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**A PILOT STUDY ON MATURATION OF  
CERVICAL VERTEBRAE AND PERMANENT  
TEETH**

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*The authors declare that they have no conflict of interest.*

*Teeth are frequently used to estimate age in forensic science but few reference data exist of cervical vertebrae stages for age. Maturation of the cervical vertebrae, seen from cephalometric radiographs are used by orthodontists to predict the pubertal growth spurt to target the timing of treatment. The relationship between cervical vertebrae and dental maturation is not well understood. The aim of this pilot study was to assess maturation of the cervical vertebrae (CVM) in terms of dental maturity and age and explore if CVM might be applied to estimating age. The sample was archived lateral cephalograms and panoramic dental radiographs of 30 boys and 30 girls (aged 8.60 to 19.31 year) taken on the same day. Cervical vertebrae maturation (using Hassal and Farman, 1995) and dental maturity ( using Demirjian, Goldstein and Tanner, 1973) was assessed by the first author. Intra-observer reliability of bone staging and tooth stage was calculated using Kappa. The mean age of each cervical maturation stage (CVM) was compared between boys and girls using a t-test. Kappa was 0.65 for bone (60 bone stages) and 0.85 for teeth (420 tooth stages). Mean ages for each cervical maturation stage were not significantly different between boys and girls but was earlier in girls compared to boys. All individuals in CVM stage IV were aged between 10.3 and 13.7 years. All individuals in CVM stage V were older than 11.9 years. Stage III was most variable for both dental and chronological age. These results suggest that CVM might be applicable to estimate age.*

**KEYWORDS:** Forensic Odontology, Age estimation, Cervical vertebrae