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Helmet Therapy in Childhood

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LETTER TO THE EDITOR

The term helmet therapy refers to conservative (non-surgical) treatment of infantile cranial deformities. Infantile cranial deformities can result from premature bony closure of the cranial sutures (premature suture synostoses) [1-5]. The incidence is reported to be about 1 : 2,500 births [3,4]. Such early ossification can lead to quite different, sometimes bizarre skull shapes and also occurs in the context of circumscribed malformation syndromes (e.g. Crouzon syndrome, Apert syndrome). In these syndromes, head deformities are present from birth and become more pronounced thereafter. Surgical correction is usually unavoidable in such cases. In the more common non-synostotic deformities, the cranial sutures are still open according to age. Their ossification also does not occur prematurely, so the brain does not suffer a lack of space at any time. The deformation is caused by external influences, e.g. confinement in the womb in the case of twin births, birth or positioning conditions (positional plagiocephaly). Too one-sided positioning of babies causes a major part of non-bony deformities. Muscular imbalances in the neck can lead to forced postures, such as torticollis. Such forced postures can in turn have a deforming effect on the child's skull growth. In extreme cases, this can lead to a displacement of the skull base, which can be recognized by a different position of the ears and further facial asymmetries. Uneven head growth can also affect jaw growth. Due to the visible deformities, in most cases a diagnosis can be made without intervening examinations, such as taking X-rays. For example, a synostotic deformity can be recognized by a trapezoidal head shape when viewed from a bird's eye view [4,5]. A positional head deformation, on the other hand, can be recognized by a parallelogram-shaped displacement. For the treatment of the very rare premature ossification of the cranial sutures in babies, a premature suture synostosis, early surgical correction can be considered as a therapeutic measure [1-6]. In contrast, the common positional deformities can be treated first by intensive physiotherapy exercise treatments. Since the skull grows imperceptibly, a therapy period of at least two months with a physiotherapist is obligatory (prescribed by the pediatrician). Parents can also contribute to the normalization of the skull deformation through the so-called "tummy time": the awake infant is placed in the prone position on the stomach of a parent and playfully encouraged to lift the little head in order to make eye contact. This

exercise strengthens the neck and shoulder muscles several times a day and relieves pressure on the back of the head. Particularly the affected infants may not be comfortable at first with the prone position, which is important for them. The sleeping infant is naturally only positioned in the supine position. Parallel to these efforts, the position of the crib and interesting objects in the nursery must be changed in such a way that the infant has to assume different positions than usual in order to get these interesting things into his field of vision. This also puts stress on the back of the head in different places than before.

From this it becomes clear that a pre-existing positional asymmetry or preferred posture can lead to a deformation of the skull.

In general, in Germany, helmet therapy will not ever be paid by the health insurance company. Parents have to pay most often for themselves because scientific research does not clearly ruled out the advantages of this therapy in detail. Moreover, the companies have to focus on good service to the patients, making helmets comfortable for the children due to excessive sweating or avoiding pressure marks in the helmet during use.

Clear guidelines are necessary in this therapy. Research should focus on advantage use of helmets in different indications in childhood, making it therefore necessary, that health insurances pay the costs for helmet therapy with conviction.

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