

Naso-Alveolar Molding in Cleft Lip and Palate Management

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Background : Cleft lip and palate (CLP) is a facial malformation affecting approximately 1 in 800 births in Belgium, causing a discontinuity in the soft tissues of the lip, nasal sill, maxillary bone, hard palate, and soft palate. Despite advances in surgical techniques, large clefts remain challenging, especially when correcting nasal deformities. Residual asymmetry is generally corrected only after growth, leaving children with residual visible cleft-related stigmas throughout schooling, leading to teasing and loss of self-esteem.

Methods : Naso-Alveolar Molding (NAM) is a pre-surgical orthodontic technique used at our Cleft Lip and Palate Center since 2024 to treat large complete labio-alveolo-palatine clefts, whether unilateral or bilateral. Its primary goal is to restore more harmonious anatomical relationships by gradually bringing the labial and maxillary segments closer together while also reshaping the nasal structure.

Results : Thanks to this technique, the severity of the cleft is significantly reduced before the first surgical intervention, typically around three months of age, enabling optimal conditions for cheiloplasty (lip closure) and primary rhinoplasty. Less invasive dissection is necessary and healing is improved by decreasing tension on sutured tissues. This leads to improved naso-labial aesthetics in the short- and long-term, reducing visible cleft stigmas from early childhood and the need for further corrective interventions. NAM also realigns the alveolar bone segments, which supports early gingivoperiosteoplasty and avoids secondary alveolar bone grafting in over 70% of cases. The impact of NAM on long-term facial growth remains a topic of ongoing study and requires further research. Despite its effectiveness, NAM is a demanding technique for both the orthodontist and the parents, who play a crucial role in its success. Rigorous commitment is necessary to ensure daily application of the device and regular adjustments during consultations.

Conclusion : Naso-Alveolar Molding has proven to be an effective pre-surgical technique for managing large cleft lip and palate, significantly improving the anatomical alignment of the lip, maxillary segments, and nasal structure. By reducing the severity of the cleft before surgery, NAM facilitates less invasive procedures, better healing, and long-term aesthetic improvement.