

# Estimation of Postmortem Interval Using Arthropod Development and Successional Patterns

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**REFERENCE:** Goff ML: Estimation of postmortem interval using arthropod development and successional patterns; *Forensic Sci Rev* 5:81–94; 1993.

**ABSTRACT:** Insects are frequently the first organisms to arrive at a dead body. By their activities they begin a biological clock that will allow for an estimation of the postmortem interval (PMI). In this publication, the two general approaches to estimation of the PMI using entomological data are reviewed: (a) use of individual species developmental patterns; and (b) use of arthropod succession data. Recent advances in studies of the biologies of various Diptera (flies) have allowed for more accurate estimates, as have recent detailed studies of the roles of various arthropods in the decomposition process. Five stages of decomposition (fresh, bloated, decay, post-decay, and skeletal) are suggested as reference points in the decomposition process. These stages are largely artificial, but serve as convenient references in court situations. Factors that may delay invasion of the remains by arthropods or alter developmental patterns, such as wrapping of the body, climate, or presence of drugs and toxins in the remains, are discussed. A general plan of approach to the estimation of PMI using entomological data is presented.

**KEY WORDS:** Arthropods, entomology, insects, life cycles, PMI, postmortem interval, succession.

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