

## Understanding Insurance Criteria

Several insurance companies require that specific anthropometric measurements of the infant's head accompany claims for cranial remolding orthoses. These measurements are based on cranial and facial landmarks that are easily identified. The more difficult component of the process for the practitioner is trying to take these measurements accurately on a "moving target". However, if your facility has a STARscanner laser data acquisition system, then detailed measurement reports are automatically produced and the need for collecting these measurements is alleviated.

This handout explains the eligibility requirements of one national insurance company, and also explains the location of the anthropometric measurements and how to acquire them if your facility does not have a STARscanner system. Included in this information is a document you can use to record and send the measurements to an insurance company with your claim. Insurance companies all have different patient care eligibility standards, but the company included here has developed standards that may apply to many of the infants we treat.

Insurance Company X covers the use of a cranial remodeling band for moderate to severe positional head deformities associated with premature birth, restrictive intrauterine positioning, cervical abnormalities, birth trauma, torticollis (shortening of the sternocleidomastoid muscle) and sleeping positions in children after 4 months and before 18 months of age when the following conditions are met:

1. A 2-month trial of conservative therapy consisting of repositioning the child's head such that the child lies opposite to the preferred position, has failed to improve the deformity and is judged to be unlikely to do so, AND...
2. One of the following must be met:  
Anthropometric data verifies that a moderate to severe plagiocephaly is documented by a physician experienced in the following measurements:
  - Skull base asymmetry
  - Cranial vault asymmetry
  - Orbitotragial depth
  - Cephalic index

### Specific Conditions of Coverage

**Positional Plagiocephaly:** For infants with moderate to severe asymmetry, coverage is warranted if there is a difference greater than 6 mm in ANY of the following measurements:

- Cranial base
- Cranial vault
- Orbitotragial depth

**Scaphocephaly and Brachycephaly:** For infants with scaphocephaly or brachycephaly, coverage is warranted if the cephalic index is 2 or more standard deviations below the mean (head narrow for its width) or 2 or more standard deviations above the mean (head wide for its length).

**Dolichocephaly:** A cranial orthoses is warranted if the infant has a long, misshapen head secondary to sustained head position (NICU babies).

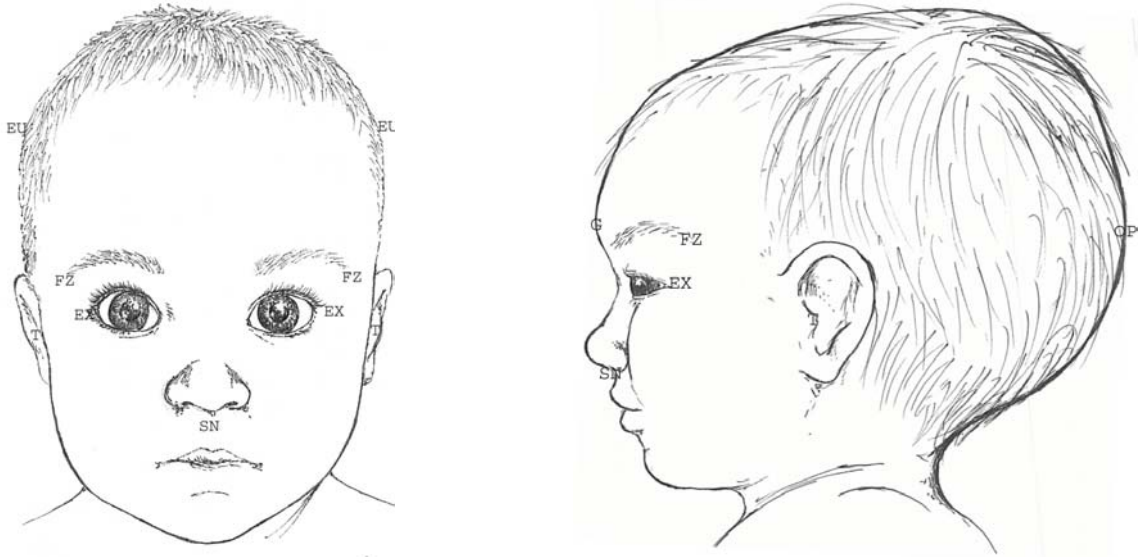
**Plagiocephaly secondary to hyperalimentation:** Coverage is warranted if infants have to be constantly positioned in a specific way because of a feeding tube or feeding problem and the head shape did not improve after changing the location of the catheter.

**Post-surgical:** Coverage is warranted if the infant has residual plagiocephaly after surgical correction.

**Sagittal synostosis:** Coverage is warranted if the infant has residual frontal bossing secondary to sagittal synostosis.

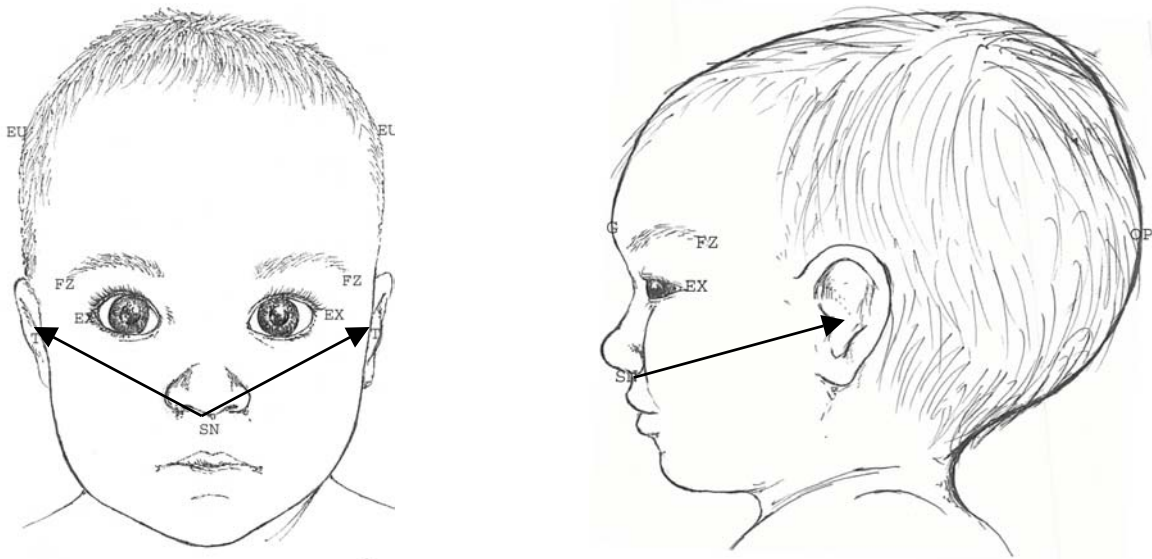
**Acquiring Anthropometric Measurements**

The diagrams below indicate the anthropometric landmarks that must be measured to determine if an infant is eligible to receive coverage. These are beneficial measurements to take in any case because they can document the asymmetry or degree of disproportion at the beginning and end of orthotic treatment.



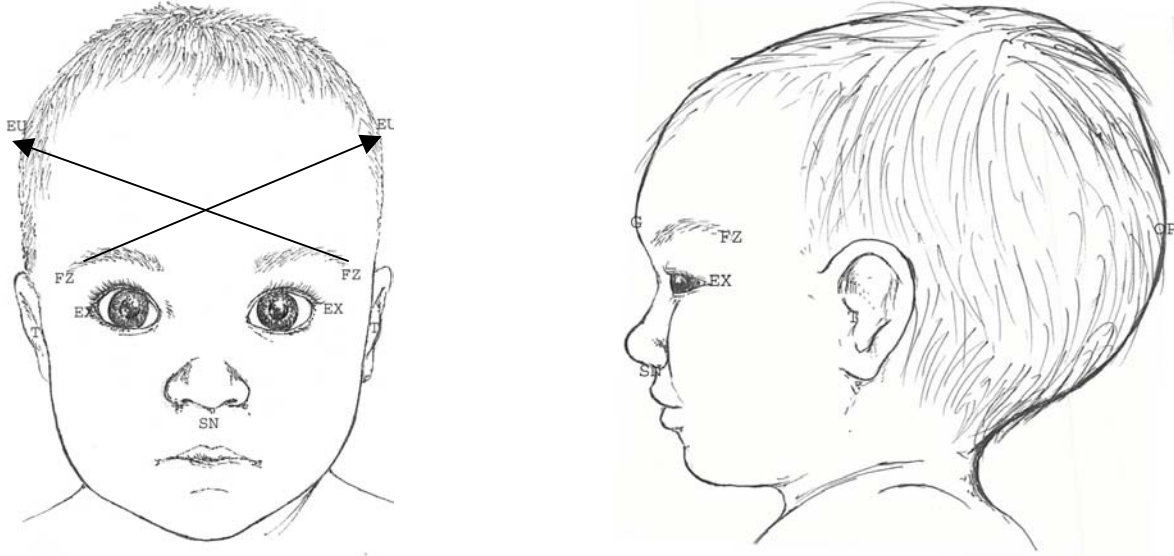
**Measuring for Cranial Base Asymmetry**

Take a measurement from SN (subnasal) to T (tragus) to both right and left sides. The Subnasal is located right below the midline of the cartilage of the nose. The tragus is the cartilaginous projection just anterior to the external auditory canal. This measures the maxillary depth of the right and left morphological face height.



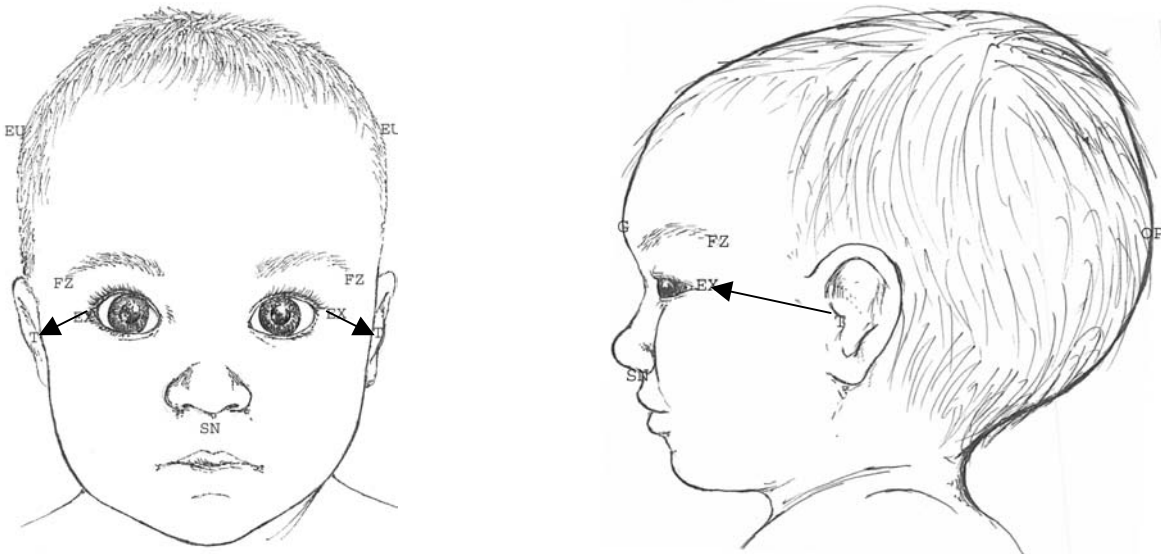
### Measuring the Cranial Vault

Take a measurement from the FZ (frontozygomatic point) on one side of the face to the EU (eurion) on the opposite side of the head. The frontozygomatic is the most lateral point on the frontozygomatic suture and is located at the upper and outer corner of the orbit. The eurion is the most lateral point on the head. It is located in the parietal region and is found by taking spreading calipers and finding the widest medial-lateral points on the head. The difference between these two measurements is the cranial vault asymmetry.



### Measuring the Orbitotragial Depth

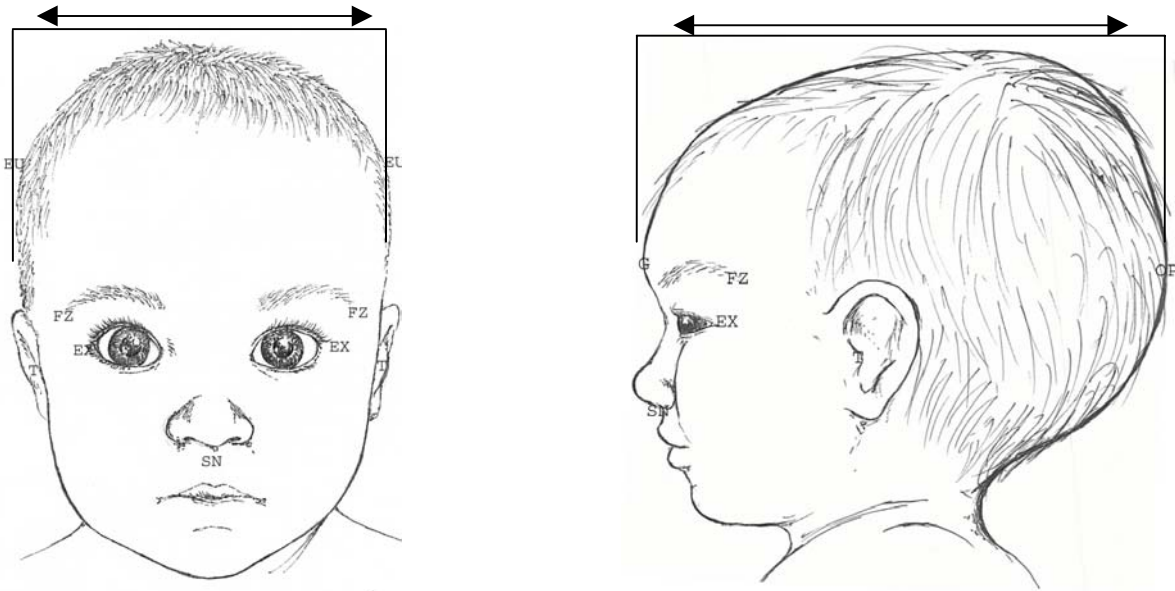
Take a measurement on the right and left sides from the EX (excanthion point) to T (tragus). The excanthis is the outer corner of the eye fissure where the eyelids meet. The tragus is the cartilaginous projection just anterior to the external auditory canal. The difference between these two measurements is the orbito-tragion depth asymmetry.



**Calculating the Cephalic Index**

The cephalic index is the overall shape of the vault of the skull. It is the ratio of the maximum width of the skull to the maximum length. The measurement is acquired by measuring EU (eurion) to EU with calipers which provides the maximum width, measuring the G (glabella) to OP (opisthocranium) with calipers which provides the maximum length, and performing a mathematical calculation.

$$\text{Cephalic Index} = \text{Maximum width (eu-eu)} \times 100 \text{ divided by the maximum length (g-op)}$$



Check the chart below and determine where the infant's **cranial index** falls in relationship to the child's sex and age.

Sex	Age	- 2 SD	-1 SD	MEAN	+1 SD	+2 SD
Male	16 days to 6 months	63.7	68.7	73.7	78.7	83.7
	6 to 12 months	64.8	71.4	78.0	84.6	91.2
Female	16 days to 6 months	63.9	68.6	73.3	78.0	82.7
	6 to 12 months	69.5	74.0	78.5	83.0	87.5

NOTE:  
 -SD is standard deviation below the mean  
 +SD is standard deviation above the mean