



# CARING FOR A VICTIM OF STRANGULATION

October 2024

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## **TRIGGER WARNING:**

TOPICS BEING DISCUSSED AND PHOTOS SHOWN DURING THIS PRESENTATION  
MAY BE UPSETTING TO SOME LEARNERS. PLEASE TAKE CARE OF YOURSELF AND  
IF YOU NEED TO DEBRIEF, KNOW THAT THERE ARE RESOURCES AVAILABLE.

# JUST A NOTE

I want to be sure to mention that sexual assault and strangulation can happen to any gender, both for the victim or the assailant. For simplicity, you will hear me throughout this presentation refer to victims using the pronoun “she” and assailants using the pronoun “he”.

Additionally, there are a few terms that are used to describe this patient population, which will vary by job role involved-you may hear me use any of these terms:

- Victim
- Patient
- Survivor
- Client

# LEARNING OBJECTIVES

Review	Review the role of the Sexual Assault and Forensic Nurse Examiner
Discuss	Discuss the basics of conducting a forensic exam in the ED
Discuss	Discuss the dangers of strangulation
Review	Review anatomy and physiology as it relates to strangulation
Review	Review aspects of care of strangulation patients
Review	Review assessment and imaging of strangulation

# ADULT SEXUAL ASSAULT AND STRANGULATION EXAMS IN OREGON

- Adolescent and adult patients over the age of 15 despite gender
- Under 15 years of age, the child should be referred to Randall or Doernbecher Children's Hospital
- Despite the victim's ability to pay
  - The SAVE fund covers the cost of the collection of forensic evidence kit as well as 5 counseling sessions.
- Use licensed interpreters for EVERY examination when applicable-preferably in person



# WHAT IS A SEXUAL ASSAULT NURSE EXAMINER/FORENSIC NURSE EXAMINER?


- Also known as SANE nurse
- A registered nurse who has advanced education and clinical preparation in the forensic examination of sexual assault and strangulation victims
  - 40 hours didactic training
  - Law enforcement ride along
  - Courtroom training and observations
  - District Attorney shadow
  - Crime lab tour
  - Victim's advocacy shadow
  - 4 total precepted examinations
  - 10 precepted genital examinations
  - Review and certification by the Oregon SANE Certification Commission
  - Yearly ongoing education and refreshers including training on care of the strangulation patient

# ROLE OF THE SANE IN A FORENSIC EXAM IN THE ED

- Perform complete nursing assessment and thorough physical head to toe examination
- Take medical and assault history
- Collect, process and preserve physical and forensic evidence
- Maintain chain of custody
- Document both subjective and objective findings
- Initiate prophylaxis in coordination with the ED physician and CDC guidelines for sexual assault patients
- Provide support and referral services
- Provide expert testimony in court hearings/trials

# WHAT IS CHAIN OF CUSTODY?

- Written documentation that identifies all people who handled the evidence throughout collection, packaging, transfer, storage, etc.
- Chain of custody **MUST** be maintained and clearly documented

 **RSI**  
rapid **SAVE** investigation

Pt. label

**SAFE Kit Chain of Custody**

Evidence collected & released (see medical record for itemized list):

☐ Sexual Assault Forensic Kit  
☐ Strangulation Kit (SKIT)  
☐ Blood  
☐ Urine  
☐ Clothing  
☐ Other (list):

Evidence listed above collected, packaged, and sealed by:

\_\_\_\_\_  
(SANE signature & printed name) (SANE #) Date/Time

Evidence listed above locked in secure lockup by:

\_\_\_\_\_  
(SANE signature & printed name) (SANE #) Date/Time

Evidence listed above released to:

\_\_\_\_\_  
(Agency signature & printed name) (Badge #) Date/Time

\_\_\_\_\_  
(Agency name) (Case #)

Evidence listed above released by:

\_\_\_\_\_  
(ED RN/SANE signature & printed name) (SANE #) Date/Time

Updated 1/2024 This form to be included in medical record, LEA to be provided photocopy.



# TRIAGE DECISIONS

- Forensic examination:
  - Acute assault: <120 hours post assault
  - Reporting to law enforcement
  - Patient desires SAFE kit collection or SKIT collection
- Medical examination:
  - Non-acute assault: >120 hours post assault
  - ***Due to the time-sensitive nature of a sexual assault or strangulation kit collection as well as the potential for life-threatening injury, the patient should receive an ESI of 2 (or higher if warranted)***

# ONCE ROOMED, WHAT DO YOU DO?

- If medically able, leave patient fully clothed
- If medically necessary to undress, place clothing on a clean bed sheet and fold up, leaving on bedside table (not the floor)
- If the patient needs to urinate, please keep at bedside so SANE can collect half
- Patient should remain NPO until seen by SANE
- A support person is allowed with the victim-this may be family/friend/significant other/advocate

# FORENSIC EVIDENCE COLLECTION

## Items needed for the examination:

- Exam room
- SAFE or Strangulation kit
  - Forms
  - Consents
- ID labels (about 30)
- Evidence tape
- Wood's lamp
- Swab dryer
- Camera
- Marking pen
- Measuring tape
- Speculum supplies
  - Urine cup



[Evidence Bags with Clothing Items] n.d. Retrieved September 2024 from Oregon State Police Crime Lab


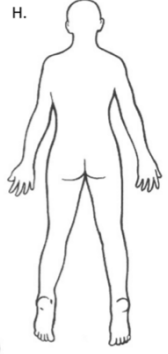

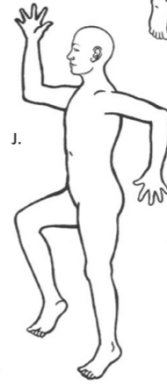
# FORENSIC EVIDENCE

- Wounds
- Clothing
- Foreign material (debris, fibers)
- DNA (aggressive handling, semen, saliva)
- Documentation
  - Victim
  - Photographs
  - Bodygrams

**IX. HEAD-TO-TOE EXAM, cont. - BODYGRAM - FULL BODY**  
Note: Physical findings should be noted on the bodygram that allows for the best visual representation. Duplication across bodygrams is not recommended.

☐ No physical findings noted at this time

**Diagram Key:** A = Abrasion AL = Alternate light source fluorescence B = Bruising BI = Bite BU = Burn C = Cut CN = Contusion E = Ecchymosis FB = Foreign body/debris LA = Laceration PE = Petechiae R = Redness S = Swelling SHX = Sample per history SI = Suction injury T = Tear TE = Tenderness OI = Other injury PTA = Per patient, injury present prior to assault  
Shade tender areas.

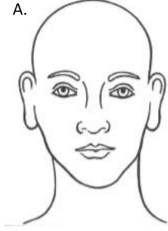





G.  H.  I.  J. 

OR-SATF, Revised 2022 Page 8 Examiner Initials \_\_\_\_\_

[BodyGram –Full Body Form] 2022. Retrieved September 2024 from RSI

**XI. HEAD-TO-TOE EXAM, cont. - BODYGRAM - HEAD AND NECK**  
Note: Physical findings should be noted on the bodygram that allows for the best visual representation. Duplication across bodygrams is not recommended.

☐ No physical findings noted at this time

A.  B.  C.  D.  E.  F. 

**Diagram Key:** A = Abrasion AL = Alternate light source fluorescence B = Bruising BI = Bite BU = Burn C = Cut CN = Contusion E = Ecchymosis FB = Foreign body/debris LA = Laceration PE = Petechiae R = Redness S = Swelling SHX = Sample per history SI = Suction injury T = Tear TE = Tenderness OI = Other injury PTA = Per patient, injury present prior to assault  
Shade tender areas.

2020 Strangulation Kit Page 7 Examiner Initials \_\_\_\_\_

[BodyGram –Head and Neck] 2020. Retrieved September 2024 from <https://oregonsatf.org/resources-for-sanes>

*It is important for the ED staff to document anything they are told by the victim in quotes. Do not put opinion or paraphrase for them, just state what they told you.*

# PLEASE REMEMBER.....

- A large portion of the physical examination we do as SANEs is to collect forensic evidence. Every time you touch the patient, you are leaving possible touch DNA that may be picked up during our swab collections.
- **REMEMBER TO ALWAYS WEAR GLOVES WHEN TOUCHING THE PATIENT**-even if just on the hand or arm.





RSI gratefully acknowledges Alliance for HOPE International for allowing us to reproduce, in part or in whole, the following educational materials.

[WWW.familyjusticecenter.org](http://WWW.familyjusticecenter.org)

# CARING FOR A VICTIM OF STRANGULATION

*Strangulation is a form of asphyxia caused by the closure of blood vessels and/or airway as a result of pressure placed to the neck or chest*

**\*Strangulation is a medical emergency that needs prompt attention\***

- Can be manual or with a ligature
- Oftentimes no outward signs are seen, but dangerous internal damage can be present
- **Ask permission *EVERY TIME* before reaching out or touching a victim**

# WHY ARE WE TALKING ABOUT STRANGULATION?

**It is really, REALLY dangerous**

- Escalation of risk and lethality for the victim
  - After one incident of strangulation, a victim is more than **7 times** more likely to be murdered by the same perpetrator in the future
- Escalation of risk and lethality for the community
  - Predictor of violence with law enforcement- cop killers are often stranglers
  - Mass murderers also have a history of strangulation





MEN WHO STRANGLE ARE THE MOST LETHAL  
AND DANGEROUS TYPE OF DOMESTIC  
VIOLENCE ABUSER





# STRANGULATION CAN BE HARD TO IDENTIFY AND DOCUMENT

Only 50% of victims  
have VISIBLE injuries,  
and oftentimes  
those are not  
obvious



**Even in fatal cases!**



Just 15% of visible injuries can be  
photographed using typical  
equipment

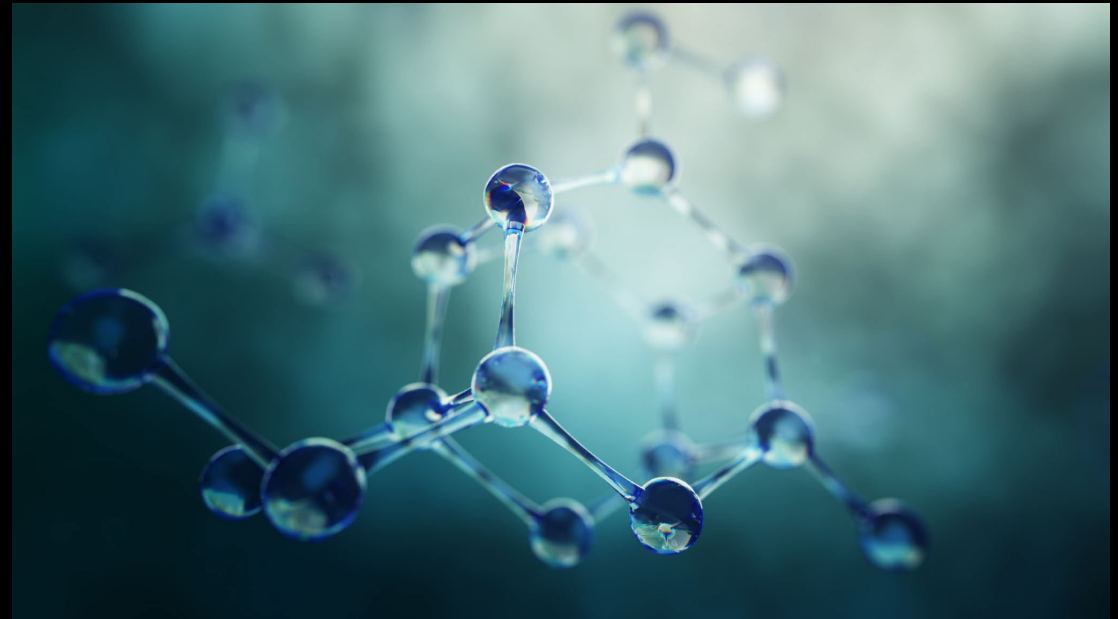




Let's pretend we all went to  
medical school over the weekend

# STRANGULATION IS.....

A form of ASPHYXIA  
where the body is  
deprived of oxygen



PowerPoint stock photo, 2024

# STRANGULATION HAS THE BASIC INGREDIENTS FOR DEATH

Sufficient sustained force to  
compromise:



Blood Flow



Air Flow



Both Blood Flow *and* Air Flow



MOTHER  
NATURE JUST  
ISN'T FAIR



Above images acquired from PowerPoint stock photos, 2024

THE HUMAN NECK AND ITS  
STRUCTURES ARE  
EXTREMELY *VULNERABLE*

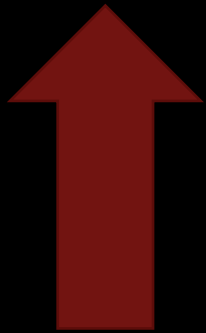
*VEINS AND ARTERIES HAVE NO  
BONES TO PROTECT THEM*



# KEEPING ARTERIES AND VEINS STRAIGHT

Carotid Arteries

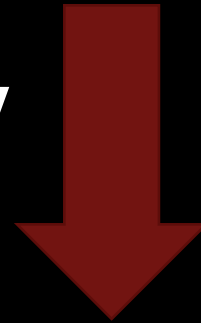
A



Takes blood UP to the brain

Jugular Veins

V



Takes blood out of the brain  
(down)

# IT TAKES A LOT LESS PRESSURE THAN YOU THINK

**Occlusion** is the temporary closure of a structure

Carotid Artery: 11 pounds

Jugular Vein: less than 5 pounds

Trachea: 3.3 pounds

Larynx Fracture: 35-46 pounds

Handgun trigger = 6 pounds



Opening a can of soda = 20 pounds



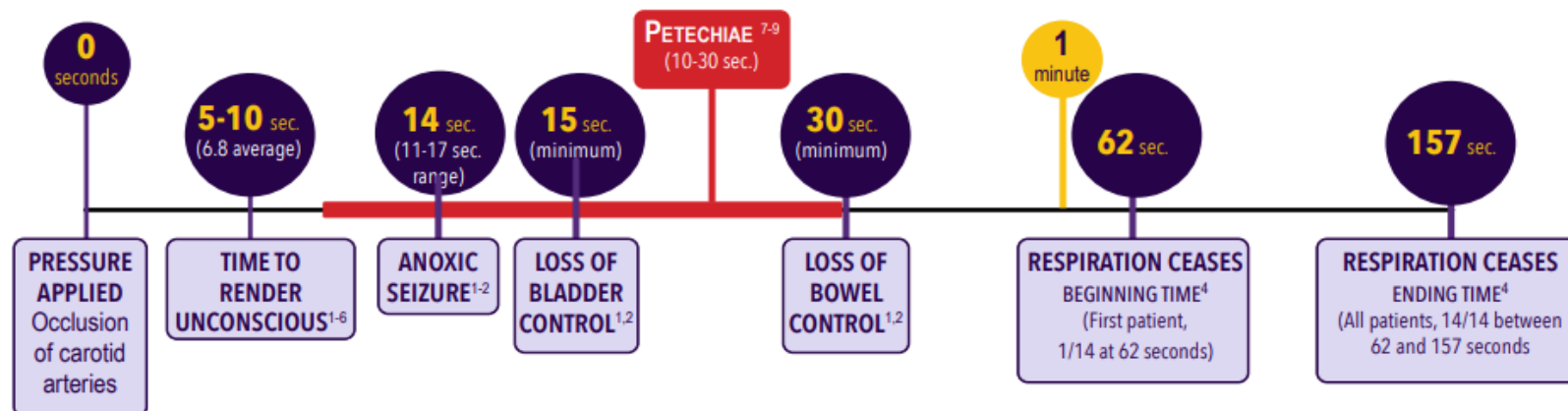
Adult male handshake = 80-100 pounds



# PHYSIOLOGICAL CONSEQUENCES OF STRANGULATION

## Occlusion of Arterial Blood Flow: Seconds to Minutes Timeline

CREATED BY: Ruth Carter; Bill Smock, MD; Gael Strack, JD; Sean Dugan, MD; Marisol Martinez, MA ; Yesenia Aceves; and Ashley Peck



### REFERENCES AND RESOURCES

- <sup>1</sup> Kabat H, Anderson JP. Acute arrest of cerebral circulation in man: Lieutenant Ralph Rossen (MC), U.S.N.R.. *Journal of Nervous and Mental Disease*. 1943; 50(5):510-528. doi: 10.1001/archneurpsyc.1943.02290230022002
- <sup>2</sup> Smith BA, Clayton EW, Robertson D. Experimental arrest of cerebral blood flow in human subjects: the red wing studies revisited. *Perspect Biol Med*. 2011;54(2):121-131. doi:10.1353/pbm.2011.0018
- <sup>3</sup> Reay DT, Holloway GA Jr. Changes in carotid blood flow produced by neck compression. *Am J Forensic Med Pathol*. 1982;3(3):199-202. doi:10.1097/00000433-198209000-00002
- <sup>4</sup> Sauvageau A, Laharpe R, King D, et al. Agonal sequences in 14 filmed hangings with comments on the role of the type of suspension, ischemic habituation, and ethanol intoxication on the timing of agonal responses. *Am J Forensic Med Pathol*. 2011;32(2):104-107. doi:10.1097/PAF.0b013e3181efba3a
- <sup>5</sup> Mitchell JR, Roach DE, Tyberg JV, Belenkie I, Sheldon RS. Mechanism of loss of consciousness during vascular neck restraint. *J Appl Physiol* (1985). 2012;112(3):396-402. doi:10.1152/japplphysiol.00592.2011
- <sup>6</sup> Stellpflug SJ, Menton WH, Dummer MF, et al. Time to unconsciousness from sportive chokes in fully resisting highly trained combatants. *International Journal of Performance Analysis in Sport*. 2020; 20(4):720-728. doi: 10.1080/24748668.2020.1780873
- <sup>7</sup> Copley AL & Kozam G. Capillary Fragility and the Ecchymosis Test in Man. *Journal of Applied Physiology*. 1951;4(4):311-327. doi: 10.1152/jappl.1951.4.4.311
- <sup>8</sup> Anscombe AM, Knight BH. Case report. Delayed death after pressure on the neck: possible causal mechanisms and implications for mode of death in manual strangulation discussed. *Forensic Sci Int*. 1996;78(3):193-197. doi:10.1016/0379-0738(95)01886-7
- <sup>9</sup> Staczynski JS. Strangulation injuries: *Emergency Medicine Reports*; 2010. 31(17):193-203. <https://www.reliasmedia.com/articles/19950-strangulation-injuries>



[strangulationtraininginstitute.com](http://strangulationtraininginstitute.com)

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v 1.23

**\*STRANGULATION  
CAN TURN  
DEADLY IN A  
MATTER OF  
SECONDS\***

# SO, WHAT DOES THAT ALL MEAN FOR MY PATIENT?

Some parts of the brain are more sensitive to the lack of oxygen:

- **Hippocampus** (memory)
- **Thalamus** (regulates consciousness and sensory input)
- **Parietal-occipital lobe** (integrates sensory information)

**\*\*THIS IS WHY SURVIVORS CANNOT RECALL EVENTS CLEARLY OR  
CHRONOLOGICALLY\*\***

# SIGNS<sup>of</sup> Strangulation

Visible evidence of injury; observable to others as well as to the victim\*

Source: Strangulation in Intimate Partner Violence, Chapter 16,  
Intimate Partner Violence, Oxford University Press, Inc. 2009.

## SCALP

- Petechiae
- Bald spots (from hair being pulled)
- Bump to the head (from blunt force trauma or falling to the ground)

## EARS

- Ringing in ears
- Petechiae on earlobe(s)
- Bruising behind the ear
- Bleeding in the ear

## EYES & EYELIDS

- Petechiae to eyeball
- Petechiae to eyelid
- Bloody red eyeball(s)
- Vision changes
- Droopy eyelid

## FACE

- Petechiae (tiny red spots-slightly red or florid)
- Scratch marks
- Facial drooping
- Swelling

## MOUTH

- Bruising
- Swollen tongue
- Swollen lips
- Cuts/abrasions
- Internal Petechiae

## CHEST

- Chest pain
- Redness
- Scratch marks
- Bruising
- Abrasions

## NECK

- Redness
- Scratch marks
- Finger nail impressions
- Bruising (thumb or fingers)
- Swelling
- Ligature Marks



strangulationtraininginstitute.com

\* The lack of visible signs does not eliminate the possibility of strangulation; invisible symptoms may also be present.

\*\*The lack of visible signs does not eliminate the possibility of strangulation; invisible symptoms may also be present\*\*



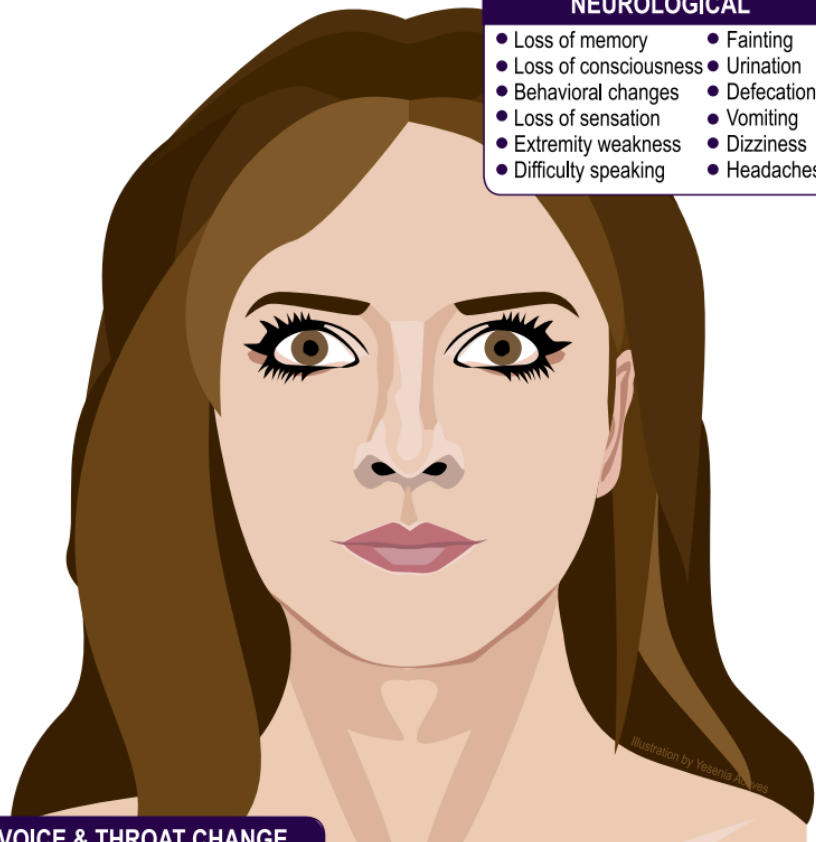
# SYMPTOMS<sup>of</sup> Strangulation

Injuries not visible to the naked eye; observable only to the victim\*

Source: Strangulation in Intimate Partner Violence, Chapter 10,  
Intimate Partner Violence, Oxford University Press, Inc. 2018.

## NEUROLOGICAL

- Loss of memory
- Loss of consciousness
- Behavioral changes
- Loss of sensation
- Extremity weakness
- Difficulty speaking
- Fainting
- Urination
- Defecation
- Vomiting
- Dizziness
- Headaches



## VOICE & THROAT CHANGE

- Raspy or hoarse voice
- Unable to speak
- Trouble swallowing
- Painful to swallow
- Clearing the throat
- Coughing
- Nausea
- Drooling
- Sore throat
- Stridor

## BREATHING CHANGES


- Difficulty breathing
- Respiratory distress
- Unable to breathe



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\* Visible signs may also be present.

- *Patients can arrive combative, restless, confused and with extreme weakness. Keep in mind that those patients could be victims of strangulation*



# Radiologic Recommendations for acute adult non/near fatal strangulation

[Recommendations for the Medical/Radiographic Evaluation of Acute Adult Non/Near Fatal Strangulation] n.d. Retrieved September 2024 from <https://www.familyjusticecenter.org/resources/>

# INJURIES-NECK

Ligature bruises



Birmingham Mail

Possible "finger" marks



Strangulation Awareness Resource Portal

May appear minimal



ACEPnow.com

# INJURIES-MOUTH

Torn frenulum



Bureau of Legal Dentistry

Petechial rash



Wikipedia

Bruising to lip/tongue



Bureau of Legal Dentistry



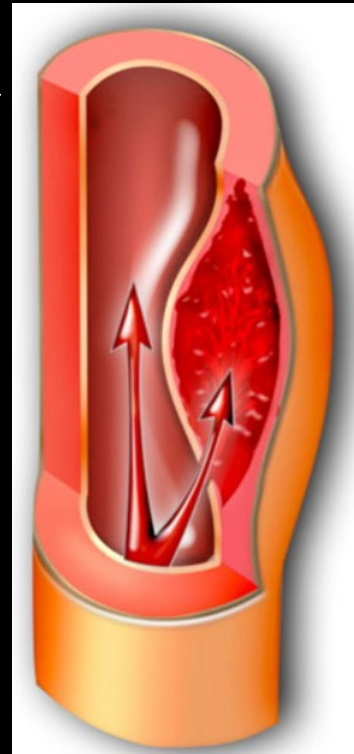
# THE DANGER OF STRANGULATION: CAROTID ARTERY DISSECTION





# CAROTID ARTERY DISSECTION

- Carotid artery dissections are the #1 cause of strokes in patients under 45
- Can occur hours to years post-assault
- Can be from violence/strangulation, MVCs, hanging injuries, etc.



Tear in the tunica intima,  
allowing formation of  
hematoma and  
compression of lumen

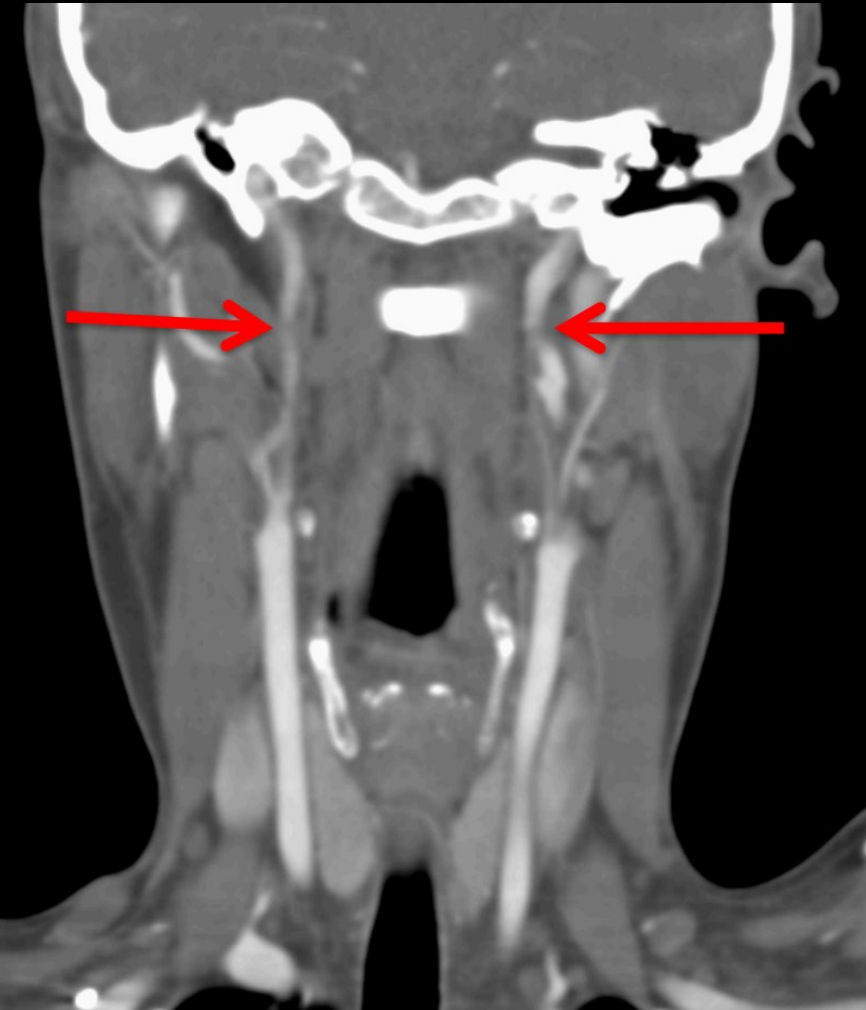


Image: Training Institute on Strangulation Prevention

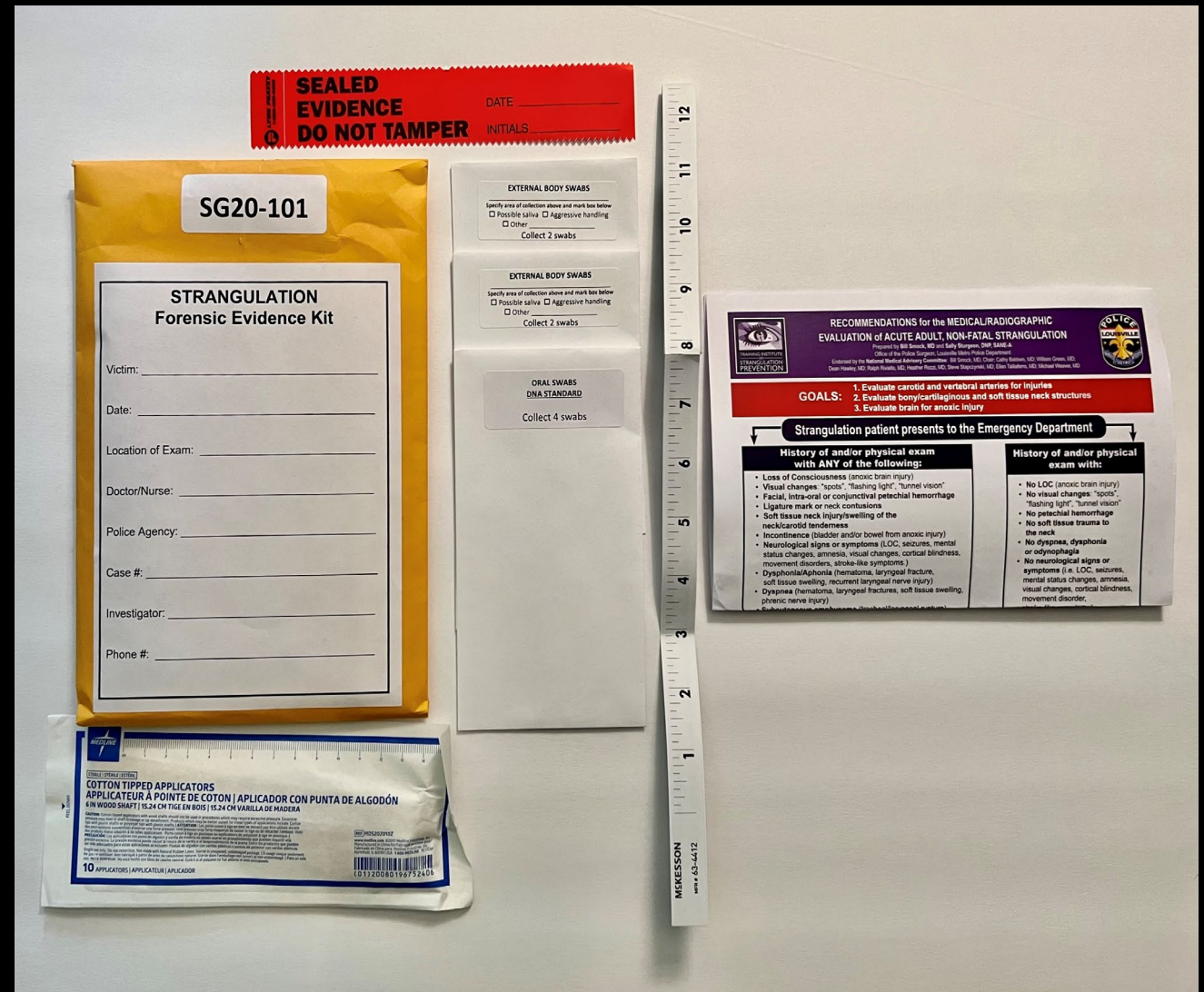
# STRANGULATION KIT (SKIT) CONTENTS

**Documentation forms:** 12 pages with a similar format to SANE kit forms

**Forensic Evidence Collection Supplies:** Swabs, envelopes, measuring tape, evidence tape

**Information for Providers:** Kit collection instructions, recommendations for imaging

**Information for Victims:** CVC form, discharge instructions



Burley, M. (2024). SKIT Contents. Personal Image.

# CONSIDERATIONS FOR KIT COLLECTION

Strangulation Kit	SAFE Kit
Can NOT be collected anonymously	Option to have anonymous collection for storage
Only used in strangulation cases where no sexual assault has occurred	Used in cases where sexual assault has occurred or if unknown (may have a strangulation component)
Collected by SANE or FNE	Collected by SANE or FNE

# MORE STATISTICS

Full IPV/Non-IPV Data	
IPV	77%
Non-IPV	23%

## Intimate Partner Violence

- Spouse
- Ex-spouse
- Current or former intimate partner

## Non-Intimate Partner Violence

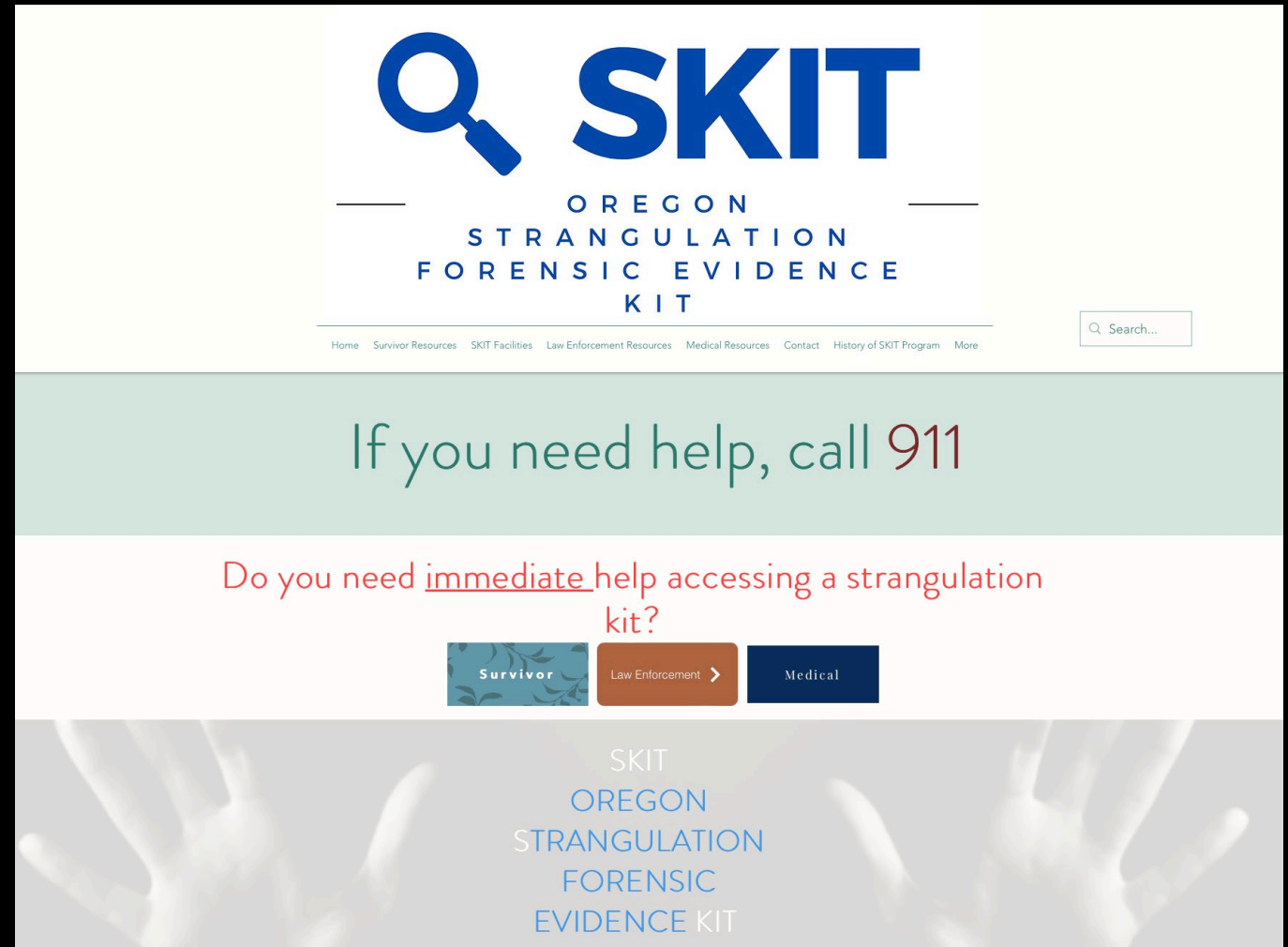
- Family member
- Stranger
- Friend

As of September 30<sup>th</sup>, 2024, 527 SKITs have been completed in Oregon. This is since the introduction of SKITs in 2021



# NEW SKIT WEBSITE!

WWW.SKITOREGON.COM



# REFERENCES

Alliance for HOPE International (n.d.) Resources Library. [WWW.familyjusticecenter.org](http://WWW.familyjusticecenter.org)

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Dunn RJ, Sukhija K, Lopez RA. Strangulation Injures. Updated 2023 April 22. StatPearls. <https://www.ncbi.nlm.nih.gov/books/NBK459192/>

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Oregon Strangulation Forensic Evidence Kit (2024). <http://www.skitoregon.com>

SATF Oregon (n.d.) Resources for SANEs. <https://oregonsatf.org/resources-for-sanes>

Smith, S. G., Zhang, X., Basile, K. C., Merrick, M. T., Wang, J., Kresnow, M., & Chen, J. (2018). *The National Intimate Partner and Sexual Violence Survey: 2015 data brief – updated release*. Centers for Disease Control and Prevention. <https://www.cdc.gov/violenceprevention/pdf/2015data-brief508.pdf>

The background features a solid black field. At the top, there is a decorative, wavy horizontal band with a color gradient. From left to right, the colors transition from a warm orange-red to a bright yellow, then through green, and finally to a light cyan or blue on the far right.

QUESTIONS??