

ABNORMAL HEAD CIRCUMFERENCE – BIRTH THROUGH 24 MONTHS

I. DEFINITION:

- A. Microcephaly is usually defined as head circumference two standard deviations or more below the mean or less than the 2nd percentile for age and sex. Severe microcephaly is defined as head circumference 3 standard deviations or more below the mean for age and sex.
- B. Macrocephaly is defined as head circumference greater than two standard deviations above the mean or greater than the 98th percentile for a given age and sex.
- C. Measuring head circumference is important and should be done at each visit for children younger than 3 years of age and in any child whose head size is a concern.
- D. Abnormal head growth may indicate a medical or developmental problem and often leads practitioners to further evaluation. If the brain is not growing, the skull will not grow; therefore, a small head reflects a small brain, or microcephaly. Conversely, a large head may be associated with a large brain, or macrocephaly. This may be a common family trait, but may be due to a disturbance of growth such as hydrocephalus or chronic subdural hemorrhages.
- E. The average rate of growth in a healthy premature infant is 0.5 cm in the first 2 weeks, 0.75 cm in the 3rd week, and 1.0 cm in the 4th week and every week thereafter until the 40th week of development. The head circumference of an average term infant measures 34-35 cm at birth, 44cm at 6 months, and 47 cm at 1 year of age.

II. MANAGEMENT:

- A. Refer to APRN or private physician if head circumference is below the 3rd percentile for age and gender.
- B. Refer to APRN or private physician if head circumference is above the 97th percentile for age and gender.
- C. Refer to APRN or private care provider if the head circumference decreases or increases more than two percentile measurements (i.e., crosses two major percentile lines on the growth chart). Thus a decrease would be indicated by the measurement being just above the 50 percentile line and then decreasing to below the 25 percentile line. An increase would be indicated by the measurements being just below the 50 percentile line and increasing to above the 75 percentile line. Time is not a factor in these changes.
- D. Follow up and track using professional judgment.

REFERENCES:

- Sniderman, A. in Pediatrics in Review Vol. 31 No. 9 September 1, 2010, pp. 382-384. Retrieved January 9, 2013, <http://pedsinreview.aappublications.org/content/31/9/382.short>
- Ashwal, S, Michelson, D., Plawner, L. et. al. Practice Parameter: Evaluation of the child with microcephaly (an evidence-based review). Report of the Quality Standards Subcommittee of the American Academy of Neurology and the Practice Committee of the Child Neurology Society. *Neurology* 2009; 73; 887. American Academy of Neurology. Retrieved January 9, 2013, <http://neurology.org/content/73/11/887.full.html>

