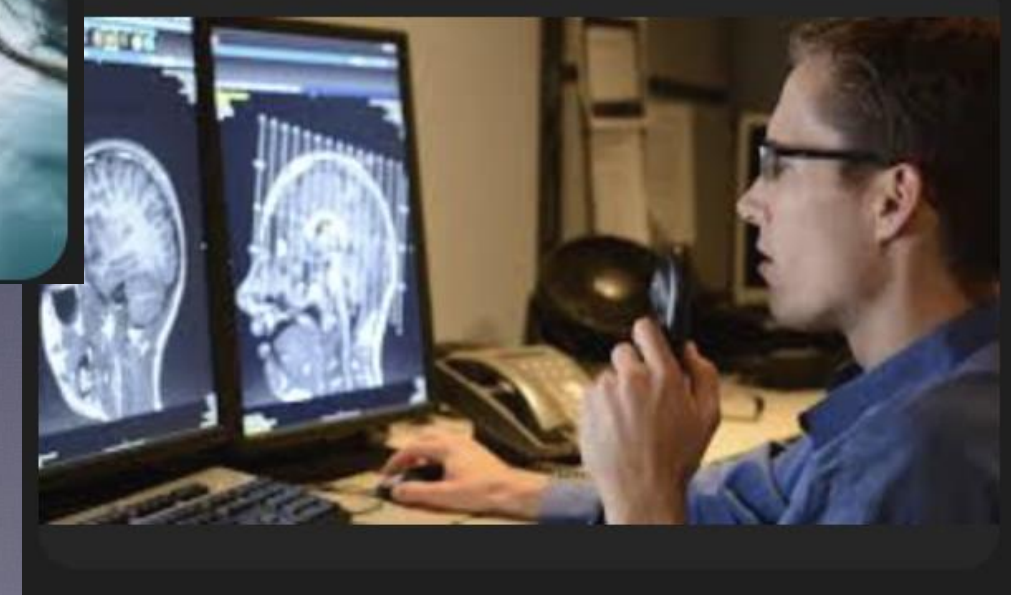
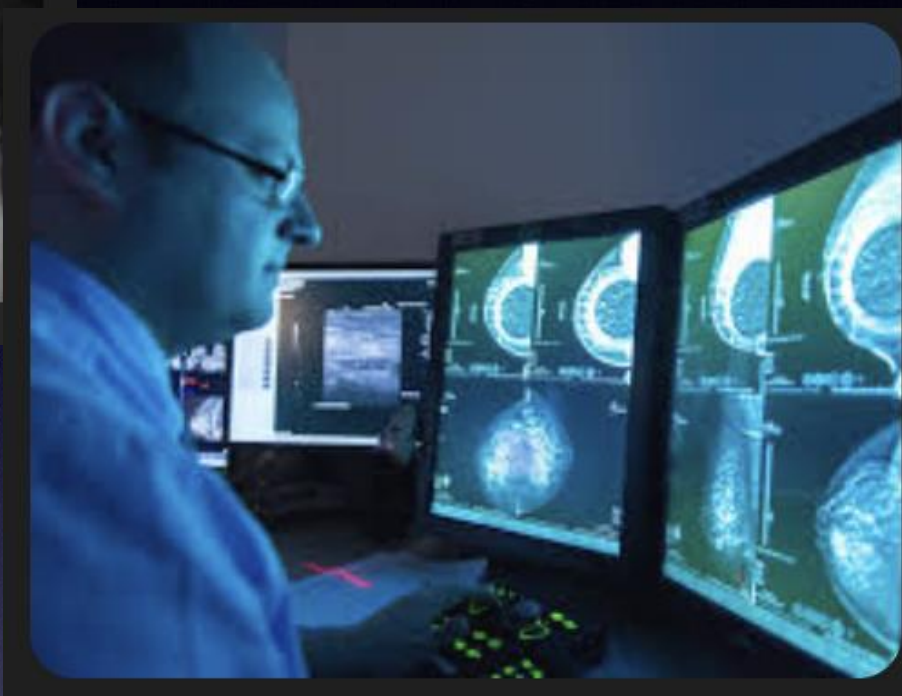
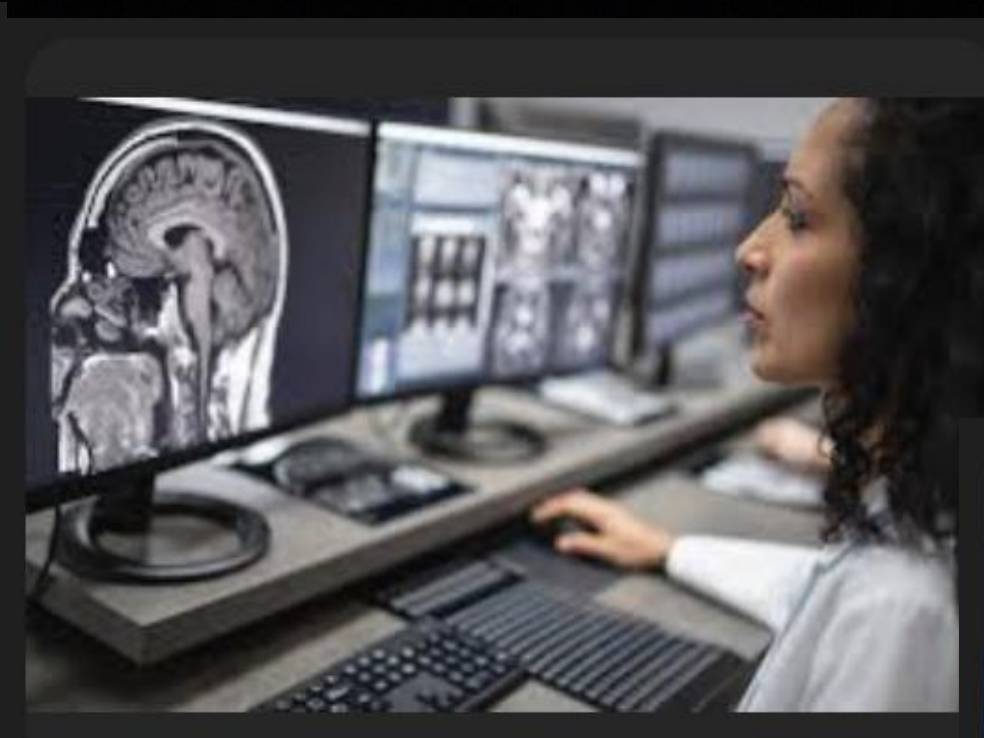


EPA Tri-Regional Radon Stakeholder Meeting 2024

Lung Cancer Screening Saves Lives

Chivonne Harrigal, M.D.
Radiologist
Cancer Care Specialists,
Personalized Imaging Consultants
Reno, NV

Why am I here?



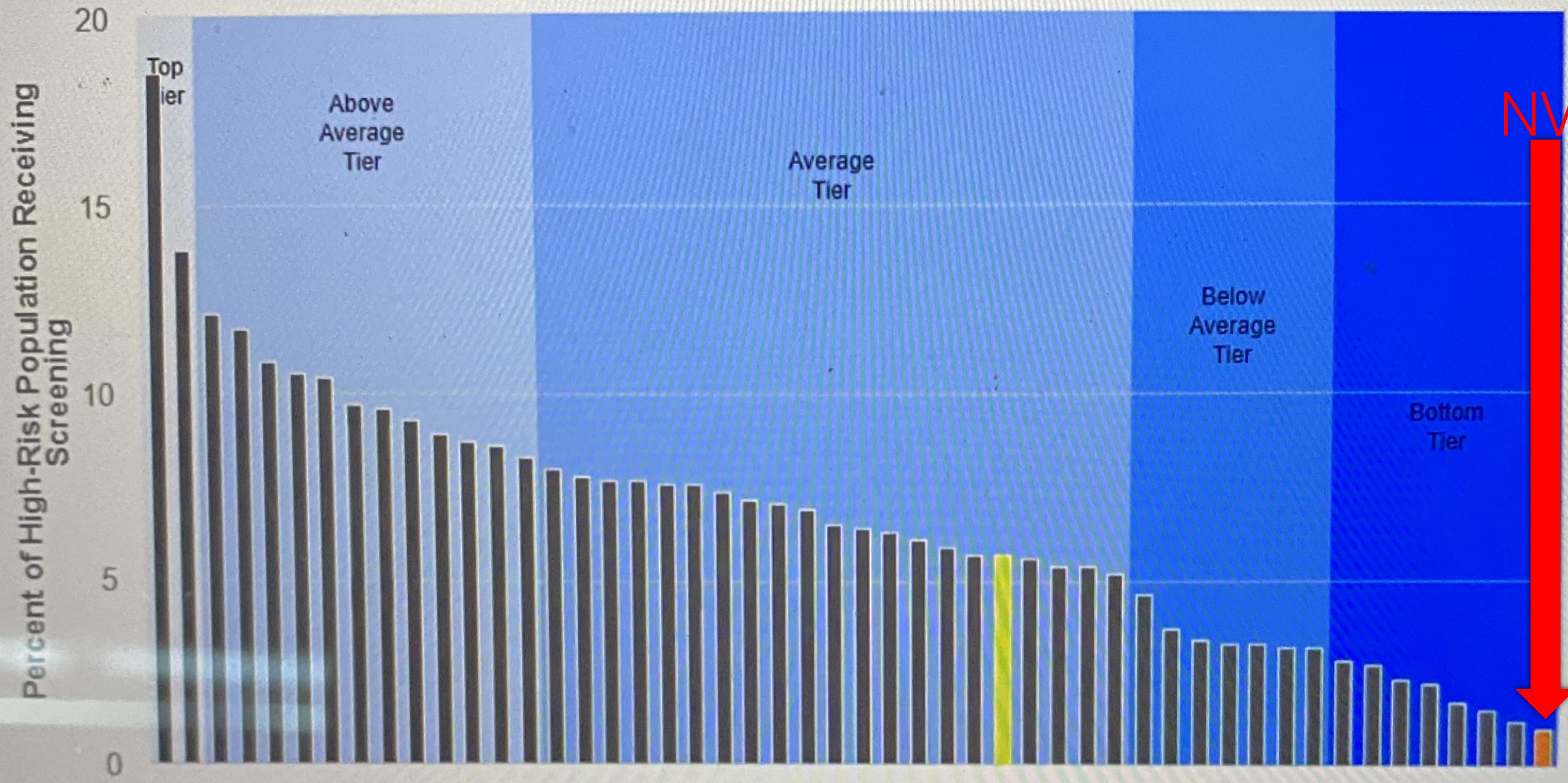


3 years ago...

#1. Heard about radon.
Got my home tested.

#2. Saw state rankings for lung cancer screening.

State Ranking by High-Risk Screening Rate



Why do we care about
Radon?

Radon is a big deal!

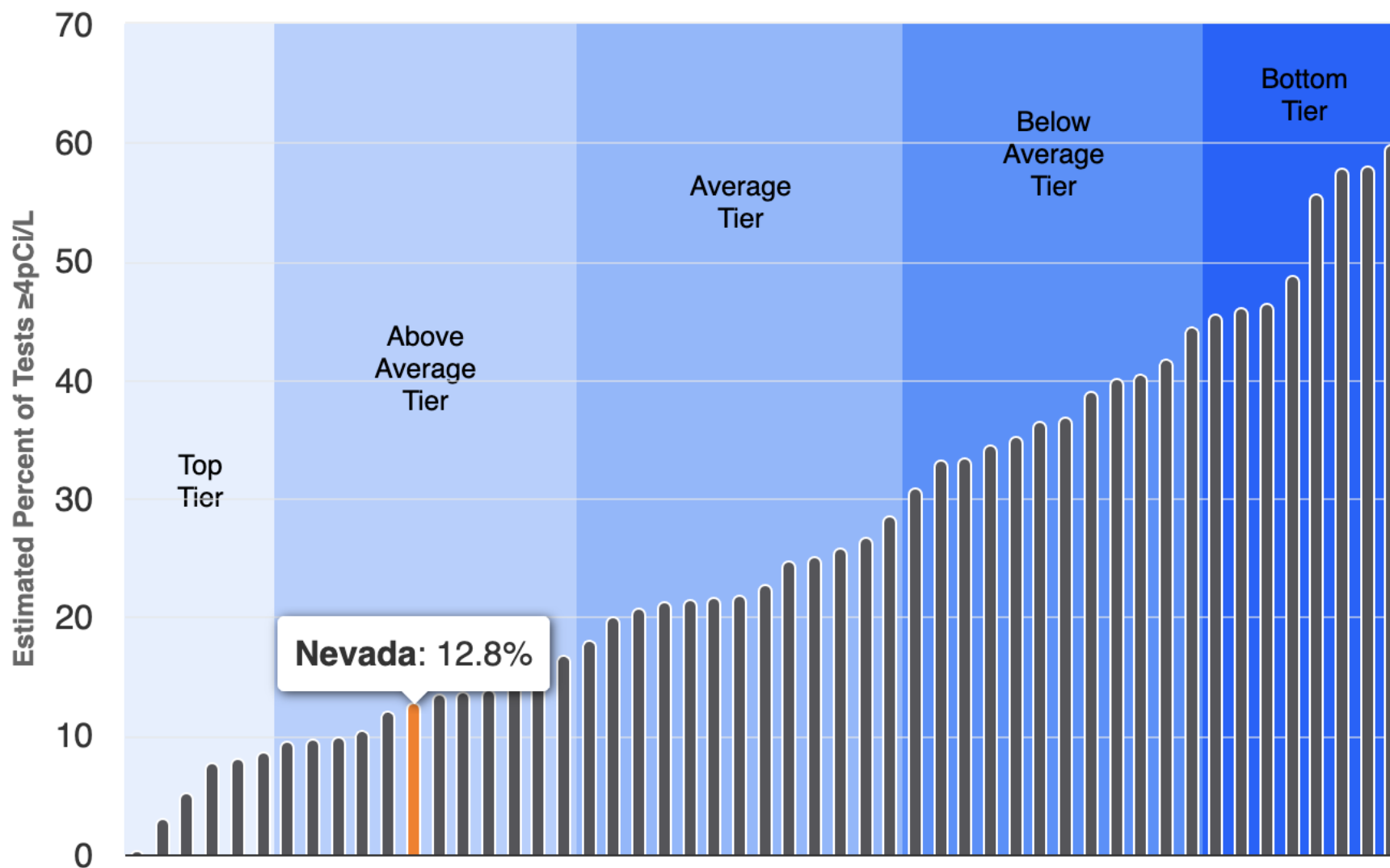
What is Radon?

- Radioactive gas produced from decay of Uranium in soil
- Moves up from the ground into your home
- 2nd leading cause of lung cancer in US (after smoking)!

Why care about Radon?

- Leading cause of lung cancer in non-smokers
- Take corrective action/mitigation if high levels are found
- Test your homes for radon!

State Rankings by Percent of Tests At or Above EPA Action Level ☰



Radon:

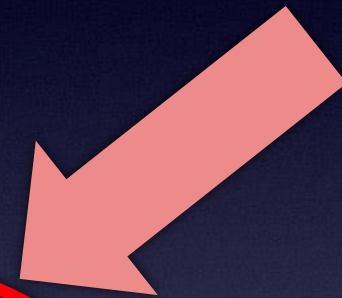
- In Nevada, **12.8%** of radon tests results were at or above the action level recommended by EPA.
- It ranks **12th** among all states, placing it in the **above average tier**.

Saving lives from lung cancer

Prevention



Treatment

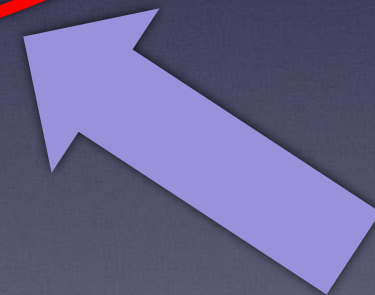


Lung Cancer

Early Detection



Health Equity



Saving lives from lung cancer

- **Prevention:** smoking, radon, air pollution
- **Early Detection:** screening
- **Treatment:** biomarker, immunotherapy, targeted
- **Health Equity:** reducing racial, economic and rural health disparities

Saving lives from lung cancer

- **Prevention:** smoking, radon, air pollution
- **Early Detection:** screening
- **Treatment:** biomarker, immunotherapy, targeted
- **Health Equity:** reducing racial, economic and rural health disparities

Saving lives from lung cancer

- **Prevention:** smoking, radon, air pollution
- **Early Detection:** screening
- **Treatment:** biomarker, immunotherapy, targeted
- **Health Equity:** reducing racial, economic and rural health disparities

Why do we care about
lung cancer?

Lung cancer is the leading
cause of cancer death in
men and women.

Lung cancer kills more people
than breast, colon and prostate
cancers combined!

Estimated new cases, 2023

By cancer type, both sexes combined

Breast ⓘ



Prostate



Lung and bronchus



Colorectum ⓘ



Melanoma of the skin



Urinary bladder ⓘ



EXPAND TO SEE ALL DATA

Estimated new cases, 2023

By cancer type, both sexes combined

Breast ⓘ



Prostate



Lung and bronchus



Colorectum ⓘ



Melanoma of the skin



Urinary bladder ⓘ



EXPAND TO SEE ALL DATA

Estimated deaths, 2023

By cancer type, both sexes combined

Lung and bronchus



Colorectum ⓘ



Pancreas



Breast ⓘ



Prostate



Liver and intrahepatic bile duct



 EXPAND TO SEE ALL DATA

Estimated deaths, 2023

By cancer type, both sexes combined

Lung and bronchus

127,070

Colorectum ⓘ

52,550

Pancreas

50,550

Breast ⓘ

43,700

Prostate

34,700

Liver and intrahepatic bile duct



29,380



EXPAND TO SEE ALL DATA



Cancer Incidence

Estimated New Cases

			Males	Females			
Prostate	268,490	27%			Breast	287,850	31%
Lung & bronchus	117,910	12%			Lung & bronchus	118,830	13%
Colon & rectum	80,690	8%			Colon & rectum	70,340	8%
Urinary bladder	61,700	6%			Uterine corpus	65,950	7%
Melanoma of the skin	57,180	6%			Melanoma of the skin	42,600	5%
Kidney & renal pelvis	50,290	5%			Non-Hodgkin lymphoma	36,350	4%
Non-Hodgkin lymphoma	44,120	4%			Thyroid	31,940	3%
Oral cavity & pharynx	38,700	4%			Pancreas	29,240	3%
Leukemia	35,810	4%			Kidney & renal pelvis	28,710	3%
Pancreas	32,970	3%			Leukemia	24,840	3%
All Sites	983,160	100%	All Sites	934,870	100%		



Cancer Incidence

Estimated New Cases

			Males	Females			
Prostate	268,490	27%			Breast	287,850	31%
Lung & bronchus	117,910	12%			Lung & bronchus	118,830	13%
Colon & rectum	80,690	8%			Colon & rectum	70,340	8%
Urinary bladder	61,700	6%			Uterine corpus	65,950	7%
Melanoma of the skin	57,180	6%			Melanoma of the skin	42,600	5%
Kidney & renal pelvis	50,290	5%			Non-Hodgkin lymphoma	36,350	4%
Non-Hodgkin lymphoma	44,120	4%			Thyroid	31,940	3%
Oral cavity & pharynx	38,700	4%			Pancreas	29,240	3%
Leukemia	35,810	4%			Kidney & renal pelvis	28,710	3%
Pancreas	32,970	3%			Leukemia	24,840	3%
All Sites	983,160	100%	All Sites	934,870	100%		



Cancer Deaths

Estimated Deaths

			Males	Females			
Lung & bronchus	68,820	21%			Lung & bronchus	61,360	21%
Prostate	34,500	11%			Breast	43,250	15%
Colon & rectum	28,400	9%			Colon & rectum	24,180	8%
Pancreas	25,970	8%			Pancreas	23,860	8%
Liver & intrahepatic bile duct	20,420	6%			Ovary	12,810	4%
Leukemia	14,020	4%			Uterine corpus	12,550	4%
Esophagus	13,250	4%			Liver & intrahepatic bile duct	10,100	4%
Urinary bladder	12,120	4%			Leukemia	9,980	3%
Non-Hodgkin lymphoma	11,700	4%			Non-Hodgkin lymphoma	8,550	3%
Brain & other nervous system	10,710	3%			Brain & other nervous system	7,570	3%
All Sites	322,090	100%			All Sites	287,270	100%

Cancer Deaths

Estimated Deaths

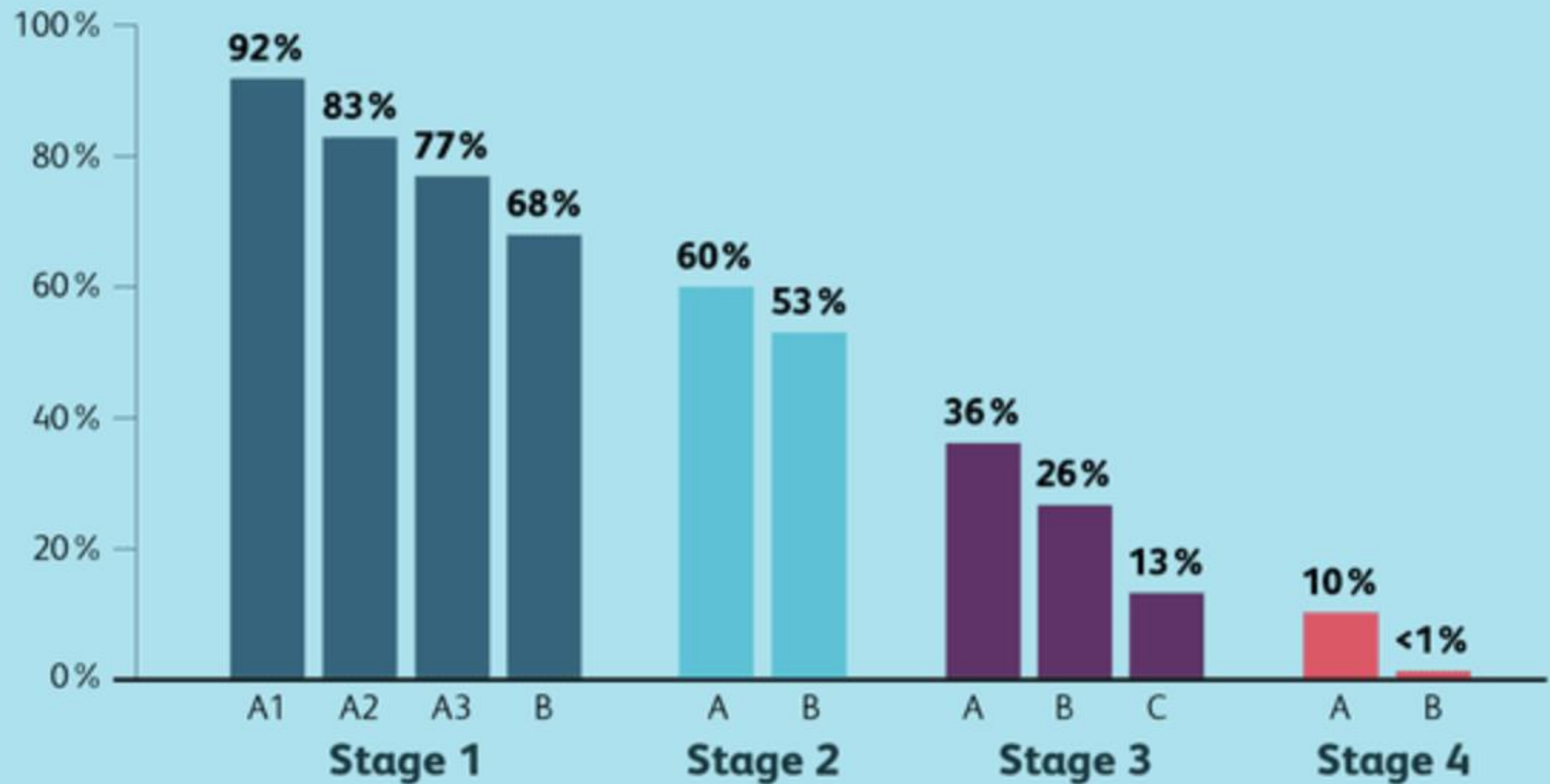
			Males	Females			
Lung & bronchus	68,820	21%			Lung & bronchus	61,360	21%
Prostate	34,500	11%			Breast	43,250	15%
Colon & rectum	28,400	9%			Colon & rectum	24,180	8%
Pancreas	25,970	8%			Pancreas	23,860	8%
Liver & intrahepatic bile duct	20,420	6%			Ovary	12,810	4%
Leukemia	14,020	4%			Uterine corpus	12,550	4%
Esophagus	13,250	4%			Liver & intrahepatic bile duct	10,100	4%
Urinary bladder	12,120	4%			Leukemia	9,980	3%
Non-Hodgkin lymphoma	11,700	4%			Non-Hodgkin lymphoma	8,550	3%
Brain & other nervous system	10,710	3%			Brain & other nervous system	7,570	3%
All Sites	322,090	100%			All Sites	287,270	100%

4 out of 5 people diagnosed
with lung cancer will die from
lung cancer.

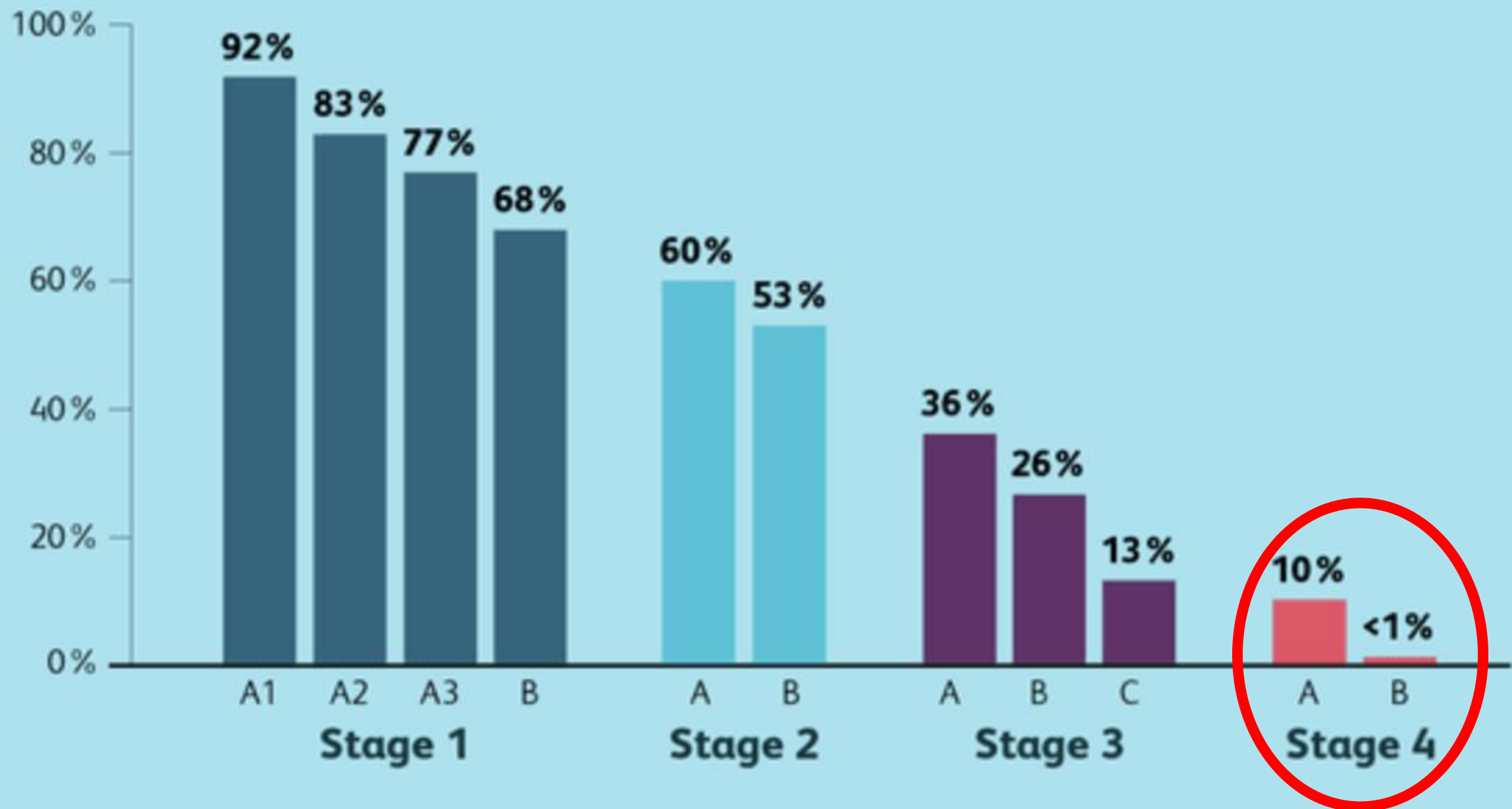
Why is lung cancer
so deadly?

Because it is usually found
too late.

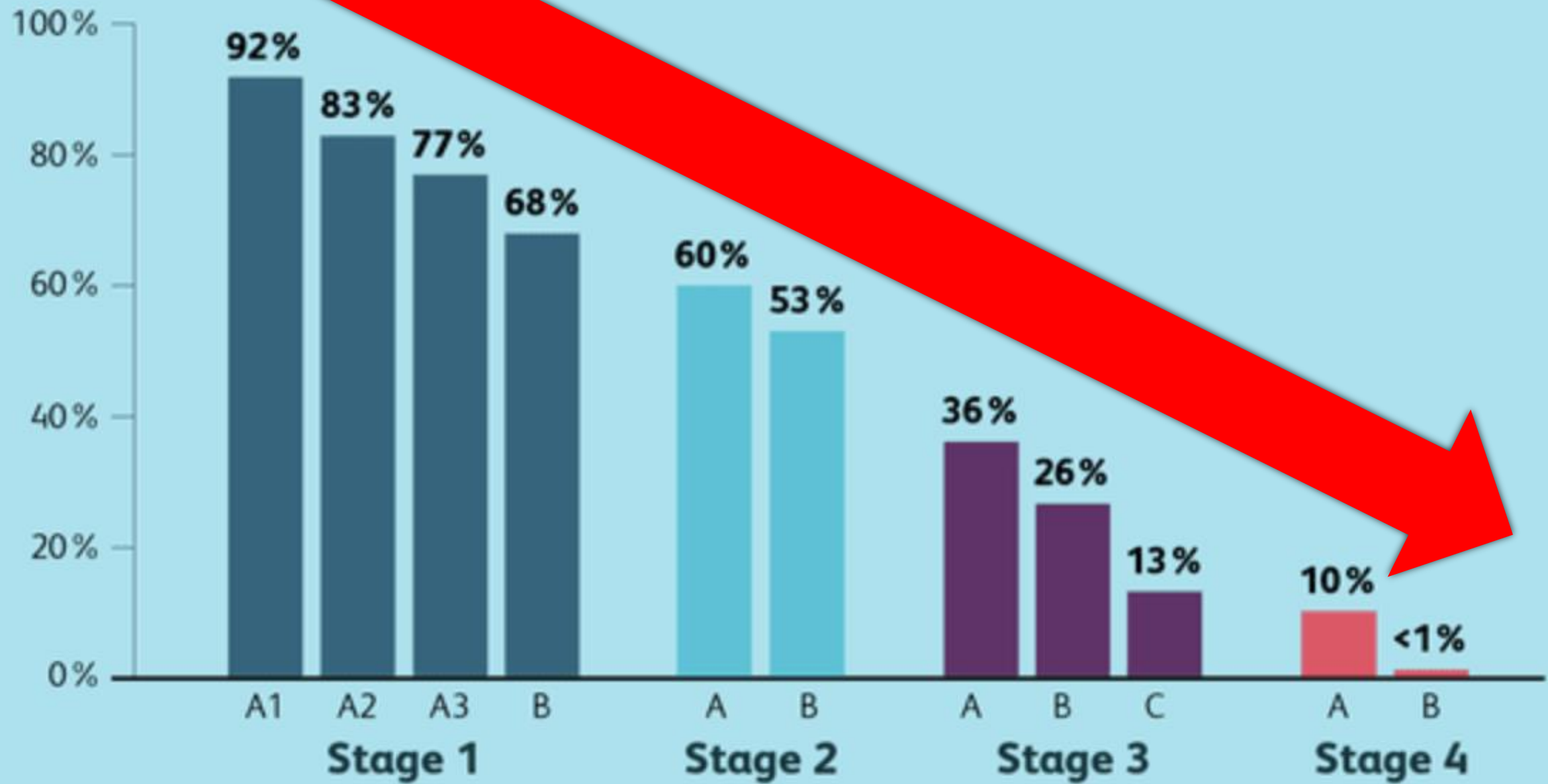
Non-Small Cell Lung Cancer: 5-Year Survival Rates



Non-Small Cell Lung Cancer: 5-Year Survival Rates



Non-Small Cell Lung Cancer: 5-Year Survival Rates



Clinical outcome is
directly related to the
stage at diagnosis.

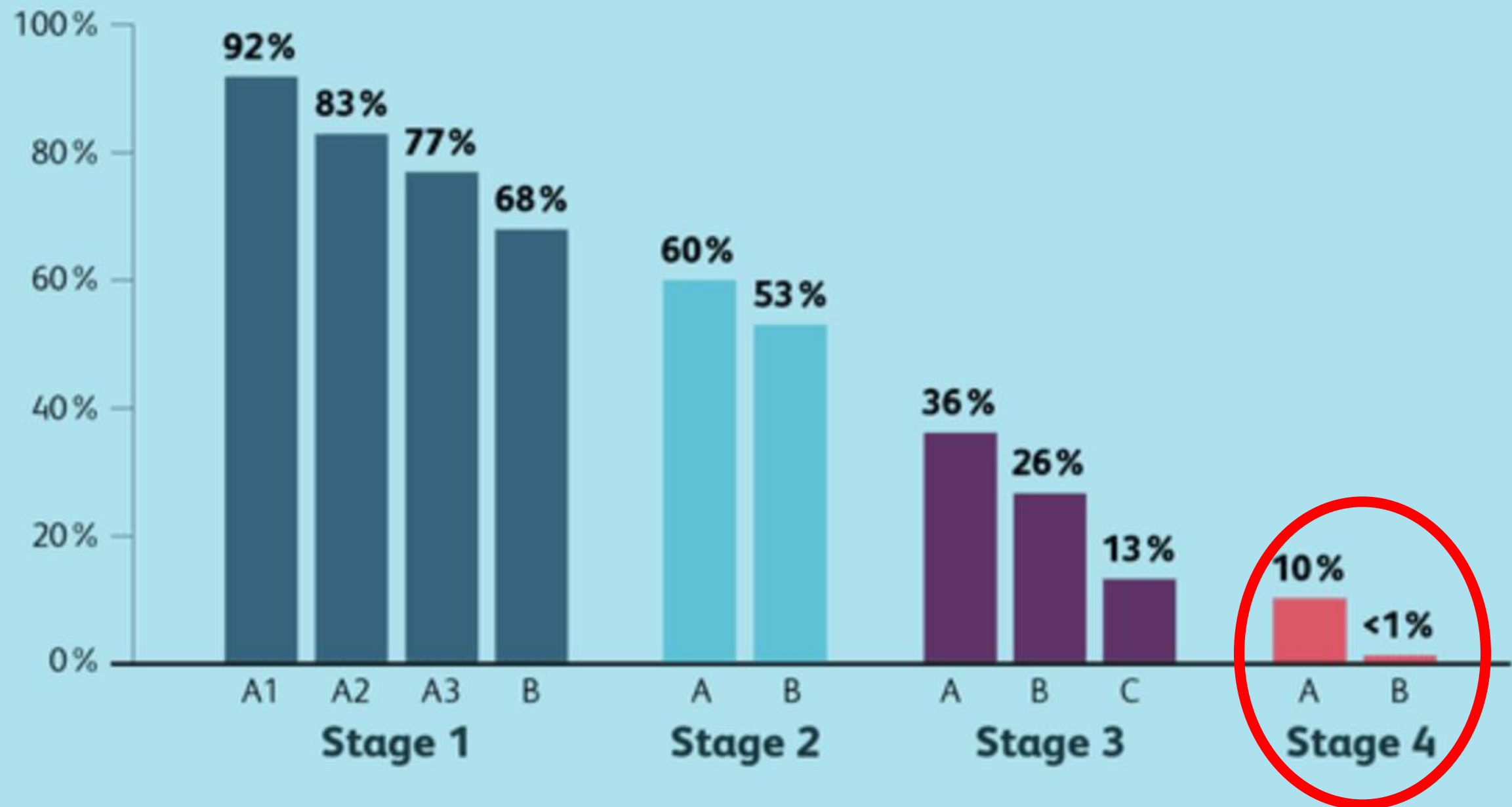
Earlier detection is
Critical!

Lung Cancer Screening

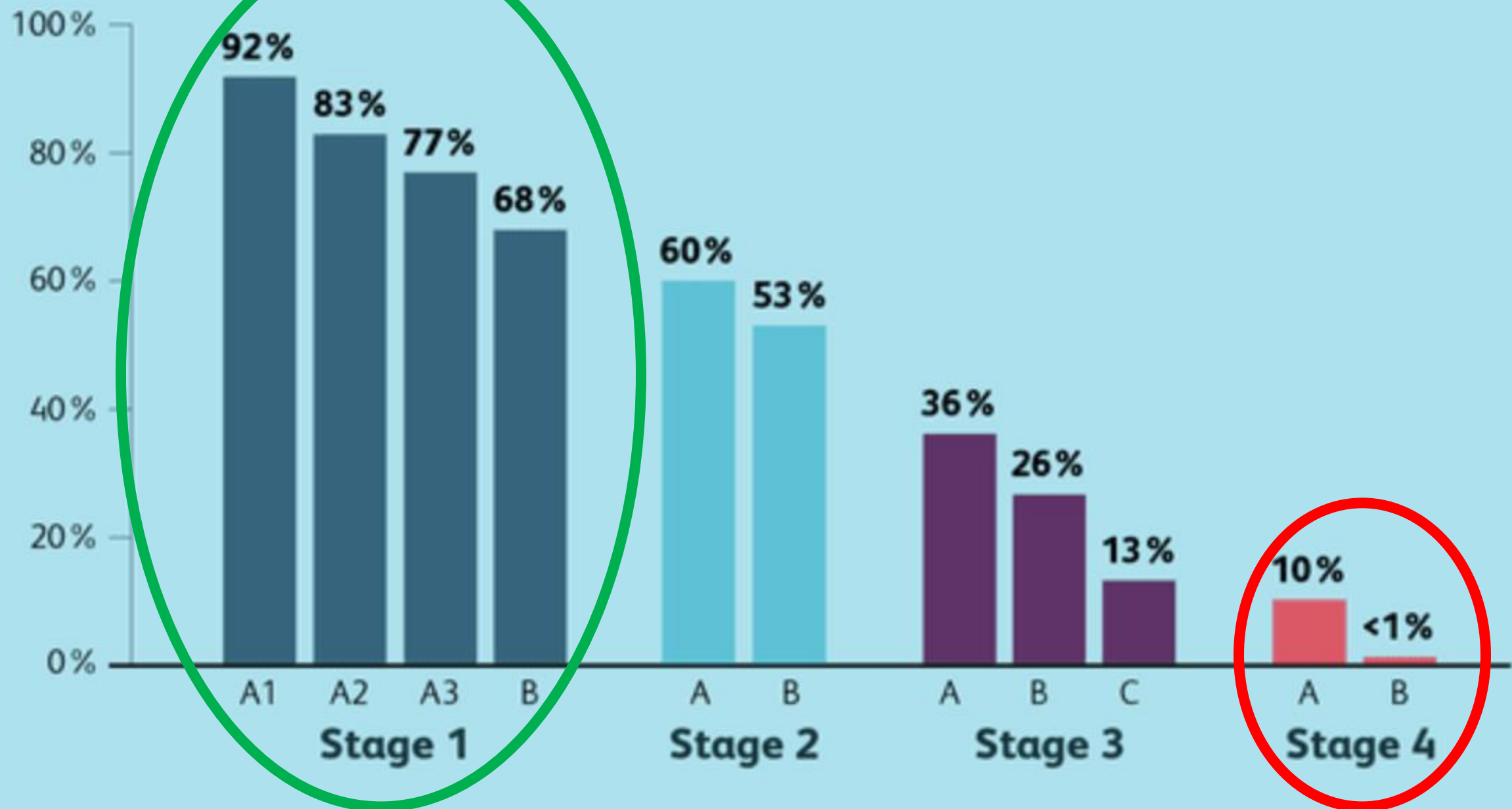
- Only 16% of lung cancers are stage 1 when diagnosed without screening
- 55-85% of lung cancers are stage 1 when diagnosed with screening

Stage Shift through
Screening.

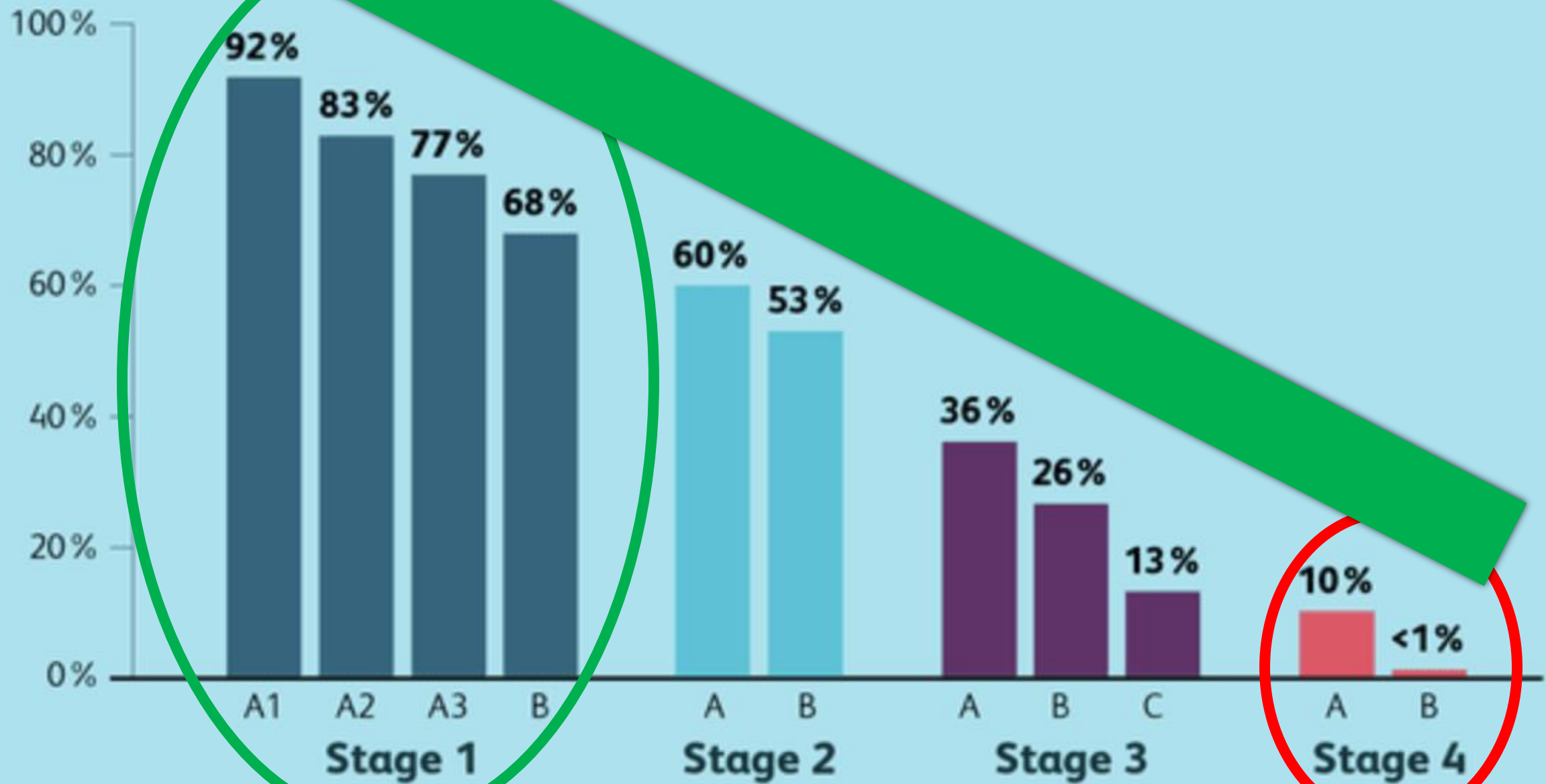
Non-Small Cell Lung Cancer: 5-Year Survival Rates



Non-Small Cell Lung Cancer: 5-Year Survival Rates



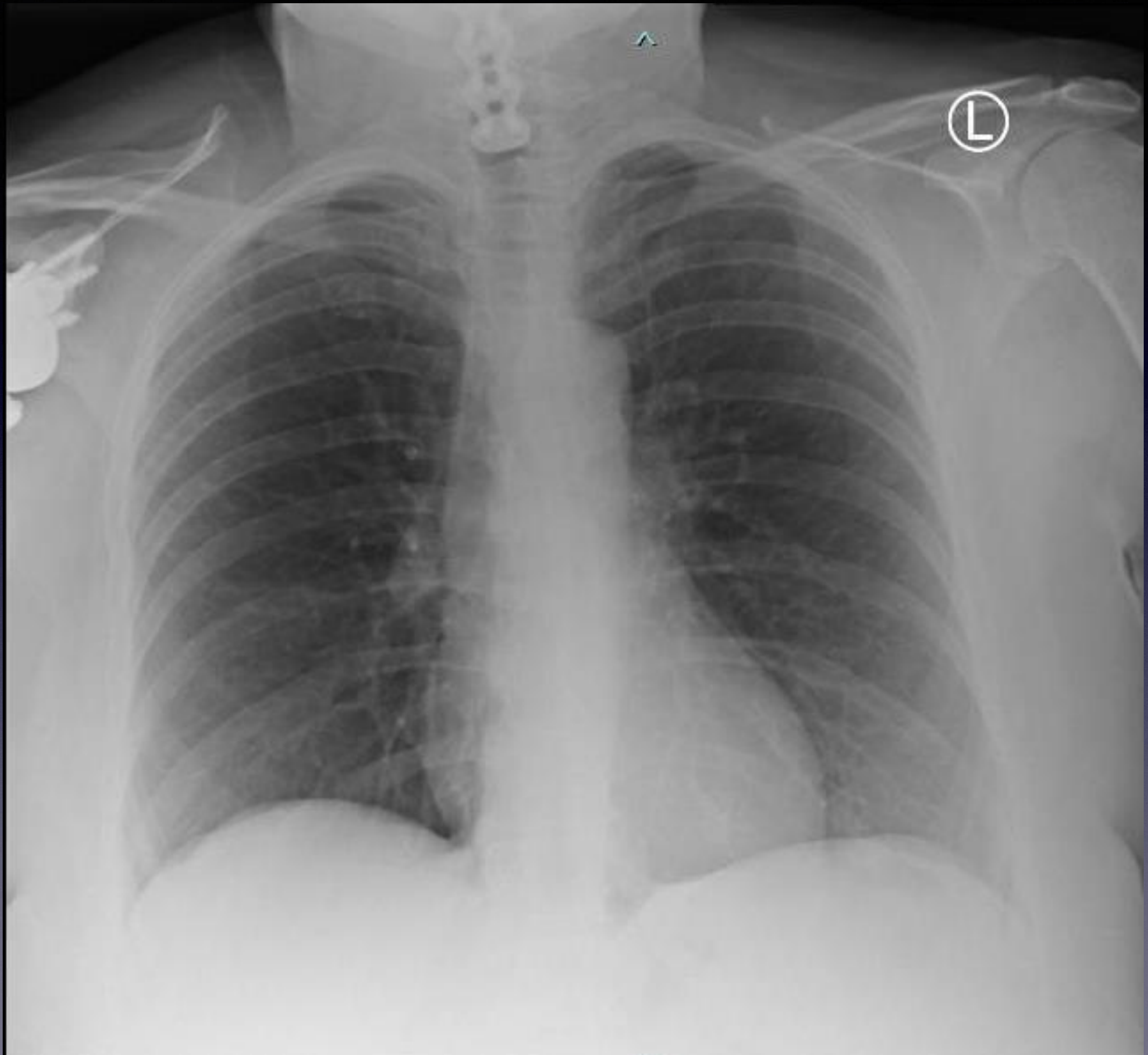
Non-Small Cell Lung Cancer: 5-Year Survival Rates



Lung cancer and
early detection:
Screening tools.

Chest X-rays?

~~Chest X-rays?~~



Chest CT!

Low Dose CT scan (LDCT)
has been shown to **save lives.**

What is a Chest CT?

Screening Chest CT

- X-ray based radiology exam, aka “CAT scan”
- Lay on back
- Go into a “tube” like a donut/bagel
- Hold breath for 5-10 seconds
- Machine takes pictures
- No IV, no needles





Data supporting LDCT

National Lung Screening Trial (NLST)

NLST trial

- Prospective randomized control trial US, 2011
- CXR vs. LDCT
- 53,452 high risk people, ages 55-74
- Annual screening for 3 years
- Lung Cancer Mortality

NLST trial

- 20% decrease in mortality from lung cancer
- 7% decrease in all cause mortality
- LDCT superior to CXR
- Stage 1: 58% baseline, 63% year 2, 69% year 3

NELSON trial

- Dutch-Belgium trial, results released in 2020
- 16,000 people, ages 50-74
- **Decrease in mortality** from lung cancer
 - **24% in men, 33% in women**

Stage 1: 65% baseline, 76% year 2, 73% year 3

Lung Cancer Screening

101

Normal CT

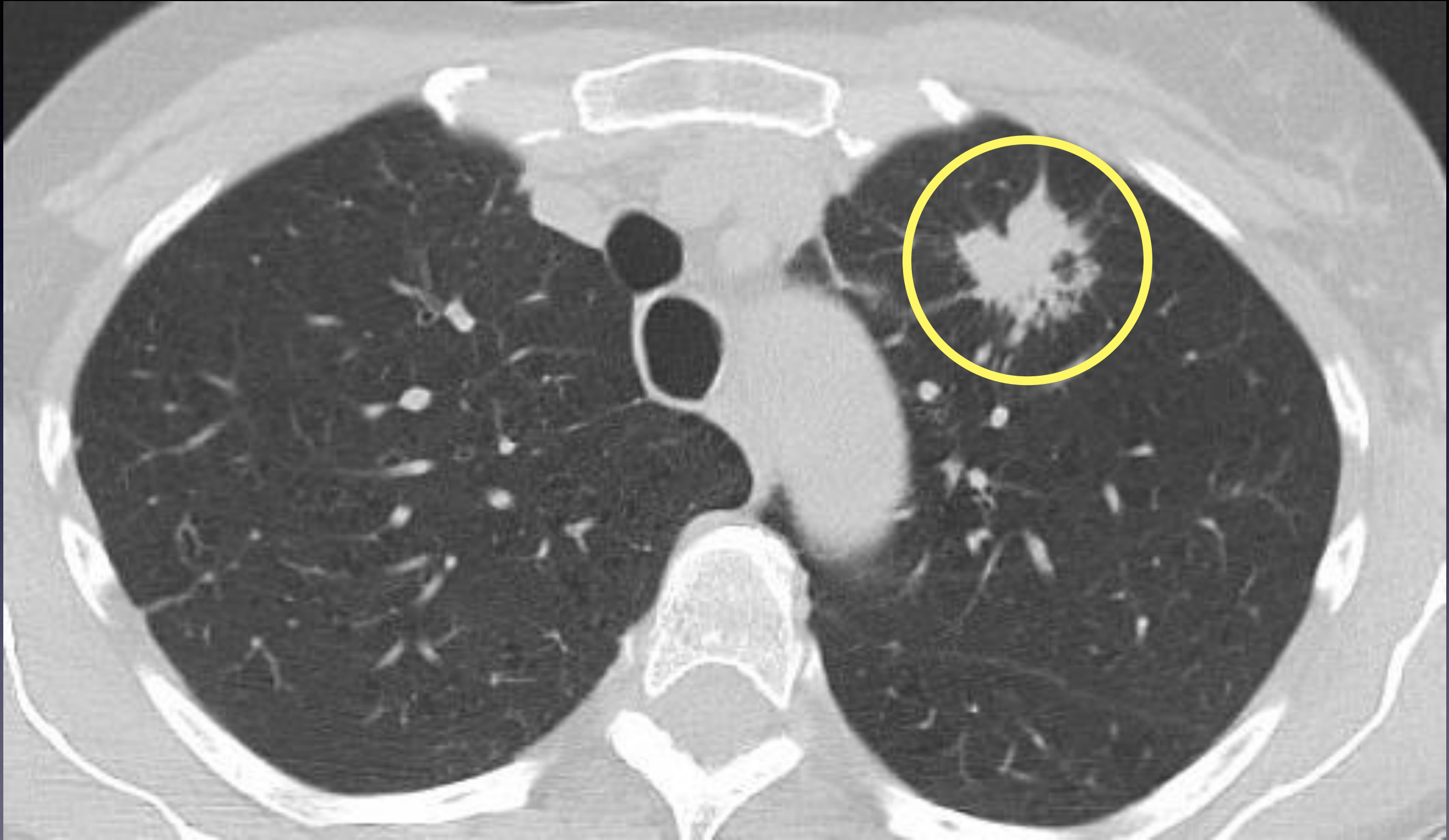


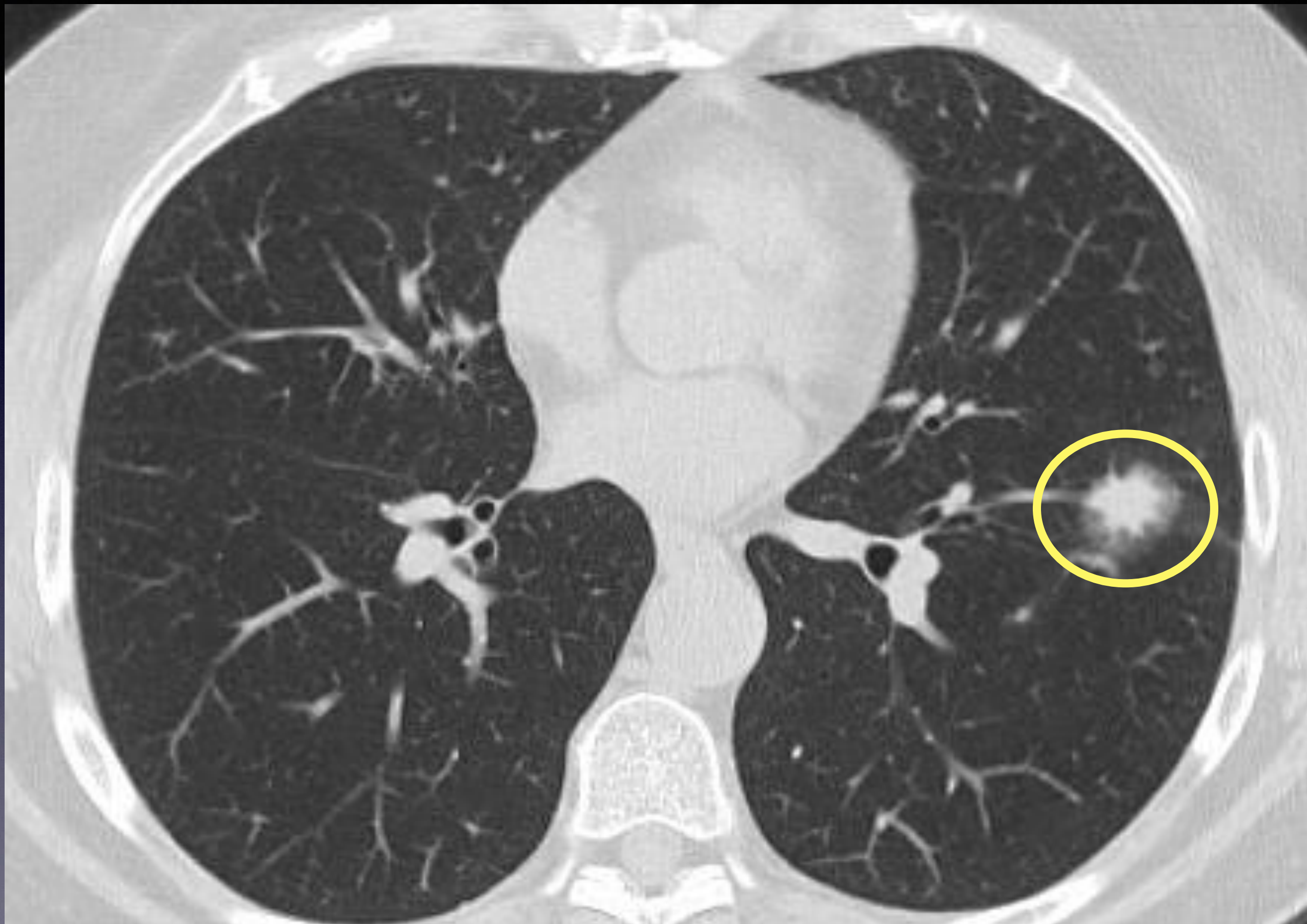
Abnormal CT









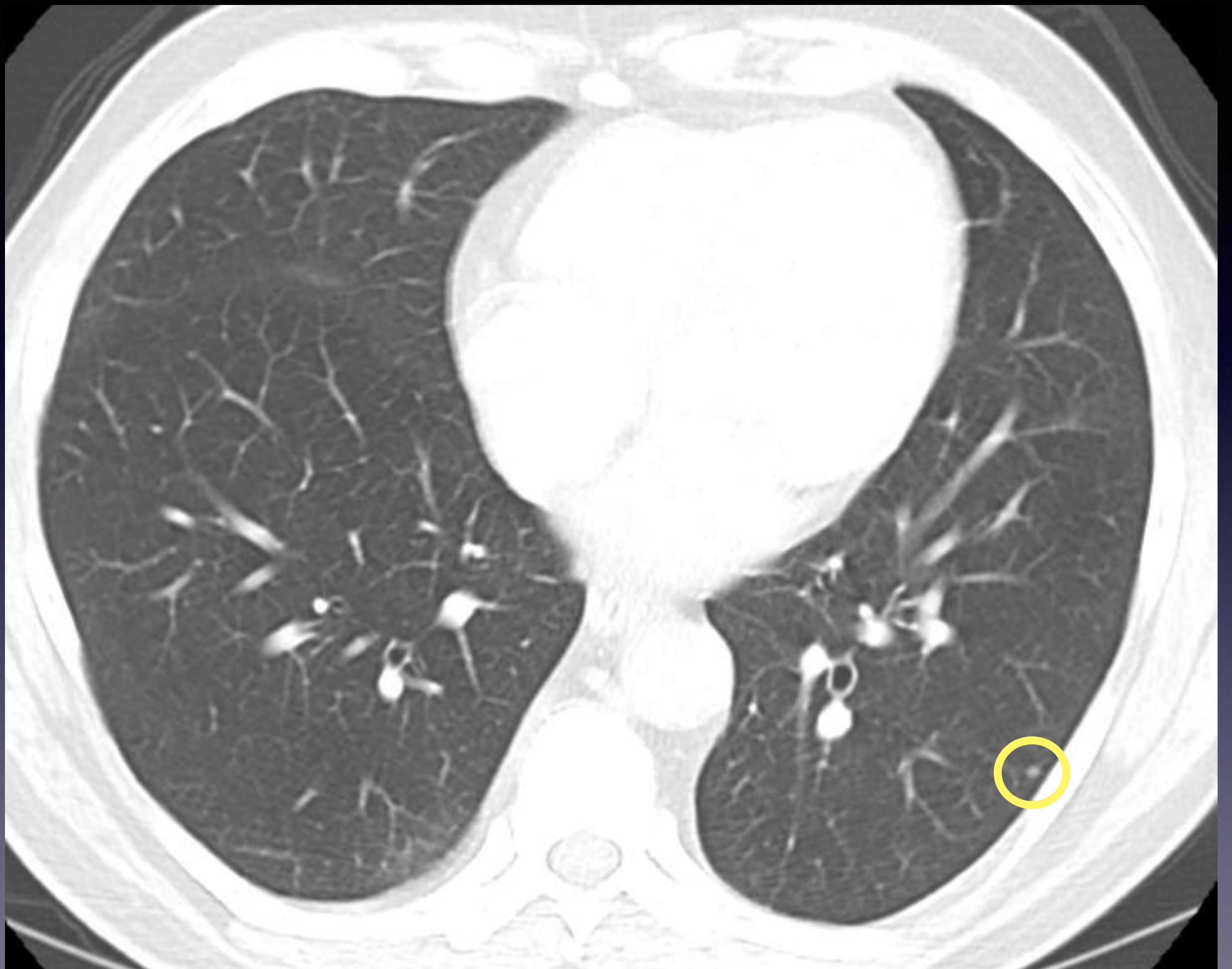


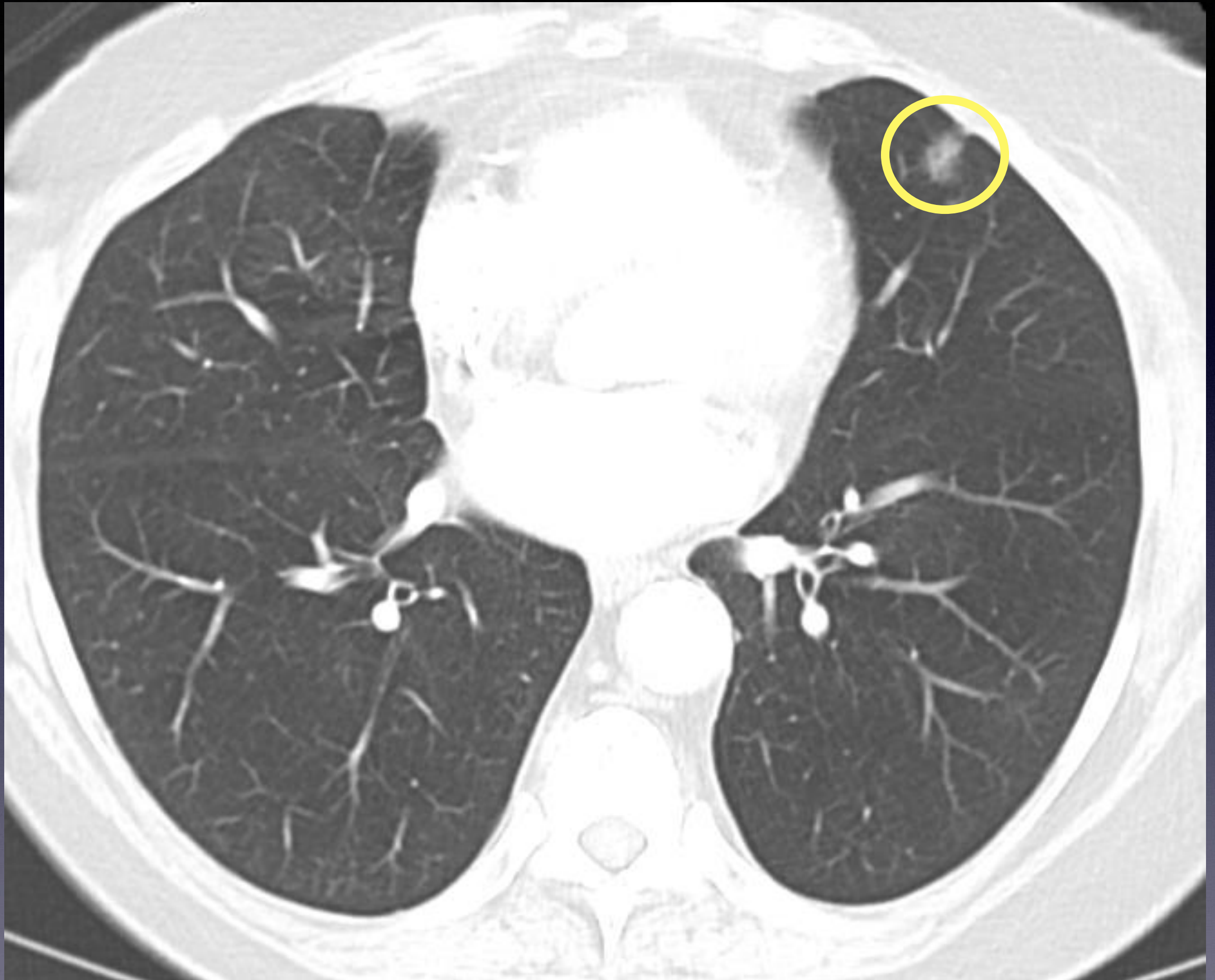


No screening tool is
perfect.

Cons of LDCT

- Cost
- Time
- False positive
- Biopsy complications
- Overdiagnosis
- Incidental findings
- Radiation





LDCT is a successful lung cancer screening exam that saves lives.

New updated
lung cancer screening
recommendations in 2021!

Final Recommendation Statement

Lung Cancer: Screening

March 09, 2021

Recommendations made by the USPSTF are independent of the U.S. government. They should not be construed as an official position of the Agency for Healthcare Research and Quality or the U.S. Department of Health and Human Services.



Ages 50-80 years with
20 pack year smoking hx.
Currently smoke or quit
within 15 years.

High Risk is defined as:

	2020 Guidelines	2021 Guidelines
Age	55-80 years	50-80 years
Smoking History	30 or more pack years (this means 1 pack a day for 30 years, 2 packs a day for 15 years, etc.)	20 or more pack years (this means 1 pack a day for 20 years, 2 packs a day for 10years, etc.)
Smoking Status	Current smoker or quit within the last 15 years	

“50-80-20-15”

Screening rates with
LDCT?

Terrible.

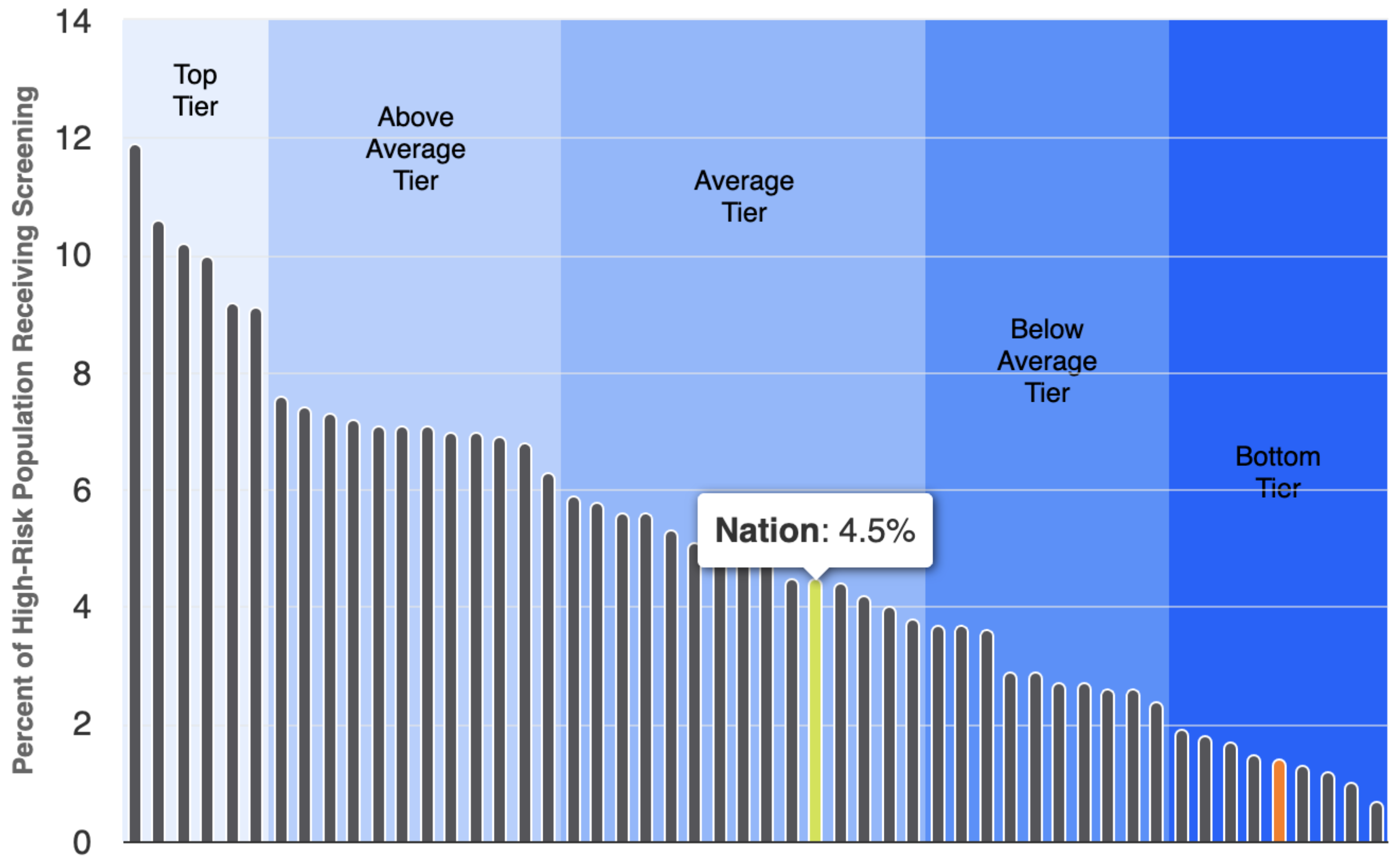
Only 4.5% of eligible high-risk people screened in the US in 2022.

Nevada?

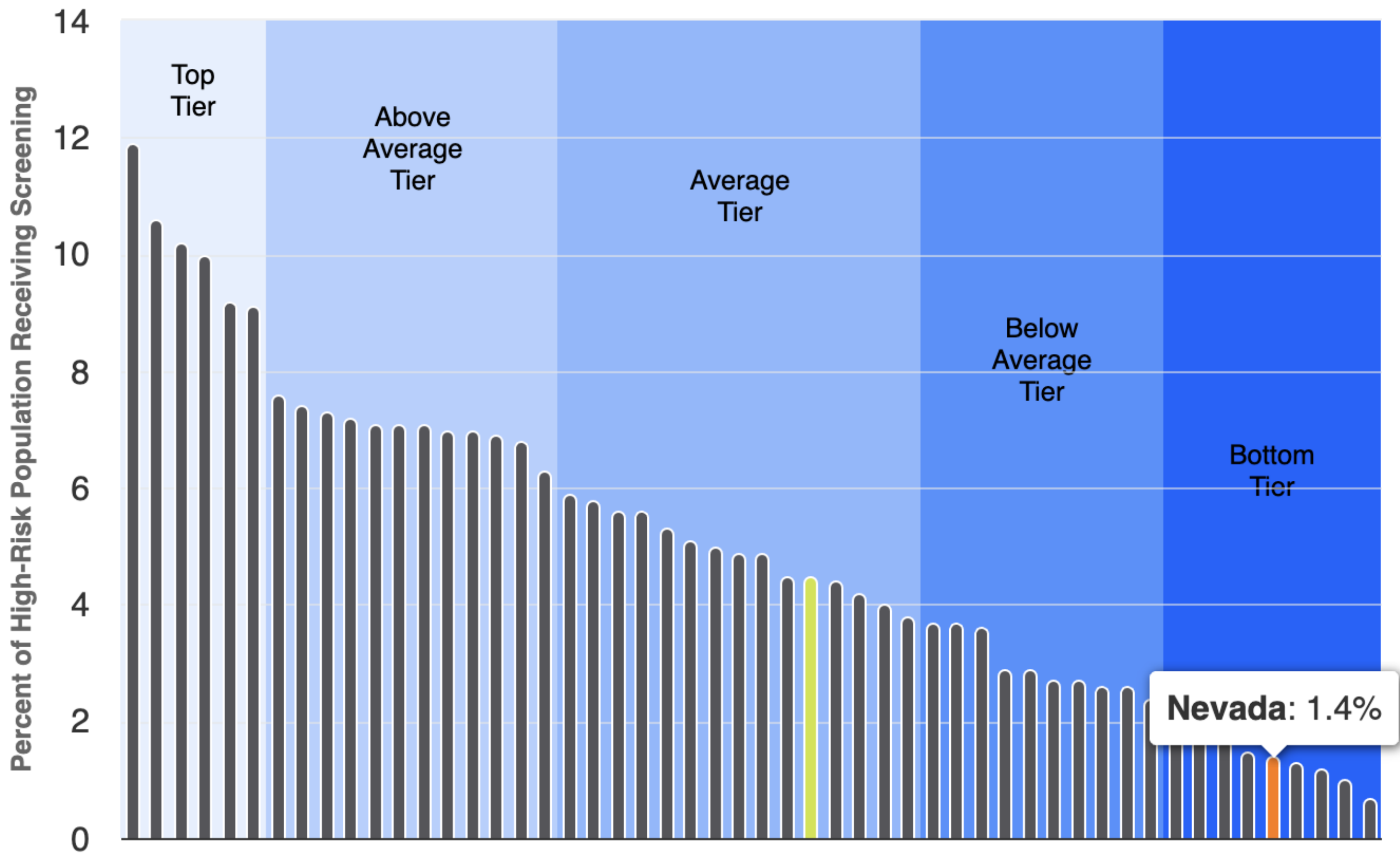
Only 1.4% of high-risk people are screened in Nevada, significantly below the national average of 4.5%.

State Rankings by Lung Screening Rates 2023, ALA

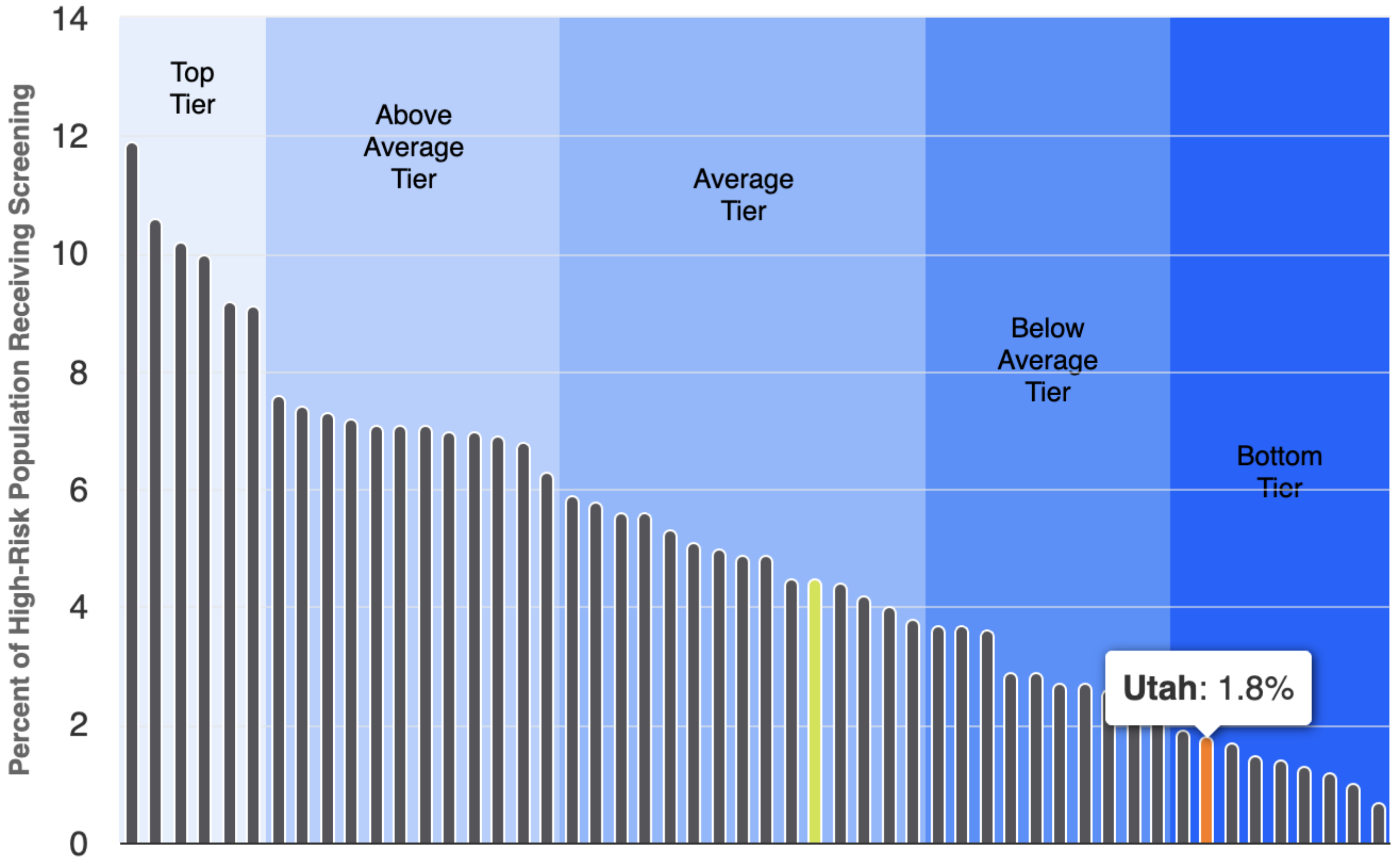
State Ranking by High-Risk Screening Rate



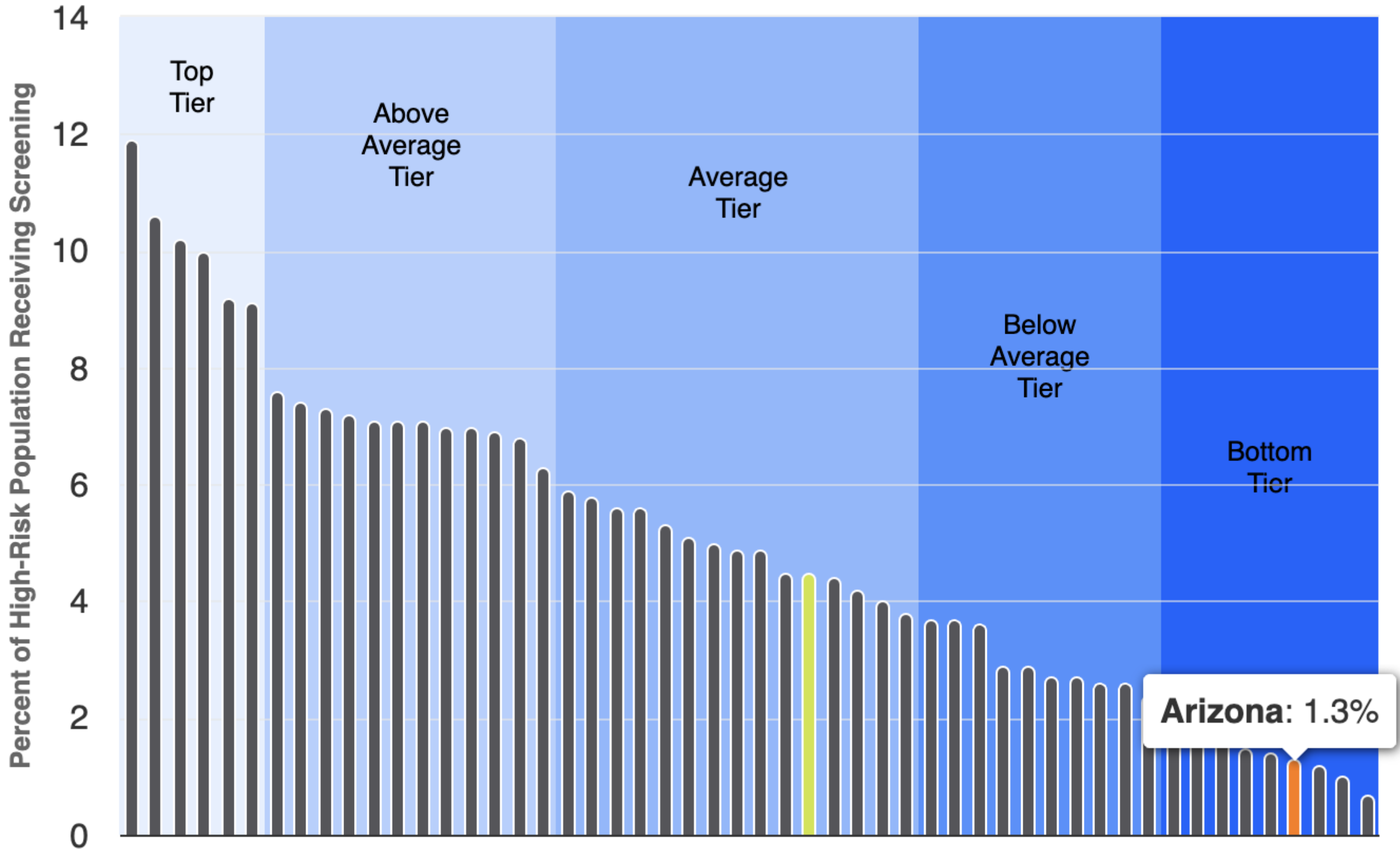
State Ranking by High-Risk Screening Rate



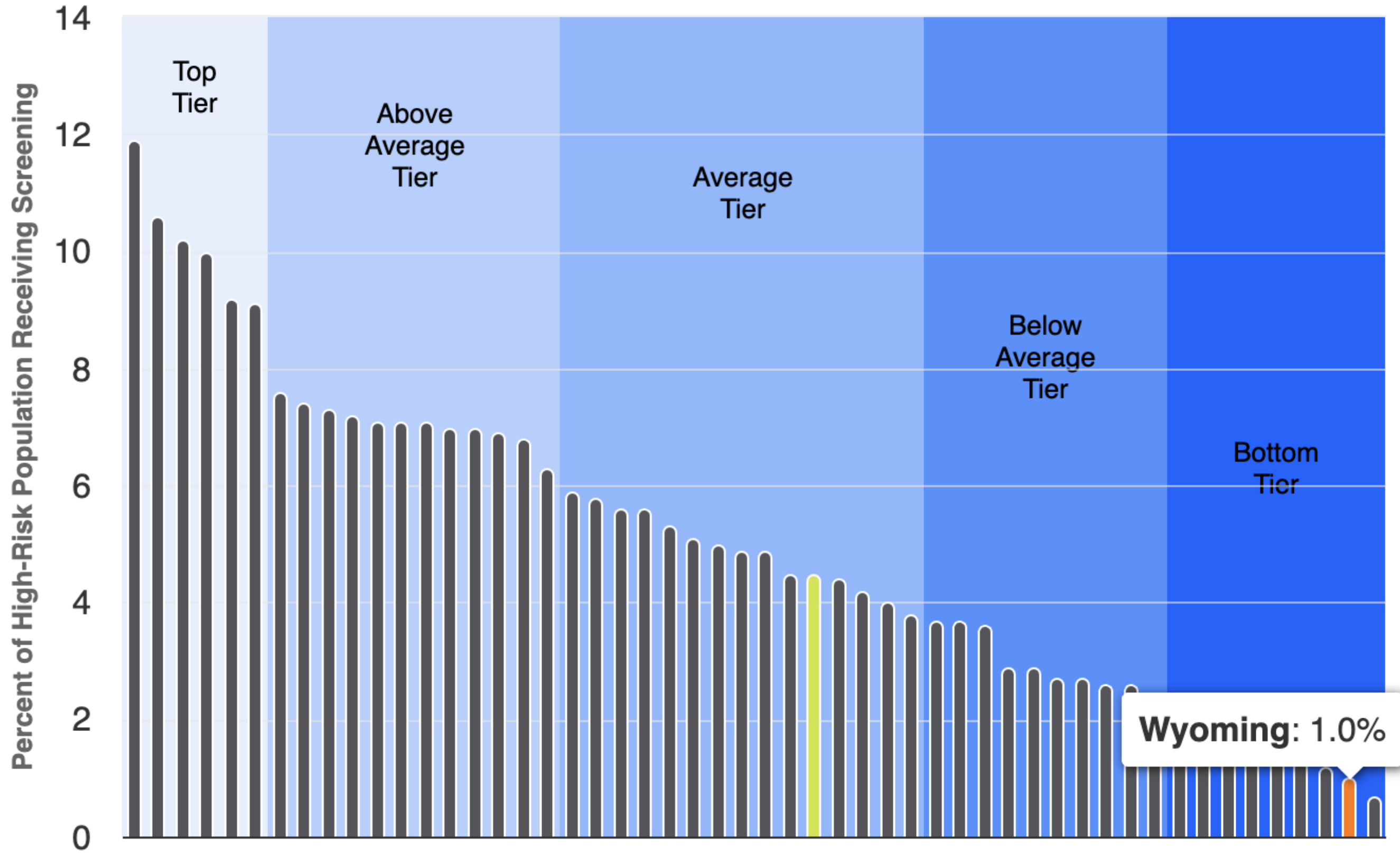
State Ranking by High-Risk Screening Rate



State Ranking by High-Risk Screening Rate

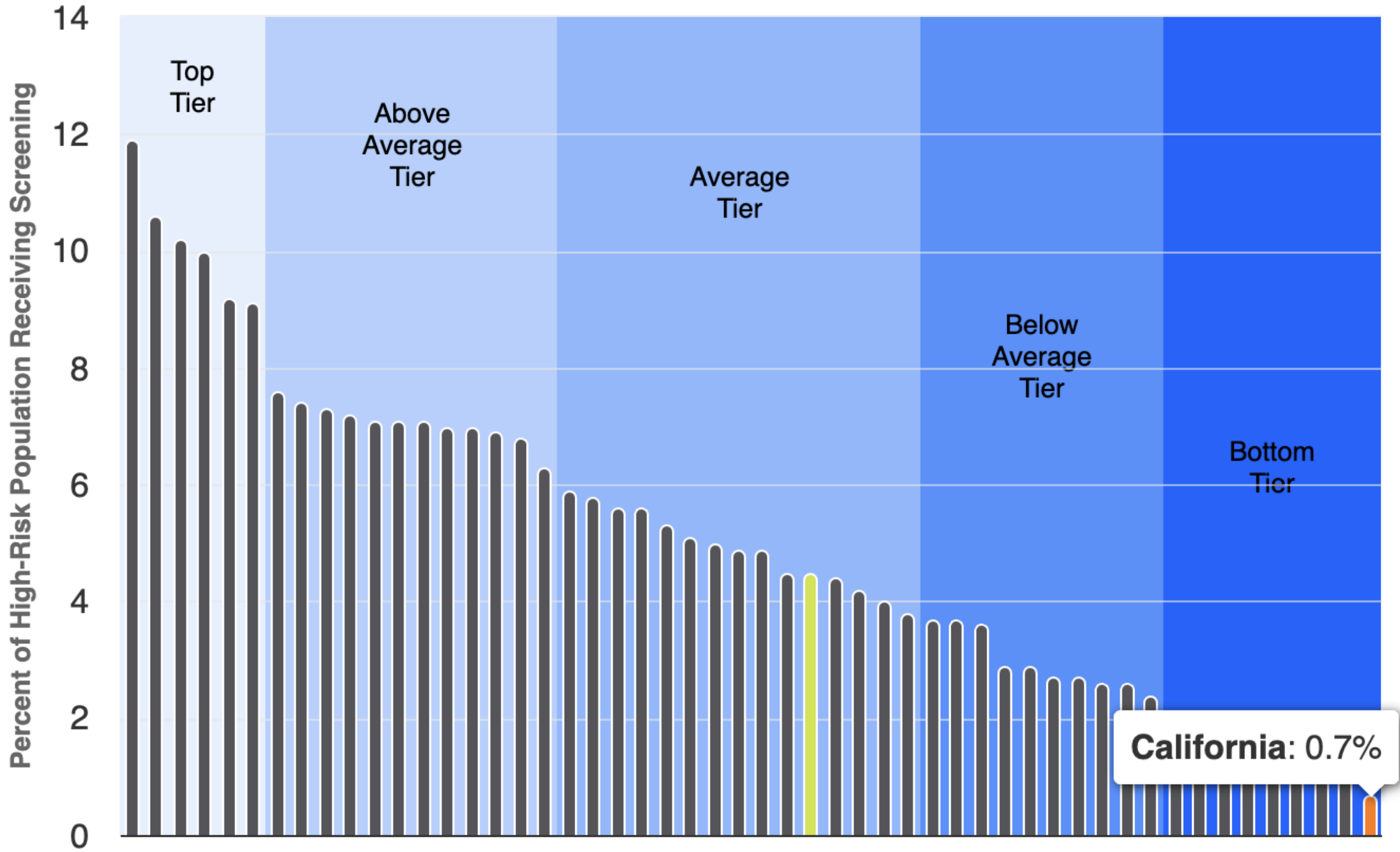


State Ranking by High-Risk Screening Rate

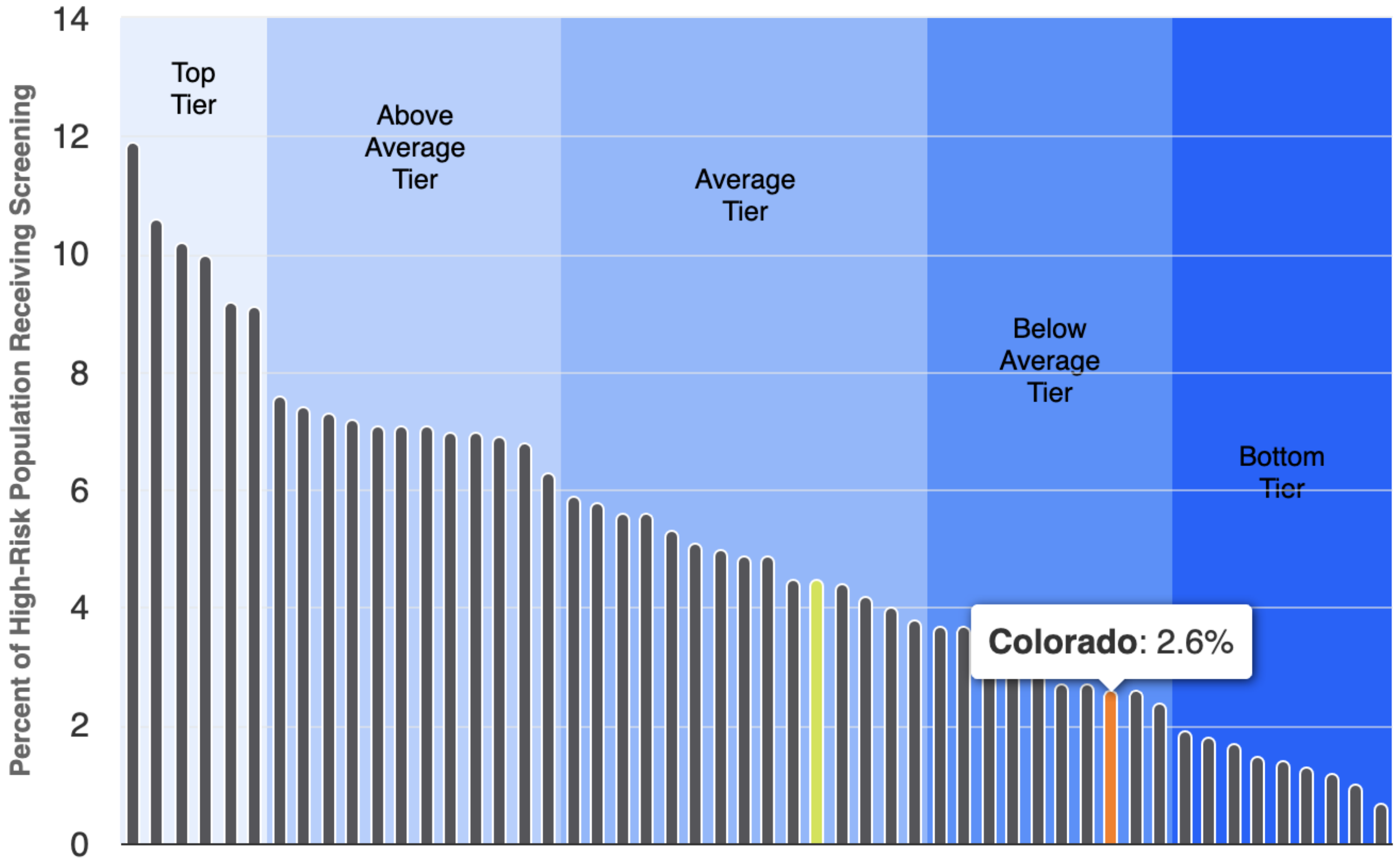


Wyoming: 1.0%

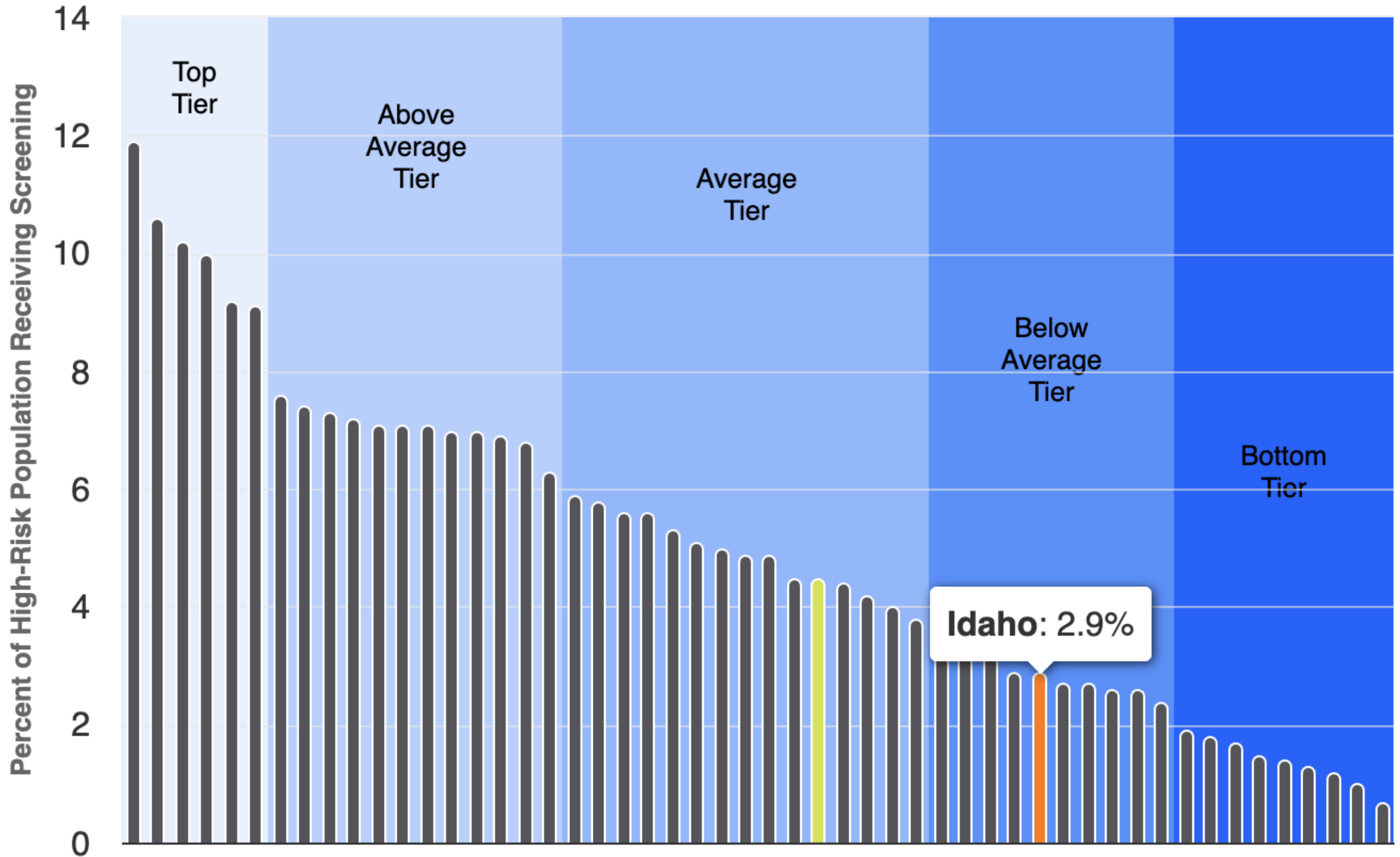
State Ranking by High-Risk Screening Rate



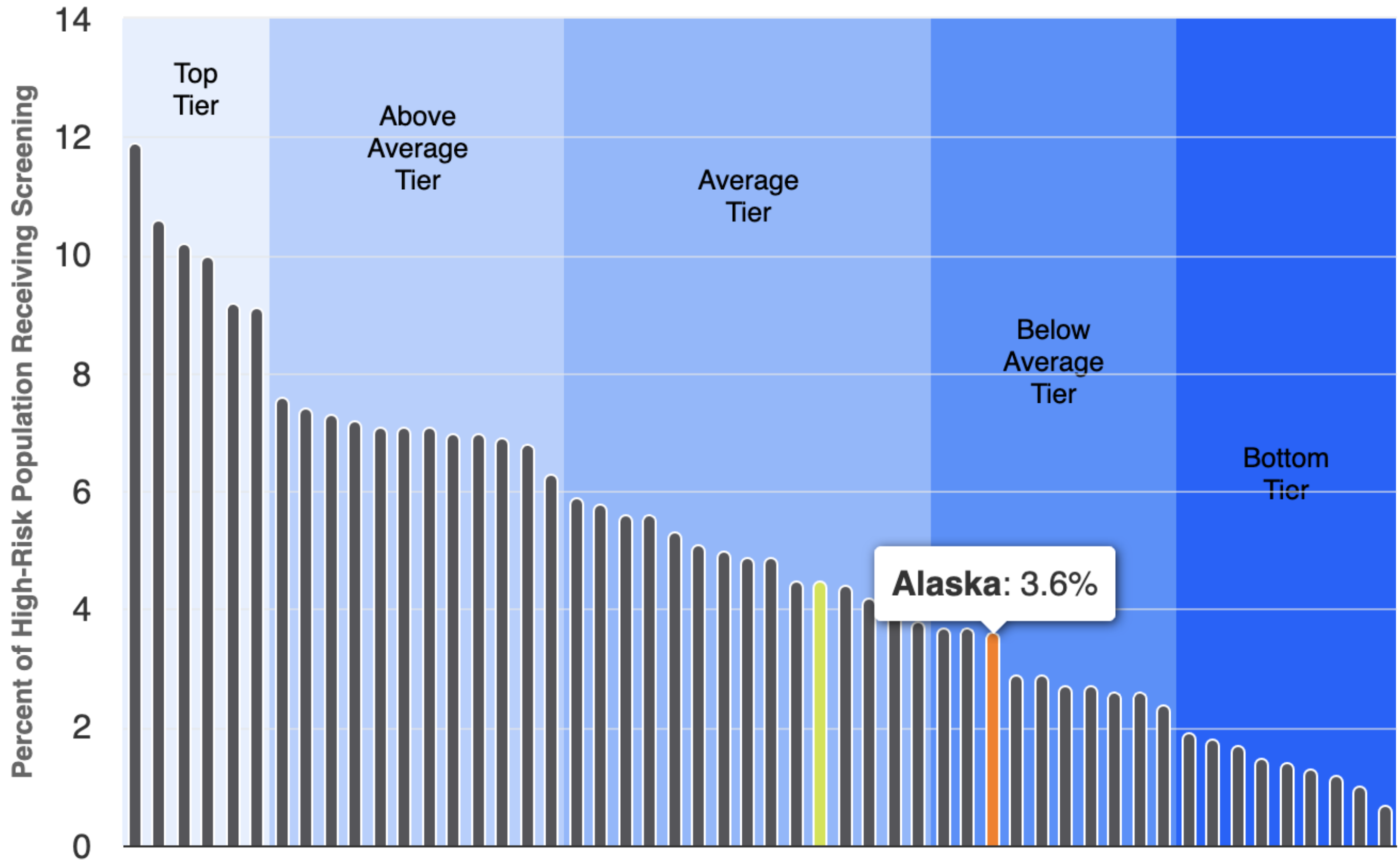
State Ranking by High-Risk Screening Rate



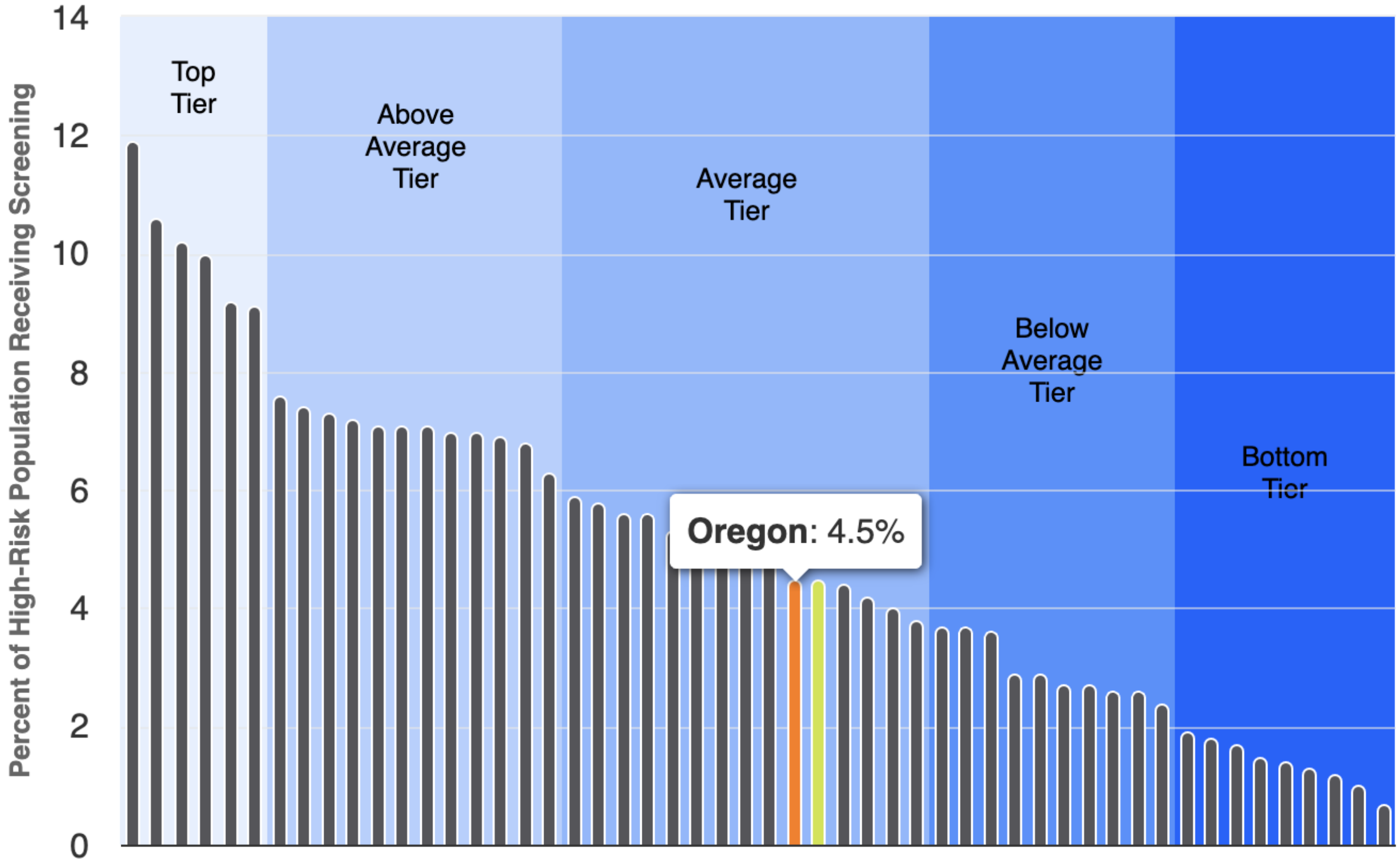
State Ranking by High-Risk Screening Rate



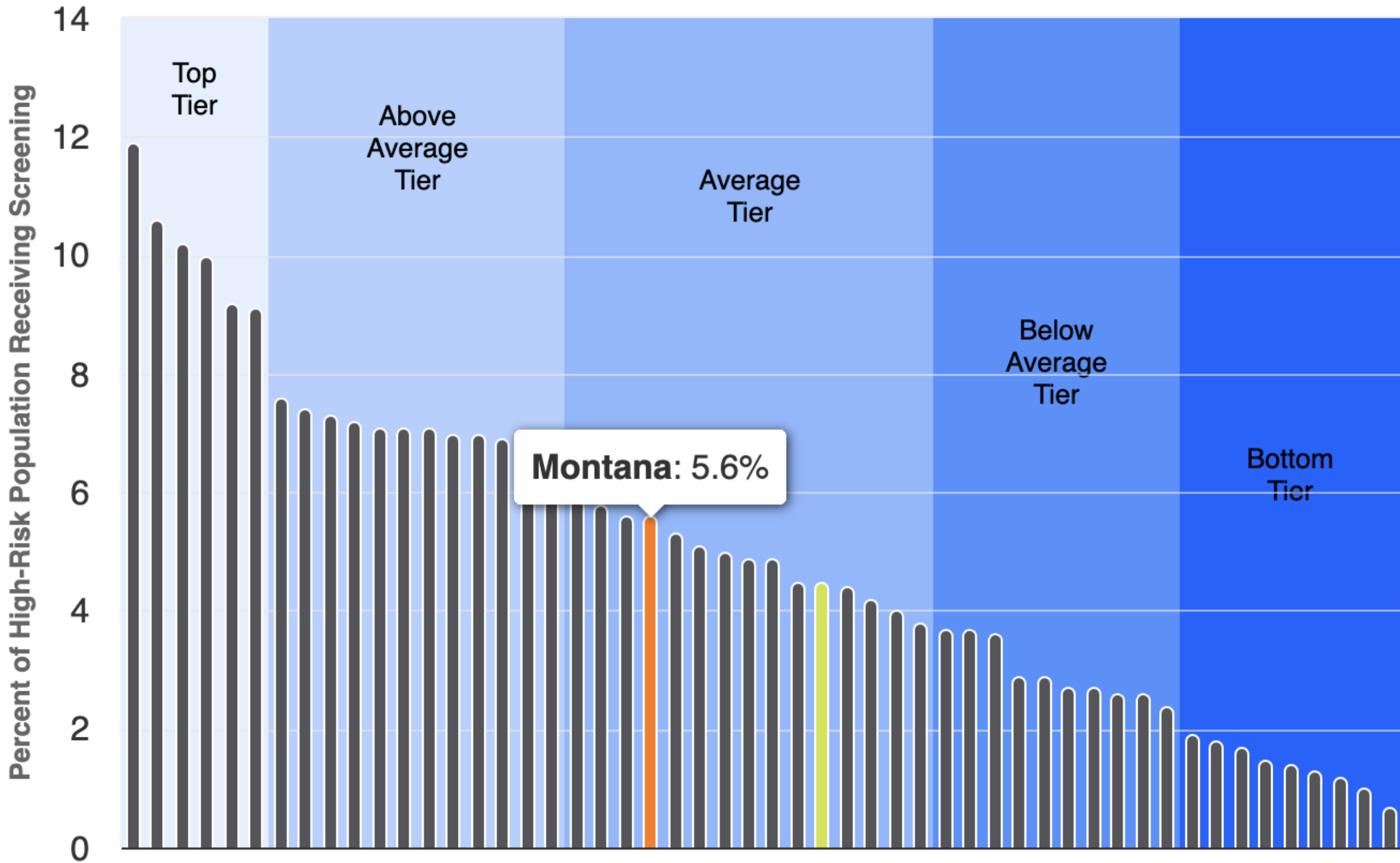
State Ranking by High-Risk Screening Rate



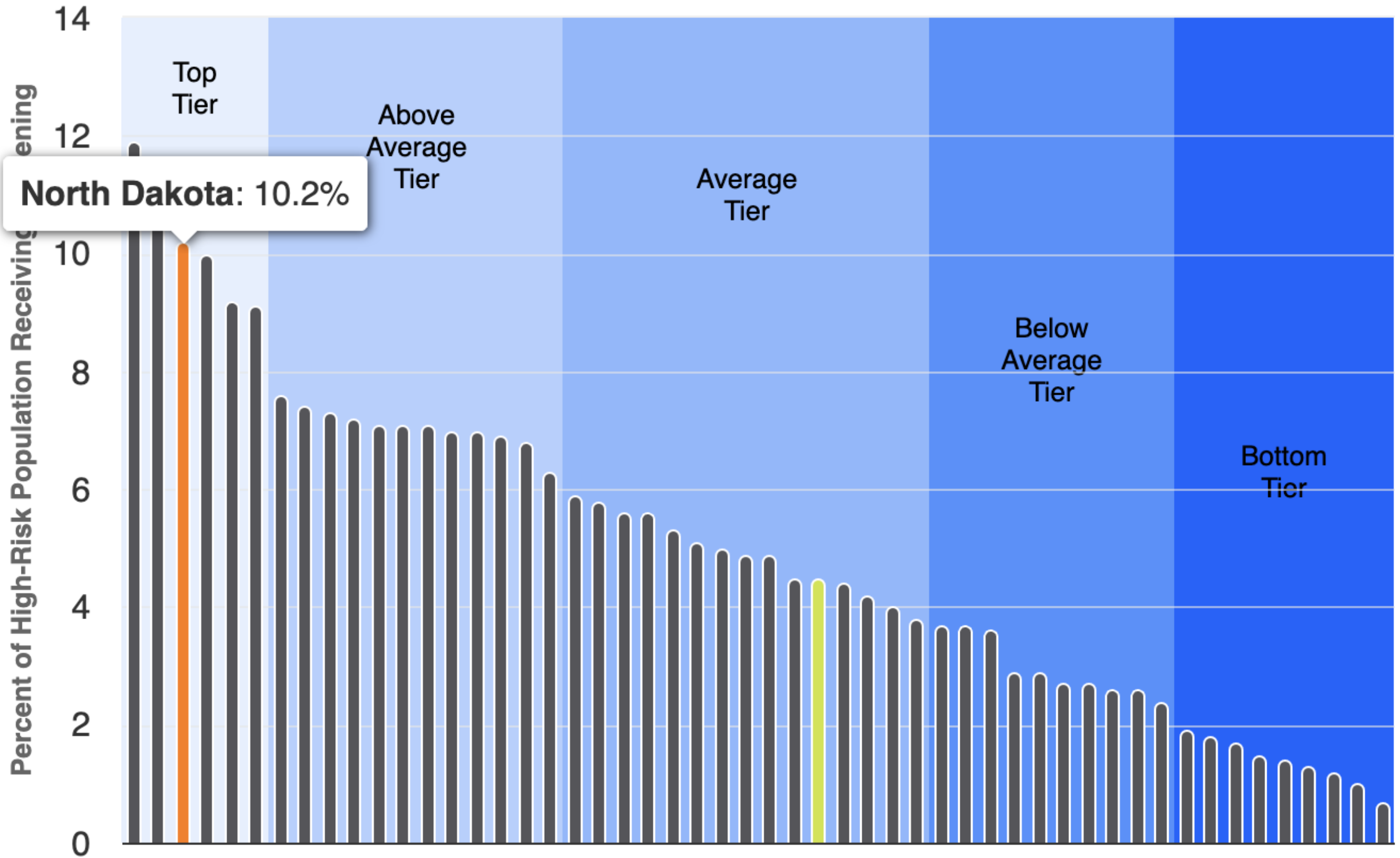
State Ranking by High-Risk Screening Rate



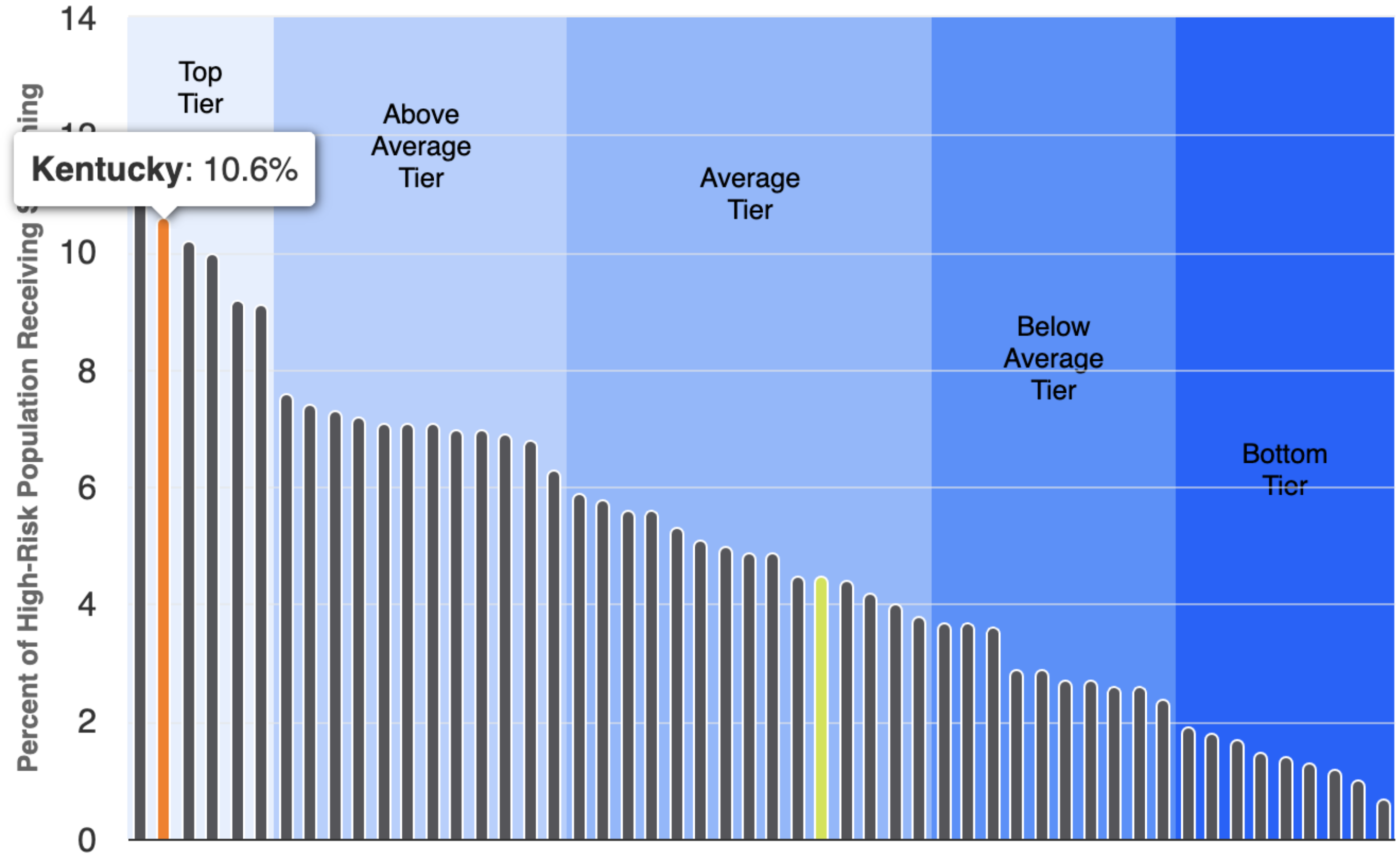
State Ranking by High-Risk Screening Rate



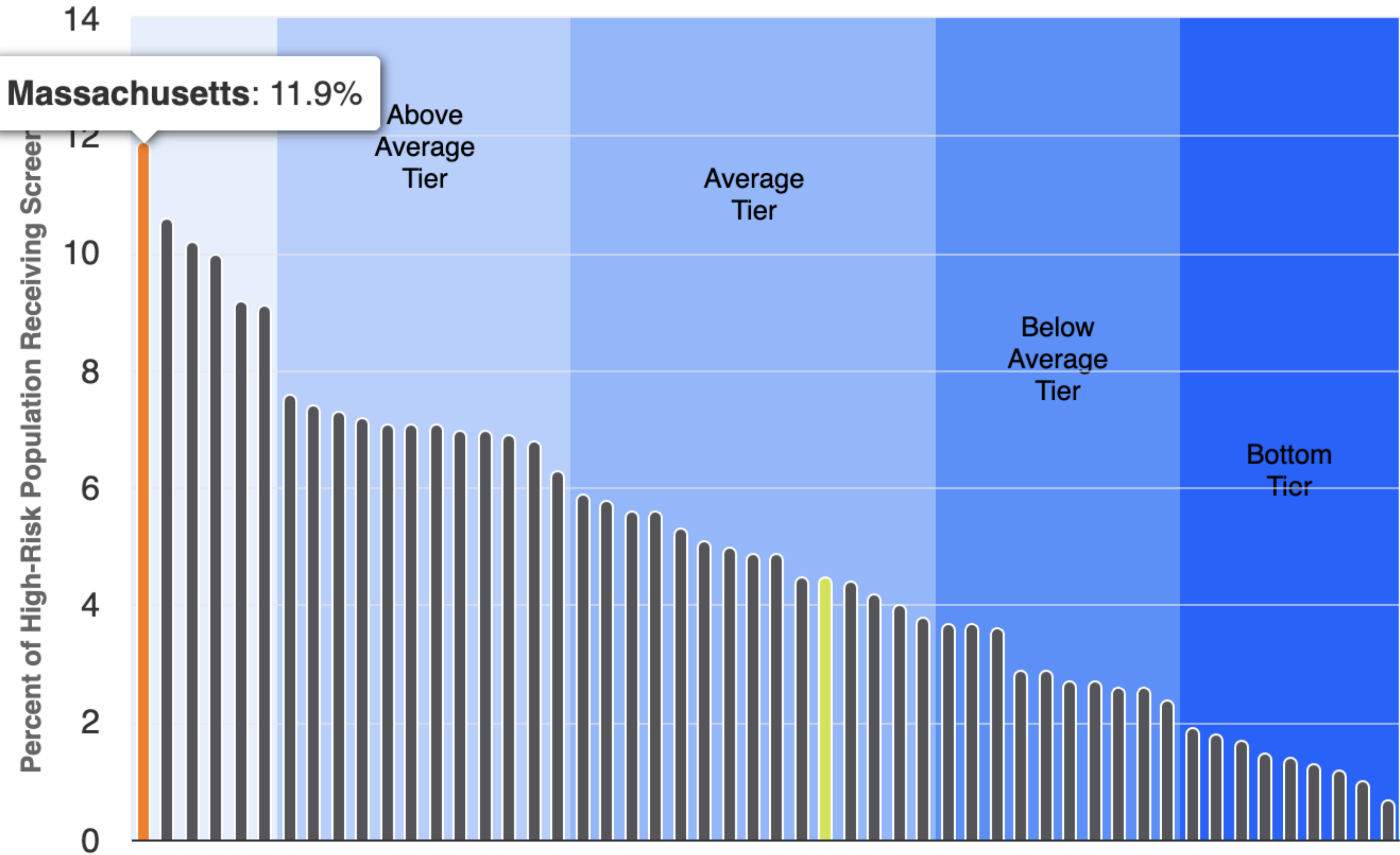
State Ranking by High-Risk Screening Rate



State Ranking by High-Risk Screening Rate



State Ranking by High-Risk Screening Rate



We have to fix this.

How?

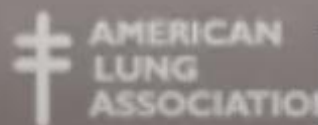
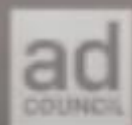
Increase LDCT rates

- 1. Increase numbers of LDCT facilities
- 2. Reduce barriers to LDCT
- 3. Improve provider and community awareness of LDCT
- 4. Improve Health Equity: reducing racial, economic and rural health disparities
- 5. Collaboration

Awareness campaigns

ALA Saved By The Scan Commercial

LEARN MORE AT
SavedByTheScan.org



If you smoked, get scanned.

Savedbythescan.org



 [Call the Lung HelpLine](#)

 [Ask a Question](#)

Search



TRANSLATE

 NV

[Lung Health & Diseases](#)

[Quit Smoking](#)

[Clean Air](#)

[Research & Reports](#)

[Policy & Advocacy](#)

[Get Involved](#)

[DONATE](#)

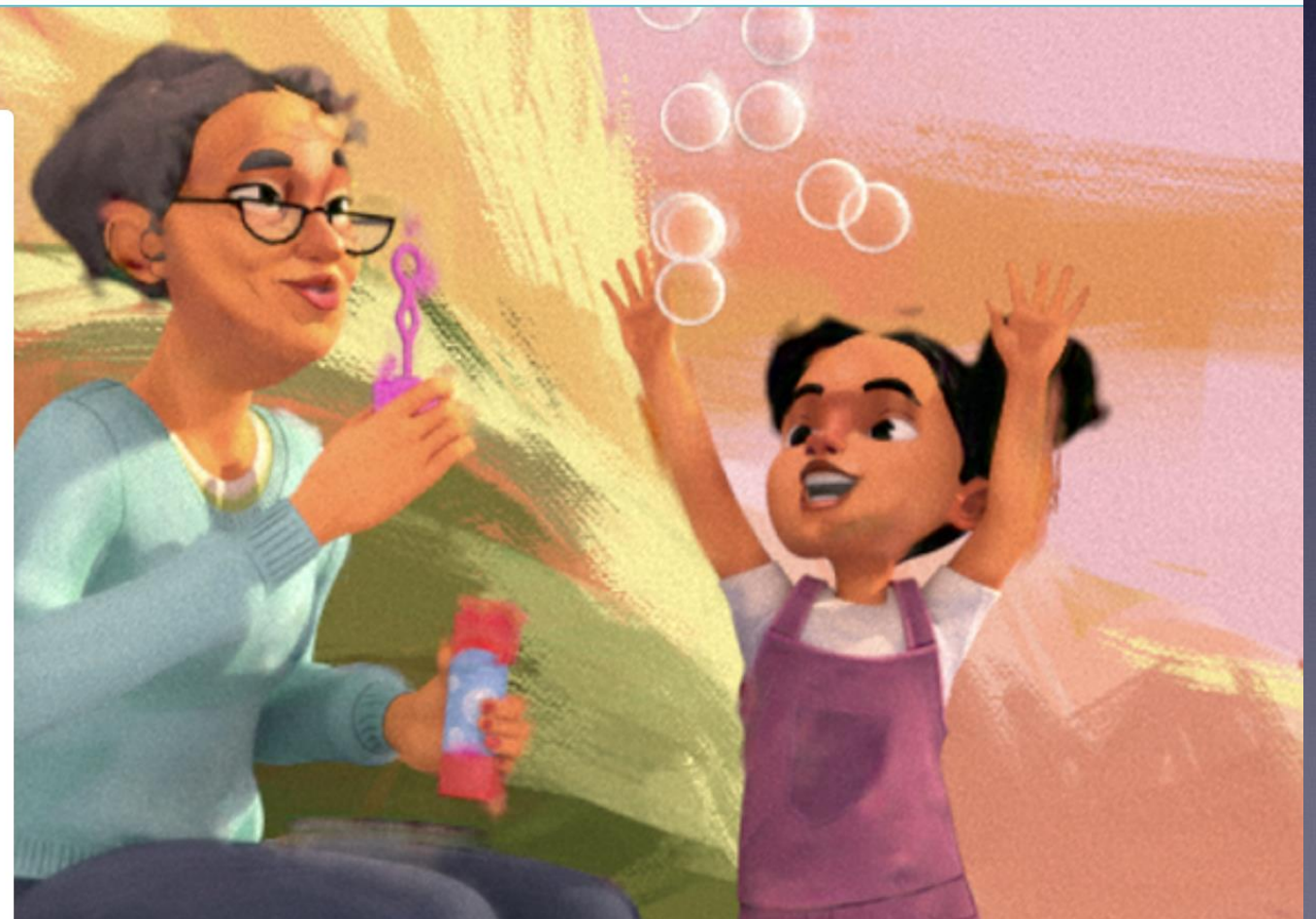
[Home](#) > [Lung Health & Diseases](#) > [Lung Disease Lookup](#) > [Lung Cancer](#) > Lung Cancer Screening

Saved By The Scan

If you smoked, this new low-dose CT lung cancer screening test and eligibility quiz could save your life.

Take the quiz to see if you should get screened.

[TAKE THE QUIZ](#)



Screenyourlungs.org

ESPAÑOL →

[HOME](#) [SCREENING QUIZ](#) [RESOURCES](#)



**if that was you then, get
your lungs screened now.**

▶ [WATCH VIDEO](#)

Knowing what's going on with your lungs is easier than you think. Take this quiz to see if you meet certain criteria for screening.

[TAKE THE QUIZ](#)

Go2foundation.org



About Screening

*Lung cancer screening
saves lives.*





[Home](#) [About the Ribbons](#) [News](#) [Events](#) [Stories](#) [Community](#) [FAQs](#) [About Us](#)



[Donate](#) [Contact Us](#)

Donate

It's time to change the lung cancer story.



The White Ribbon Project promotes awareness about lung cancer by changing public perception of the disease.

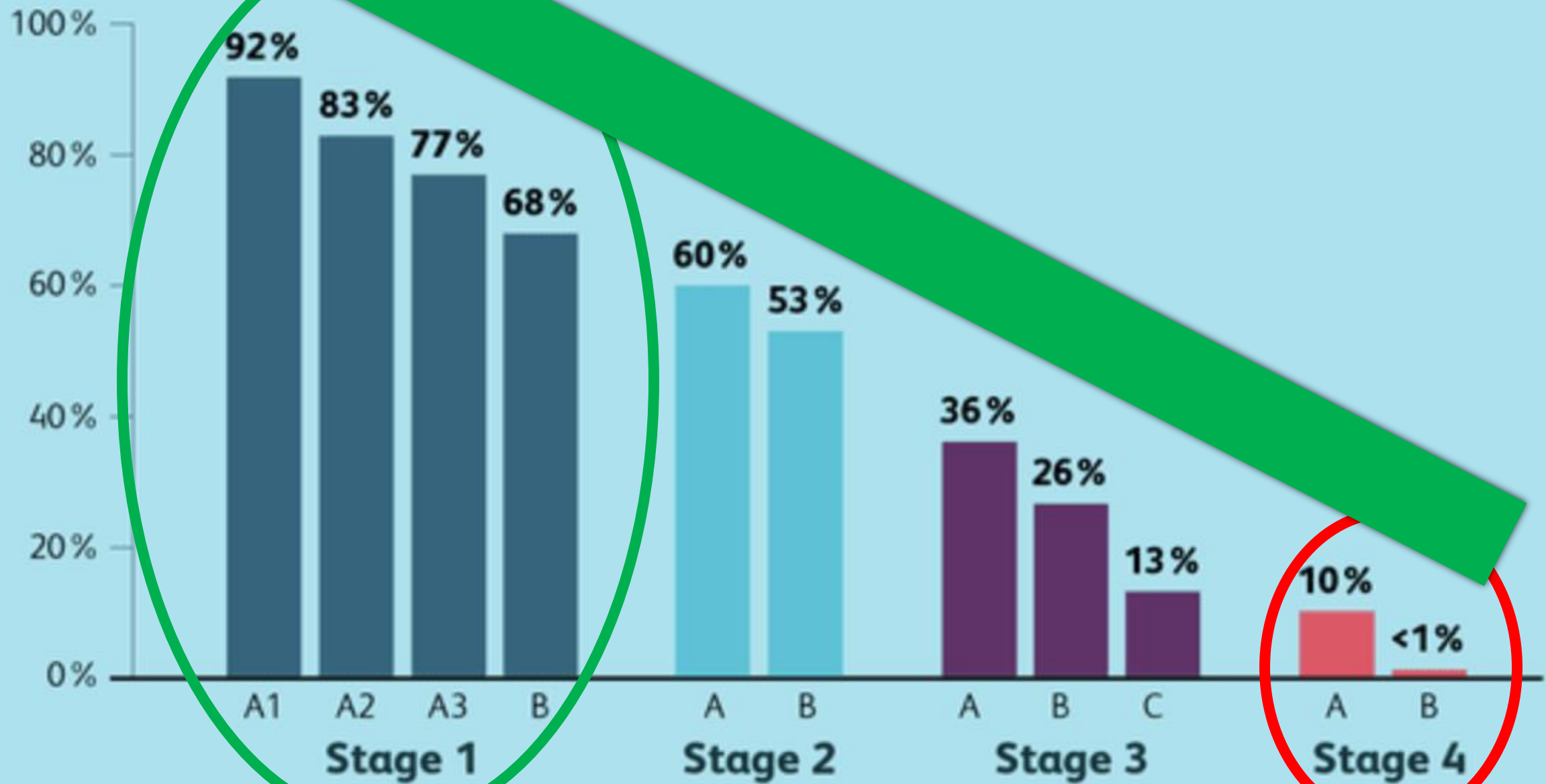
Community awareness

- Normalize/Promote LDCT for healthy lifestyle
- “Saved by the Scan” and Scan-a-thon events
- Increase support for people with lung cancer
- November is Lung Cancer Action Month
- Reduce stigma, White Ribbon Project

Save lives from
lung cancer.

Stage Shift through Screening!

Non-Small Cell Lung Cancer: 5-Year Survival Rates



Screening Saves Lives.

Saving lives from lung cancer

- **Prevention:** smoking, radon, air pollution
- **Early Detection:** screening
- **Treatment:** biomarker, immunotherapy, targeted
- **Health Equity:** reducing racial, economic and rural health disparities

Saving lives from lung cancer

- **Prevention:** smoking, radon, air pollution
- **Early Detection:** screening
- **Treatment:** biomarker, immunotherapy, targeted
- **Health Equity:** reducing racial, economic and rural health disparities

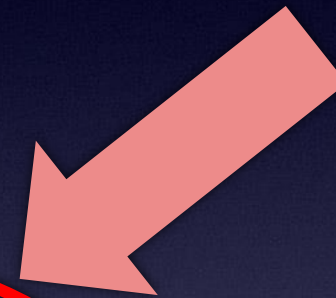
Radon is the 2nd leading cause of lung cancer in US (after smoking).

Saving lives from lung cancer

Prevention



Treatment

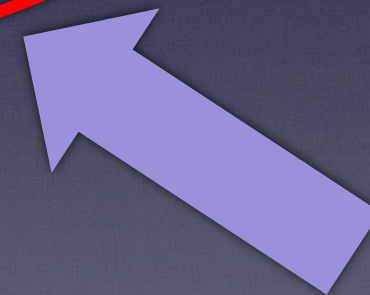


Lung Cancer

Early Detection



Health Equity



Resources

- American Lung Association Lung.org
- American Cancer Society Cancer.org
- Savedbythescan.org, Screenyourlungs.org
- Go2foundation.org
- Awareness and support: thewhiteribbonproject.org

Thank you!

Questions and Comments?

Contact info:

charrigal@ccsreno.com