

ORTHOTICS



Mary Dillon, age 9



Joan Devereil in callipers age 6

A lifelong journey for survivors of the polio virus

When polio struck, especially in the 1940s and 50s before vaccines were widely available, it often left children with lasting effects. This highly infectious virus attacked the nervous system, damaging the spinal cord and sometimes leading to partial or full paralysis. At the time, there wasn't much in the way of medical treatment beyond physiotherapy, supportive devices, and surgery.

Orthotics became part of many children's lives. Callipers, leg braces, back supports and other aids, all played a key role in their recovery. They allowed children more mobility and independence by stabilising weak joints and muscles, supporting limbs in standing and walking, and helping prevent deformities as bones grew.

However back then, orthotics were big, bulky devices made of steel and leather. They were often uncomfortable, but unquestionably the best solution when muscles were paralysed or weak.

Mary Dillon contracted polio in Bournemouth in 1949 when she was just one year old. The disease left her with paralysis in her left leg and significant weakness in her left arm. She was discharged from the hospital at age two, equipped with a full-length calliper and crutches to support her mobility.

As time went by and these children turned into teenagers and young adults, many stopped wearing their orthotics. After years of growing stronger, learning how to compensate for weak muscles, and navigating life with polio, they felt they no longer needed the support and could do without them.

It was a huge relief to discard this visible symbol of their disability. They'd overcome polio, and they felt accepted and more "normal". But deep down many knew they were giving up something that helped their body. They were torn, and this internal struggle often led to feelings of guilt, frustration, and even anger.

Decades later, many of those same polio survivors have found themselves having to return to using orthotics again and this has presented them with both physical and emotional challenges.

Mary was able to stop using her calliper at the age of 12, though she remained vulnerable to falls and had to take extra care. Despite this, she embraced life fully—eventually marrying and raising two wonderful children.

However, by the time she turned 50, Mary began to notice increasing weakness in her left leg. After suffering another serious fall, she reluctantly returned to using a full-length calliper for support.

NEEDING ORTHOTICS AGAIN

Polio survivors have had to return to orthotics, not because they didn't work - they did, but because for many the benefits of discontinuing braces haven't been permanent. Their bodies have changed, their compensatory strategies have caused other problems, and some of the longer-term effects of polio have begun to emerge.

In the UK, the British Polio Fellowship estimates at an absolute minimum 47,000 polio survivors remain and are experiencing secondary complications.

Some of the most common reasons polio survivors return to orthotics in later life include:

- **Post-Polio Syndrome (PPS):** This is a neurological condition that can affect a polio survivor years, even decades after the original polio infection. It brings new or worsening muscle weakness, fatigue, and pain, impacting on daily living.
- **Wear and tear:** The later effects of polio include muscle weakness which put more stress and strain on joints over time. For example, those early compensatory strategies, such as walking with a hyperextended knee or uneven weight distribution will have worked for a while but over time this level of wear and tear will cause arthritis and joint damage, especially in the knees, hips, and back.



Callipers



Full-length caliper

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- **Aging:** As a person gets older their muscle strength will naturally decrease, but this is even more pronounced in polio survivors. It can become harder for them to maintain balance, stand up, or walk without support.
- **Risk of falls and fractures:** Weakened muscles and joint instability increase the risk of falls. As a polio survivors' bones can be more fragile because of less weight-bearing activities, there can also be a heightened chance of any fall resulting in a fracture or broken bone.

FACING CHALLENGES

Adapting to orthotics after years of doing without them is incredibly hard for a polio survivor, especially emotionally. It can feel like a regression and understandably, they can feel defeated and frustrated their bodies aren't working the way they used to.

The decision to stop using orthotics, in many cases, was not so much about no longer needing them, but more about reclaiming independence. No orthotics meant fewer reminders of having a disability and fewer barriers to living a normal life.

CONCLUSION

The life of a polio survivor has always been one of resilience, adaptation, and



Mary Dillon today



adjustment. Orthotics have been an essential part of that life for many people, especially at the very start. Though many may have gone on to abandon braces when they were younger, aging, post-polio syndrome, and wear and tear on joints has often led to their return in later life.

Understanding this likely course of events is important, not just for orthotists and clinicians but for polio survivors themselves. Modern technologies and advancements need to be embraced in order for polio survivors to be better supported and helped to stay mobile and live independent, comfortable, and safe lives for as long as possible.

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