

Importance of pediatrician's role in preventing positional plagiocephaly

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Key message

- Plagiocephaly is characterized by the asymmetrical shape of a baby's head.
- Since positional plagiocephaly is associated with developmental delay and further musculoskeletal problems, early detection allows for timely intervention and prevents worsening of the condition.
- Pediatricians can educate parents about proper head positioning and encourage supervised tummy time during awake hours.

Plagiocephaly refers to the condition of asymmetrical skull deformation in a baby. The majority of cases are positional plagiocephaly (PP), in which the asymmetrical head shape is not caused by craniosynostosis but rather by external pressure at birth or during the general growth process.¹⁻³ Since craniosynostosis requires surgical treatment, it is important to differentiate it from PP. This is done through a detailed physical examination (evaluating craniofacial asymmetry, ridged sutures, and other musculoskeletal deformities) and imaging tests (such as skull x-rays and cranial computed tomography scans).⁴ Because the prevalence of PP is by no means small at about 3% and head shape is of great cosmetic interest to caregivers of infants, primary medical physicians receive much counseling about the shape of babies' heads.³ Moreover, because PP is reportedly associated with developmental delay and further musculoskeletal problems, primary care physicians should pay careful attention to patients at risk of PP.^{1,3,5,6}

Due to the American Academy of Pediatrics' Back to Sleep campaign, parents are well aware that their babies should be placed in supine position to reduce the risk of sudden infant death syndrome (SIDS).^{2,5,7} However, the fact that keeping them in supine position even during awake hours can result in positional skull deformity is relatively less well known. Hence, once a baby can control its neck, placing the baby on its belly for tummy time becomes essential. The World

Health Organization recommends supervised tummy time since it promotes gross motor development and can reduce the occurrence of PP.⁸ However, as mentioned in a paper by Yoon et al.,⁹ many Korean guardians do not know exactly whether prone-to-supine or supine-to-prone rolling over comes first due to inaccuracy of the Korean word for "rolling over." In addition, according to Yoon, there are more cases in which the order of rolling over occurs in reverse. Because of this perception, parents may place their baby flat on their backs even when awake, which increases the risk of PP.

Since head shape is determined within a few months of birth and could last for a lifetime, the rapid detection of and early intervention for PP are required.^{1,2,7} First, parents should recognize that immobility is associated with delayed gross motor development or PP and encourage spontaneous and unhindered physical movement from birth.² If PP is detected before 3 months of age, allowing the baby to lie on the protruding part of the head rather than on the flattened area when on the floor or while sleeping may be helpful.¹⁰ In addition to promoting posture changes during supine positioning, caregivers should be educated to provide frequent tummy time as the baby develops the ability to control its neck (Fig. 1).⁸ After 4 months of age, if the severity of PP is mild to moderate according to measurements of the

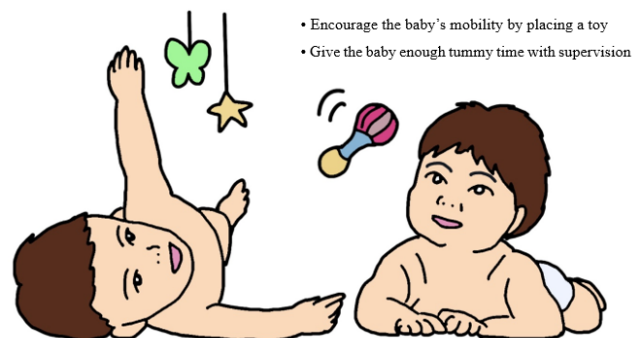


Fig. 1. How to help the baby to roll over and prevent positional plagiocephaly.

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difference between the longest and shortest cranial diagonal diameter, continued repositioning is needed. If the infant has severe PP, initiating helmet therapy for more than 20 hours per day can improve the head shape. Helmet therapy is typically most effective when started before 6 months of age, while its effectiveness is significantly reduced when initiated after 12 months of age.¹⁰⁾

Pediatricians regularly monitor infants during office visits. In Korea, the National Health Screening Program for Infants and Children is conducted 8 times for all infants and children.¹¹⁾ The first check-up takes place at 14–35 days after birth, while the second check-up is conducted at 4–6 months of age. Additionally, for vaccinations, the infant visits the pediatrician up to 5 times before 6 months of age.¹²⁾ Therefore, it is most appropriate for pediatricians to screen patients with potential cranial issues, including plagiocephaly, during these visits. Pediatricians should not only educate guardians to keep their baby in the supine position during sleep to prevent SIDS, but they should also inform them about the importance of appropriate physical movement and tummy time during awake hours once the baby can control its head.²⁾ If PP is detected, it is crucial to provide proper and prompt intervention to prevent gross motor and long-term developmental delays.⁶⁾ In this context, the pediatrician's attention and responsibility are very important.

See the Letter to the Editor “Effect of rolling over pattern and caregiver perception on plagiocephaly in Korean infants” via <https://doi.org/10.3345/cep.2023.00108>.

Footnote

Conflicts of interest: No potential conflict of interest relevant to this article was reported.

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