I. **Announcements**  Exam I next session; 11 am & 12 n lab sections go directly to 11 PAC & 12 PAC. All others here (100 WIL)! Review: Sunday, 6 pm 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?
Heart-Blood Pressure Lab Today!

Lub-dup!

I'm cool!
11 am lab section takes Exam on Tuesday in 11 Pacific (PAC)
12 n lab section takes Exam on Tuesday in 12 Pacific (PAC)
All others here (100 WIL)!

Study & blast the exam!
Study Groups?
Cardiac Cycle

**Systole**
Contract & Empty

**Diastole**
Relax & Fill

Diagram showing the transition between systole and diastole.
Veins → Atria → Ventricles → Arteries

Superior vena cava (from head)

Right atrium

Inferior vena cava (from body)

Right ventricle

Endocardium

Pericardium

Left ventricle

Myocardium

Aorta

Left atrium

http://www.nhlbi.nih.gov/health/health-topics/topics/hhw/contraction.html
Patent or still open!

SI Fox 2009 fig 13.17 p 420
We all have multimillion-dollar bodies!!

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!
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 and children.

**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
DISEASED CAROTID ARTERY

HEALTHY CAROTID ARTERY

Source: Lifeline Screening, 2007
Coronary Circulation ≡ Crowns the Heart!
Area of cardiac muscle deprived of blood supply if coronary vessel is blocked at point A:

Right coronary artery

Right ventricle

Area of cardiac muscle deprived of blood supply if coronary vessel is blocked at point B:

Left coronary artery

Left ventricle

**FIGURE 9-35**

Extent of myocardial damage as a function of the size of the occluded vessel
59 yr HTN ♀
Treatment Triad

Drugs/Surgery

Exercise

Dietary Modification

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

C Coronary
A Artery
B By-pass
G Graft
Tobacco-free Campus
For better health, smoking and use of tobacco products are prohibited everywhere on our property.

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

For a healthier community and cleaner environment, the University of Oregon is smoke and tobacco-free.
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!
HEALTH-RELATED FITNESS

Cardiorespiratory Endurance

Muscular Strength/Endurance

Flexibility

Neuromuscular Relaxation
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>700 (0.09%)</td>
</tr>
<tr>
<td>USA</td>
<td>500 (0.13%)</td>
</tr>
<tr>
<td>France</td>
<td>300 (0.14%)</td>
</tr>
<tr>
<td>Japan</td>
<td>200 (0.37%)</td>
</tr>
</tbody>
</table>

S&W 2011
fig 5-12 p 167
Healthy Oils to Minimize Atherosclerosis

HAPOC?
Olive Oil Loves Olive Oil & has some heartfelt advice for Popeye!!
Yes for the spinach! — but get rid of the pipe!!
Before

After
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
Before

After