

2026
Annual Session for the
Missouri Dental Association



**CONNECT
4SUCCESS**

**“Actions and Algorithms
for Medical Emergencies”**

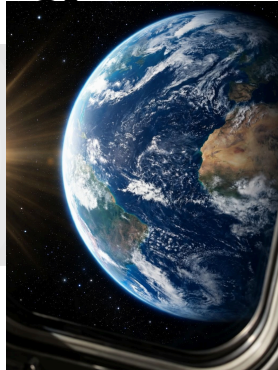
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**ADVANCED
PRACTICE
SEMINARS**
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www.APS4DDS.com



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**Daniel G. Pompa, D.D.S.
& Conflicts of Interest**

“Participants should be cautioned about the potential risks of using *limited knowledge* when integrating new techniques in their practice.”

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Daniel G. Pompa, D.D.S.
Neither my immediate family nor I have any financial interests that would create a conflict of interest or restrict my independent judgment with regard to the content of this course

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**8 Reasons
to use a
Pulse Oximeter**

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Multiple uses for Epinephrine (4)

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Guidance for:

- Asthma Attack not responsive to Rescue Inhaler (MDI) or Nebulizer
- Unconscious Hypoglycemic
- Cardiac Arrest after 6 minutes
- Status Epileptics
- Post Seizure Rule/Out=Cardiac Arrest
- Anaphylactic Shock not responding to Epi

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Median Temporal Lobe and the Pre-Frontal Cortex

- 80% of the time in *Intuitive and Emotional* mode
= System I MTL
vs.
- 20% of time for *Deliberative and Logical* thinking
= System II PFC
- System III - just a switch from I to II

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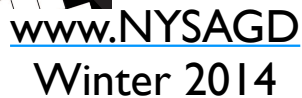
System I = F = MTL=Auto
System II = S = PFC=Logical
~~System III=Allows switching~~

- With High Epi —System III is not accessible

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- Cannon : 1929 Fight or Flight
- Laborit : 1986 Fight Flight or **Freeze**
- Renouard: 2017 **Human Factors**
- Harvey: 2020 GP - in NYC
“Entire Office Staff Trained”

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Reducing the Occurrence of Many Medical Emergencies in the Dental Office

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Go to
nayzilam.com
to register for a
savings card



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Link for IntraNasal (IN) Drugs:

<https://www.uwhealth.org/ckm/cpg/medications/Intranasal-Medication-Administration---AdultPediatric---InpatientAmbulatory-170217.pdf>

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Other new **"Administration Routes"**
for drugs in an Emergency Kit



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Top 10 List:

- 1) **Epi Pen and Epi Pen Jr (IM-Autoinjector)**
- 2) ~~Spice of Ammonia~~ (to R/O Etiology of LOC = Differential Dx) - even better: now is the use of a **Pulse Oximeter**
- 3) **Benadryl (Pre-filled-IM) & Elixir = PO**
- 4) **Ventolin Inhaler and as packets to be used in a Nebulizer**
Note: If using a Nebulizer connect with a Compressor or E tank Cylinder
NOT your chairside Oxygen! (will not work)



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Top 10 List:

- 5) **Aspirin (Baby aspirin = 81mg)**
- 6) **Nitroglycerine (Pills* or Spray)**
- 7) **Glucose: for Hypoglycemia:**
Glucose Gel 15, 30 and 45
Now New: for Hypoglycemia
Auto-injector = HypoPen

*Pill is more practical and economical



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Top 10 List:

- 8) **Midazolam IN/IM & Now New: Nayzilam IN**
- 9) **Narcan IN/ Kloxado IN**
- 10) **Oxygen with Nitrous Oxide**



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DixieEMS

Email: info@dixieems.com

Phone: 800-347-3494
or 718-257-6400

CoreMedical
systems.com
212-873-0105

6 more companies!

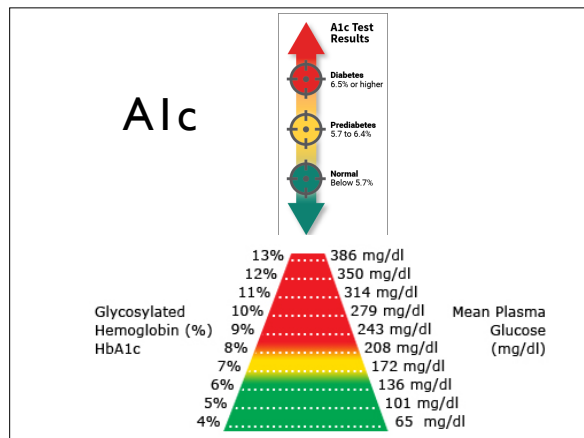
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What is A1c

- **Patient fasting is not required prior to an A1c test. The more recent 30 days is more significant than 90~120 days ago.**

*Males = 117 days = RBC life
Females = 106 days = RBC life

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The Maastricht Study

- Demonstrated that in **Pre-diabetes** there is already **microvascular** changes associated with impaired **function in the skin** (cardiovascular) and **vascular impairment in the retina**.

A1c Target Levels

- Normal: less than or equal to 5.6
- Prediabetes: 5.7 - 6.4
- Diabetes: 6.5

**Circulation. 2016;134:1339-1352. DOI: 10.1161/CIRCULATIONAHA.116.023446*

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Some causes of Hypoglycemia= below 70 mg/dl*

- ▶ -Missed, delayed or inadequate meals
- ▶ -Excess insulin or oral hypoglycemics
- ▶ -Excessive exercise
- ▶ -Alcohol (frequently without food)
- ▶ -Medication combined with Use of high doses of Aspirin

**May be below 60 mg/dl for some people*

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Risk for Hypoglycemia with GLP-1's:

- 1) People with diabetes generally have relatively low GLP-1 levels, so the drugs in this class* are intended to supplement GLP-1 action in the body
- 2) An important benefit of GLP-1 receptor agonists is that they affect insulin levels **only when blood glucose levels are elevated, so they do not increase the risk of hypoglycemia on their own.** However, you can still get hypoglycemia if you take a GLP-1 receptor agonist with a sulfonylurea* and/or insulin

**Ozempic and Mounjaro and now: Pill form: Foundayo, Wegovy and "The Ozempic Pill"*

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The 3 Most Prescribed Sulfonylureas are:

- Glipizide (**Glucotrol, Glucotrol XL**)
- Glimepiride (**Amaryl**)
- Glyburide (**DiaBeta, Glynase**)

Raised Index of Suspicion

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*The major names today:
are injectables once a week...*

- **Mounjaro**** for Diabetes and
- **Zepbound**** for weight loss

Now in pill
form:

* **tirzepatide**
=
* **Foundayo**
* (Lilly)
* 2026

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*The major names today:
are injectables once a week...*

- **Ozempic*** for Diabetes and
- **Wegovy*** for Weight loss

Now in pill
form:

* (NovoNordisk) Pill is:
* **Wegovy**
* and "Rybelsus" now
"The Ozempic Pill"

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The Drug Companies bringing these ***pill forms*** out to market are: Lilly, Novo-Nordisk and Amgen

- Lilly - **orforglipron** And the brand is: 
Foundayo
- Novo-Nordisk = **semaglutide** was "**Rybelsus**" (now called "**The Ozempic Pill**") and **Wagovy** as a pill form 
- Amgen = **maridebart cafraglutide** is: the brand is **AMG 133** or **MariTide** - this is the once a month GLP -1 / GIP Agonist

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Restrictions / Precautions with GLP-I & GIP Agonists:

- History of Thyroid Cancer
- History of Pancreatitis
- History of Gastroparesis (slow stomach emptying)
- History of Diabetic Retinopathy
- Oral Contraceptives less effective
- Blood Pressure medication and Pain medication less effective
- Spicy foods
- Alcohol
- Carbonated

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Precautions / Restrictions with GLP-I / GIP Agonists:

- Altered Taste
- Altered Skin Sensations (Dysesthesia)
- Ozempic Face - secondary to muscle loss with potential for misfitting dentures
- Vivid Dreams
- Reduced Addictive urges
- Mood changes

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Precautions / Restrictions with GLP-I / GIP Agonists:

Anesthesia Risks = **Pulmonary Aspiration**
due to slow stomach emptying, food may remain in stomach after standard NPO guidelines for surgical procedures with Anesthesia. With aspiration this can be severe and life threatening

Standard of Care

Stop GLP-I and GIP Agonist meds 1 week prior to Anesthesia

t 1/2 is over

Consider

For ASA PS II and above cases:
Liquid Diet 36 hours pre op then
Clear Liquid Diet 24 hours pre op

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**Those major names today
are injectables once a week...**

- **Ozempic*** and **Mounjaro**** for Diabetes and
- **Wegovy*** and **Zepbound**** for Weight loss

* * the brand names for generic **semaglutide** (Novo Nordisk) 2017

7 Day half-life

5 Day half-life

* ** the brand names for generic **tirzepatide** (Lilly) 2022

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It takes between
4 - 5 half/lives of a
drug to be up to
97% cleared from
the body

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Hair Loss = Alopecia

Stress

- **Semaglutide and Tirzepatide injectables** are not confirmed to directly cause hair loss; in many cases, other factors are responsible.
- The more **likely culprit is the weight loss itself**; cutting calories for extended periods causes the body to deprioritize hair growth.
- This type of shedding is usually temporary and tends to resolve once the calorie deficit ends.
- Getting enough protein and key vitamins like **iron and zinc** can help reduce shedding risk during a calorie deficit.
- Sudden, patchy, or persistent hair loss that does not improve is worth discussing with your doctor.



Telogen Effluvium

Jury out
on
FOPW

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New finding of concern...

- NAION = Nonarteritic Anterior Ischemic Optic Neuropathy
- Slightly increased risk with GLP-I use v. without use of GLP-I
- 4.1% - 7.1% incidence rate per 100,000 persons

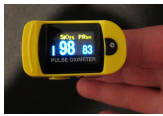
JAMA Ophthalmology
2025;143(4):304-315

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Simple Tests in office:

- Pulse Oximeter (**Pulse** & O₂ Saturation)
- Blood Pressure Monitor (screening and medico-legal requirement-listed for all Local) = **Systolic**/Diastolic
- Glucometer (Blood Sugar levels) & A1c Tester
- Thermometer - to measure temperature* to R/O infection and/or inflammation, > immune response

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X



- $RPP = \text{Pulse} \times \text{Systolic BP}$

Rate Pressure Product (RPP)

Dr. Thomas Quinn
OMFS, Boston

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Rate Pressure Product

- $RPP = \text{Pulse} \times \text{Systolic BP}$
If 10,000 and below suggests a healthy heart
with the coronary arteries able to supply
oxygen to myocardium*

The association of Rate Pressure Product and Myocardial perfusion imaging,
Perfusion, 2012 May;27(3): 207-13 Ansari M Javadi H 10.1177/0267659112436631
Epub 2012 Feb 2

A comparative analysis of Rate Pressure Product between prehypertensives
and normotensives and its correlation with body mass index
Soundariya
Indian Journal of Clinical Anatomy and Physiology, October-December 2016;3(4):452-455

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Rate Pressure Product

- $RPP = \text{Pulse} \times \text{Systolic BP}$
If over 12,000 **suggests** compromised ability
of coronary arteries to supply oxygen to
myocardium*

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HEART MUSCLE (Myocardium)

- RBC's* give up 30% of their **Oxygen** to
peripheral muscle tissue
- The **heart muscle** takes out 60% of the oxygen
from the RBC so it needs more and is more
susceptible to less Oxygen than other tissues

*Males = 117 days = RBC life
Females = 106 days = RBC life

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Percentage of Oxygen delivery

Nasal Cannula
30%
Nose Hood
40%
Simple Face Mask
50%
Intubation Intubation
100%

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Oxygen as Premedication (I2)

- Any Patient with Angina - especially if using Nitroglycerin every day
- If the RPP is over 13,000 -14,000*
- Oxygen Saturation is below 93%

* If > 16,000 =
Contraindication if
Elective

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Oxygen as Premedication

- History of CHF + JVD + Exertional Dyspnea
- Asthma treated with B agonists plus Steroids* and Anticholinergic meds:
Atrovent, Spiriva, or Incruse
- Patients with a history of seizures not responsive to meds
- Macho Man 16-30 years old - first visit for an extraction

*Next Slide

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*Steroids used for asthma include:

- Medrol, Methylpred,
- Solu-Medrol
(methylprednisolone)
- Deltasone (prednisone)
- Prelone, Prediapred, Orapred,
(prednisolone)
- Decadron(dexamethasone)

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Oxygen as Premedication

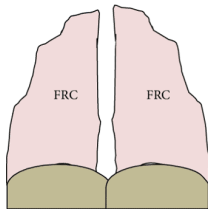
- History of an MI in the past 6 months
- RPP over 13,000 - 14,000 and BMI* over 30
- Any Obese patients (BMI > 30)

* Body Mass Index

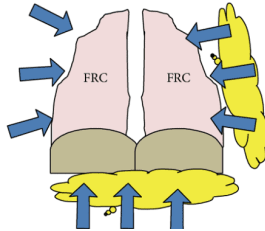
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Functional Residual Capacity Normal vs. Obese Lungs

Resting lung volumes (FRC) in nonobese lungs with good lung compliance



Reduced resting lung volumes (FRC) in obese lungs due to restriction from surrounding adipose tissue and reduction in lung compliance



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Oxygen as Premedication

- Pregnant patient - especially Third Trimester of Pregnancy if having respiratory difficulty

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Fordyce's granules as a marker for Hyperlipidemia

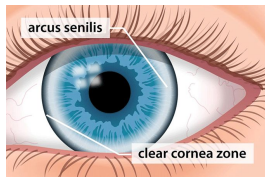


Note: Correlation is usually with Fordyce's Granules on both sides of the mouth AND on the Vermillion border of the lips.

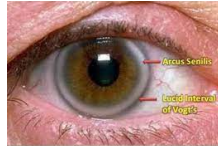
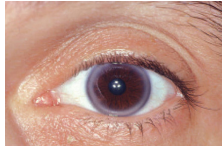


Sabathia, R. Y., & Rahimi, J. (2014). Can presence of oral Fordyce's granules serve as a marker for hyperlipidemia. *Dental Research Journal*, 11(5), 553-558.

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Hyperlipidemia



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Pseudomembranous lesions of the tongue*

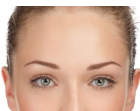


R/O Inflammatory Bowel Disease (IBD): *Chrons Disease (CD) or Ulcerative Colitis (UC)

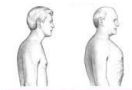
Perinatologist

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Exam at 20 paces...



- Color of Sclera in eyes
- Barrel Chest of COPD and Osteoporosis



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Blue Sclera



thinness of collagen fibers

- **Hypothyroidism**
- Osteogenesis Imperfecta (27)
- Marfans Syndrome
- Minocycline use (Tetracycline)
- Adrenal Insufficiency (Addison's Disease)
- Conjunctival Melanoma

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3 Signs associated with Hypothyroidism

- Peripheral Numbness
- Cold and Dry handshake
- Blue Sclera

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Hypothyroid

- Increased risk for hemorrhage*
- Cardiac pathology

***There may be an increased risk of hemorrhage due to:**

- Platelet Adhesion abnormalities,
- Factor VIII and IX deficiencies &
- Increased Capillary Fragility

Digression....

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Diseases that cause excessive bleeding:

- # 1 is Von Willebrand Disease (I, II & III) Treat with DDAVP (desamino-8-arginine vasopressin). No use of Steroids! (50,000 in U.S.)
- Hemophilia: A, B and C
- Idiopathic Thrombocytopenia Purpura (ITP)
- Disseminated Intravascular Coagulation (DIC)

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10 Meds that can cause excessive bleeding:

- AntiDepressants (SSRI's)

- AntiPsychotics

- Aspirin - AntiPlatelet

- Anticoagulants- Coumadin inhibits Vit K

- dabigatran (Pradaxa)
- apixaban (Eliquis)
- edoxaban (Savaysa)
- rivaroxaban (Xarelto)

- DOAC's - Inhibits Thrombin or f10a & f2a

- Tylenol with Codeine and Oxycodone

- Hormonal Contraceptives

- LevoDopa (for Parkinsons)

- Steroids

- Tamoxifen

- Other Chemo meds

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Hypothyroid

- Potential for excessive bleeding
- Inability to tolerate cold
- Unexplained weight gain
- Constipation
- Dry and Cold skin
- Fatigue - excessive sleep
- *Peripheral Numbness*



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Hyperthyroid

- Inability to tolerate heat
- Unexplained weight loss
- Frequent bowel movements
- Sweating and hot skin
- Irritable/Nervous/ difficult to sleep-
- Careful with local with Epi if intravascular possible thyroid storm



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CLINICAL CORRELATES Clinical Correlates

1. Solitary submandibular node at angle of jaw.....	Nasopharyngeal carcinoma
2. Osteoma of jaw.....	Gardner's syndrome
3. Circumoral pigmentation.....	Peutz-Jeghers syndrome
4. Odontogenic cyst in child.....	Basal cell nevus syndrome
5. Giant cell lesion of jaw.....	Hyperparathyroidism
6. Nodule in upper lip.....	Basal cell adenoma
7. Loss of lamina dura.....	Hyperparathyroidism
8. Ground glass.....	Fibrous dysplasia
9. Parotid mass in a child.....	Capillary hemangioma
10. Hair-on-end.....	Thalassemia
11. Punched out lesions of bone.....	Multiple myeloma
12. Radiolucency below the inferior alveolar canal.....	Static bone defect
13. Floating teeth.....	Histiocytosis X
14. Butterfly rash.....	Lupus erythematosus
15. Target lesions.....	Erythema multiforme
16. Cafe-au-lait.....	Fibrous dysplasia
17. Cotton wool.....	Neurofibromatosis
18. Precocious puberty.....	Albright's syndrome
19. Port wine stain.....	Sturge-Weber syndrome
20. Amyloidosis of tongue.....	Multiple myeloma
21. Sunburnt.....	Osteosarcoma
22. Lichen planus.....	Diabetes
23. Deep voice.....	Hypothyroidism
24. Solitary loose tooth.....	Cancer
25. Funnel shaped alveolar canal.....	Neurofibroma
26. White lesion in child.....	White sponge nevus
27. Blue Sclera.....	Osteogenesis imperfecta
28. Geographic skull.....	Hand-Schuller-Christian
29. Paget's disease.....	Osteosarcoma
30. Erythroplasia.....	Carcinoma-in-situ
31. Hypercementosis.....	Paget's disease

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Clinical Correlates

- Fordyce's granules/Arcus Seniles
- Pulsating Uvula = Mullers Sign
- Pseudomembranous Lesions on Tongue
- Hypothyroidism

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Waiting Room

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Arrival Time	Appt. Time	Doctor or Department	New Patient (✓)	Any change in address/phone/insurance since last visit?
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DASH the ABC'S
must ask questions every time

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D_A_S_H_ the ABC'S
must ask questions **every time**

- Any New Drugs
- Any Allergies
- Any Surgeries
- Any Hospitalizations

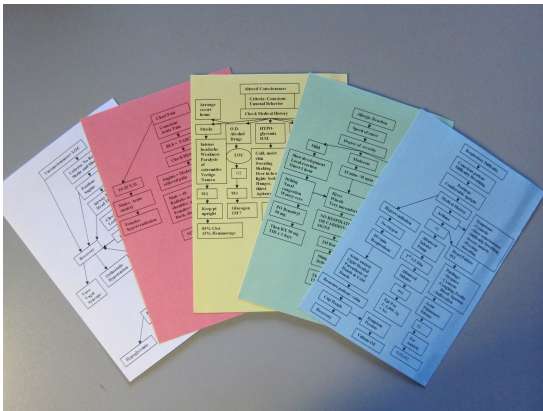
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DASH the ABC'S

must ask questions every time

- Any New Drugs
- Any Allergies
- Any Surgeries
- Any Hospitalizations
- Aspirin regimen or sensitive to it
- Any Bleeding disorders or history
- Chest Pain - any history of
- Shortness of Breath

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Approach to all Medical Emergencies



- **Method over Memory**
- **Develop your (IOS) "Index of Suspicion"**
- **Increase your knowledge of "Clinical Correlates"**
- **Perform Mock Emergency Drills!**

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Post it 911 *internal code*
ie: "126" — **55 y/o female**
severe chest pain

ang,aeth.....AGE, Sex, CC



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Do not hesitate



Just Do It!

male vs. female

Land Line



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CAUSES OF MEDICAL EMERGENCIES



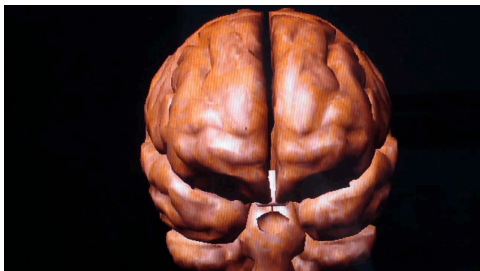
	Low O2 / Low Blood Flow	Blood Clot : (Thrombus, Emboli)
BRAIN		
HEART		
LUNGS		

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CAUSES OF MEDICAL EMERGENCIES

	Low O2 / Low Blood Flow	Blood Clot : (Thrombus, Emboli)
BRAIN	Seizure/Syncope	
HEART		
LUNGS		

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CAUSES OF MEDICAL EMERGENCIES		
	Low O2 / Low Blood Flow	Blood Clot : (Thrombus, Emboli)
BRAIN		Stroke=80% Blood Clot
HEART		
LUNGS		

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Stroke

- Cincinnati Stroke Scale
Simple scale for office use...(FAST)
- F) Facial Drooping
- A) Arm drift
- S) Slurred Speech
- T) Time is CRITICAL = call 911!!
FAST (If one of the 3 = 72% Stroke, if all 3 present = 85% Stroke)

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Stroke assessment continued:

- Weakness or Numbness in the face, arm or leg (usually on just one side)
- Unexplained severe Headache
- Blurred or diminished vision in one or both eyes
- Unexplained loss of Balance or dizziness
- Difficulty understanding Language

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BEFAST

- Unexplained loss of **B**alance or dizziness
- Blurred or diminished vision in one or both **E**yes
- **F**acial Drooping
- **A**rm Drift
- **S**lurred Speech
- **T**ime is critical

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CAUSES OF MEDICAL EMERGENCIES		
	Low O2 / Low Blood Flow	Blood Clot : (Thrombus, Emboli)
BRAIN		Hemorrhagic Stroke=15-20%
HEART		
LUNGS		

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3 Rules of Real Estate

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The Three Rules of

Stroke vs. Syncope

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PABCD

●P=Position,Position, and Position...

- A=Airway
- B=Breathing
- C=Circulation, Compressions
- D=Definitive Treatment = Drugs,

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Position

- This is often the only treatment necessary for complete recovery
- Syncope = Supine--Head Tilt/Chin Lift
- When not managed correctly this can be the **only reason for a fatal outcome**
- S

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Syncope and Stroke

- With these two medical emergencies--
POSITION is everything!

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CAUSES OF MEDICAL EMERGENCIES

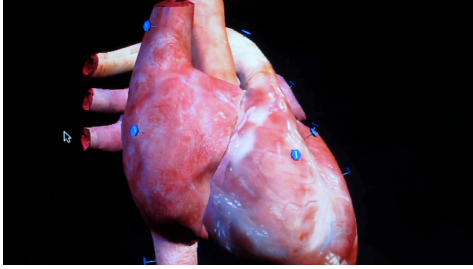
	Low O2 / Low Blood Flow	Blood Clot : (Thrombus, Emboli)
BRAIN	Syncope/Faint Tx= SUPINE!	
HEART		
LUNGS		

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CAUSES OF MEDICAL EMERGENCIES

	Low O2 / Low Blood Flow	Blood Clot : (Thrombus, Emboli)
BRAIN		Stroke Tx= UPRIGHT!
HEART		
LUNGS		

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CAUSES OF MEDICAL EMERGENCIES		
	Low O ₂ / Low Blood Flow	Blood Clot : (Thrombus, Emboli)
BRAIN		
HEART	Angina	
LUNGS		

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CAUSES OF MEDICAL EMERGENCIES		
	Low O ₂ / Low Blood Flow	Blood Clot : (Thrombus, Emboli)
BRAIN		
HEART		Myocardial Infarction
LUNGS		

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CAUSES OF MEDICAL EMERGENCIES		
	Low O2 / Low Blood Flow	Blood Clot : (Thrombus, Emboli)
BRAIN		
HEART		
LUNGS	COPD	

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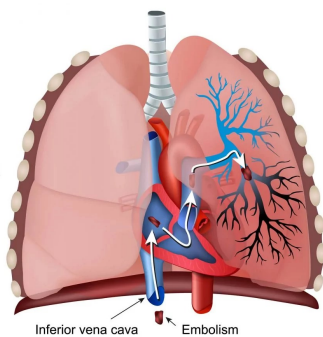
CAUSES OF MEDICAL EMERGENCIES		
	Low O2 / Low Blood Flow	Blood Clot : (Thrombus, Emboli)
BRAIN		
HEART		
LUNGS		Pulmonary Embolism

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Pulmonary Embolism

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Pulmonary Embolism



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Pulmonary Embolism

- Frequently seen after prolonged sitting or recovering from surgery
- Risk factors: Obesity, Smoking & **Pregnancy +3 months***
- Women on Birth Control Meds..
- **Covid-19 + few months**

* AutoRegulation of the Hemopoietic System.

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Administer Aspirin - Yes or No?

- Myocardial Infarction?
- Stroke?

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Yes to MI unless:

- Allergic to Aspirin

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No to Stroke

F.A.S.T.

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Pulmonary Embolism (PE)

WORLD THROMBOSIS DAY
15 OCTOBER

Sudden/Severe

Shortness of breath

• Rapid breathing

Hyperventilation

• Chest pain that may increase when taking a deep breath

Pain on Inspiration

• Rapid Heart Rate

Dizzy

• Light headedness and/or passing out

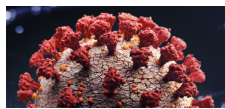
• Coughing up blood

If you experience any of these symptoms talk to your healthcare professional (even if less)



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SARS-Covid



- Female patient taking Birth Control Meds and recently had Covid or
- Pregnant (+ 3 months) and recently had Covid - then
- Higher risk for:
Pulmonary Embolism *

102

How a Pulse Oximeter can help in an Emergency or help prevent one

8 Uses for us:

103

- **Rule/out Cardiac Arrest after 10 sec's in Unconsciousness (LOC)**
- **Rule/out Cardiac Arrest after a Seizure is over (13% of the time CA presents as a Seizure to start)**
- **To obtain a Pulse number - and use it to determine the Rate Pressure Product**
- **Knowing when to administer Supplemental Oxygen (<93%)**

(RPP) Rate Pressure Product =
Heart Rate X Systolic BP

104

- **Help to Rule/Out Pulmonary Embolism**
- **To help Monitor a Asthma Attack to determine if a Nebulizer or Epi needed or neither**
- **To Rule/out Tachycardia**
- **To Rule/out Bradycardia**
