

Bloodstain Pattern Analysis

Because certain scientific principles can be applied to blood, what may appear to be a random spatter of bloodstains at a crime scene allows a trained bloodstain pattern analyst to examine and draw useful conclusions as to how the blood may have been distributed. Information gathered from the bloodstain patterns and other marks associated with it has proven a worthwhile forensic application.

I. Documenting Bloodstain Patterns for Analysis

The examination of bloodstain patterns has always been a part of crime scene investigation, but has gained more emphasis in recent years as a separate discipline. Careful observation, measurement and documentation of the size, shape and pattern of bloodstains can reveal significant information in some cases, e.g., direction and angles of blood spatter, origination point(s) and the minimum number of blows in a beating or stabbing incident.

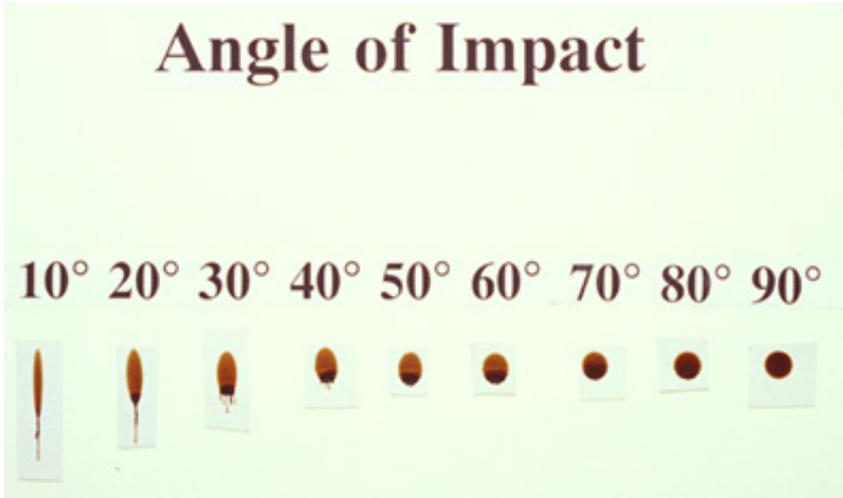


Fig. 5-1 The chart above demonstrates how the appearance of a blood drop will change depending on the angle in which it impacts a surface. A blood drop that falls straight down at a 90° angle to a surface will be round in appearance. As the angle of impact becomes more acute, the blood drop elongates.

When bloodstains are found at a crime scene, the following information should be documented:

Physical state (fluid, moist, dry)

- Amount present (few drops, small pool)
- Shape (smear, round drops)
- Exact location in relation to fixed objects
- Pattern of stains (all in one spot, trail)
- Atmosphere conditions (temperature, humidity)
- Date and time of observations
- Scaled and unscaled photographs of stains (see Chapter 2 – Forensic Photography). Videography is also an option.

It is essential to preserve bloodstain patterns until a trained bloodstain pattern analyst can examine the patterns. Although photography and videography are useful in recording some of the aspects of bloodstains at a crime scene, it does not substitute for the detailed examination.

Further information and guidance on bloodstain pattern analysis, training, and quality assurance in bloodstain analysis can be found at the resources location of The Scientific Working Group On Bloodstain Pattern Analysis (SWGSTAIN) <http://www.swgstain.org/resources>. The site also contains a document of recommended and defined terminology useful when working with or discussing bloodstain patterns.