Put your Heart before your Head

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since 1963, the US Congress has required the President to proclaim February "American Heart Month."
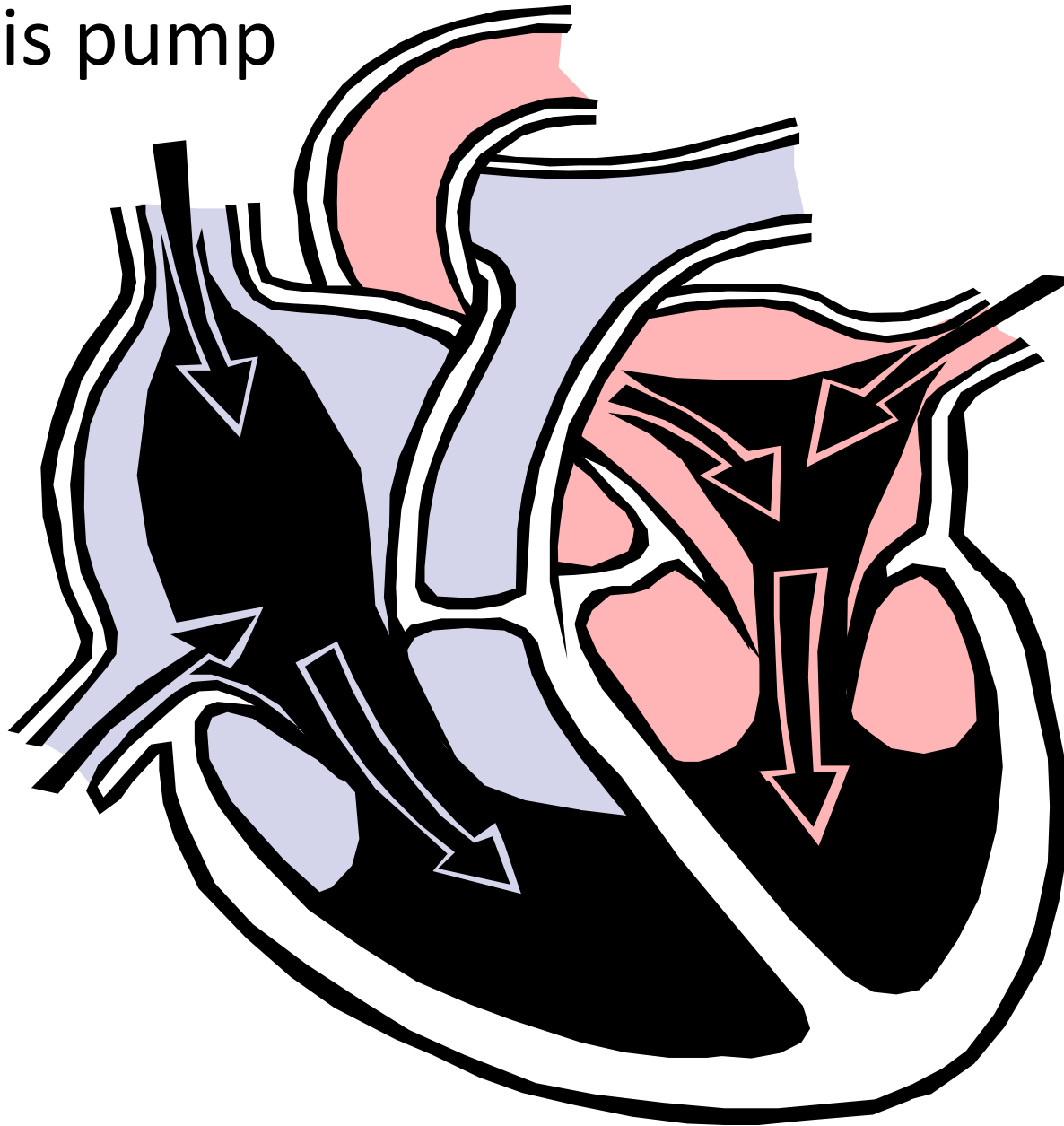
In this month of the heart

- *One ought to hold on to one's heart; for if one lets it go, one soon loses control of the head too!*

Heart is pump

The Heart pumps blood all over

- Blood pressure is the pressure of the blood against the walls of the arteries.
- Blood pressure is typically recorded as two numbers and is written as a ratio: 118/74 millimeters of mercury.
- The **top** number, which is also the higher of the two numbers, **is** the **Systolic pressure** in the arteries-- when the heart beats.
- The **bottom** number, which is also the lower of the two numbers, **is** the **Diastolic pressure** in the arteries-- between heartbeats.

# Desirable blood pressure

- **Optimal blood pressure:**
- is _less than_ **120** mm Hg systolic and **80** mm Hg diastolic.

- Prehypertension:
- is blood pressures of 120-139 syatolic and/or 80-89 systolic.

- **Hypertension:**
- _Blood pressure is considered high_ if it is **140** mm Hg over **90** mm Hg _or higher_.

Risks from hypertension

- **High Blood Pressure**, or **hypertension**, is a condition in which blood pressure levels are above the normal range.
- **High blood pressure increases the risk** for **heart attack** and **stroke.**
- The risk of **angina, heart failure, kidney failure, peripheral artery disease** (PAD) also increases due to high blood pressure.
- High blood pressure may also increase the **risk of developing fatty deposits in arteries** (atherosclerosis).

Blood pressure does not stay the same
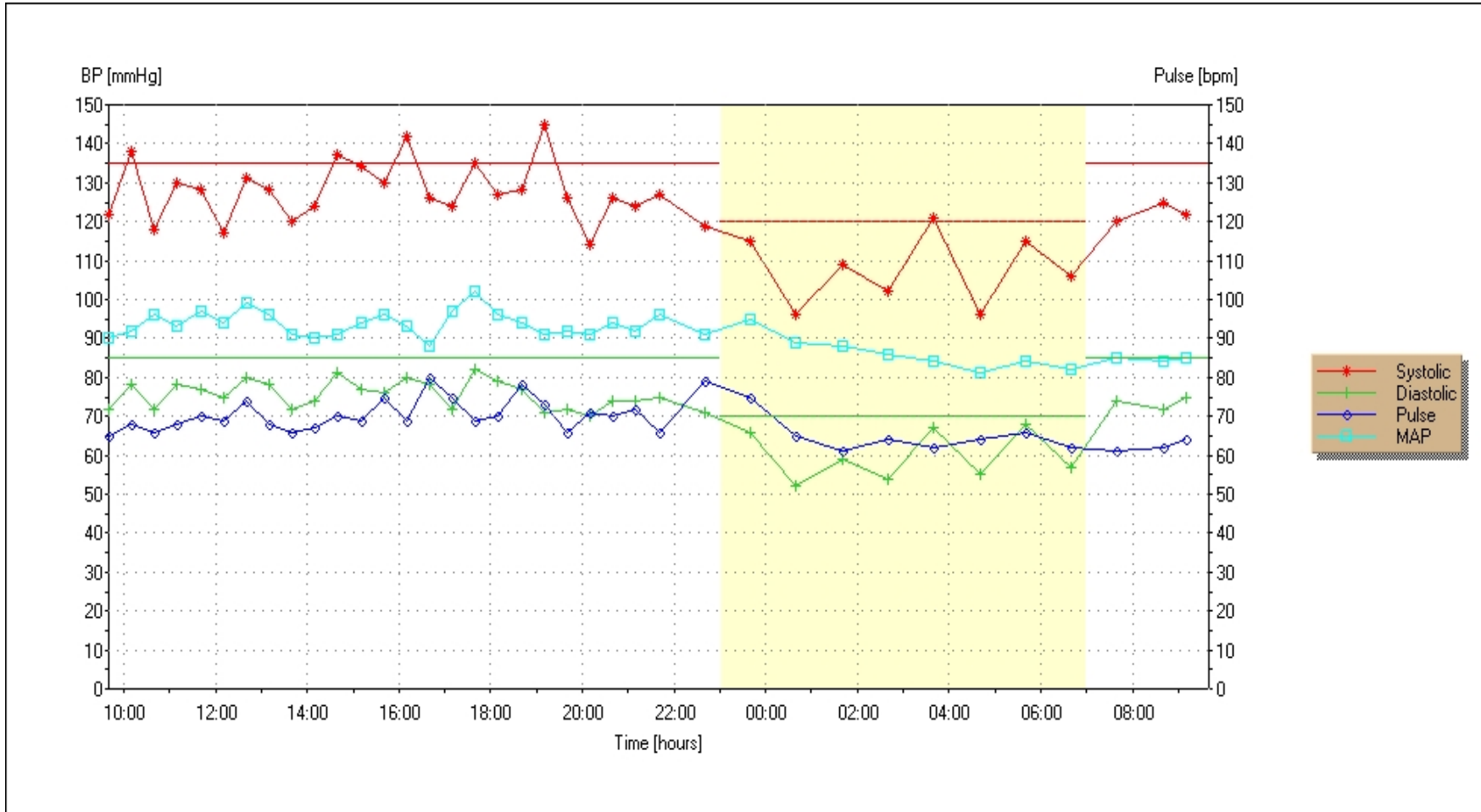
It varies even more in Hypertension
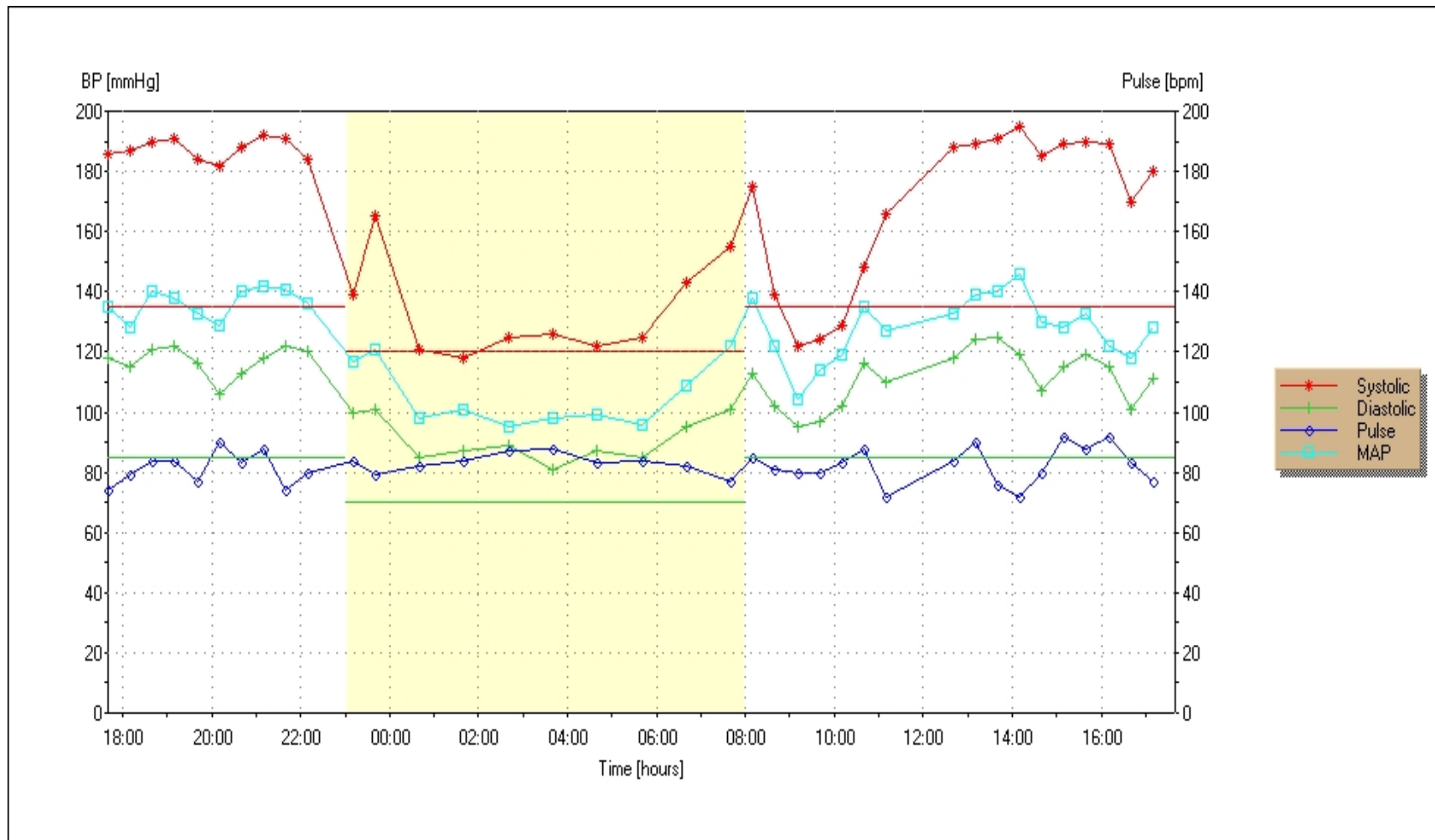
We can measure blood pressure during the day and night

The blood vessels

- The arteries carry the blood away from the heart.
- The veins bring back the blood to the heart.
- The inner lining of the arteries, the endothelium, is able to control the diameter of the arteries.
- The diameter of the arteries affects the blood pressure.
- Other things like blood glucose levels affect the endothelium, which in turn influences the blood pressure.

Assessing blood vessel health

Assessing blood vessel health

- Done in a fasting state at the same fixed clock hour (range 8-10 AM), after having avoided stimulants for 12-hours, using the ITAMAR®, endo-PAT device.

- This provides a read out from its software using data gathered from a patented finger sleeve (probe) that measures the peripheral arterial tone (pulsatile blood flow at the fingertip after the release of the blood pressure cuff occluding the brachial artery).
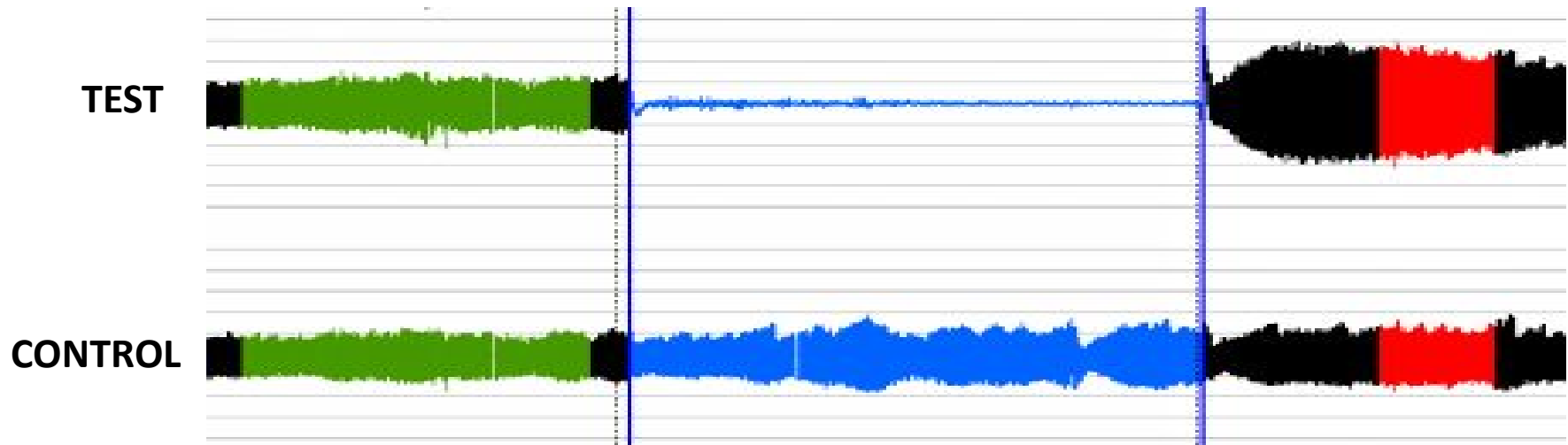
Measure at the finger tips
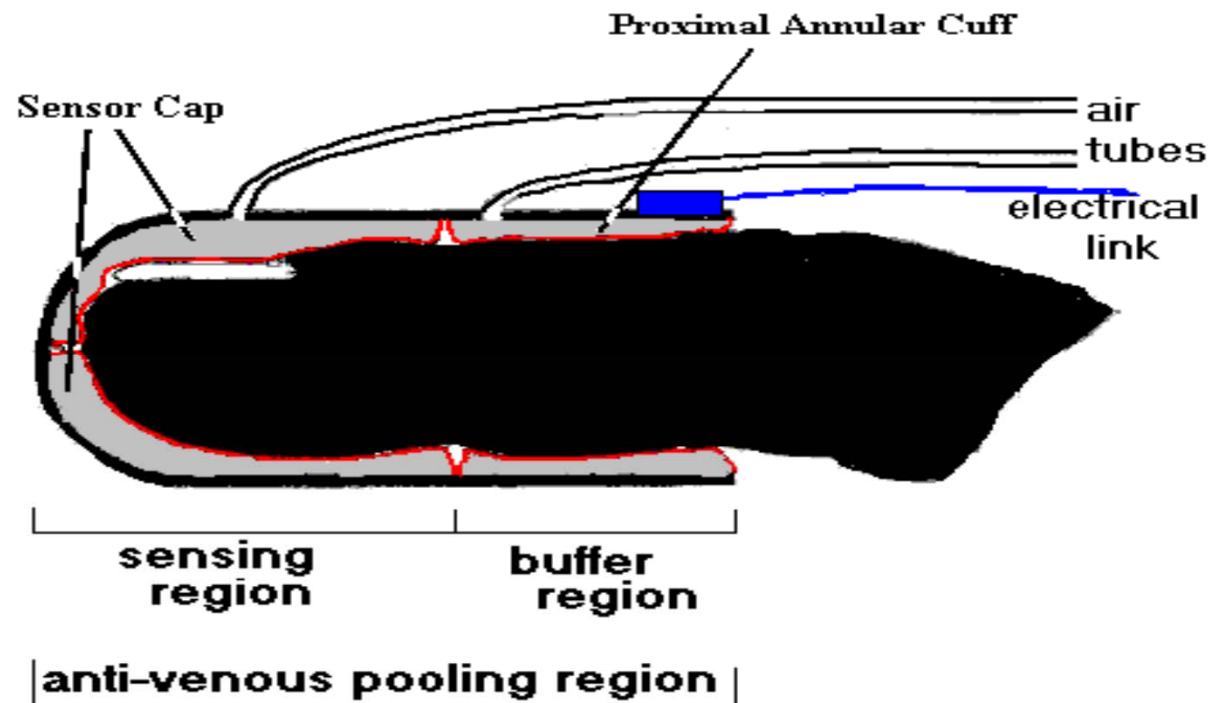
The more the dilation the better it is

-- Baseline   Occlusion   -- FMD

American Heart Association 2011 update:
Cardiovascular disease Kills

- **Cardiovascular disease** accounted for 33.6% (813 804) of all 2 243 712 deaths in 2007, or **1 of every 2.9 deaths** in the United States.

- **Coronary heart disease caused 1 of every 6 deaths** in the United States in 2007.

- **Congestive heart failure** was mentioned in **1 in 9 death certificates** (277 193 deaths) in the United States during 2007.

American Heart Association 2011 update:

CV adverse events occur very frequently

- Approximately every 25 seconds, an American will have *a heart attack*, and approximately every minute, someone will die of one.

- On average, every 40 seconds, someone in the United States has *a stroke*.

- On the basis of 2007 mortality rate data, more than 2200 Americans die of CVD each day, an average of 1 death every 39 seconds.

American Heart Association 2011 update:
CVD risk factors are on the rise

- An estimated 67.3% of adults and 31.7% of children in the U.S. are overweight or obese (over 170 million people!).

- Obesity prevalence is increasing: for *men* from 28% (in 2000) to **32% (in 2008)** and for *women from* 33% (in 2000) to **36% (in 2008)**.

- Every other adult in US has total cholesterol levels above 200 mg/dL.

- Almost 1 of every 3 U.S. adults have LDL levels ≥130 mg/dL; 1 of every 5 have HDL levels below 40 mg/dL.

- 1 in 4 healthy adults has Prehypertension, 1 in 4 has Prediabetes and 1 in 10 has both.

AHA 2020 Impact goal

- **improve the cardiovascular health of Americans by 20%**

- **while also reducing cardiovascular deaths by 20%**

seven components

- **four ideal health behaviors:**
- not smoking,
- body-mass index (BMI) <25 kg/m^2,
- physical activity at goal levels: >150 min/wk,
- diet that includes three or more daily servings of fruits and vegetables—and
- **three ideal health factors:**
- total cholesterol <200 mg/dL,
- systolic blood pressure <120 mm Hg,
- diastolic blood pressure <80 mm Hg,
- fasting plasma glucose levels <100 mg/dL.

The state of cardiovascular health

- Overall, only 1.0% of subjects met all seven metrics

- 13.8% of subjects met five of the seven metrics.

- 5.4% met six metrics.

- 1.5% of the study population met none.

What effect does this have?

- Compared with individuals with no ideal health measures: those with five or more had a 78% lower risk of all-cause mortality and an 88% lower risk of death from diseases of the circulatory system.
- **often up to a 90% reduction in risk is seen in subjects meeting ideal criteria.**

Heart Attack!!
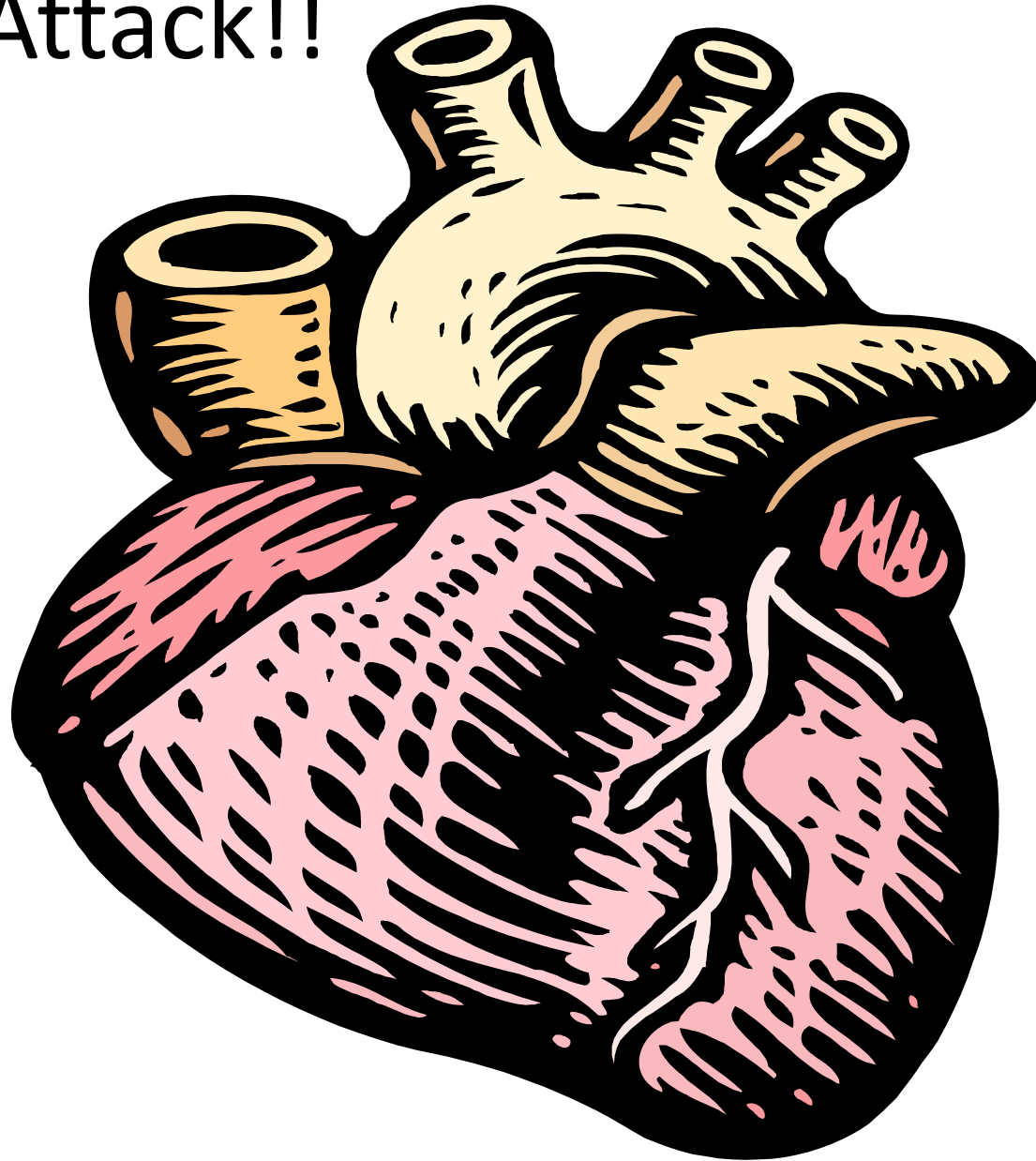
The seven components

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Some things to eat!

- "*In traditional societies, where people don't eat processed foods, heart disease is rare*," says cardiologist Arthur Agatston, MD, author of *The South Beach Wake-Up Call.*
- "*If you start with a healthy diet in childhood, heart attacks are almost completely preventable*."

- Oranges
- **Rx Effect:** Reduce blood pressure, cholesterol and heart failure.
- Kale
- **Rx Effect:** Prevents atherosclerosis.
- Garlic
- **Rx Effect:** Reduce blood pressure
- Pomegranates
- **Rx Effect:** Reduce atherosclerosis

Harmony!