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## **Terms and Definitions in Bloodstain Pattern Analysis**



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# Terms and Definitions in Bloodstain Pattern Analysis

**Keywords:** bloodstain pattern analysis, terminology, classification

**Abstract:**

A list of recommended terms and definitions for bloodstain pattern analysis is presented. These terms and definitions address basic bloodstain pattern types and related concepts.

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## **Foreword**

This document contains a list of recommended terms and definitions for bloodstain pattern analysis. These terms and definitions address basic bloodstain pattern types and related concepts.

The recommended terms and definitions were proposed by the bloodstain pattern analysis subcommittee of the Organization of Scientific Area Committees. Many of the terms and definitions contained in this document originated from the Scientific Working Group on Bloodstain Pattern Analysis (SWGSTAIN) document “Scientific Working Group on Bloodstain Pattern Analysis: Recommended Terminology.”<sup>1</sup>

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<sup>1</sup> *Forensic Science Communications*, April 2009, Volume 11, Number 2

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## Scope

This document provides a list of recommended terms and definitions to be used in published manuscripts, forensic reports discussing the conclusions of scientific examination of bloodstains, in courtroom testimony, and when teaching bloodstain pattern analysis. The target audience of this document includes crime scene investigators, forensic scientists, investigators, attorneys, judges, and researchers.

## Terms and Definitions

### Accompanying Drop

A small blood drop produced as a by-product of drop formation.

### Altered Stain

A [bloodstain](#) with characteristics that indicate a physical change has occurred.

### Angle of Impact

The acute angle (alpha), relative to the plane of a [target](#), at which a blood drop strikes the [target](#).

### Area of Convergence

The space in two dimensions to which the directionalities of [spatter stains](#) can be retraced to determine the position of the spatter producing event.

### Area of Origin

The space in three dimensions to which the trajectories of spatter can be utilized to determine the position of the spatter producing event.

### Backspatter Pattern

A [bloodstain pattern](#) resulting from blood drops which can be produced when a projectile creates an entrance wound.

### Blood clot

A gelatinous mass formed by a complex mechanism involving red blood cells, fibrinogen, platelets, and other clotting factors.

## Bloodstain

A deposit of blood on a surface.

## Bloodstain pattern

A grouping or distribution of [bloodstains](#) that indicates through regular or repetitive form, order, or arrangement the manner in which the pattern was deposited.

## Bubble ring

An outline within a [bloodstain](#) resulting from air in the blood.

## Cast-off Pattern

A [bloodstain pattern](#) resulting from blood drops released from an object due to its motion.

## Cessation Pattern

A [bloodstain pattern](#) resulting from blood drops released from an object due to its abrupt deceleration.

## Directionality

The characteristic of a [bloodstain](#) that indicates the direction blood was moving at the time of deposition.

## Directional Angle

The angle (gamma) between the long axis of a [spatter stain](#) and a defined reference line on the [target](#).

## Drip Pattern

A [bloodstain pattern](#) resulting from a liquid that dripped into another liquid, at least one of which was blood.

## Drip Stain

A [bloodstain](#) resulting from a falling drop that formed due to gravity.

## Drip Trail

A [bloodstain pattern](#) resulting from the movement of a source of [drip stains](#) between two points.

### Edge Characteristic

A physical feature of the periphery of a [bloodstain](#).

### Expiration Pattern

A [bloodstain pattern](#) resulting from blood forced by airflow out of the nose, mouth, or a wound.

### Flow Pattern

A [bloodstain pattern](#) resulting from the movement of a volume of blood on a surface due to gravity or movement of the [target](#).

### Forward Spatter Pattern

A [bloodstain pattern](#) resulting from blood drops which can be produced when a projectile creates an exit wound.

### Impact Pattern

A [bloodstain pattern](#) resulting from an object striking liquid blood.

### Insect Stain

A [bloodstain](#) resulting from insect activity.

### Parent Stain

A [bloodstain](#) from which a [satellite stain](#) originated.

### Perimeter Stain

An [altered bloodstain](#) which consists of its edge characteristics, the central area having been partially or entirely removed.

### Pool

A [bloodstain](#) resulting from an accumulation of liquid blood on a surface.

### Projected Pattern

A [bloodstain pattern](#) resulting from the ejection of blood under hydraulic pressure, typically from a breach in the circulatory system.

### Satellite Stain

A smaller [bloodstain](#) that originated during the formation of the [parent stain](#) as a result of blood impacting a surface.

### Saturation Stain

A [bloodstain](#) resulting from the accumulation of liquid blood in an absorbent material.

### Serum Stain

The stain resulting from the liquid portion of blood ([serum](#)) that separates during coagulation.

### Spatter Stain

A [bloodstain](#) resulting from an airborne blood drop created when external force is applied to liquid blood.

### Splash Pattern

A [bloodstain pattern](#) created from a large volume of liquid blood falling onto a surface.

### Swipe Pattern

A [bloodstain pattern](#) resulting from the transfer of blood from a blood-bearing surface onto another surface, with characteristics that indicate relative motion between the two surfaces.

### Target

A surface onto which blood has been deposited.

### Transfer Stain

A [bloodstain](#) resulting from contact between a blood-bearing surface and another surface.

### Void

An absence of blood in an otherwise continuous [bloodstain](#) or [bloodstain pattern](#).

### Wipe Pattern

An [altered bloodstain pattern](#) resulting from an object moving through a preexisting wet [bloodstain](#).