

# Orthotic Intervention for Patients with Post- Polio Syndrome

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orthotist /or-thot-ist/ (or-thot´ist): a person skilled in orthotics and practicing its application in individual cases.

Orthotists and polio survivors have worked together for years. Polio survivors are a very diverse and complex group. Within the past two decades, there has been an influx of post-polio patients presenting with Post-Polio Syndrome. Orthotists must be sensitive to these patient's unique situation and desires. Some polio survivors have used orthoses for years. Their orthoses have become a part of them and any changes to the style or design of their orthosis is not seen as a necessity. Others have never worn an orthosis and the idea of using one now after years of independence is extremely frustrating.

An orthotist must assess a number of things when treating patients with PPS, such as a patient's fall history and previous orthosis use. When PPS begins there are typically new symptoms of pain, fatigue, and weakness, which all must be considered before recommending an orthosis to a patient. The proper orthosis may counter some or all of these new symptoms. If there is an increase in a patient's pain level, it is important to determine if the level of pain is increased while the patient is weight bearing. Perhaps a joint is misaligned due to overuse or years of compensation. An orthosis may be helpful to hold a patient's lower extremity in proper alignment, thereby decreasing the pain level.

Issues of fatigue and weakness can often be addressed by helping a patient achieve a more efficient gait. Compensatory movements require the body to work harder when trying to get from A to B. An orthosis may assist weak muscles thereby eliminating the need for compensatory movements and allow a patient to walk further and faster.

If a patient is falling it is important to determine the reason. Perhaps the falls are a result of knee weakness or buckling. Or their toe is not always clearing the ground and they fall after they catch their toe. A full medical screening is necessary because there could be an underlying explanation for the falls and an orthosis may not be able to solve the problem.

If you are a candidate for an orthosis, there is good news. Technology has changed the field dramatically since the epidemic years of polio. The typical polio orthosis composed of metal and leather is still available, but it isn't the only option. Stronger and lighter weight orthoses have been developed, using thermoplastic and more recently carbon fiber braces. Different knee and ankle joints have been developed which allow an orthotist to isolate and target the desired muscle groups. By far the most exciting advancement in the field has been the use of the stance control orthosis (SCO). Previously, patients who had knee weakness and issues with their knees buckling were prescribed a standard locking knee, ankle and foot orthosis (KAFO), which would hold their knee in a locked position while they were walking. Patients wearing these braces would have gait deviations due to the significant compensatory movements required to ambulate. However, with the advancements in orthotic technology patients with isolated knee weakness can have the freedom to bend their knee when they are taking a step and only have their knee locked when bearing weight on their leg.

Currently, there are numerous types of stance control KAFOs. Depending on a patient's specific presentation will determine which orthosis to choose. Mechanical driven SCOs require patients to have certain levels of muscle strength and range of motion at the hip, knee, and ankle. Microprocessor driven SCOs require less ROM and muscle strength from the patients, but are often heavier and bulkier. It is important to see an orthotist who is familiar with all the options on the market.

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