Screening Before Symptoms and Sickness

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Outline

- Breast Cancer

  – Risk assessment

  – Screening

- Colon Cancer Screening

- Cardiovascular Risk assessment

  – Cholesterol

  – Coronary artery calcium score (CAC score)

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Breast Cancer Risk Assessment

Most Common Risk Factors
Age
Breast biopsy (even if benign)
Breast Density (>50%)
Higher age at birth of first child
Alcohol use
Family history (1st degree relative)
Lower age at first period
Obesity
Menopause hormone use (>5 years)

Gail Model: Breast Cancer Risk Assessment Tool

http://www.cancer.gov/bcrisktool/

↑ risk of breast cancer = Gail Score ≥1.7%

Many other risk assessment tools available

Tyrer-Cuzick—specifically used to determine if high risk women should get breast MRI screening

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Breast Cancer Risk Assessment

Referral for Genetic Counseling

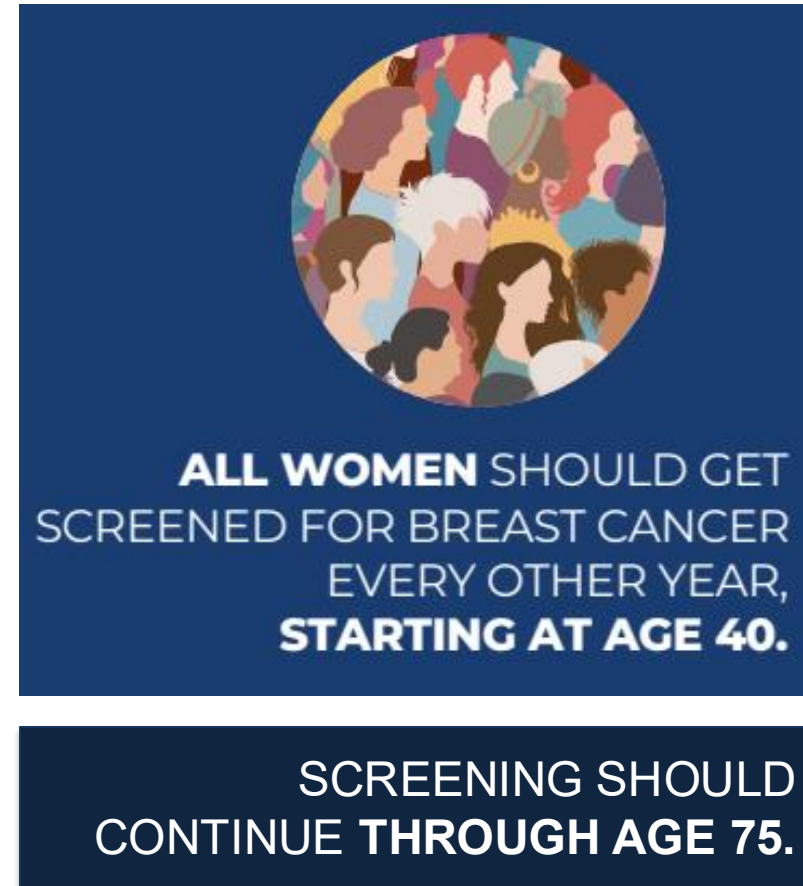https://www.breastcancergenescreen.org/

Considerations for referral:
- Known BRCA gene mutation in family
- ≥2 breast cancers from same side of family
- Breast + ovarian cancer from same side of family
- Breast cancer occurring at or before age 45
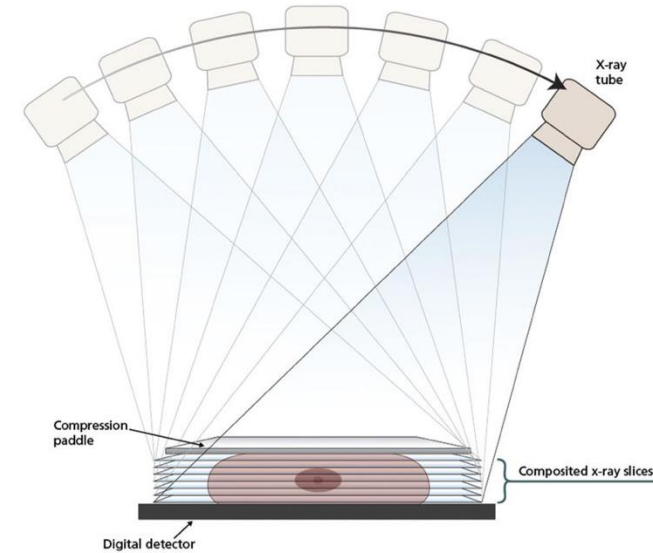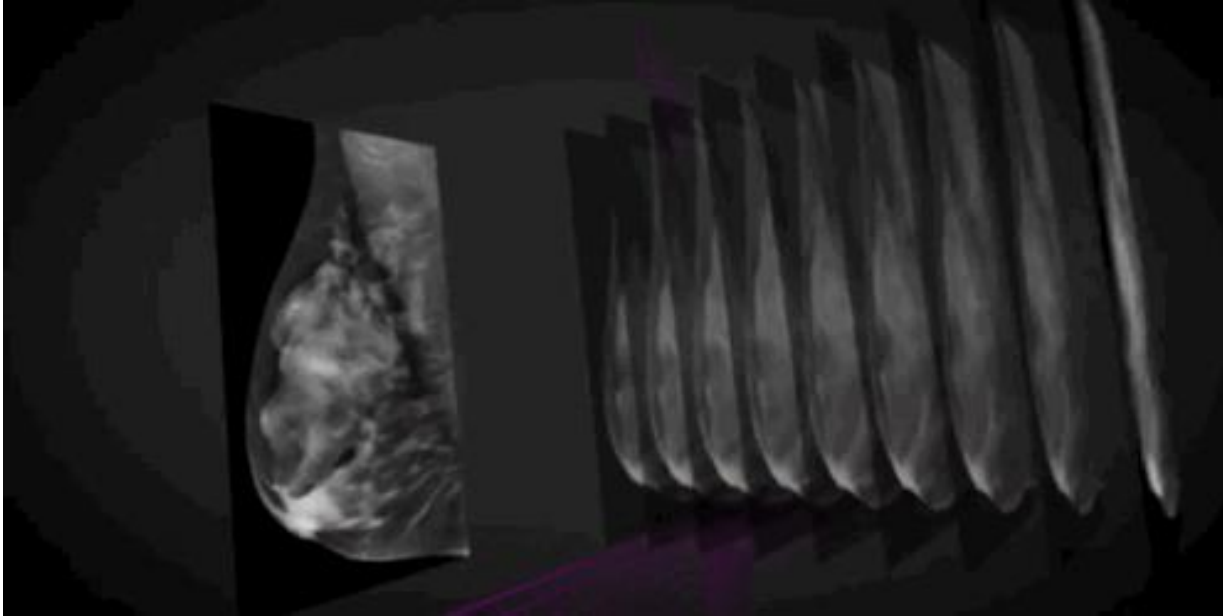- Male relatives with breast cancer

- Counsel on lifestyle/preventive strategies
  - Alcohol use, screening plan
- Consider preventive medication if Gail>1.7%
  - Greater risk → more benefit
  - Determine which medication:
    - Consider menopausal status
    - Consider side effects
    - Consider risk/benefit ratio

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Breast Cancer Screening: Average Risk

U.S. Preventive Services

Task Force (USPSTF)

updated guidelines in 2024

ALL WOMEN SHOULD GET
SCREENED FOR BREAST CANCER
EVERY OTHER YEAR,
STARTING AT AGE 40.

SCREENING SHOULD
CONTINUE **THROUGH AGE 75.**

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Does Type of Mammogram Matter?

Digital Breast Tomosynthesis

3D mammogram = Digital Breast Tomosynthesis (DBT)
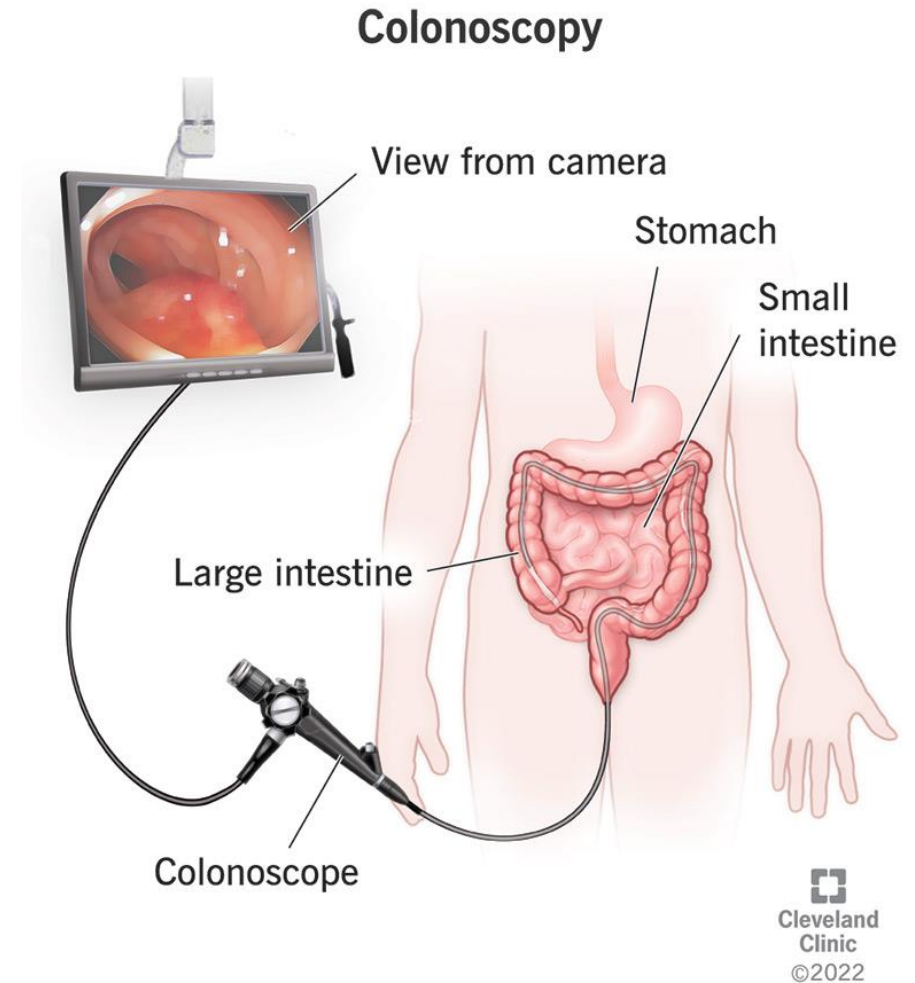
- Used at UTSW in addition to Computer Aided Detection (CAD)

- CAD and evolving AI will be used more frequently over time

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Breast Cancer Screening: Density

- Breast Density is a risk factor for cancer

  – No recommendation on what to do with this finding

  – No evidence that ultrasound or MRI are helpful

- My approach

  – Review breast cancer risk, counsel on preventive strategies

  – Mammogram annually for heterogeneously/extremely dense breast

  – Screening breast MRI if lifetime risk >20% (based on Tyrer-Cuzick)

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Colon Cancer Screening

- Regular screenings are recommended from age 45-75 for **average risk**

  – Colonoscopy is gold standard

  – Acceptable:

  FIT-DNA (Cologuard)→if positive, next step is colonoscopy

Colonoscopy

View from camera

Stomach

Small intestine

Large intestine

Colonoscope

Cleveland Clinic ©2022

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Colon Cancer Screening—Blood Test?

- Epi proColon®

  – FDA approved when *all other* recommended screenings are declined

  – A positive result must be followed by colonoscopy

Professional organizations like American Cancer Society do not endorse as a **primary** screening tool

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Future Directions for Cancer Screening

- Effective screening requires early detection and therapy that is beneficial

> A good screening test picks up early-stage cancers—these are usually the cancers for which treatment would offer the patient a high likelihood of cure (or long-term remission)

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Future Directions for Cancer Screening

- Galleri® (or other MCED: multi-cancer early detection tests)

  – Studies ongoing, not yet recommended

  – Reasonably good at ruling out cancer, but accuracy for cancer varies significantly

- Whole Body MRI

  – Studies ongoing

  – Not recommended for preventive health screening for average risk people outside of a research setting

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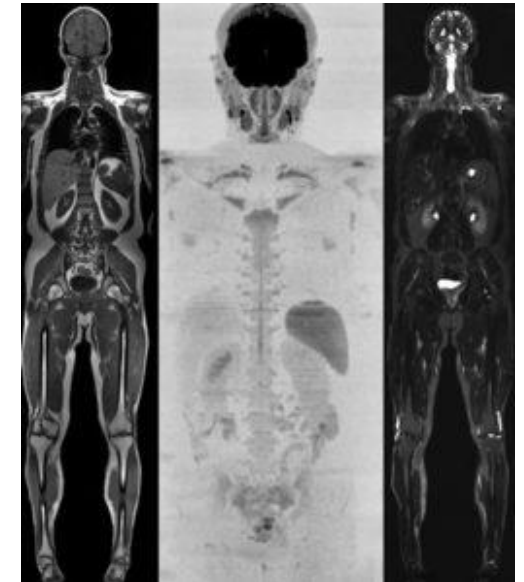
Cardiovascular Risk Assessment

Traditional Risks
High Blood Pressure
High Cholesterol
Smoking
Diabetes
Obesity
Family History

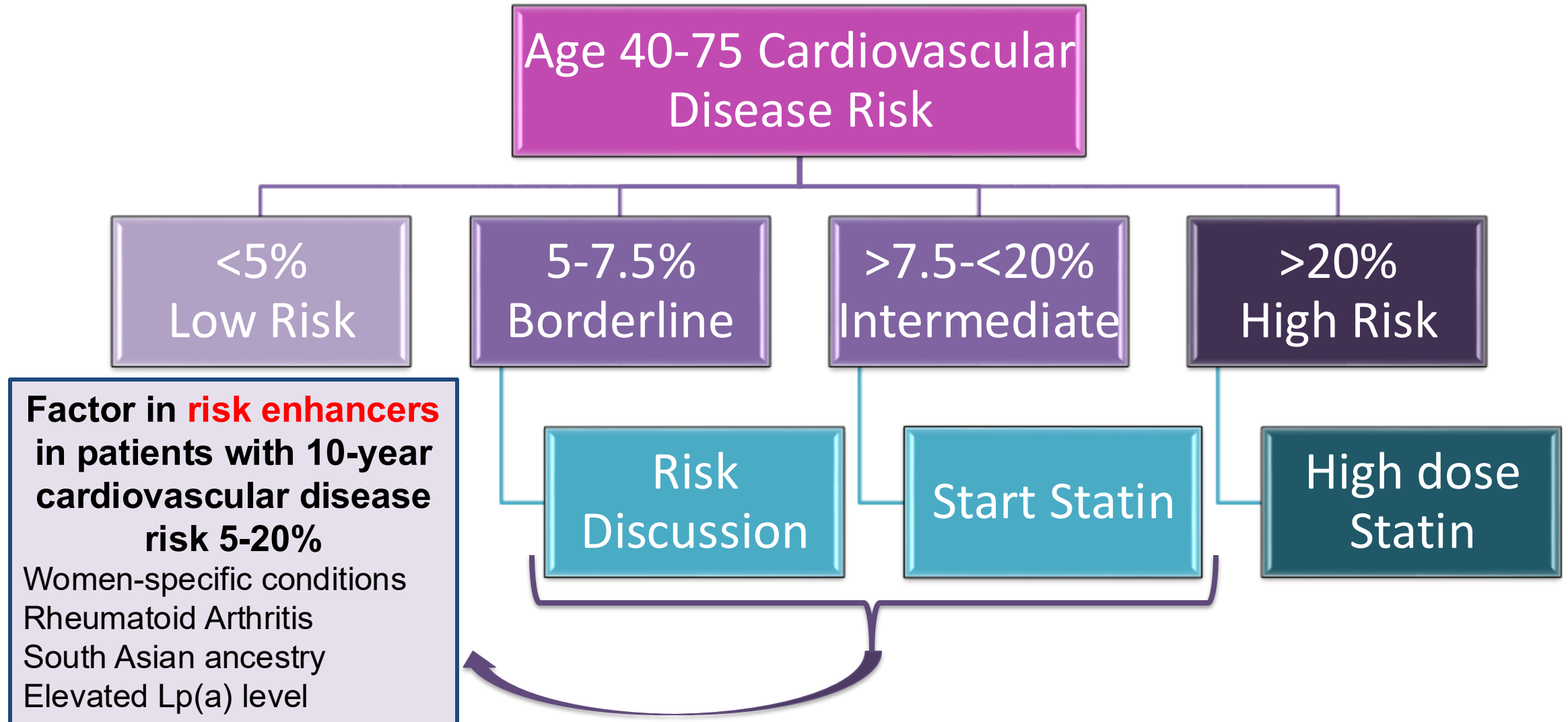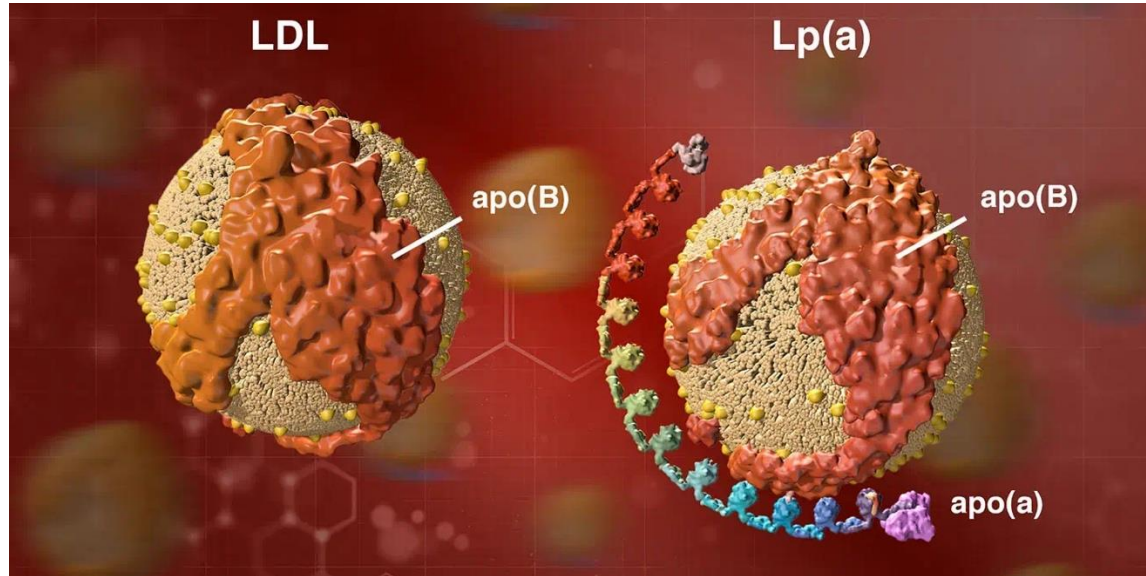| Comprehensive Cardiovascular History in Women |
| --- |
| Polycystic ovary syndrome (PCOS) |
| Gestational Diabetes |
| Gestational Hypertension |
| Preeclampsia |
| Premature Ovarian Failure |
| Age at Menopause |
| Use of Hormone Therapy |

Cholesterol screening every 5 years

Age 40-75: Calculate Risk Score for Cardiovascular Disease

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Cardiovascular Risk Assessment

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                    Age 40-75 Cardiovascular
                          Disease Risk
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<5% Low Risk	5-7.5% Borderline	>7.5-<20% Intermediate	>20% High Risk
	Risk Discussion	Start Statin	High dose Statin

Factor in risk enhancers in patients with 10-year cardiovascular disease risk 5-20%

Women-specific conditions
Rheumatoid Arthritis
South Asian ancestry
Elevated Lp(a) level

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Cardiovascular Risk Assessment

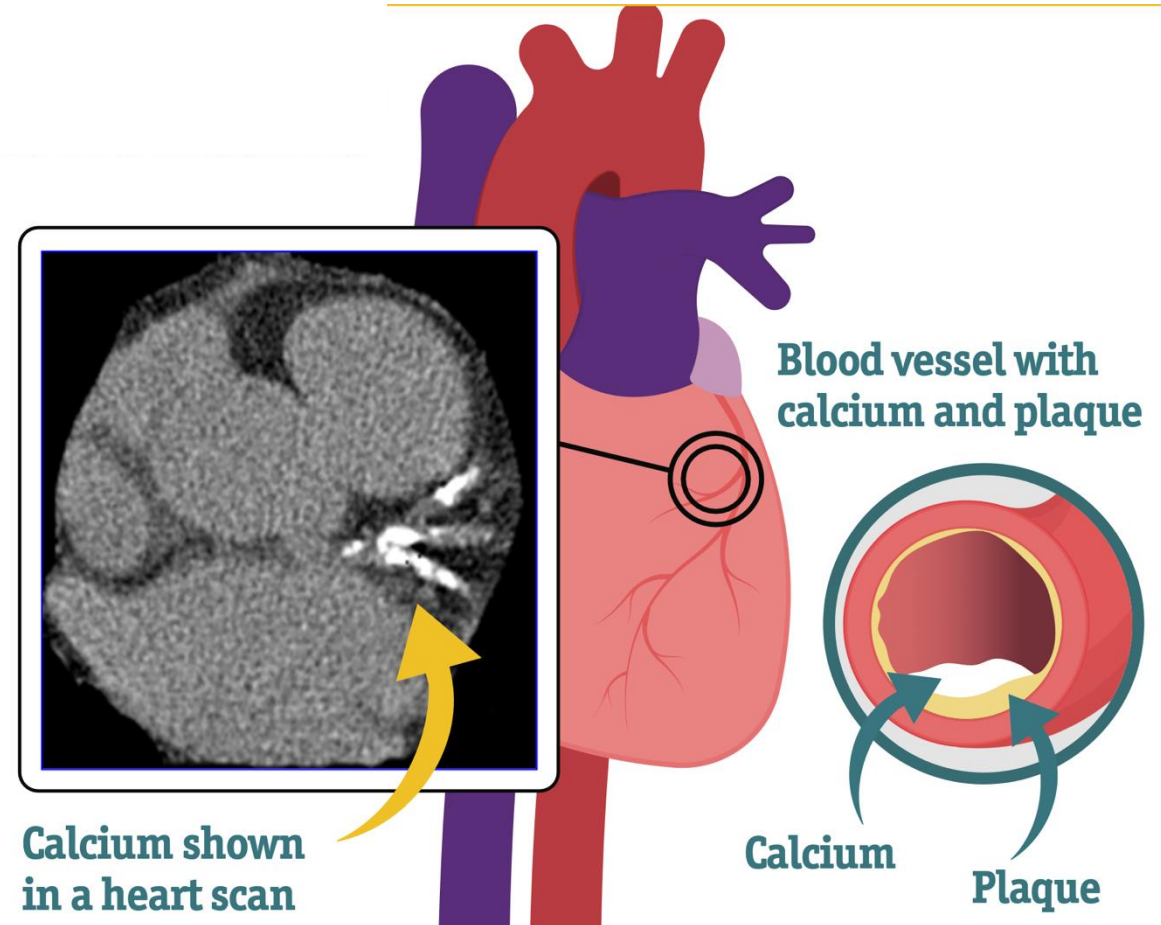Lp(a): independent genetic risk factor for atherosclerotic cardiovascular disease

Lp(a) ≥50 mg/dL is considered a risk-enhancing factor

Talk to your doctor about Lp(a) testing:

- Family or personal history of premature heart disease
  - <45 for men and <55 for women
- Known family history of high Lp(a)
- Diagnosis of familial hypercholesterolemia (FH)

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Cardiovascular Risk Assessment

- What if it's still uncertain?

  – Coronary Artery Calcium score

  (CAC score) done with low dose, no

  contrast CT scan

  – If score = 0, low risk for disease

  – If score >100, clear benefit from statin

Calcium shown in a heart scan

Blood vessel with calcium and plaque

Calcium

Plaque

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Recommendations for <u>Average</u> Risk

Screening Recommendations	
Cervical Cancer	Age 25-65 HPV only (need specific test) every 5 years **Pap smear + HPV every 5 years** → I do not continue past age 65
Breast Cancer	Age 40-75 every other year → I often continue past age 75 for healthy patients
Colon Cancer	Age 45-75 FIT-DNA every 3 years or Colonoscopy every 10 years → I do not continue past age 75
Lung Cancer	Age 50-80 if history of smoking for ≥ 20 years Annual low dose CT scan → I do not continue past age 80

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Recommendations for <u>Average</u> Risk

Screening Recommendations	

Diabetes	Age 35, every 3 years
	  Any age if obese (BMI ≥25) or other risk factors (Gestational Diabetes)
	  -if prediabetic, annually

Thyroid	Age 35, one time (often women have thyroid levels checked for symptoms throughout life)
Cholesterol	Age 20-39, every 5 years Age 40-75, every 2-3 years; complete cardiovascular disease risk assessment and discuss risk enhancers Often annual screening after age 50
Vitamin D	Routine testing no longer recommended for healthy adults

Bone Density (DEXA)	Age 65
Hepatitis C	All adults once (All pregnant women during each pregnancy)
HIV	All adults once Higher risk, annually (All pregnant women during each pregnancy)

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Questions

Thank you!

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