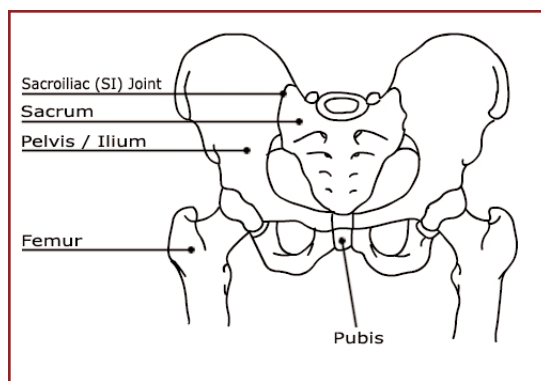


## Sacroiliac Pain: A Physical Therapy Perspective

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**M**ost people experience low back pain at some point in their life. There are many possible causes of back pain, and it is important to find the correct source so that proper treatment can occur successfully. One common cause of low back pain in post-polio survivors is sacroiliac dysfunction.

The sacroiliac (SI) joints are located on each side of the lower back at the top of the buttocks, connecting the sacrum (base of the spine) to the ilium (hips/pelvis). The SI joint is a true joint, connected with cartilage and strong ligaments to support the structure. It has very limited mobility and functions to provide stability between the spine and pelvis, to distribute the load from the legs to the torso, and to provide shock absorption for the spine. There are many muscles in the trunk and legs that affect the SI joint and can contribute to pain in that region.



Sacroiliac pain is often one-sided, caused by either hypermobility or instability (too much movement), or hypomobility or fixation (too little movement). The pain may be of sudden or gradual onset and may radiate from the low back to the buttock and back

of the thigh. The pain can be described as sharp and stabbing or as a dull ache. Twisting, extended sitting or standing with a sway back can aggravate the pain. SI joint dysfunction can result in stiffness with getting out of a chair or bed. The pain often results in limitations with functional activities such as turning in bed, donning shoes and socks, getting legs into a car, and driving long distances.

### The most common causes of sacroiliac joint dysfunction

explain why it can be a source of back pain in post-polio individuals. These causes include, but are not limited to, the following:

- Leg length discrepancy or legs of unequal length often seen in polio survivors can cause asymmetric forces on the pelvis resulting in pain, usually in the shorter limb.
- Muscle imbalance in the legs or unilateral weakness of lower extremity muscles affected by polio can lead to abnormal transfer of stress and load through the torso in an asymmetric posture, increasing stress on one or the other side of the pelvis.
- Poor trunk and abdominal muscle control can lead to increased stress on the ligaments, causing laxity over time and sacroiliac joint dysfunction.

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- Weight gain, especially around the area of the trunk, adds stress.
- Structural pelvic asymmetry is a result of the underdevelopment of the affected lower extremity and pelvic structure following polio. This can cause an abnormal transfer of load through the torso that can lead to SI joint dysfunction.
- Scoliosis (curvature of the spine) can cause asymmetrical movement, leading to an abnormal load transfer and SI joint dysfunction.
- An altered gait pattern can increase the stress on the SI joint.
- Poor postural awareness and habits in sitting, standing and daily activities can load the sacrum incorrectly.
- Trauma or injury from a fall onto the buttocks, a blow to the side of the pelvis, or a motor vehicle accident can strain the ligaments around the SI joint, creating instability. Most polio survivors experience falls, often leading to traumatic SI joint dysfunction.

Women are at greater risk later in life for developing SI joint problems, especially when coupled with the above-mentioned causes. Anatomically, women have a wider pelvis and the effect of the hormones that are released to relax the pelvis for child-birth may cause them to develop “hypermobility” SI joints. This eventually can lead to wear-and-tear arthritis.

While most sacroiliac pain comes from benign causes such as arthritis, the pain can also be caused by inflammatory disease, infection, stress fractures, irritable bowel syndrome and malignancy. A proper medical examination and an accurate diagnosis is critical to successful treatment.

**Treatment of sacroiliac pain** is usually multifaceted and individualized based on the cause of the pain. The physician may prescribe medication to control pain and inflammation.

Physical therapy is often prescribed by physicians with therapists receiving referrals from physiatrists (physical medicine and rehabilitation specialists), rheumatologists (consulted for inflammatory disease), osteopathic physicians or orthopedists. It is important that the treating physician and physical therapist are aware of the patient’s history of polio as this affects the treatment plan.

Physical therapy treatment for SI joint dysfunction depends on the cause of the pain and focuses on trying to restore normal motion in the joint. *Two completely different treatment options—manipulation or stabilization—are considered.*

In some cases, it appears that the joint is “too stiff” or “locked” and needs to be more mobile to function

### About the Authors

**Cynthia Henley, PT** (cynthiahenley@bellsouth.net) has more than 25 years experience as a physical therapist and specializes in therapeutic treatment of musculoskeletal and neurological disorders and designing physical restoration programs for polio survivors. Henley began working with polio survivors in 1996 with Carol Vandenaeker, MD, and later with Andrew Sherman, MD, at the University of Miami Post-Polio Clinic. In addition to providing lectures to support groups on exercise guidelines and fall prevention, Henley currently offers physical therapy including home evaluations, consultations, exercise programs, aquatic exercise and education to post-polio survivors in the Miami, Florida, area.

**Kathryn Wollam, PT** (katwollampt@yahoo.com) is a guest lecturer at the University of Miami Graduate School of Physical Therapy, and also lectures on post-polio syndrome to healthcare professionals and support groups. With over 20 years’ experience, she performs monthly evaluations at the University of Miami Post-Polio Clinic with Andrew L. Sherman, MD. Wollam is an independent practitioner in Broward County (Florida), performing physical therapy evaluations, home treatments and individualized fitness programs, including land-based and aquatic exercises for polio survivors.

#### Resources:

Sacroiliac Joint Syndrome

[www.spineuniversity.com/public/spinesub.asp?id=89](http://www.spineuniversity.com/public/spinesub.asp?id=89)

Sacroiliac Joint Inflammation

[www.sportsinjuryclinic.net/cybertherapist/back/buttocks/sacroiliac.htm](http://www.sportsinjuryclinic.net/cybertherapist/back/buttocks/sacroiliac.htm)

*Sacroiliac Joint Injury* by Andrew L. Sherman, MD

[www.emedicine.com/sports/topic116.htm](http://www.emedicine.com/sports/topic116.htm)

correctly. In these cases, the pain seems to decrease in response to mobilization of the joint. Mobilization of the joint includes stretching exercises and manual therapy. This type of therapy is directed to loosening up the joint ligaments, allowing the joint to move in a normal fashion.

Polio survivors more commonly experience the opposite problem. Long-standing laxity or biomechanical stress can be the source of arthritic changes in the SI joint. Exercises that are directed by the physical therapist will reduce the mobility of the joint by stabilizing the region, thereby decreasing the pain. Stabilization of the joint occurs by muscle strengthening and pelvic stabilization exercises that reduce movement in the joint. A sacroiliac belt that wraps around the hips to squeeze the SI joints together can help to accomplish this stabilization.

Specifically, in polio survivors, the therapist must attend to the cause of the SI joint dysfunction. A wedge seat is a simple solution to correct the inequality in the pelvis that contributes to the SI joint pain. A shoe lift compensates for a leg length discrepancy. Weight gain should be addressed with diet and exercise. Altered gait patterns are modified with bracing and assistive devices. Poor postural habits can be corrected with postural retraining. Fall prevention is essential to reduce the risk of traumatic SI joint injury.

Pain can then be addressed in physical therapy with modalities such as ultrasound, heat and cold. Manual techniques, such as deep tissue massage and myofascial release, decrease the tightness of the muscles surrounding the SI joint. Stretching of the tight musculature in the neutral spine posi-

tion is often helpful. Activities and postures that aggravate the condition should be avoided.

As the condition becomes less acute, physical therapy is beneficial to strengthen the weak muscles. Muscles affected by polio that are graded less than 3/5 on a manual muscle test cannot be strengthened and stabilization with a belt should be considered. The therapist should follow the exercise guidelines for strengthening a polio survivor. Muscle cramping or twitching following the PT session is an indication of overuse.

It is best to start strengthening exercises slowly, progressively building the resistance and repetitions. Isometric exercises and trunk stabilization techniques are useful. Aquatic exercises are a valuable tool in reconditioning and balance retraining. Patient education is a priority and a commitment to a home exercise program is essential. Some less traditional therapies such as Pilates, t'ai chi and yoga can improve core stability.

If the pain does not respond to PT and medications, other treatment options exist. A qualified physician can perform a cortisone-based injection into the joint under an x-ray fluoroscopy screen. Alternative treatments such as prolotherapy,\* acupuncture or neuromuscular massage can help in chronic cases as well. Surgery is not usually helpful in cases of chronic SI pain.

Sacroiliac pain in polio survivors is often due to the long-term biomechanical stresses placed on the body. Successful management is achieved with proper evaluation of the cause, medical management and physical therapy, and active involvement of polio survivors in the treatment plan. ▲

\* Prolotherapy is a non-surgical injection procedure used to treat connective tissue injuries of the musculoskeletal system that have not healed by either rest or conservative therapy in order to relieve back pain. The injections promote a healing response in small tears and weakened tissue, with the goal of alleviating back pain and improving function. Prolotherapy is also referred to as sclerosant therapy, sclerotherapy, regenerative injection therapy, "proliferative" injection therapy and non-surgical ligament reconstruction.