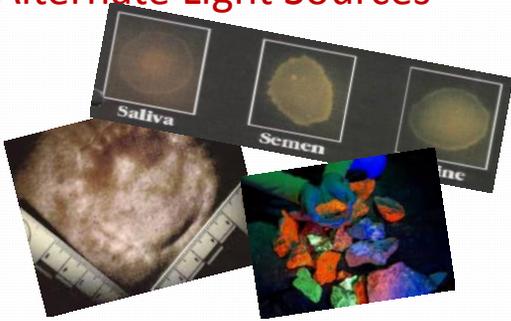


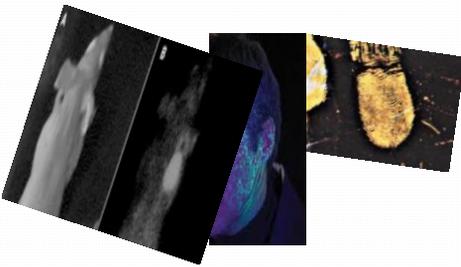
Alternate Light Sources



Alternate Light Source (A.L.S.)

Equipment used to produce visible and invisible light at various wavelengths to enhance OR VISUALIZE items of evidence (fluids, fibers, bruising and other)

Numerous uses of A.L.S.



Today we will concentrate on one aspect of its use.

BRUISING

OBJECTIVES

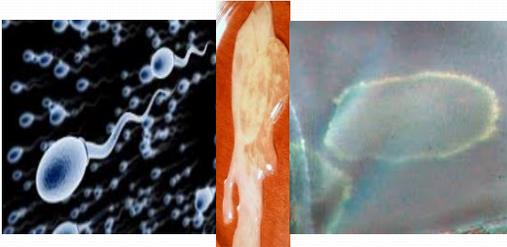
- Help visualize the injury.
- Document the injury.
- Provide additional detail of the injury.
- Help provide a possible cause of the injury.
- Among others.

Some court information

- Successful Frye Reed Hearing
 - May 2013
 - State MD vs Nelson Clifford
 - Upheld as respected technology used by forensic medical professionals.

Let's start with a few items that reflect the light.

SEMEN !!!!! REFLECTS LIGHT



URINE REFLECTS LIGHT



Hairs and fibers

REFLECT LIGHT

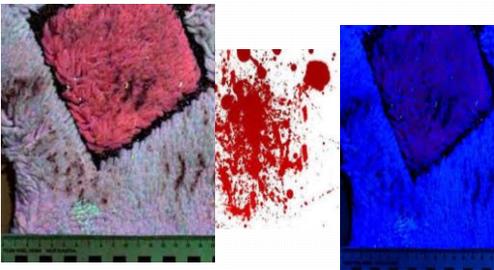


The two main ways to VISUALIZE evidence is by:

Florescence- (evidence glows)

Absorption- (evidence darkens)

BLOOD ABSORBS THE LIGHT



To present this evidence we want to show the photographs side by side.

BEFORE / AFTER

IT WORKS LIKE THIS-

The light penetrates the skin and is absorbed by the blood. This helps with visualizing the pooling blood under the skin.

A.L.S.

Which Goggle to use?		Nomenclature	
WAVELENGTH	GOOGLES	ABBREVIATION	DEFINITION
300 - 400 nm	CLEAR	nm	NANOMETER
415 - 445 nm	YELLOW	BP	BAND PASS
455 - 515 nm	ORANGE	LP	LONG PASS
CSS	ORANGE	SP	SHORT PASS
535 - 595/75 nm	RED	CSS	SP540

ITEM	SEARCH	GOOGLE	CAMERA FILTER
BODY FLUIDS (START)	CSS	ORANGE	1-2 ORANGE
(Dark surfaces and for soles)	UV	CLEAR/YELLOW	YELLOW
(Dark surfaces show 'crusty' spots)	WHITE (OBLIQUE ANGLE)	CLEAR	NONE
BITE MARK/BRUISE	(FRESH) 415/445	YELLOW	1-2 YELLOW
	TO 495/505/515	ORANGE	1-2 ORANGE
(OLDER)	535/555/575	RED	RED (RFLC)

Pattern injuries



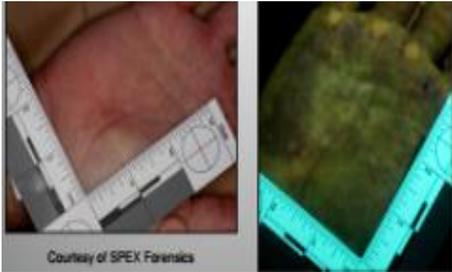
Bruises



3 weeks later



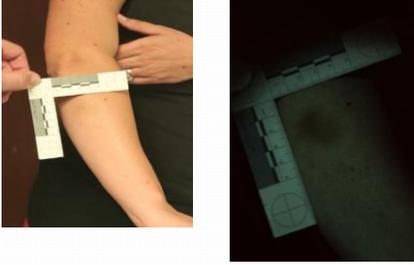




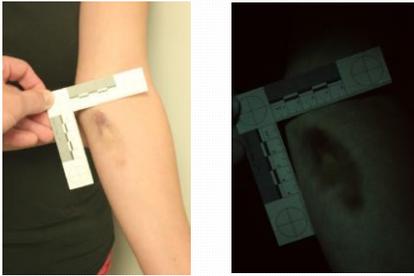
3 days after assault



3 days after the assault



3 days after the assault



Fresh 3 days after with light

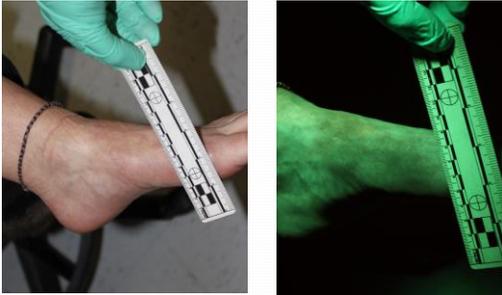


Fresh

2 days after



2 days after assault



Natural Vio w/ yellow blue w/orange



