

## HISTORY OF DEVELOPMENT

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In 1984, a four-year old girl with dystonic cerebral palsy developed subluxation of her left hip. She had been able to sit, stand and walk with support (albeit with scissoring). A fixed abduction brace was recommended to stabilize her hip, but her father was concerned about the negative side effects such a device could impart on "normal" function.

He researched medical literature published on use of hip orthotic devices, and concluded the "ideal" brace for his daughter must permit:

- Independent hip flexion
- Maximum abduction during hip flexion
- Minimum abduction - just enough to prevent scissoring during hip extension and weight-bearing
- Normal anatomical movement as the orthosis moves from minimum abduction with hip extension to maximum abduction with hip flexion

Based on the findings in available literature, the father concluded a device was required that:

- Would allow the child to pursue a more normal range of activities with reduced risk of hip dislocation
- Would further enhance acetabular modeling and development of the hip joint complex.

With this in mind, he set about to design his daughter a brace that uses the rotation of leg bars about an inclined pivot to achieve abduction which was continuously variable according to the degree of hip flexion. The result of this effort is the SWASH® (Sitting, Walking And Standing Hip) Orthosis.

The first commercial use of the SWASH® began in 1992. Since then, thousands of children and some adults worldwide with varying degrees of disabilities have been able to realize the functional and psychological benefits offered by the assistance of this innovative orthotic intervention.

### Primary development goals of the SWASH®

1. Increase abduction and stretch hip adductors to improve hip alignment
2. Prevent excessive adduction during sitting, standing and walking
3. Optimize sitting and standing posture
4. Achieve the above goals with an automatic transition from neutral (walking, standing) to abduction (sitting)