When the gait cycle is altered, your body must compensate for the resulting imbalances, which puts abnormal stress and pressure

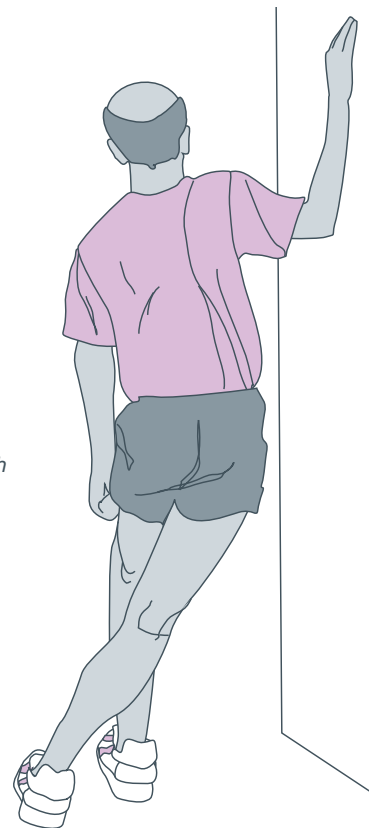
on the hip. In runners and athletes, this problem is greatly magnified because of the relentless repetition and force put on the hips and other soft tissue around the hip.

Adolescents, especially boys, sometimes suffer from a painful condition known as **Legg Calvé Perthe Disease (LCPD)**. LCPD is a flattening of the femoral head, limiting the range of motion of the hip within its socket. The cause of this disease is not known, although it's usually found in physically active young people. Pain is often felt in the inner thigh and knee, and may come and go. LCPD is usually treated with a combination of strengthening and stretching exercises and a spe-

## Iliotibial Band Stretch

*This exercise helps prevent IT band syndrome.*

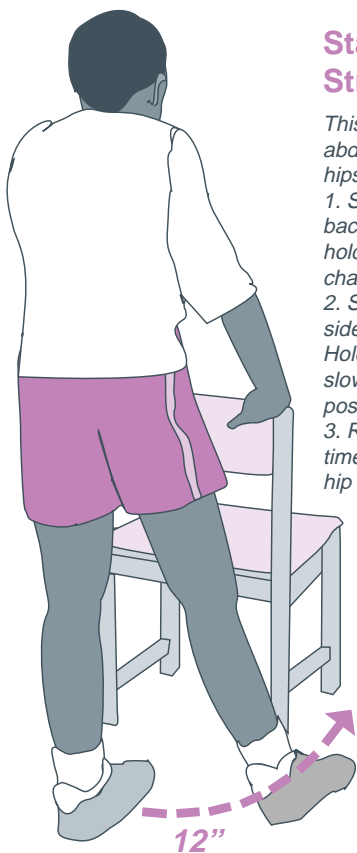
1. Position yourself as shown, with your right hand and forearm on the wall while keeping your arm straight.
2. Move your right foot back and so that it crosses behind the left leg.
3. Slowly lean into the wall and feel the stretch in your right iliotibial band and your calves. Hold for 30 seconds.
4. Switch to other side and repeat.



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cial brace known as the Scottish Rite Abduction Orthosis. Surgery to provide more hip range of motion and/or to realign the acetabulum (to provide improved coverage of the femoral head) is an option for advanced stages of LCPD.

Women who have musculoskeletal dysfunctions in the pelvis or lower back may find these conditions aggravated during pregnancy. Physical therapists may recommend strengthening exercises and/or gentle stretching exercises. These stretches should be static as opposed to ballistic stretches; ie, there should be no “bouncy” movements, and once you feel the full stretch you should hold the position for 30 seconds without moving. General



### Standing Hip Strengthener

*This exercise strengthens the abductor muscles around your hips.*

- 1. Stand behind a chair with back straight and head up, holding on to the back of the chair.*
- 2. Slowly move your leg out sideways about 12 inches. Hold for 10 seconds and slowly return to starting position.*
- 3. Repeat with each leg 10 times, or until the side of your hip is tired.*

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activities that are appropriate for pregnant women who want to avoid hip trouble include swimming (using the “flutter kick”), aquatic exercise, yoga, and bicycling.

A problem most often found in overweight males during the period of rapid growth in adolescence is a **slipped capital femoral epiphysis (SCFE)**. This occurs when the head of the femur becomes displaced from its normal relation to the femoral neck. Surgery is a must to correct this condition. Physical therapy during rehabilitation is necessary to assure a normal range of motion in the hip.

### Pain And Stiffness

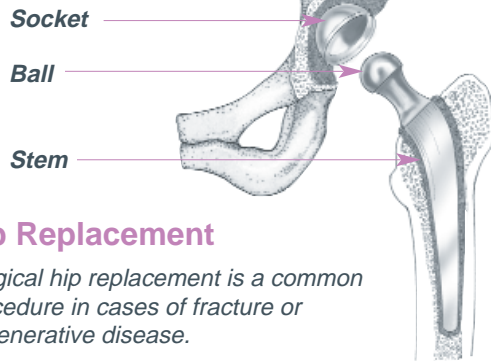
**S**tiffness in the hip is usually associated with pain during daily activities, such as when you get in and out of bed, put your socks on, get in and out of your car, etc. Pain that persists may signal a form of arthritis. Limping while walking is also a common hip complaint and may be related to stiffness and pain in the hip joint.

As we grow older, the articular cartilage that covers the ball and socket of the hip joint starts to roughen and deteriorate. This is **osteoarthritis**, and it’s a natural part of the aging process. In time, there may be nothing left to prevent direct bone-on-bone friction within the joint, which can result in pain with movement and weight-bearing activities.

A break in the bone just below the head of the femur (where it fits into the hip socket) is called a **hip fracture**. Hip fractures in younger people are rare and tend to be caused by falls, car accidents, and sports mishaps. A hip fracture should be considered a medical emergency that usually requires surgery.

A **stress fracture** at the hip may be more subtle. Sometimes it’s a hairline crack in the femur and

## Hip Prosthesis



## Hip Replacement

*Surgical hip replacement is a common procedure in cases of fracture or degenerative disease.*

may not penetrate the entire bone. A stress fracture is brought on by repetitive motion and overuse. Stress fractures are often misdiagnosed as muscle strain or tendinitis. Without proper treatment, the fracture may not heal.

A complication of a hip fracture or dislocation is **avascular necrosis**. In this case, blood circulation to the head of the femur is cut off and the bone dies. Avascular necrosis also may result from autoimmune diseases such as lupus and sickle cell anemia. In addition, the effects of alcoholism and prolonged steroid use can contribute to this condition.

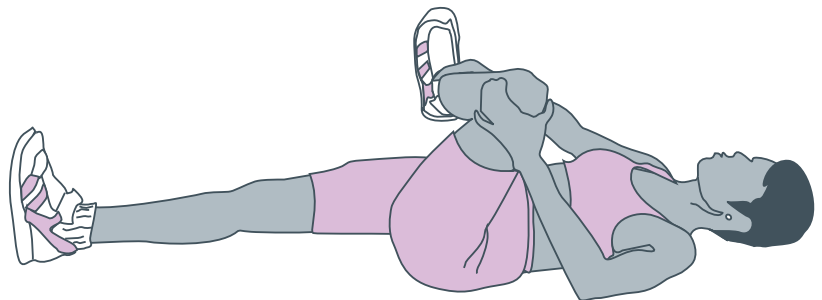
For elderly people—especially those with **osteoporosis**—broken hips due to falls can have disastrous consequences. Osteoporosis is a disease that makes bones weak, porous, brittle, and prone to fracture. The causes of osteoporosis involve hormonal, genetic, and lifestyle factors. The National Osteoporosis Foundation estimates that one out of every two women and one out of every eight men over age 50 has had an osteoporosis-related frac-

ture. Many of these fractures are broken hips, while others are mostly wrist and vertebral fractures. What makes a hip fracture so dangerous to an elderly person is that it often involves major surgery and a long recuperation period. The effects of osteoporosis can be minimized by starting in childhood or the early teens to strengthen the bones through diet, exercise, and a healthy lifestyle. Consumption of adequate calcium and other minerals that the body needs to maintain bone mass is essential, as is regular weight-bearing exercise. Smoking, heavy drinking, and use of cortisone-type medications can also predispose a patient toward osteoporosis. But whatever your age and health, modifying your diet and exercise habits (under the guidance of your physician and physical therapist) can lessen the chance of broken hip due to brittle bones. And if you already suffer from osteoporosis, your physical therapist can instruct you in special balance and posture exercises designed to make a fall less likely.

## Sideways Hip Stretch

*This exercise is for stretching the hip and buttock muscles.*

1. Lie on your back. Keep your right leg straight on the floor.
2. Grasp your left leg at the ankle and the knee as shown, and gently move it toward your shoulder. Let the hip rotate.
3. Hold the position for 15-30 seconds and feel the stretch.
4. Repeat on other side.



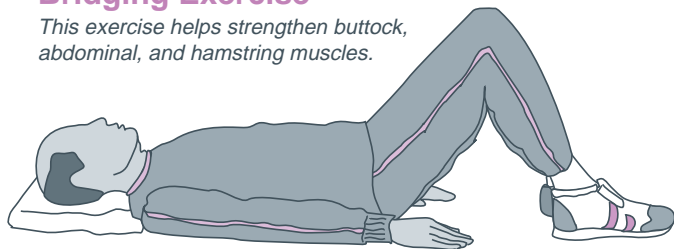
## Treating Your Hip Right

For people who are middle-aged and younger, the hip usually requires only moderate conditioning exercises to keep it in shape. Major trauma is rare, and repetitive motion injuries usually are confined to serious runners and other athletes. For older people, however, changes in the hip due to aging or disease demand awareness of what can be done to prevent potential injuries.

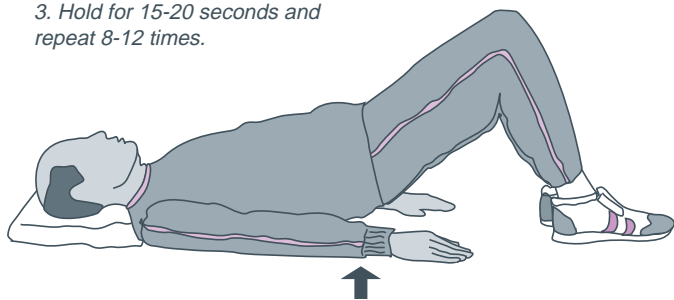
Stretching and strengthening exercises such as the ones in this booklet should be part of your regular exercise routine unless you have a special health problem. The hip region is affected positively by exercises for the thighs, lower back, groin, buttocks, and abdominal muscles. You may find that exercises that are already in your repertoire have a “bonus” benefit as hip conditioners.

## Bridging Exercise

*This exercise helps strengthen buttock, abdominal, and hamstring muscles.*



1. Lie on your back, with your knees bent and your feet flat on the floor.
2. While tightening your abdominal and buttocks muscles, lift your pelvis slightly upward until it's in a straight line with your knees.
3. Hold for 15-20 seconds and repeat 8-12 times.



## For Runners And Other Athletes

**R**unners and other athletes need to be especially cautious and sophisticated in their approach to hip pain or dysfunction. Persistent or chronic pain in the hip region warrants special attention. Ignore the urge to “run through” the pain; pain is a warning signal to stop what you’re doing, even if the discomfort is minor. See your physical therapist or physician and find out what’s really going on: although you may just be experiencing muscle strain or tendinitis, there’s a small but real chance that you may have something more serious.

The following types of pain may indicate serious problems, and warrant immediate attention from your physical therapist or physician:

- Groin pain
- Progressive loss of motion in the hip
- Buttock pain that worsens when you walk
- Hip pain in people with circulatory problems

Older people are most at risk for osteoarthritis, which may cause pain and stiffness. Unfortunately there’s no way to predict or prevent the onset of this condition. But maintaining flexibility and range of motion through exercise is a top priority, and your physical therapist is well-equipped to design a program of exercise especially for your needs.

Here are some tips for people with hip problems:

- If you use a cane, use it on the side opposite your problem hip to take the weight off the affected area. Your elbow should be nearly straight when you hold the cane.
- Wear shoes with thick soles to absorb



shock and weight on the hip;

- If you have osteoporosis or arthritis, talk to your physical therapist about making your home safer and avoiding falls.

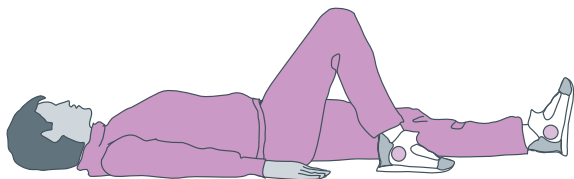
### How Physical Therapy Can Help

**Y**ou may find yourself in a physical therapist's care for rehabilitation after hip surgery, or for a condition related to a lack of balance, poor posture, or pain in the hip joint. Whatever the reason, your physical therapist will start by taking a detailed history and evaluating your condition. Related conditions such as osteoarthritis, inflammatory arthritis, and osteoporosis are assessed during this initial phase.

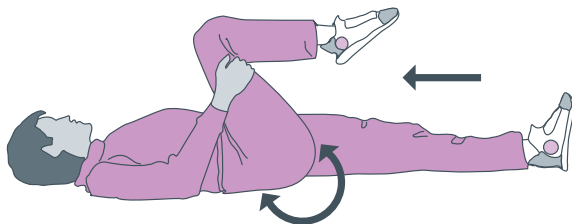
Your physical therapist may then proceed to a "hands-on" evaluation of your condition. He or

### Knees-To-Chest Exercise

*This movement strengthens the abdominal muscles while improving the flexibility of your hips, back, and neck.*



1. Lie on the floor with your left leg straight and your right foot flat on the floor. Keep your chin down toward your chest, with your head flat. While grasping behind your right knee, bring your right leg toward your chest.
2. Hold for 30 seconds.
3. Switch legs and repeat.



### Cycling For Healthy Hips

**F**or many people, cycling is a great way to keep their hips in shape. Whether you choose to ride outside or to work out on a stationary bike, cycling helps maintain muscle tone and fluid joint movement without undue shock and pressure on the joint. (If you have an existing hip injury or condition, be sure to get your physical therapist's approval before exercising.)

she may assess your balance, gait, posture, and range of motion. Your physical therapist may also perform tests to assess the strength, sensation, and blood circulation in your hip region and lower limbs.

Physical therapists may choose from an array of interventions, including exercises for stability, balance, posture, flexibility, coordination, strength, and restoration of range of motion. You may also benefit from hip mobilization, massage, electrical stimulation, ultrasound, or the application of heat or cold. Your physical therapist will custom-design a program just for you.

Your physical therapist will also want to make sure that your home environment is safe and efficiently laid out, especially if you have limited mobility. There are many techniques and "tricks" that can make life much easier for someone recovering from a hip injury or condition. Your physical therapist wants you to return to your normal activity as quickly as possible, with the knowledge you need to prevent reinjury or disability.



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## Tai-Chi

*This ancient Chinese martial art has become very popular in the West in recent years, and classes are often available through community colleges, local recreation centers, YMCAs, and health clubs. People of all ages—including seniors—often find Tai-Chi to be helpful in promoting posture, stability, and balance...all traits associated with maintaining healthy hips. An added bonus is that Tai-Chi may add to your sense of emotional well-being.*



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## About APTA

**T**he American Physical Therapy Association is a national professional organization representing more than 70,000 physical therapists, physical therapist assistants, and students throughout the United States.

Physical therapists are vital members of the multi-disciplinary health care team. They provide treatment and can refer clients to other health care specialists. APTA serves its members and the public by promoting understanding of the physical therapist's increasing role in the health care system. APTA also promotes excellence in the field with advancements in physical therapy education, research, and practice.

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## *Other APTA Brochures*

- Fitness: A Way Of Life
- For The Young At Heart: Exercise Tips  
For Seniors
- For Women Of All Ages
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- Taking Care Of Your Hand, Wrist, And Elbow
- Taking Care Of Your Knees
- Taking Care Of Your Shoulder
- The Secret Of Good Posture
- What Young People & Their Parents Need To  
Know About Scoliosis
- What You Need To Know About Carpal  
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