



### **D51 Forensic Podiatry: Importance of Foot and Footprints in Forensic Casework**

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After attending this presentation, attendees will be exposed to an emerging discipline of forensic science, forensic podiatry, with an emphasis on estimation of stature from foot and footprints, and individual characteristics of footprints.

This presentation will impact the forensic science community by presenting a newer discipline of forensic science called forensic podiatry, which may motivate and inspire young forensic scientists to study this technique.

Forensic podiatry is a comparatively new scientific sub-discipline of forensic science. It is defined as the application of sound and researched podiatric knowledge and experience in forensic investigations, to show the association of an individual with a scene of crime, or to answer any other legal question concerned with the foot or footwear that requires knowledge of the functioning foot. One of the main tasks of forensic podiatrists is to contribute to the establishment of personal identity in forensic investigations. The need to establish the identity of dismembered remains may arise in cases of mass disasters like terrorist attacks, mass murders, transport accidents, tsunamis, floods, and earthquakes. Furthermore, forensic podiatrists help in the analysis of footprints generally recovered at the crime scene.

The human foot has been in the focus for a variety of reasons in the past for detailed study of diabetic feet, for orthopedic reasons, for anatomical purposes, study of feet by foot and shoe industries and Army, and the most important is forensic study of the foot. Now, it has been universally accepted that a mature foot and its impression are not only unique to an individual but also provides highly valuable clues regarding personal identity. Human feet separated from the body are usually recovered at the scene of mass disasters, both man-made and natural. Footprints can be found as a kind of evidence and can be collected from almost all types of crime scenes. A human foot and footprints can provide clues for personal identification in three ways, i.e., by reconstruction of body size (estimation of stature and body weight) from different segments of the foot and footprints, sex determination from dimensions of the foot and footprint, and by individualistic characteristics of the foot and footprints. Estimation of stature from the foot and footprints is based upon the fact that, like other parts of the human body, the foot also has a definite and positive relationship with stature of a person. Estimation of stature is an important parameter in forensic investigation and is considered as one of the "big fours" of forensic anthropology. Stature, age, sex, and ancestry facilitate the narrowing down of the pool of possible victim matches in the forensic investigation process and help in establishing identification of the individual.

The individualistic characteristics like corns, pits, ridges, humps, creases, deformity, an extra toe, etc. can be considered as useful forensic evidences in establishing personal identity. The presentation discusses, with examples, various methods of personal identification (e.g. estimation of stature, from individualistic characteristics) from the foot and footprint with reference to a study of North Indian population.

**Forensic Podiatry, Stature Estimation, Individual Character**