

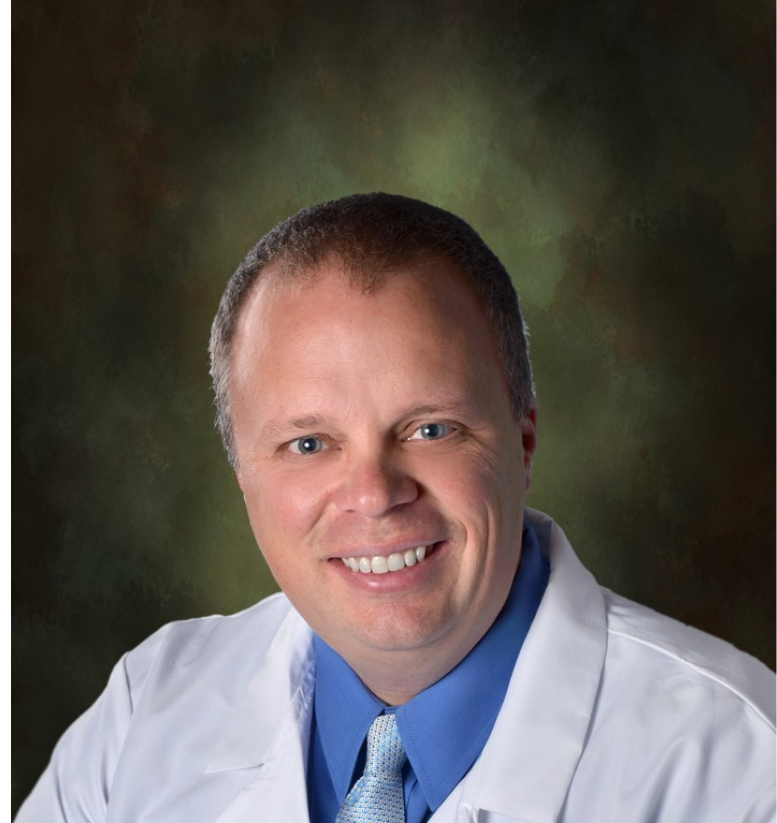


Strangulation: What Paramedics need to Know

Speakers:



Gael Strack, J.D.
CEO/Co-Founder
Alliance for HOPE



R. William Worden, D.O., M.Ed.
Medical Director
Reserve Deputy Sheriff



Heartland Medical Direction



Thank you SD & Dr. Kristi Koenig for your leadership & SD County Health Alert (2/19)



Date: February 12, 2019
To: CAHAN San Diego Participants
From: Health and Human Services Agency

Strangulation: Intimate Partner Violence in San Diego County

This health advisory informs healthcare providers about the risks of intimate partner, non-fatal strangulation. It also contains resource links and recommendations for local healthcare providers.

Key Points

- In the past decade, approximately half of women who were murdered in the City of San Diego were killed by an intimate partner, some by strangulation.
- Intimate partner, non-fatal strangulation is a strong indicator that an abusive relationship could turn fatal. Non-fatal strangulation is associated with a six-fold increased risk of attempted homicide and seven-fold increased risk of completed homicide.
- Recognizing strangulation signs and symptoms during history and examination of at-risk patients can save lives.
- **For suspected cases of strangulation, healthcare providers should immediately contact local law enforcement, concurrent with a medical work up.**
- Local law enforcement has been trained to implement a standardized strangulation protocol.
- Collection of evidence of strangulation, and other serious domestic violence injuries, by trained healthcare personnel can increase felony filings by 30 percent.

In Memory of Casondra and Tamara



Findings: Minimization by ALL professionals due to a lack of knowledge

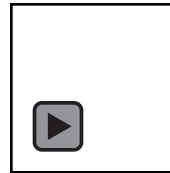
- Dispatchers & paramedics minimized it
- Police officers minimized
- Doctors and Nurses minimized
- Prosecutors minimized
- Survivors minimized
- Courts minimized
- Don't expect your jurors to understand the seriousness of strangulation
- Without an expert, jurors are likely to think it didn't happen because the injuries were too minor (San Diego Jury)
- With an expert, jurors wanted to know why the case was only prosecuted as a misdemeanor (Orange County Jury)

Minimization by Victims

Let's listen in...

Minimization by Victims

- Victims may not understand the danger and maybe reluctant to seek medical attention.
- “He didn’t really choke me, he just had me in a headlock and I couldn’t breathe.”
 - Plattsburgh, NY
 - Santa Clara County policy is to roll out the paramedics on each case



Realities of Strangulation



50%
No visible
injury



PAUSE/PLAY

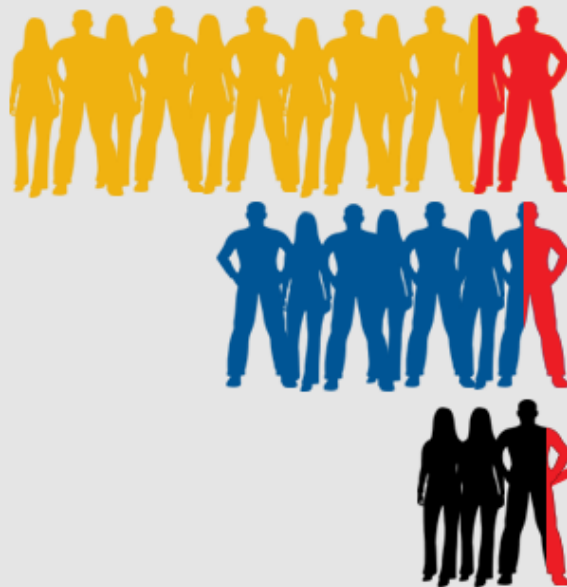


Back

Continue



Realities of Strangulation



3%
of victims
seek medical
attention



PAUSE/PLAY



Back

Continue 

Observations

- 90% of the cases had a DV history
- 50% of the cases, children were present.
- 99% of the suspects were men.

Signs and Symptoms documented in Police Reports – Evidence was there!

- Redness to neck
- Scratch marks
- Rope burns
- Thumb print bruising
- Red eyes
- Spasm
- Urination & defecation
- Pain to neck/throat
- Coughing
- Raspy voice
- Nausea or vomiting
- Unconsciousness
- Ears ringing
- Head rush
- Miscarriage



Dr. Dean Hawley, Forensic Pathologist, Professor University of Indiana Medical School

- “Fatal strangulation can occur without any external evidence of violence on the human body.”
- “The best way to document a strangulation case is still by an autopsy”



Why no visible injuries?

Manual Strangulation - Most Common

- Method is important
- Some methods may not leave a visible external injury “at the time” of the assault or when victims call police
- Single incident may show intent to injury or control
- Multiple strangulations may show intent to kill
- Use of a ligature is recognized as a method of “finishing it” or overkill



Carotid Restraint: Prohibited or Restricted by Many Police Departments Nationwide

- Many police agencies do not allow officers to use carotid restraint.
 - SDPD: No more than 30 seconds (7/92)
 - POST: First aid protocol.
 - “... subject should be checked by medical personnel”



“CHOKE HOLDS”

Strangulation by any other name...

Vascular

Blood Choke

- LVNR
- Vascular Neck Restraint
- Carotid Hold
- Bilateral Carotid Compression
- Sleeper Hold

Martial Arts:

- Rear-Naked Choke
- Anaconda Choke
- Arm Triangle Choke
- Side Choke
- Head and Arm Choke
- D’Arce Choke
- Hell Strangle

Both

- Strangle Hold
- Neck Hold
- Knee on Neck

Martial Arts:

- Ezekiel Choke
- Shime-Waza (12 variations)
- Guillotine Choke

Airway

- Air Choke
- Arm Bar Choke Hold
- Wind Choke
- Tracheal Choke

Martial Arts:

- True Choke
- Gogoplata
- North-South Choke

Fast forward...

Journal of Emergency Medicine in 2001 Published Six Articles on Strangulation

- 1 – Walking and Talking Victims
- 2 – Survey Results of Strangled Women
- 3 – Review of 300 Cases – Legal Issues
- 4 – Review of 300 Cases – Clinical Evaluation
- 5 – Review of 300 Cases – Fatal Cases
- 6 – Effect of Multiple Strangulation Attacks

Fast Forward

We have now collected approximately 900 articles related to strangulation in our dropbox/bibliography related to strangulation

Some new articles related to injuries:

- **Value of 3T Craniocervical MR imaging following non-fatal strangulation. 114 Cases. (2-19)**
 - European Society of Radiology. Heimer, et al, Switzerland
 - MR of the neck useful in chokehold cases
- **CTA of the neck in strangulation victims: incidence of positive findings at a level one trauma center over a 7-year period. 147 cases. 1/47 CAD found. (4-19)**
 - Emergency Radiology, Zuberi, et al, Kentucky.
- **Tracheal perforation from non-fatal strangulation**
 - Journal of Forensic and Legal Medicine.
 - Case Study of 21 yo. (5-19).
 - Julia De Boos. Queensland, Australia
- **Evaluation of Nonfatal Strangulation in Alert Adults.**
 - Annals of Emergency Medicine (7-19)
 - 188 manually strangled patients received some imaging. 6 had injury; 2 had Carotid Dissection or 1/94

American Academy of Neurology Position Statement (June 9, 2021)

- “The medical literature and the cumulative experience of neurologists clearly indicate that restricting cerebral blood flow or oxygen delivery, even briefly, can cause permanent injury to the brain, including stroke, cognitive impairment, and even death.”

Significant Findings:

- **Lack of injuries** caused the entire criminal justice system to minimize the seriousness of strangulation.
- **Lack of Understanding.** Victims didn't understand the danger, the immediate or long term consequences. "I'm fine, I'm fine"
- **Lack of Research** – non-fatal strangulation was neglected by the medical community
- **Lack of laws and protocols** caused suspect to get away with it. They were not being held accountable for the crimes they committed but they knew exactly what they were doing. Strangulation was a clear weapon of choice.
- **Need a System-wide Response.** Multi-disciplinary teams have the best outcomes.

Training Institute on Strangulation Prevention



- Project of Alliance for HOPE International
- Launched October 2011 by USDOJ, Office on Violence Against Women
- Most comprehensive training program in the U.S.
- Fee-based Training for All Professionals
- Supported by a team of National Advisors and Faculty
- Work in three committees: Medical, Legal and Advocacy

strangulationtraininginstitute.com



ALLIANCE for
HOPE
INTERNATIONAL



ESCAPE 



RESOURCE LIBRARY

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NEWS

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LEGISLATION **MAP**

REQUEST **TRAINING**

www.strangulationtraininginstitute.com

ALLIANCE for
HOPE
INTERNATIONAL

CREATING PATHWAYS TO HOPE

Strangulation is the last warning shot before a murder

#LastWarningShot



Violence: Recognition, Management and Prevention

NON-FATAL STRANGULATION IS AN IMPORTANT RISK FACTOR FOR HOMICIDE OF WOMEN

Nancy Glass, PhD, MPH, RN,* Kathryn Laughon, PhD, RN,† Jacquelyn Campbell, PhD, RN,*
Carolyn Rebecca Block, PhD,‡ Ginger Hanson, MS,§ Phyllis W. Sharps, PhD, RN,*
and Ellen Taliaferro, MD, FACEP||

*School of Nursing, Johns Hopkins University, Baltimore, Maryland, †School of Nursing, University of Virginia, Charlottesville, Virginia,
‡Illinois Criminal Justice Information Authority, Chicago, Illinois, §School of Nursing, Oregon Health and Science University, Portland,
Oregon, and ||Health After Trauma Project, Creekside Communications, Half Moon Bay, California

Reprint Address: Nancy Glass, PhD, MPH, RN, School of Nursing, Johns Hopkins University, 525 N. Wolfe Street, Room 439, Baltimore,
MD 21205

Abstract—The purpose of this study was to examine non-fatal strangulation by an intimate partner as a risk factor for major assault, or attempted or completed homicide of women. A case control design was used to describe non-fatal strangulation among complete homicides and attempted homicides ($n = 506$) and abused controls ($n = 427$). Interviews of proxy respondents and survivors of attempted

Keywords—intimate partner violence; strangulation; risk of homicide

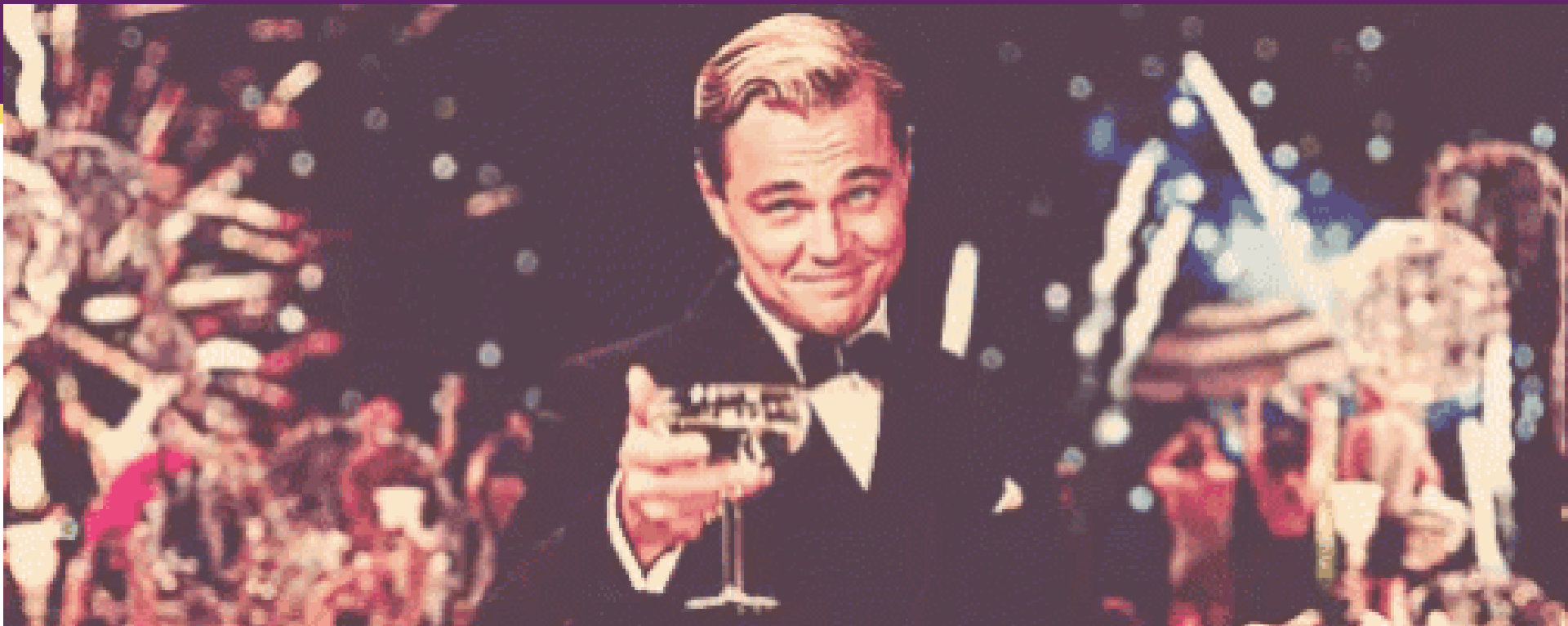
INTRODUCTION

The 1993 National Mortality Followback Survey of

Key findings from 2018 Oklahoma Lethality Assessment Study of 1008 LAP Victims

- 79.66% reported some form of strangulation
 - 11.70% reported attempted;
 - 30.16% reported completed
 - **37.80 reported multiple**
- Women of all strangulation were more likely to be sexually assaulted.
- Women of multiple strangulations were more likely to report; believed abuser was capable of killing them; suffered a miscarriage; lost consciousness; sought medical treatment and felt powerless.
- **Conclusion: Multiple strangulations mean higher risk of homicide and health consequences**

In the US, 48 States, 20 Tribes, 2 Territories, Federal and Military have passed felony strangulation Laws.
Around the world, Australia, New Zealand, Canada & UK have joined.



SB40 (Roth) enrolled 9-1-17 as California Penal Code 13701

- **DUTY TO WARN:** New law requires a statement informing the victim that strangulation may cause internal injuries and encouraging the victim to seek medical attention.
- **DUTY TO TRACK:** New law requires documenting when the incident involves strangulation or suffocation.

Congratulations to Washington for passing the first strangulation DV exam law!!!!!!

WASHINGTON STATE LEGISLATURE

Legislature Home

- House of Representatives
- Senate
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- Bill Information
- Agendas, Schedules, and Calendars
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- Coming to the Legislature
- Legislative Agencies
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- View All Links

Bill Information > SB 5183

Search for another bill or initiative:

5183 **Bill** Initiative 2021-2022 Search

SB 5183 - 2021-22

Concerning victims of nonfatal strangulation.

Sponsors: **Nobles, Dhingra, Das, Hasegawa, Hunt, Keiser, Kuderer, Liias, Mullet, Nguyen, Rivers, Salomon, Stanford, Wagoner, Wilson**

Bill Status-at-a-Glance ⓘ

See **Bill History** for complete details on the bill

As of Tuesday, April 6, 2021 05:07 PM

Current Version:	Current Status:
2nd Substitute - 2SSB 5183	HPassed 3rd

Where is it in the process?

	Introduced	In Committee	On Floor Calendar	Passed Chamber
In the Senate:	●	●	●	●
In the House:	●	●	●	●
After Passage:	○	○	○	○
	Passed Legislature	On Governor's Desk	Governor Acted	Session Law

Comment on this bill

Get Email Notifications

RSS Notifications

Why?

- Rendering a person unconscious, whether by choking, strangulation or suffocation, is an inherently dangerous act that is easily capable of causing death, or brain injury with devastating lifelong consequences.
- The difference in the outcome, between unconsciousness, brain damage and death, may be only a matter of a few additional seconds of pressure.
- In the final analysis, this is an act of cruel domination met by sheer horror and often accompanied by serious physical and psychological harm.
- **R v. Lemmon (2012) 524 A.R. 164**

Why Dr. Worden is here:

2016 Study about EMS

How One Change In Policy Could Help Victims Of Domestic Violence

A new study shows first responders need better training when it comes to dealing with intimate partner violence.

🕒 01/18/2016 11:02 am ET



Jenavieve Hatch

Editorial Fellow, The Huffington Post



PNC VIA GETTY IMAGES

- Huffington Post – 1/18/16
- Study conducted by University of Windsor, Florida State University and University of Florida College of Medicine
- 403 EMS first responders
- 33% agreed: DV is a normal reaction to day to day frustration
- 35% agreed: when victims stay, they are responsible for the abuse
- 21% agreed: battered women secretly want to be abused.

EMS Study – Other Findings

- 71% reported having interacted with DV victims
- 31% reported having 2 hours or less of training in the past 5 years
- 19% did not receive any training in the last 5 years
- “The key to better services is providing mandated ongoing training and education to EMS”
- Kentucky and Tennessee are the only two states that mandate DV training for EMS personnel



Training Institute on Strangulation Prevention

Oklahoma City, OK - May 2018
Advanced Course - Class #13





They Are Killers!

R. William Worden, D.O., M.Ed.

Medical Director

Reserve Deputy Sheriff



Stranglers are Killers!

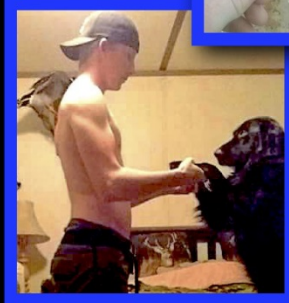
- 07/26/05
 - Domestic assault & battery
 - Issue emergency protective order
- 05/07/07
 - Unlawful poss. Of c.D.S.-(Fel)
 - Transporting loaded firearm
 - Toc-beer
 - Dus - (misd)
 - SPEEDING (16-20 OVER), in violation of 47 OS 11-801a

Stranglers are Killers

- 08/20/07
 - Feloniously pointing weapon
- 12/03/09
 - Kidnapping (felony)
 - Domestic abuse-assault and battery (misd possession of controlled substance
 - Unlawful possession of drug paraphernalia
- 05/19/2011
 - Assault with a dangerous weapon

Stranglers are Killers

- 06/23/15
 - Assault & battery, misdemeanor
 - Public intoxication
 - Threaten to perform act of violence
 - Malicious injury to property - under \$1000
- 12/14/16
 - Protective order violation
- 12/19/16
 - Driving while license is suspended
 - Escape from arrest or detention



ROSE BORISOW GRAFX



OFFICER JUSTIN TERNEY

END OF WATCH : MARCH 27, 2017



"LIVE YOUR LIFE
THAT THE FEAR OF DEATH
CAN NEVER ENTER YOUR HEART"

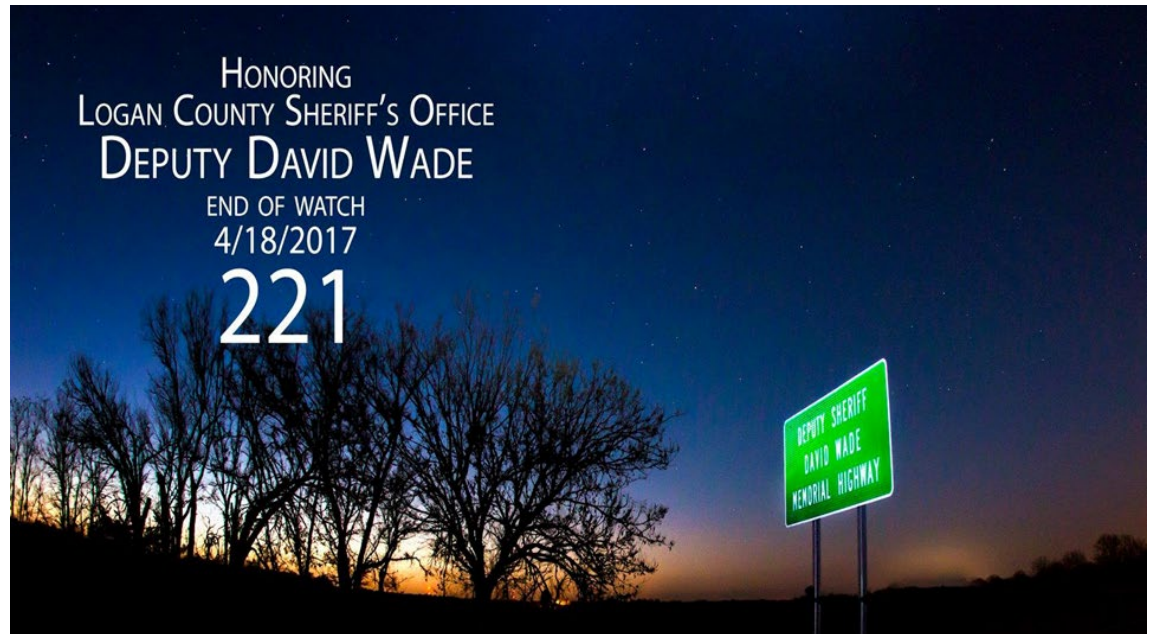


Stranglers are KILLERS

- 11/27/06 Obstructing an Officer
- 02/09/10 Obtaining cash or merchandise by trick or deception
- 11/23/15 Kidnapping
- 11/23/15 Child endangerment

Stranglers are KILLERS

- **11/23/15 Domestic abuse – Assault and Battery in the presence of a child**
 - “Then took her to the bedroom and tied her hands up with a ‘cord’”
 - “attempted to located some duct tape to cover her mouth.”
 - **03/07/17 Order of dismissal of Counts 1-2-3 (from November 23, 2015)**



The next time we heard
from this killer was
April 18, 2017

Murder in the first degree

They are Killers



Casey Gwinn, President,
Family Justice Center Alliance

“The most dangerous domestic violence offenders strangle their victims. The most violent rapists strangle their victims. We used to think all abusers were equal. They are not. Our research has now made clear that when a man puts his hands around a woman, **he has just raised his hand and said, “I’m a killer.”** They are more likely to kill police officers, to kill children, and to later kill their partners. So, when you hear “He choked me”, now we know you are the edge of a homicide.”

A background image showing a line of police officers in dark uniforms and caps, standing in formation. The image is slightly blurred and serves as a backdrop for the text.

Riverside County District Attorney's Office 2013 Study by Gerald Fineman, J.D.

- Law enforcement officers killed in the line of duty
- 1993-2013
- 50% of officers were killed by a criminal suspect with a public records act history of strangulation assault against a woman in a prior relationship

2013 Treasure Valley (ID) Study

- Evaluated ten officer-involved critical incidents where officer shot a suspect or suspect shot an officer
- 80% of suspects with domestic violence history
- Non-fatal strangulation history in 30%
- Based only on public records history
- More research needed
- We all should be looking for it/tracking it



Heartland Medical Direction



It's no big deal. It's just Choking

One sees what one knows!

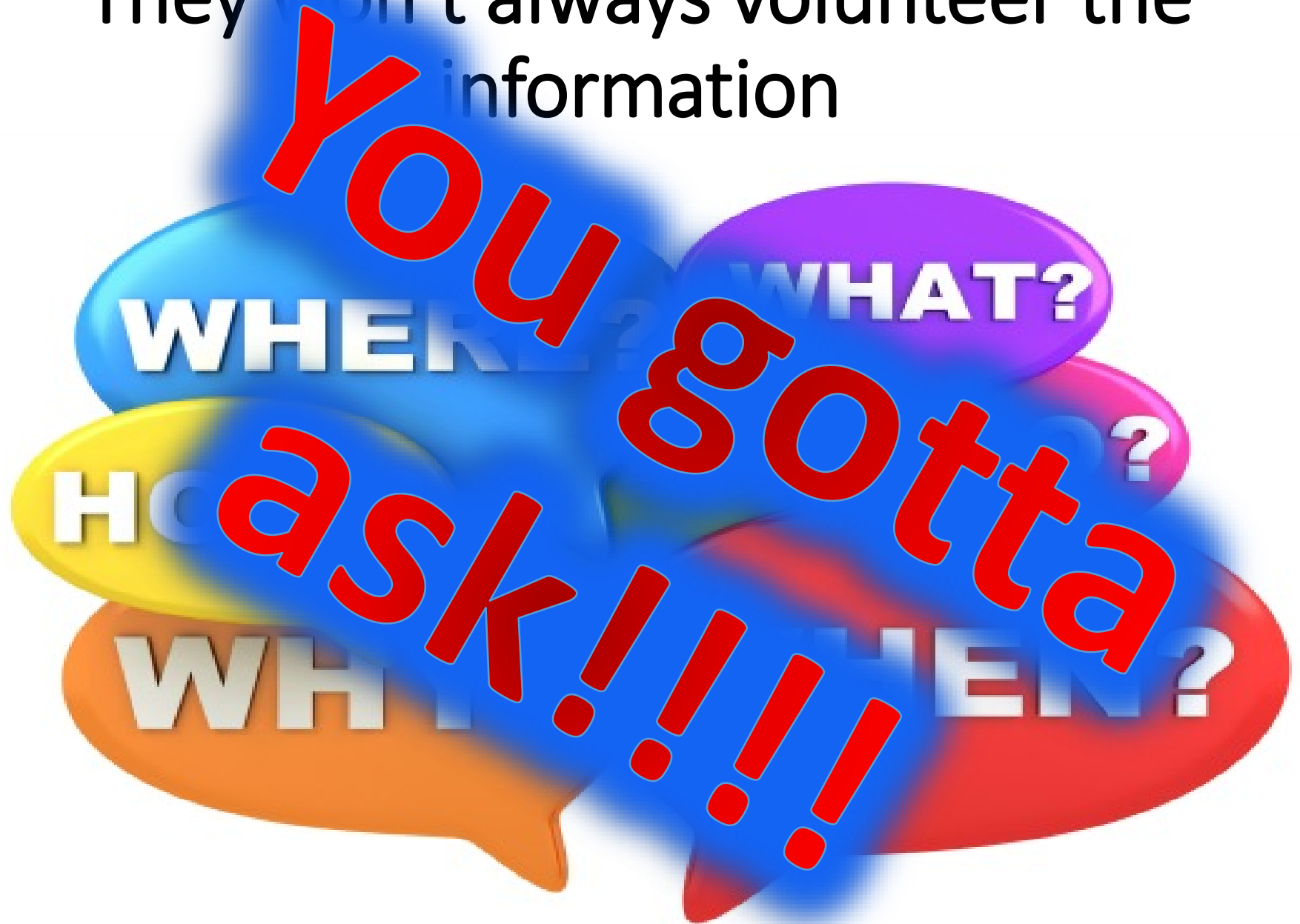
For us to effectively recognize Non-Fatal Strangulation, we have to be able to recognize the signs and symptoms



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They won't always volunteer the information



What does all this mean??

Choking

Strangulation

Asphyxia

Hypoxia

Anoxia

Suffocation



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Key terms

- **Anoxia (a-nak-se-a):**

- Absence of oxygen supply to tissue (carotid compression in strangulation-no blood flow)

- **Hypoxia (hy-pox-i-a):**

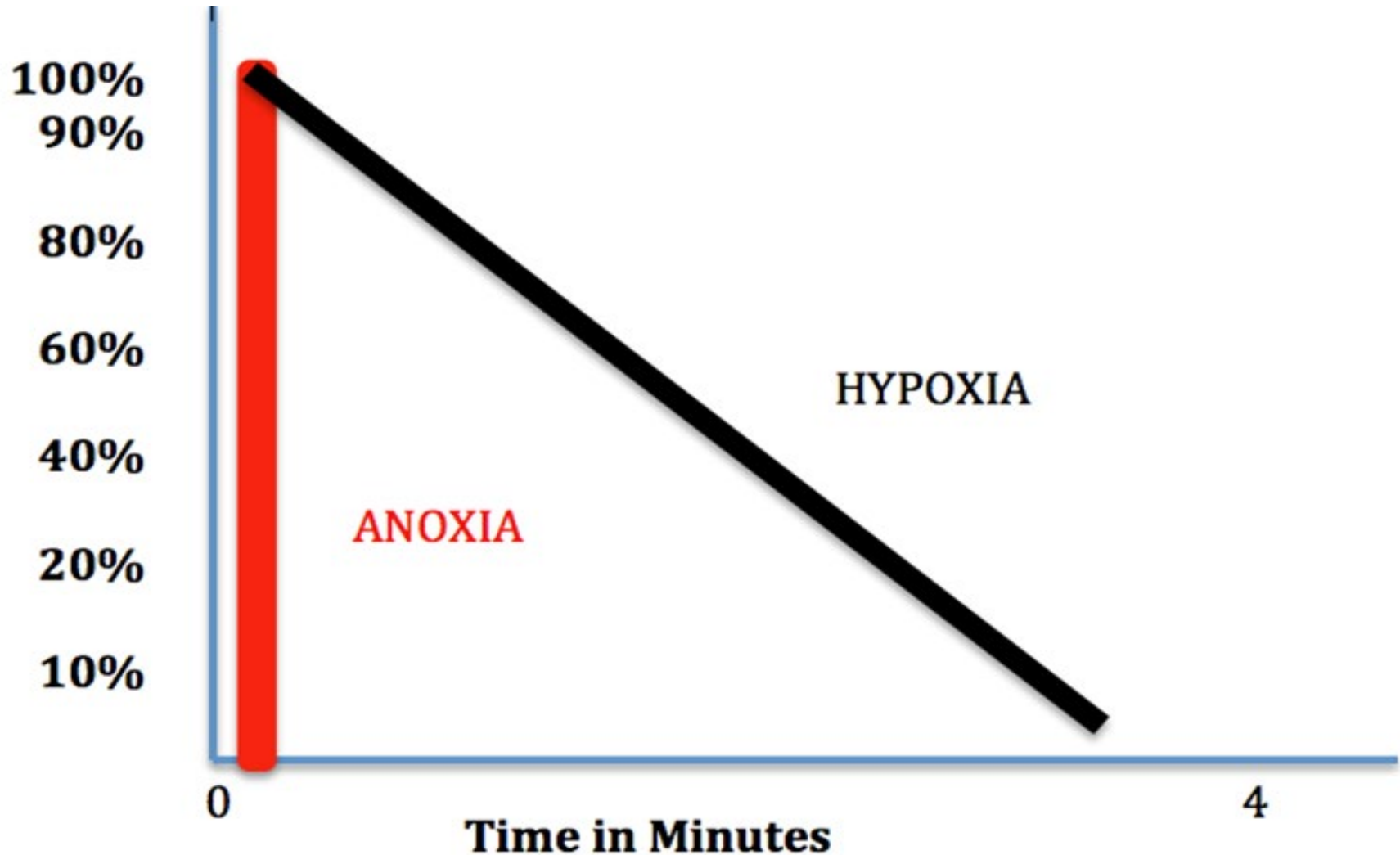
- Deficiency in the amount of oxygen reaching the tissue (drowning-blood flow with decreasing oxygen levels)



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Anoxia vs Hypoxia



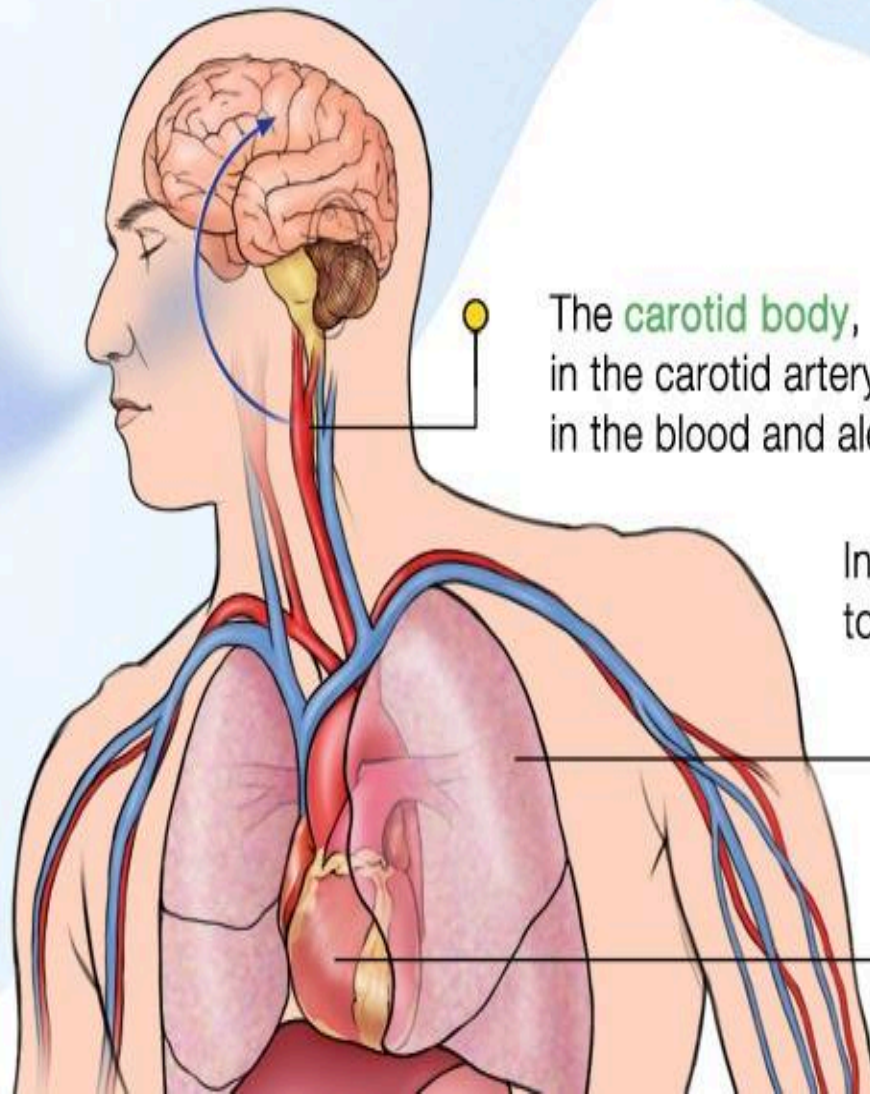
Effects of Hypoxia

(hi-pok'se-ah)

: a condition in which the body as a whole or a region of the body is deprived of adequate oxygen supply.

/hy-pox-ia/ - noun

Low oxygen pressure at high altitude



The **carotid body**, a cluster of specialized cells in the carotid artery, detects low oxygen levels in the blood and alerts the brain.

In response, the **brain** sends signals to the rest of the body to...

● increase breathing rate and constrict vessels in the **lung**

● increase **heart** rate

Time is Brain

Anoxic Insults

Neurons lost per second
= 32,000

Synapses lost per second
= 230 million



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Suffocation

- Obstructing oxygen from getting into the lungs
- Sealing off the mouth and nose by manual compression
- Duct tape over face
- Head inside plastic bag
- Pillow over mouth and nose
- Sitting on chest



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Classification of Suffocation

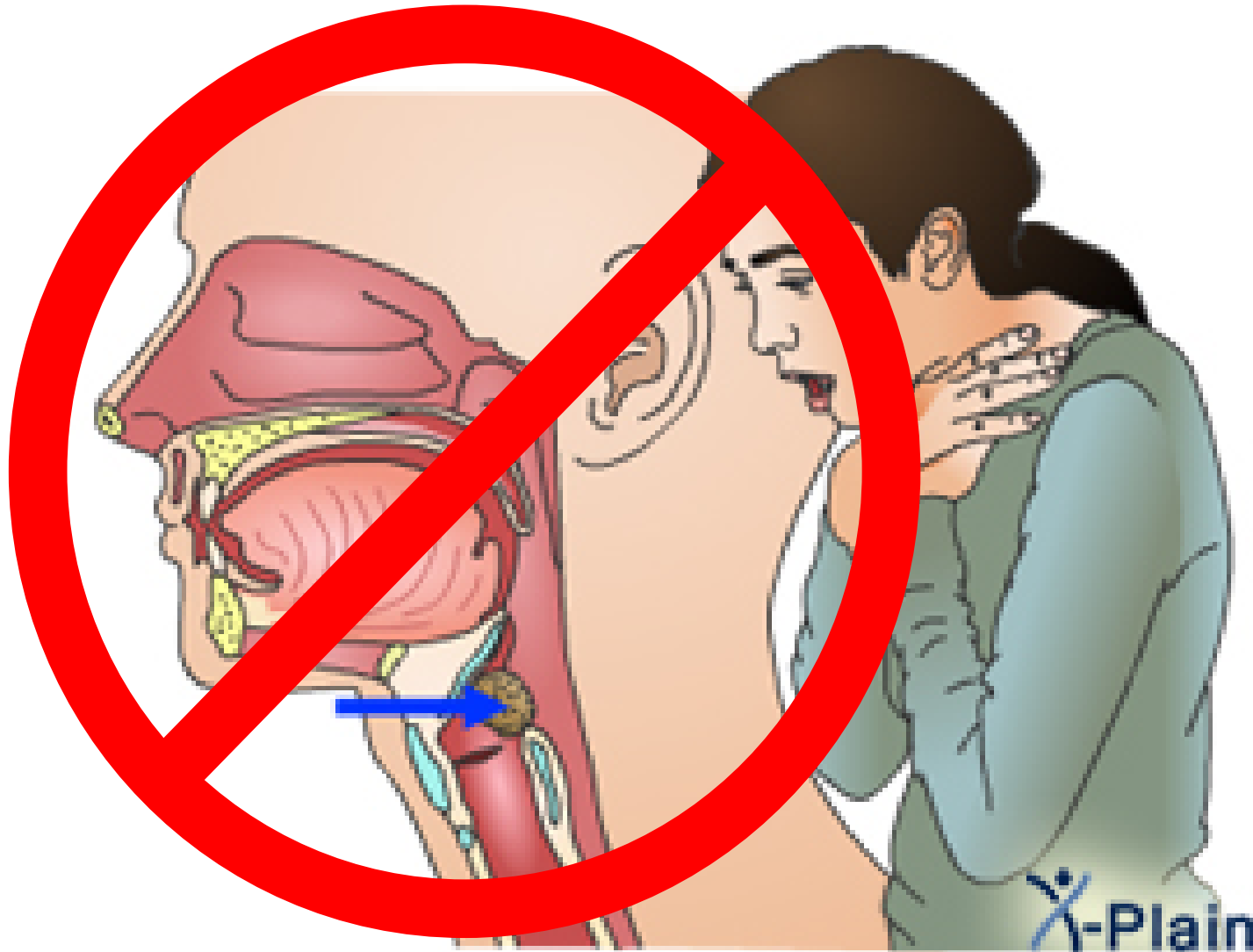
Suffocation	A broad term encompassing different types of asphyxia such as vitiated atmosphere and smothering, associated with deprivation of oxygen
Smothering	Asphyxia by obstruction of the air passages above the epiglottis including the nose, mouth and pharynx
Choking	Asphyxia by obstruction of the air passages below the epiglottis
Confined Spaces	Asphyxia in an inadequate atmosphere by reduction of oxygen, displacement of oxygen by other gases or by gases causing chemical interference with the oxygen uptake and utilization



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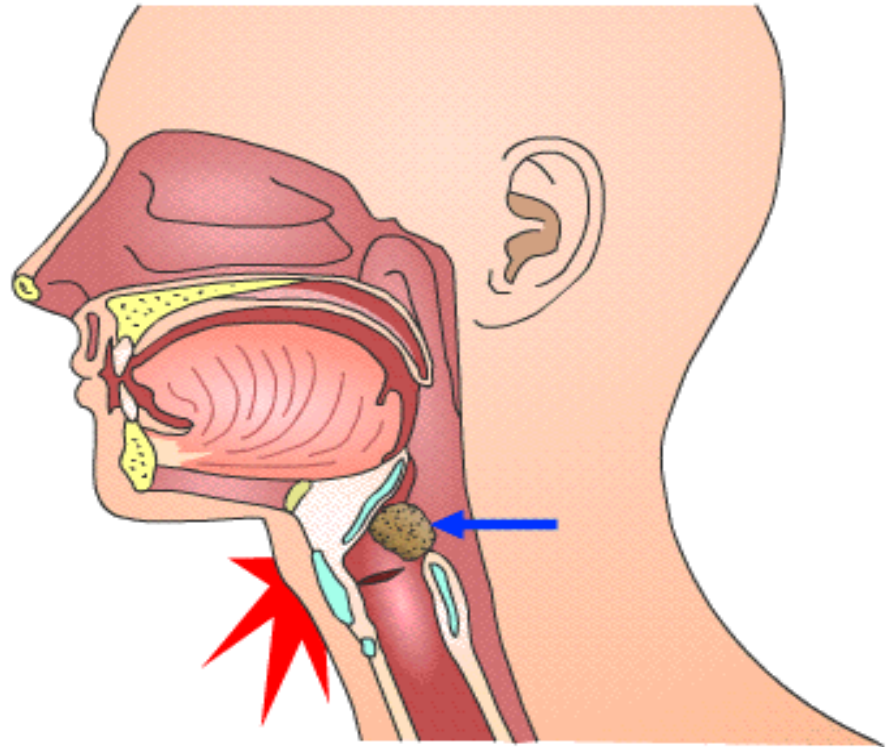
It's just choking, right?



Choking

- Occurs when a foreign body lodges in the throat or windpipe

Food or small objects can cause choking if they get caught in your throat and block your airway. This prevents oxygen from getting to your lungs and brain.



Asphyxia

A condition arising when the body is deprived of oxygen causing unconsciousness or death; suffocation.



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Classification of Asphyxia

Mechanical Asphyxia	Asphyxia by restriction of respiratory movements, either by the position of the body or by external chest compression
Positional Asphyxia	Asphyxia by obstruction of the air passages above the epiglottis including the nose, mouth and pharynx
Traumatic Asphyxia	A type of asphyxia caused by external chest compression by a heavy object
Drowning	Asphyxia by immersion in a liquid



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Strangulation

Strangulation is a form of asphyxia characterized by closure of the blood vessels and/or air passages of the neck as a result of external pressure on the neck



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Classification of Strangulation

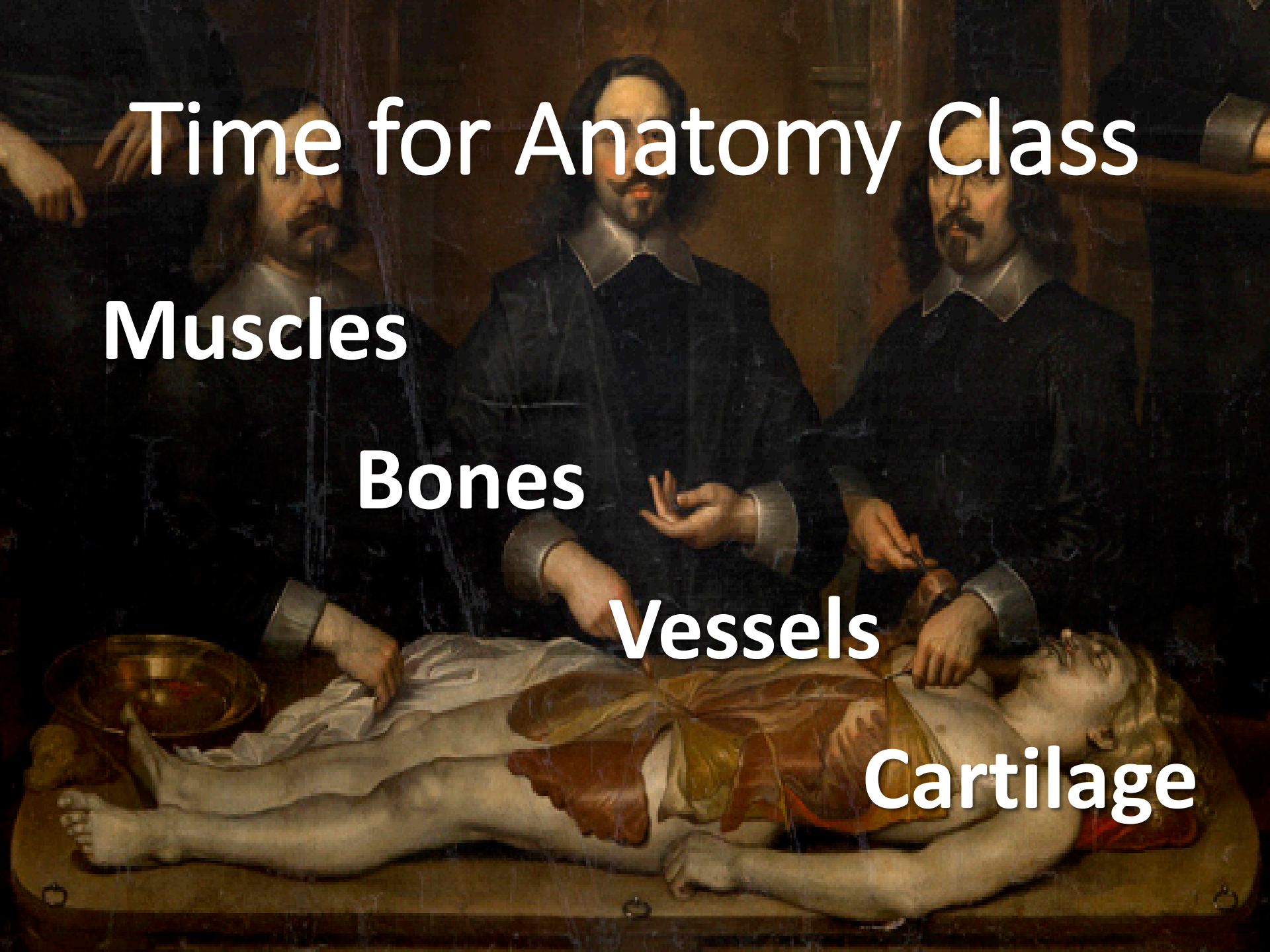
Strangulation	Asphyxia by closure of the blood vessels and/or air passages of the neck as a result of external pressure on the neck
Ligature Strangulation	A form of strangulation in which the pressure on the neck is applied by a constricting band tightened by a force other than the body weight
Hanging	A form of strangulation in which the pressure on the neck is applied by a constricting band tightened by a force other than the body weight
Manual Strangulation	A form of strangulation caused by an external pressure on the structures of the neck by hands, forearms or other limbs

Ligature Strangulation



Manual Strangulation





Time for Anatomy Class

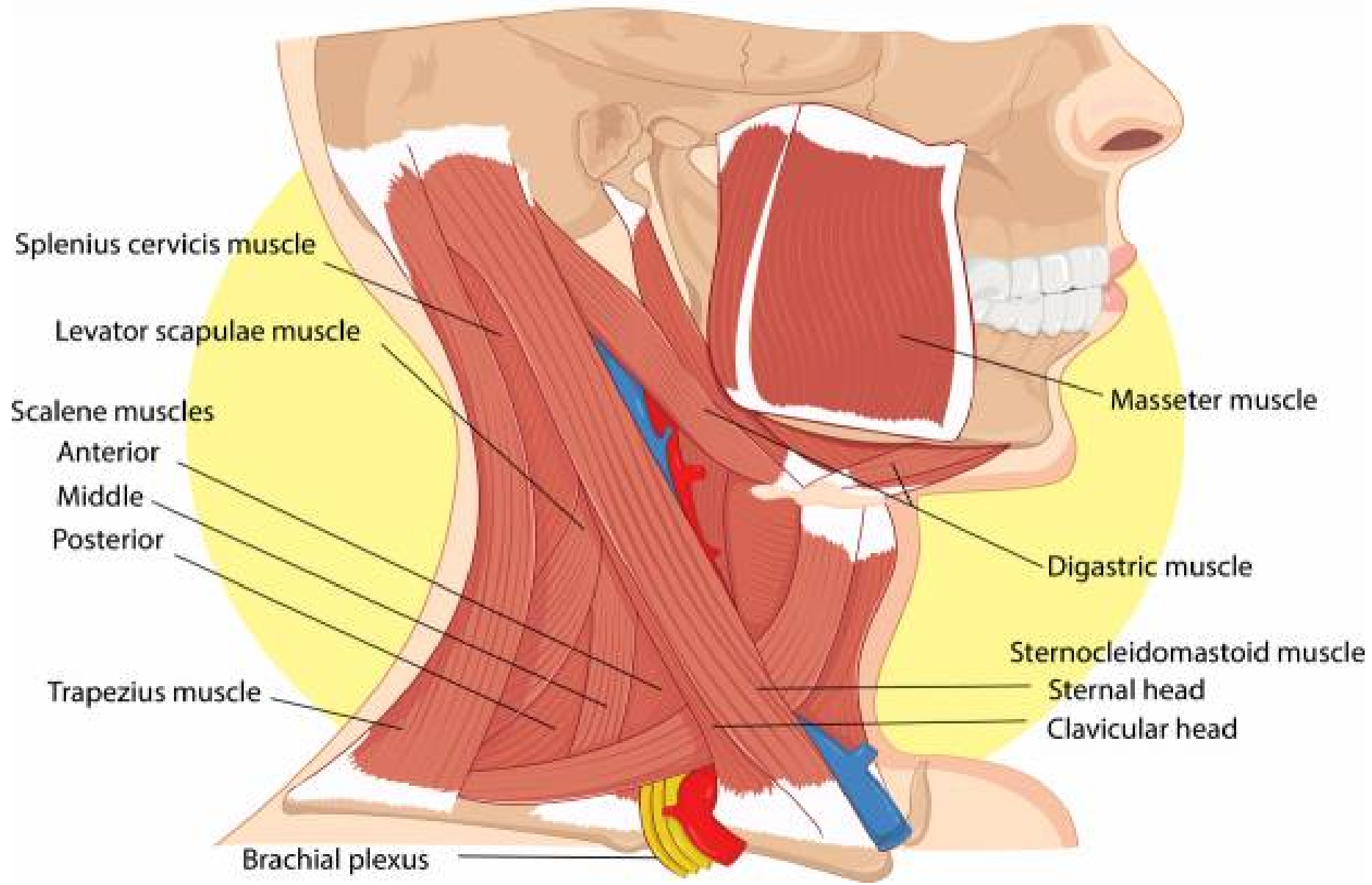
Muscles

Bones

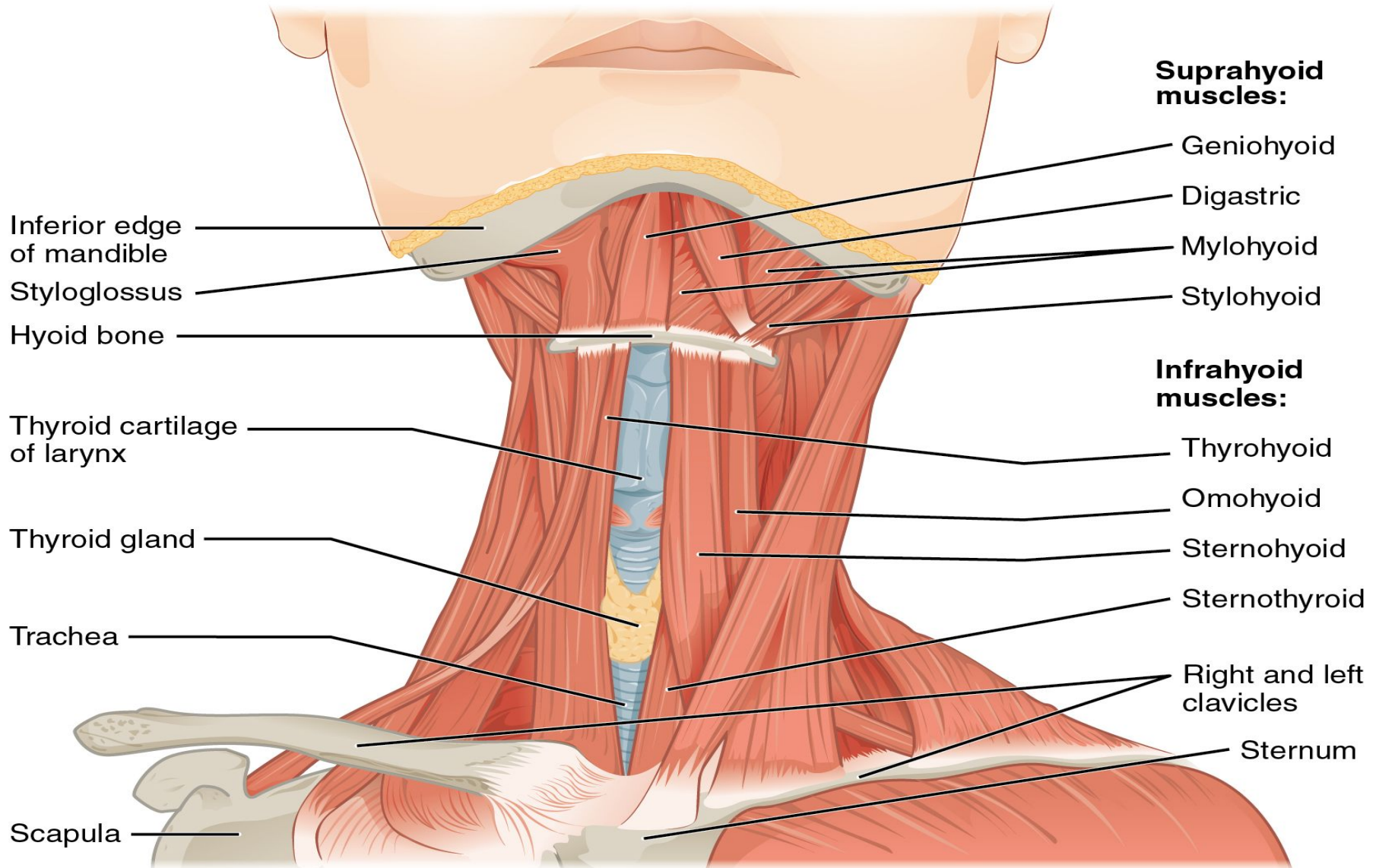
Vessels

Cartilage

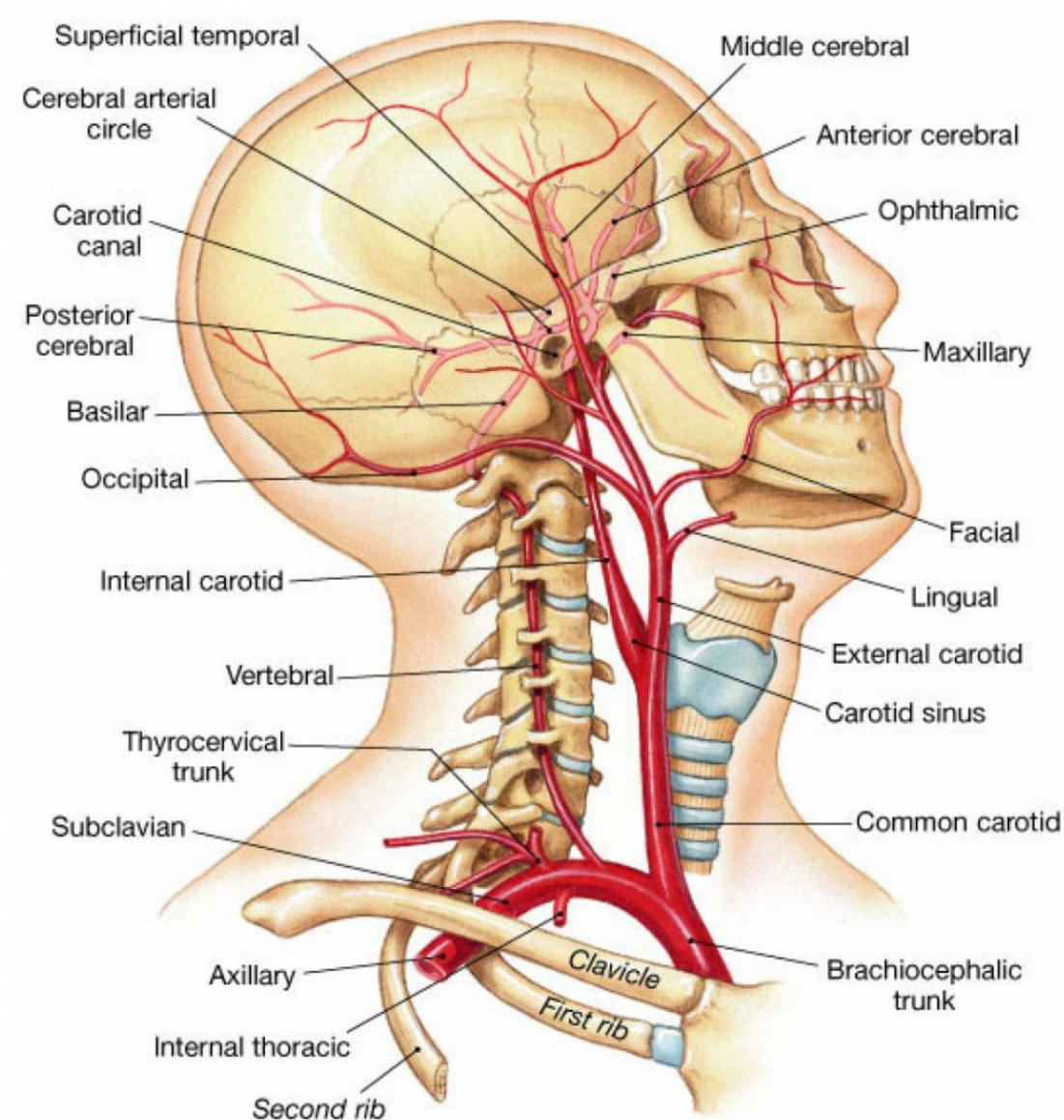
Neck-muscles



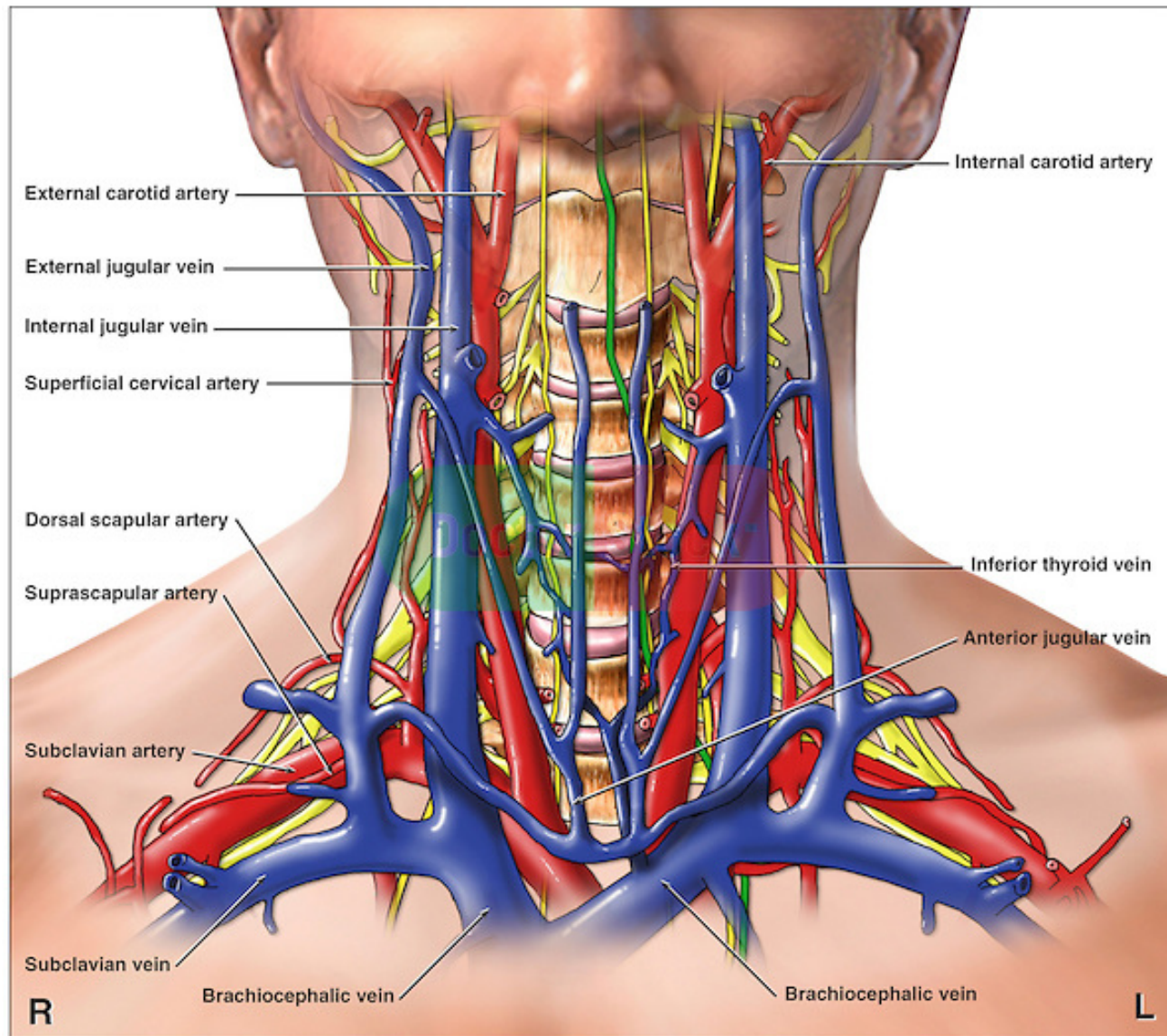
Muscles and Bone



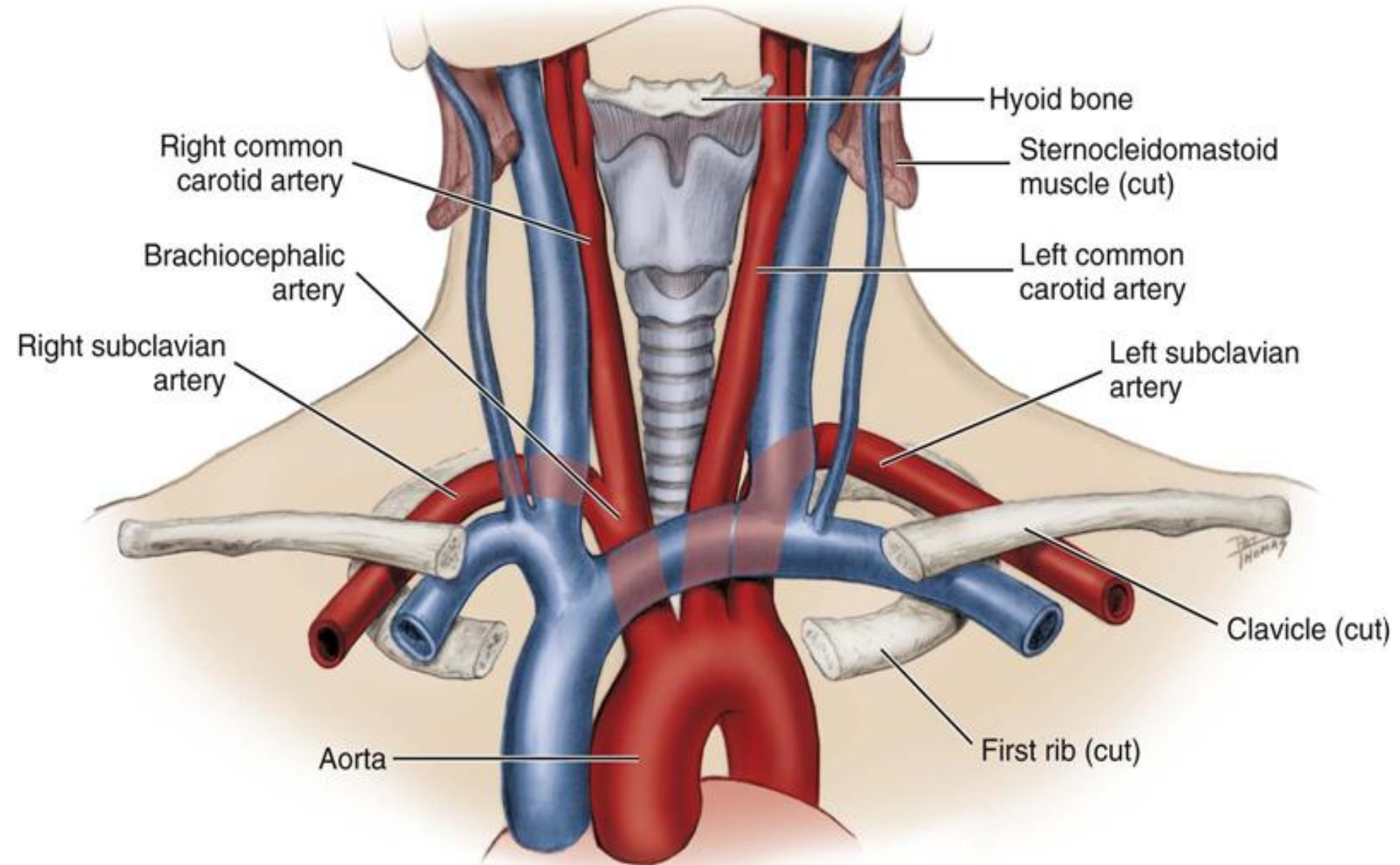
Arterial Supply to Head



Arteries and Veins

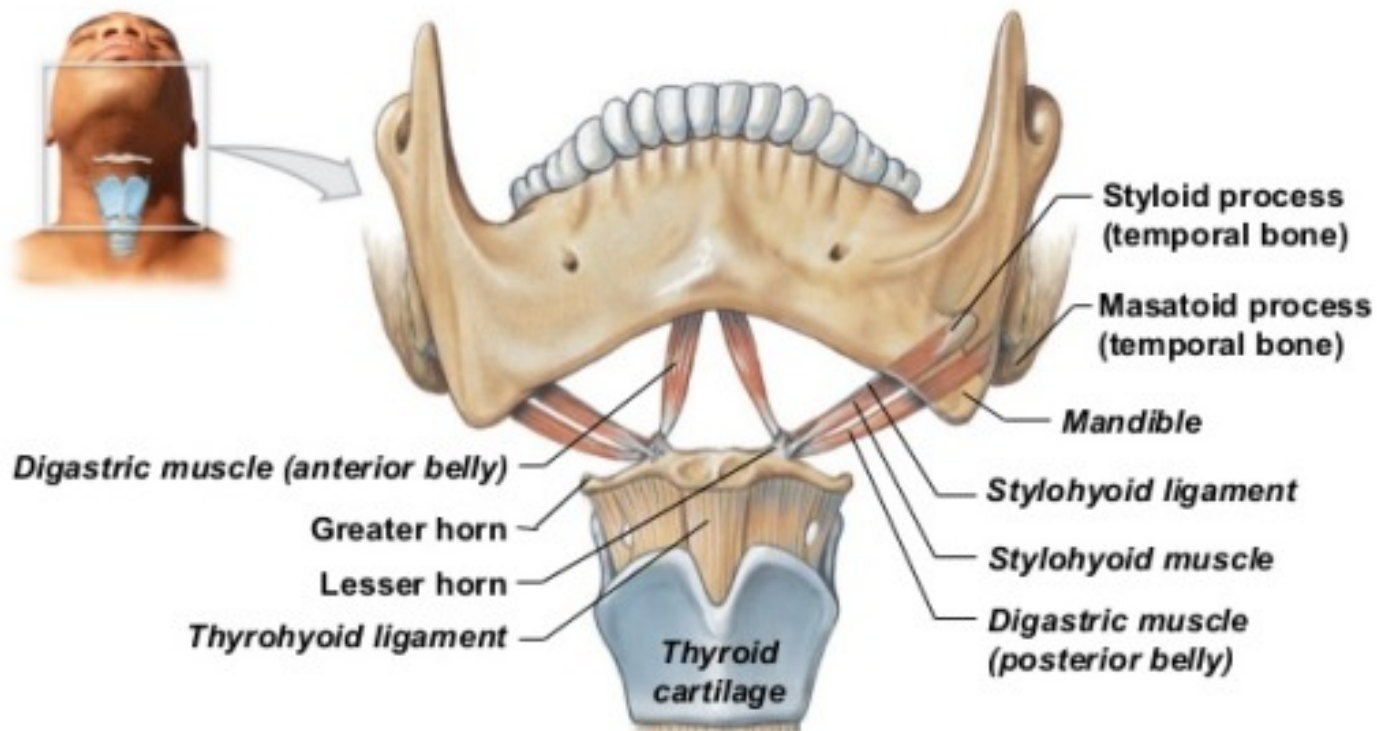


Anterior view of the neck region



Hyoid Bone

Figure 6.18a The Hyoid Bone

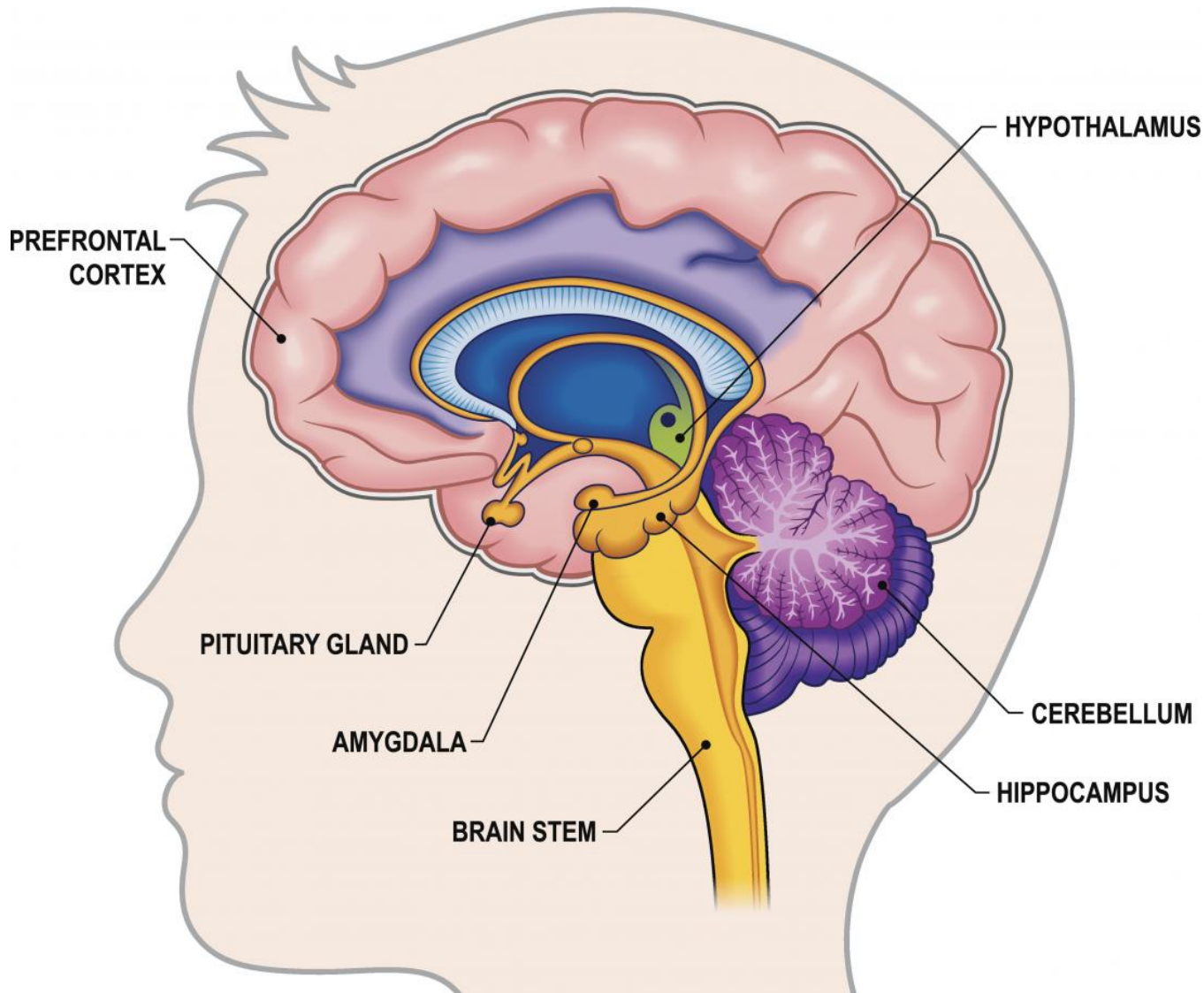


a Anterior view showing the relationship of the hyoid bone to the skull, the larynx, and selected skeletal muscles



Neuroanatomy

How we make memories



What is the hippocampus?

- Located in the medial temporal lobe of the brain
- Latin word for Seahorse
- Forms part of the limbic system, part of the brain that deals with emotions
- Mainly associated with memory, the transfer from short term to long term memory
- Most sensitive to hypoxia



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Trauma and the brain

- **Amygdala** – the brains emotional and alarm center
- **Hippocampus** – Storage for our most recent memories
- **Thalamus** – Translates sights, sounds, smells into the language of the brain
- **Prefrontal Cortex** – Where information is used to make decisions about cognitive and emotional responses



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**Just what
is it that
we can do
to help**



Signs and Symptoms

Often dependent on who notices first

- Signs

- Medical sign is a physical response
- Often measured
- Patients may not notice the sign
- Objective findings

- Symptoms

- Something the patient tells you
- Sometimes vague
- Subjective Findings

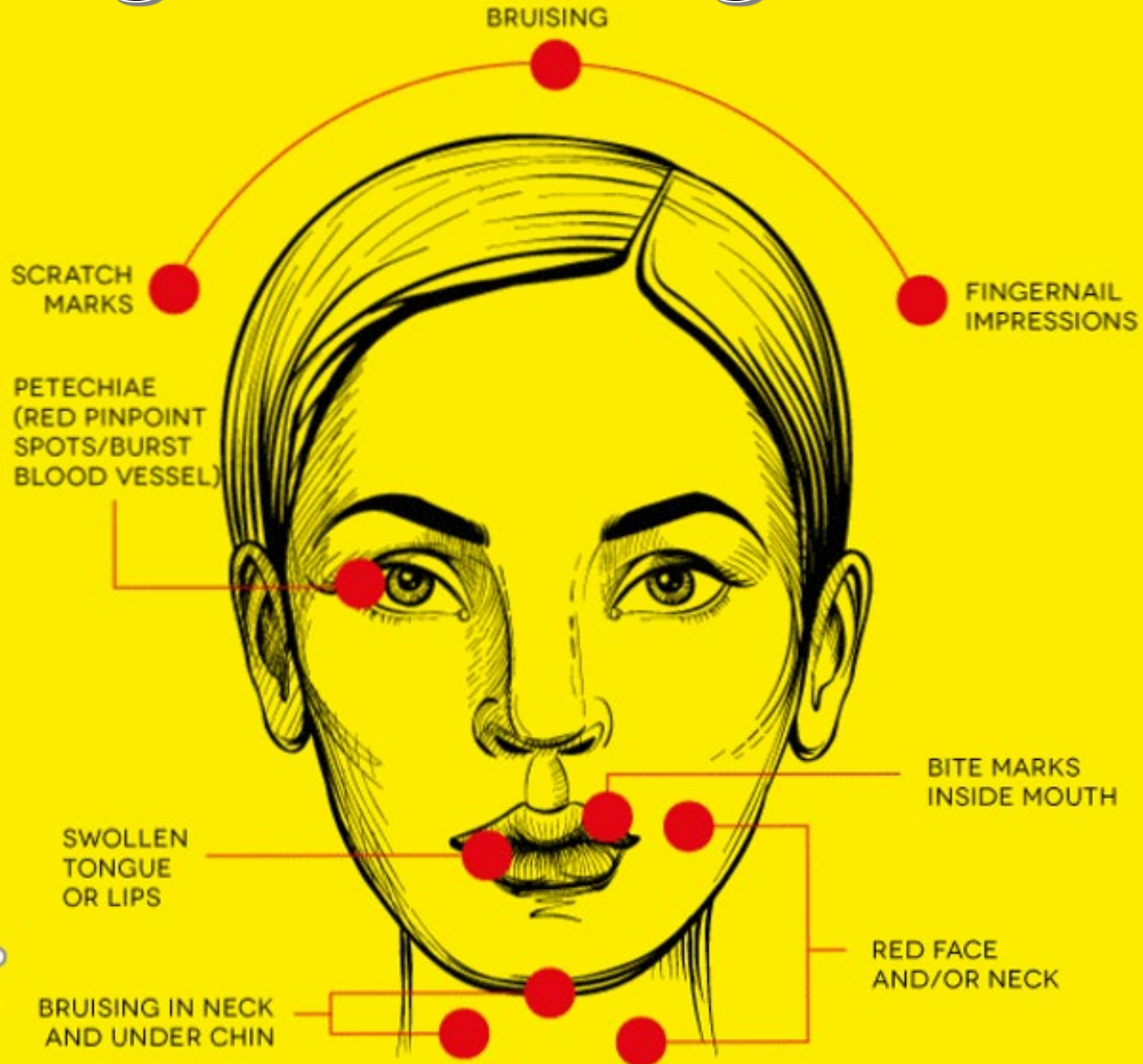
Regardless of who notices that a system or body part is not functioning normally, signs and symptoms are the body's ways of letting a person know that not everything is running smoothly.



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Signs of Strangulation



SYMPTOMS OF STRANGULATION



DIFFICULTY
BREATHING
AND OR/
HYPERVENTILATING



TENDERNESS
UNDER THE
CHIN



RASPY VOICE



VOMITING



COUGHING



DROOLING



HURTS
TO SWALLOW



DIZZY



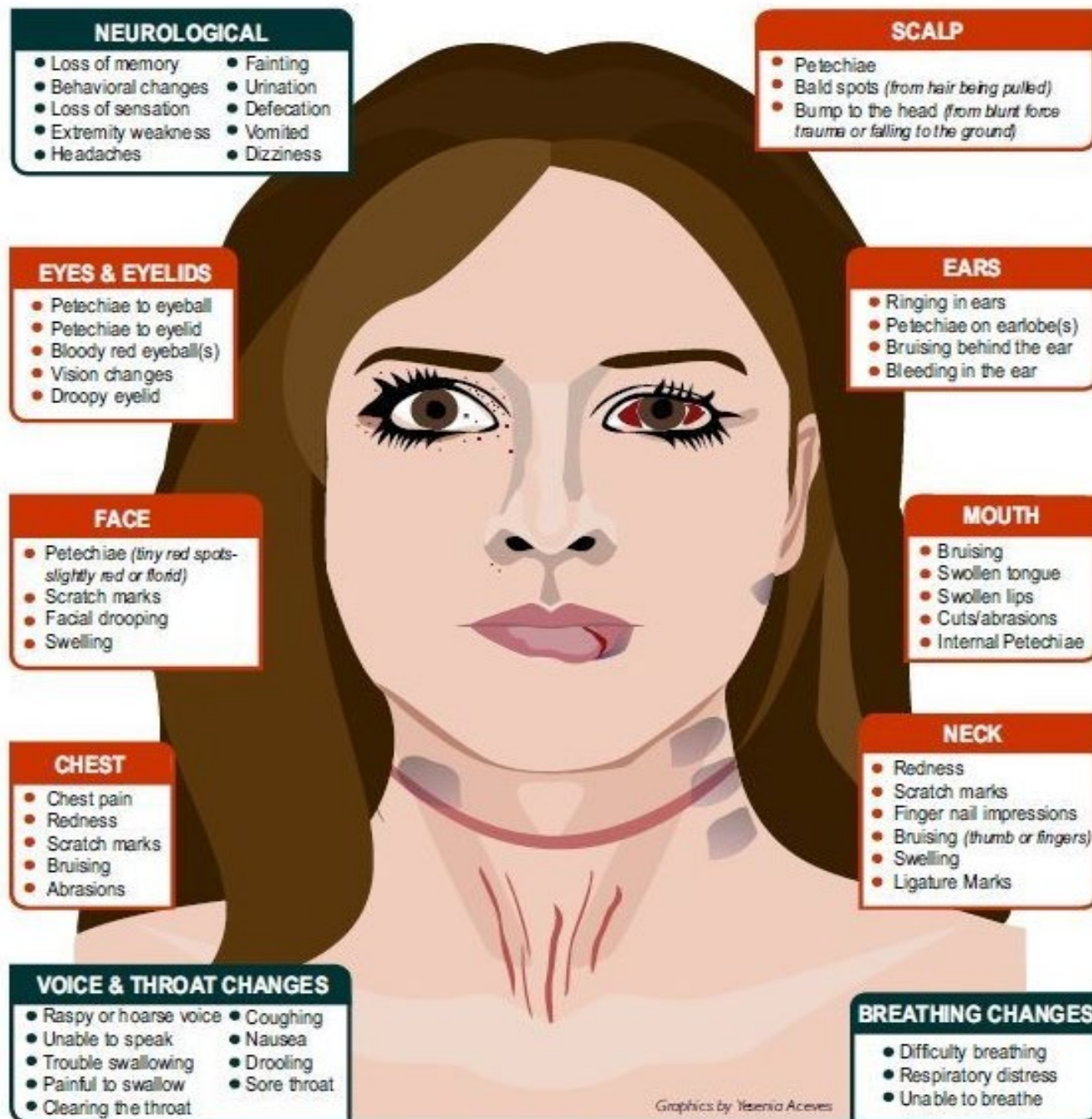
NECK PAIN



HEADACHES



URINATION AND/OR DEFECATION
BIGGEST TELLTALE SIGN



NEUROLOGICAL

- Loss of memory
- Behavioral changes
- Loss of sensation
- Extremity weakness
- Headaches
- Fainting
- Urination
- Defecation
- Vomited
- Dizziness

SCALP

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

EYES & EYELIDS

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

EARS

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

FACE

- Petechiae (*tiny red spots-slightly red or floid*)
- 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

VOICE & THROAT CHANGES

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

BREATHING CHANGES

- Difficulty breathing
- Respiratory distress
- Unable to breathe

Graphics by Yeneria Aceves

Petechia of the Eyelid



- Occur when capillaries Break open
- 1-2 mm in size

- Can be caused by trauma
- Coughing, Vomiting, breath holding
- Asphyxiation
- Constriction



Intraoral Petechia





Subconjunctival Hemorrhage



Scratches or claw marks



Battle's Sign



Ligature Strangulation



Hanging vs Strangulation

Findings	Hanging	Strangulation
Ligature mark	Oblique, Incomplete, High in the neck	Transverse, Complete, Midlevel or below thyroid cartilage
Base	Pale, Hard, Parchment like	Contused
Abrasion, Contusion, Ecchymosis	Less prominent	More Prominent
Hyoid Fracture	More common	Less common
Thyroid Cartilage	Less common	More common
Involuntary discharge	Occasional	Frequent
Injury to other body parts	Rare	Frequent

Symptoms of Strangulation

- Voice Changes
- Swallow Changes
- Breathing Changes
- Behavioral Changes

If you don't ask,
they may not
tell you.

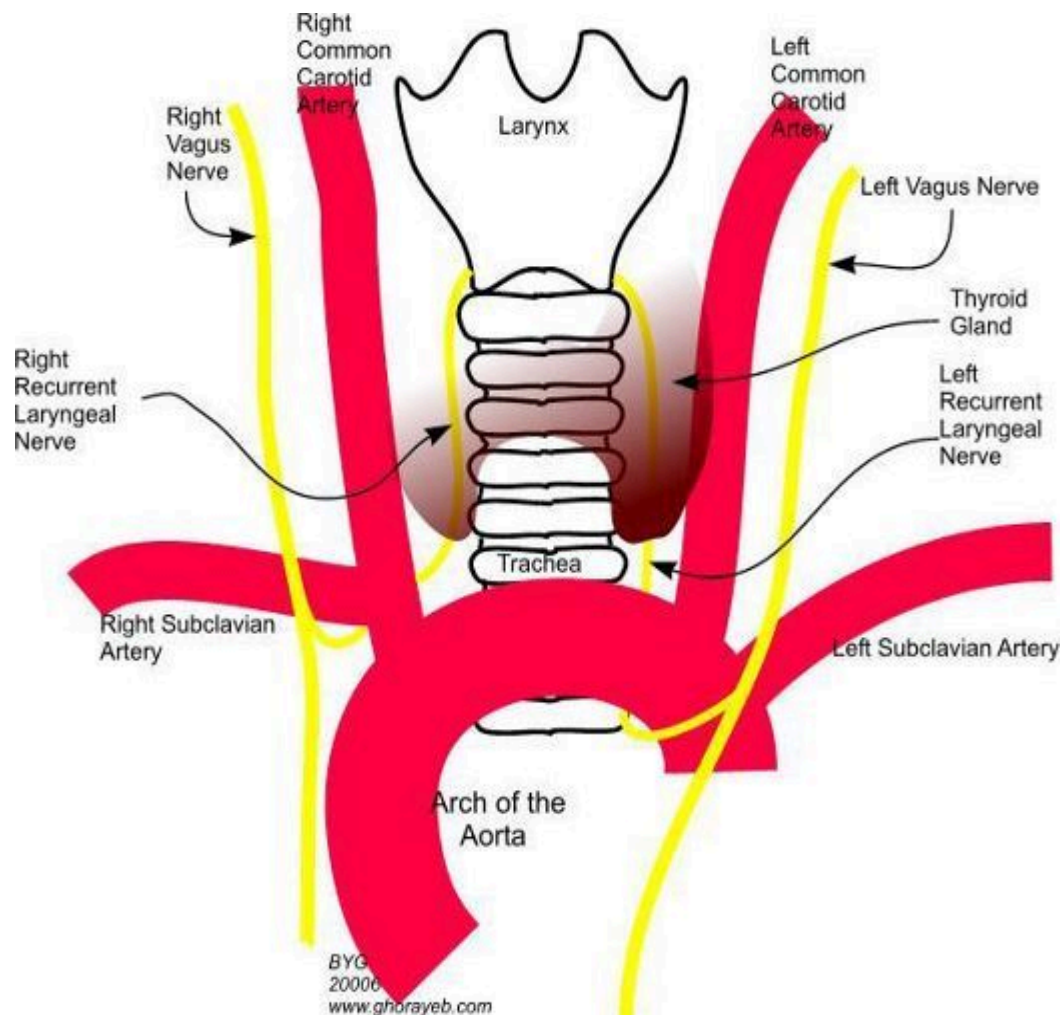


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Symptoms of laryngeal injury

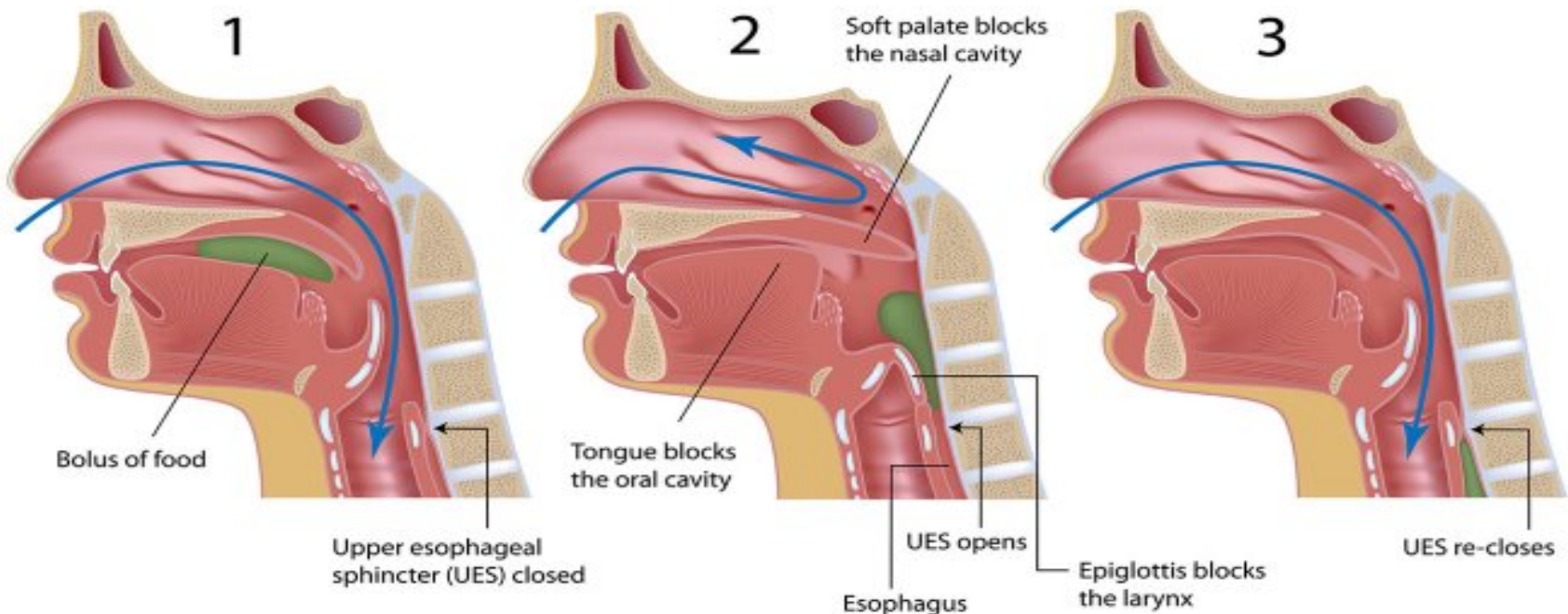
- Voice changes
 - 50% of victims
 - Nerve (recurrent laryngeal nerve)
- Hoarseness (dysphonia)
 - May be permanent
- Loss of voice (aphonia)



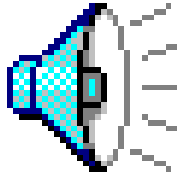
Symptoms of laryngeal injury

- Swallowing Changes
 - Due to larynx injury
 - Difficult to swallow (dysphagia)
 - Painful to swallow (odynophagia)

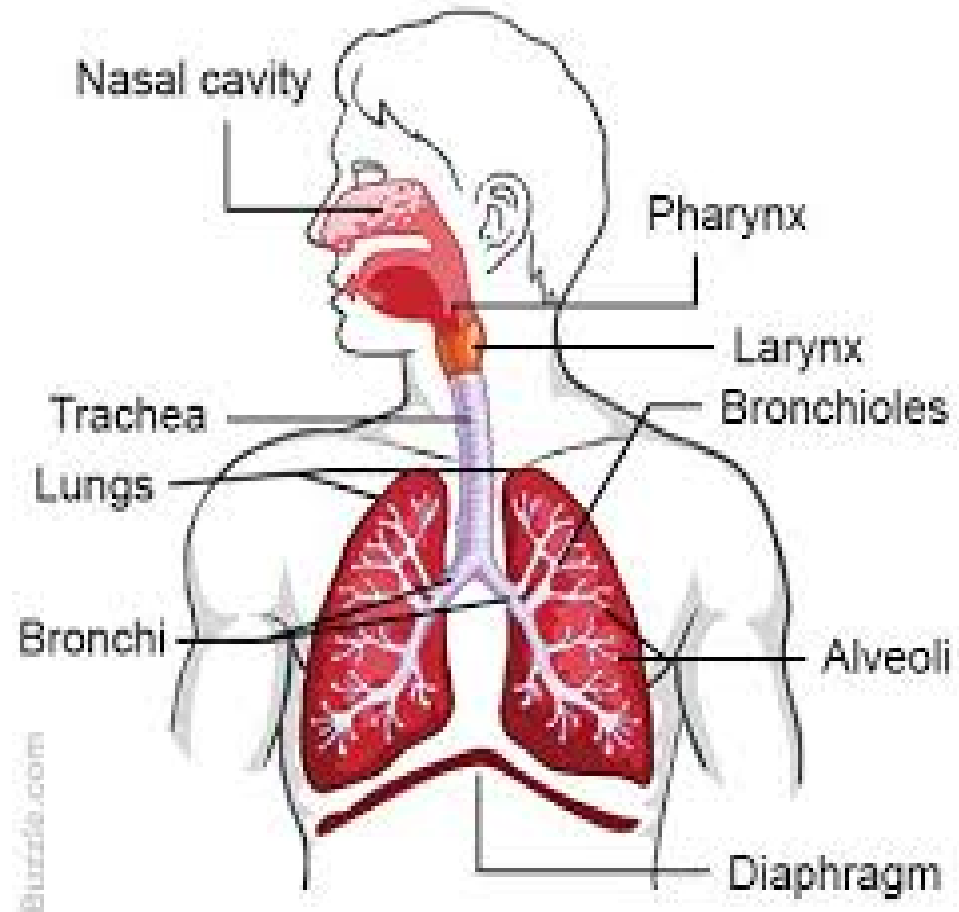
Swallowing



Symptoms of laryngeal injury



- Breathing Changes
 - Due to laryngeal fracture or swelling
 - Difficult to breathe (dyspnea)
 - Inability to breathe (apnea)
 - May appear mild but may kill within 36 hours



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TIME IS BRAIN

1 minute: Brain cells begin to die,
but survival is possible

3 minutes: serious brain
damage likely

10 minutes: many
brain cells have died;
the patient is unlikely
to recover

15 minutes:
recovery is
virtually
impossible

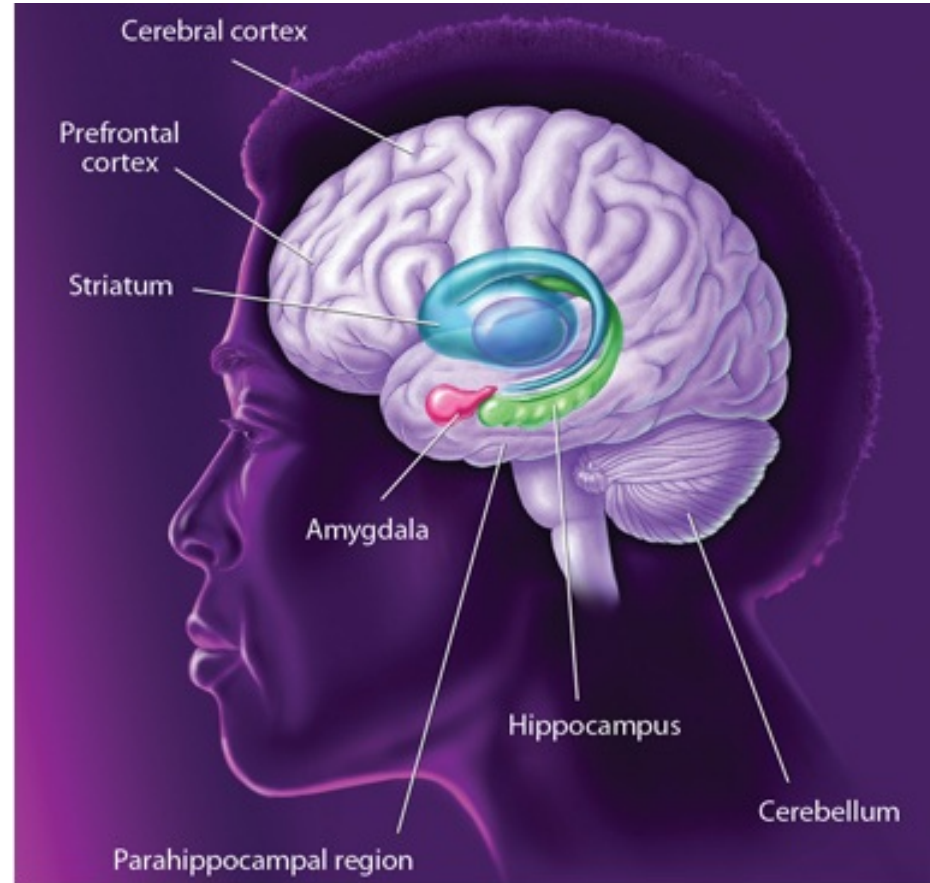


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Symptoms of Asphyxia or Hypoxia

- Behavioral Changes
 - Early: Restlessness and violence
 - Hostile toward officers at the scene
 - “She woke up fighting”
 - Long term:
 - Psychosis
 - Amnesia
 - Changes in personality
 - Progressive dementia

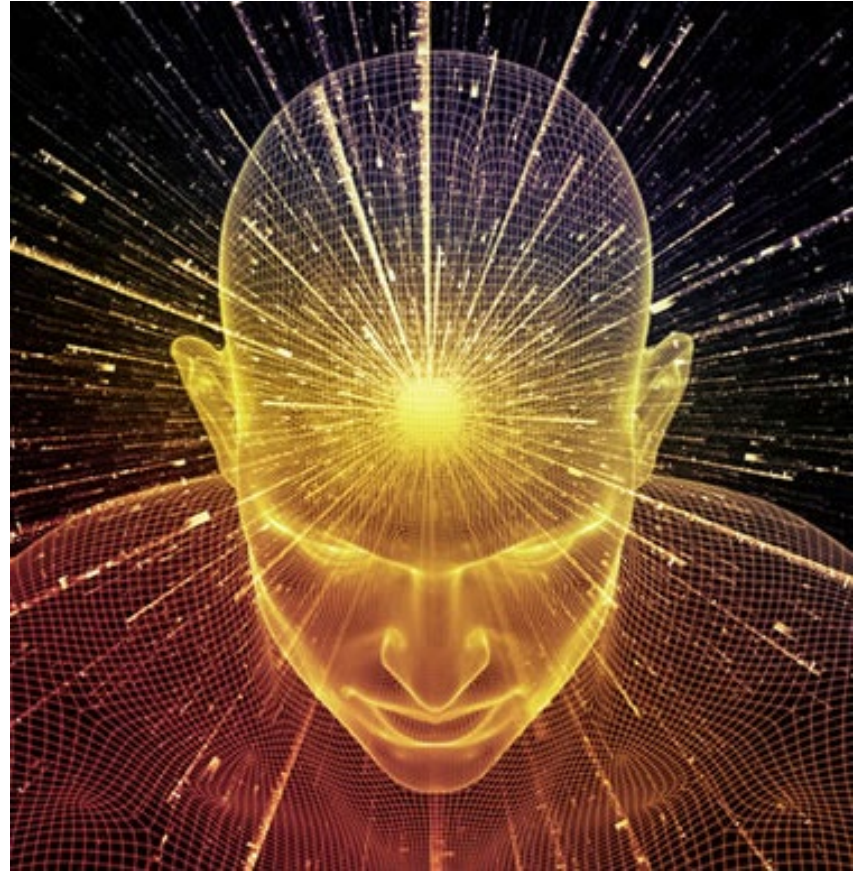


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Symptoms of Asphyxia or Hypoxia

- Evidence of brain Injury from strangulation will include problems with:
 - Memory
 - Concentration
 - Sleep
 - Headaches
 - Depression and
 - Anxiety



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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

Anny Sauvageau, MD, MSc, Romano LaHarpe, MD,† David King, MD,‡ Graeme Dowling, MD,* Sam Andrews, MD,§ Sean Kelly, MD,¶ Corinne Ambrosi, MD,¶ Jean-Pierre Guay, PhD,|| and Vernon J. Geberth, MS, MPS for the Working Group on Human Asphyxia*

- Unconscious 10 +/- 3 seconds
- Anoxic Convulsions 14 +/- 3 seconds
- Loss of muscle tone 77 +/- 25 seconds
- Last respiration 62 to 157 seconds

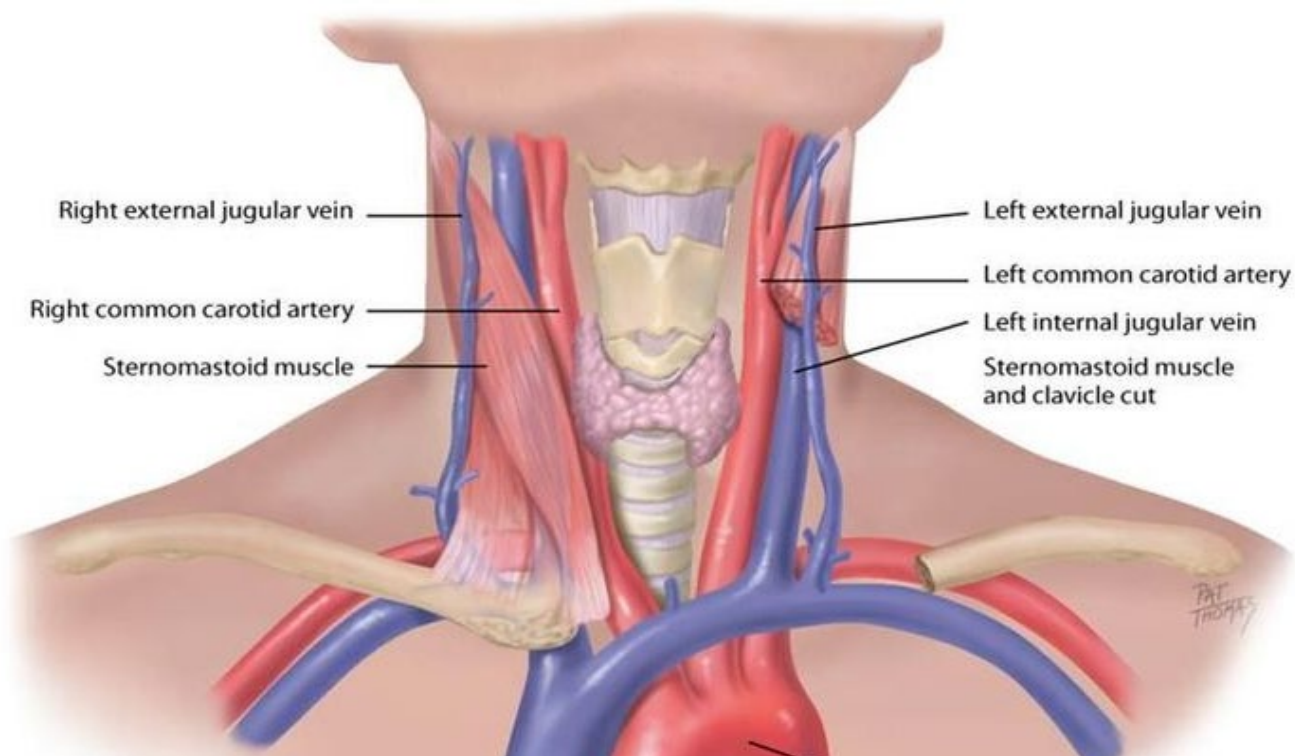


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Occlusion of neck structures

- Jugular Vein 4.4 psi
- Carotid Artery 11 psi
- Trachea 34 psi



What do these pressures really mean?

- Handgun trigger pull 6 psi
- Opening a soda can 20 psi
- Adult male handshake 80 psi



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Neurological Insult to the Brain

ACUTE ARREST OF CEREBRAL CIRCULATION IN MAN

LIEUTENANT RALPH ROSSEN (MC), U.S.N.R.*

HERMAN KABAT, M.D., PH.D.

BETHESDA, MD.

AND

JOHN P. ANDERSON

RED WING, MINN.

Archives of Neurology and Psychiatry, 1944 Vol. 50, 5



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Acute arrest of cerebral circulation in man

- 11 schizophrenic patients and 126 normal males (inmates)
- More than 500 controlled strangulations
- “The neurons in the brain are the cells of the body most sensitive to anoxia.”



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5 to 10 seconds

- Fixation of the eyeballs
- Blurring of vision
- Constriction of visual fields
- Loss of consciousness
- Anoxic convulsions
 - These seizures were of a generalized tonic and clonic type; they were usually relatively mild and rarely continued more than six to eight seconds.”
 - “The convulsion was preceded by loss of consciousness”
 - “had no memory of it (seizure)”



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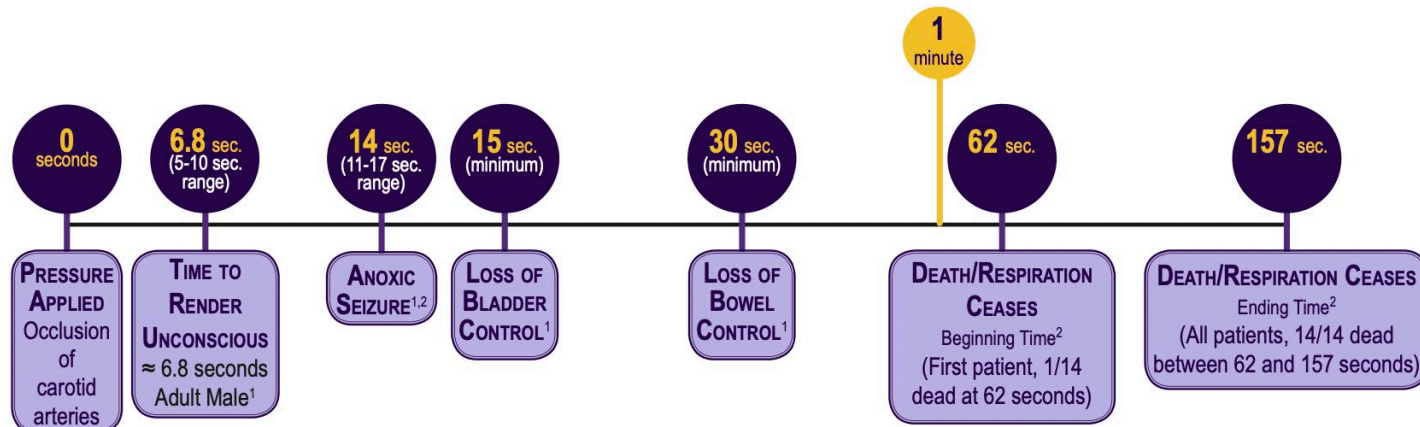


PHYSIOLOGICAL CONSEQUENCES OF STRANGULATION

Occlusion of Arterial Blood Flow: Seconds to Minutes Timeline

v6.18.19

Created by: Ruth Carter; Bill Smock, MD; Gael Strack, JD; Yesenia Aceves, BA; Marisol Martinez, MA; and Ashley Peck



REFERENCES AND RESOURCES

- ¹ Acute Arrest of Cerebral Circulation in Man, Lieutenant Ralph Rossen (MC), U.S.N.R.; Herman Kabat, M.D., PH.D. Bethesda, MD. and John P. Anderson Red Wing, Minn.; Archives of [Neurology](#) and Psychiatry, 1944, Volume 50, #5.
- ² Anny Sauvagneau, MD, MSc; Romano LaHarpe, MD; David King, MD; Graeme Dowling, MD; Sam Andrews, MD; Sean Kelly, MD; Corinne Ambrosi, MD; Jean-Pierre Guay, PhD; and Vernon J. Geberth, MS; MPS for the Working Group on Human Asphyxia, Forensic Med Pathol 2011;32: 104 – 107.
- ³ Training Institute on Strangulation Prevention: strangulationtraininginstitute.com



strangulationtraininginstitute.com

This project is supported all or in part by Grant No. 2016-TA-AX-K067 awarded by the Office on Violence Against Women, U.S. Department of Justice. The opinions, findings, conclusions, and recommendations expressed in this publication/program/exhibition are those of the author(s) and do not necessarily reflect the views of the Department of Justice, Office on Violence Against Women.



What can possibly go wrong?

- Death from strangulation
 - Hours to days to months post strangulation "choke hold"
 - *Dooling EC, Richardson EP: Delayed Encephalopathy After Strangling: Arch Neurol 1976;33;196-9*
- Delayed Stroke
 - Occur months to years after the anoxic damage from strangulation or "choke hold"
 - *Strack GB et al, Why Didn't Someone Tell Me? Health Consequences of Strangulation Assaults for Survivors, 2014, Domestic Violence Report;19(6):87-90.*



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What can possibly go wrong?

- Acute anoxic encephalopathy
 - Brain damage from blockage of blood flow to and from brain
 - *M Oechmichen et al* "Cerebral Hypoxia and Ischemia: The Forensic Point of View: A Review; *J Forensic Science*, July 2006, Vol. 51, No. 4:880-887
- Acute anoxic encephalopathy
 - –Hippocampus, parieto-occipitaltemporal cortex, cerebellar purkinje cells, amygdala, caudate nucleus, lentiform nucleus, thalamic nuclei most sensitive to lack of oxygen
 - *Wolstenholme N, Moore, B: The Clinical Manifestations of Anoxic Brain Injury; Progress in Neurology and Psychiatry;8-13*



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What can possibly go wrong?

- Delayed anoxic encephalopathy
 - Brain damage manifests days to weeks after strangulation/choke hold:
 - *Dooling EC, Richardson EP: Delayed Encephalopathy After Strangling: Arch Neurol 1976;33;196-9*
- Spinal Cord Injury
 - Tear of anterior and posterior longitudinal ligaments, Spinous process fractures, Epidural spinal cord hemorrhage, Spinal cord contusion
 - *Kornblum RN, Medical Analysis of Police Choke Holds and General Neck Trauma Part 2, Trauma, 1986, 1:13-64*



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What can possibly go wrong?

- Seizures

- Anoxic convulsions: tonic clonic contraction of muscle groups within 1-3 seconds after loss of consciousness
- *Sauvageau A et al "Agonal Sequences in 14 Filmed Hangings...", Am J Forensic Med Pathol; 2011;32: 104-107*

- Sphincter Incontinence

- Anoxia of at least 15 seconds resulted in loss of bladder sphincter tone (involuntary urination)
- Anoxia of at least 30 seconds resulted in loss of rectal sphincter tone (involuntary defecation)
- *Rossen R et al. Acute Arrest of Cerebral Circulation in Man, Arch Neurol Psychiatry, 1943;50:510-28.*



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What can possibly go wrong?

- Carotid Artery Dissection
 - Pressure applied to the carotid arteries during strangulation and “choke holds” results in damage (tears) within the vessel
 - *Clarot F et al: Fatal and non-fatal bilateral delayed carotid artery dissection after manual strangulation; **Forensic Science International**;2005, 149:143-150*
- Carotid Artery Hematoma
 - Rupture of the hematoma can cause rapid death, days to weeks after strangulation or “choke hold”
 - *Dayapala A et al: An Uncommon Delayed Sequela After Pressure on the Neck: An autopsy case report, **Am J Forensic Med Pathol**;2012 33(1):80-2.*



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What can possibly go wrong?

- Airway swelling / Respiratory Failure
 - Pharyngeal, supraglottic, subglottic and laryngeal edema has created lifethreatening airway obstruction
 - Respiratory failure secondary to swelling >36 hours post strangulation or application of “choke hold”
 - *Kuriloff DB, Pincus RL: Delayed Airway Obstruction and Neck Abscess Following Manual Strangulation. Ann Otol Rhinol Laryngol. 1989;98:824-7.*



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What can possibly go wrong?

- Thyroid Storm

- Compression of the thyroid gland can cause the release of excess thyroid hormone resulting in thyrotoxicosis
- *Ramirez J et al, Thyroid Storm Induced by Strangulation, Southern Medical Journal, 2004:97(6);608-610*

- Vocal Cord Paralysis

- Unilateral or bilateral injury to the recurrent laryngeal nerve from pressure applied during strangulation
- *Peppard SB. Transient vocal paralysis following strangulation injury. Laryngoscope 1982:92:31-33.*



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What can possibly go wrong?

- Fracture of Hyoid Bone
 - Hyoid fractures are seen in both surviving and fatal victims of strangulation
 - *Line WS et al: Strangulation: A Full Spectrum of Blunt Neck Trauma; Ann Otol Rhinol Laryngol, 1985, 94:542-46.*
- Thyroid Cartilage Fracture
 - 34.76 pounds of pressure can fracture of the thyroid cartilage which can occur from the application of pressure on the larynx and result in life-threatening airway obstruction
 - *Stanley RB, DG Hanson: Manual Strangulation Injuries of the Larynx; Arch Otolaryngol, 1983;109:344-347.*



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What can possibly go wrong?

- Dysphagia / Odynophagia
 - Difficulty swallowing, painful swallowing or inability to swallow after strangulation or application of a “choke hold”
 - *Briddel J et al, Dysphagia after strangulation; Ear, Nose & Throat Journal, 2012;91(9):30-31*
- Hypopharyngeal Rupture
 - Pneumopericardium (air surrounding the heart) has occurred during a strangulation-induced hypopharyngeal rupture
 - *Giger R, Pneumopericardium After Manual Strangulation, Am Journal Med, 2004;116,116-118*



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What can possibly go wrong?

- Tinnitus
 - Aneurysm of carotid artery from a ligature strangulation resulted in nerve injury. Symptoms were present for 3 years after the strangulation
 - *YadollahiKhaless G et al, Tinnitus 3 Years After Strangulation, Journal of Nervous and Mental Disease;2015;203(2)154-55.*
- Post Traumatic Stress Disorder
 - The emotional distress associated with life-threatening events, including strangulation, have longterm psychological consequences
 - *McClane GE, Strack GB, Hawley D. A review of 300 Attempted Strangulation Cases Part II: Clinical Evaluation of the Surviving Victim. J Emerg Med;2001;21(3):311-15.*



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How Can I Help?



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**EMERGENCY
REPORTING™**

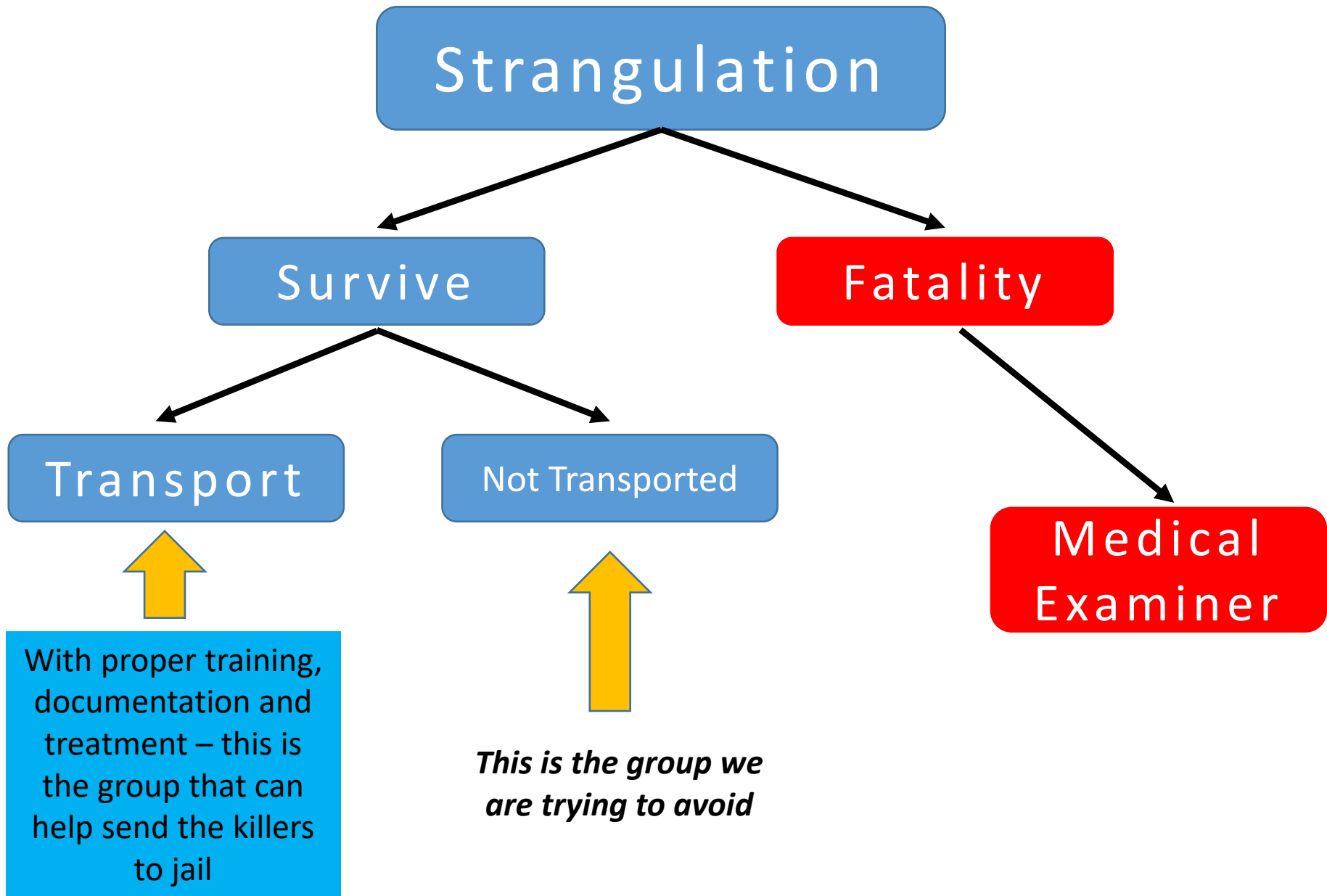
ZOLL

IMAGETREND®



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History is paramount!

- "I passed out"
 - Loss of consciousness
 - Evidence of an anoxic brain injury
- "I couldn't breathe"
 - Collapse of larynx and/or trachea
- "I urinated on myself"
 - prolonged anoxic insult of at least 15 seconds
- "My son told me I had a seizure"
 - anoxic seizure from an anoxic brain injury



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Legal Considerations

Gael Strack, Esq., CEO & Co-Founder



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HIPAA – 45 CFR 164.512

- **(1) Permitted disclosures.** Except for reports of child abuse or neglect permitted by paragraph (b)(1)(ii) of this section, a covered entity may disclose protected health information about an individual whom the covered entity reasonably believes to be a victim of abuse, neglect, or domestic violence to a government authority, including a social service or protective services agency, authorized by law to receive reports of such abuse, neglect, or domestic violence:
 - **(i)** To the extent the disclosure is required by law and the disclosure complies with and is limited to the relevant requirements of such law;
 - **(ii)** If the individual agrees to the disclosure; or
 - **(iii)** To the extent the disclosure is expressly authorized by statute or regulation and:



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Special Edition of the Family & IPV Quarterly on Strangulation



- Trends in Strangulation Case Law

Great Medical Diagnosis Exception Strangulation Cases

- Morones v. State, 2020 WL 3446081 (**Wyoming**) – sexual assault nurse examiners serve dual roles of providing medical care and collecting and preserving evidence for criminal prosecutions. Victim's statements admissible even though victim was initially reluctant.
- Cody v. Commonwealth, 68 Va.App. 638 (2018, **Virginia**) – primary purpose of victim's statement to forensic nurse in DV/Strangulation exam as recorded in the "medical-legal report" was to obtain a medical diagnosis and treatment for her injuries.
- State v. Porter, 390 Mont. 174 (2018, **Montana**) – statement to treating physician about the identify of her attacker and thoughts of dying admissible – primary purpose was medical care.
- State v. Hilterbran, 2017 WL 5474489 (2017, **Idaho**) – Forensic Nurse exam at a FJC/FACES – primary purpose was medical care.
- Ward v. State, 50 N.E.3d 752 (2016, **Indiana**) – statements made to paramedic and forensic nurse identifying her attacker were admissible as primary purpose was medical care.
- State v. Kimble, (2015, **Maine**) – statements made to paramedic admissible as medical diagnosis and non-testimonial.



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Additional Resources



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How to access our materials in dropbox:

<https://bit.ly/LastWarningShot>

The Handouts: They are print worthy

> 1. Handouts

Overview

Upload Create Follow

Name

Coloring Pages for tables

0. California S...ual 2020.pdf

1. Esperanza S... mptoms.pdf

2. Strangulatio... v10.12.18.pdf

3. San Diego ...ion Form.pdf

4. Recommen...n v4.9.19.pdf

5. Domestic V...ss Online.pdf

6. Facts-Victim...ure- 2017.pdf

7. Judge Benc...ld Knows.pdf

8. Vital Struct...the Neck.pdf

Updated IACP DV Model Policy



Model Policy

Updated: April 2019

Domestic Violence

I. PURPOSE

The purpose of this policy is to establish agency priorities, guidelines, and procedures to be followed by law enforcement officers in response to domestic violence calls, to include when the subject is a law enforcement officer.¹

II. POLICY

It is the policy of this law enforcement agency to provide a proactive, victim-centered approach when responding to domestic violence. Additionally, it is the policy of this law enforcement agency to take a position of zero tolerance on domestic violence. Any domestic violence incident will be thoroughly investigated, to include when law enforcement officers or individuals in positions of power or influence are involved.

III. DEFINITIONS

Domestic Violence: Abusive behavior in any relationship, as defined by law, that is used to gain or maintain power and control over an intimate partner or family or household member.²

Intimate Partners or Family or Household Members: Persons who are married, in a domestic partnership, or in a romantic or dating relationship; have a child in common; have been intimately involved in some way; are related by blood, adoption, or legal custody; or reside in the same home.

Predominant Aggressor: The individual who poses the most serious, ongoing threat who might not necessarily be

Preferred Arrest Response: Law enforcement officers are expected to arrest any person who commits a crime related to domestic violence as defined by law, unless there is a clear and compelling reason not to arrest, such as self-defense or lack of probable cause, after a comprehensive investigation to identify the predominant aggressor.

Protection Order: Any injunction or other court order issued for the purpose of preventing violent or threatening acts or harassment against, contact or communication with, or physical proximity to another person, including any permanent, temporary, or emergency order issued by a civil or criminal court (other than a support or child custody order issued pursuant to state divorce and child custody laws, except to the extent that such an order is entitled to full faith and credit under other federal law) whether obtained by filing an independent action or as a pendent lite order in another proceeding so long as a civil order was issued in response to a complaint, petition, or motion filed by or on behalf of a person seeking protection.

IV. PROCEDURES

A. Communications Personnel Response

When a caller reports a domestic violence incident, communications personnel should follow standard agency protocols. In addition, communications personnel shall do the following:

1. Dispatch a minimum of two officers whenever possible.

- Strangulation language has been modified to:
- “7. Summons EMS at the request of the victim or suspect or if it appears that strangulation has occurred.
- Alliance Recommendation:
- All police and sheriff's department should update their protocols to include strangulation.

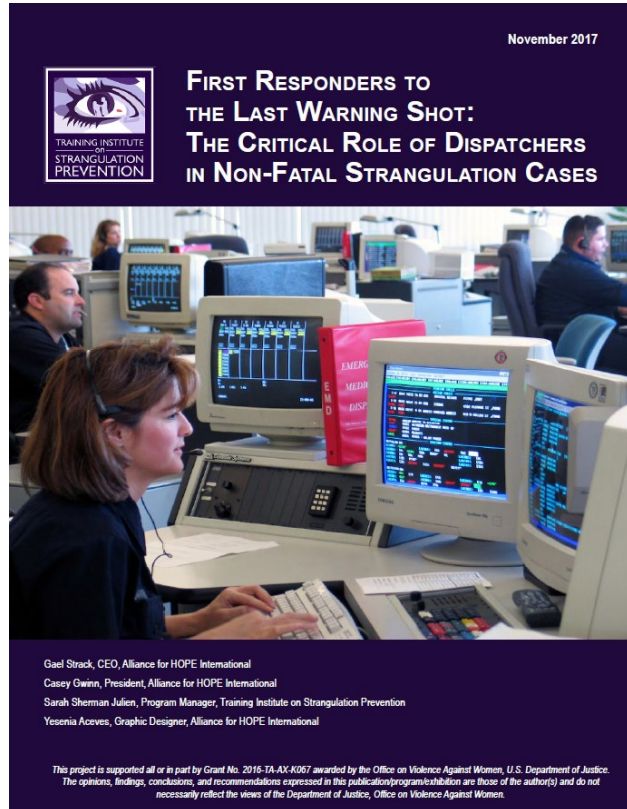


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First Responders Chapter:

The Critical Role of Dispatchers in Non-Fatal Strangulation Cases



- Discusses the importance of 911 tapes and their use in successful cases
- Provides information on vicarious trauma with links to the IACP Vicarious Trauma Toolkit
- Describes signs and symptoms of strangulation and questions for dispatchers to use with 911 callers
- Features resources for dispatchers including the strangulation assessment card
- Spotlights in house dispatcher, Irma Young from Marksville City Police Department and her 43 years of service



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STRANGULATION ASSESSMENT CARD

SIGNS	SYMPTOMS	CHECKLIST	TRANSPORT
<ul style="list-style-type: none"> ● Red eyes or spots (Petechiae) ● Neck swelling ● Nausea or vomiting ● Unsteady ● Loss or lapse of memory ● Urinated ● Defecated ● Possible loss of consciousness ● Ptosis – droopy eyelid ● Droopy face ● Seizure ● Tongue injury ● Lip injury ● Mental status changes ● Voice changes 	<ul style="list-style-type: none"> ● Neck pain ● Jaw pain ● Scalp pain (from hair pulling) ● Sore throat ● Difficulty breathing ● Difficulty swallowing ● Vision changes (spots, tunnel vision, flashing lights) ● Hearing changes ● Light headedness ● Headache ● Weakness or numbness to arms or legs ● Voice changes 	<p>S Scene & Safety. Take in the scene. Make sure you and the victim are safe.</p> <p>T Trauma. The victim is traumatized. Be kind. Ask: what do you remember? See? Feel? Hear? Think?</p> <p>R Reassure & Resources. Reassure the victim that help is available and provide resources.</p> <p>A Assess. Assess the victim for signs and symptoms of strangulation and TBI.</p> <p>N Notes. Document your observations. Put victim statements in quotes.</p> <p>G Give. Give the victim an advisal about delayed consequences.</p> <p>L Loss of Consciousness. Victims may not remember. Lapse of memory? Change in location? Urination? Defecation?</p> <p>E Encourage. Encourage medical attention or transport if life-threatening injuries exist.</p>	<p>If the victim is Pregnant or has life-threatening injuries which include:</p> <ul style="list-style-type: none"> ● Difficulty breathing ● Difficulty swallowing ● Petechial hemorrhage ● Vision changes ● Loss of consciousness ● Urinated ● Defecated <p>DELAYED CONSEQUENCES</p> <p>Victims may look fine and say they are fine, but just underneath the skin there would be internal injury and/or delayed complications. Internal injury may take a few hours to be appreciated. The victim may develop delayed swelling, hematomas, vocal cord immobility, displaced laryngeal fractures, fractured thyroid bone, airway obstruction, stroke or even delayed death from a carotid dissection, bloodclot, respiratory complications, or anoxic brain damage.</p> <p>Taliaferro, E., Hawley, D., McClane, G.E. & Strack, G. (2009), Strangulation in Intimate Partner Violence. <i>Intimate Partner Violence: A Health-Based Perspective</i>. Oxford University Press, Inc.</p> <p>This project is supported all or in part by Grant No. 2014-TA-AX-K008 awarded by the Office on Violence Against Women, U.S. Dept. of Justice. The opinions, findings, conclusions, and recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the Department of Justice, Office on Violence Against Women.</p>



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ADVISAL TO PATIENT

- After a strangulation assault, you can experience internal injuries with a delayed onset of symptoms. These internal injuries can be serious or fatal.
- Stay with someone you trust for the first 24 hours and have them monitor your signs and symptoms.
- Seek medical attention or call 911 if you have any of the following symptoms: difficulty breathing, trouble swallowing, swelling to your neck, pain to your throat, hoarseness or voice changes, blurred vision, continuous or severe headaches, seizures, vomiting or persistent cough.
- The cost of your medical care may be covered by your state's victim compensation fund. An advocate can give you more information about this resource.
- The National Domestic Violence Hotline number is **1-800-799-SAFE**.

NOTICE TO MEDICAL PROVIDER

- The Medical Advisory Board of the Training Institute on Strangulation Prevention has developed recommendations for the radiologic evaluation of the adult strangulation victim. In patients with a history of a loss of consciousness, loss of bladder or bowel control, vision changes or petechial hemorrhage, medical providers should evaluate the carotid and vertebral arteries, bony/cartilaginous and soft tissue neck structures and the brain for injuries. A list of medical references is available at www.strangulationtraininginstitute.com
- Life-threatening injuries include evidence of petechial hemorrhage, loss of consciousness, urination, defecation and/or visual changes. If your patient exhibits any of the above symptoms, medical/radiographic evaluation is strongly recommended. Radiographic testing should include: a CT angiography of carotid/vertebral arteries (most sensitive and preferred study for vessel evaluation) or CT neck with contrast, or MRA/MRI of neck and brain. Strangled patients with arterial injuries can present with strokes months or years post-strangulation.
- ED/Hospital observation should be based on severity of symptoms and reliable home monitoring.
- Consult Neurology, Neurosurgery and/or Trauma Surgery for admission.
- Consider an ENT consult for laryngeal trauma with dysphonia, odynophagia, dyspnea.
- Discharge home with detailed instructions to return to ED if neurological signs/symptoms, dyspnea, dysphonia or odynophagia develops or worsens.



StrangulationTrainingInstitute.com



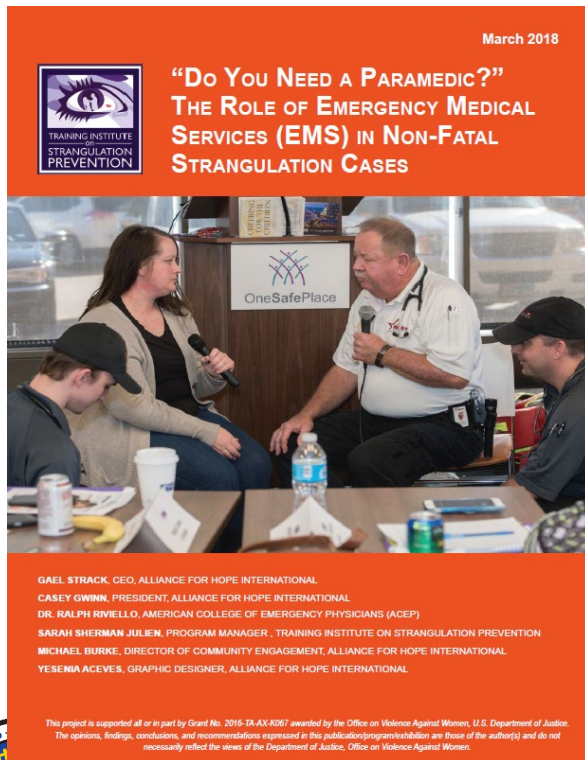
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Paramedics Chapter:

“Do You Need a Paramedic?”

The Role of Emergency Medical Services (EMS) in Non-Fatal Strangulation Cases



- Provides detailed information on why training is critical for EMS responders
- Features resources including links to training video clips, the strangulation assessment card, and additional articles
- Provides information on when to transport a victim who has been strangled
- Recognizes Ken Shetter, a featured leader who has passed a new ordinance leading the way for survivors of non-fatal strangulation



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Thank you for you attention

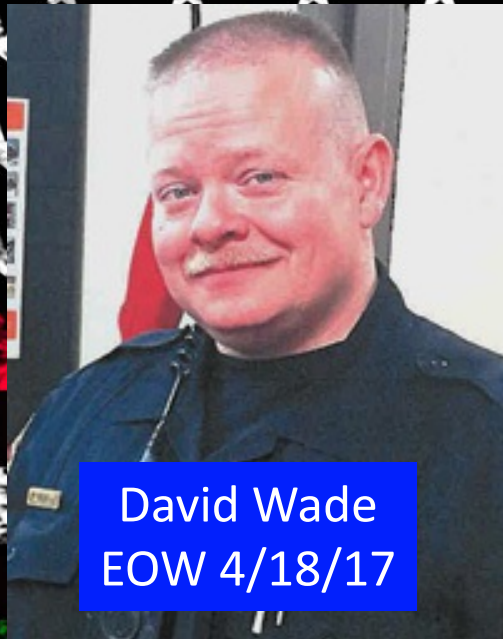


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Remember, No one fights alone!

This presentation is dedicated to Deputy Wade and Officer Terney and to the hundreds of other officers who have lost their lives at the hands of stranglers.



David Wade
EOW 4/18/17



Justin Terney
EOW 3/27/17

For further information, or to bring
this training to your local
organization, feel free to contact me.

Dr. Bill Worden

Cell Phone: 405-226-3404

Email: bill@heartlandmedicaldirection.org



Heartland Medical Direction



Gael Strack, J.D.

CEO and Co-Founder



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- Strangulationtraininginstitute.com
- gael@allianceforhope.com
- 760-445-3559



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It's easy to join our mailing list!

Just send your email address by text message:

Text

HOPEGIVER

To **22828** to get started.

Message and data rates may apply.



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Thank you, OVW!

This project is supported all or in part by Grant No. 2016-TA-AX-K067 awarded by the Office on Violence Against Women, U.S. Department of Justice. The opinions, findings, conclusions, and recommendations expressed in this publication/program/exhibition are those of the author(s) and do not necessarily reflect the views of the Department of Justice, Office on Violence Against Women.



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