Fun heart rate & BP lab today! Hooray!!...

BI 121 Lecture 8

I. **Announcements** Exam I next session; 12 n lab section go directly to 129 Huestis (HUE). All others here (100 WIL)! Review: Sunday, 6 pm here (100 WIL)! Lab notebooks. Q?

II. **Cardiovascular Connections** LS 2012 ch 9, Torstar Books+

III. **CV Physiology in News** AHA + NHLBI websites. Nic? ACSM, AHA, DHHS Healthy people exercise guidelines!

IV. **CV Pathophysiology & Risk Reduction** LS ch 9, 10 +

   A. AMI, CVA, CVD, PVD, TIA, HTN? + surgical treatments
   B. Atherosclerosis? LS fig 9-27, 9-25, 9-26 pp 266-8
   C. How to minimize risk of CVDs? Treatment triad:
      Exercise, Diet, Drugs+Surgery
   D. Food choices make a difference? What’s HAPOC?
12n lab section takes Exam I on Tuesday in 129 Huestis (HUE) Lab. All others here (100 WIL)! Study & blast the exam!
Heart-Blood Pressure Lab Today!

Lub-dup!

I'm cool!
Cardiac Cycle

Systole
Contract & Empty

Diastole
Relax & Fill
Veins ➔ Atria ➔ Ventricles ➔ Arteries

http://www.nhlbi.nih.gov/health/health-topics/topics/hhw/contraction.html
SI Fox 2009 fig 13.16 p 419

Septal defect in atria
Patent or still open!

SI Fox 2009 fig 13.17 p 420
American Heart Association (AHA) & National Heart, Lung & Blood Institute

http://www.heart.org/

http://www.nhlbi.nih.gov/health/

Department of Health and Human Services · National Institutes of Health

National Heart Lung and Blood Institute

People Science Health
Can you believe that's Nicole?

Hollywood glamour queen Nicole Kidman likes to swim to keep that multimillion-dollar body in shape. But the down-to-earth superstar doesn’t need a fancy spa — she does her laps at the local YMCA! Nice goggles, Nic!

We all have multimillion-dollar bodies!!
How much aerobic?

Continuous exercise

> 50% muscle mass

> Conversational pace

20-60 min/session

3-5 days/wk

Guidelines: Healthy Adults < 65 yr

Do moderately intense aerobic exercise
30 min/d, 5 d/wk

OR

Do vigorously intense aerobic exercise
20 min/d, 3 d/wk

AND

Do 8-10 strength-training exercises
8-12 repetitions/each exercise, 2 d/wk
How much strength?

✓ 2-3 days/wk
✓ 8-10 exercises for major muscle groups
✓ ≥ 1 set/exercise
✓ 8-12 (most) or 10-15 (frail/> 50-60 yr) repetitions/set
Federal exercise guidelines include strength training for all

**Adults**: Moderate to Vigorous Exercise

> 30 min, 5 d/wk

**Children**: Moderate to Vigorous Exercise

> 60 min, 5 d/wk

Did you know?

- Every year ~785,000 Americans have a first heart attack. Another 470,000 who've had ≥ 1 have another attack.
- In 2008, > 616,000 people died of heart disease. Heart disease caused almost 25% of deaths in the US.
- In 2010, coronary heart disease US costs ~$108.9 billion including health care, medications & lost productivity.

SOURCE: Heart Disease Facts, Centers for Disease Control, 2012
Heart Disease Death Rates, 2000-2006
Adults Ages 35+, by County

Eugene, OR

MN is lowest!

AK low, too!

Jackson, MS

http://www.cdc.gov/heartDisease/statistics.htm
Source: Lifeline Screening, 2007
Coronary Circulation ≡ Crowns the Heart!
FIGURE 9-35
Extent of myocardial damage as a function of the size of the occluded vessel

L Sherwood 2004 p 336
59 yr HTN ♀

Torstar 1984 p 77
Treatment Triad

- Exercise
- Dietary Modification
- Drugs/Surgery

NB: Last blasted resort!!
**Figure 37-1** Devices for percutaneous transluminal coronary interventions. **A**, Coronary balloon. **B**, Rotational atherectomy burr (Rotablator). **C**, Coronary stent.
CABG
Tobacco-free Campus
For better health, smoking and use of tobacco products are prohibited everywhere on our property.

September 1, 2012
SMOKE AND TOBACCO-FREE UNIVERSITY
For a healthier community and cleaner environment, the University of Oregon will be smoke and tobacco-free.
Ready to Quit Tobacco?
For more information visit tobaccofree.uoregon.edu

UO's Josh Buehler  U.S. Surgeon General  Regina Benjamin
300/200

KA-BOOM!

Hg
An LDL to HDL ratio greater than 5 to 1 in men or 4.5 to 1 in women

Increased risk of heart disease
Those with *apple type* of obesity predisposed to CVD!
Pick an abundance of whole grains, legumes, nuts, vegetables & fruits!
Fish Oil Intakes & Cardiovascular Death Rates

<table>
<thead>
<tr>
<th>Country</th>
<th>Cardiovascular Deaths per 100,000 Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ireland</td>
<td>0.09%</td>
</tr>
<tr>
<td>USA</td>
<td>0.13%</td>
</tr>
<tr>
<td>France</td>
<td>0.14%</td>
</tr>
<tr>
<td>Japan</td>
<td>0.37%</td>
</tr>
</tbody>
</table>
Healthy Oils to Minimize Atherosclerosis

HAPOC?
Olive Oil Loves Olive Oil & has some heartfelt advise for Popeye!!
Yes for the spinach! — but get rid of the pipe!!
An LDL to HDL ratio of *less than* 5 to 1 in men or 4.5 to 1 in women

Reduced risk of heart disease