

“The difference between Men
and Women....”

I learned this in High School

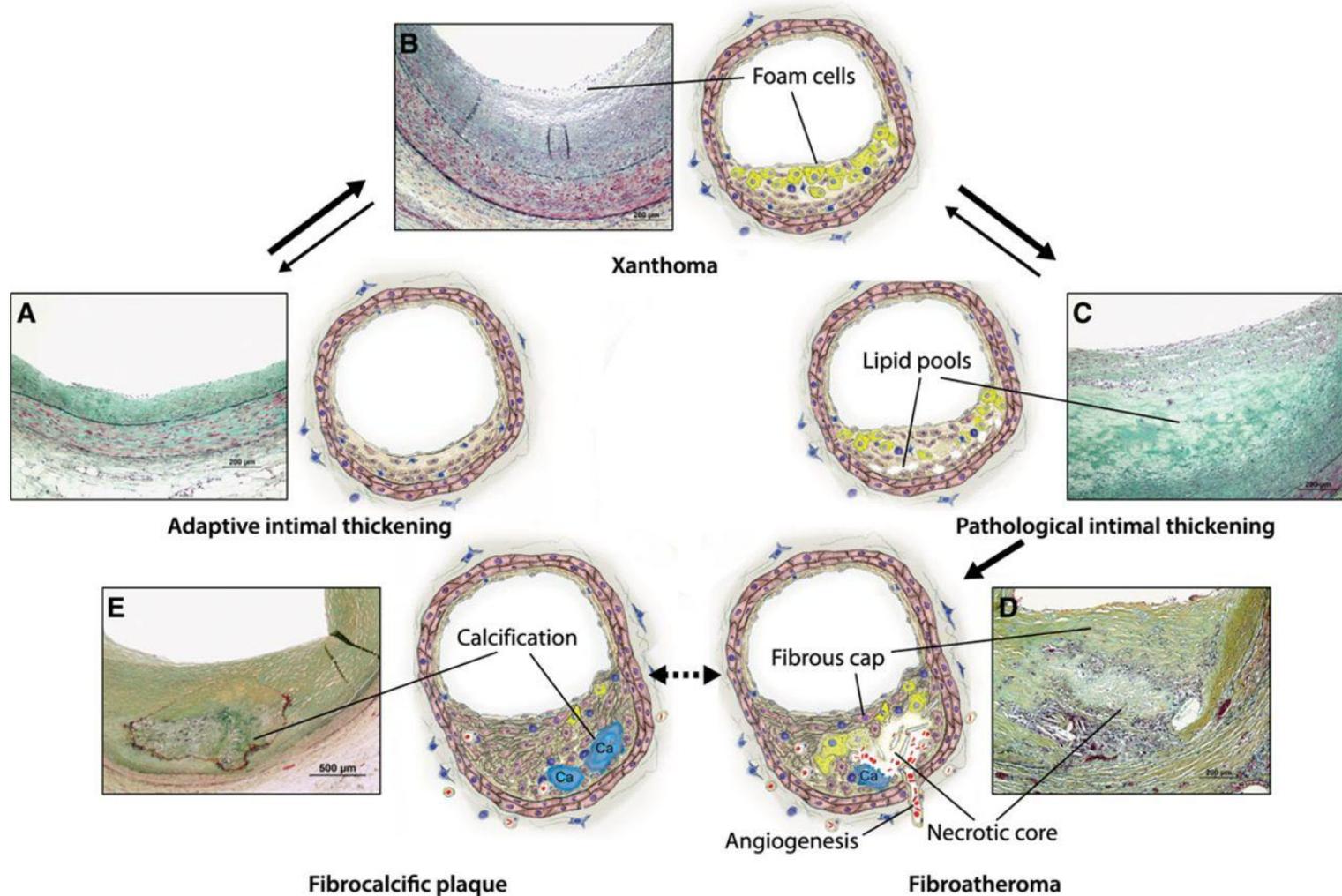
**Heart Disease is the
No. 1 killer of women.**



What causes a classic heart attack

- Let us talk about Plaques
 - This is where cholesterol becomes important
- LDL (bad cholesterol) gets into the artery wall and causes inflammation.
- This inflammation leads to plaque formation.

Lesion types of atherosclerosis and a proposed sequence of their development.

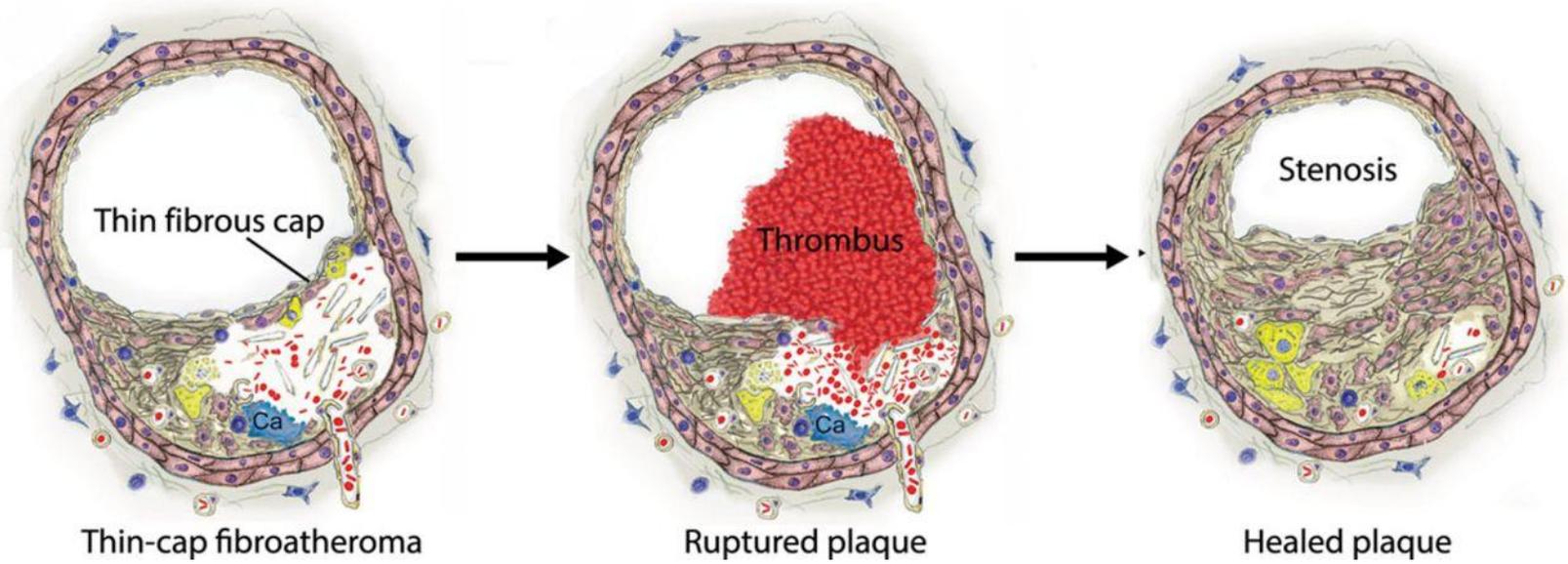


Jacob Fog Bentzon et al. *Circ Res.* 2014;114:1852-1866

Instability

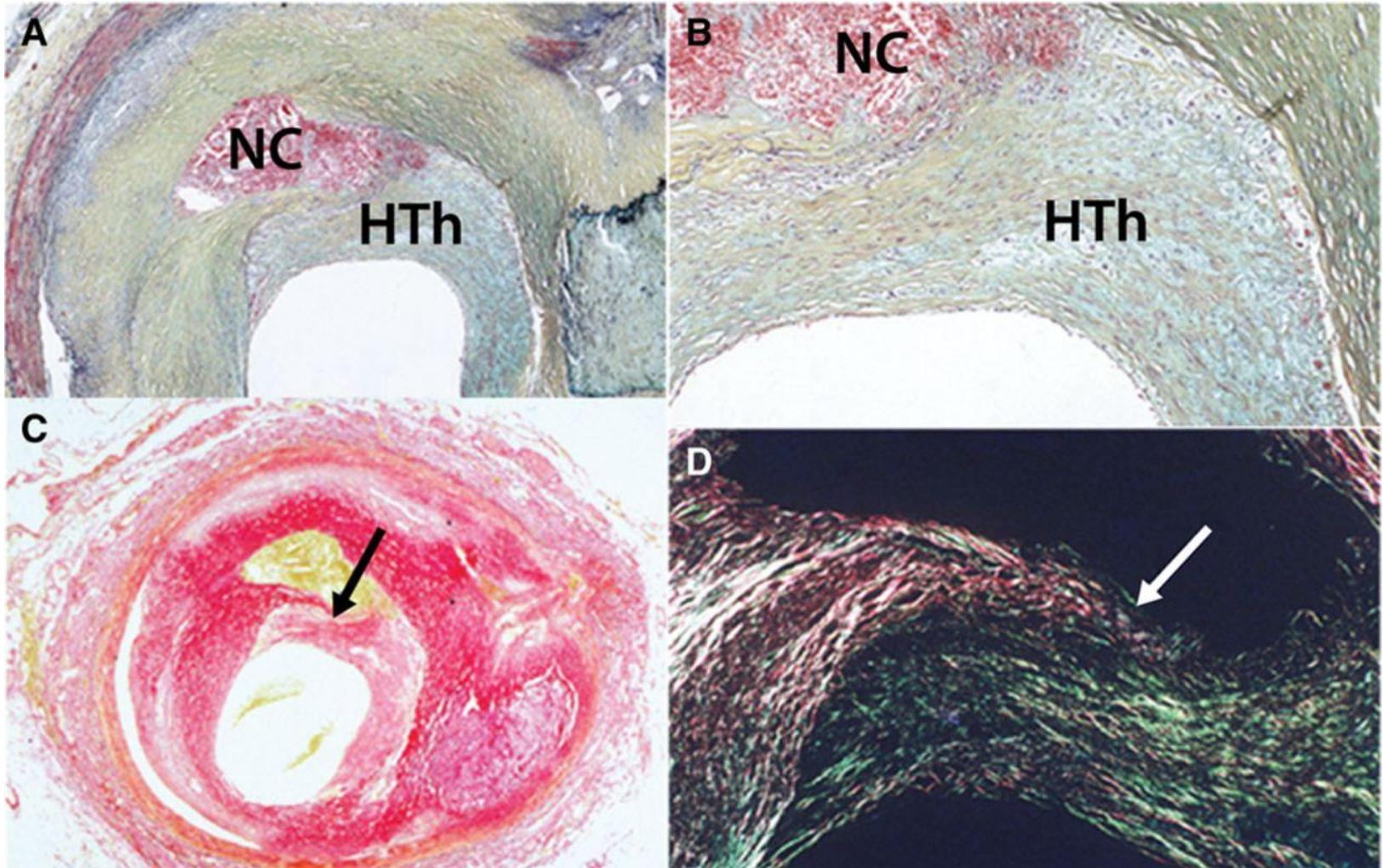
- Multiple factors lead to instability of the plaque
- These include but are not limited to Diabetes, smoking and lipid levels
- Plaque rupture can be spontaneous, but can also be triggered by emotional or physical stress

Plaque rupture and healing.



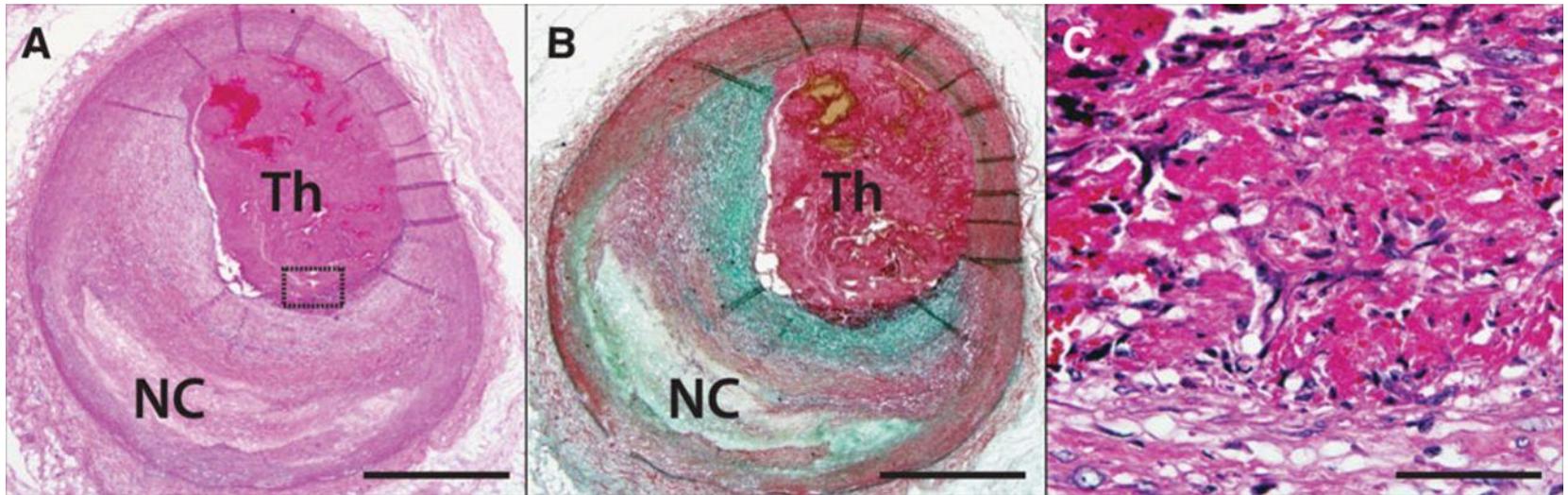
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Healed plaque rupture.



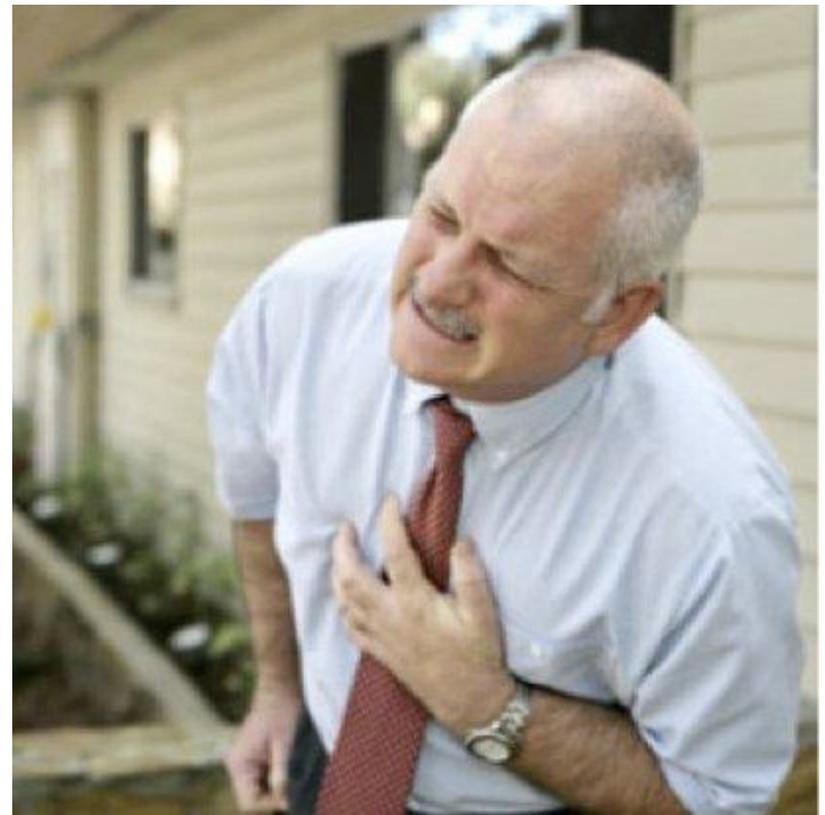
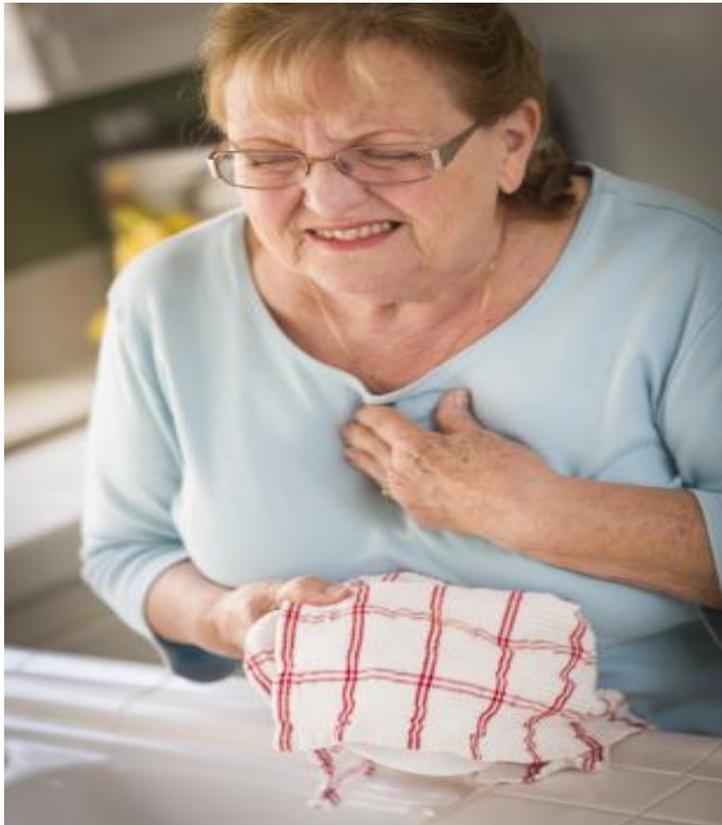
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Plaque erosion.



Jacob Fog Bentzon et al. *Circ Res.* 2014;114:1852-1866

So now comes the heart attack...



Symptoms

- Chest pain or discomfort
 - The most common heart attack symptom
 - Women tend to experience it differently than men

Symptoms

- Pain in arms, back, neck or jaw
 - This pain is more common in women than in men
 - Can be gradual or sudden
 - May initially fluctuate before becoming intense

Symptoms

- Stomach pain
 - Many times women experience severe abdominal pressure
 - *The elephant is sitting on your stomach*

Symptoms

- Shortness of breath, nausea or lightheadedness
 - If you are short of breath for no reason you could be having a heart attack

Symptoms

- Sweating
 - Breaking out in a nervous, cold sweat is common among women having a heart attack

Symptoms

- Fatigue
 - Women who are having heart attacks feel extremely tired even they have not done anything in awhile

Symptoms

- No chest symptoms
 - At least 10% of women have no chest discomfort at all.
 - Some studies have quoted the number closer to 40%

Why the difference?

- One reason may be related to the fact women develop heart disease 7 to 10 years later than men
 - Estrogen
- This difference means women tend to have developed other diseases including diabetes and hypertension

Type of disease

- Men tend to develop isolated blockages in a bigger part of the coronary artery
- Women are more likely to develop more diffuse disease in the small arteries

Differences in risk factors

- Smoking increases the risk of heart attack
 - In women it increases the risk for heart attacks twice compared to men
 - Good cholesterol levels should be above 40 for men but above 50 for women

Differences in Outcomes

- Men less than 55 are at a higher risk for a heart attack compared with women.
 - Women who have a heart attack less than 55 have a higher risk of dying from the heart attack

Differences in Outcomes

- Women have more complications than men during hospitalization and a higher mortality rate at 30 days
- Rates of another heart attack at 30 days are similar

Differences in Outcomes

- Women have a higher mortality after bypass surgery compared with men

SIGNS OF A HEART ATTACK

Symptoms Every Woman Should Know and Pay Attention to

Women and men may differ in their experience of heart attack symptoms, as women are more likely to have unusual or "atypical" signs of a heart attack. Some of these may come and go before a heart attack occurs.

