

HAPPY STRAP™



Hypotonia in Children

Hypotonia is a state of low muscle tone often involving reduced muscle strength.





What is Hypotonia?

Hypotonia is not a specific medical disorder, but a potential manifestation of many different diseases and disorders that affect motor nerve control by the brain or muscle strength (see etiology section).

Recognising hypotonia, even in early infancy, is usually relatively straightforward, but diagnosing the underlying cause can be difficult and often unsuccessful.

The long-term effect of hypotonia on a child's development and later life depend primarily on the severity of the muscle weakness and the nature of the cause.

Some disorders have a specific treatment but the principal treatment for the most hypotonia of idiopathic or neurologic cause is physical therapy and/or occupational therapy to help the person compensate for the neuromuscular disability.

**increase mobility
through stability**



HAPPY STRAP™



Attributes:

1. Happy Strap™ is a EU Class one Medical device that aids children with hypotonia (low muscle tone) to assist the control of ligament laxity and joint flexibility in the hips (poor pelvic stability).
2. Happy Strap™ limits excessive hip abduction and therefore limits reliance on solely sagittal plane movement when transferring from one position to another. This in turn encourages the development of musculature that enables movement in frontal and transverse planes.
3. Hypotonia is commonly found in children with Down syndrome and children with athetosis. However, there are many other conditions responsible for hypotonia (both congenital and acquired), a few of which are mentioned on pages 3 and 4.
4. Happy Strap™, worn while sleeping, counteracts any tendency of the legs to "splay".
5. Happy Strap™ can be worn either over or under clothing day and night.





Etiology of Hypotonia

I Congenital-disease at birth (including within 6 months)

1. Genetic disorders are the most common cause

Down syndrome (most common)	Marfan's syndrome
3-Methylcrotonyl-CoA carboxylase deficiency	Menkes syndrome
Achondroplasia	Methylmalonic acidemia
Aicardi syndrome	Myotonic dystrophy
Canavan disease	Niemann-Pick disease
Centronuclear myopathy	Nonketotic hyperglycinemia (NKH)
Central core disease	Prader-Willi syndrome
Dejerine Sottas syndrome (HMSN Type III)	Rett syndrome
Familial dysautonomia (Riley-Day syndrome)	Septo-optic dysplasia (de Morsier syndrome)
Fragile X syndrome	Spinal Muscular Atrophy (SMA)
Griscelli syndrome Type I (Elejalde syndrome)	Tay-Sachs disease
Growth Hormone Disorder Pituitary Dwarfism	Trisomy 13
Infantile spinal muscular atrophy	22q13 deletion syndrome
Krabbe disease	FG syndrome
Leigh's disease	

2. Developmental disability

Cerebellar ataxia (congenital)
Sensory integration dysfunction
Developmental dyspraxia
Hypothyroidism (congenital)
Hypotonic cerebral palsy
Teratogenesis from in-utero exposure to Benzodiazepines

II Acquired-onset occurs after birth

1. Genetic

Muscular dystrophy (including Myotonic dystrophy)
Metachromatic leukodystrophy
Rett syndrome
Spinal Muscular Atrophy

2. Toxins

Infantile acrodynia (childhood mercury poisoning)



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Etiology continued

3. Infections

- Encephalitis
- Guillain-Barre syndrome
- Infant botulism
- Meningitis
- Polimyelitis
- Sepsis

4. Autoimmunity disorders

- Myasthenia gravis (most common)
- Abnormal vaccine reaction
- Celiac disease

5. Metabolic disorder

- Hypervitaminosis
- Kernicterus
- Rickets

6. Neurological

- Shaken Baby syndrome
- Lower motor neuron lesions
- Upper motor neuron lesions

7. Miscellaneous

- Cerebellar lesions
- Hypothyroidism



Development

Happy Strap™ was developed by Janet Wichmann whose son, Jens, was experiencing difficulty in walking due to hypotonia caused by Down syndrome. As a result of her efforts to develop a device to assist Jens, Happy Strap™ was developed.

Happy Strap™ is a Class 1 Medical device that is in conformity with EU law, has CE certification and is covered by Patent 2006/10475.



HAPPY STRAP™



Sizing








Happy Strap™ is offered in four (4) sizes depending on the mid-thigh circumference of the child.

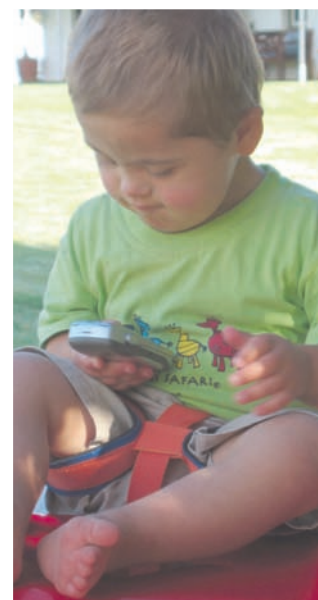
The approximate age outlined below is based on the average size of a normal child.

Age	Size	Mid-Thigh Circumference
1 - 12 months	Extra Small	< 24 cm / 9,4 ins
12 - 36 months	Small	< 27 cm / 10,6 ins
36 - 60 months	Medium	< 35 cm / 13,7 ins
60 - 96 months	Large	< 43 cm / 16,9 ins

Colours

Happy Strap™ is available in the following colours:

Extra Small	Pale Pink		Pale Blue	
Small	Purple		Orange	
Medium	Teal Green		Magenta	
Large	Purple			



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For more information please contact:



Mycology Research Laboratories

Windsor House, 9 - 15 Adelaide Street,
Luton, Bedfordshire
LU1 5BJ United Kingdom

Tel: +44 (0) 1583-485-209
Email: info@mycologyresearch.com
Website: www.mycologyresearch.com

