

**OBJECTIVES:** To determine the dental caries experience in relation to the severity of dental fluorosis and; to evaluate the dietary snacking habits of adolescents. **DESIGN:** A descriptive cross-sectional study. **SETTING:** A peri-urban primary school in Nairobi, Kenya. **SUBJECTS:** Two hundred and seventy five adolescents aged 13-15 years among whom 128 were males and 149 were females. **RESULTS:** Two hundred and seventy five adolescents were examined for varying degrees of dental fluorosis according to the Thylystrup Fejerskov Index (TFI) scores and the dental caries was determined in the four first permanent molars. One hundred and five individuals were found to have had a TFI score of zero with a corresponding decayed missing and filled teeth (DMFT) for dental caries of 1.30-1.03 and 88 (52%) individuals had mild to moderate severity of dental fluorosis (TF scores 1-4) and had a corresponding mean DMFT of 1.53 +/- 1.005 for dental caries. Furthermore, 82 (48.2%) adolescents had severe degrees of dental fluorosis of TFI scores.