Introduction

Night-time positioning as part of 24 hour postural management is advocated by many clinicians to prevent deformity in children with neuromuscular disorders, principally cerebral palsy (Gericke 2006). Postural management is achieved by using a seating system, standing frame and sleep system. The aim of the intervention is to maintain postural symmetry, improve function and prevent the development of deformities such as hip dysplasia and scoliosis.

Evidence to support sleep positioning

Sleep systems are a relatively new intervention. During the last decade there have been attempts to obtain evidence to support their use, principally by those who have developed the systems.

Pountney et al (2009) in a prospective cohort study of 39 children who commenced use of postural management (using Chailey sleep system, CAPS II seating system and C?? S/F), under 18 months of age found that those who used equipment at recommended or moderate levels had a significantly reduced chance of hip migration compared with those whose use was minimal. The frequency of children with hip problems was significantly less for the intervention group than for those in a historical control group and there were fewer treatments needed.

In a study of 7 children with cerebral palsy Hankinson and Morton (2002) found that hip migration percentage was less in during a trial of the Jenx Dreama sleep system than in the previous six months during which baseline data were collected. Response to a parental questionnaire indicated that symmetrical positioning in sleep and settling to sleep both improved during the trial.

Goldsmith (2000) gathered information from 31 families over one year via a questionnaire and found that parental opinion was that children lay straighter, slept as well as usual and
showed ‘a little’ less pain while using the Symmetrisleep system. They also found that parents needed support and training to use the sleep system.

Waugh and Hill (2009) present a single case study of a 9 year old child with a severe scoliosis who had a sleep positioning system introduced over a period of 3 months. As a result her thoracic symmetry improved and scheduled surgery for scoliosis was avoided.

Clearly the evidence for postural management systems is limited and longer term studies are needed.

**Considerations in the Implementation of night time positioning**

Careful assessment for equipment and monitoring of its effects are clearly vital for postural management to be successful. Gough (2009) highlights the cost of introducing postural management in both financial terms and time spent in implementation by families and clinicians. He feels that the children who most need postural management are often the least able to tolerate it and the least able to express their feelings if the positioning causes discomfort or pain.

Sleep positioning aids vary from full scale sleep systems, which rely on adjustable padded brackets to maintain the desired posture, to a variety of cushions or bean bags that can be used to support part of the body e.g. the lower limbs, while allowing some movement and change of position. The NHS buyers guide (2009) gives details of six commercially available systems but does not include positioning aids such as bean bags or shaped cushions.

Before introducing night-time positioning consideration should be given to risk factors such as nocturnal seizures, gastro-oesophageal reflux, chest infections and sleep apnoea. Sleep studies may be needed before and after the introduction of the equipment to ensure safety. (Hill 2009)

Children with complex disabilities often experience sleep problems. Parents who have struggled to get their child to sleep will be unlikely to welcome any intervention which may disrupt their sleep pattern. Early introduction of equipment is therefore desirable before the child has established a preferred sleep posture. However a well-positioned aid or sleep system should improve comfort and it is therefore possible to introduce equipment at a later stage. It may be necessary to phase positioning in gradually. Studies have shown that a high level of support for parents is often necessary to obtain a successful adoption of night-time postural management.

**References**


Goldsmith S (2000) Postural care at night within a community setting. Physiotherapy, 86 (10), 528-34
Gough M (2009) Continuous postural management and the prevention of deformity in children with cerebral palsy Dev Med Child Neurol 51 (2) 105-110


