



Pathology/Biology Section - 2014

G105 Impact of the Estimation of the Body Weight on the Determination of the Postmortem Interval

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After attending this presentation, attendees will know the forensic pathologist's ability to estimate the weight of a corpse and how the knowledge of the body height influences his estimation.

This presentation will impact the forensic science community by raising awareness of the impact of an over- or under-estimation of the body weight on the determination of the PMI using standard methods.

Background: The forensic pathologist has to do his/her best to estimate as precisely as possible the Postmortem Interval (PMI) when called upon to examine a dead body at the scene. Different methods based on rectal temperature exist to help the pathologist with this issue, like the Henssge nomogram or the Marshall model. However, the body weight is required to use these methods, because the rate of body cooling depends greatly on it. This implies that the weight is known, or is at least estimated, at the scene.

Objectives: This study intends to assess the forensic pathologist's ability to estimate the weight of a corpse, to determine if the knowledge of the body height improves his estimation, and to show how such an estimation impacts the determination of the PMI.

Methods: A total of 50 corpses subjected to an autopsy were selected in the Forensic Department of the University Hospital of Montpellier regardless of their age, sex, and state of preservation. Their weight and height were measured before autopsy was performed, but they were not initially disclosed. The weight of each corpse was estimated in a totally blind manner by three evaluators composed of two forensic pathologists and a house physician. The evaluators had to estimate the weight of each corpse before and after being aware of the body height, so they were able to change their initial estimation. The approximate body weights and the actual body weights were reported. From these figures, PMIs were calculated, then compared in each case, using both methods mentioned above. Various statistical tests were used. Constant predetermined values were entered for the variables taken into account in these methods (ambient and rectal temperatures, correction factors), excepted for the height which had been measured.

Conclusion: The results of this study will reveal how accurately a forensic pathologist can estimate the weight of a corpse, how the knowledge of the body length may influence that estimation, and the impact the over- or under-estimation of body weight has on the determination of the PMI, using standard methods.

Postmortem Interval, Body Weight, Estimation