



CFAO GRADUATE STUDENT POSTERBOARD ABSTRACTS

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Posterior cranial base time-related changes: A systematic review

Kris Currie, Humam Saltaji, Dena Sawchuk, Heesoo Oh, Manuel Lagravere, Carlos Flores-Mir.

Objectives: The goal of this systematic review is to provide a synthesis of the published studies evaluating the growth and development of the posterior cranial base.

Materials and Methods: The search was performed on Medline, Embase, PubMed, and All EBM Reviews electronic databases. In addition, reference lists of the included studies were hand-searched. Articles were considered if they specifically analyzed posterior cranial-base growth. Study selection, data extraction, and risk of bias assessment were completed in duplicate. A meta-analysis was not justified.

Results: 23 published studies were selected: 5 cross-sectional and 18 longitudinal studies. Articles were published between 1955 and 2015 and were all in English. The sample sizes varied between 20 and 243 subjects and consisted of craniofacial measurements from either living or deceased human skulls. Validity of the measurements was not determined in any of the studies. All but five reported some form of reliability assessment. All the articles included multiple time points within the same population or data from multiple age groups. Growth of the posterior cranial base is generally agreed to be from sphenoccipital synchondrosis. *Basion* displaces downward and backward and *Sella Turcica* moves downward and backward during craniofacial growth. Timing of cessation of posterior cranial base growth is not conclusive due to limited evidence.

Conclusion: Current evidence suggests that the posterior cranial base is not stable as its dimensions change throughout facial growth and minor dimensional changes observed even in late adulthood.