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Preventing torticollis and plagiocephaly

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Pediatric physiotherapists routinely address conditions that directly or indirectly influence the growth and development of the musculoskeletal system, such as torticollis and plagiocephaly, both which affect the neck and skull.

Physiotherapists at the Janeway Child Health and Rehabilitation Centre in Newfoundland have noted a marked increase in consults for torticollis and plagiocephaly. Between April 2001 and September 2002, 63 referrals were received; 29 from physicians in pediatric specialty areas and 34 from family practice physicians. This phenomenon is not unique to Newfoundland.

So what are the causes of plagiocephaly with or without torticollis and/or gross motor delay, and what preventive measures can be taken?

Why the increase?

According to the literature, many physiotherapy services in Canada and the U.S. have reported an increase in the incidence of torticollis, plagiocephaly, and gross motor delay. This increase has occurred since the 1992 joint launch of the sudden infant death syndrome (SIDS)-preventing "Back to Sleep Program." This program was headed by the American Academy of Pediatrics and the National Institute of Child Health and Human Development.

The experts' recommendation that babies sleep on their backs has led to a decrease in prone experiences for babies. Infants are spending an increasing amount of time in infant carriers, bouncy seats, or in a supine position during waking hours. Newborns, though, lack the head control to resist the effects of gravity when placed in a sitting or supine posi-

tion. Their heads fall to one side for extended periods of time. Due to the soft, pliable nature of the skull and the weakness of the neck musculature, positional plagiocephaly, and/or torticollis are the results of this limited positioning.

Although the increase in torticollis, plagiocephaly and gross motor delays are side effects of preventing SIDS, they are seen as minor problems when compared to the successful outcome of lowering the risk of SIDS. These conditions are preventable, though, and should not



Preventing torticollis and plagiocephaly (cont'd)

have to lead to unnecessary tests, treatments and operations.

What are the effects?

In babies with plagiocephaly, the head shape has developed an asymmetric rhomboid shape, with flattening of the involved occiput and flattening of the contralateral forehead (Figure 1). In addition, the ipsilateral forehead becomes more prominent and bulges anteriorly and laterally, and the ipsilateral ear migrates forward.

Once an infant has developed some flattening in the occiput,

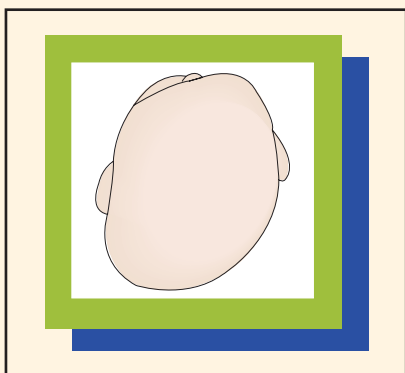


Figure 1. Plagiocephaly in the infant.

he/she tends to position the head with preference to that one side, potentially leading to mus-

cular neck changes. The recent increase in acquired torticollis appears to be a direct effect of infants developing a preference for positioning themselves with their heads turned to one side with tilting to the other. This contributes to asymmetrical shortening of the neck musculature, most often the sternocleidomastoid, upper trapezius and the scalene muscles. Torticollis can later affect gross motor milestone acquisition through asymmetrical head position, asymmetrical neck muscle tightness and weakness, and in some cases, can result in subsequent scoliosis.

What are the recommendations?

It is well documented that the molding of the skull happens through sleep position in the first three months of life. Preventive measures include:

- Alternating the direction the baby sleeps in the crib (with the head at a different end of the crib each night) can help prevent plagiocephaly, acquired torticollis and associated gross and fine motor delays.
- Supervised prone positioning is *the* key to preventing positional plagiocephaly.
- When positional molding is suspected, the baby should be kept off the flattened side.

- Evaluation by a physiotherapist to assess positioning, tightness of neck musculature and gross motor development can be useful for addressing associated problems, such as torticollis and delays in motor milestones.

What is the prognosis?

When positional plagiocephaly is identified early, at less than three months of age, repositioning can stop the process and reverse the appearance of flattening.

The prognosis for babies with positional plagiocephaly is excellent. With proper intervention, most skull-flattening deformities can be corrected by the time the child is a year old. [CME](#)

References

1. Huang MH, Gruss JS, Clarren SK, et al: The differential diagnosis of posterior plagiocephaly: true lambdoid synostosis versus positional molding. *Plast Reconstr Surg.* 1996; 98(5):765-74.
2. Moss SD: Nonsurgical, nonorthotic treatment of occipital plagiocephaly: what is the natural history of the misshapen neonatal head? *J Neurosurg.* 1997; 87(5):667-70.