

Compression Garments

Many people with neurological conditions or functional issues may not be able to sit up or walk on their own. That's why companies have created compression garments, such as the Snug CP Pressure Suit and the Body Splint, to increase mobility for people with disabilities.

People with cerebral palsy (CP), spinal cord or traumatic brain injuries may have problems with balance, leg positions, lower limb awareness, endurance or muscle extension, among other physical challenges. There are different compression garments available to help with these problems, including products from England's Gilbert and Mellish Limited and the Australian-based Second Skin. Both companies individually design each garment to meet each individual's postural and functional needs.

Gilbert and Mellish has a history in clothing and durable medical goods, such as garments for burns. They have adapted that technology to use cotton Lycra as the source material, giving users a tight, custom-fitted Snug CP Pressure Suit.

As a custom-made suit, the Snug CP Pressure Suit requires more than 40 different body measurements. Flesh colored and made of weighted material, the suit resembles a pair of connected "long johns." Ordinary clothing is worn over the suit.

Dr. Dabrowski's study

Dr. Edward Dabrowski, the chief of the Division of Physical Medicine and Rehabilitation Services for Children's Hospital of Michigan in Detroit and Rainbow's Pediatric Medical Director, conducted a controlled study comparing children using the Snug CP Pressure Suit with those who did not wear it.

Dabrowski examined nearly 40 children from both the United States and U.K. "We looked at these kids' GMFMs, which is a scaled measure of their gross motor function. We found [that when they used the suit] the GMFM change to be statistically significant," he said.

The report found that the quality of movement improved substantially. "It could make the difference between rolling and sitting, or sitting for a long period of time," Dabrowski said. "It is a very significant finding."

Dabrowski said that the Snug CP Pressure Suits would work well with kids with any disability, from cerebral palsy to a traumatic brain injury. "[The suit] seems to work a little bit better with kids with hypotonic trunks, low tone trunks, and either stiff or



variable toned limbs. It seems to work very nicely with kids with dystonia (kids who get stuck in certain postures) and ataxia. So it's actually quite impressive."

Not only were the results positive, but Dabrowski said that the children tested responded positively to the suits as well. The majority asked for the suits and said they were helpful. One of the participants, a young man Dabrowski has worked with since he was a little boy, sat up independently for the first time in his life, while wearing a Snug CP Pressure Suit.

The Body Splint

The Body Splint is similar to the Snug CP Pressure Suit. Requiring anywhere from 80 to 150 measurements depending on the type of Body Splint, Second Skin has been providing customized compression garments, mobility splints and dynamic splints for survivors with a broad range of diagnosis and disabilities since 1994. These garments are designed to assist and improve:

- balance
- hip and knee extension
- leg positioning e.g., reduced scissoring
- body and lower limb awareness
- endurance
- pelvic instability
- posture and biomechanics
- additional proximal (trunk) stability

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- motor skills
- shoulder girdle stability
- bilateral arm function

The Principle Specialist Occupational Therapist at Second Skin, Jenni Ballantyne, explained, "Second Skin individually prescribes Lyrca-based compression garments for patients with burns, neurological dysfunction, spinal injuries, acquired brain injury, cerebral palsy, tumors and more."

The Body Splints for TBI and SCI survivors require more design elements than those created for burns. They are much more prescriptive in the layers of fabric and directional lines of fabric. Additional structural elements, such as molded plastic components, are frequently incorporated. Each individual is prescribed a splint that reflects his or her very specific neurological and physical needs. Each suit is made to include targeted goals of the individual and his or her medical and therapy teams.

"The specific postural, biomechanical, tonal and/or sensory needs can be factored into the design components of the splint, maximizing the Body Splints' effectiveness for the wearer," Jenni explained.

Not everyone showed improvement in balance and mobility from wearing these garments, but the majority of wearers respond favorably to compression garments. ❖

About the Researcher

Dr. Edward Dabrowski, MD has a medical degree from Wayne State University School of Medicine. He is board-certified in physical medicine and rehabilitation. Dr. Dabrowski has extensive faculty and professional appointments. He currently serves as chief of the Division of Physical Medicine and Rehabilitation Services for Children's Hospital of Michigan and pediatric program medical director at Rainbow Rehabilitation Centers. In addition, Dr. Dabrowski is program director of the combined pediatric/PM&R residency program and codirector for the Muscular Dystrophy Association of Southeastern Michigan. Dr. Dabrowski specializes in pediatric traumatic brain injury, neuro-muscular conditions and spasticity.

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