

Analysis on Morphological Variation of Earprints for Individual Identification and Gender Differentiation

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Abstract

Only a handful of countries use earprints for forensic investigation and the practice of using earprints as an evidence in a court of law remains arguable. This study was conducted to determine if an earprint could be traced back to an individual and show significant difference when compared to an earprint from another and to identify the difference(s) between genders. The earprints of 50 males and 50 females between the ages of 18-40 were collected and analysed. The digital overlay method was employed and measurements (angles and lengths) were compared between prints. The overlay method as well as the measurements show clear difference(s) among individuals and prove that each ear is unique and that earprints can be used for individual identification. Although the measurements showed some differences in the tragus angle, helix-tragus length as well as antitragus-helix length between the genders, the differences were too small to bear any significance.

Keywords:

Earprint, morphology, individual identification, gender differentiation, overlay, measurements.