

# Leckey Sleepform



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## 24-hour Postural Management and Early Intervention - the UK Perspective

“A planned approach encompassing all activities and intervention which impact on an individual’s posture and function. Programmes are tailored specifically for each child and may include special seating, **night-time support**, standing supports, active exercise, orthotics, surgical interventions, and individual therapy sessions. ( Mac Keith Consensus Statement 2006

Published online by Cambridge University Press: 16 March 2006)

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## 24-hour Postural Management Key Elements

Aims to increase comfort and may reduce deformity

GMFCS IV or V should begin a lying programme as soon as possible after birth; a sitting programme at 6 months; a standing programme at 1 year

Aims to increase comfort and may reduce deformity

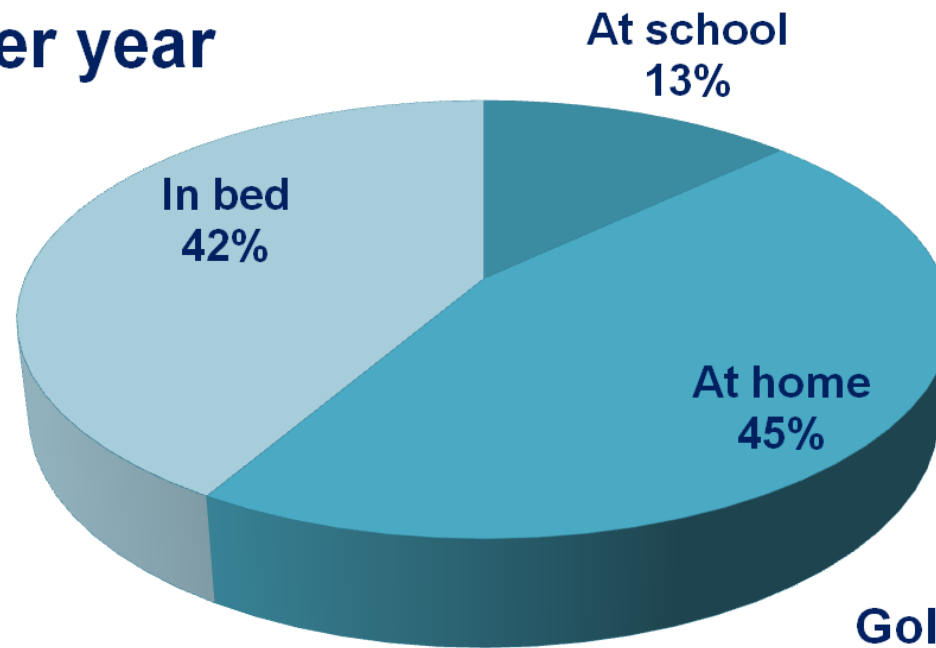
Guided by Gross Motor Function Classification System (GMFCS)

(Palisano et al, 2007)

Prevention of deformity is considered an integrated approach between equipment, activity and surgery (function – Gough, 2009)

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## Children's 24-hour activities per year



Goldsmith, 2000

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## Sleepform Development Background

Sleepform is the first night time positioning system from Leckey.

Leckey have been designing and manufacturing postural support equipment for the last 35 years and are well known for seating, standing and bathing solutions – so why did we design a sleep system?

As part of our user centred approach we looked at the daily routines of children and realised that in order to offer 24 hour postural care solutions we needed to provide comfortable and secure support for children as they rested.

The project began in June 2003 and the Sleepform system was launched in June 2006.

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## Design research

We began by studying the existing research literature and published reports. We also learned about the pioneering work of John and Liz Goldsmith in the area of 24 hour postural management and in particular the importance of night time positioning as a means of maintaining postural alignment.

### Protecting Body Shape book by John & Liz Goldsmith

Following this we spoke to a number of children, parents and therapists in order to learn more about their experience of sleep and night-time positioning.



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## We wanted to find out:

- how long children usually spend in bed
- how often they need to be moved or turned during the night
- how often their parents check on them
- the main reasons for prescribing a sleep system
- the main function of night-time positioning – is it supportive or correctional?
- the most common sleeping positions which need to be supported
- the most common postural reflexes which need to be inhibited during the Night
- the requirements for temperature control/pressure relief
- what is acceptable in terms of appearance and aesthetics – especially as this system would be used in children's bedrooms



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## Design aims

Our core aim was to develop a proximally supportive system that would ensure children's comfort and help to inhibit abnormal postural reflexes. We wanted a system which allowed children and their parents / carers to have an uninterrupted night's sleep so they were fully rested for the day ahead.

In addition to this we knew that the system would need to:

- Accommodate supine, side and prone lying
- Reduce the risk of breathing issues or suffocation
- Reduce heat build & sweating
- Prevent scissoring and postures that the child cannot recover from during sleep
- Be quiet to set up minimizing disruption during sleep
- Allow easy re-positioning
- Be simple for parents to use



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## Thinking “outside the box”

We began to investigate other sectors where firm, contoured postural support was required. We found out that emergency rescue equipment also requires this level of postural support and discovered a Swedish company who made mouldable pillows used by accident and emergency teams to transport injured people to safety.



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This pillow consisted of a PVC outer layer and an inner bag filled with polystyrene beads which could be moulded into any desired shape by extracting the air inside the pillow using a vacuum pump.

## Developing our ideas:

The PVC bag would provide us with the proximal support we were looking for without the need for any bespoke bed design, **metal brackets, sliders, nuts or bolts**. It could simply be used on the individual's own bed.

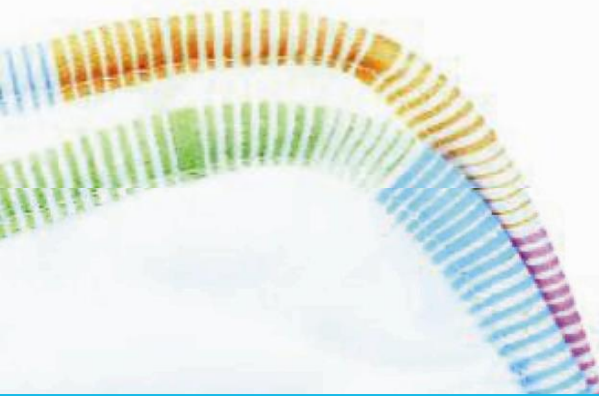
We sourced a polyester based position bag, which we adapted into a horse shoe shape, This then became the Leckey Sleepform.



We had found our airflow mattress for the re-mouldable pillow. The unique properties of this base material meant that we were able to use a simple cotton fabric for the outer layer - similar to that used in standard bed linen.

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## 5 Key Features and Benefits

- Light weight/Portable
- Bespoke positioning
- Simple to use
- Temperature control
- Accessories

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## 1) Light weight/Portable



The Sleepform Mattress is light weight and portable, it is easily mouldable and will conform to any contoured bed in any position.

### The Sleepform can also be used:

- On mum and dads double bed
- On the floor in the living room
- Cot bed
- Single bed



- 0-1 years - cot
- 1-5 years - cot
- 1-5 years - single bed
- 5-18 years - single bed

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## 2) Bespoke positioning

### Sleepform Mattress

The Sleepform Mattress has proven to be very successful where your child would benefit from a cradling type of support.

It is a mouldable cushion and can be formed to your child's contours quickly and easily. It can be changed and re-formed time and time again.

Once you have set it up it will retain its form for months or until you choose to change it.



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## 3) Simple to use

### How to mould the Sleepform Mattress

Attach the pump to the nozzle and open the valve. Using the hand pump extract some air out. The slower you pull the handle the quieter it will be. As you extract air you will feel that the mattress begins to become less flexible.

After a few seconds the mattress will become firm. To retain it's shape close the valve and remove the pump.



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## 4) Temperature control

We have introduced a Temperature Control Sheet using Outlast fabric which was originally developed for use by NASA in space travel!

This sheet can be placed under the child and will keep the user at a constant comfortable temperature.



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## 5) Accessories



The Air-flow Knee Pillow



The Air-flow Mattress



Under Mattress Straps



Cushioned Leg and Knee Guides



Cushioned Chest and Hip Guides



The Air-flow Knee Pillow





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## Leckey Sleepform Demonstration

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Thank you  
Any Questions ?

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