

**Table Attachment
O-13**

Determination of Severity of Plagiocephaly

Determination of the severity of plagiocephaly requires precise measurements of the skull using either the cephalic index or anthropomorphic measurements.

**Table 1
Specifications for Taking Anthropometric Measurements**

	Comparative Cranial Landmarks
Cranial Vault	Left frontozygomatic point (fz) to right euryon (eu) minus right frontozygomatic point (fz) to left euryon (eu)
Cranial Base	Subnasal point (sn) to left tragus (t) minus subnasal point (sn) to right tragus (t)
Orbitotragial Depth	Left exocanthion point (ex) to left tragus (t) minus right exocanthion point (ex) to right tragus (t)

Moderate to severe plagiocephaly is defined as one of the following:

Cranial base (sn – t): ≥ 6 mm difference between left and right measurements

Cranial vault (fz – contralateral eu): ≥ 8 mm difference between left and right measurements

Orbitotragial depth (ex – t): ≥ 4 mm difference between left and right measurements

Table 2

$$\text{Cephalic Index: } \frac{\text{Head width (eu - eu)} \times 100}{\text{Head length (g - op)}}$$

Moderate to severe plagiocephaly is defined as a cephalic index two standard deviations above or below the mean. Infants with deformational scaphocephaly will have a lower cephalic index due to a very long and narrow skull deformity. Infants with deformational brachycephaly will have an increased cephalic index due to a very wide and short skull deformity.

Gender	Age	-2SD	-1SD	Mean	+1SD	+2SD
Male	16 days-6 months	63.7	68.7	73.7	78.7	83.7
	6-12 months	64.8	71.4	78	84.6	91.2
Female	16 days-6 months	63.9	68.6	73.3	78	82.7
	6-12 months	69.5	74	78.5	83	87.5

Assessment of plagiocephaly may be based on anthropomorphic measures of the head, using anatomical and bony landmarks. However, there is no accepted minimum objective level of asymmetry for a plagiocephaly diagnosis. The following table presents normative values and the mean pretreatment

asymmetries reported in large case series. These may be useful in determining if a significant variation from normal is present.

Table 3

Normative Values

Study	Cranial Base (mm)	Cranial Vault (mm)	Orbitotragial Distance (mm)
Moss (1)	NR	9.2	7.1*
Littlefield et. al. (2)	6.17	8.5	4.36
Teichgraeber et. al. (3)	7.08	8.53	3.12

*In this report, the asymmetry was measured from the tragus to the frontozygomatic point instead of the exocanthion