I. **Announcements** Exam I next time: 10 & 11 am lab sections go directly to 5 KLA & 129 HUE. All others (except AEC) here, 100 WIL! Review: Sun, 6 pm 100 WIL! Lab Manuals. Q?

II. **Cardiovascular Connections** DC Module 4, LS ch 9, Torstar+…

III. **CV Physiology in News** AHA + ACSM 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


D. Food choices make a difference? Plant-based diet!

What’s HAPOC?
10 am lab section takes Exam in 5 Klamath (KLA)
11 am lab section takes Exam in 129 Huestis (HUE)
All others (-AEC) here in 100 WIL!
All on Tuesday, 8:30 start time!

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

https://www.nhlbi.nih.gov/health-topics/how-heart-works
https://www.youtube.com/watch?v=zJXAlh9VDDU
Patent or still open! Ductus arteriosus!
Heart Murmurs? An unusual or extra heart sound lub-dup, lub-dup vs lub-gurgle-dup, lub-swish-dup…

S1 = lub  S2 = dup

https://www.thinklabs.com/heart-sounds
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
AMI
CVDs
CVA
TIA
HTN
PVD
Did you know?

- Every 40 seconds, someone has a heart attack in the US!
- ~630,000 Americans die of heart disease each yr – that’s 1 in every 4 deaths. Heart disease is the leading cause of death for both men and women.
- Heart disease costs the US ~ $200 billion per yr in health care, medications & lost productivity. By 2035, CVD costs are projected to top $1 trillion annually.

Heart Disease Death Rates, 2011-2013
Adults, Ages 35+, by County

Rates are spatially smoothed to enhance the stability of rates in counties with small populations.

Data Source: National Vital Statistics System
National Center for Health Statistics

https://www.cdc.gov/dhdsp/data_statistics/fact_sheets/fs_heart_disease.htm
Coronary Circulation ≡ Crowns the Heart!
Area of cardiac muscle deprived of blood supply if coronary vessel is blocked at point A:

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

Right coronary artery

Left coronary artery

Right ventricle

Left ventricle

**FIGURE 9-35**

Extent of myocardial damage as a function of the size of the occluded vessel
59 yr HTN ♂

Torstar 1984 p 77
Treatment Triad

- Exercise
- Dietary Modification
- Drugs/Surgery

NB: Last blasted resort!!
CABG

Coronary Artery By-pass 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

September 1, 2012

For a healthier community and cleaner environment, the University of Oregon will be smoke and tobacco-free.

Ready to Quit Tobacco?
Visit tobaccofree.uoregon.edu for free and low-cost resources.
An LDL to HDL ratio greater than 5 to 1 in men or 4.5 to 1 in women

Increased risk of heart disease
Apple type of obesity predisposed to CVD!

Pear type of fat pattern...

implies lower disease risk!

Eat more apples...

to help prevent the apple type of obesity!
Pick an abundance of whole grains, legumes, nuts, vegetables & fruits!
Fish Oil Intakes & Cardiovascular Death Rates

Cardiovascular Deaths per 100,000 Population

<table>
<thead>
<tr>
<th>Country</th>
<th>Death Rate</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!!
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