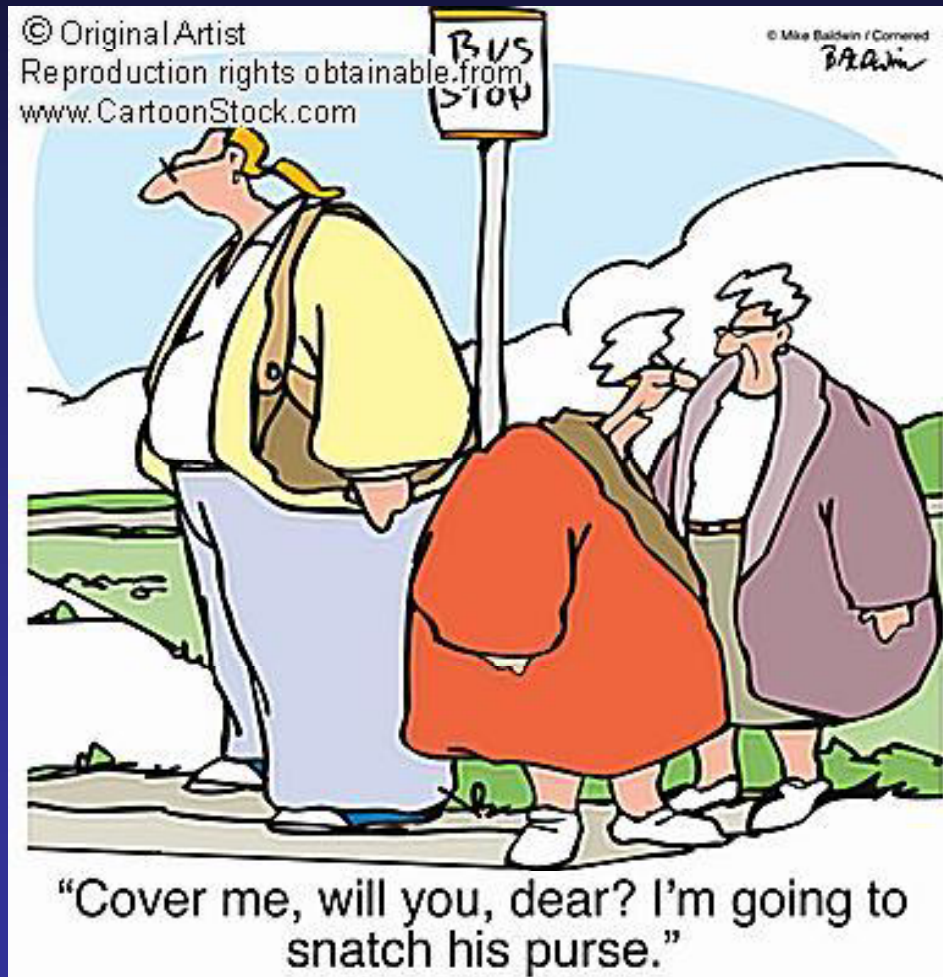




# YOUR FIRST PATIENT: GRANDMA



Grandma says: "I need a lower bridge  
My Insurance Policies Do Not Cover Implants and  
I refuse to wear a GD Flipper"





# \$6000.00 GRANDMA \$6000.00

- DOUBLE INSURANCE
- PA APPROVED \$6000.00  
UCR (\$1500 yearly  
maximums X 2 = \$3000.00 +  
\$3000.00 Cash from Bingo)
- TxPlan: Extract #23-26, Prep 6  
Unit Bridge #22-27, Gelfoam &  
Sutures +/- Foil, Bridge Preps  
& Impression. Place Immediate  
Provisional fabricated from  
Pressure Pot Shell or prefab  
from lab, MTI & healed ridge  
lap impression in 3-6 weeks
- **Plavix 75 mg & Baby ASA q AM**
- Stable Angina 0.4 mg NTG prn  
used rarely
- CHF Lanoxin 0.125 mg  
No ankle edema, No JVD
- BP 140/90 Meds: HCT, Metoprolol,  
Vasotec
- Old AI Infarct, Occas Unifocal  
PVCs
- Cardiac Pacemaker for rare  
Tachycardia
- H/O CVA , PVD & Rare TIAs
- Ejection Fraction 80%

# Grandma's Management Options

- Get Written Medical Consult , Refuse \$3000 & Reschedule
- Have LMD D/C Plaxix & ASA X 1-2 Wks and risk medical complications
- Refer to OSU COD Prosthodontist & let them snatch your purse or to D.L. Hall DDS OSU DFP
- Reschedule for Ortho & Perio Consults & give them the \$3000
- Have Oral Surgeon Remove Teeth First and use up part of the patient's annual insurance benefit with no provisional & give the surgeon 25%.
- **Check BP, Leave Cuff On Arm, Go Ahead & Treat Patient with 0.5% Marcaine w 1:200,000 Epi. X 2 Carpules via Infiltration +/- 0.3 mg Clonidine PO 1 hr PreOp. Extract #23-26 prep & provisionalize Bridge # 22-27 in one appointment. Tylenol not Aspirin for pain. Verify adequate hemostasis post OP & telephone patient later, expect oozing and bruising.**

# Chairside Portable Stat INRatio

**For  
Coumadin  
Not Plavix**



**Evaluation and Management  
Of Geriatric Patients with  
CARDIOVASCULAR  
DISEASE**

# I. ATHEROSCLEROSIS

---

**DEFINITION:** abnormal accumulation of lipids in the walls of the arteries.

**CAUSE:** Unknown.

**IMPACT:** Accumulations of “atheromatous plaques” encroach on the vascular lumen, limiting the blood flow to the affected organs. The atheromatous plaques also act as a potential site for thrombosis (blood clot formation) and embolism.

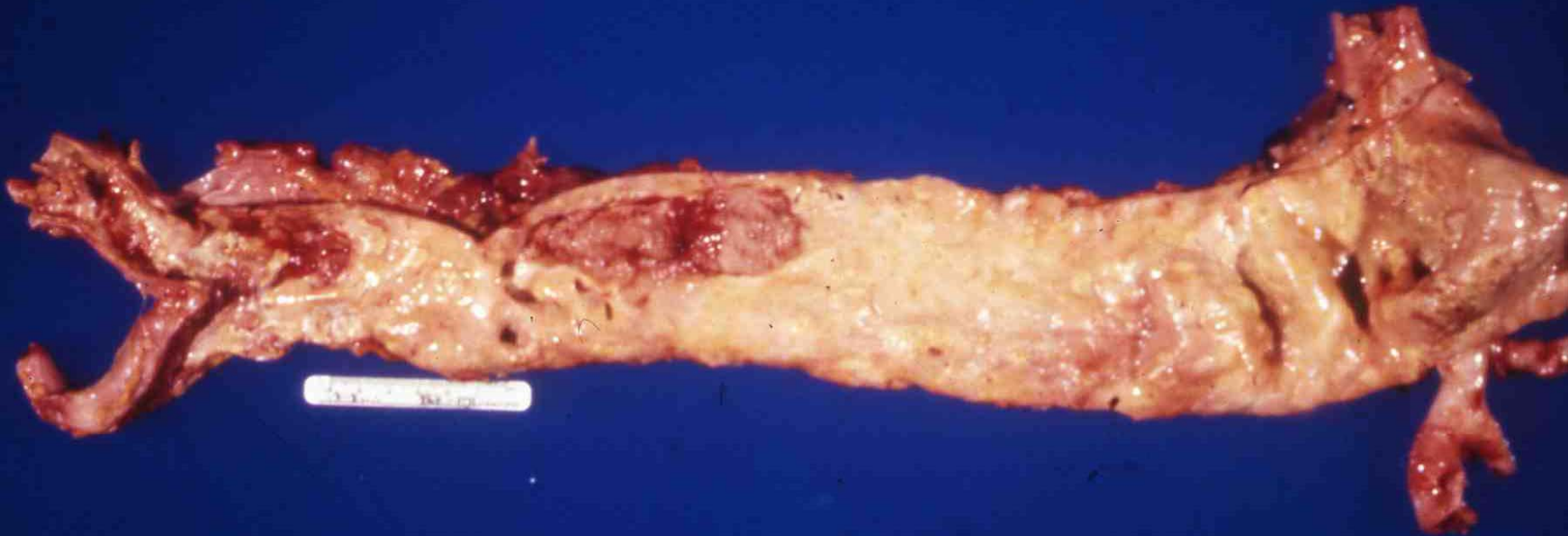
# **ATHEROSCLEROSIS**

---

## **CLINICAL MANIFESTATIONS:**

- 1. Arteriosclerotic heart disease (ASHD)**
- 2. Cerebrovascular disease (CVA)**
- 3. Peripheral vascular disease (PVD)**

ie. Clogged Pipes



# **ISCHEMIC HEART DISEASE (Coronary Heart Disease CAD)**

---

**DEFINITION:** Those cardiac diseases resulting from an imbalance of limited myocardial oxygen supply and excessive oxygen demand

**CAUSES:** Arteriosclerotic constriction of the coronary arteries.  
(ASHD, arteriosclerotic heart disease)

# **ISCHEMIC HEART DISEASE (Coronary Heart Disease)**

---

## **CLINICAL ENTITIES:**

- 1. Angina**
- 2. Myocardial infarction**
- 3. Arrhythmias**
- 4. Congestive heart failure**
- 5. Sudden death**

**CLINICAL IMPLICATIONS:** All ischemic heart disease implies advanced atherosclerosis and a higher risk of morbidity and mortality.

# **ASYMPTOMATIC ISCHEMIC HEART DISEASE (Suspected ASHD)**

---

**DEFINITION:** Asymptomatic patients in the target population (men over 50 and postmenopausal women) with suspected arteriosclerotic heart disease (ASHD) because of the presence of multiple risk factors.

# **ASYMPTOMATIC ISCHEMIC HEART DISEASE (Suspected ASHD)**

---

## **CLINICAL IMPORTANCE:**

- 1. Dental patients in the target age population with multiple high-risk ASHD factors are those patients most likely to develop symptomatic ischemic heart disease (angina, myocardial infarction, arrhythmias, congestive heart failure) while under the dentist's care.**
- 2. More than 75 percent of patients who die suddenly from ischemic heart disease have two or more of the high risk factors (hypertension, diabetes Mellitus, Smoking, hypercholesterolemia).**

# **RISK FACTORS**

---

## **ESTABLISHED RISK FACTORS**

**Hypertension**

**Cigarette Smoking**

**Hyperlipidemia**

## **PROBABLE RISK FACTORS**

**Diabetes**

**Stress**

**Family History**

**Post Menopausal state**

**Contraceptive pills**

## **SUSPECTED RISK FACTORS**

**Obesity, Sedentary Life Style**

**Periodontal Disease??**

# **DENTAL MANAGEMENT OF THE ASYMPTOMATIC ASHD PATIENT (SUSPECTED ASHD)**

---

- 1. Minor Procedures: Normal Tx Protocol  
Possible Medical Referral**
- 2. Major Procedures: Remedial Consultation,  
Intra-operative Monitoring (BP, HR, R, +/-  
SpO2, +/- EKG, +/- ET CO2)**
- 3. Medical ACLS MONA becomes Dental  
NONA : Nitrous Oxide. Oxygen,  
Nitroglycerine and Aspirin for ACS (Acute  
Coronary Syndromes)**
- 4. CPR/BLS if Needed with AED**

## II. HYPERTENSION (HTN)

---

**DEFINITION:** Resting blood pressure in excess of 140 systolic or 90 diastolic or both.

**ETIOLOGY:** Essential (primary or idiopathic) in 90%. Secondary to renal parenchymal, renovascular, or adrenal diseases in 10%

**INCIDENCE:** Ten to Twenty percent of adult patients.

**SYMPTOMS:** Asymptomatic in the majority of the patients. May occasionally present with throbbing headache, visual blurring, vertigo, or changes in mental status

# **GUIDELINES FOR CLINICAL STATUS OF BLOOD PRESSURE**

---

<b>Normal</b>	<b>120/80 mm Hg</b>
<b>Controlled</b>	<b>Up to 140/up to 90</b>
<b>Mild Hypertension</b>	<b>140-160/90-105</b>
<b>Moderate Hypertension</b>	<b>160-170/105-115</b>
<b>Severe Hypertension</b>	<b>170-190/115-125</b>
<b>**Malignant** Hypertension</b>	<b>Severe Hypertension (often 190+/125+) associated with central nervous system symptoms such as blurring of vision, headache or changes in mental status</b>

# **HYPERTENSION**

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## **COMPLICATIONS:**

**Common sequelae of long-term untreated hypertension:**

- a. Cerebrovascular disease**
- b. Renal Disease**
- c. Coronary artery disease**

# HYPERTENSION

---

## SEVERITY

## TREATMENT

Mild

Diuretic (+/- potassium supplements)

Moderate

Diuretics and a “second-order” drug :

Methyldopa (Aldomet)

\*\*Clonidine (Catapres)

Propranolol (Inderal)

\*Metoprolol (Lopressor)

Hydralazine (Apresoline)

Prazosin (Minipress)

Reserpine (Serpasil)

\*Enalapril (Vasotec)

Procardia or Norvasc (Dental+)

# **HYPERTENSION**

---

## **EXAMINATION (RECORDING THE BLOOD PRESSURE)**

- **Blood pressure at initial exam and yearly for all patients**
- **Blood pressure at each visit for patients with reading of 140/90 or higher**
- **Blood pressure prior to all Major surgical procedures for all patients**
- **Blood pressure during lengthy dental procedures in the diagnosed or suspected hypertensive patient (leave cuff on pt's arm)**

# **HYPERTENSION**

---

## **HISTORY (TO ASSESS SEVERITY):**

- **Time of discovery of hypertension**
- **Medication regimen— present and recent changes, dosage and drug combinations**
- **Presence of end-organ complications— stroke, renal disease, coronary artery disease**

# HBP HTN DENTAL TREATMENT PROTOCOL

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## BLOOD

## PRESSURE

## PROCEDURES

## PROTOCOL

---

Controlled (BP  
140/90) and Mild  
(BP 140-160/90-  
105

Minor

Normal protocol  
+/- MD Referral

Controlled (BP  
140/90) and Mild  
(BP 140-160/90-  
105

Major

Above +/-  
Sedation  
Techniques w  
Monitoring

# DENTAL Tx PROTOCOL

<u>B P</u>	<u>PROCEDURES</u>	<u>PROTOCOL</u>
Moderate (BP 160-170 /105-115)	Minor	MD Referral or review of medical management with MD
Moderate (BP 160-170 /105-115)	Moderate	Above plus Sedation Techniques w Monitoring
Moderate (BP 160-170 /105-115)	Major	Consider Hospitalization

# III. ANGINA PECTORIS: CLASSIFICATION

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	<b>Mild Angina</b>	<b>Moderate Angina</b>	<b>Severe Angina</b>
<b>Frequency of Attacks</b>	<b>Up to 1 per month</b>	<b>Up to 1 per week</b>	<b>Daily episodes</b>
<b>Stability</b>	<b>Stable</b>	<b>Stable</b>	<b>Unstable</b>
<b>Changing Frequency</b>	<b>None</b>	<b>Slight increase over previous year or more distant past</b>	<b>Change in last six months</b>

# ANGINA PECTORIS: MANAGEMENT

	Mild Angina	Moderate Angina	Severe Angina
Onset	Following severe exertion or emotion	Following moderate exertion or emotion or (infrequently) meals	Following rest, decreasing or mild emotion and meals (Frequently)
Meds	Nitroglycerine (Symptomatically)	Nitroglycerine, long acting nitrates (e.g. Isordil), propranolol (inderal)	Nitroglycerine, long acting nitrates (e.g. Isordil), propranolol (inderal)

# **ANGINA PECTORIS: TAKING HISTORY**

---

## **CHAIRSIDE HISTORY**

**General information - the presence of the following factors must be determined:**

- 1. Obesity**
- 2. Sedentary Life Style**
- 3. Psychosocial tension**
- 4. Family History of premature myocardial infarction**

# ANGINA PECTORIS

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## SIGNS AND SYMPTOMS:

1. Chest pain +/- radiation
2. Weakness
3. +/- dyspnea (shortness of breath)
4. Apprehension
5. Increased blood pressure
6. +/- sweating

# ANGINA PECTORIS

## MANAGEMENT IN THE DENTAL OFFICE

1. Stop dental treatment
2. Recline patient to 45 degree angle not supine if systolic BP <100
3. Reassure patient
4. Medical ACLS MONA becomes Dental NONA : Nitrous Oxide. Oxygen, Nitroglycerine and Aspirin for ACS (Acute Coronary Syndromes)
5. CPR/BLS if Needed with AED
6. Transport if Unresolved or condition worsens

# ANGINA PECTORIS

Administer nitroglycerine (sublingually, 0.3-0.4 mg):

- a. Anginal pain will be relieved in 3-5 min
- b. May be repeated twice at 5 min intervals
- c. Mild headache suggests a therapeutic dose has been given
- d. Failure to relieve pain suggests myocardial infarction, preinfarction angina or a panic attack etc.

**O<sub>2</sub> administration via full face mask with reservoir (this alone will not usually relieve Angina distress)**

**If pain persists after the above therapy:**

- a. Transport the patient to a hospital via ambulance**
- b. Monitor blood pressure and pulse every 5 min**
- c. Be prepared to administer cardiopulmonary resuscitation in the event of an arrest**

# ANGINA DENTAL TREATMENT PROTOCOL

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<b>ANGINA PECTORIS CATEGORY</b>	<b>DENTAL PROCEDURE</b>	<b>DENTAL MANAGEMENT</b>
<b>Mild</b>	<b>Minor</b>	<b>Normal Protocol</b>
<b>Mild</b>	<b>Moderate</b>	<b>+/- Sedation techniques w Monitoring</b>

# DENTAL TREATMENT PROTOCOL

<b>ANGINA PECTORIS CATEGORY</b>	<b>DENTAL PROCEDURE</b>	<b>DENTAL MANAGEMENT</b>
<b>Moderate</b>	<b>Minor</b>	<b>Normal Protocol</b>
<b>Moderate</b>	<b>Moderate</b>	<b>Prophylactic Nitroglycerine +/- Sedation techniques</b>
<b>Moderate</b>	<b>Major</b>	<b>Prophylactic Nitroglycerine Sedation techniques +/- Hospitalization</b>

# DENTAL TREATMENT PROTOCOL

<b>ANGINA PECTORIS CATEGORY</b>	<b>DENTAL PROCEDURE</b>	<b>DENTAL MANAGEMENT</b>
<b>Severe</b>	<b>Exams</b>	<b>Normal Protocol</b>
<b>Severe</b>	<b>Minor</b>	<b>Prophylactic Nitroglycerine +/- Sedation techniques</b>
<b>Severe</b>	<b>Moderate</b>	<b>Prophylactic Nitroglycerine Sedation techniques +/- Hospitalization</b>
<b>Severe</b>	<b>Major</b>	<b>Hospitalization</b>

# COMMON SIDE EFFECTS OF ANGINA PECTORIS MEDICATIONS

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**NITROGLYCERINE (Within minute of administration)**

- Headache
  - Postural hypotension
  - Tachycardia
  - Tolerance (develops at more than 10 doses/day)

# **IV. MYOCARDIAL INFARCTION**

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**History of past myocardial infarction and time elapsed since this event (6 mo)**

**Presence of other cardiovascular pathology:**

**Congestive heart failure**

**Arrhythmia**

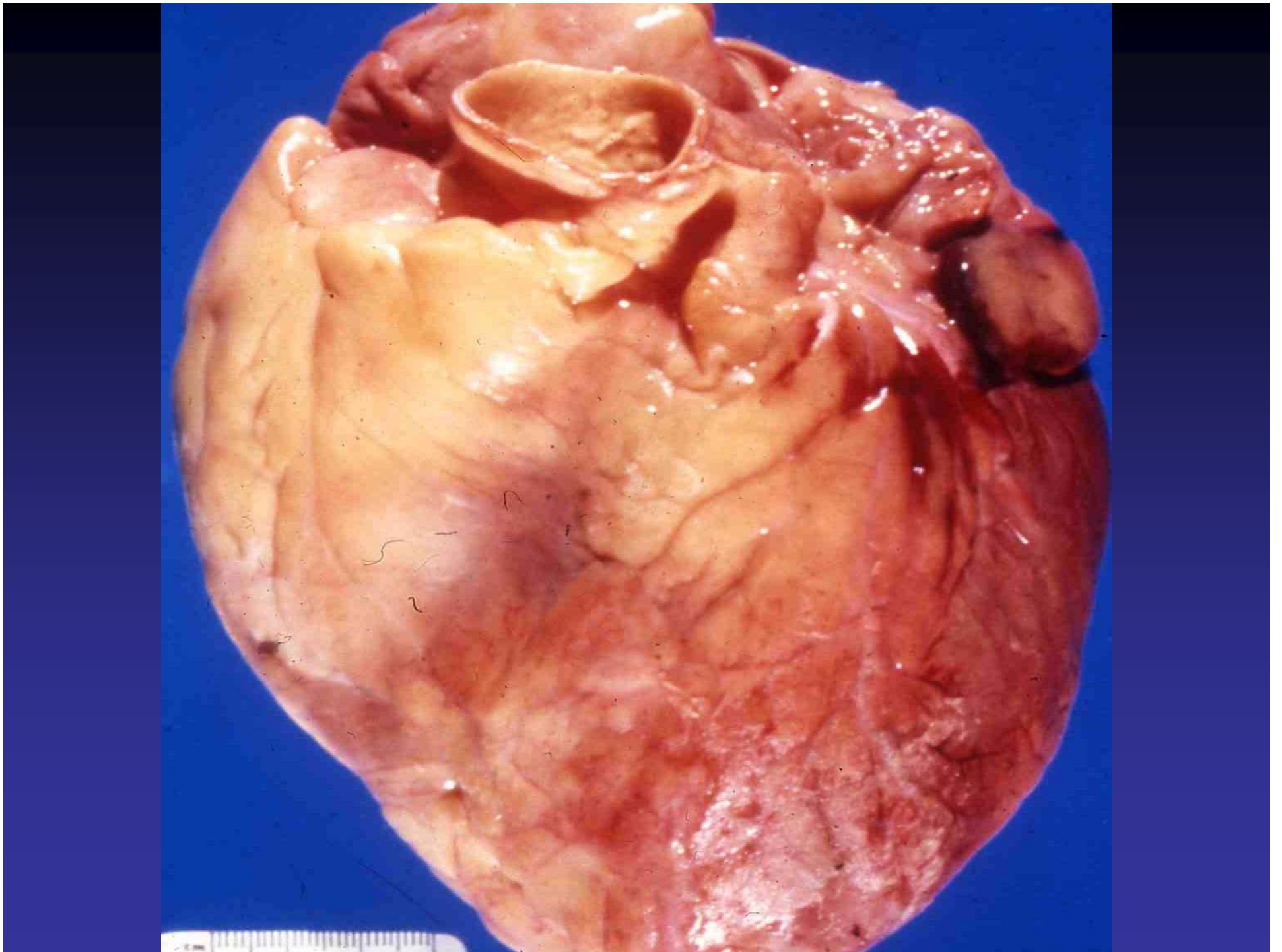
**Angina**

**Hypertension**

**Presence of other risk factors:**

**Hyperlipidemia**

**Hypercholesterolemia**



# MI DENTAL TREATMENT PROTOCOL

Time Interval	Procedures	Management
< 6 Months post MI	Minor	Normal Protocol
	Moderate	Deferred if possible, medical consultation, minimization of stress, +/- sedation techniques
	Major	Contraindicated; Palliative therapy if possible. All emergency surgery should be performed in a hospital setting

<b>Time Interval</b>	<b>Procedures</b>	<b>Management</b>
<b>6 mo- 1 year post-MI</b>	<b>Minor</b>	<b>Normal Protocol</b>
	<b>Moderate</b>	<b>Consider deferring, medical consultation, minimization of stress, Adjunctive sedation techniques</b>
	<b>Major</b>	<b>Defer if possible, Hospitalization recommended</b>
<b>&gt;1 Year Post-MI</b>	<b>Minor</b>	<b>Normal Protocol</b>
	<b>Moderate</b>	<b>minimization of stress, sedation techniques</b>
	<b>Major</b>	<b>Medical consultation, +/- Hospitalization, Hospitalization mandatory for Anesthesia</b>

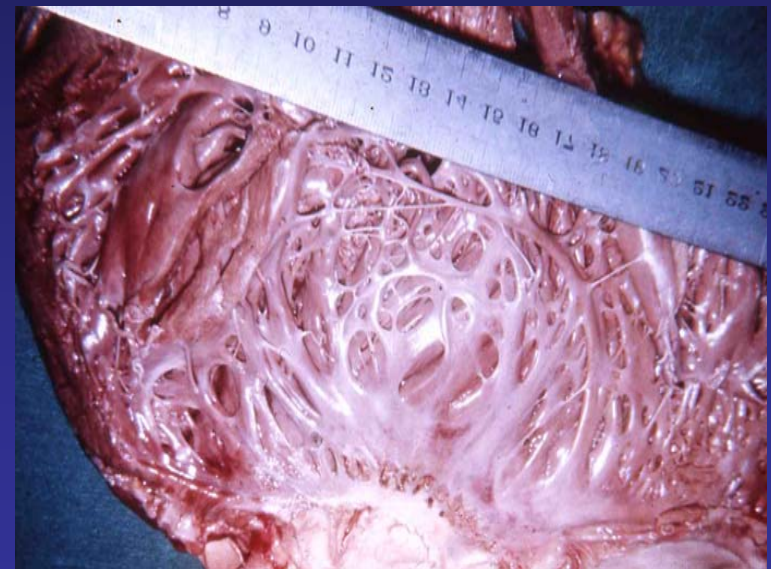
# **V. CONGESTIVE HEART FAILURE**

## **DEFINITION:**

**The inability of the heart to deliver an adequate supply of blood to meet metabolic demands. (Pump Failure)**

## **SIGNIFICANCE:**

**Indicates significant cardiac dysfunction; stressful procedures are associated with increased morbidity and mortality**



# **CONGESTIVE HEART FAILURE (CHF) ETIOLOGY**

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## **DECREASED MYOCARDIAL FUNCTION:**

**Ischemic heart disease**

**Infiltrative diseases (e.g. amyloidosis)**

**Metabolic disorders (e.g. Severe Hypothyroidism)**

**Pharmacological suppression (e.g. propranolol especially with lots of epi)**

## **INCREASED VASCULAR RESISTANCE**

**Hypertension (75% of Cases)**

**Aortic Stenosis**

**Co-arctation of the aorta**

# **CONGESTIVE HEART FAILURE ETIOLOGY**

---

## **INCREASES BLOOD VOLUME**

**Valvular Insufficiency (e.g. aortic or mitral insufficiency)**

**Atrial or ventricular septal defect**

**Chronic Renal failure**

## **EXCESSIVE METABOLIC DEMAND**

**Severe Anemia**

**Thyrotoxicosis**

# **CONGESTIVE HEART FAILURE**

---

## **SYMPTOMS:**

### **Left-sided heart failure:**

**Dyspnea (Shortness of breath), especially on exertion (DOE)**

**Orthopnea (Shortness of breath with recumbency)**

**Paroxysmal nocturnal dyspnea**

### **Right-sided heart failure:**

**Peripheral edema**

**Hepatic Congestion**

**Ascites**

# CONGESTIVE HEART FAILURE

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## GOALS OF THERAPY:

Identify and correct reversible causes

Avoid possible precipitating factors

Control symptoms with medical therapy

# DENTAL TREATMENT PROTOCOL

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## GENERAL GUIDELINES

- **Minimization of stress (Shorter appointments, adjunctive sedation)**
- **Limit use of epinephrine (2-3 Carpules 1:100K, 4-5 Carpules 1:200K)**

# MEDICATIONS

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Preparation	Brand Name	Daily Dosage
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Digoxin	Lanoxin	0.125-0.5 mg
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Dosage is Proportional to Severity of Disease

# CHF DENTAL TREATMENT PROTOCOL

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<b>Risk Category</b>	<b>Type of Procedure</b>	<b>Protocol</b>
<b>Low Risk</b>	<b>Minor</b>	<b>Normal Protocol</b>
<b>Low Risk</b>	<b>Major</b>	<b>Medical Consultation +/- Sedation</b>

**(Low Dose Dig, Min Edema, Ejection Fraction >50%)**

# DENTAL TREATMENT PROTOCOL

---

<b>Risk Category</b>	<b>Procedure</b>	<b>Protocol</b>
<b>Moderate Risk</b>	<b>Minor</b>	<b>Medical consultation, check potassium for patients on diuretics</b>
<b>Moderate Risk</b>	<b>Moderate</b>	<b>Normal Protocol +/- Sedation</b>
<b>Moderate Risk</b>	<b>Major</b>	<b>+/- Hospitalization</b>

**(Med Dose Dig, Mod Edema, Ejection Fraction 40-50%)**

# **DENTAL TREATMENT PROTOCOL**

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<b>Risk Category</b>	<b>Procedure</b>	<b>Protocol</b>
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<b>High Risk</b>	<b>Minor</b>	<b>Medical Consultation, Recent med eval, check K for pts on diuretics</b>
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<b>High Risk</b>	<b>Moderate</b>	<b>Hosp.Sedation</b>
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<b>High Risk</b>	<b>Major</b>	<b>Hospitalization</b>
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**(High Dose Dig, Severe Edema, JVD, Eject. Fract. <40%)**

# **VI. DYSRHYTHMIA**

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## **DEFINITION:**

**EKG evidence of abnormal atrial or ventricular electrical activity that can produce symptoms and frank cardiovascular compromise**

## **COMMON SYMPTOMS:**

**“Skipped beats”, “Flutter”, palpitations, dizziness, light headedness, dyspnea, hypotension, syncope**

# **DYSRYTHMIA**

---

## **POTENTIAL COMPLICATIONS:**

### **Ischemic heart disease:**

- **Angina**
- **Myocardial Infarction**
- **Congestive Heart Failure**
- **Cardiac arrest**

# DYSRHYTHMIA

---

**Transient ischemic attacks (TIA)  
suggested by:**

- **Blindness**
- **Irregular Speech**
- **Partial face droop or hemi-plegia**
- **Loss of limb sensation**

**Frank Cerebrovascular accident (CVA)**

# DYSRHYTHMIA: RISK EVALUATION

---

**Low Risk**

**Chronic A.Fib, PACs,  
Unifocal PVCs**

**Significant Risk**

**Ventricular  
arrhythmia, chronic  
meditation,  
asymptomatic**

**High Risk**

**Symptomatic patient,  
Pulse rate greater  
than 100 or less than  
60, irregular pulse  
rhythm**

# DENTAL TREATMENT PROTOCOL

<b>Risk Category</b>	<b>Procedures</b>	<b>Dental Management</b>
<b>Low Risk</b>	<b>Min/Mod</b>	<b>Normal Protocol</b>
<b>Low Risk</b>	<b>Major</b>	<b>+/- Sedation techniques</b>
<b>Moderate Risk</b>	<b>Minor</b>	<b>Normal Protocol and medical consultation</b>
<b>Moderate Risk</b>	<b>Moderate</b>	<b>+/- Hospitalization</b>
<b>Moderate Risk</b>	<b>Major</b>	<b>Sedation +/- Hosp.</b>

<b>Risk Category</b>	<b>Procedures</b>	<b>Dental Management</b>
<b>Significant Risk</b>	<b>Exams</b>	<b>Normal protocol and medical consultation</b>
<b>Significant Risk</b>	<b>Minor</b>	<b>+/- Sedation techniques</b>
<b>Significant Risk</b>	<b>Moderate</b>	<b>Sedation Techniques</b>
<b>Significant Risk</b>	<b>Major</b>	<b>+/- Hospitalization</b>
<b>High Risk</b>	<b>Exams</b>	<b>Normal Protocol and medical consultation</b>
	<b>All Others</b>	<b>Contradicted pending medical evaluation and consultation</b>

# **VII. BRADY/TACHYCARDIA**

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## **HISTORY**

**Past History of Brady/Tachycardia**

**Patient has pacemaker**

**Patient has symptoms of dizziness,  
light headedness, or syncope**

## **EXAMINATION**

**Pulse Rate**

**Regularity of pulse rate**

## **DEFINITION**

**Pulse rate < 60 / >90 beats per minute**

## **SYMPTOMS**

- 1. May be completely symptomatic**
- 2. May have symptoms resulting from inadequate blood supply to the brain:**
  - A. Dizziness**
  - B. Light headedness**
  - C. Syncope**
- 3. Rarely, may have symptoms resulting from inadequate blood supply to heart:**
  - A. Angina**
  - B. Congestive heart failure**

# **BRADY/TACHYCARDIA**

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## **MEDICAL CONSULTATION:**

**Refer all symptomatic patients for evaluation. Inquire about history of bradycardia or tachycardia and the function of the cardiac pacemaker**

**Recent examination and electrocardiogram in patients with history of bradycardia or tachycardia, patients with pacemaker, and patients with symptoms**

## **PATIENTS AT RISK**

**Patients with a pulse rate of less than 45 beats per minute or greater than 100 bpm.**

**Patients with irregular pulse and bradycardia:**

- **1<sup>st</sup> or 2<sup>nd</sup> Degree heart block**
- **3<sup>o</sup> Complete heart block**
- **Slow atrial fibrillation**

**Symptomatic patients with bradycardia.**

**Bradycardia patients with cardiac pacemakers**

# Patients Not at Risk

- Asymptomatic Athletes with HR 50-60 bpm
- Healthy Asymptomatic but anxious patients with HR 90-110 bpm
- Healthy Asymptomatic patients who receive Local Anesthetics with Vasopressor
- Stabilized Asymptomatic Grandma with Chronic Atrial Fibrillation (Irregular Pulse 60-80 BPM) Not On Coumadin