Lung Cancer Screening: Is It Right For Me?

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Learning objectives

At the conclusion of this activity, participants will be able to:

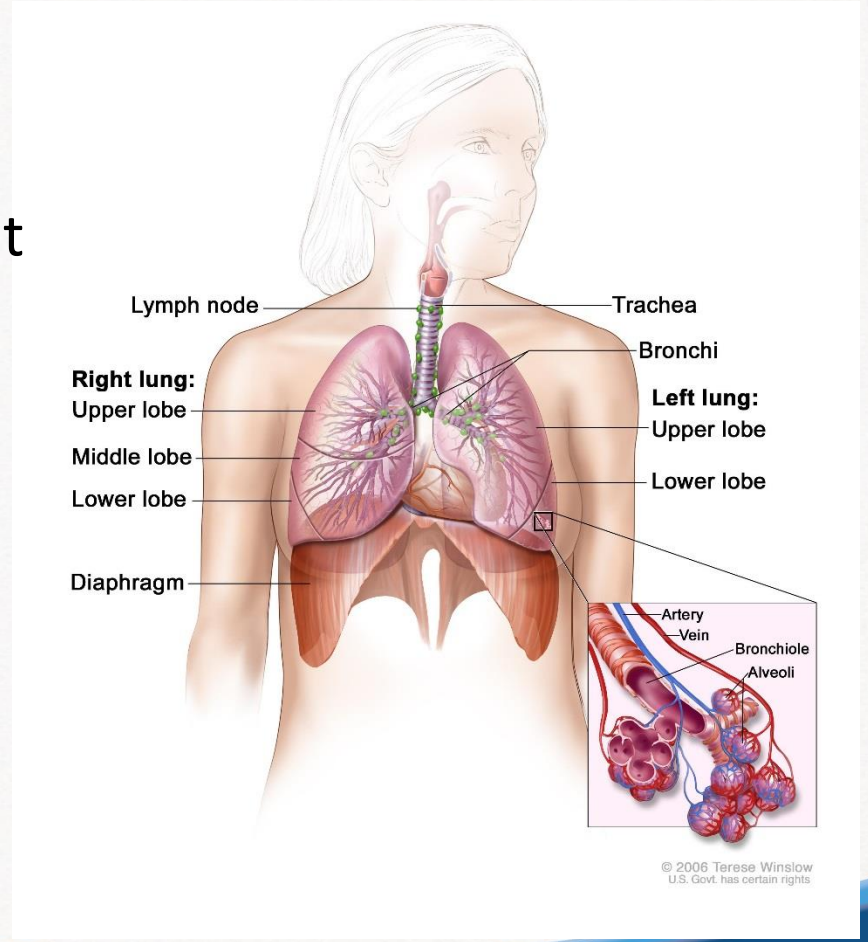
1. Understand the idea of screening for lung cancer.
2. Understand the problem of lung cancer as a health risk.
3. Describe the risks and benefits to lung cancer screening so that you can make an informed decision about whether to undergo screening.
4. Understand the process that will occur after you have your CT Scan done.

Why Screen for Lung Cancer

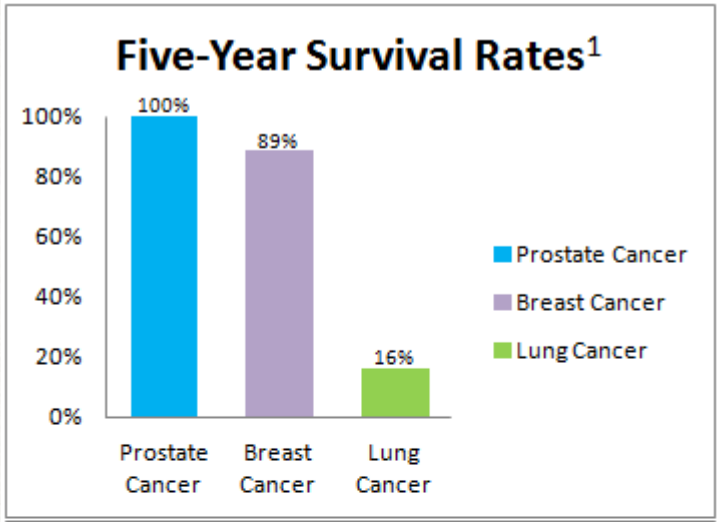
- Screening is a process of looking for cancer before a person has any symptoms.
- Screening is important because often if we wait for symptoms, the cancer will have spread and be harder to treat.
- Recently we have found that we can effectively screen for lung cancer in patients at high risk for lung cancer.

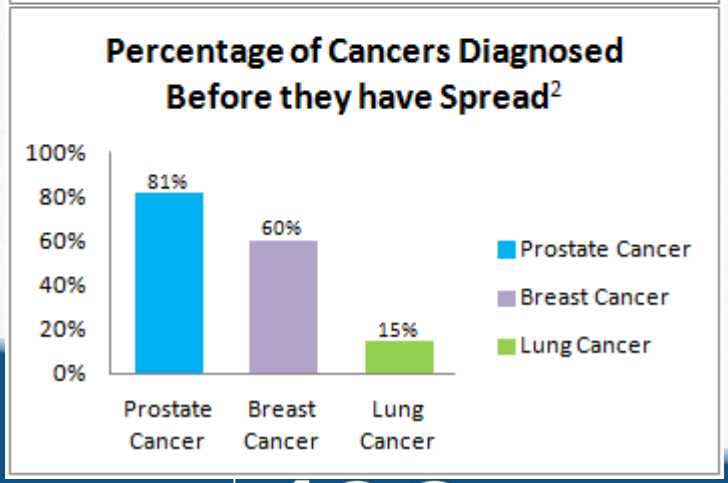
What is Lung Cancer?

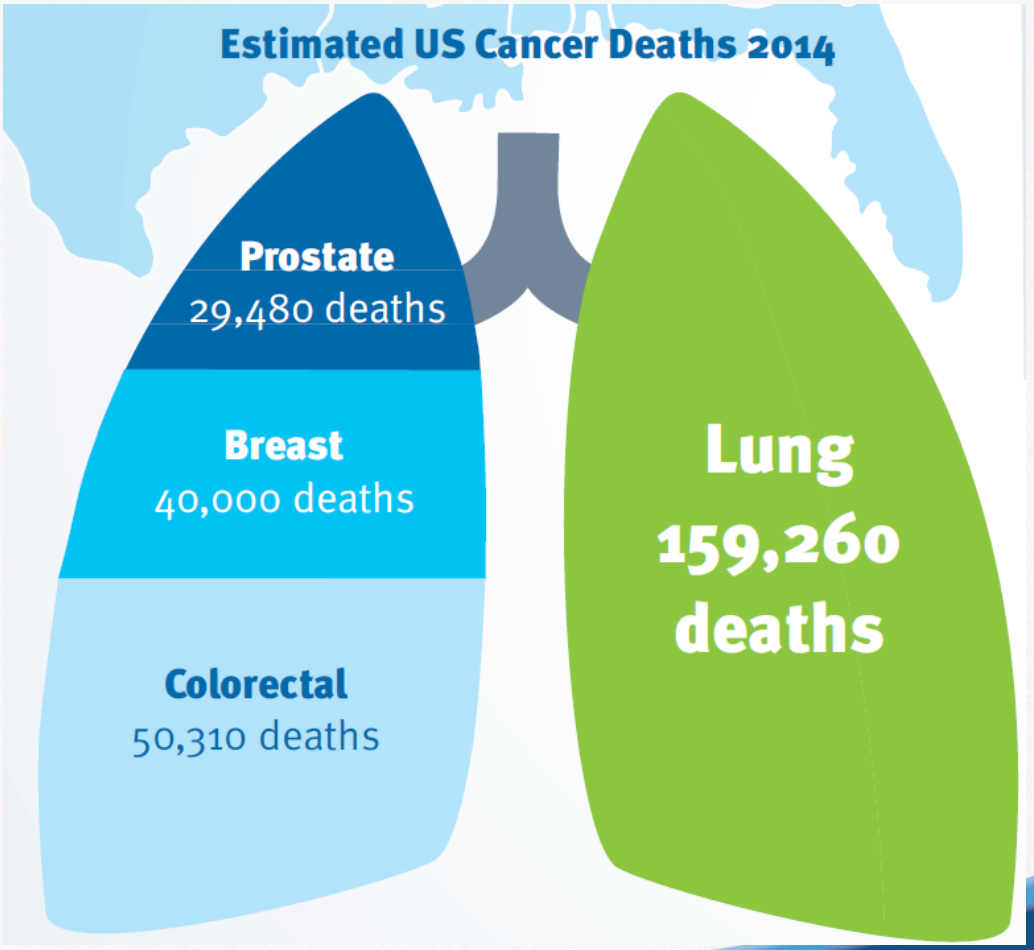
- Lungs:
  - Organs in the chest which bring in oxygen and send out carbon dioxide.
- Cancer
  - Cells normally stay in place
  - Cancer cells constantly divide and grow and then spread to other areas.



Lung Cancer Is Deadly







How to Screen for Lung Cancer

- Sputum Cytology
  - Sample of mucus from your lungs is looked at under a microscope for cancer cells
- Chest Xray
- Low Dose Chest CAT Scan (LDCT)
  - The only test that has been shown to save lives

How Do We Know the LDCT Saves Lives?

- National Lung Cancer Screening Trial
- Studied Over 53,000 people at high risk for lung cancer
- By chance, they either were screened with CXR or LDCT
- 3 yearly scans and then followed for 6.5 years
- Reduced cancer deaths by 20%
  - Screen 320 patients to save 1 life

Benefits of LDCT

SUMMARY OF THE EVIDENCE FROM THE NATIONAL LUNG SCREENING TRIAL*

Benefits: How did LDCT scans compare with chest x-rays in reducing deaths from lung cancer per 1,000 people screened?

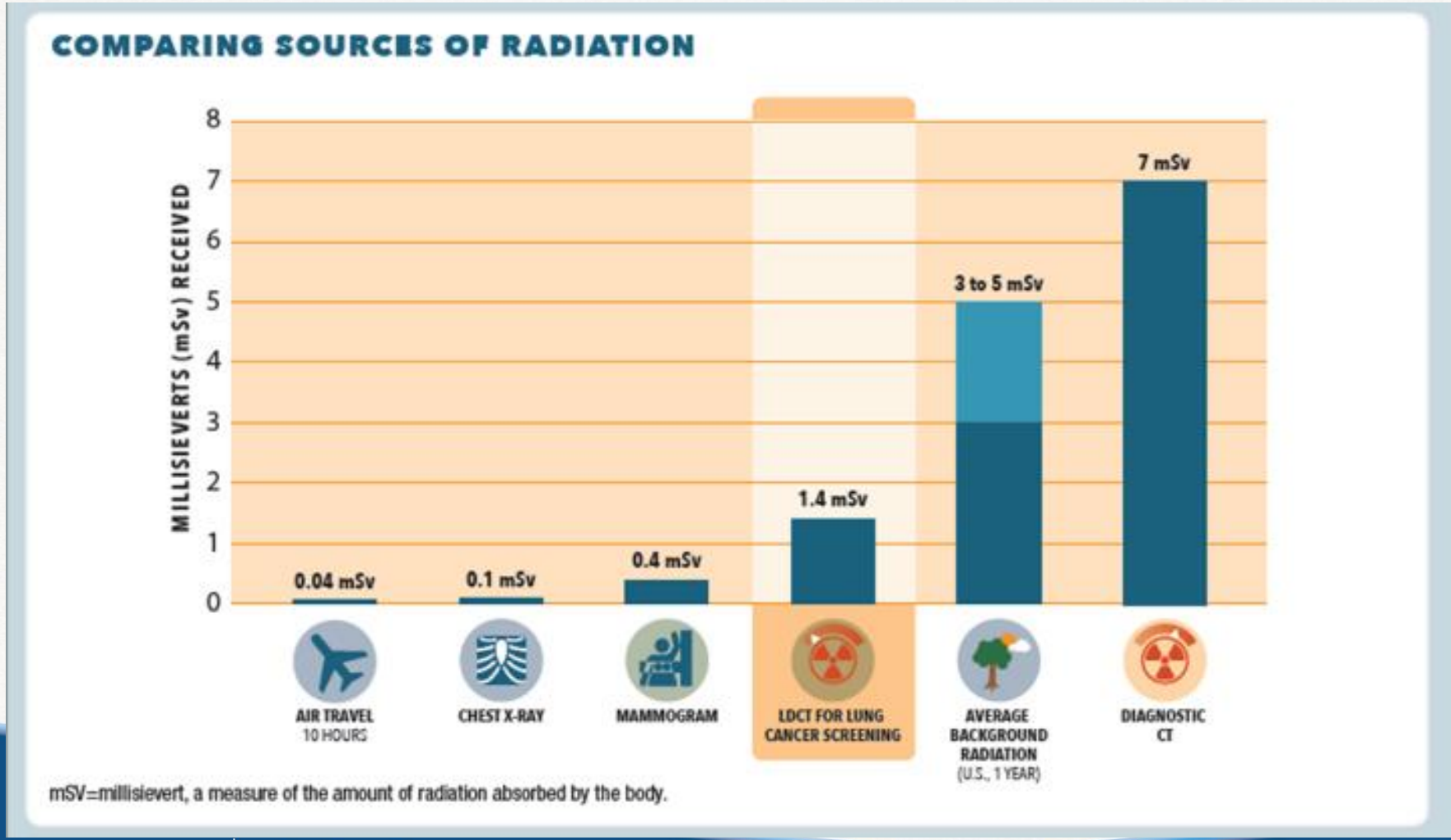
	LDCT	Chest x-ray	
Deaths from lung cancer over 6.5-year followup period	18 in 1,000	21 in 1,000	3 in 1,000 fewer deaths from lung cancer with LDCT
Deaths from all causes over 6.5-year followup period	70 in 1,000	75 in 1,000	5 in 1,000 fewer deaths from all causes with LDCT

*About the NLST: more than 50,000 smokers participated; participants had up to three annual screenings; average followup was 6.5 years.

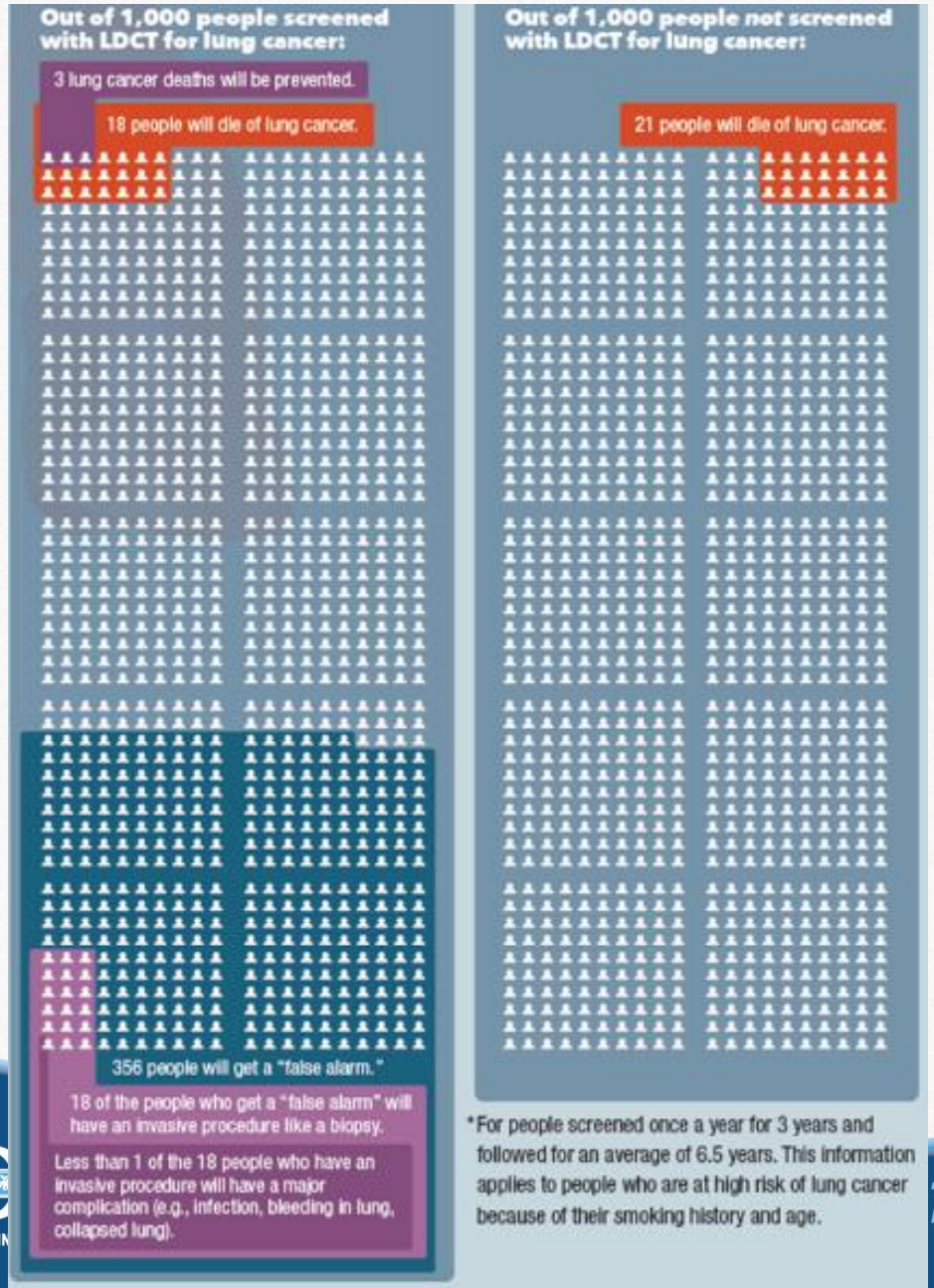
Are There Risks?

- Radiation Exposure
- High False Alarm Rate
  - 20-25% per scan
- Need for Invasive Procedures
- Overdiagnosis
- Other Findings In Chest

Radiation Exposure



False Alarms and Invasive Procedures



Overdiagnosis

- Some lung cancers would never harm a patient
  - 1 -2 out of every 10 lung cancers found with screening
- Doctors don't know which ones those are so we treat them all the same
- So, for these people, they are exposed to the risk of cancer treatment without any benefit

Other Findings In Chest

- Emphysema
- Narrowing of Arteries in Heart
  - "coronary calcification"
- Scarring in Lung
  - "lung fibrosis"
- Widening of Arteries in Chest
  - "aortic aneurysm"

Overview of Risks and Benefits

- Given the risks, we only want to do screening on patients who are at high risk for lung cancer and are otherwise eligible
- Risk Factors:
  - Age
  - Smoking History

Eligibility Criteria

Criteria according to:	USPSTF	CMS[a]
Relevant group:	Persons with private health insurance	Medicare beneficiaries
Age (years):	55–80	55–77
Smoking status:	Current or former[b] smoker	
Smoking history:	30 pack-years[c]	
Lung cancer signs:	Asymptomatic (no signs of lung cancer)	
Screening frequency:	Yearly	
When to stop screening:	The patient exceeds upper age criterion, has not smoked for more than 15 years, and/or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative surgery	

CMS = Centers for Medicare & Medicaid Services; USPSTF = U.S. Preventive Services Task Force

[a] CMS requires that the beneficiary receive a written order for LDCT by a physician or nonphysician practitioner, as outlined in CMS policies for initial or subsequent LDCT lung cancer screening.

[b] Former smokers must have quit within the last 15 years.

[c] [Number of pack-years = (Average number of packs smoked per day) X (Years smoked)] Note there are 20 cigarettes in 1 pack.

Smoking History

Calculate pack-years

(20 cigarettes = 1 pack)

Number of years smoked	×	Average number of packs smoked per day	=	Pack-years

Remember, the best way to lower your chances of dying from lung cancer is to stop smoking.

More than 8 out of every 10 lung cancer cases in the United States are from smoking.

Lung cancer screening should not be done instead of quitting smoking. If you currently smoke, talk to your health care professional or call the nationwide quit line at

1-800-QUIT-NOW
(1-800-784-8669).

SMOKING CESSATION RESOURCES

BeTobaccoFree.gov (U.S. Department of Health and Human Services)
tinyurl.com/ap657cz
Smoking Quitline: 1-877-448-7848

Smoking & Tobacco Use (Centers for Disease Control and Prevention)
tinyurl.com/ya5jlvl
Smoking Quitline: 1-800-784-8669

Help for Smokers and Other Tobacco Users (Agency for Healthcare Research and Quality)
tinyurl.com/owj68h4

Smokefree.gov (U.S. Department of Health and Human Services)
smokefree.gov/ready-to-quit

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Signs of Lung Cancer

Possible signs and symptoms of lung cancer

- A new cough that does not go away or gets worse
- Chest pain that is often worse when you breathe deeply, cough, or laugh
- A hoarse voice
- Unexplained weight loss and loss of appetite
- Coughing up blood or rust-colored spit or phlegm
- Shortness of breath
- Infections such as bronchitis and pneumonia that do not go away or keep coming back
- Wheezing

Many patients with lung cancer do not have any symptoms when the cancer first starts. It is best to find lung cancer early before symptoms start, when the cancer is more easily treated. This is why screening is important.

If you have any signs or symptoms of lung cancer, be sure to tell your health care professional.

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What Happens After My CT

- Letter to explain findings and recommendations.

Size of solid lung nodule	Size of part-solid lung nodule	When should you get the first follow-up test?					
<6 mm	<6 mm	Get an LDCT in a year					
6–<8 mm	≥6 mm with solid part <6 mm	Get an LDCT in 6 months					
8–<15 mm	≥6 mm with solid part 6–<8 mm	Get an LDCT in 3 months or Consider getting PET/CT					
≥15 mm	Solid part ≥8 mm	Chest CT with or without contrast and/or PET/CT	Low concern for lung cancer	→	LDCT in 3 months	→	If no cancer, LDCT every year until curative treatment is not an option
			High concern for lung cancer	→	Biopsy or surgery	→	If cancer, start cancer treatment

What Happens After My CT – One Example

- Letter to explain findings:

Size of Nodule	Likelihood Of Cancer in next 6.5 Years	When should you get the first follow-up test?
< 6mm	1/200	Get a LDCT in 1 year
6 – <8 mm	1/100	Get an LDCT in 6 months
8 – <15 mm	2/100	Get a LDCT in 3 months or consider getting a PET Scan and Physician Visit
>= 15 mm	Depends on size	Physician Visit

- Refer to PCP for any other findings

Questions/Discussion:

- What are your thoughts about lung cancer screening?
- I know I have given you a lot of information. Tell me in your own words what you have heard.
- We talked about the risks of screening. What do you think about those risks?