Medical Emergencies Update 2015

Steven W. Beadnell, DMD
Gum Gardner's RDH Study Club
September 28, 2015

Medical Emergencies

Basic Principles

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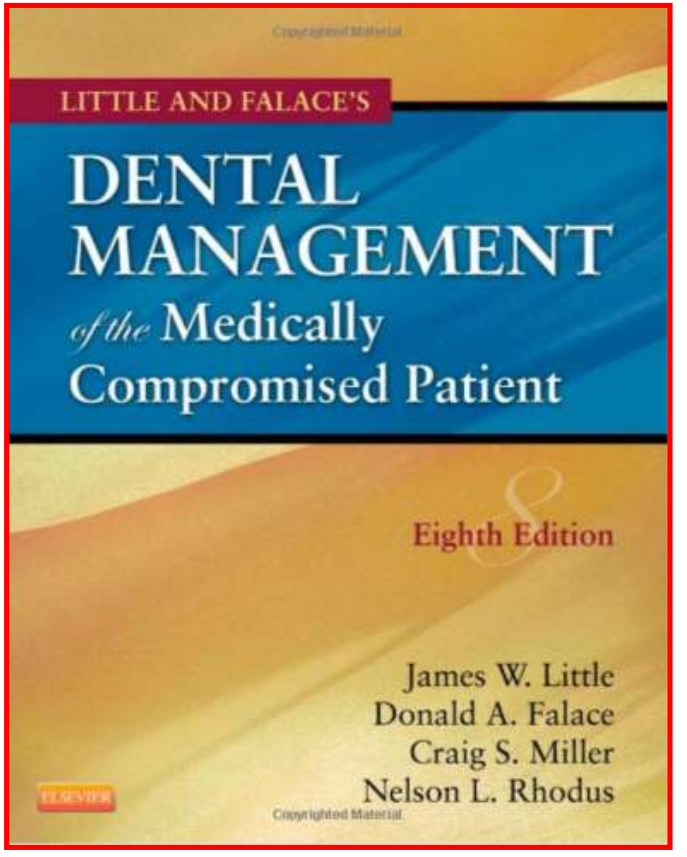
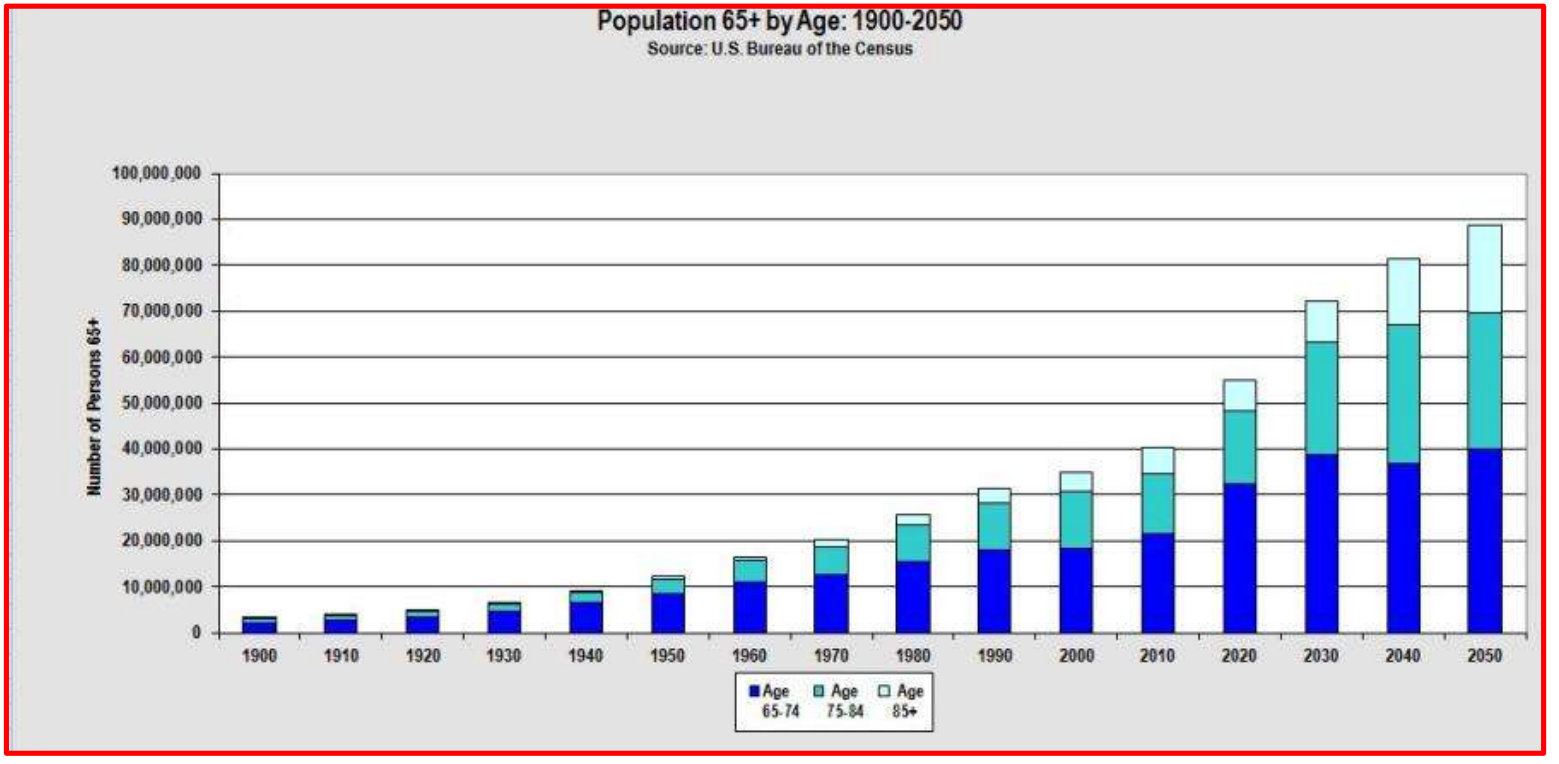
Medically Complicated Patient

- Cardiac Disease
- Diabetes Mellitus
- Renal Dialysis
- Organ Transplants
- Immune Disorders
- Liver Failure
- Anticoagulated Pt



Here comes the Baby Boomers



2014 => 14.5% U.S. Population > 65y/o
(with life expectancy of 19.3yr)

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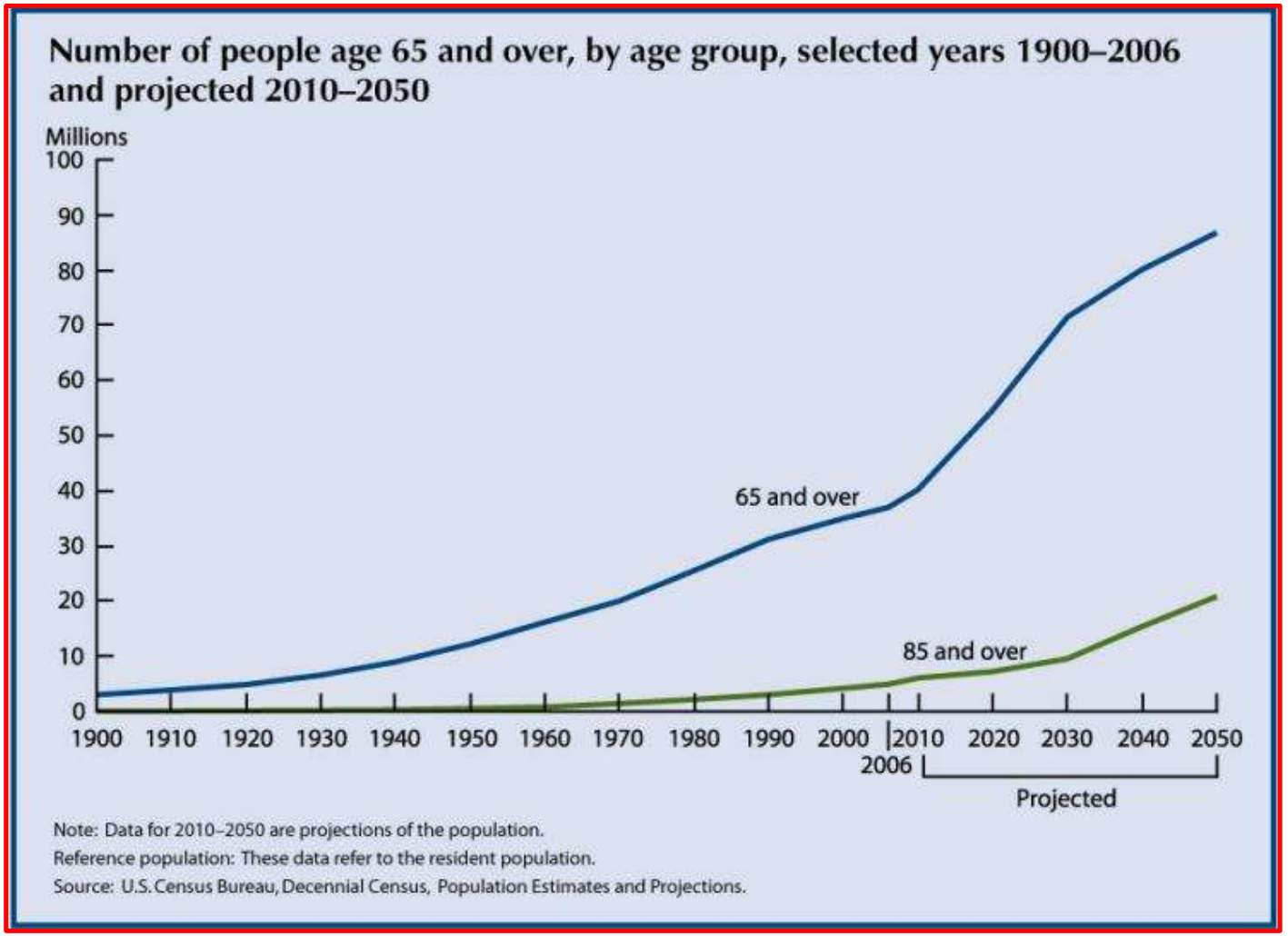
Here comes the Baby Boomers



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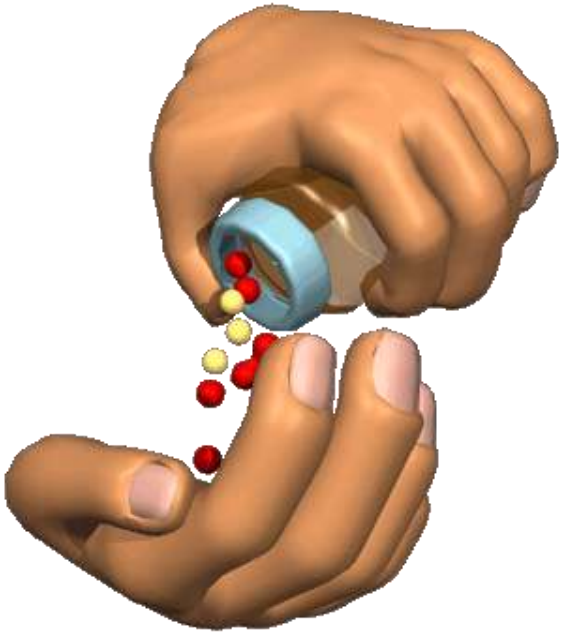
A Pill Cures All



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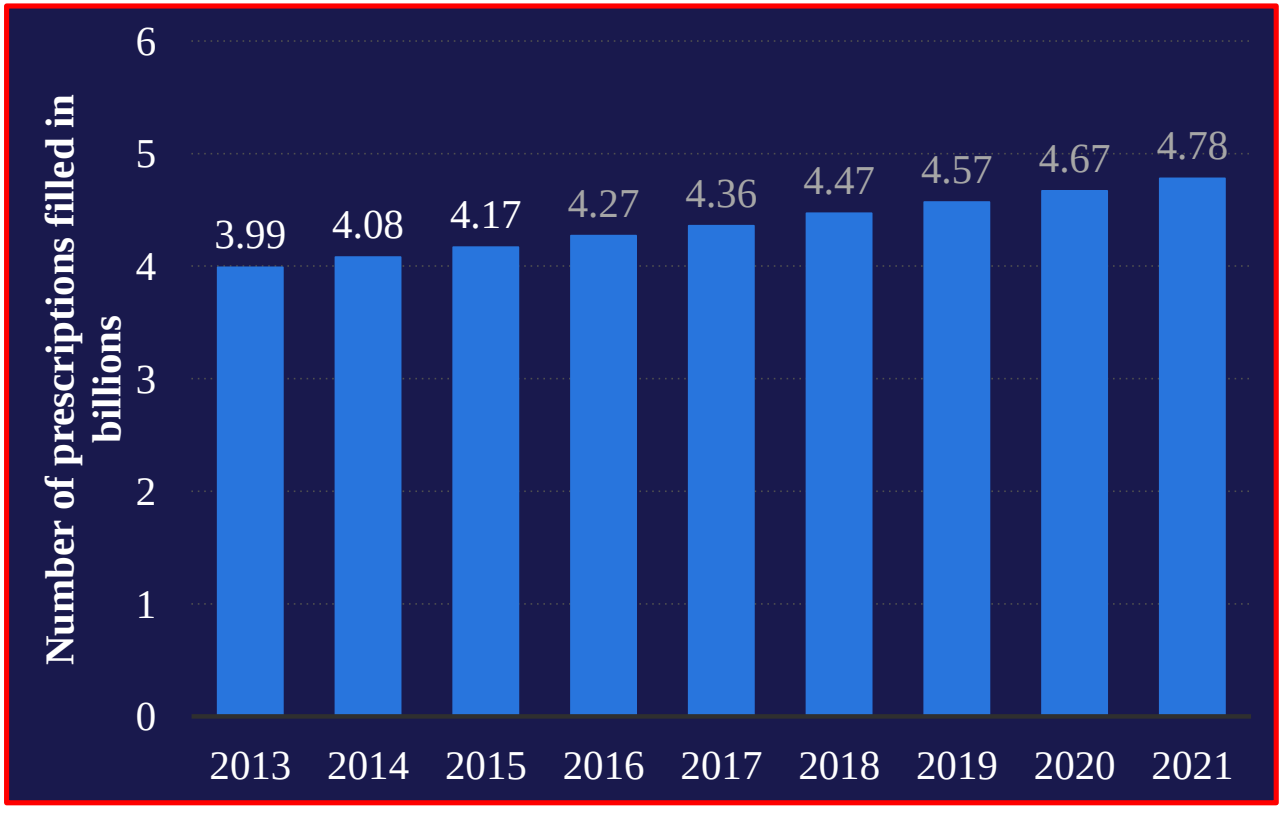
A Pill Cures All

Total number of retail prescriptions filled annually in the United States from 2013 to 2021 (in billions)*



Source: Trefis.com

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A Pill Cures All

Age	Per Capita Rx
0 – 18 yrs	4.1
19 – 64 yrs	12.6
> 65 yrs	27.9

Medical Emergencies

What's happening ?

When's it happening ?

What's causing it to happen ?

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Medical Emergencies

Private practice – 30,608 emergencies

Syncope	15,407(50.3%)	Cardiac Arrest	331(1.1%)
Mild allergy	2,583(8.4%)	Anaphylaxis	304(1.0%)
Angina Pectoris	2,552(8.3%)	Myocardial Infarction	289(0.9%)
Postural hypotension	2,475(8.1%)	L.A. Overdose	204(0.7%)
Seizure	1,595(5.2%)	Acute Pulm Edema	141(0.5%)
Asthmatic attack	1,392(4.5%)	Diabetic Coma	109(0.4%)
Hyperventilation	1,326(4.3%)	Stroke	68(0.2%)
Epinephrine Rxn	913(3.0%)	Adrenal Insufficiency	25(0.09%)
Insulin Shock	890(2.9%)	Thyroid Storm	4(0.01%)

Malamed, JADA 1993

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TABLE 1-7 Medical emergencies occurring among British dentists in a 12-month period

Emergency situation	Percentage of dentists reporting emergency	Number of cases reported
Vasovagal syncope	63	596
Angina pectoris	12	53
Hypoglycemia	10	54
Epileptic fit (seizure, convulsion)	10	42
Choking	5	27
Asthma	5	20
Cardiac arrest	0.3	1

Data from Jevon P: Updated guidance on medical emergencies and resuscitation in the dental practice, *Br Dent J* 212:41–43, 2012.

Medical Emergencies

Stage of Treatment

Treatment Stage	Occurrence
Immediately before Tx	1.5%
During or after local	54.9%
During treatment	22.0%
After treatment	15.2%
After leaves office	5.5%

Malamed, JADA 1993

Medical Emergencies

Treatment being performed

Treatment	Occurrence
Tooth extraction	38.9%
Pulp extirpation	26.9%
Unknown	12.3%
Other treatment	9.0%
Preparation	7.3%
Filling	2.3%
Incision	1.7%

Malamed, JADA 1993

Medical Emergencies

Prevention

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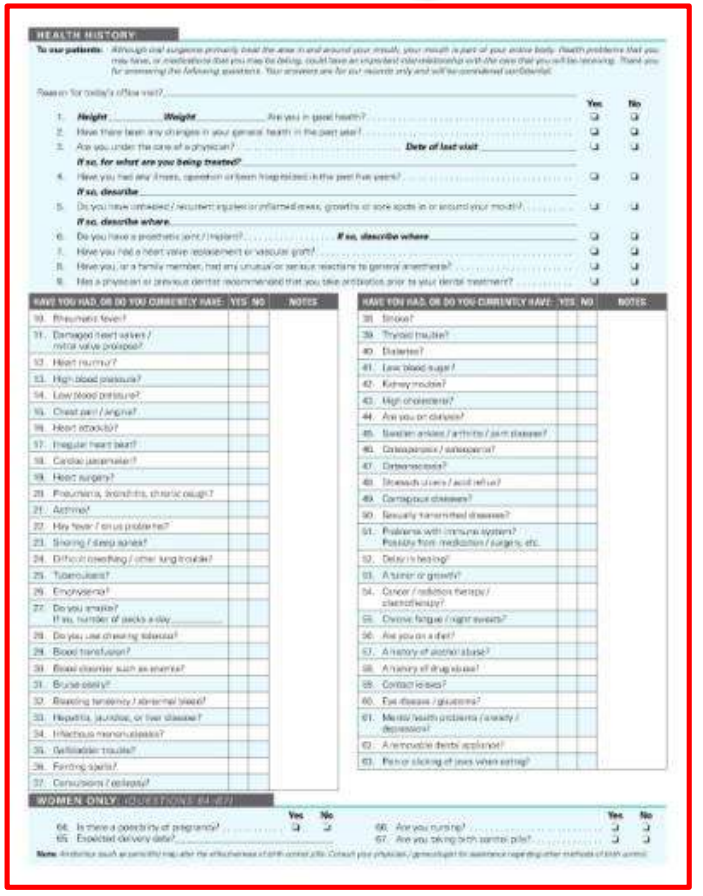
Prevention

❖ Recognition of risk



HEALTH HISTORY

To our patients: Although oral surgeons primarily treat the area in and around your mouth, your mouth is part of your entire body. Health problems that you may have, or medications that you may be taking, could have an important interrelationship with the care that you will be receiving. Thank you for answering the following questions. Your answers are for our records only and will be considered confidential.

Reason for today's office visit? _____

	Yes	No
1. Height _____ Weight _____ Are you in good health?	☐	☐
2. Have there been any changes in your general health in the past year?	☐	☐
3. Are you under the care of a physician? Date of last visit _____	☐	☐
If so, for what are you being treated? _____		
4. Have you had any illness, operation or been hospitalized in the past five years?	☐	☐
If so, describe _____		
5. Do you have unhealed / recurrent sores or inflamed areas, growths or sore spots in or around your mouth?	☐	☐
If so, describe where _____		
6. Do you have a prosthetic joint / implant? If so, describe where _____	☐	☐
7. Have you had a heart valve replacement or vascular graft?	☐	☐
8. Have you, or a family member, had any unusual or serious reactions to general anesthesia?	☐	☐
9. Has a physician or previous dentist recommended that you take premedication prior to your dental treatment?	☐	☐

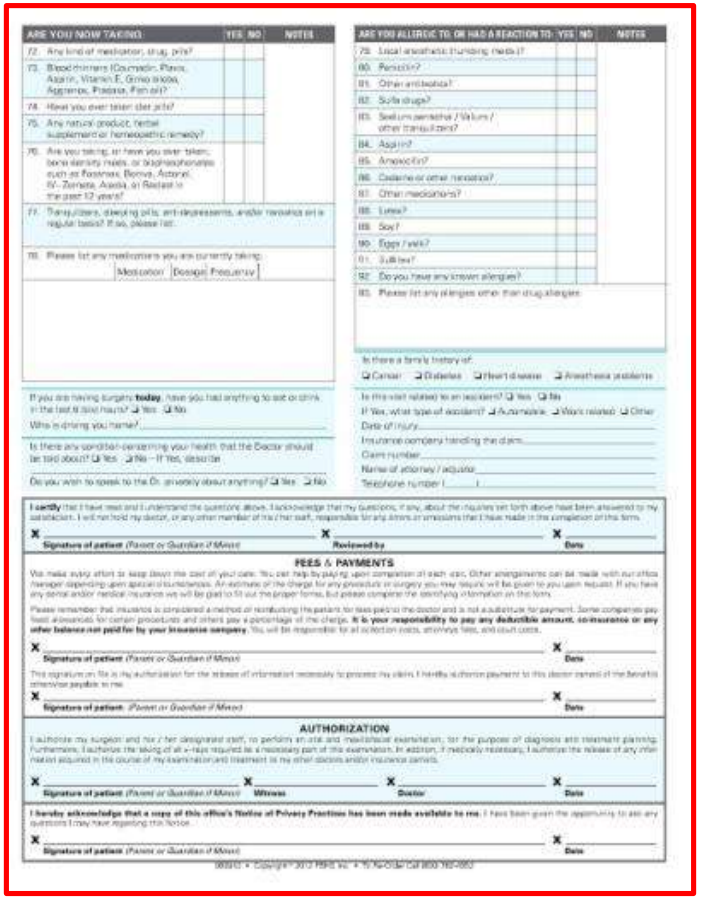
HAVE YOU HAD, OR DO YOU CURRENTLY HAVE:	YES	NO	NOTES
10. Rheumatic fever?			
11. Damaged heart valves / mitral valve prolapse?			
12. Heart murmur?			
13. High blood pressure?			
14. Low blood pressure?			
15. Chest pain / angina?			
16. Heart attack(s)?			
17. Irregular heart beat?			
18. Cardiac pacemaker?			
19. Heart surgery?			
20. Pneumonia, bronchitis, chronic cough?			
21. Asthma?			
22. Hay fever / sinus problems?			
23. Snoring / sleep apnea?			
24. Difficult breathing / other lung trouble?			
25. Tuberculosis?			
26. Emphysema?			
27. Do you smoke? If so, number of packs a day _____			
28. Do you use chewing tobacco?			
29. Blood transfusion?			
30. Blood disorder such as anemia?			
31. Bruise easily?			
32. Bleeding tendency / abnormal bleed?			
33. Hepatitis, jaundice, or liver disease?			
34. Infectious mononucleosis?			
35. Gallbladder trouble?			
36. Fainting spells?			
37. Convulsions / epilepsy?			

HAVE YOU HAD, OR DO YOU CURRENTLY HAVE:	YES	NO	NOTES
38. Stroke?			
39. Thyroid trouble?			
40. Diabetes?			
41. Low blood sugar?			
42. Kidney trouble?			
43. High cholesterol?			
44. Are you on dialysis?			
45. Swollen ankles / arthritis / joint disease?			
46. Osteoporosis / osteopenia?			
47. Osteonecrosis?			
48. Stomach ulcers / acid reflux?			
49. Contagious diseases?			
50. Sexually transmitted disease?			
51. Problems with immune system? Possibly from: medication / surgery, etc.			
52. Delay in healing?			
53. A tumor or growth?			
54. Cancer / radiation therapy / chemotherapy?			
55. Chronic fatigue / night sweats?			
56. Are you on a diet?			
57. A history of alcohol abuse?			
58. A history of drug abuse?			
59. Contact lenses?			
60. Eye disease / glaucoma?			
61. Mental health problems / anxiety / depression?			
62. A removable dental appliance?			
63. Pain or clicking of jaws when eating?			

WOMEN ONLY (QUESTIONS 64-67)

	Yes	No
64. Is there a possibility of pregnancy?	☐	☐
65. Expected delivery date? _____		
66. Are you nursing?	☐	☐
67. Are you taking birth control pills?	☐	☐

Note: Antibiotics such as penicillin may alter the effectiveness of birth control pills. Consult your physician / gynecologist for assistance regarding other methods of birth control.



ARE YOU NOW TAKING:	YES	NO	NOTES
72. Any kind of medication, drug, pills?			
73. Blood thinners (Coumadin, Plavix, Aspirin, Vitamin E, Ginko biloba, Aggrenox, Pradaxa, Fish oil)?			
74. Have you ever taken diet pills?			
75. Any natural product, herbal supplement or homeopathic remedy?			
76. Are you taking, or have you ever taken, bone density meds, or bisphosphonates such as Fosamax, Boniva, Actonel, IV- Zometa, Aredia, or Reclast in the past 12 years?			
77. Tranquilizers, sleeping pills, anti-depressants, and/or nervousness on a regular basis? If so, please list:			
78. Please list any medications you are currently taking: Medication / Dosage / Frequency			

If you are having surgery **today**, have you had anything to eat or drink in the last 6 (six) hours? ☐ Yes ☐ No

Who is driving you home? _____

Is there any condition concerning your health that the Doctor should be told about? ☐ Yes ☐ No – If Yes, describe _____

Do you wish to speak to the Dr. privately about anything? ☐ Yes ☐ No

ARE YOU ALLERGIC TO, OR HAD A REACTION TO:	YES	NO	NOTES
79. Local anesthetics (numbing meds)?			
80. Penicillin?			
81. Other antibiotics?			
82. Sulfa drugs?			
83. Sealers (periodontal / fillers / other transplants)?			
84. Aspirin?			
85. Anaspazitin?			
86. Codeine or other narcotics?			
87. Other medications?			
88. Latex?			
89. Soy?			
90. Eggs / yolk?			
91. Sulfites?			
92. Do you have any known allergies?			
93. Please list any allergies other than drug allergies:			

Is there a family history of: ☐ Cancer ☐ Diabetes ☐ Heart disease ☐ Anesthesia problems

Is this visit related to an accident? ☐ Yes ☐ No

If Yes, what type of accident? ☐ Automobile ☐ Work related ☐ Other

Date of injury _____

Insurance company handling the claim _____

Claim number _____

Name of attorney / adjuster _____

Telephone number ( ) _____

I certify that I have read and understand the questions above. I acknowledge that my questions, if any, about the inquiries set forth above have been answered to my satisfaction. I will not hold my doctor, or any other member of his / her staff, responsible for any errors or omissions that I have made in the completion of this form.

X _____ Signature of patient (Parent or Guardian if Minor) X _____ Reviewed by X _____ Date

FEES & PAYMENTS

We make every effort to keep down the cost of your care. You can help by paying upon completion of each visit. Other arrangements can be made with our office manager depending upon special circumstances. An estimate of the charge for any procedure or surgery you may require will be given to you upon request. If you have any dental and/or medical insurance we will be glad to fill out the proper forms, but please complete the identifying information on this form.

Please remember that insurance is considered a method of reimbursing the patient for fees paid to the doctor and is not a substitute for payment. Some companies pay fixed allowances for certain procedures and others pay a percentage of the charge. **It is your responsibility to pay any deductible amount, co-insurance or any other balance not paid for by your insurance company.** You will be responsible for all collection costs, attorneys' fees, and court costs.

X _____ Signature of patient (Parent or Guardian if Minor) X _____ Date

This signature on file is my authorization for the release of information necessary to process my claim. I hereby authorize payment to this doctor named of the benefits otherwise payable to me.

X _____ Signature of patient (Parent or Guardian if Minor) X _____ Date

AUTHORIZATION

I authorize my surgeon and his / her designated staff, to perform an oral and maxillofacial examination, for the purpose of diagnosis and treatment planning. Furthermore, I authorize the taking of all x-rays required as a necessary part of this examination. In addition, if medically necessary, I authorize the release of any information acquired in the course of my examination and treatment to my other doctors and/or insurance carriers.

X _____ Signature of patient (Parent or Guardian if Minor) X _____ Witness X _____ Doctor X _____ Date

I hereby acknowledge that a copy of this office's Notice of Privacy Practices has been made available to me. I have been given the opportunity to ask any questions I may have regarding this Notice.

X _____ Signature of patient (Parent or Guardian if Minor) X _____ Date

Medical History

- Past Medical History
- Review of Systems
- Current Medications
- Past Hospitalizations
- Medication Allergies

Vital Signs

BP & Pulse

Steven W. Beadnell, DMD
Gum Gardner's RDH Study Club
September 28, 2015

Management of Blood Pressure

Blood Pressure Classification for Adults

Blood Pressure Classification	Systolic BP (mmHg)	Diastolic BP (mmHg)
Normal	< 120	< 80
Pre-Hypertension	120 – 139	80 – 89
HTN Stage I	140 – 159	90 – 99
HTN Stage II	>160	>100
HTN Stage III	>180	>110

US Dept Health & Human Services, NIH, JNC7

Management of Blood Pressure

Is it safe to treat you today ?

BP = 198/96 – Should we treat the patient?

Management of Blood Pressure

Medical Risk Factors (MRF)

- Prior Myocardial Infarction
- IHD – Angina
- High coronary disease risk
- Recurrent stroke prevention
- Diabetes
- Kidney disease

US Dept Health & Human Services, NIH, JNC7

Management of Blood Pressure

Dental Treatment and Blood Pressure			
SBP	**DBP**	**MRF***	**Dentist Guidelines**
120-139	80-89	Yes/No	Routine Tx OK; Discuss HTN guidelines
140-159	90-99	Yes/No	Routine Tx OK; Refer for Med/Consult
160-179	100-109	No	Routine Tx OK; Refer for Med/Consult
		Yes	Urgent Tx OK; Refer for Med/Consult
180-209	110-119	No	No Tx w/o consult; Refer prompt M/Consult
		Yes	No dental Tx; Refer emergent Med/Consult
$\geq$ 210	$\geq$ 120	Yes/No	No dental Tx: Refer emergent Med/Consult

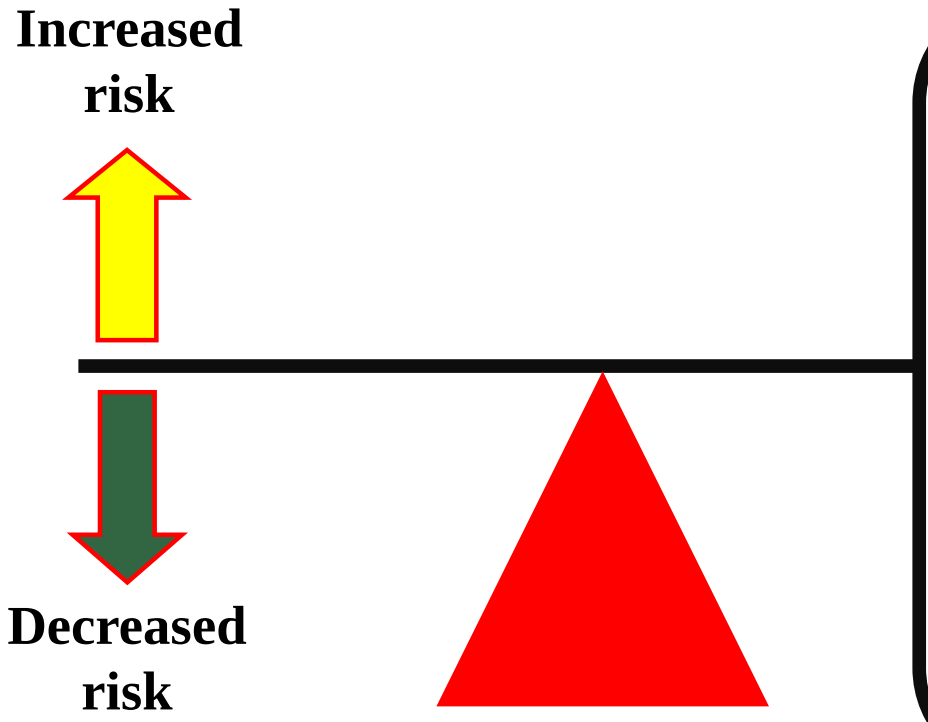
*MRF = Medical Risk Factors

US Dept Health & Human Services, NIH, JNC7

Prevention

- Recognition of risk
- Assessment of risk

Assessment of Risk



- Medical Condition ?
  - Severity
  - Stability
  - Control
- Functional Capacity ?
- Emotional Status ?
- Dental Procedure ?
  - Invasiveness
  - Length of procedure
  - Blood loss
  - Vasoconstrictor use

Prevention

Stress is a common etiologic factor in emergency situations

Steven W. Beadnell, DMD
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Medical Consult

The Quick Medical Consultation

- Fax note to MD office
- Ask for a “Problem List”
- Ask for a “Medication List”

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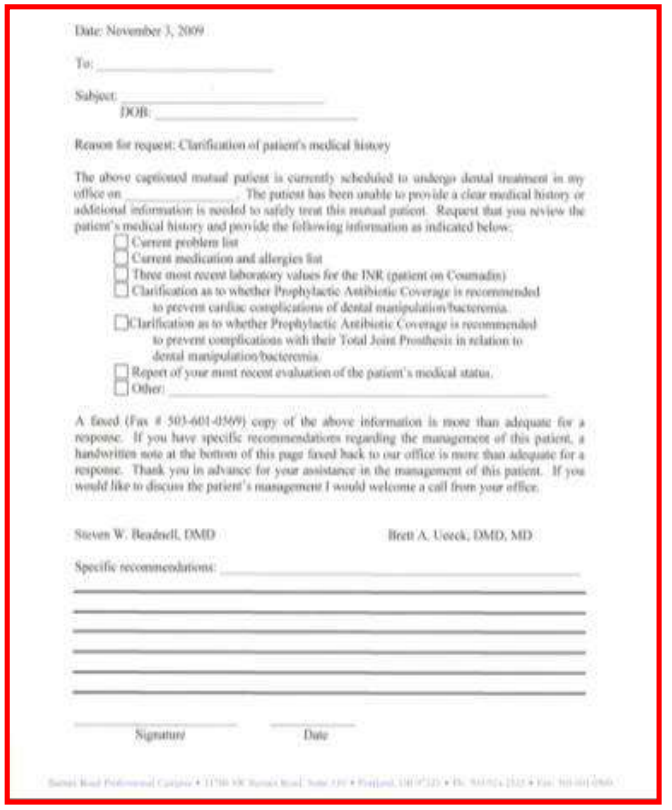
Medical Consult



Date: November 3, 2009

To: _____

Subject: _____
DOB: _____

Reason for request: Clarification of patient's medical history

The above captioned mutual patient is currently scheduled to undergo dental treatment in my office on _____. The patient has been unable to provide a clear medical history or additional information is needed to safely treat this mutual patient. Request that you review the patient's medical history and provide the following information as indicated below:

- ☐ Current problem list
- ☐ Current medication and allergies list
- ☐ Three most recent laboratory values for the INR (patient on Coumadin)
- ☐ Clarification as to whether Prophylactic Antibiotic Coverage is recommended to prevent cardiac complications of dental manipulation/bacteremia.
- ☐ Clarification as to whether Prophylactic Antibiotic Coverage is recommended to prevent complications with their Total Joint Prosthesis in relation to dental manipulation/bacteremia.
- ☐ Report of your most recent evaluation of the patient's medical status.
- ☐ Other: _____

A faxed (Fax # 503-601-0569) copy of the above information is more than adequate for a response. If you have specific recommendations regarding the management of this patient, a handwritten note at the bottom of this page faxed back to our office is more than adequate for a response. Thank you in advance for your assistance in the management of this patient. If you would like to discuss the patient's management I would welcome a call from your office.

Steven W. Beadnell, DMD Brett A. Ueeck, DMD, MD

Specific recommendations: _____

_____ _____
Signature Date

www.SunsetOMS.com

Medical Consult

The Quick Medical Consultation

- Fax note to MD office
- Ask for a "Problem List"
- Ask for a "Medication List"
- Stability of medical conditions
- Modifications of dental Tx

Functional Capacity

Functional Capacity

Functional capacity of the patient, defined as the assessment of an individual's capacity to perform common daily tasks (Table 1), is an important determinant of whether the provision of oral health care services is safe. The ACC/ AHA guidelines stress that the patient should be able to perform daily tasks equal to at least four METs to be at a low risk for adverse cardiovascular events.[3] A MET is the amount of oxygen needed to perform a physical activity.

Table 1. Functional Capacity Test[3]

Patients who can achieve four or more metabolic equivalents are considered at low risk during noncardiac procedures.

1. Can you walk two blocks without stopping?
2. Can you climb a flight of stairs without stopping?
3. Can you run a short distance?
4. Can you do heavy housework and move furniture?
5. Can you carry groceries from the car into the house?

***Dimensions of Dental Hygiene*. July 2011; 9(7): 58-61**

Functional Capacity

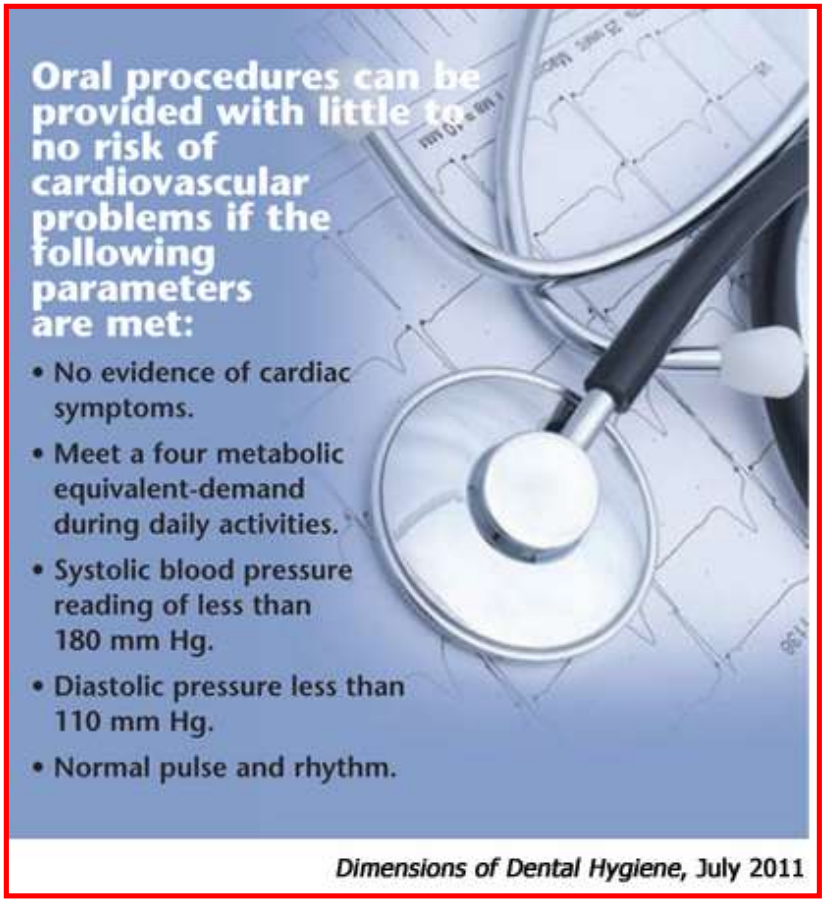


Table 1. Metabolic Equivalents (METs)[5,6]

Physical Activity	MET
Light-intensity Activities	<3
Sleeping	0.9
Watching television	1.0
Writing, desk work, typing	1.8
Walking 1.7 mph on level ground	2.3
Walking 2.5 mph	2.9
Moderate-intensity Activities	3 to 6
Stationary bicycling, very light effort	3.0
Walking 3.0 mph	3.3
Calisthenics, light or moderate effort	3.5
Walking 3.4 mph	3.6
Bicycling <10 mph	4.0
Stationary bicycling, light effort	5.5
Vigorous-intensity Activities	>6
Jogging	7.0
Calisthenics (eg, push-ups, sit-ups, pull-ups, jumping jacks); heavy, vigorous effort	8.0
Running	8.0
Jumping rope	10.0

Dimensions of Dental Hygiene, October 2011

***Dimensions of Dental Hygiene*. July 2011; 9(7): 58-61**

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Medical Emergency Equipment

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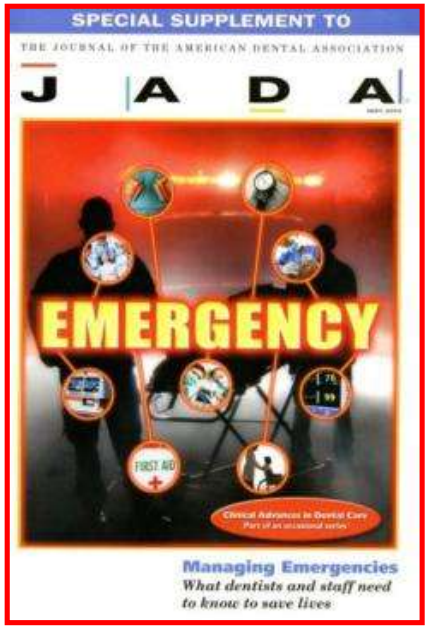
Basic Emergency Equipment



Suggested basic emergency equipment for the dental office.

- Portable oxygen cylinder (E size) with regulator
- Supplemental oxygen delivery devices
  - Nasal cannula
  - Nonrebreathing mask with oxygen reservoir
  - Nasal hood
- Bag-valve-mask device with oxygen reservoir
- Oropharyngeal airways (adult sizes 7, 8, 9 centimeters)
- Magill forceps
- Automated external defibrillator
- Stethoscope
- Sphygmomanometer with adult small, medium and large cuff sizes
- Wall clock with second hand

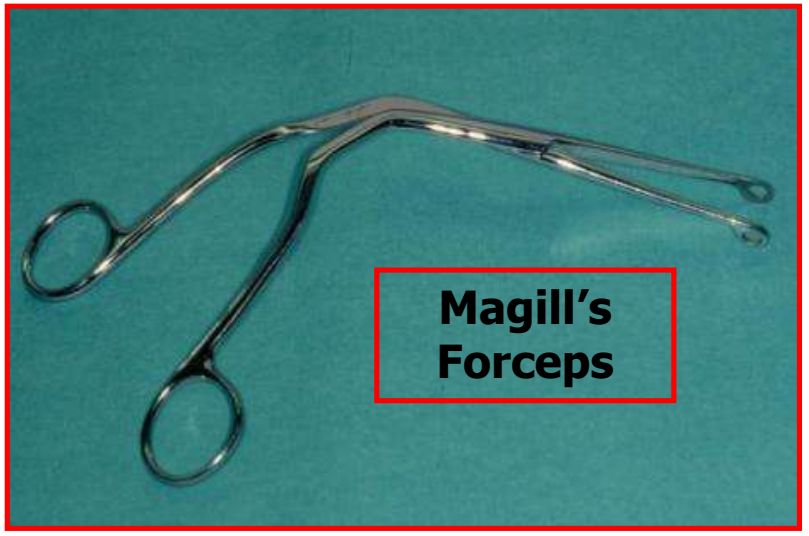
Preparing for medical emergencies, Rosenberg, M. , JADA 141:supp:15s-19s, 2010

Basic Emergency Equipment

- O_2 delivery system
  - Bag-valve mask
  - Oxygen mask

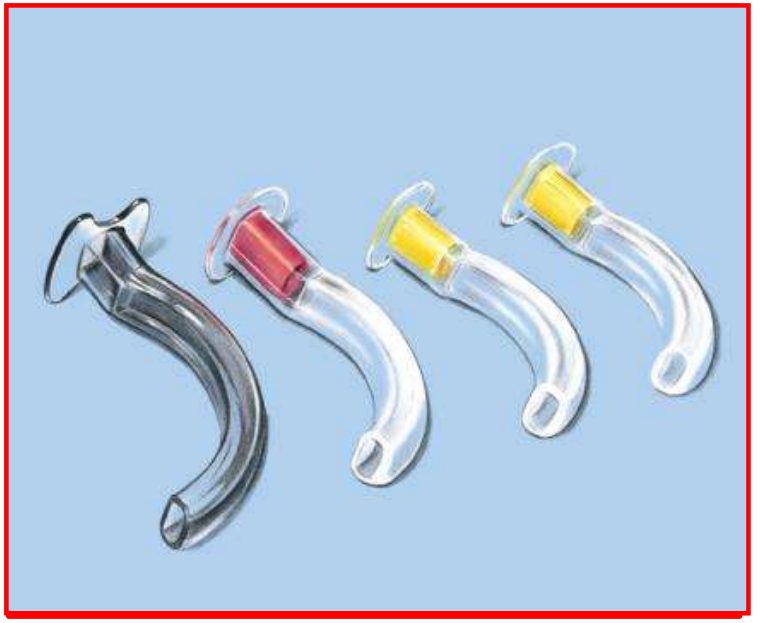
Basic Emergency Equipment

- MaGill intubation forceps



Basic Emergency Equipment

- Artificial airways
  - Oropharyngeal



Basic Emergency Equipment

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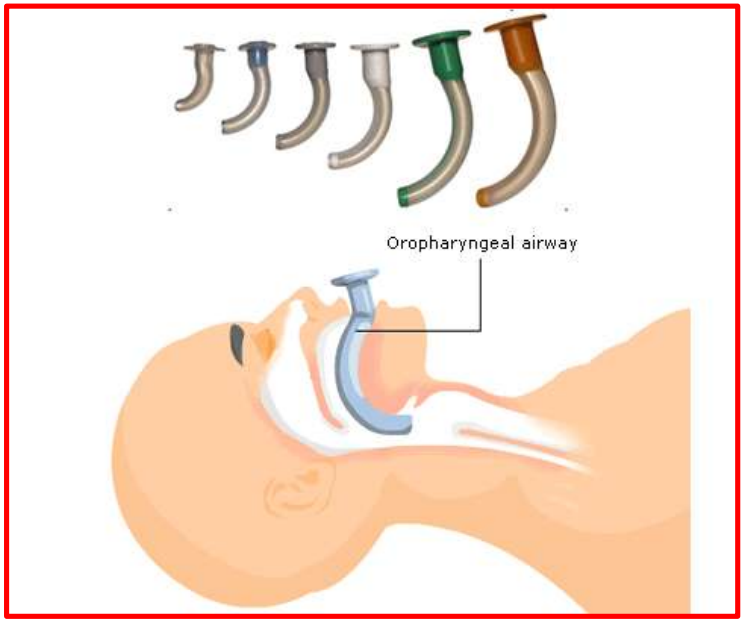

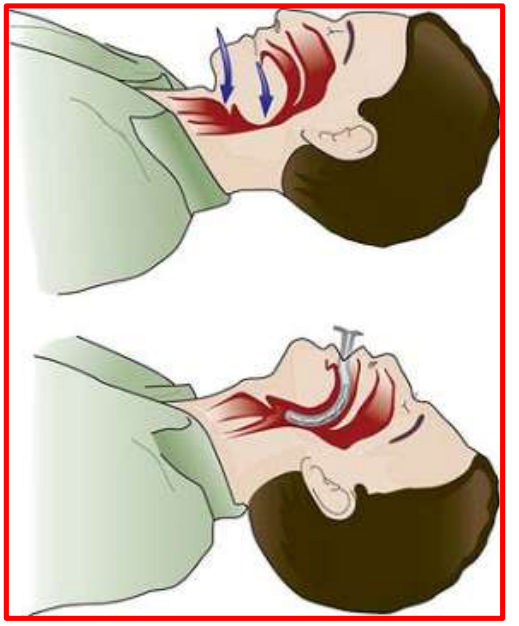

Basic Emergency Equipment

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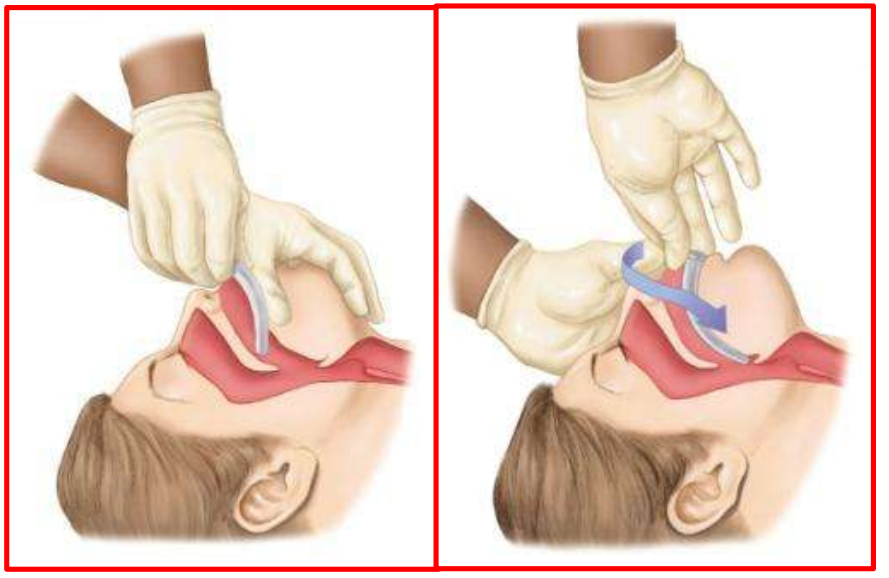
  - Oropharyngeal



Basic Emergency Equipment

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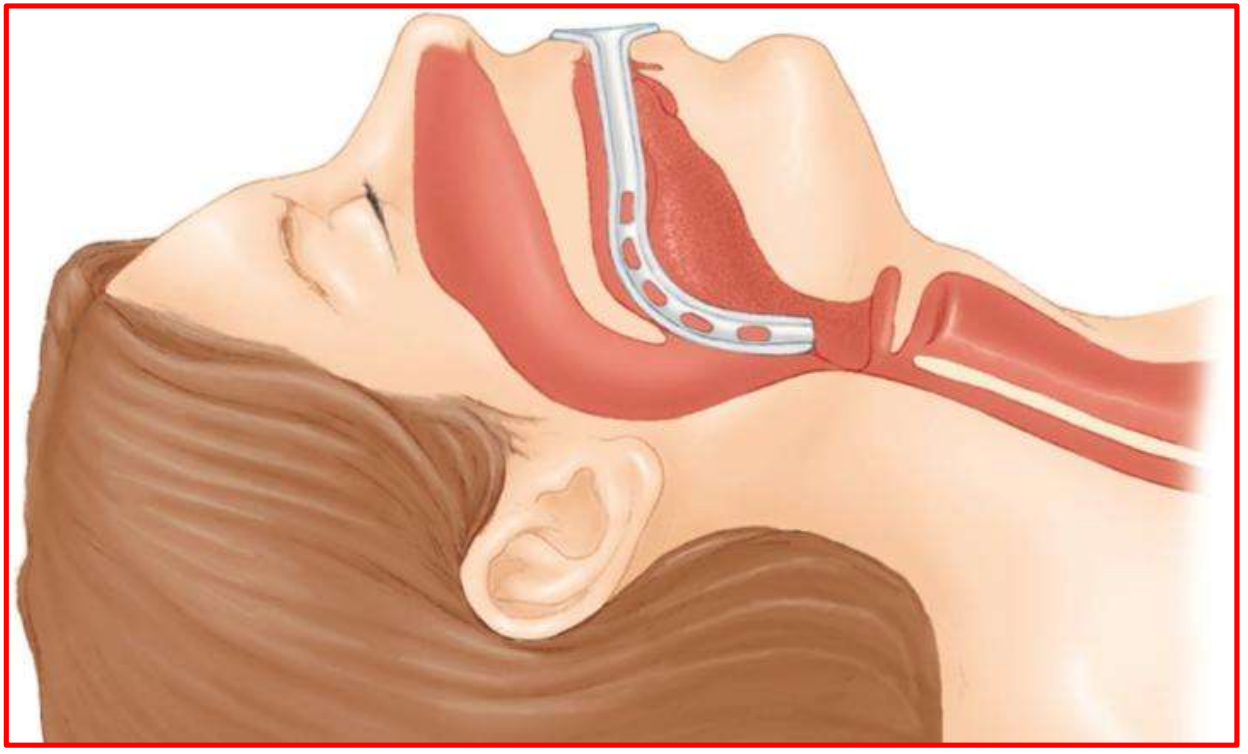
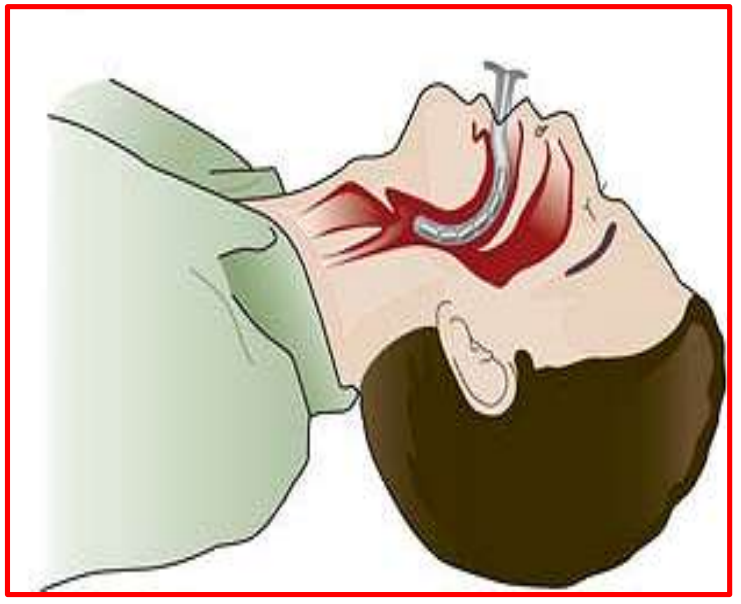


Basic Emergency Equipment

- Artificial airways
  - Oropharyngeal



Basic Emergency Equipment

- Blood Pressure Cuff + Stethoscope

Basic Emergency Equipment

- Automated External Defibrillator (AED)

www.AEDsuperstore.com

Emergency Medical Services

Steven W. Beadnell, DMD
Gum Gardner's RDH Study Club
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Medical Emergency Drugs

Steven W. Beadnell, DMD
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September 28, 2015

Basic Emergency Drugs

Suggested basic emergency drugs for the general dental office.

INDICATION	DRUG	ACTION	ADMINISTRATION
Bronchospasm (Severe Allergic Reaction)	Epinephrine	α- and β-adrenergic receptor agonist	Autoinjectors or preloaded syringes, ampules; 1:1,000 solution subcutaneously, intramuscularly or sublingually; adults, 0.3 milligram; children, 0.15 mg
Mild Allergic Reaction	Diphenhydramine	Histamine blocker	50 mg intramuscularly; 25 to 50 mg orally every three to four hours
Angina	Nitroglycerin	Vasodilator	Sublingual tablet: one every five minutes up to three doses; translingual spray: one spray every five minutes up to three times
Bronchospasm (Mild Asthma)	Bronchodilator such as albuterol	Selective β_2- adrenergic receptor agonist	Two or three inhalations every one to two minutes, up to three times if needed
Bronchospasm (Severe Asthma)	Epinephrine	α- and β-adrenergic receptor agonist (bronchodilator)	Autoinjectors or preloaded syringes, ampules; 1:1,000 solution subcutaneously, intramuscularly or sublingually; adults, 0.3 mg; children, 0.15 mg
Hypoglycemia	Glucose, as in orange juice	Antihypoglycemic	If the patient is conscious, ingest
Myocardial Infarction	Aspirin	Antiplatelet	One full-strength tablet (165-325 mg) chewed and swallowed
Syncope	Aromatic ammonia	Respiratory stimulant	Inhalant crushed and held four to six inches under nose

Preparing for medical emergencies, Rosenberg, M. , JADA 141:supp:15s-19s, 2010

Primary Emergency Drugs - Gotta Have 'Em

Category	Drug	Preparation
Anti-allergy	Epinephrine	1:1000 (EpiPen)
Histamine Blocker	Benadryl	50mg/ml
Vasodilator	Nitroglycerin	Spray (0.4mg/puff)
Bronchodilator	Albuterol	Inhaler
Anti-hypoglycemic	Insta-Glucose	Tube
Oxygen	Portable	100%
Antiplatelet	Aspirin (chewable)	81mg tablets

Patient Assessment

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Emergency Management

P-C-A-B-D

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Emergency Management

Position
Circulation
Airway
Breathing

B
L
S

Definitive Treatment

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AHA CPR 2010

Summary of Key BLS Components for Adults, Children, and Infants*

Component	Recommendations		
	Adults	**Children**	**Infants**
Recognition	Unresponsive (for all ages)		
	No breathing or no normal breathing (ie, only gasping)	No breathing or only gasping	
	No pulse palpated within 10 seconds for all ages (HCP only)		
CPR sequence	C-A-B		
Compression rate	At least 100/min		
Compression depth	At least 2 inches (5 cm)	At least ⅓ AP diameter About 2 inches (5 cm)	At least ⅓ AP diameter About 1½ inches (4 cm)
Chest wall recoil	Allow complete recoil between compressions HCPs rotate compressors every 2 minutes		
Compression interruptions	Minimize interruptions in chest compressions Attempt to limit interruptions to <10 seconds		
Airway	Head tilt–chin lift (HCP suspected trauma: jaw thrust)		
Compression-to-ventilation ratio (until advanced airway placed)	30:2 1 or 2 rescuers	30:2 Single rescuer 15:2 2 HCP rescuers	
Ventilations: when rescuer untrained or trained and not proficient	Compressions only		
Ventilations with advanced airway (HCP)	1 breath every 6-8 seconds (8-10 breaths/min) Asynchronous with chest compressions About 1 second per breath Visible chest rise		
Defibrillation	Attach and use AED as soon as available. Minimize interruptions in chest compressions before and after shock; resume CPR beginning with compressions immediately after each shock.		

Emergency Management

Position

Circulation

Airway

Breathing

Definitive Diagnosis

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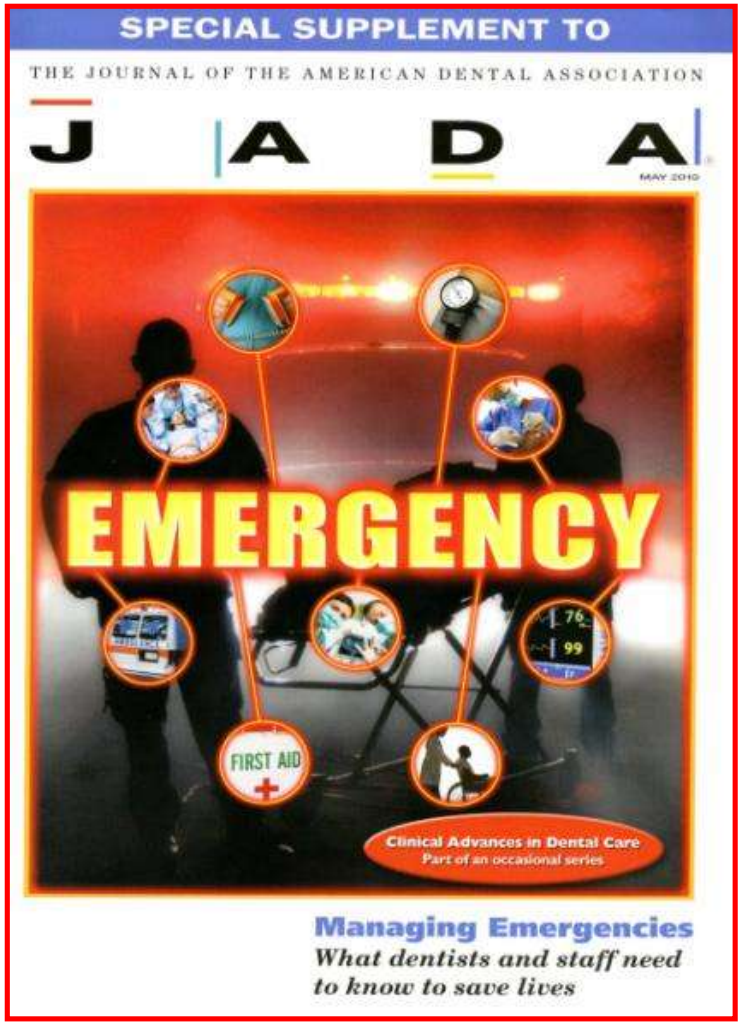
Medical Emergency Plan



Emergency duties of a four-member dental team.*

TEAM MEMBER 1: LEADER

- Directs team members
- Positions the patient and stays with him or her
- Performs "ABCs"† of cardiopulmonary resuscitation (CPR)
- Takes command and appears calm
- States instructions directly and clearly
- Requests acknowledgment from team members that instructions are understood
- Fosters open exchange among team members
- Concentrates on what is right for the patient, not who is right‡

TEAM MEMBER 2

- Brings emergency kit
- Brings oxygen tank and attaches appropriate delivery system
- Brings automated external defibrillator
- Assists with ABCs of CPR, including monitoring vital signs
- Checks oxygen tank regularly
- Checks emergency kit regularly
- Prepares drugs for administration

TEAM MEMBER 3

- Telephones emergency medical services (9-1-1)
- Meets paramedics at building entrance
- Keeps chronological log of events
- Assists with ABCs of CPR

TEAM MEMBER 4

- Assists with ABCs of CPR
- Assists with other duties as needed

* Source: Malamed.[1]
† ABC: Airway, breathing, circulation. Source: American Heart Association.[4]
‡ Source: Gaba and colleagues.[3]

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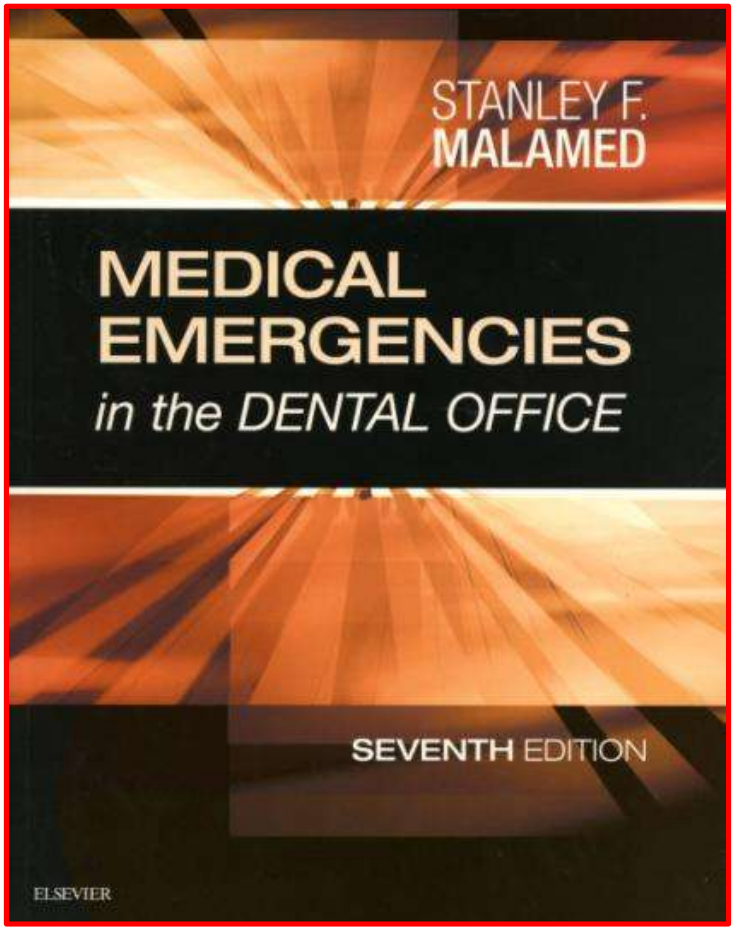
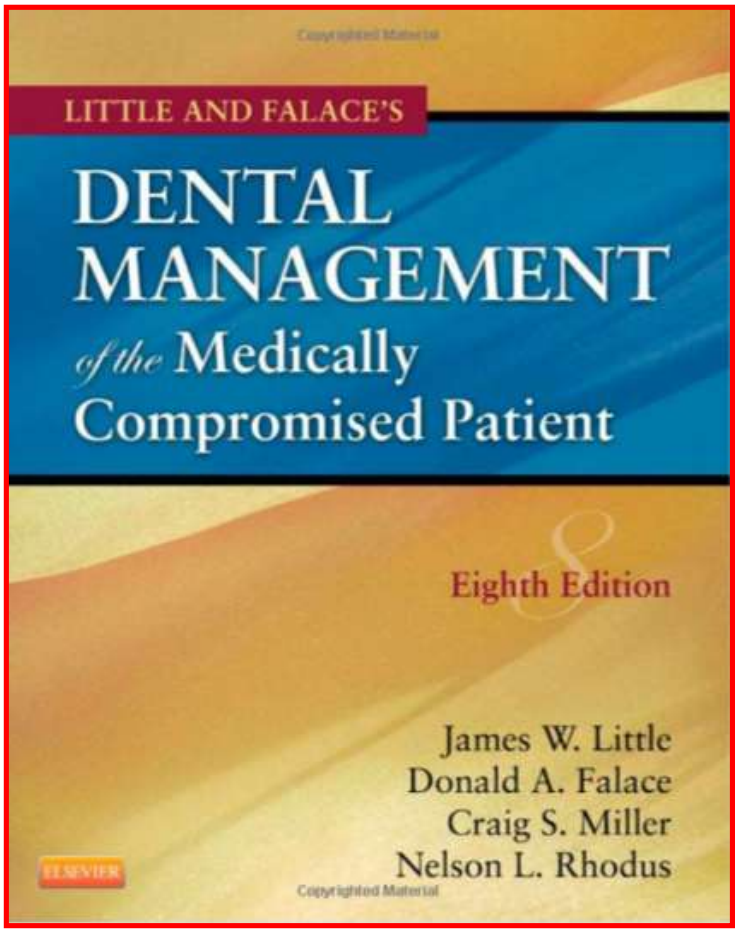
Reference Texts





Medical Emergency

Unconsciousness

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Unsconsciousness Mechanisms

- Inadequate blood flow to brain
- Inadequate oxygen to brain
- Metabolic deficiencies
- Disorders of nervous system
- Psychic mechanisms

Unsconsciousness in the Dental Chair

Differential Diagnosis

- Vasodepressor syncope
- Drug administration or ingestion
- Orthostatic hypotension
- Seizure disorders
- Hypoglycemic reaction
- Cerebrovascular accident (CVA)

Basic Unconsciousness Tx

Recognition of Unconsciousness

↓

Position patient supine, feet elevated

↓

Assess Circulation (Carotid pulse)
Artificial circulation if needed

↓

Assess Breathing (Look, Listen, Feel)

Artificial ventilation if needed

↓

Activate EMS if delayed recovery

↓

Definitive management of cause

Unsconsciousness

Vasodepressor Syncope

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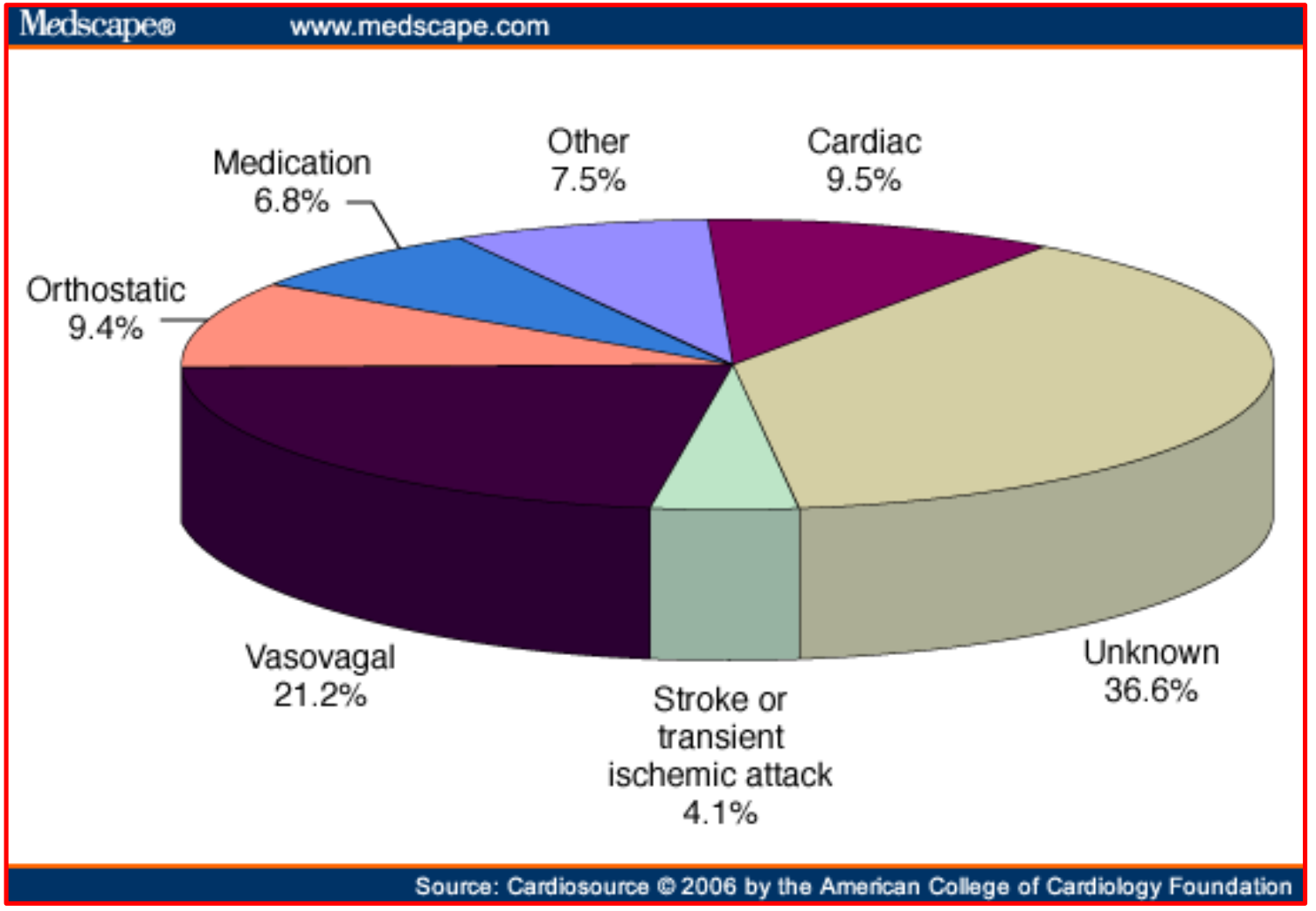
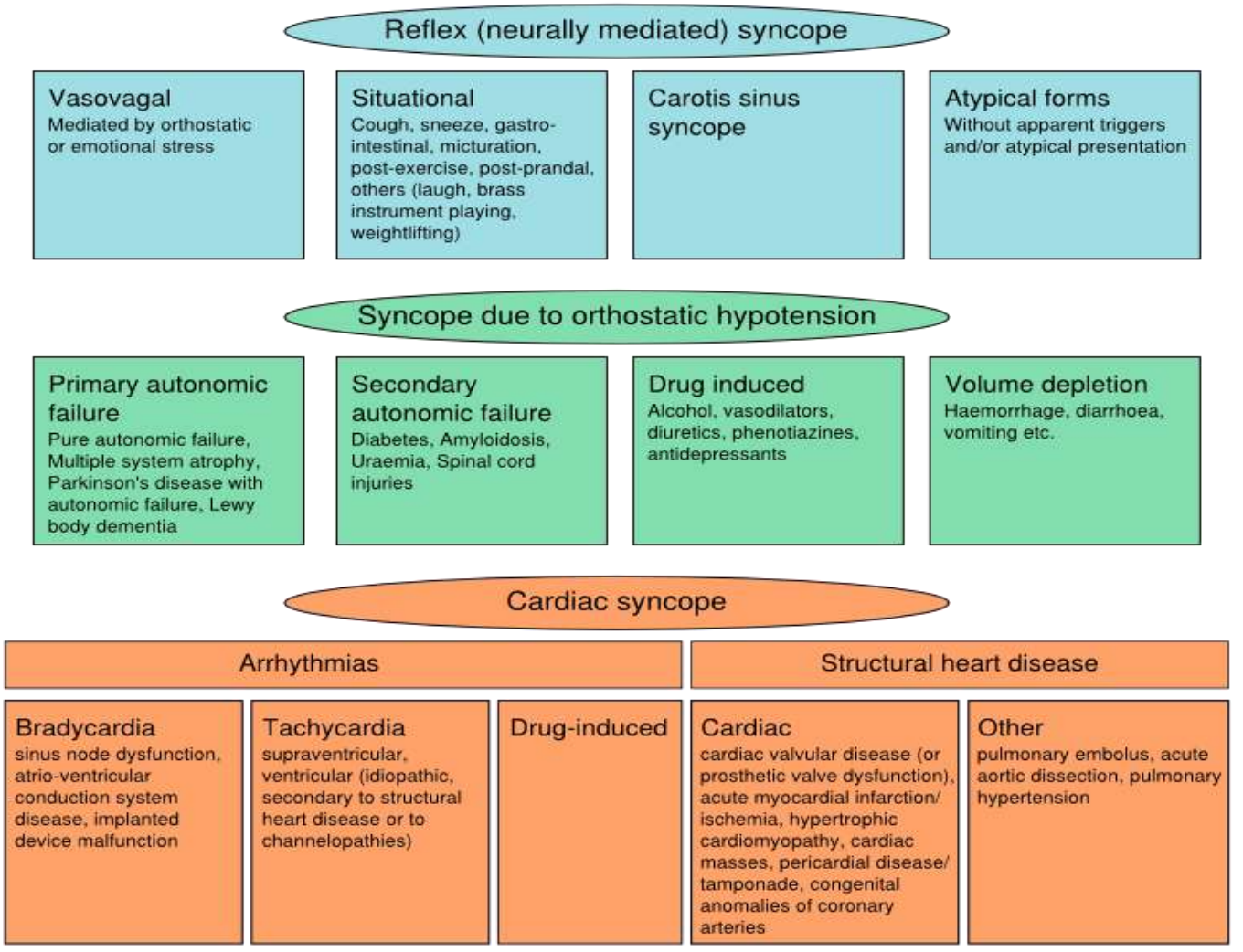
Syncope - Etiology



Syncope – Etiology



Syncope - Predisposing Factors

Psychogenic	Nonpsychogenic
❖ Fright	❖ Upright position
❖ Anxiety	❖ Hunger
❖ Emotional stress	❖ Exhaustion
❖ Unwelcome news	❖ Male gender
❖ Sight of blood	❖ Age 16 – 35 yrs

Fight or Flight Response

Pain or fear

↓

Release of catecholamines (Adrenalin)

↓

Blood pumped to peripheral muscles

↓

Muscle activity – run or fight

↓

Blood pumped back to heart

↓

Normal cardiac output maintained

Syncopal Reaction

Pain or fear – Catecholamine release – Blood to muscles

No muscle activity - Blood pools in muscles

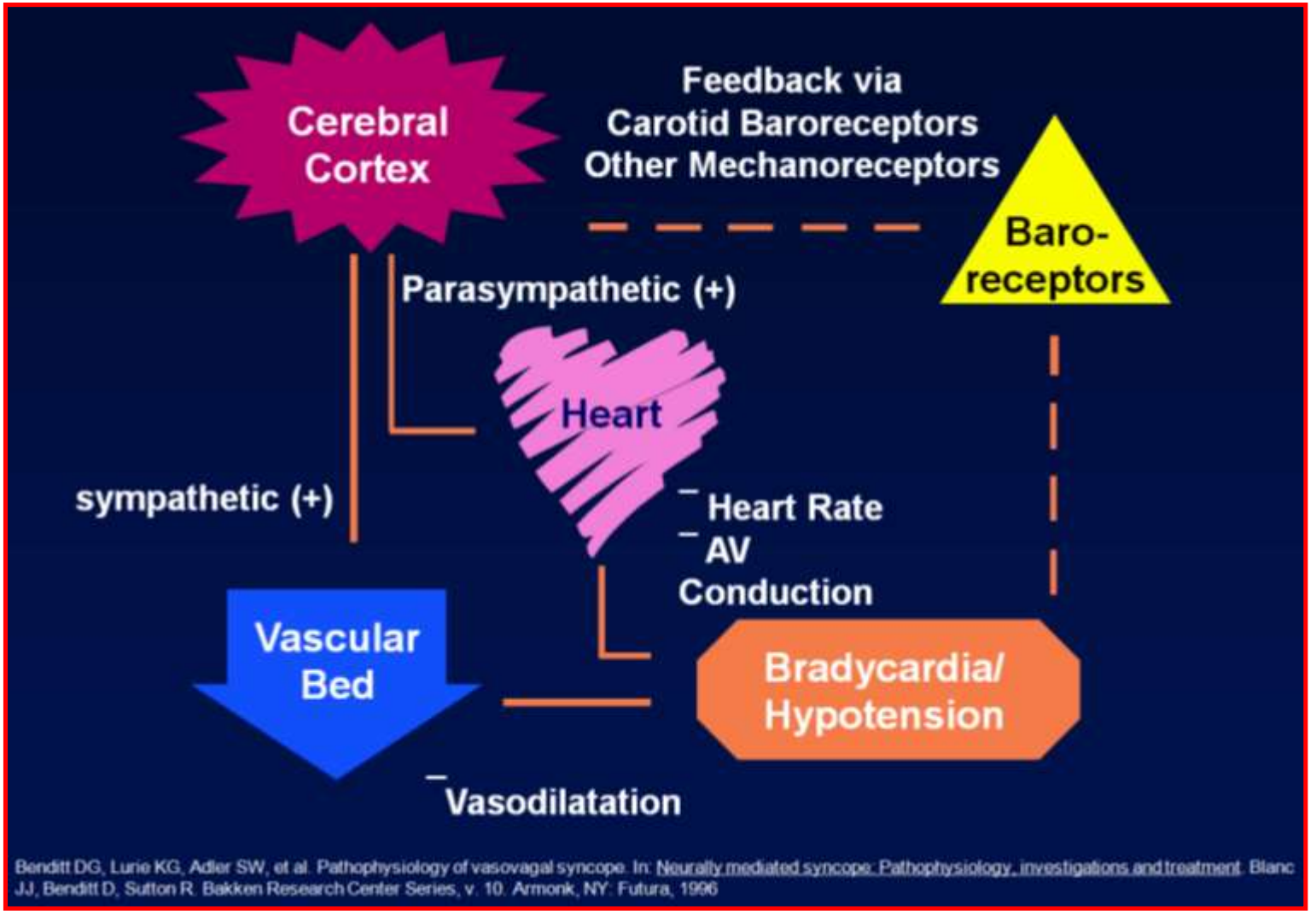
Compensatory => vasoconstriction, tachycardia

Mechanoreceptors => reflex bradycardia, vasodilation

Reduced cardiac output & hypotension

Cerebral ischemia – loss of consciousness

Syncopal Reaction



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Presyncopal - Early signs & symptoms

- Feeling of warmth
- Loss of skin color, pale
- Heavy perspiration
- Nausea
- “Feel bad”, “feel faint”
- Tachycardia (⬆ pulse)

Presyncopal - Late signs & symptoms

- Pupils dilation
- Yawning
- Rapid respirations
- Cold hands and feet
- Hypotension
- Bradycardia (⬇ pulse)

Syncope Management

Assess level of consciousness

↓

Position supine, feet elevated

↓

Assess Circulation, Airway, Breathing

Provide CPR if needed

↓

Activate EMS if recovery is not immediate

↓

Administer oxygen

↓

Monitor vital signs

15 – 20 sec

Diagnosis correct ?

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Syncope Management

Definitive management

Aromatic ammonia inhalants

Cold towel on face

Stimulate patient

(Post-syncopal recovery)

Postpone dental treatment ?

Escort for patient

(Delayed recovery)

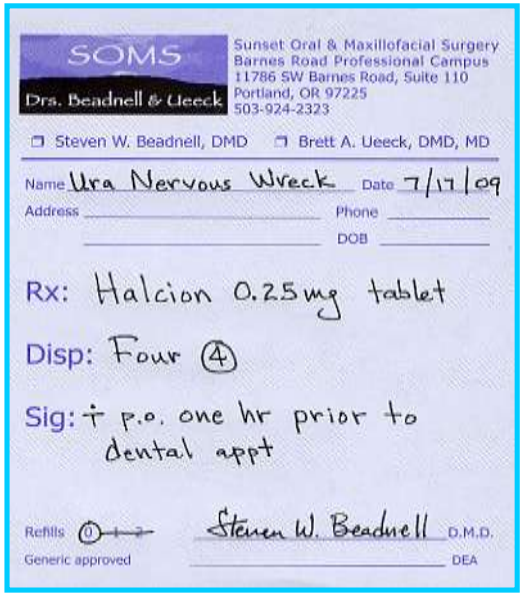
Activate EMS

Patient to hosptial

Prevention of Syncope

- Patient positioning

- Anxiety relief
  - Preop sedation
  - Nitrous oxide



SOMS
Drs. Beadnell & Ueeck

Sunset Oral & Maxillofacial Surgery
Barnes Road Professional Campus
11786 SW Barnes Road, Suite 110
Portland, OR 97225
503-924-2323

Steven W. Beadnell, DMD Brett A. Ueeck, DMD, MD

Name Ura Nervous Wreck Date 7/17/09
Address Phone
DOB

Rx: Halcion 0.25mg tablet

Disp: Four (4)

Sig: ŧ p.o. one hr prior to dental appt

Refills 0 1 2 Steven W. Beadnell D.M.D.
Generic approved DEA

Unconsciousness

Postural Hypotension

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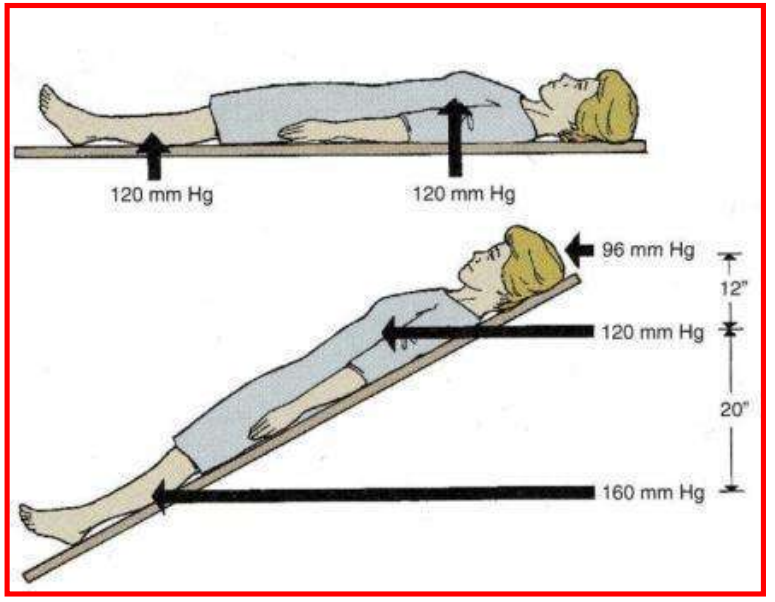
Postural Hypotension



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Postural Hypotension

Predisposing factors

- Drug administration
- Prolonged recumbency
- Inadequate postural reflex
- Pregnancy
- Addison's disease

Postural Hypotension

Drugs causing postural hypotension

- Antianginals
- Antiarrhythmics
- Antidepressants
- Antihistamines
- Antihypertensives
- Antipsychotics
- Beta-blockers
- Diuretics
- Phenothiazines
- Tranquilizers

Postural Hypotension Management

Assess consciousness

↓

Position supine, feet elevated

↓

Assess Circulation, Airway, Breathing

Provide CPR if needed

↓

Administer oxygen

↓

Monitor vital signs

(Episode terminates)

↓

Slowly reposition chair, discharge

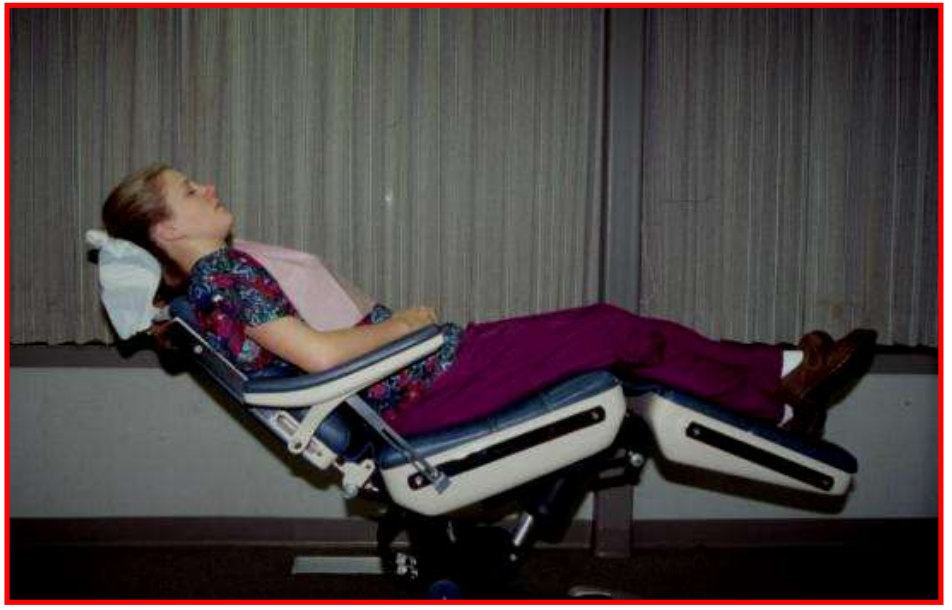
(Episode continues)

↓

Summon medical assistance

Prevention of Postural Hypotension

- PMH: medications, fainting Hx
- Slowly discharge from supine



Respiratory Emergencies

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Respiratory Distress

Potential Causes

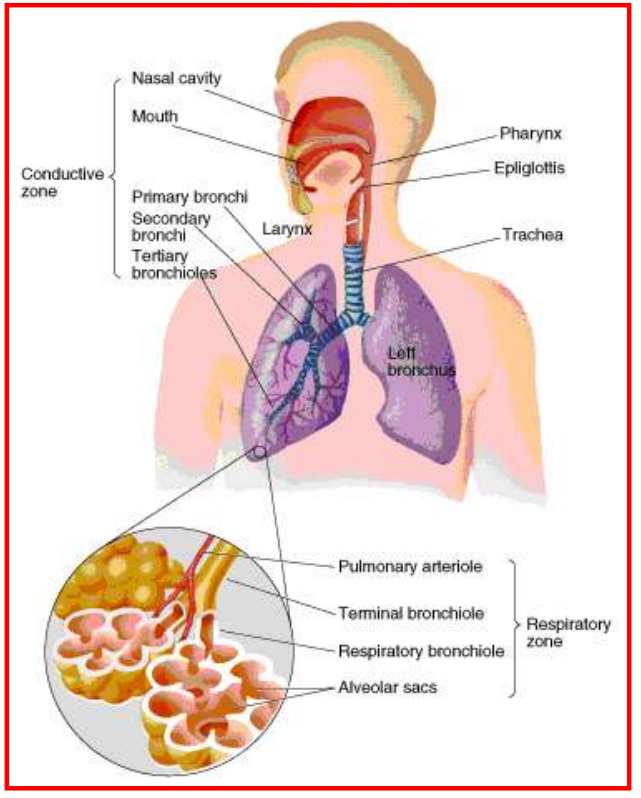
Hyperventilation

Syncope

Asthma

Heart Failure

Hypoglycemia



Acute MI

Anaphylaxis

Angioedema

Stroke

Epilepsy

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Respiratory Emergencies

Airway Obstruction

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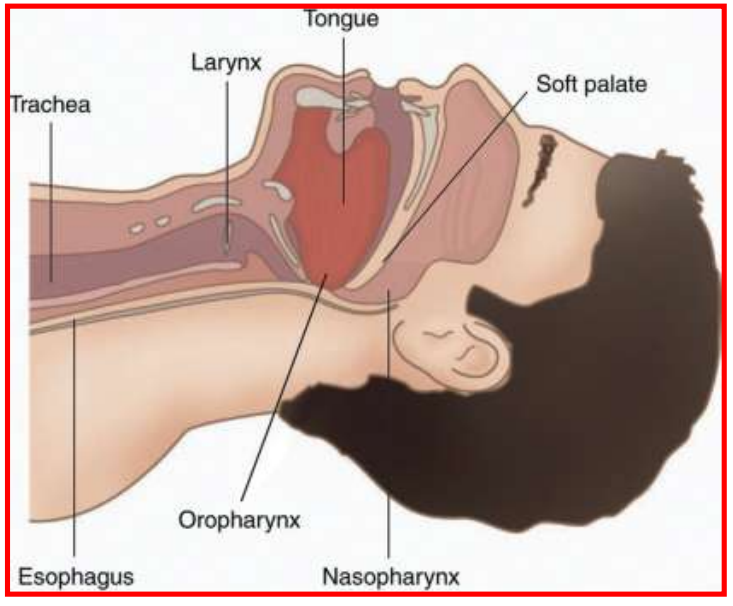
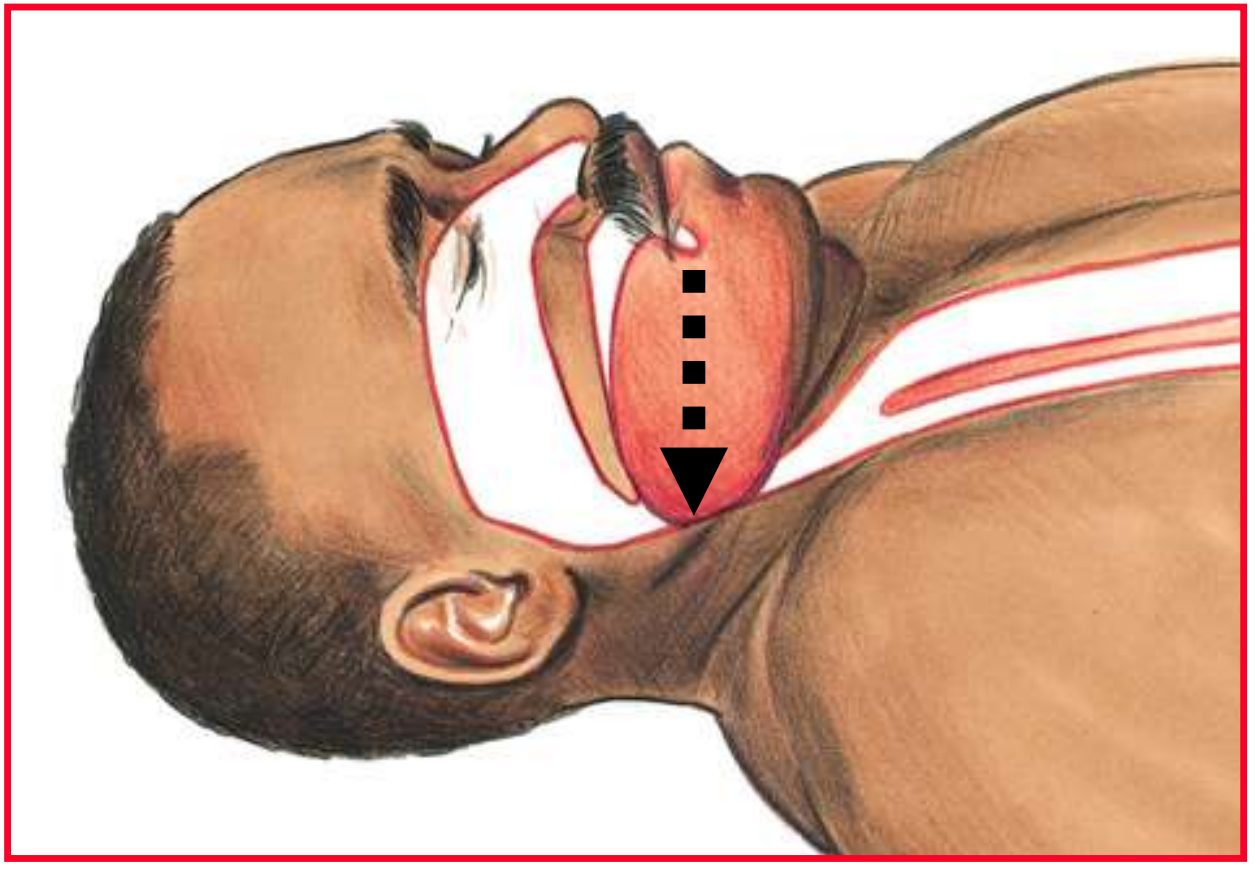
Airway Obstruction

Relaxed Tongue Blocks Airway



Airway Obstruction



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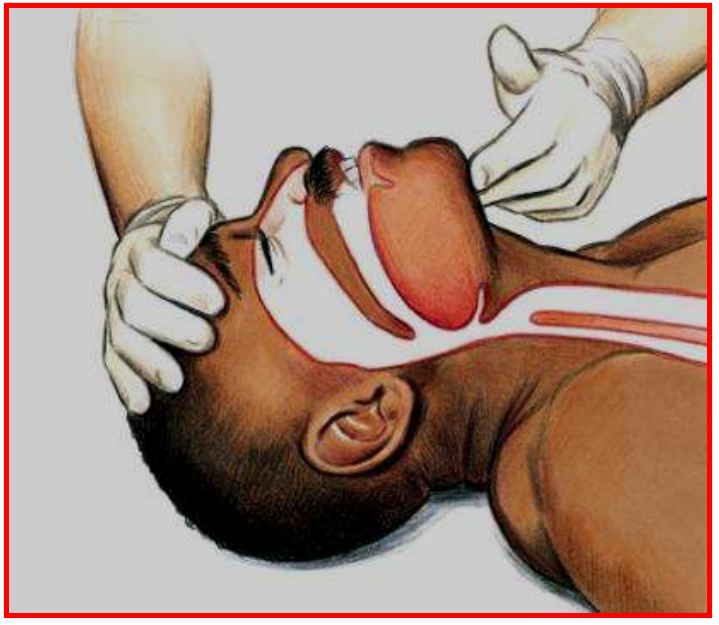
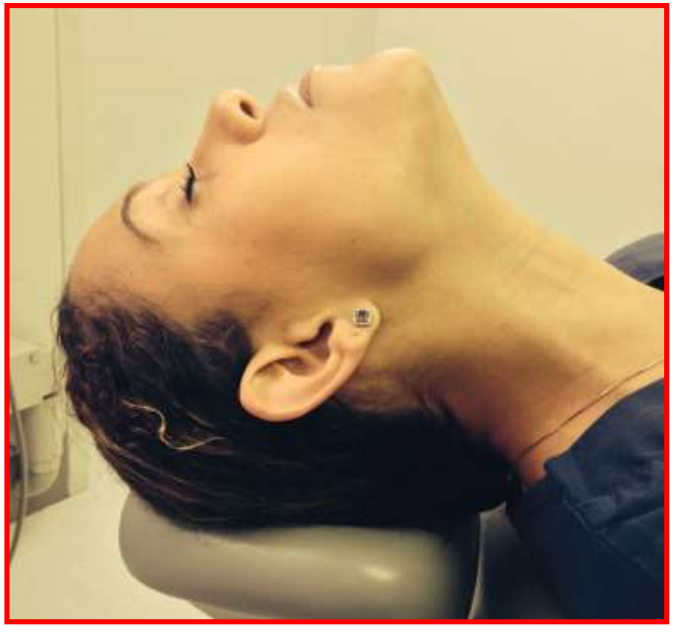
Opening the Airway

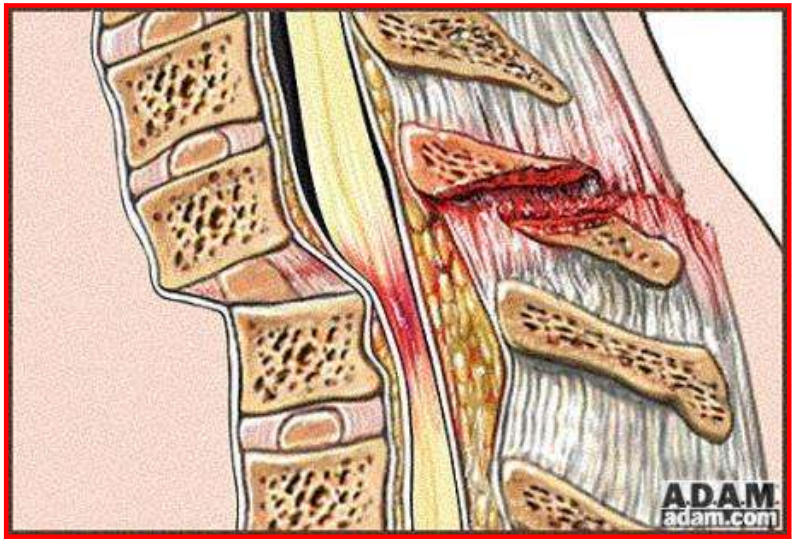
Head Tilt – Chin Lift





Opening the Airway

Jaw Thrust



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The Lost Tooth

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The Lost Tooth

Aspirated Object

- Cough, wheeze, choking, shortness of breath
- Symptoms present within one hour 90% of the time
- Symptoms may be delayed up to six hours

Management of Possible Aspiration

Place patient in left lateral decubitus position

Head tilted down over edge of chair

Encourage patient to cough

Object is retrieved

Consult physician or pulmonologist

Post-aspiration complications ?

Object not retrieved

Transport to E.R.

Flat plate abdomen

Lateral and PA Chest X-rays

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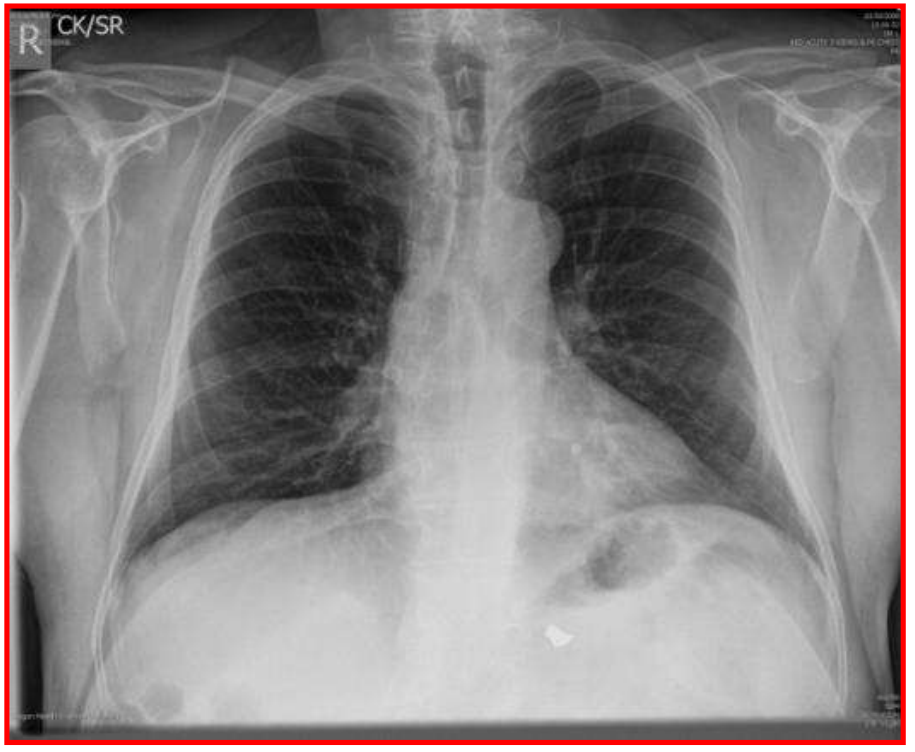
The Lost Tooth

Swallowed object => Asymptomatic



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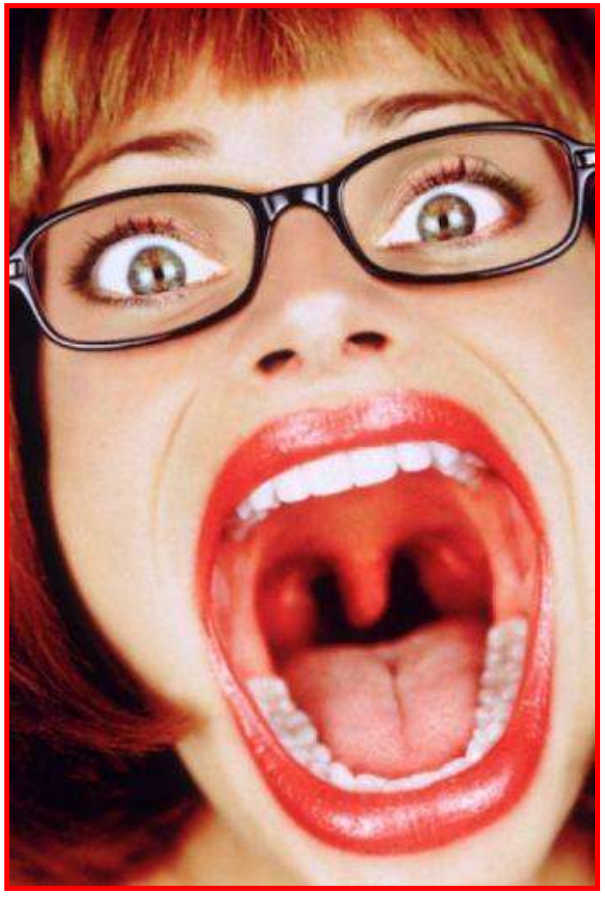
Avoiding Aspiration



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Swallowed Object

Swallowed object . . . . But did it pass?

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Respiratory Emergencies

Hyperventilation

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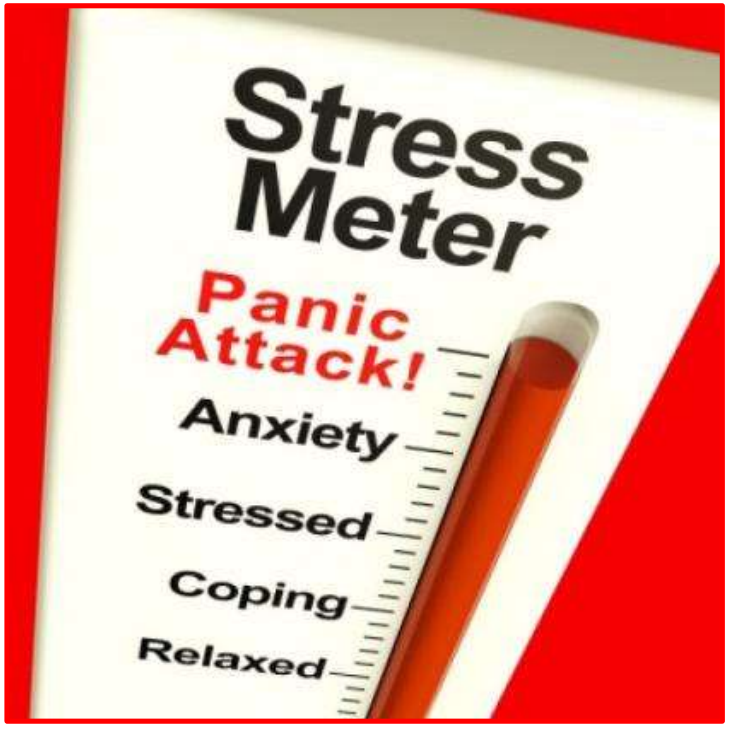
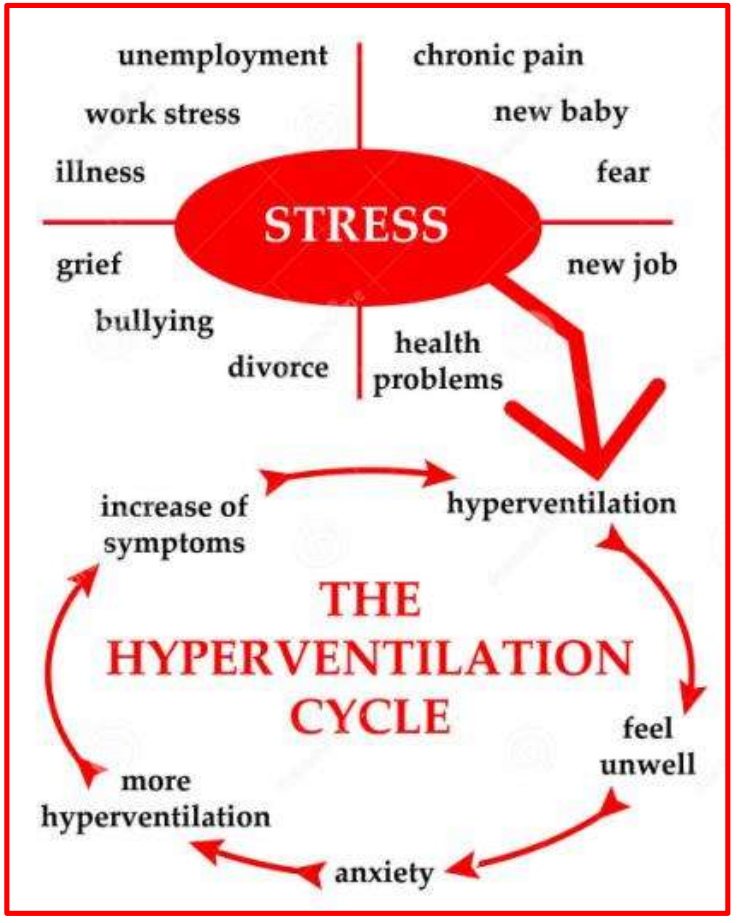
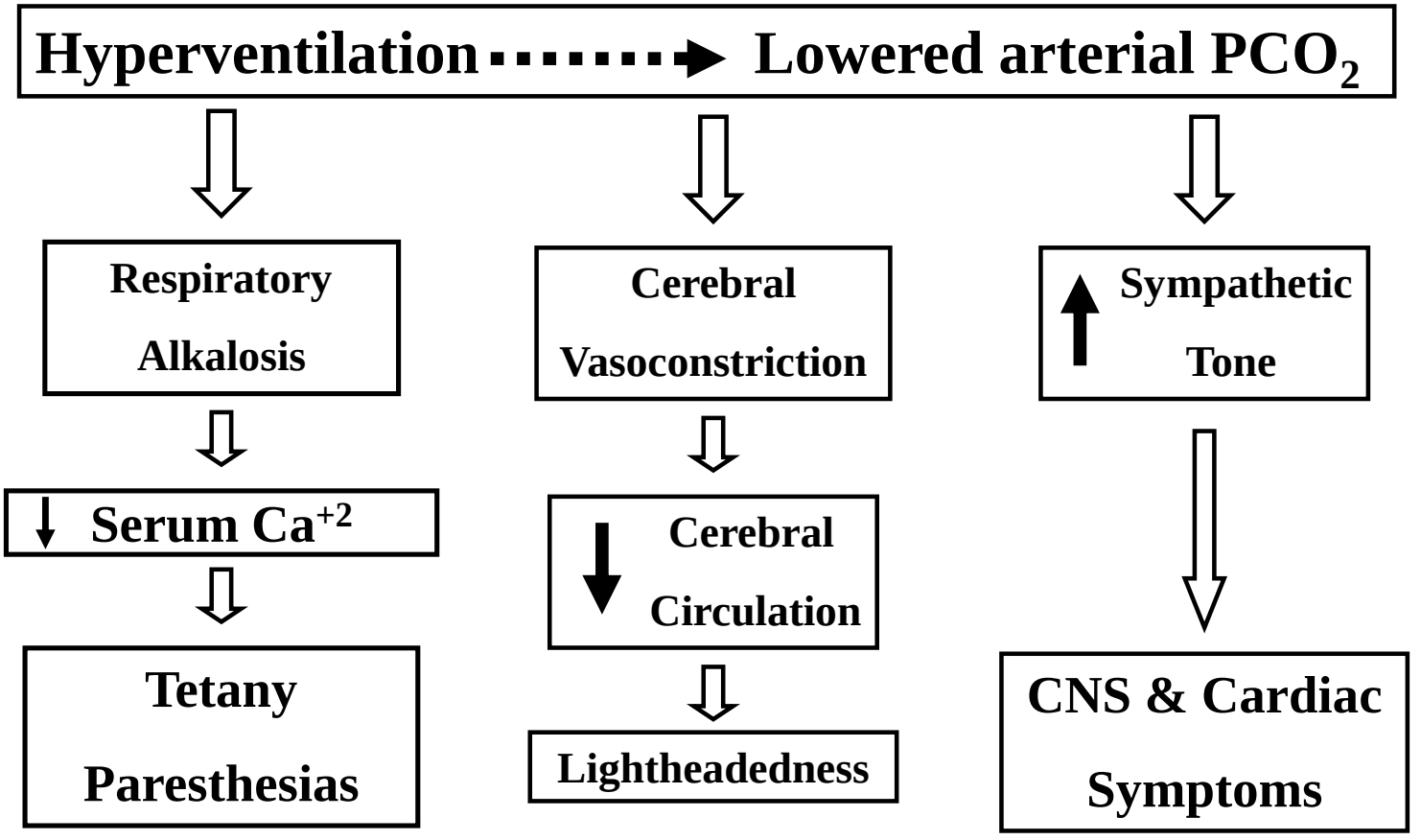
Hyperventilation



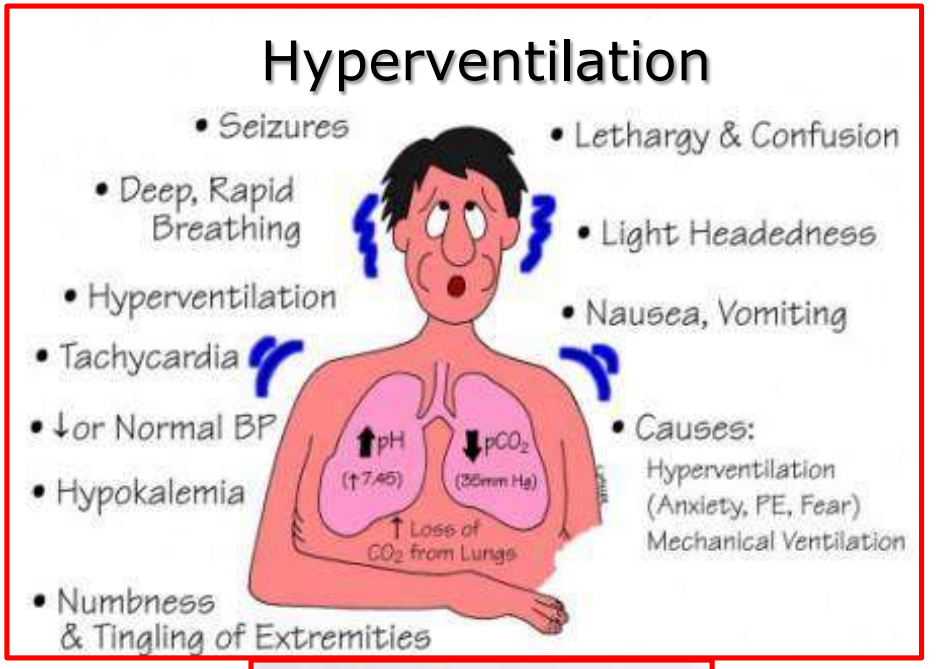


Hyperventilation - Pathophysiology



Hyperventilation - Manifestations

- Anxious patient
- Shortness of breath
- Palpitations
- Tachycardia
- Lightheadedness
- Circumoral paresthesia
- Carpopedal tetany



Hyperventilation - Management

Position patient comfortably (upright)

C – A – B – BLS as needed

Remove dental materials from patient's mouth

Calm patient

Correct respiratory alkalosis

Drug management if needed – Versed, Valium

Complete treatment, discharge

Respiratory Emergencies

Asthma

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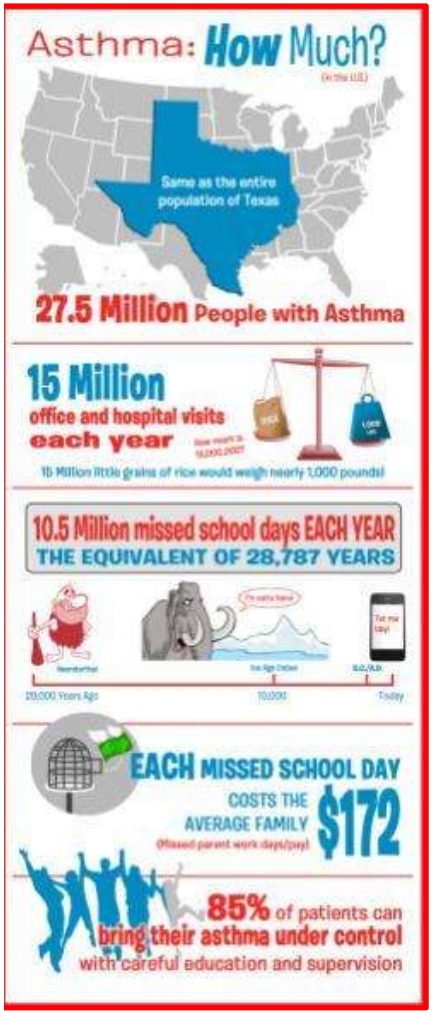
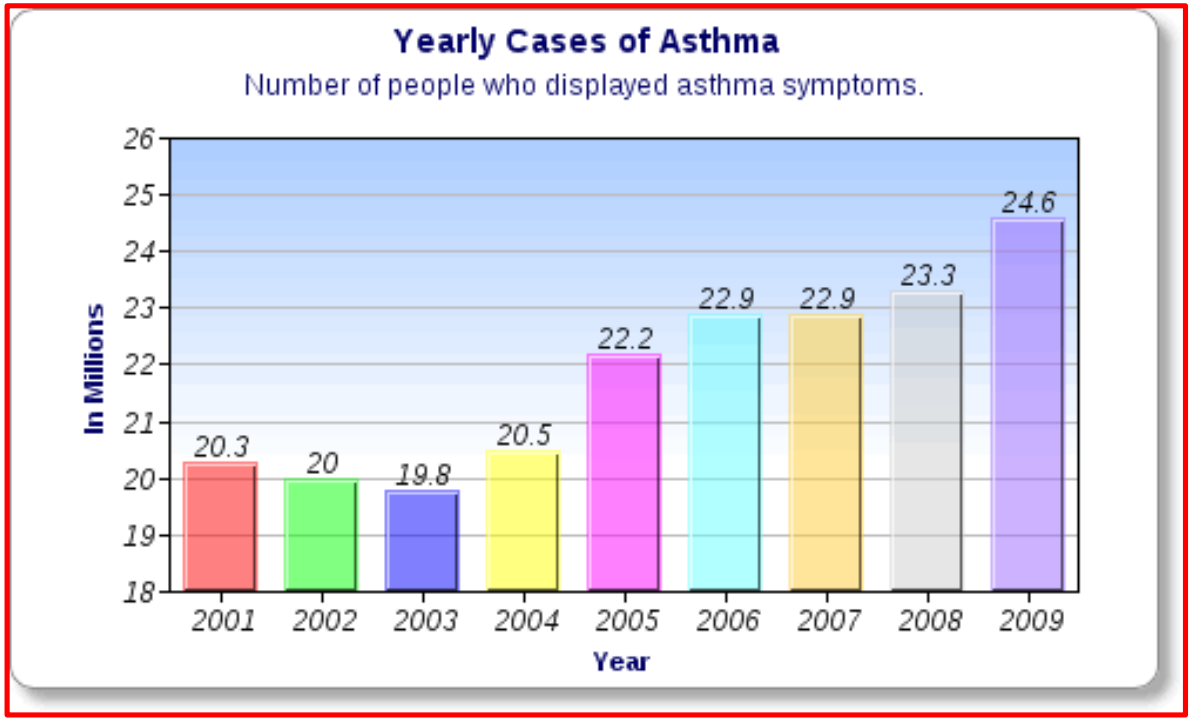
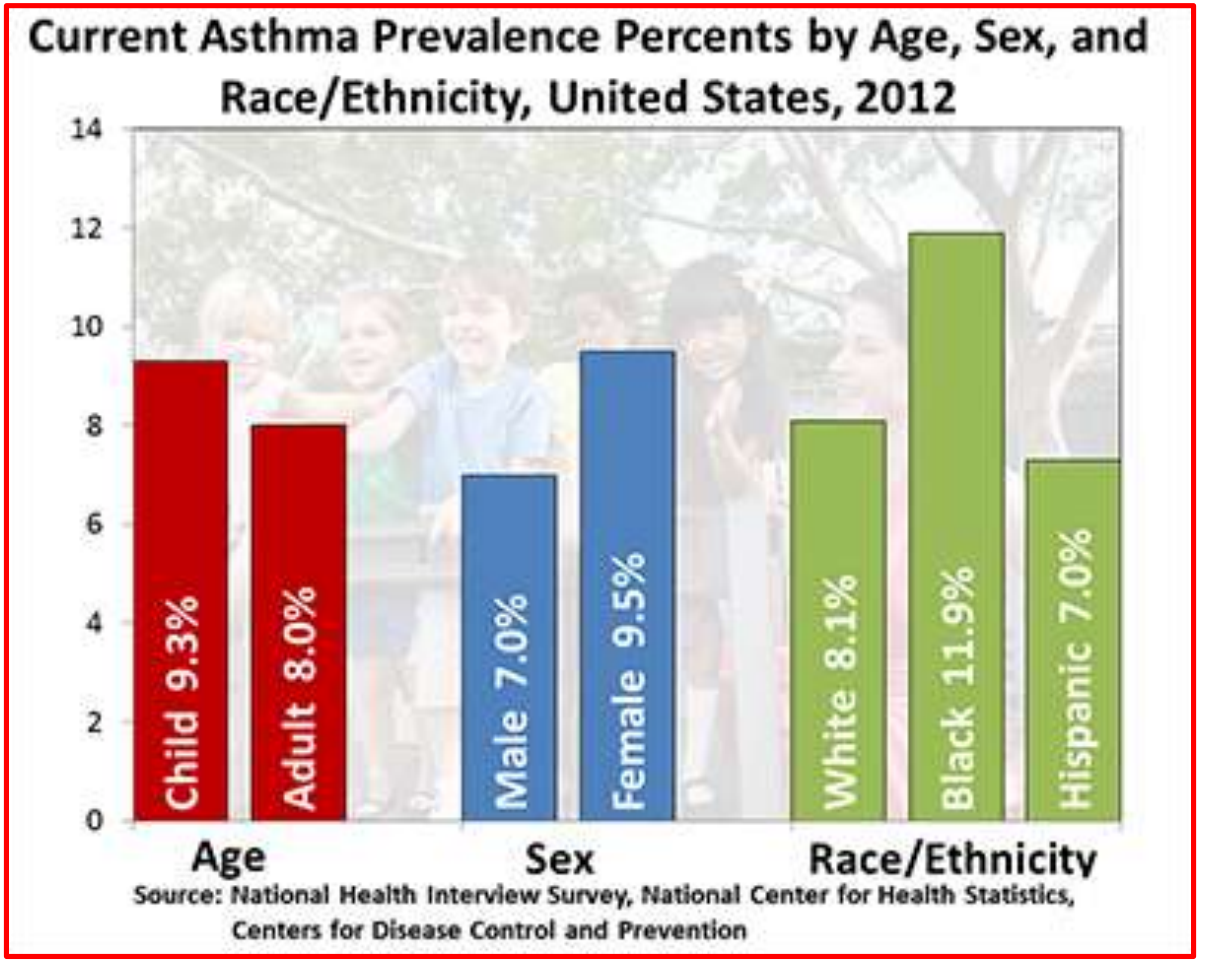
Asthma





www.copewithasthma.com

Asthma



CDC – National Center for Health Statistics

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Asthma - Pathophysiology

Asthma - Pathophysiology

Hyperactivity of tracheobronchial tree

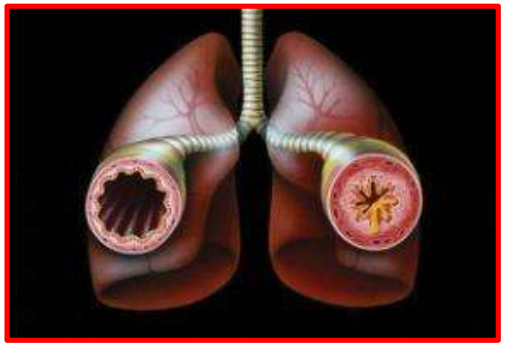
↓

Bronchial smooth muscle contraction

Bronchial wall edema

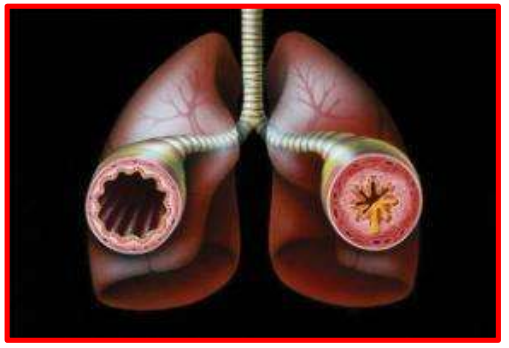
Mucus hypersecretion

↓



Narrowed airways

↓



Wheezing

Shortness of breath

Coughing

Asthma

Medical Management of Asthma

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Asthma - Signs & Symptoms

- Chest congestion/tightness
- Cough, wheezing, SOB
- Anxiety or agitation
- Increased respiratory rate
- Increased heart rate
- Pt wants to sit or stand up
- Use of accessory muscles

Asthma

Indicators of a Severe Attack

- SaO_2 (pulse oximeter) is below 91%
- Bronchodilator doesn't improve Sx after two treatments
- Patient has difficulty speaking
  - Sentences < phrases < words < mute
- Patient is struggling for air

Asthma Management

Position patient comfortably (upright)

C - A – B –BLS as needed

Administer bronchodilator via inhalation
(Alubuterol inhaler)

(Episode terminates)

Complete dental treatment

Discharge patient

(Episode continues)

Administer oxygen, call EMS

Epinephrine 0.3mg SQ or IM

Discharge or hospital

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