

My Search for a Better Polio Brace

Marny K. Eulberg, MD, Denver, Colorado

My search for a better brace began 4½ years ago. I had been using a below-knee brace that provided good control of my drop foot and also provided some knee control. I was using a single forearm crutch whenever walking more than one block (such as whenever making rounds at the hospital). But my knee was getting weaker and at times when walking my dog, it felt like my knee was going to buckle. I was not sure I'd make it back home.

I knew that the only option available with conventional bracing was a long leg brace locked at the knee. I was not excited about that possibility as I was not sure that I had enough hip flexor strength to lift the additional weight of a long leg brace all day. Also, I did not want my obvious limp to become even more exaggerated, and the idea of locking and unlocking the knee joint every time I wanted to sit down was daunting.

I learned that there are some companies that make knee joints that can lock during weight bearing and will automatically unlock when not weight bearing. I checked out some websites and it appeared that these knee joints were not available in Denver, or at least not through any of the vendors covered by my insurance.

One of my post-polio patients who lives in California had come back for a re-evaluation with an impressively improved gait after getting a new brace. Eileen suggested that I should get a brace made by the orthotists who had made hers. I knew that Eileen's pattern of muscle weakness was much different than mine so I was not sure this design would work for me. I decided to learn more.

Eileen has a dynamic triplanar short leg brace (Ankle Foot Orthosis or AFO) from DynamicBracingSolutions (DBS)

in San Diego. It is dynamic in that it is both rigid enough to provide for stability and flexible enough to provide for mobility. Conventional bracing controls/supports only in the front-to-back plane; the triplanar design provides control in side-to-side and rotational planes as well.

DBS suggests that a potential client send them a video that shows the client standing and walking, and then they will render an opinion whether they feel the DBS design(s) has(have) the potential to benefit that client. After I sent my video, DBS's reply was, "Yes, a DBS AFO can solve many of your gait problems, and we believe that you have the potential to have a nearly normal gait and walk without a cane or crutch."

I arranged to go to San Diego for a medical conference. While there I

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There are licensed DBS clinicians in Scottsdale, Arizona; Dallas-Ft. Worth, Texas; San Diego, California; and New Jersey (Ortho-Therapy) who follow the DBS design protocol that I can endorse.

For information, visit www.DynamicBracingSolutions.net or www.Ortho-Therapy.com, or call 619-972-3853 or email info@DynamicBracingSolutions.net

Marny K. Eulberg, MD,

is a polio survivor who has worn a brace for over 30 years. She is a family physician who founded a post-polio clinic in 1985 and has seen over 1,000 polio survivors. Eulberg was named “Colorado Family Physician of the Year” by the Colorado Academy of Family Physicians in July 2005.

Eulberg can be reached at Post-Polio Clinic, St. Anthony’s Family Medical Center West, Ground Floor East, 4231 West 16th Avenue, Denver, Colorado 80204; 303-899-5369 voicemail.

was evaluated by a DBS orthotist who told me that, in 90-95% of cases, a DBS AFO could adequately control the knee (prevent knee flexion from a weak or even absent quadriceps) and then a long leg brace would not be needed. I decided that the cost of the brace would be worth it *even* if it did nothing more than save me from wearing a long leg brace. So I was casted for an AFO and the design team spent hours analyzing the video of my gait and custom engineering a brace for me.

I flew back to San Diego about two months later for three days for fitting of the new brace and for training in balance exercises. I began to unlearn how I had walked for 54 years and to learn a new way to shift my weight over my polio-affected leg with each step and *to trust* that it would allow me to be stable as I advanced my other leg. After the first day, I could already feel how well my knee was supported.

The next phase—practicing, practicing and more practicing—was a test of my determination. I have been the medical director for a post-polio clinic for 20 years, so intellectually I understood a lot about gait, but knowing how walking should work and *doing it myself* were two very different things. The way I had walked nearly all my life seemed normal to me.

I was poor at monitoring my own body positions, so I worked with a physical therapist weekly to biweekly. To make the time for practice, I got up 30 minutes earlier than usual for nearly a year. It was frustrating, to put it mildly, as I practiced, or when I would get the assessments back from DBS after I had sent followup videos and be

told again and again, “You are showing improvement *but* you need to get your pelvis over further.” Finally after nearly two years, Marmaduke Loke, CPO, of DBS gave me the equivalent of an Olympian’s “perfect 10!”

I never thought I’d say I love a brace, but I love this brace. I would have been satisfied simply avoiding a long leg brace. In addition, I am walking with nearly normal gait and not using a cane or forearm crutch except when I might have to walk distances or on uneven terrain or when walking my rambunctious dog who could pull me over. I feel very stable when standing, such as when I lecture. In the past, I always leaned on the podium or sat on the edge of a table.

There are no straps or velcro to ruin nylon stockings, and the footplate makes up for the difference in my foot sizes so now I don’t have to buy split-size shoes.

An unexpected benefit was that I felt so much better about my appearance that I was motivated to lose 50 pounds which, of course, decreases the stress on my weakened leg muscles. Another interesting finding is that the strength of my hip and knee muscles has improved.

For me, the search for a better brace was successful—beyond my initial expectations. But it was not without significant time, money and lots and lots of work by the orthotists, my physical therapist and myself. ▲