

BLUNT FORCE TRAUMA - PART I
What the soft tissues can tell us (external injuries)



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 Bachelor's Degree in Nursing, 2001
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Forensic Experience
 -Legal Nurse Consultant - 2009
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Clinical Experience:
 -Emergency - Stanford University Medical Center - 6 years
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Testimony Experience:
 -Blunt Force Trauma
 -Toxicology
 -Medically Acceptable Blood Draws
 -Strangulation



Disclaimer: Gross Pictures Ahead!



Bruises/Contusions



Bruises/Contusions

Impact with a hard object or pressure that causes the blood vessels to burst and blood to leak out into the cellular space.

- May involve multiple layers and go as deep as the underlying organs.



Can you age bruises accurately in children? A systematic review. -(S Maguire, MK Mann, J Sibert, AKemp, 2003)

- Reviewed 167 studies, only 3 met inclusion criteria
 - Study 1: Barciak et al
 - Study 2: Stephenson & Bialas
 - Study 3: Carpenter
- Conclusions of reviewers:
 - assessment of age of bruise in children is inaccurate
 - color discrimination with human eye is poor
 - different colors can be observed in bruise anytime prior to resolution



Can you date bruises?

Dating of Bruises in Children: An Assessment of Physician Accuracy
 (Barciak, Plint, Gaboury, & Bennett, 2003)

- Fifty children with accidental bruises.
- Bruises ranged from 2hrs to 16 days
- Color, tenderness then swelling to estimate age
- Conclusions
 - ER pediatricians' accuracy was 47.6%.



Can you date bruises?

TABLE 2. Bruise Color Reported Compared With Actual Bruise Age

Actual Age of the Bruise	Colors Reported by Observers*			
	Fresh	Mixed	Old	Total
Fresh (<48 h)	30	2	7	39
Intermediate (48 h to 7 d)	4	12	9	25
Old (>7 d)	3	1	9	13
Total	37	25	15	77

p < .001.
 * Fresh, red, blue, purple; old, yellow, green, brown; mixed, combination of "fresh" and "old" colors.



-(Barciak, Plint, Gaboury, & Bennett, 2003)

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The Life Cycle of Bruises in Older Adults.
- (Mosqueda, Burnight, & Liao, 2005)

- Assessed bruises in adults 65+ years
 - Sample: 101 patients, 108 bruises
 - Examined daily
- Findings:
 - Bruises remained visible from 4-41 days
 - Yellow: 16/108 (14.8%) within 24 hours**, 60% at 6 days
 - Purple: uncommon after 11 days (<5%)
 - Red: Present up to 6 weeks



The ageing of bruises: a review and study of the colour changes with time.
- (Langlois & Cresham, 1991)

- 369 photographs
 - Sample: 89 patients, aged 10-100
 - Bruises 6h to 21d old
- Findings:
 - Yellow develops faster in patients <65 years
 - Yellow: 18h+ old



Abrasions



Abrasions

A scrape from friction between the skin and another surface.



Lacerations



Lacerations

A tear in the skin from an impact that causes the skin to split apart.



Cuts

An opening in the skin caused by a sharp object - such as a knife or scalpel.



Avulsion



Avulsion

Soft tissues, musculature, and/or bone are torn away from the normal points of attachment.



Types of Avulsion

- Eyelid—MVA, dog bites, human bites
- Nerve—MVA or neonate injury during delivery
- Tooth—exposure of dental pulp
- Surgical—ingrown nail, varicose veins
- Periosteal—peeling the bone covering off the bone

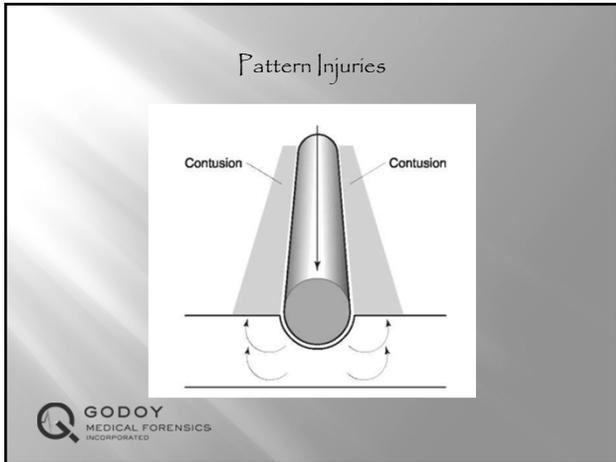


Multiple Injuries

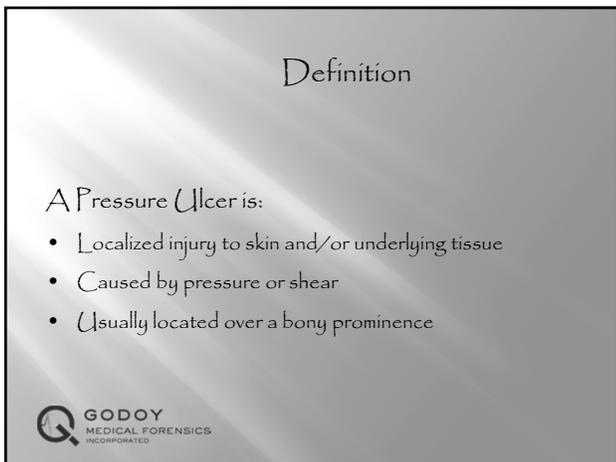


Other Injuries - Patterned Injuries









Godoy Medical Forensics, Inc.
www.GodoyMedical.net



Cases

<p>Criminal:</p> <ul style="list-style-type: none"> -Homicide -Attempted Murder/Assault -Domestic Violence -DUI/Drug Possession -Child Abuse/Neglect -Workman's Comp -Psych -Mitigation 	<p>Civil:</p> <ul style="list-style-type: none"> -Medical Malpractice -Elder Abuse -Personal Injury -Wrongful Death -Catastrophic Injury
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