

# **Cancer in Cass County**

*Mary Charlton, PhD & Amanda Kahl, MPH*

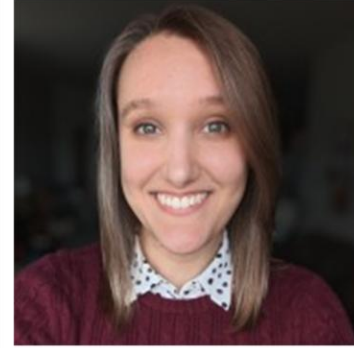
December 3, 2025

# Who we are



## **Mary Charlton, PhD**

- Professor, University of Iowa College of Public Health
- Director, Iowa Cancer Registry
- President, Iowa Cancer Consortium
- Co-Leader of the Cancer Epidemiology & Population Science Program, Holden Comprehensive Cancer Center
- Research: Rural/ Urban differences in cancer prevention, screening, & quality of care



## **Amanda Kahl, MPH**

- Epidemiologist, Iowa Cancer Registry
- Assistant Director of Catchment Area Data, Community Outreach & Engagement, Holden Comprehensive Cancer Center
- Research: rural-urban differences in treatment and quality of cancer care; cancer registry data quality

## These slides will be posted

These slides will be posted to the Iowa Cancer Registry website:

[www.iowacancerregistry.org/99](http://www.iowacancerregistry.org/99)



If you have questions after, please email us at [ICR-99countiesproject@uiowa.edu](mailto:ICR-99countiesproject@uiowa.edu)

## Media

If you are a representative of the media and would like more information on this presentation or to speak with someone from the Iowa Cancer Registry, contact [ICR-Media@uiowa.edu](mailto:ICR-Media@uiowa.edu).

## Survey

We would appreciate your feedback on this presentation.

We will send & post a link to a brief survey after this presentation.

# 99 Counties Project Team



Iowa Cancer  
Consortium  
[www.canceriowa.org](http://www.canceriowa.org)



**IOWA**  
HEALTH CARE  
Holden Comprehensive  
Cancer Center

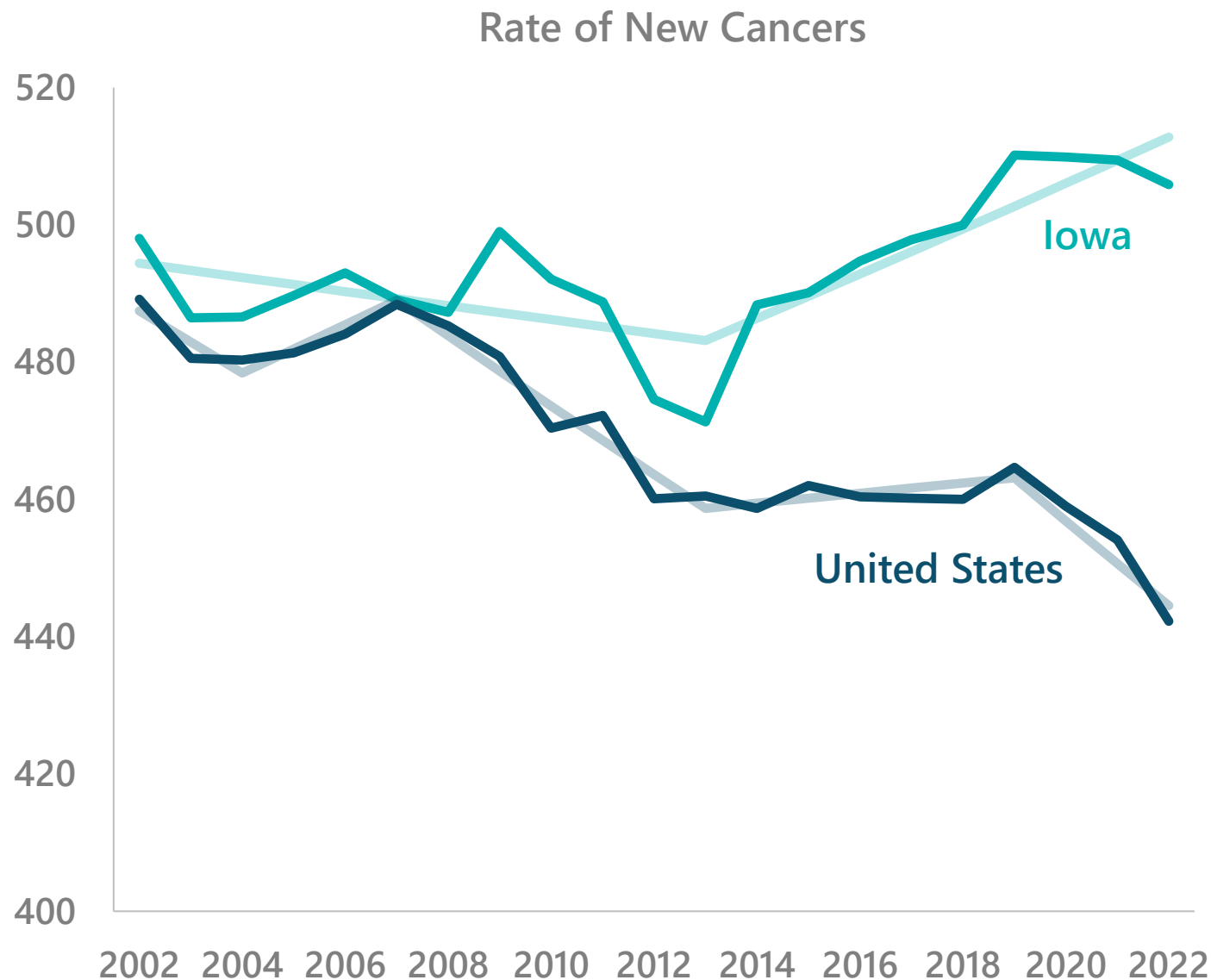
**IOWA**™ | Health and  
Human Services

*"Statistics are people  
with the tears wiped away"*

*Dr. Irving Selikoff*

Iowa has the **#2** highest rate of **new cancers** in the U.S.

Iowa's rate is **14% higher** than the U.S. rate

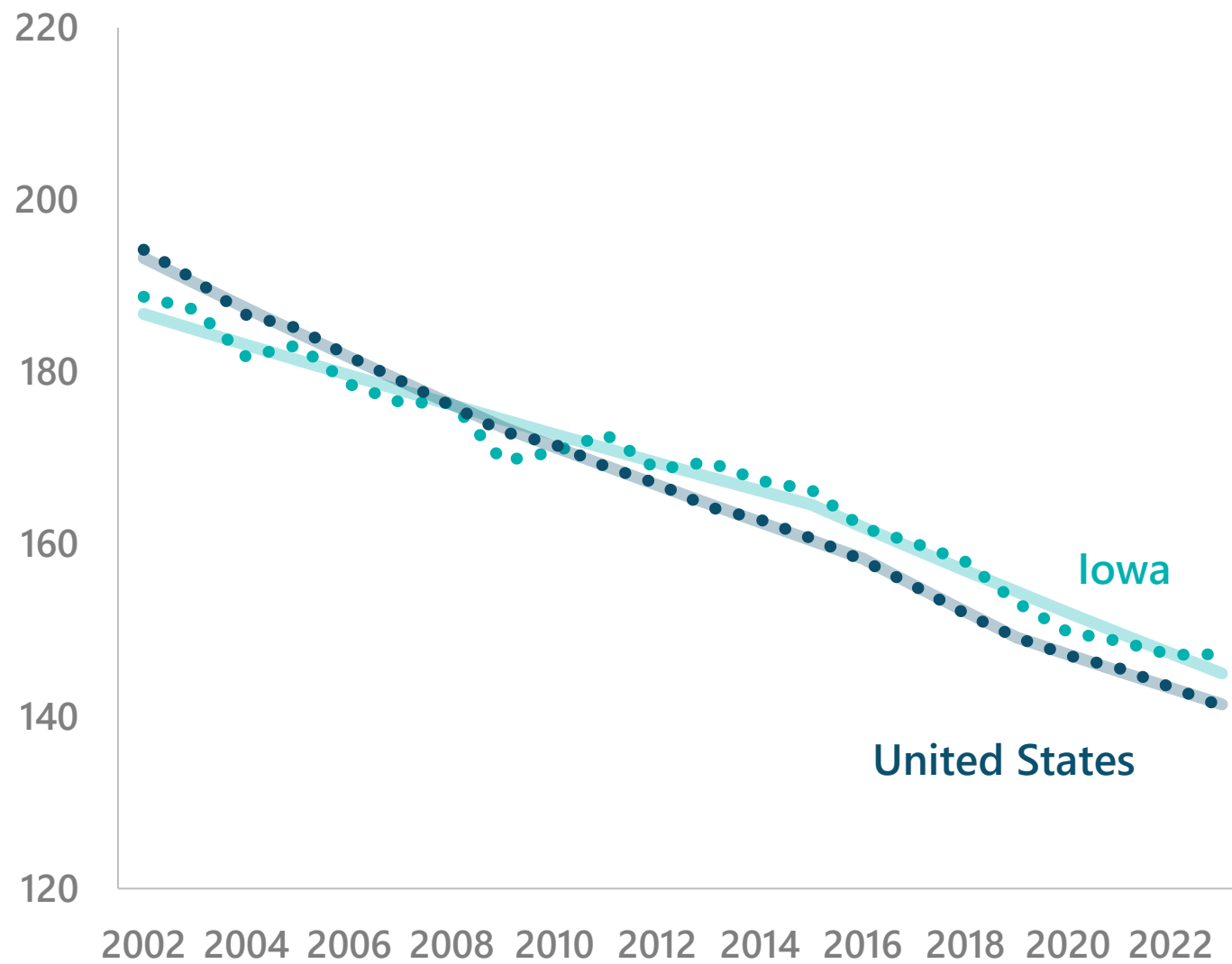


2020 data not included

Iowa has the **#23**  
highest rate of  
**cancer deaths** in  
the U.S.

Iowa's rate is  
**3% higher** than  
the U.S. rate

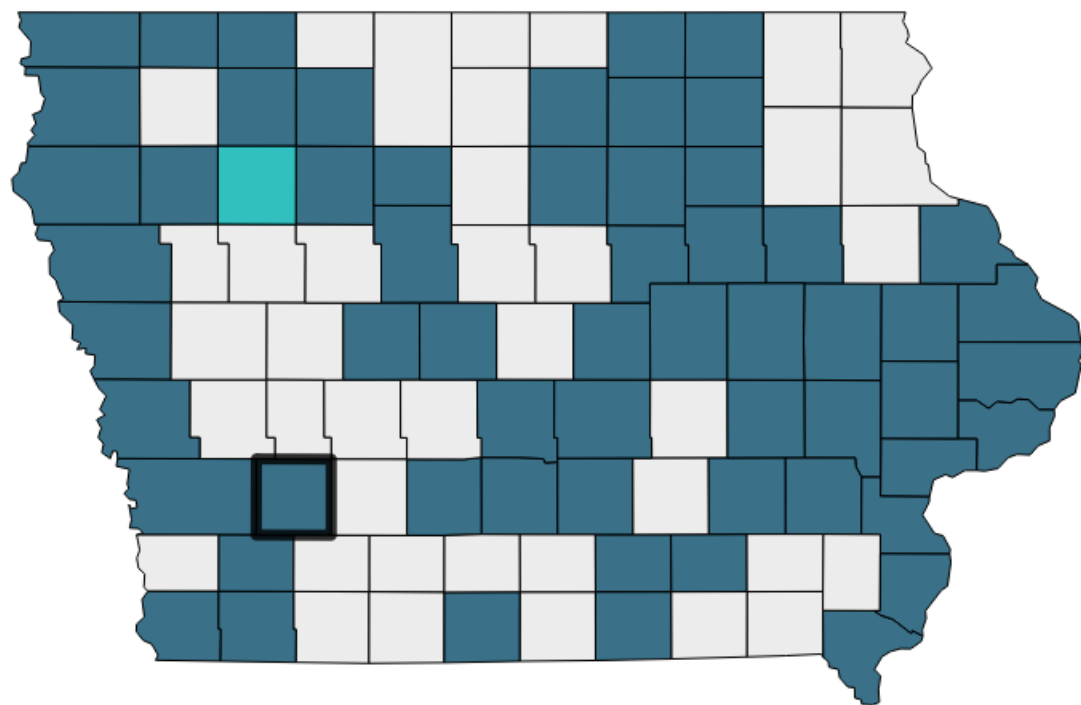
Rate of Cancer Deaths



# Over half of Iowa's counties have a higher incidence rate than the U.S.

**59** Counties with rate **OVER** the national average

**1** County with rate **BELOW** the national average



■ Above National Average  
■ Below National Average  
■ Similar to National Average

2018-2022 Incidence



# **About the Project**

**Goal:** to enhance community engagement & education around cancer prevention and control across all of Iowa's 99 counties.



Present county-specific cancer data



Listen



Provide  
Resources



Recommend  
actions

# There are Many Cancer Control Partners in Iowa

## State Government



### Governor

- Implement state laws
- Advance and pursue policies and programs

### Iowa Legislature

- Propose and vote on legislation
- Appropriate money to state agencies and programs
- Create and modify Iowa laws



### Bureau of Chronic, Congenital and Inherited Conditions

#### Comprehensive Cancer Control Program

Cancer prevention, screening, survivorship

Care for Yourself  
(Breast & Cervical  
Cancer Program)

Colorectal Cancer  
Screening Program

### Bureau of Environmental Health Services

- Track environmental health-related diseases
- Assist local boards of health

### Local (County) Public Health Services/Boards of Health

- Address health priorities and health disparities
- Promote healthy living
- Protect against environmental hazards
- Assure access to health services

Unity Point, MercyOne, Great River, Avera, Mayo, Methodist, Gundersen, Sanford and numerous independent **health systems, hospitals and clinics across Iowa**

Provide cancer prevention, screening, treatment, and survivorship services



Iowa Cancer  
Consortium

Advocate, collaborate, plan



### Iowa Cancer Action Network

Advocate for better policies

### ACS Iowa

Help with cancer treatment and recovery



Holden Comprehensive  
Cancer Center

Iowa's only NCI Designated  
Cancer Center

Health Care, research,  
education



Data, support research &  
education

## UI Research Centers



Center for Health Effects of  
Environmental Contamination



# Iowa Cancer Registry Goals



**Assemble & report data** on new cancers, cancer deaths, & survival



Respond to **data requests** from organizations & individuals



**Support studies** for cancer prevention, research & education

# Federal Funding for Cancer Control in Iowa

- The Iowa Cancer Registry is funded in part with Federal funds from the **National Cancer Institute (National Institutes of Health)**, Department of Health and Human Services, under Contract No. HHSN261201800012I
- The Cancer in Iowa: 99 Counties Project is specifically funded by Federal funds from the **National Cancer Institute** through grant award: 5R01CA254628-04S2, and through National Cancer Institute funds provided to the University of Iowa Holden Comprehensive Cancer Center (P30CA086862)
- The Iowa Cancer Consortium acknowledges the **Centers for Disease Control and Prevention (CDC)** for its funding support under cooperative agreement NU58DP007103 awarded to the Iowa Department of Health and Human Services (Iowa HHS).

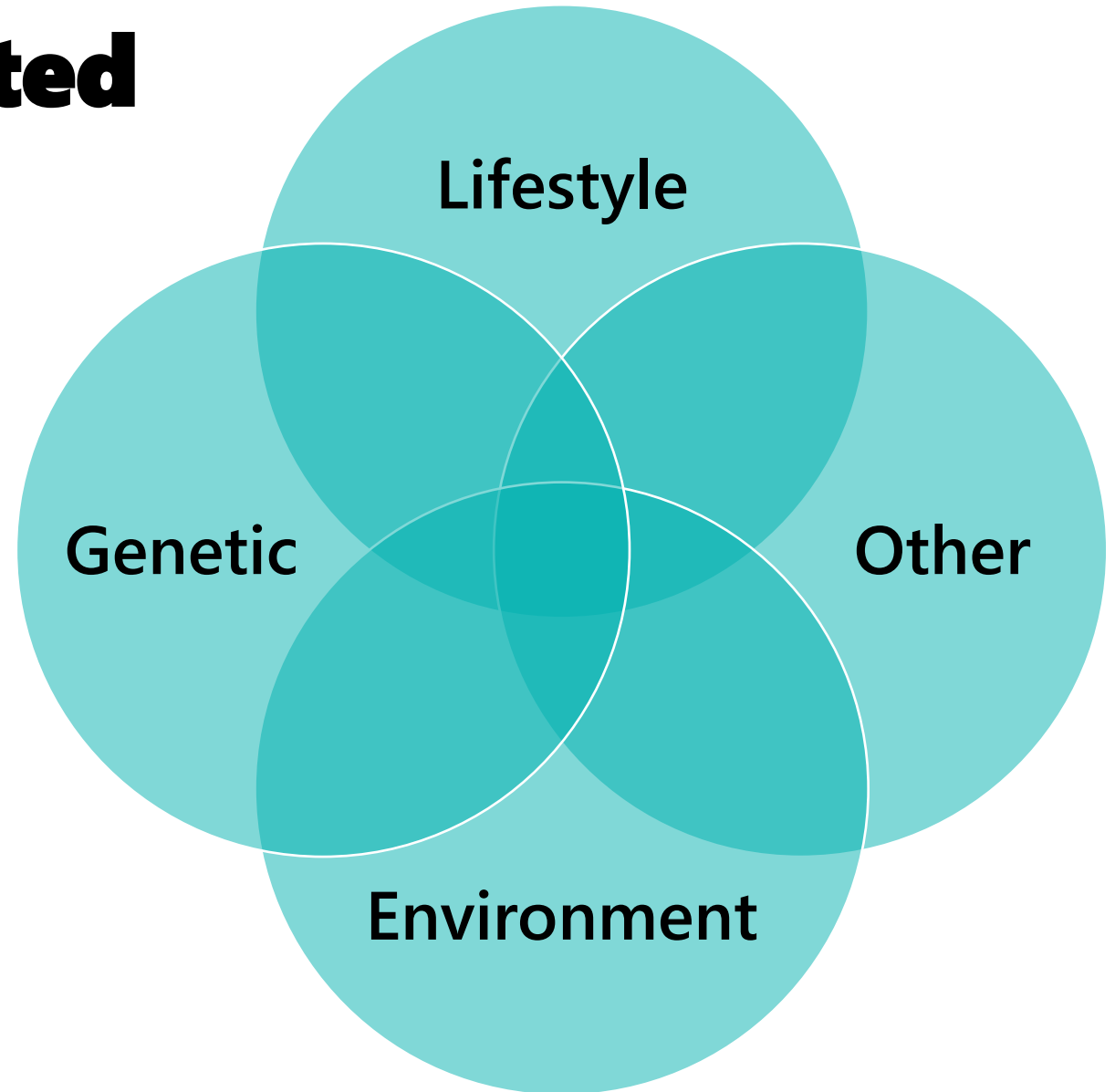
The contents of this presentation are solely the responsibility of the authors and do not necessarily represent the official views of CDC or the National Institutes of Health/National Cancer Institute.



# **Background on Cancer**

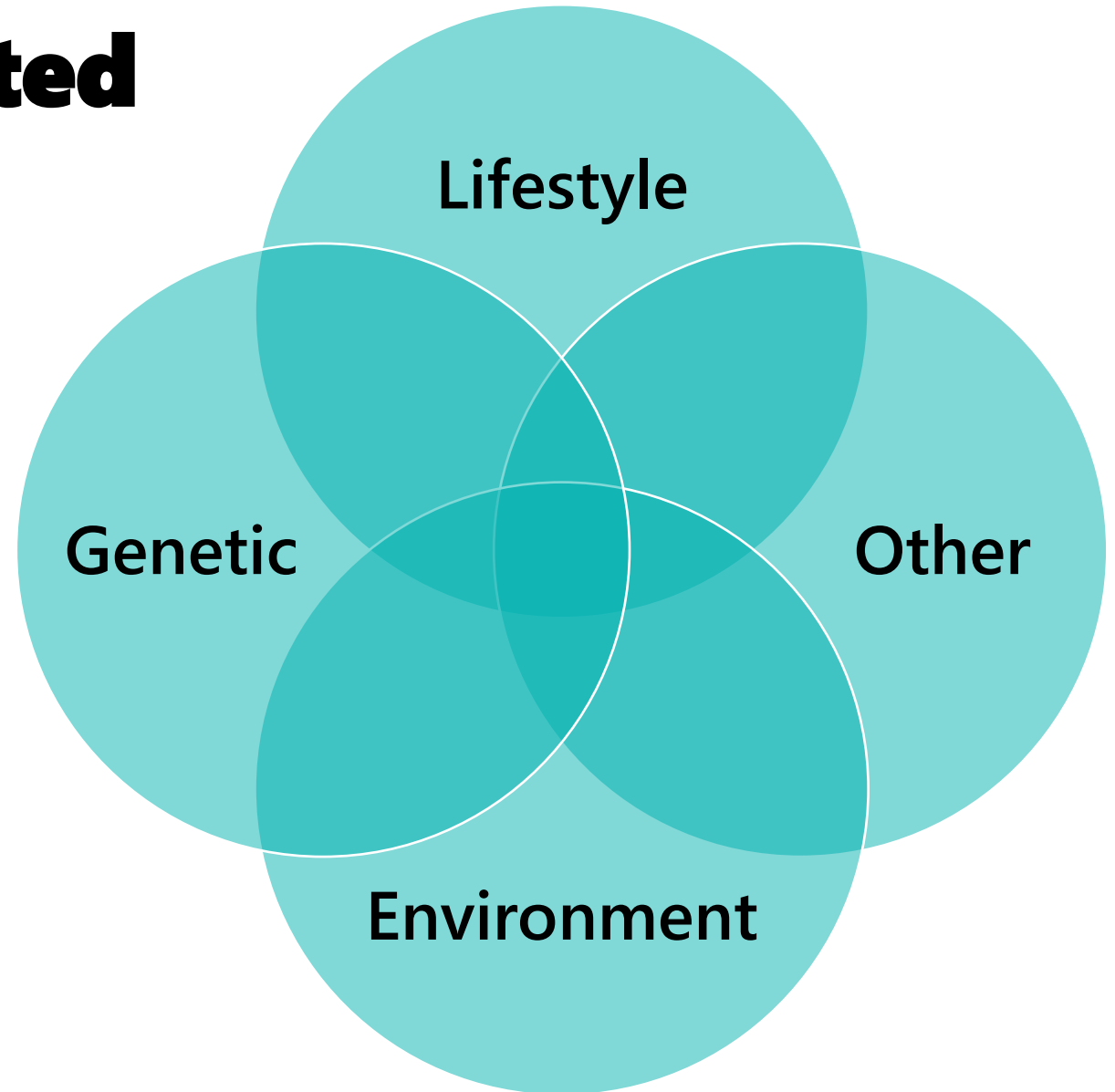
# Cancer is Complicated

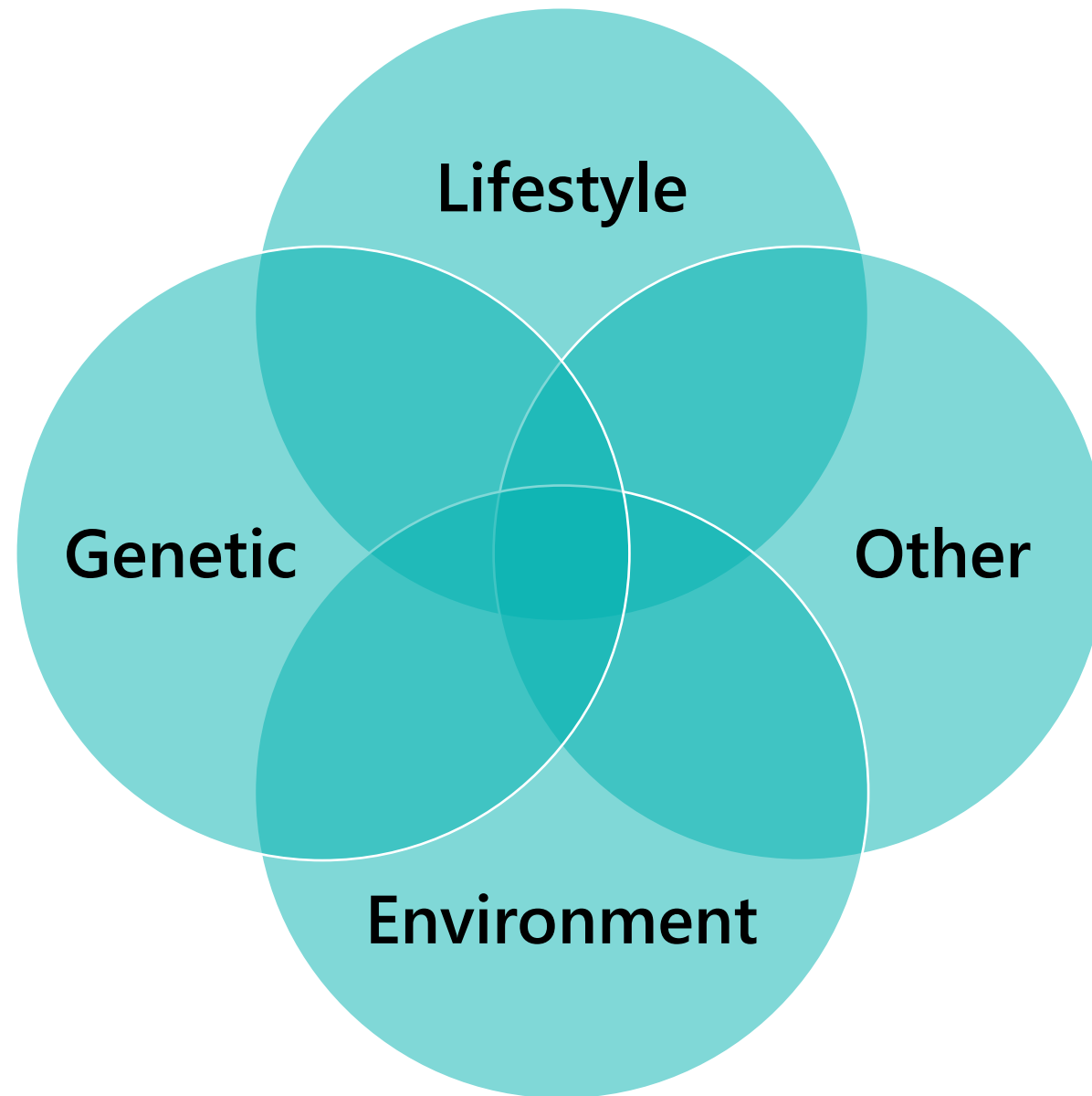
There is no one cause of cancer; it is a combination of different **genetic, lifestyle, and environmental** risk factors that change the function of cells



# Cancer is Complicated

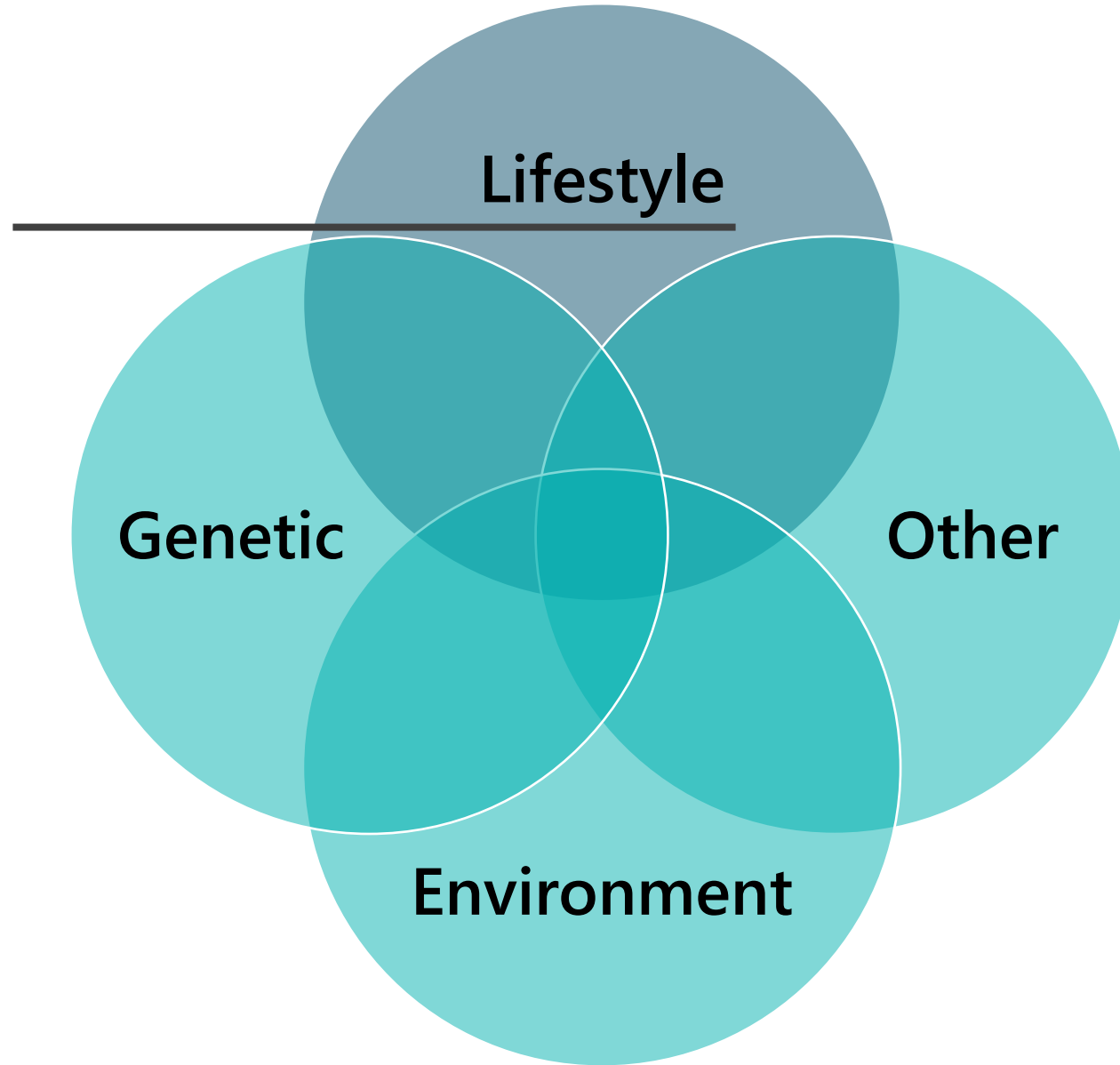
**Risk factors** are things that increase your chances of getting cancer



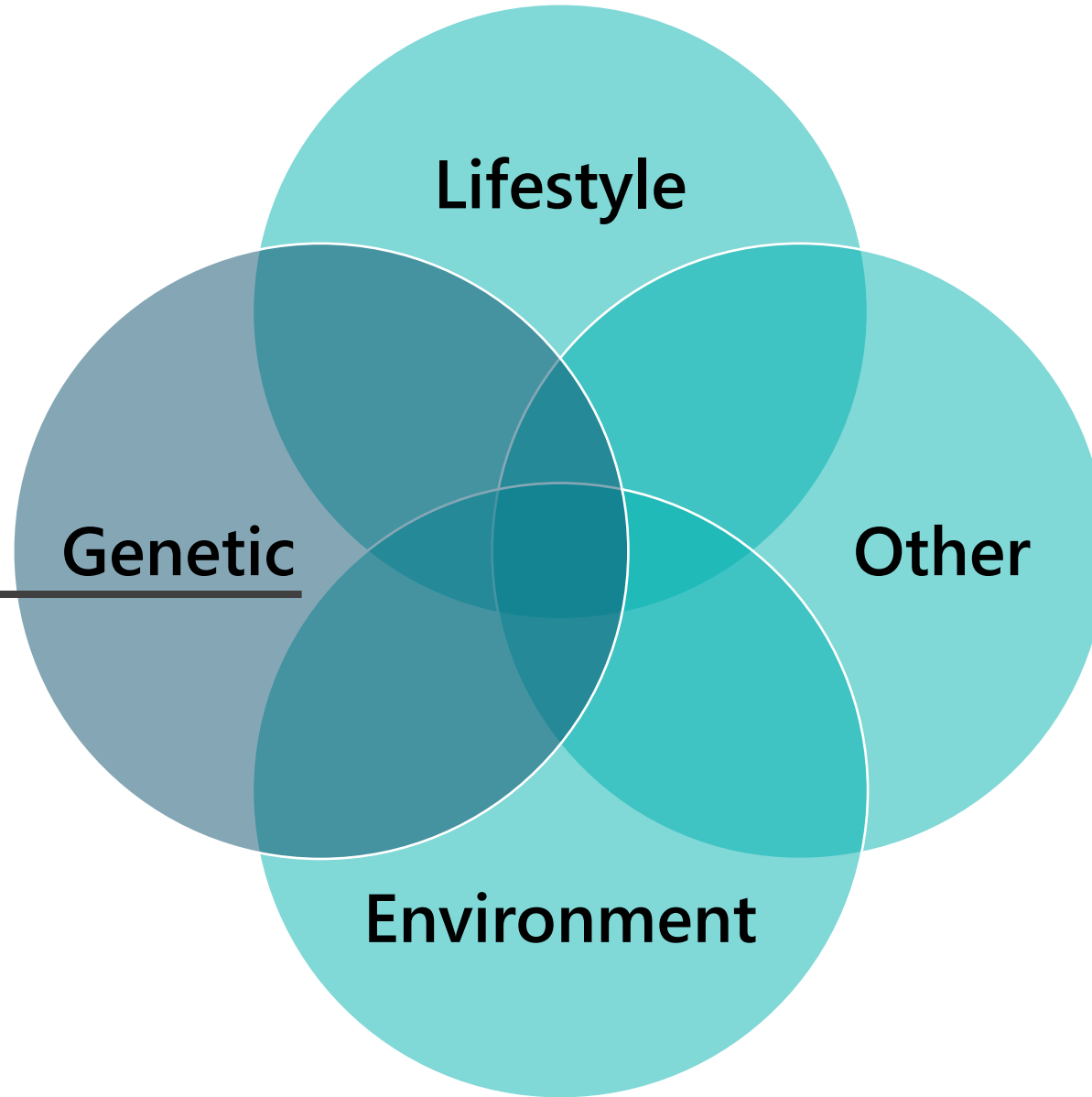


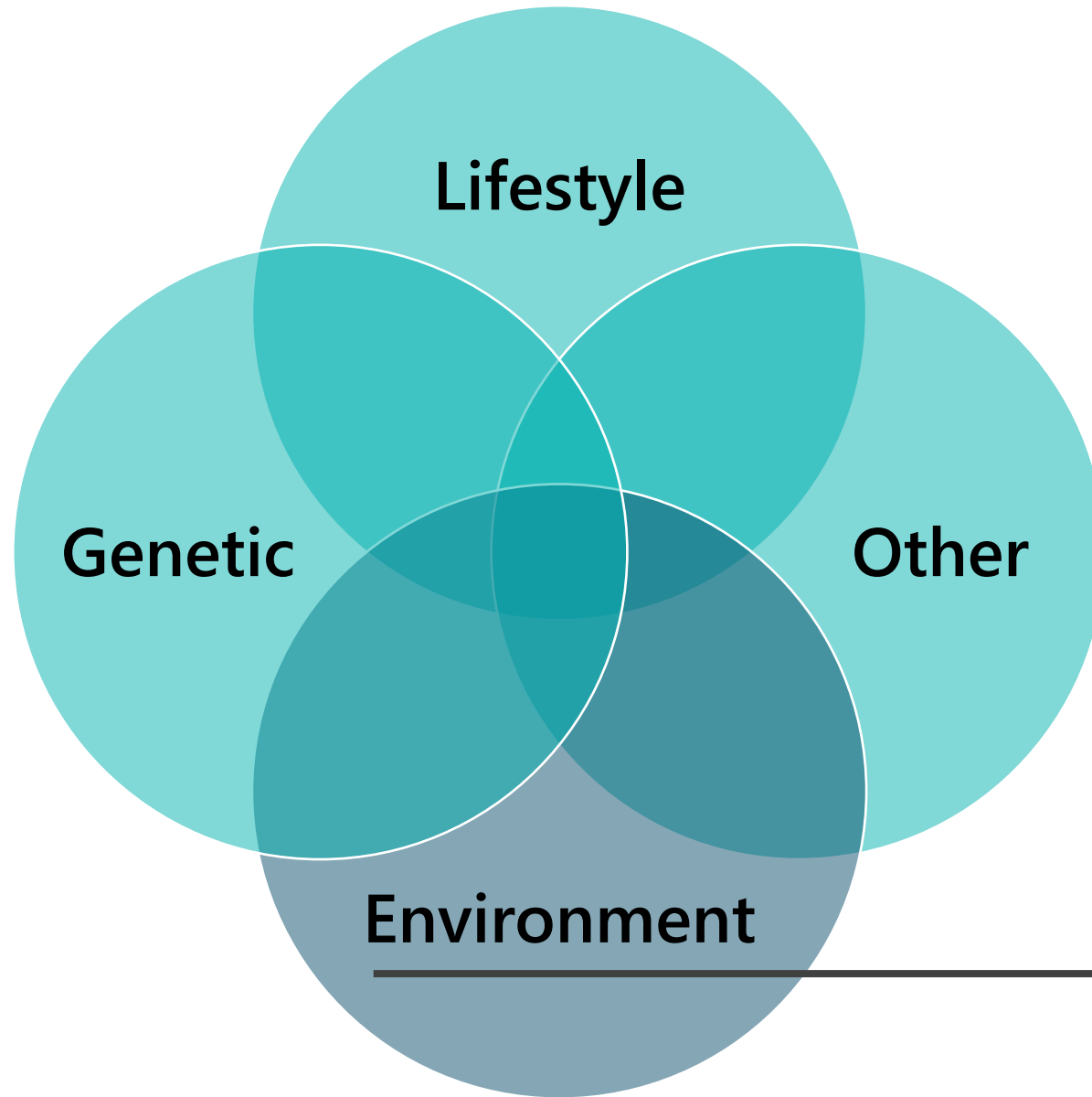


- Tobacco
- Alcohol
- Unhealthy diet
- Not being physically active
- Sunburns

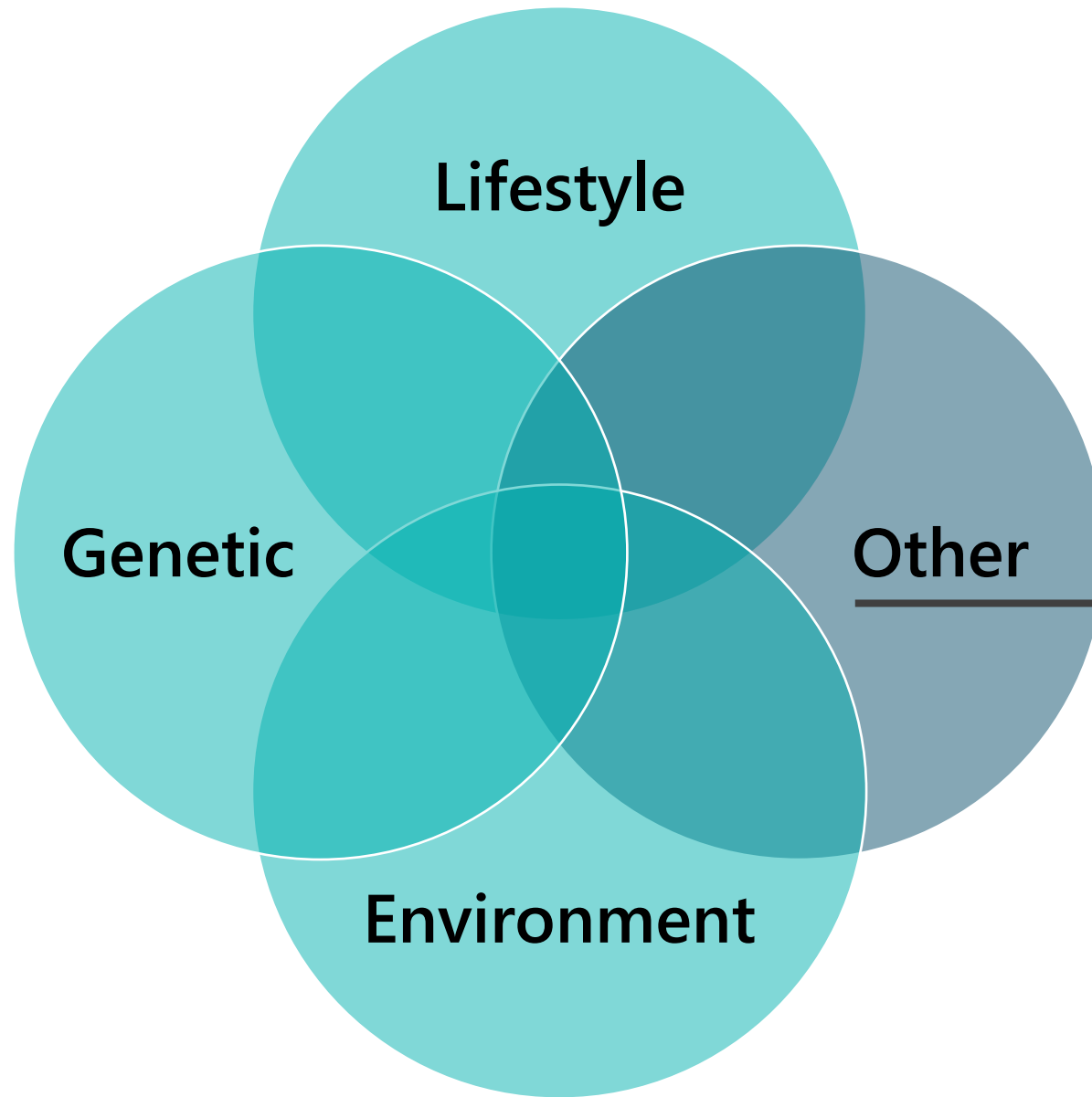


- Family history of cancer
- Random mutations





- Exposure to chemicals
- Radiation



- **Aging**
- Viruses (HPV, HIV)
- Medical conditions like chronic inflammation

# Cancer & the Environment

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- Many Iowans understandably have questions about potential links between environmental exposures and cancer
- This is an important area of continued research, and Iowans are right to ask questions and be cautious
- ICR, along with other population-based cancer registries, do not collect data on environmental risk factors, but we do share our data with researchers to support studies of cancer & environmental risk factors

# Risk Factors

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- There can be many years between exposure to risk factors & cancer development, which makes it difficult to prove connections.
  - For example, lung cancer may not occur until 30 years after a person starts smoking
- Today we will focus on things you can do to reduce your cancer risk. These things can be addressed at the state, community, and individual levels.



# **Key Terms**

# Incidence & Mortality

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- Incidence
  - Number of **new cases** of cancer occurring during a specified time period in a population
- Mortality
  - Number of **deaths** from cancer that occur during a specified time period in a population



# Rates & Counts

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- Counts
  - The **number** of new cases diagnosed or deaths from cancer
- Age-Adjusted Rates
  - Addresses the question: *If the size and age of the populations were the same, would there be a difference in rates?*
  - Adjusts the counts to give a **# per 100,000 people**

# **Stage definition used today**

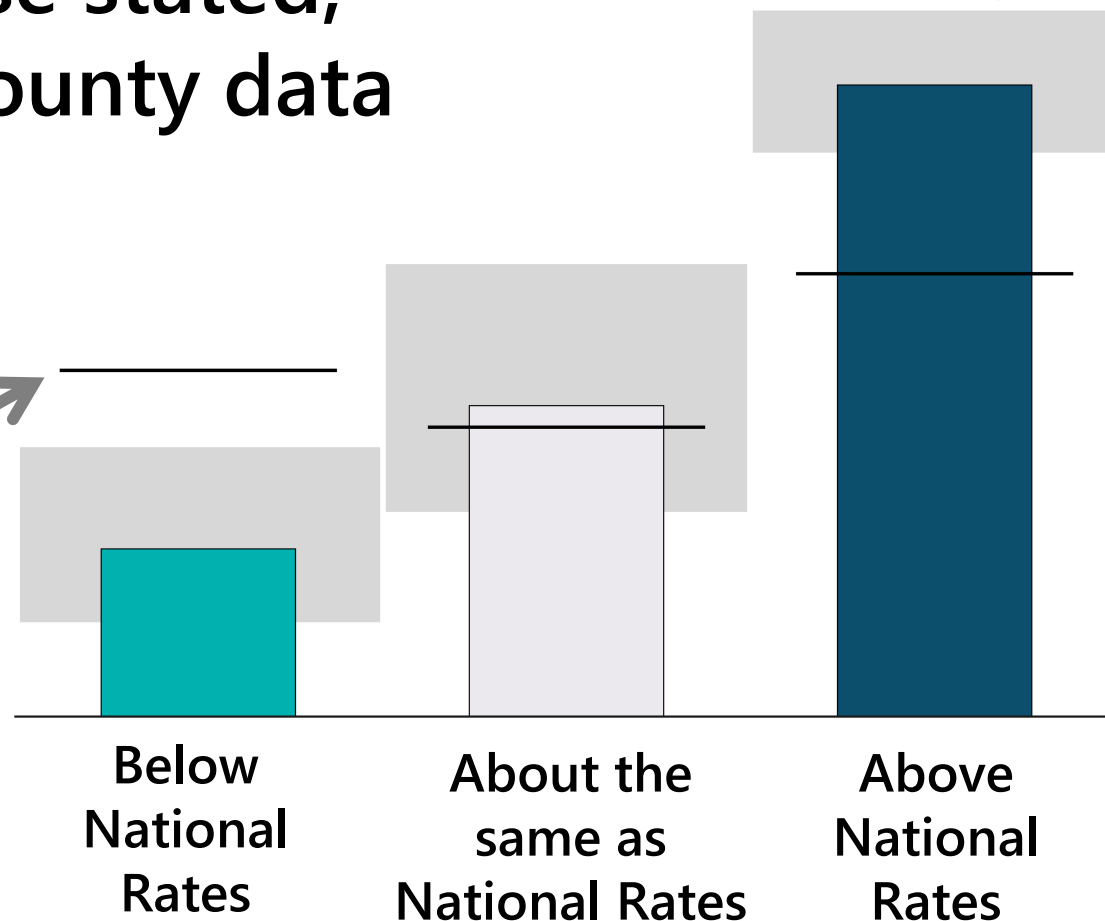
- Early Stage includes
  - Localized: cancer is limited to the place where it started, with no sign that it has spread
- Late Stage includes
  - Regional: cancer has spread to nearby lymph nodes, tissues, or organs
  - Distant: cancer has spread to distant parts of the body

<https://www.cancer.gov/about-cancer/diagnosis-staging/staging>

# How to read the graphs

Unless otherwise stated,  
bars are your county data

Black lines on  
bar graphs  
are United  
States data



Grey boxes on  
bar graphs are  
95% Confidence  
Intervals.

These are used to  
determine if rates  
are statistically  
different from  
each other



# **Cancer in Cass County**

# New Cancers in Cass County

All cancer types, average counts and rates, 2018-2022

Each year, there are about

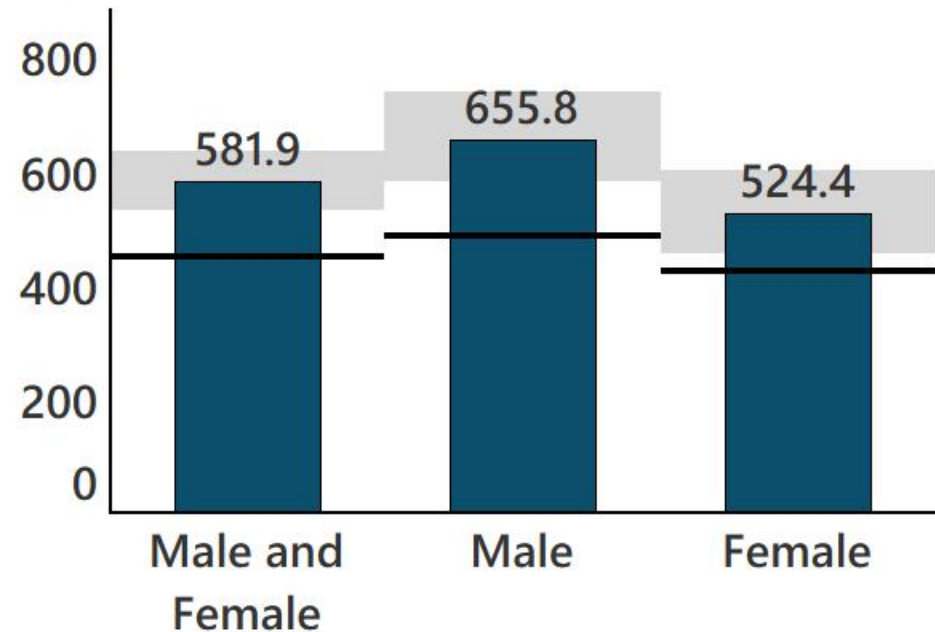
**114**

new cancers diagnosed in  
Cass County

Cancer incidence rates in Cass County are  
**higher than the U.S. average**

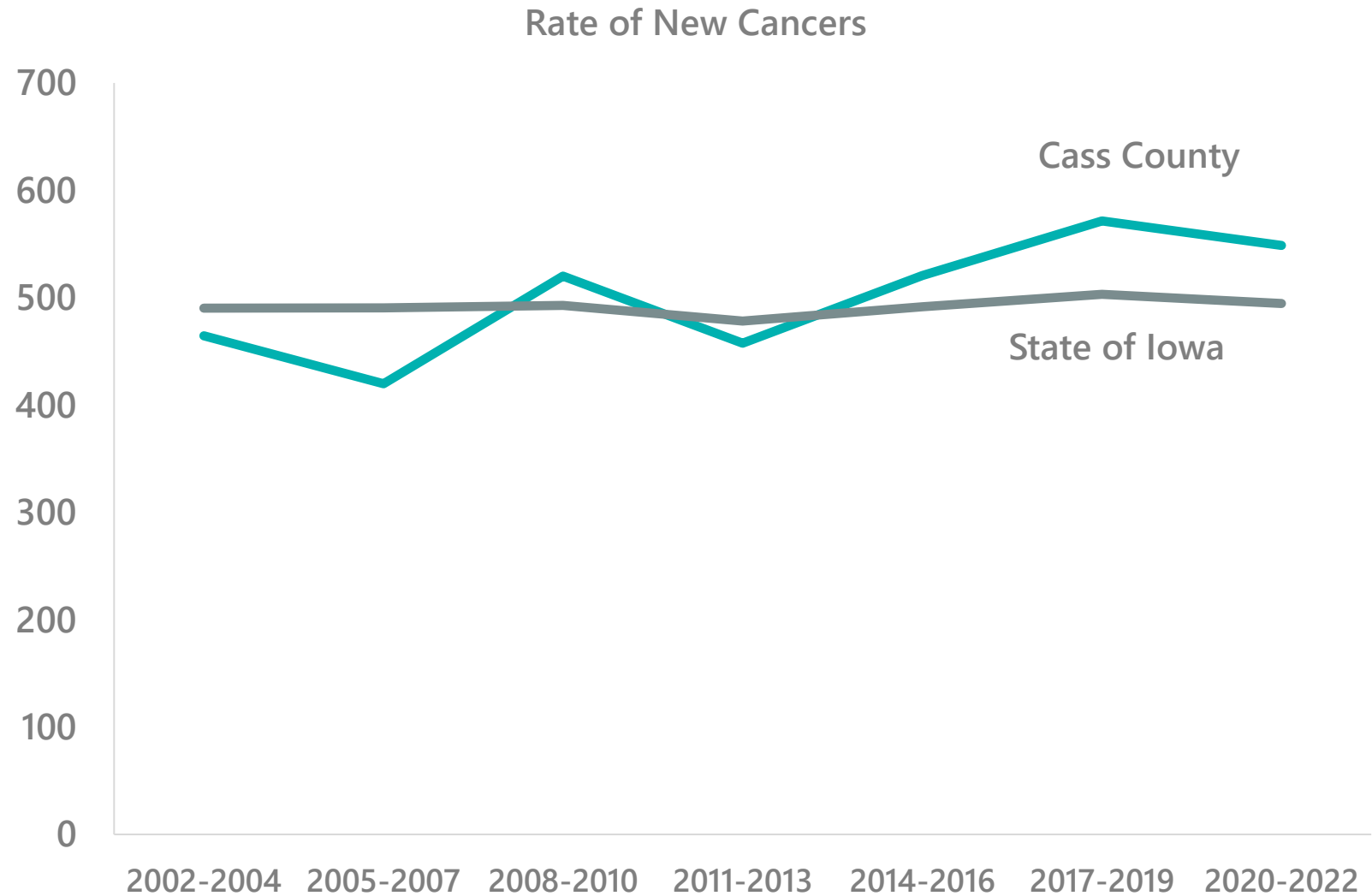
Ranks #1 of 99 counties

Cancer incidence rates are typically  
higher in men than women



Age-Adjusted incidence rate per 100,000 (2018-2022)

# Rate of **new cancers** in Cass County



# Cancer deaths in Cass County

All cancer types, average counts and rates, 2019-2023

Each year, there are about

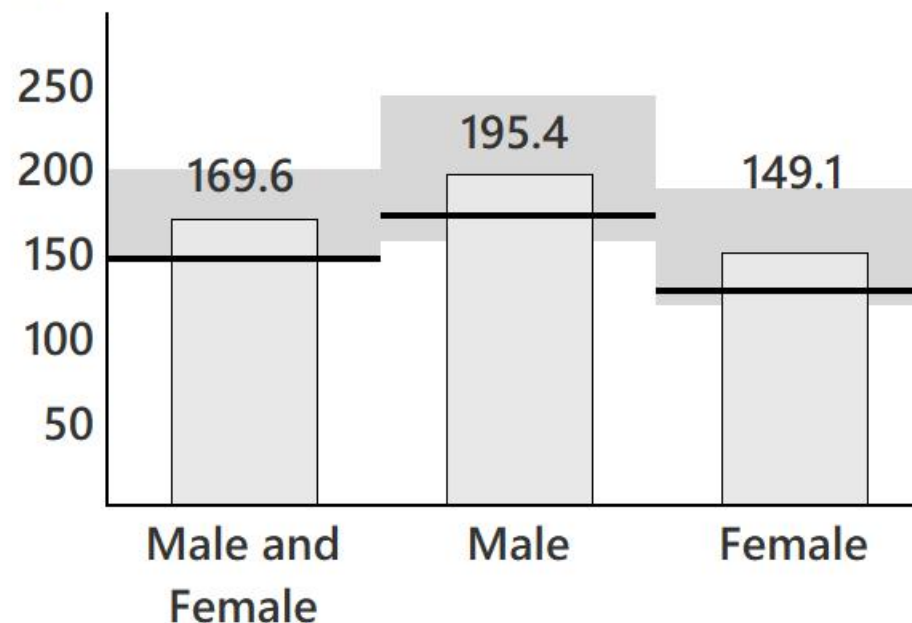
**37**

cancer deaths in Cass County

Cancer mortality rates in Cass County are  
**Similar to National Average**

Ranks #16 of 99 counties

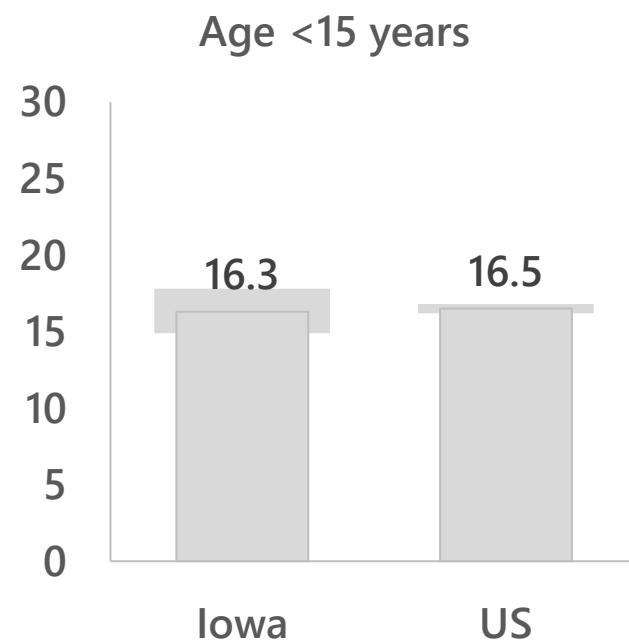
Cancer mortality rates are typically  
higher in men than women



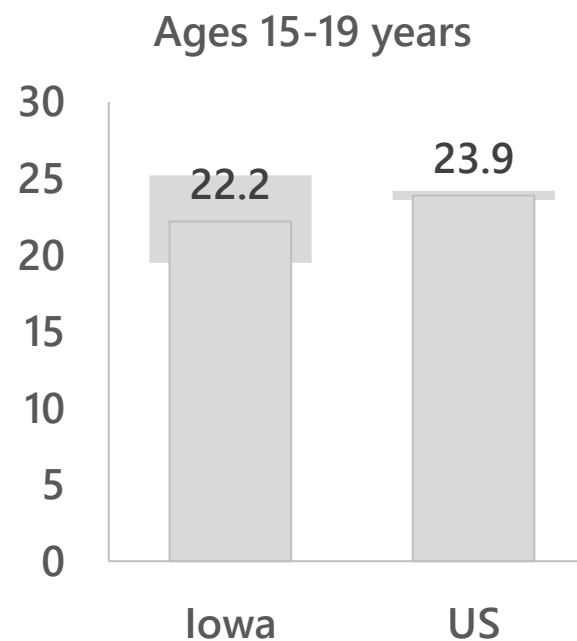
Age-Adjusted mortality rate per 100,000 (2019-2023)

# Pediatric, Adolescent, and Young Adult New Cancers in Iowa

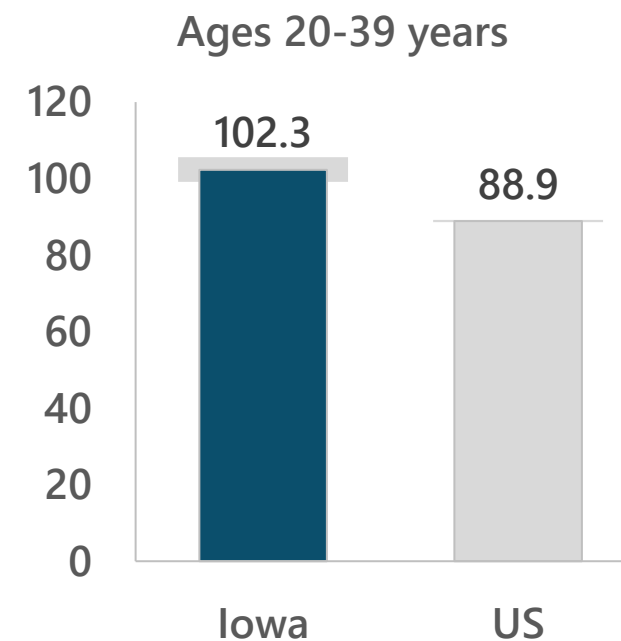
Pediatric cancer incidence rates in Iowa are **not different** than the U.S. rate



Adolescent cancer incidence rates in Iowa are **not different** than the U.S. rate



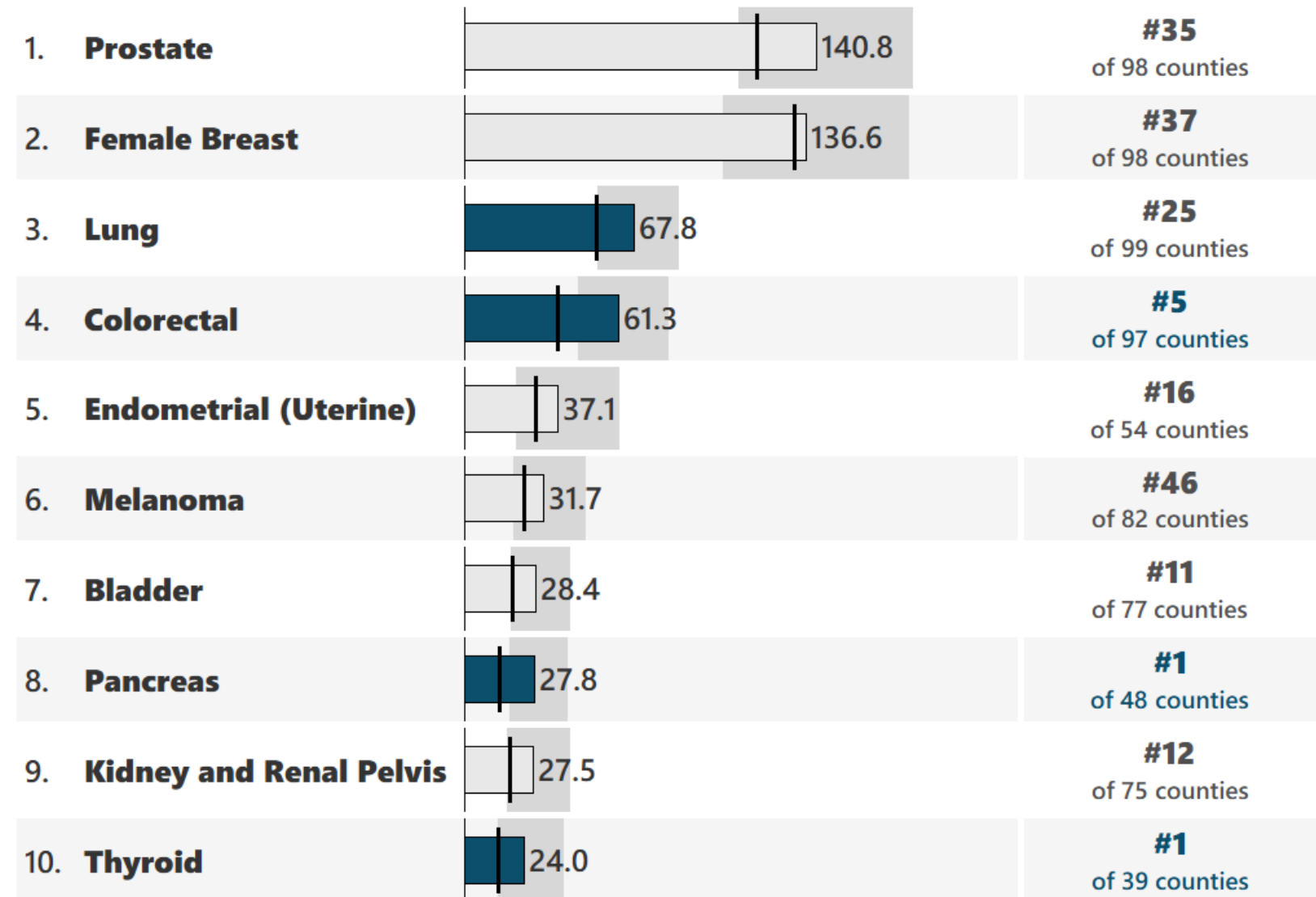
Young Adult cancer incidence rates in Iowa **are higher** than the U.S. rate



Age-Adjusted incidence rate per 100,000 (2018-2022)



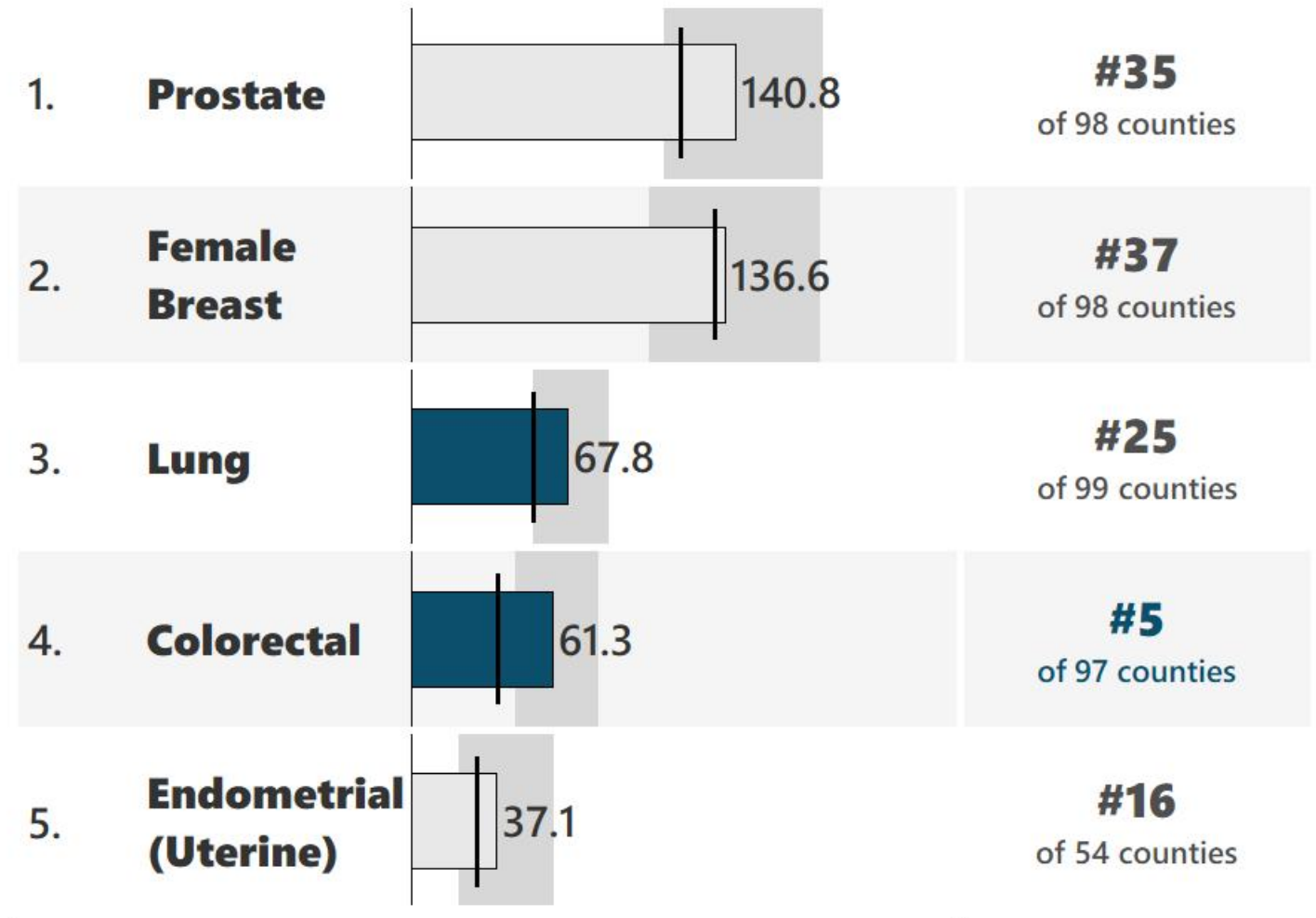
# Top 10 cancers in Cass County



Age-Adjusted incidence rate per 100,000 (2018-2022)

Rank compared to other counties, where #1 is highest in the state

# Top 5 Cancers in Cass County



Age-Adjusted incidence rate per 100,000 (2018-2022)

Rank compared to other counties, where #1 is highest in the state

# 1 | Prostate

Each year in Cass County,  
there are about...

**15**

New Cases per year

Cass County

140.8

Statewide

129.5

United States

116.5

**<6**

Deaths per year

Cass County

*\*Too few cases to show rates*

Statewide

19.6

United States

19.2

Age-Adjusted Rate per 100,000  
Incidence (2018-2022); Mortality (2019-2023)

# Prostate Cancer Screening

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## Screening Guidelines

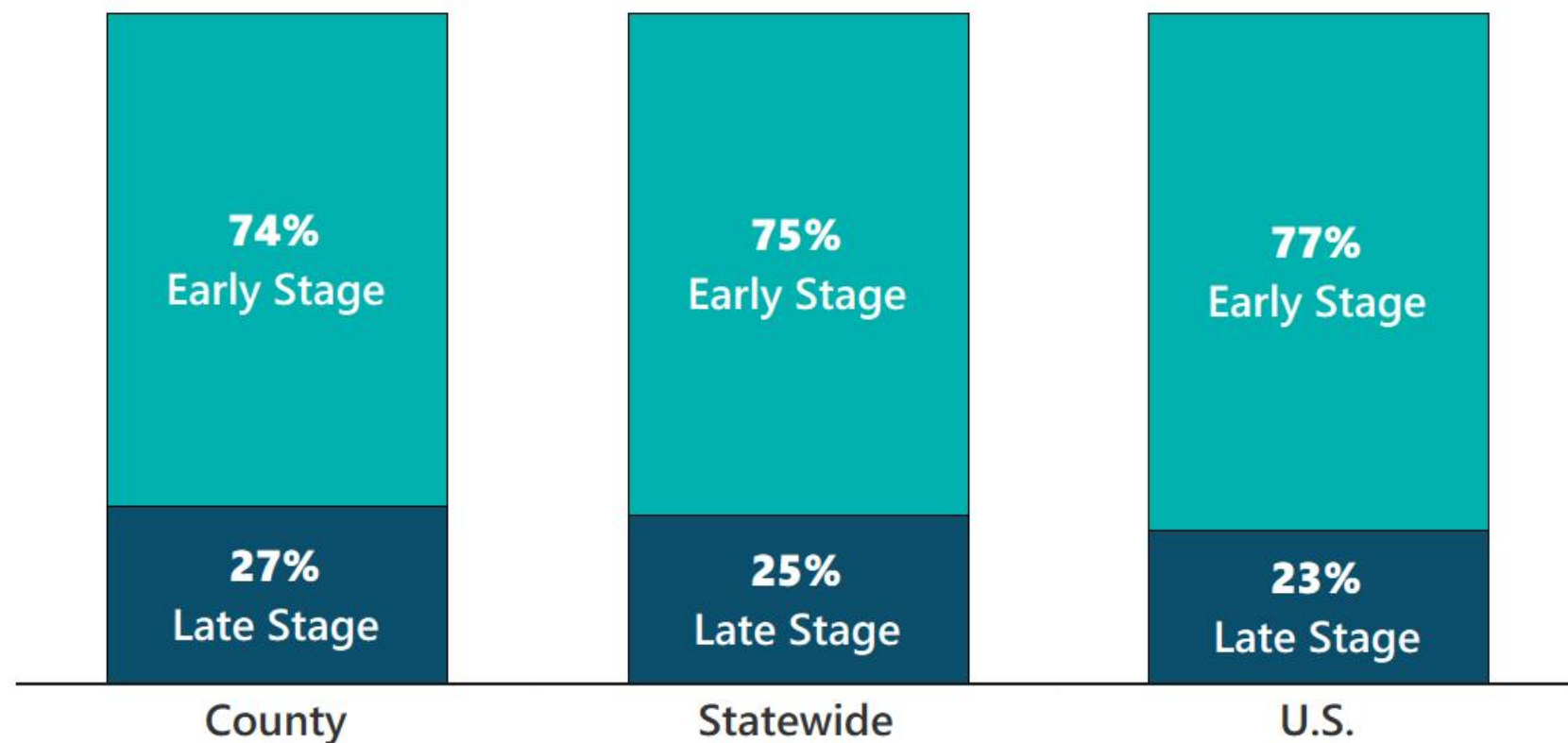
Screening test: Prostate-specific antigen (PSA) blood test

Men who are 55-69 years old, discuss with your doctor if  
a PSA test is right for you

(U.S. Preventative Services Task Force)

# 1 | Prostate Cancer Stage at Diagnosis

Early stage = Easier to treat, Higher survival rates



**27%**  
Diagnosed at a  
Late Stage

## 2 | Female Breast

Each year in Cass County,  
there are about...

**14**

New Cases per year

Cass County

136.6

Statewide

137.3

United States

131.4

**<6**

Deaths per year

Cass County

*\*Too few cases to show rates*

Statewide

17.4

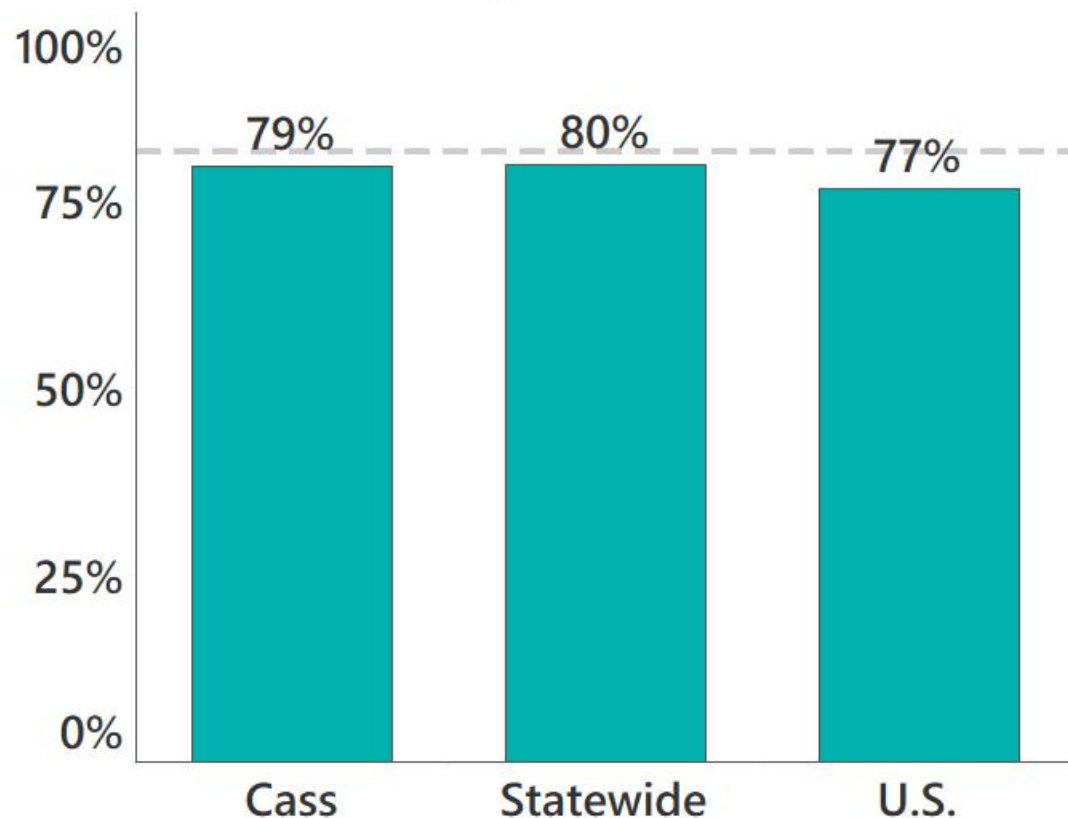
United States

19.2

Age-Adjusted Rate per 100,000  
Incidence (2018-2022); Mortality (2019-2023)

# Breast Cancer Screening

Women age 50+ who are up to date with their breast cancer screening



## Screening Guidelines

Women ages 40-74 should screen with a mammogram every 2 years

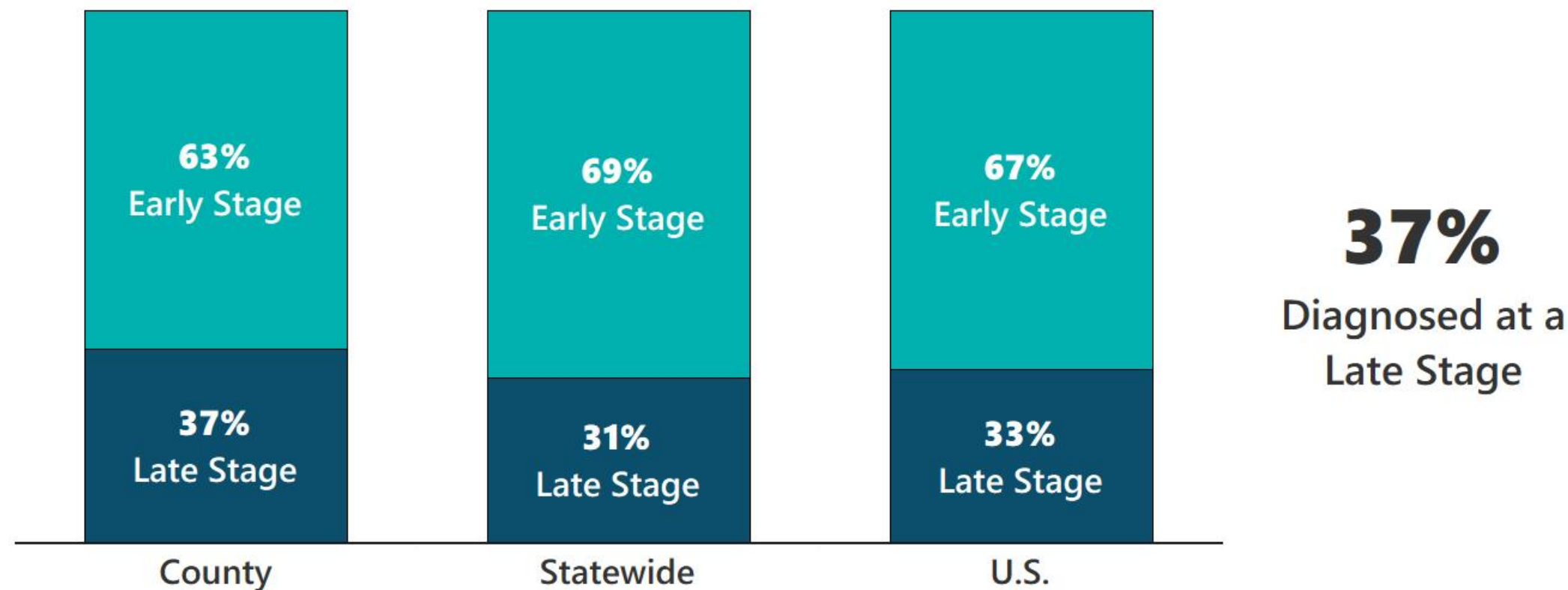
Talk to your doctor if you have a family history of breast cancer

*Data from 2022 survey  
Goal: 81.4% by 2027*



## 2 | Female Breast Cancer Stage at Diagnosis

Early stage = Easier to treat, Higher survival rates





# The Care for Yourself – Breast and Cervical Cancer Program (CFY-BCC)

**We provide free breast and cervical cancer screenings across Iowa.**

- ▶ CFY-BCC is also called the Iowa Breast and Cervical Cancer Early Detection Program.
- ▶ CFY-BCC serves Iowans between 21 and 64 years of age.
- ▶ Are at or earn less than 250% of the Federal Poverty Level.
- ▶ Call (866) 339-7909 to speak to a confidential coordinator immediately.
- ▶ CFY-BCC coordinators are available to help you Monday-Friday, 8:00 a.m. to 4:00 p.m.



<https://hhs.iowa.gov/public-health/cancer/cfy>

# 3 | Lung

Each year in Cass County,  
there are about...

**16**

New Cases per year

**8**

Deaths per year

Cass County

67.8

Statewide

60.0

United States

52.4

Cass County

32.5

Statewide

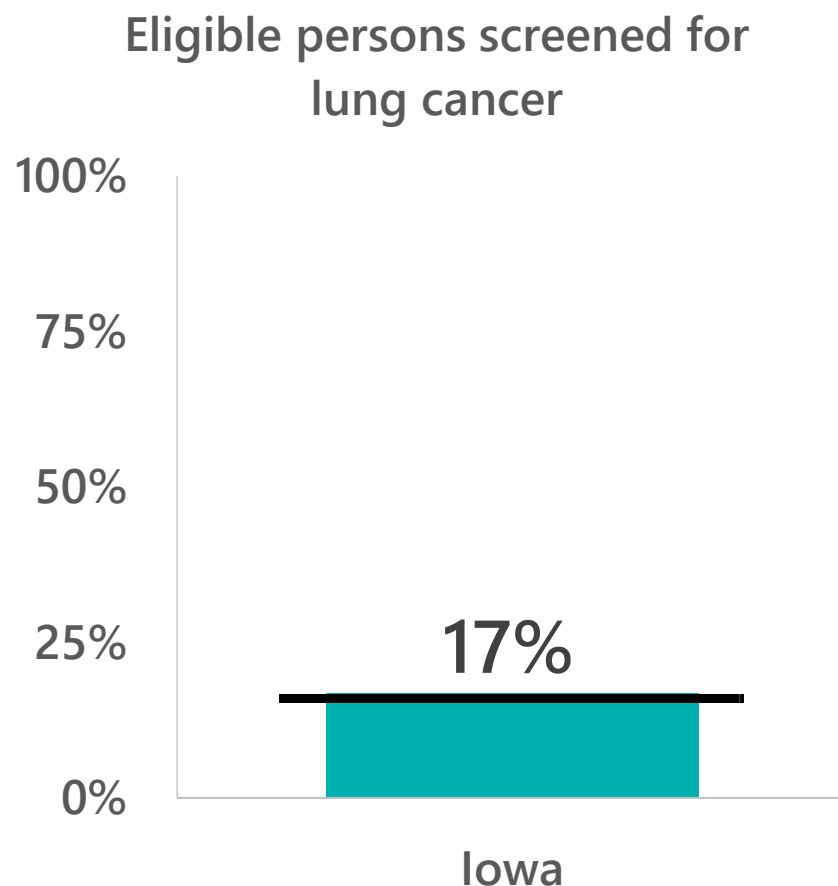
34.3

United States

31.5

Age-Adjusted Rate per 100,000  
Incidence (2018-2022); Mortality (2019-2023)

# Lung Cancer Screening



## Screening Guidelines

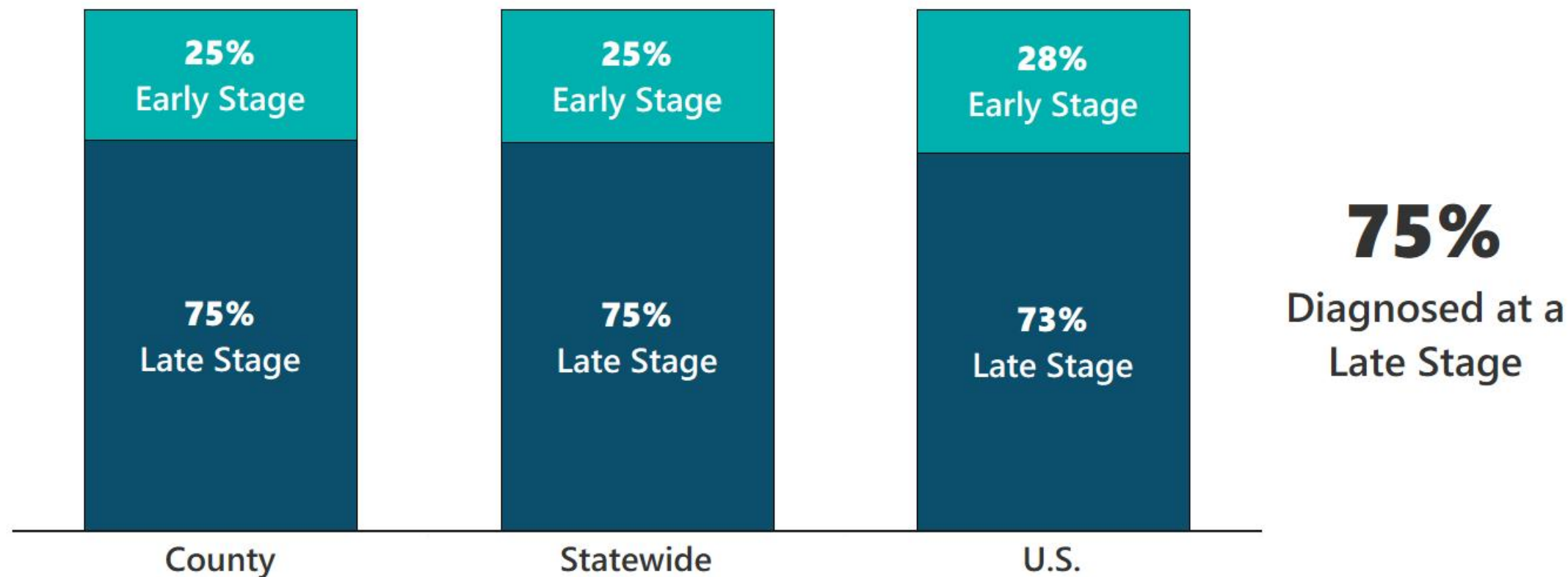
### Low-dose CT scan

If you have smoked in the last 15 years and are between the ages 50-80 years talk to your doctor about being screened for lung cancer

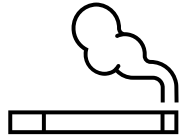
(U.S. Preventative Services Task Force)

# 3 | Lung Cancer Stage at Diagnosis

Early stage = Easier to treat, Higher survival rates



# Lung Cancer Risk Factors



Smoking is #1 cause of lung cancer



Radon is #2 leading cause of lung cancer  
Test your home for radon and mitigate

People who smoke that are exposed to radon are at a **10 to 20 times higher** risk of developing lung cancer than non-smokers

**Learn more about Radon testing and mitigation:**

Iowa Health & Human Services

[hhs.iowa.gov/radiological-health/radon](https://hhs.iowa.gov/radiological-health/radon)

Iowa Cancer Consortium

[canceriowa.org/radon/](https://canceriowa.org/radon/)

# 4 | Colorectal

Each year in Cass County,  
there are about...

**11**

New Cases per year

**<6**

Deaths per year

Cass County

61.3

Statewide

40.3

United States

36.6

Cass County

*\*Too few cases to show rates*

Statewide

13.3

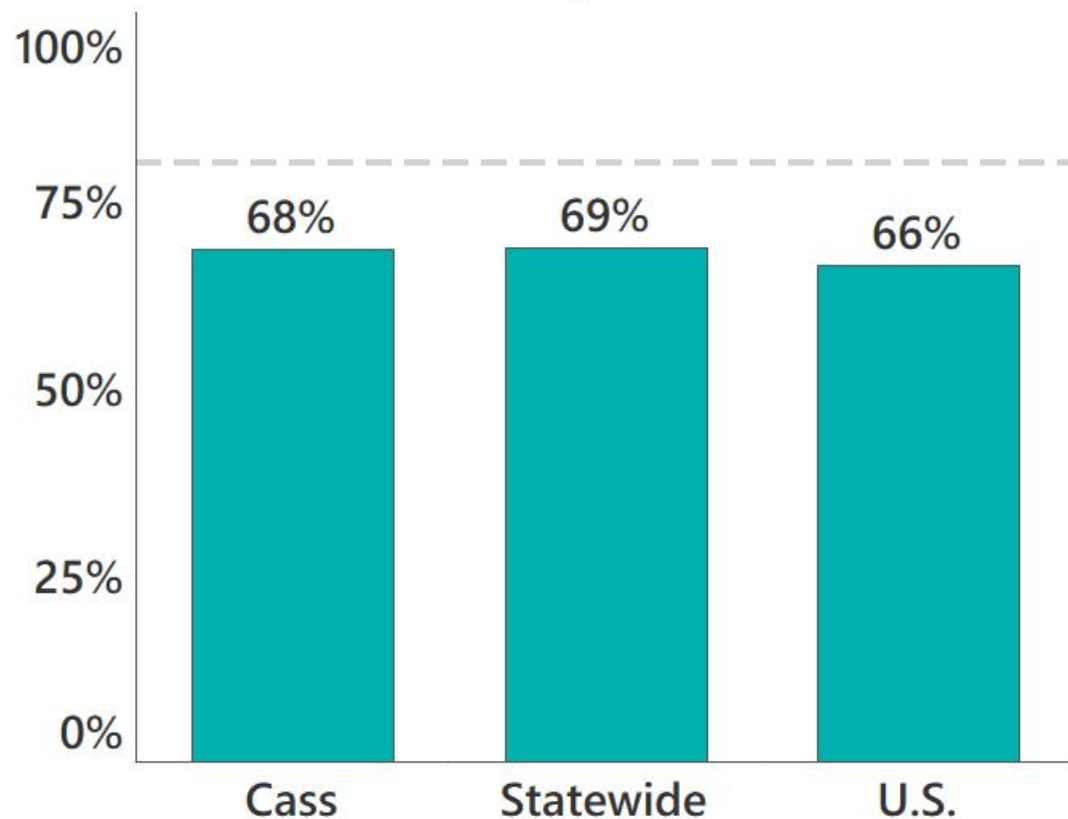
United States

12.9

Age-Adjusted Rate per 100,000  
Incidence (2018-2022); Mortality (2019-2023)

# Colorectal Cancer Screening

Adults ages 45-75 who are up to date with their colorectal cancer screening



## Screening Guidelines

Adults ages 45-75 can screen with either (1) an at-home, stool-based test, or (2) a colonoscopy.

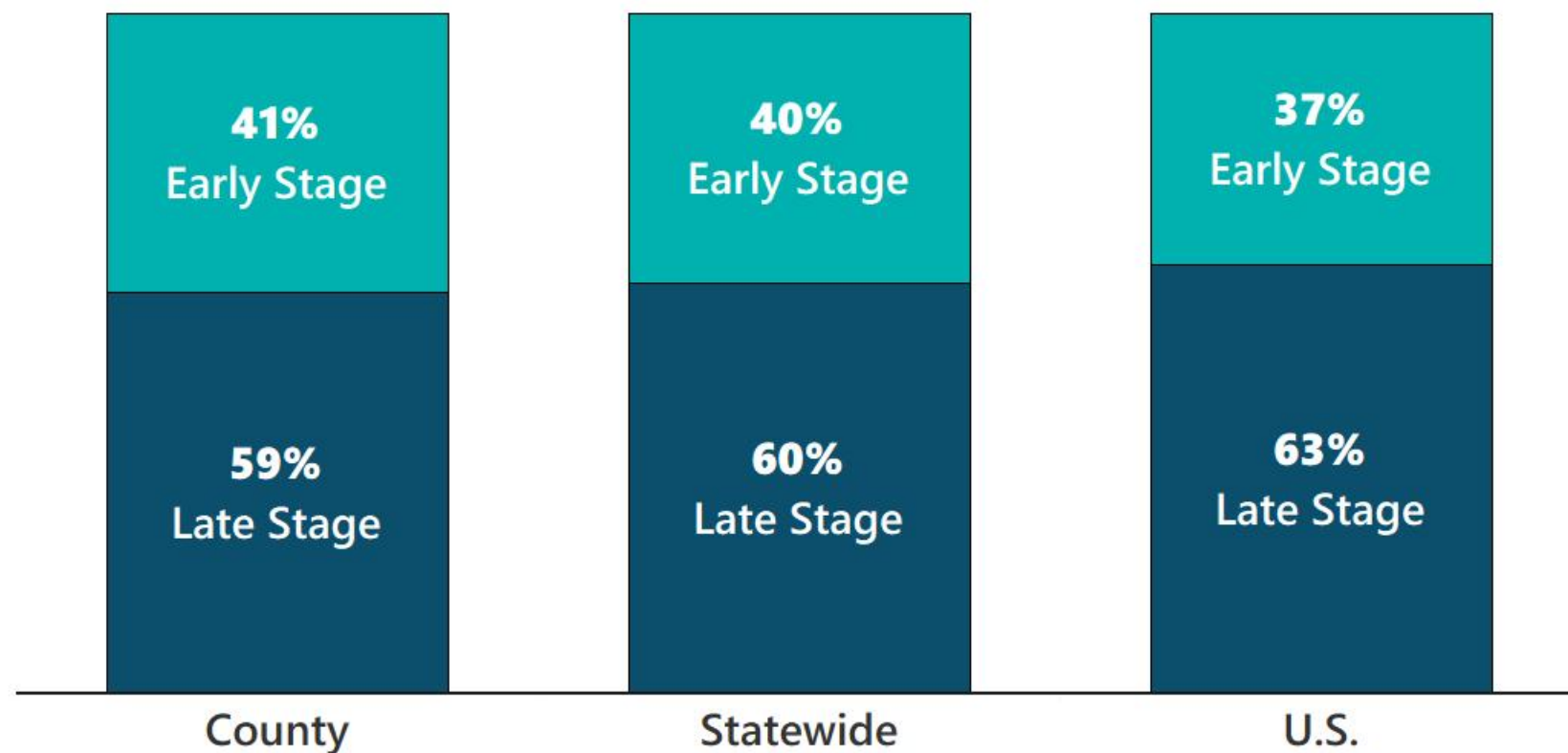
Talk to your doctor about which is best for you.

*Data from 2022 survey  
Goal: 80% by 2027*



## 4 | Colorectal Cancer Stage at Diagnosis

Early stage = Easier to treat, Higher survival rates



**59%**  
Diagnosed at a  
Late Stage



# Iowa Get Screened (IGS): Colorectal Cancer Program

**We partner with Iowa's Federally Qualified Health Centers (FQHCs) and local public health agencies to increase colorectal cancer screening.**

Through a collaboration with the Iowa Primary Care Association (Iowa PCA) and FQHCs, the program serves low-income Iowans, ages 45-75, to:

- ▶ Increase the number of cancers prevented
- ▶ Increase the diagnosis of early-stage colorectal cancer
- ▶ Reduce colorectal cancer incidence and mortality in the state



<https://hhs.iowa.gov/public-health/cancer/colorectal-cancer-screening-program>

# 5 | Endometrial (Uterine)

Each year in Cass County,  
there are about...

<6

New Cases per year

Cass County

37.1

Statewide

31.0

United States

27.9

<6

Deaths per year

Cass County

*\*Too few cases to show rates*

Statewide

5.4

United States

5.4

Age-Adjusted Rate per 100,000  
Incidence (2018-2022); Mortality (2019-2023)

# **Endometrial (Uterine Cancer)**

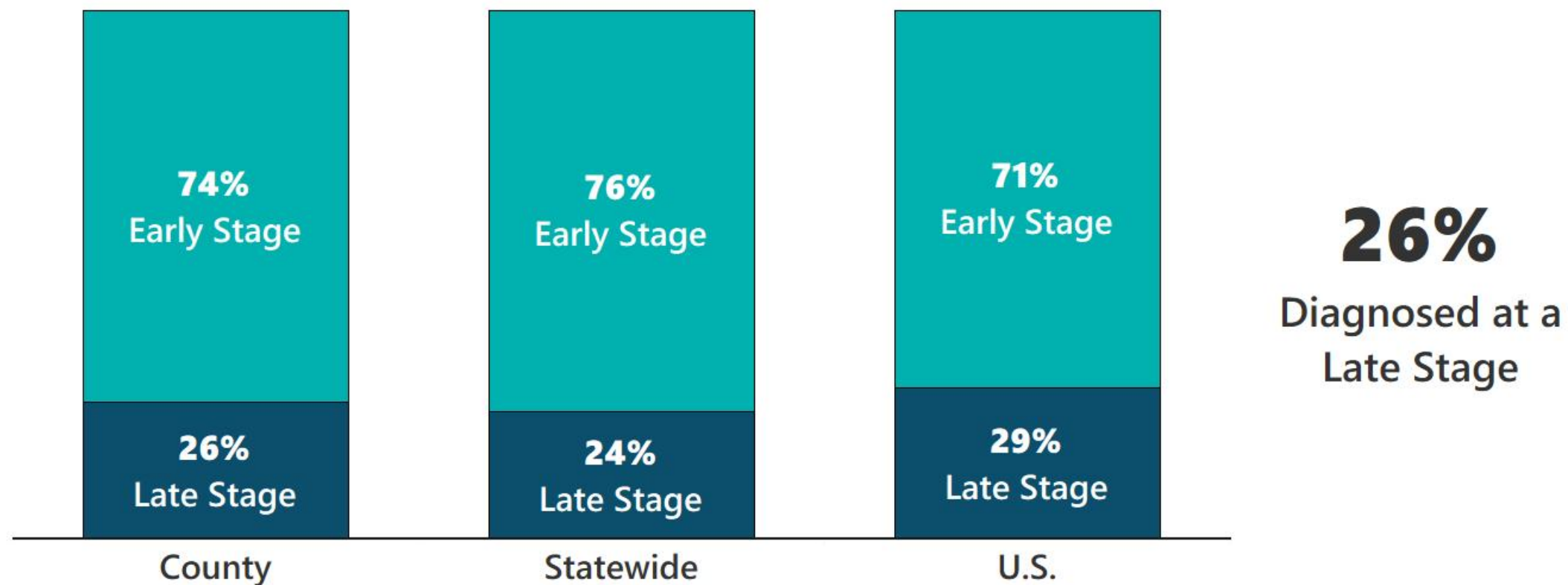
## **Talk to your doctor if you experience...**

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- Vaginal bleeding or discharge not related to menstruation (periods)
- Vaginal bleeding after menopause
- Difficult or painful urination
- Pain during sexual intercourse
- Pain in the pelvic area

# 5 | Endometrial (Uterine) Cancer Stage at Diagnosis

Early stage = Easier to treat, Higher survival rates

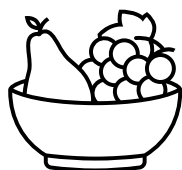


# How can you reduce your risk for cancer?

~**40%** of cancers in the US are attributable to modifiable risk factors  
(i.e., smoking, alcohol, diet, infections, etc.)



Do not smoke or use  
any form of tobacco  
Make your home  
smoke-free



Enjoy a healthy diet



Avoid too much sun,  
use sun protection



Limit alcohol  
consumption



Be physically active



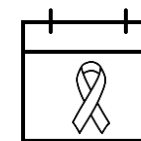
Vaccinate against  
Hepatitis B and HPV



Reduce indoor and  
outdoor air pollution  
(including radon)



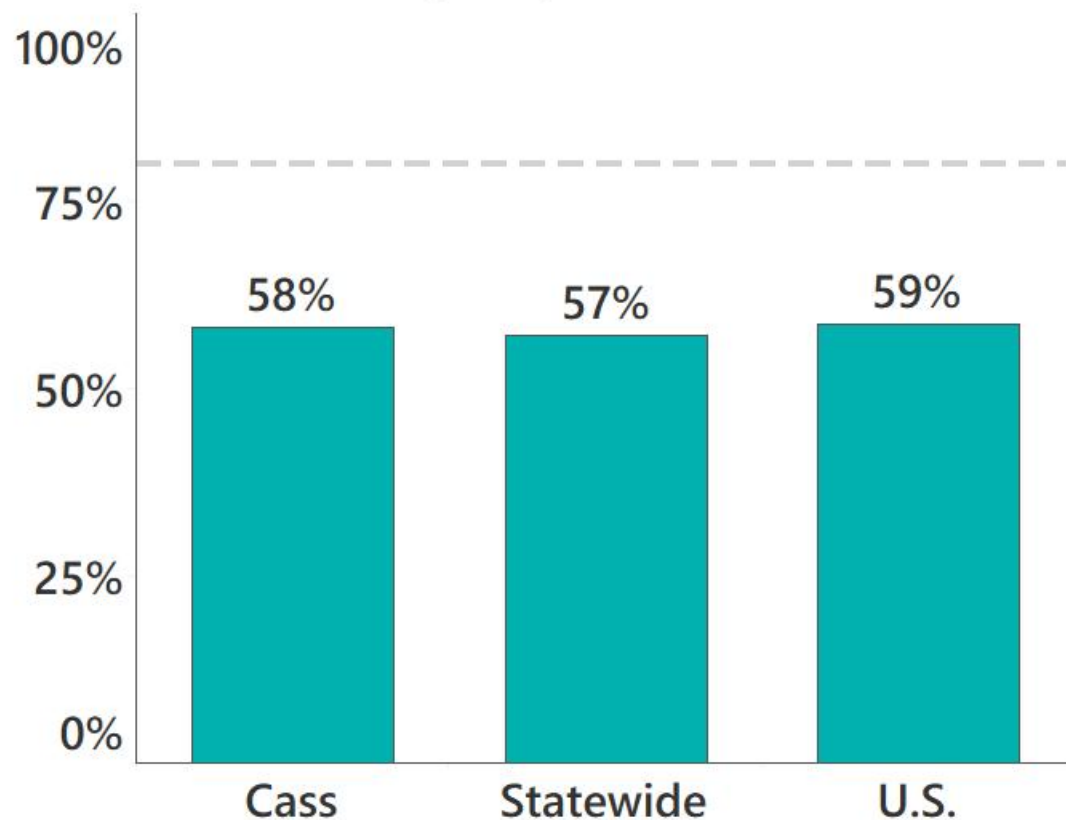
Decrease excess  
body weight



Get the appropriate  
cancer screenings for you!

# A vaccine that prevents cancer: HPV

Adolescents ages 13-15 who have completed their HPV vaccine series (2022)

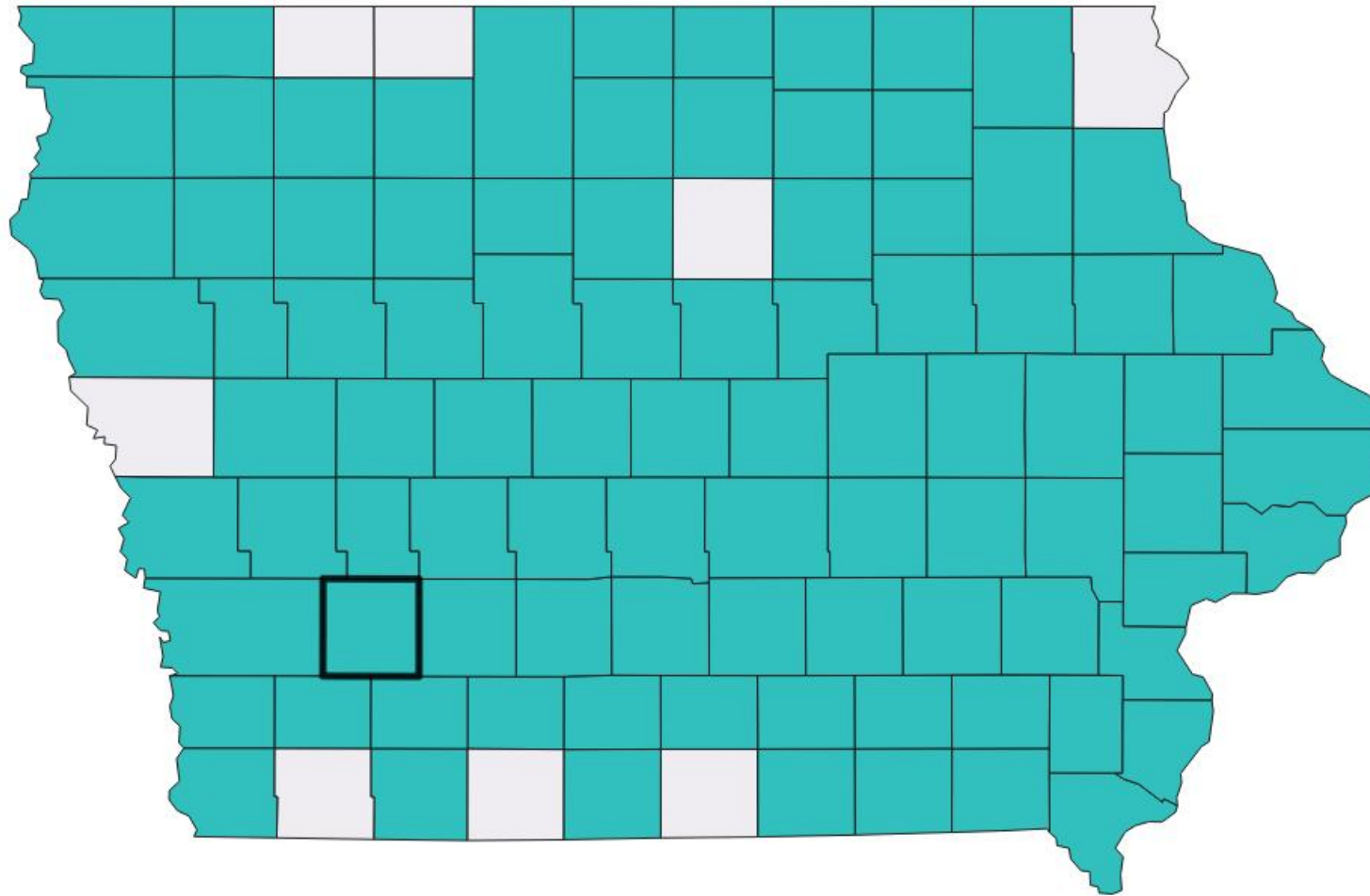


- HPV infection can cause cancers of the cervix, mouth and throat, anus, rectum, penis, vulva, and vagina.
- Iowa has the highest rate of oropharyngeal cancer in the U.S.
- Vaccine provides safe, effective, and lasting protection against HPV, thus reducing cancer risk
- Recommended at age 11 or 12 years, when immune response is best & before HPV exposure

*Data from 2022 survey  
Goal: 80% by 2027*

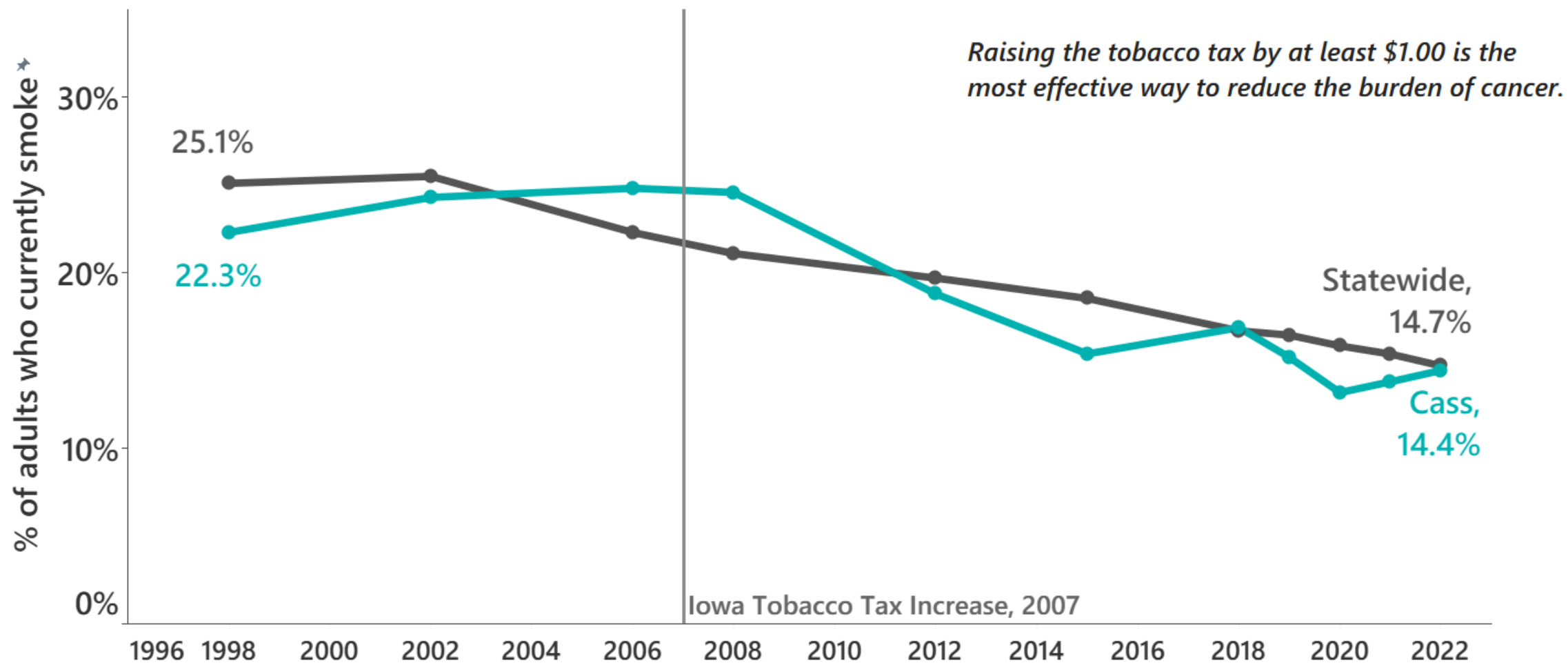


After the last tobacco tax was passed in 2007,  
smoking rates **decreased** in **92%** of Iowa counties



# After the last increase to the tobacco tax was passed in 2007, smoking rates **decreased\*** in Cass County

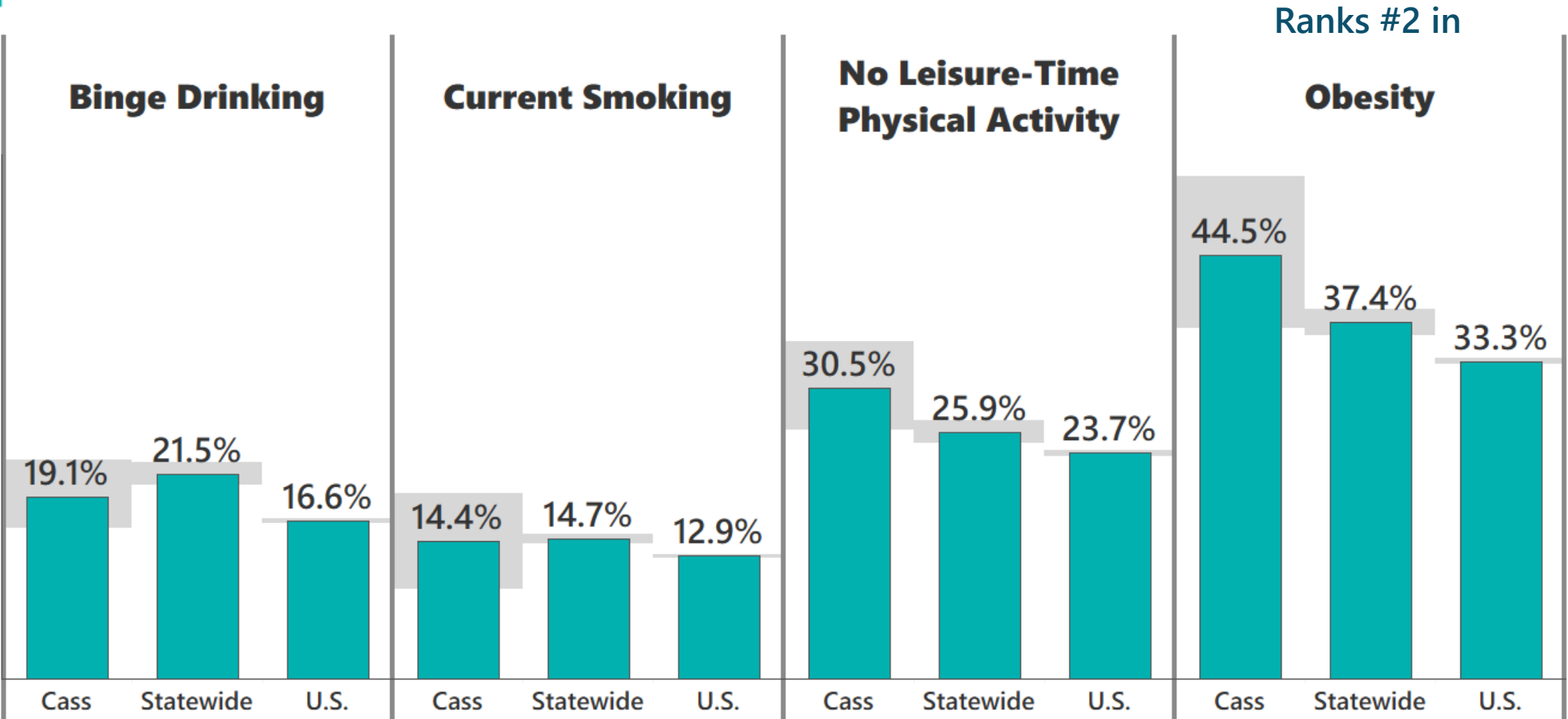
*\*Determined by comparing data from 2004-2007 combined to 2011-2013 combined*





# Other Cancer Risk Factors

**Lower  
is  
better**



# Want to know your cancer risk?

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Take the American Cancer Society's cancer risk assessment to learn more about what factors might affect your personal cancer risk and actions you can take to help lower your risk.

<https://acscancerrisk360.cancer.org/>



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**Resources** to help understand  
and address cancer in Iowa  
communities

# Iowa Comprehensive Cancer Control Program (CCCCP)

**Work with partners to prevent cancer whenever possible and support cancer survivors across Iowa.**

- ▶ The CCCCPC partners with many organizations, including the Iowa Cancer Consortium, Iowa's cancer coalition.
- ▶ CCCCPC is involved in the revision and implementation of the Iowa Cancer Plan.
- ▶ Currently CCCCPC is focused on increasing HPV vaccination, increasing lung cancer screening, and supporting cancer survivors.

<https://hhs.iowa.gov/public-health/cancer>  
<https://canceriowa.org/iowa-cancer-plan/>



## Iowa Cancer Consortium

**Mission:** To advance cancer prevention and control through advocacy, equity, and collaboration.

**Vision:** An Iowa where cancer is not a burden.

A non-profit cancer coalition that provides

- Connections and partnership
- Latest news and cancer updates via email
- Training and educational opportunities
- Grant opportunities and technical assistance
- Free cancer educational materials for distribution
- Virtually-hosted workgroups
- The Iowa Cancer Plan

[www.canceriowa.org](http://www.canceriowa.org)

Funded in part through a contract with the Iowa CCCCPC



Health and  
Human Services



Iowa Cancer  
Consortium

# Blueprint for cancer control, the *Iowa Cancer Plan*

Chapters with sections that include priorities, strategies, and specific action steps which may be tailored to many settings to guide cancer control activities.

- 1. Health Equity:** identify and eliminate cancer health disparities.
- 2. Prevention and Risk Reduction:** whenever possible, prevent cancer from occurring.
- 3. Early Detection and Screening:** promote the benefits of screening tests to ensure early diagnosis.
- 4. Diagnosis and Cancer-Directed Therapy:** reduce barriers to care, promote evidence-based practices, and encourage participation in clinical trials and other forms of research.
- 5. Survivorship and End-of-Life Care:** ensure resources to optimize quality-of-life for cancer survivors and their families.



[https://canceriowa.org/  
iowa-cancer-plan/](https://canceriowa.org/iowa-cancer-plan/)

"There is a lot we know about how to reduce our personal cancer risk. There is opportunity for the biggest impact when policies help us do that.

## **Effective policies**

- make the healthy choice easier
- make the unhealthy choice harder
- provide protections from risk factors that are out of an individual's control"

*- Iowa Cancer Consortium*

# Policy Examples

## State-level

- Increase the tobacco tax by at least \$1.00
- Raise taxes on alcohol and set minimum unit prices
- Prohibit minors' use of tanning beds

## Community & Organization-level

- Implementing tobacco- and nicotine-free policies
  - Zoning restrictions to prohibit tobacco shops from operating near schools or other tobacco retailers
  - Set and enforce limits on the number of places that sell alcohol and the distance between them
  - Reducing out-of-pocket costs for cessation treatments
  - Build communities that provide natural opportunity for physical activity (walkable/ bikeable/ accessible)
- Ensure access to affordable fresh food
  - Providing sunscreen and UV-safety education in outdoor occupational, recreation/tourism, and childcare settings
  - Engaging community health workers, developing clinic-specific interventions, and supporting care navigation
  - Include cancer-relevant strategies in your hospital's community health needs assessments or public health department's needs assessment

# More ways to get involved

## American Cancer Society Cancer Action Network

Engage American Cancer Society Cancer Action Network (ACSCAN) to promote cancer-relevant legislation

[www.fightcancer.org](http://www.fightcancer.org)



## Contact your legislator

Find your legislator at

<https://www.legis.iowa.gov/legislators/find>



# Every community is different

## Your expertise is key

**Your expertise** as community members and leaders and local policy makers **is key to answering the question of what to do next.**

*You know best what your community needs and what will work.*

## Cancer control partners can help

**Cancer control partners can provide ideas, advise, and help find data, evidence, and other resources,** but *ultimately you are the experts.*

## Take stock of the information presented today

A good place to start is by **taking stock of the information presented today**

- Where are opportunities for change within your county, town, or organization?
- Use the Iowa Cancer Plan for inspiration.
- Reach out to the Iowa Cancer Consortium for partnership in moving forward.

# Cass County Resources

## Care for Yourself

The Iowa Breast and Cervical Screening program provides free breast and cervical cancer screenings to eligible women, ages 21+ years. For more information, contact Cass County Public Health 712-243-7551.

## Mammos & Mocktails

An after-hours event for breast cancer screenings held quarterly at Cass Health. To find out more or to schedule, call the Radiology department at Cass Health at 712-243-7450.

## Healthy Cass County

A community-focused network, which promotes the health and well-being of Cass County residents. This group of individuals represents over 25 local organizations. Their purpose is to spread health information and initiate programs throughout the county.

## Radon Tests

Radon test kits will be available at all Cass County Libraries for free to Cass County households. These tests are provided by Cass Health.

## Above + Beyond Cancer

Cass Health is proud to be partnering with this organization to provide evidence-based, free programs for cancer survivors and the community that promote recovery and prevention.

## Cass Health Cancer Screening Guidelines

Copies available tonight!

**A great resource is a primary care provider who you know and trust!**

# Iowa Private Well Grants Program

Iowa Health & Human Services

Iowa's [Private Well Grants Program](#) (PWG) provides free water testing to all private well owners and users for the analytes listed.

The Iowa DNR recommends that all private well owners have their water tested at least annually.

## Analytes

- Bacteria/coliform (annually)
- E.coli/fecal coliform (annually)
- Nitrate (annually)
- Arsenic (every 3 years)
- Manganese (every 3 years)
- PFAS (requires pre-approval from the DNR)

## Cass County

The Private Well Grant is available for private well testing, well plugging and other well services through Guthrie County Health Services.

Call **Guthrie County Health Services** at 641-747-3972

<https://hhs.iowa.gov/public-health/environmental-health/private-well-grants>

<https://www.iowadnr.gov/environmental-protection/water-quality/private-well-program/well-testing>

# Resource Guide

## Cancer in Iowa: 99 Counties Project

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- Organizations and programs we presented today
- IHHS Programs
  - Tobacco Use Prevention and Control
  - Immunization Program
  - The Hepatitis Program
  - Radon
- Iowa Rural Health Association

### **In the next slides we will highlight...**

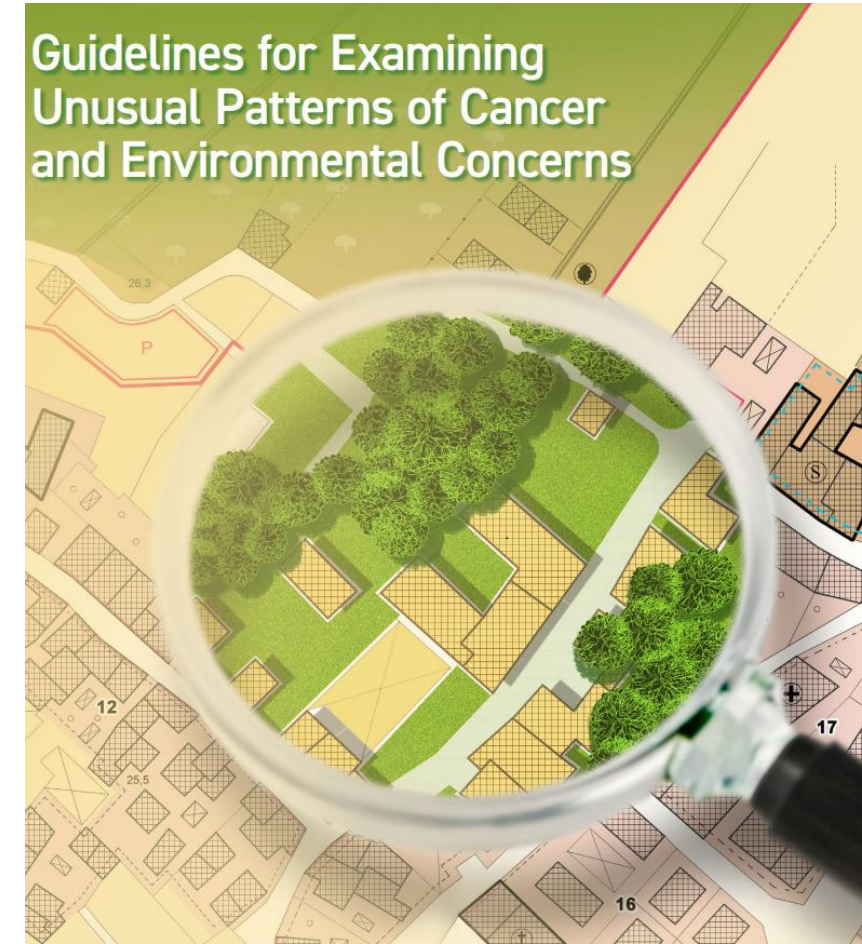
- Cancer Cluster Concerns
- Agricultural Health Study
- Environmental Exposures and Health Risks Fact Sheets
- Iowa Private Well Grants Program
- Center for Health Effects of Environmental Contamination
- Center for Energy & Environmental Education's (CEEE) Environmental Health Program

[www.iowacancerregistry.org/99](http://www.iowacancerregistry.org/99)

# What to do if you suspect a cancer cluster in your community

If you are concerned about cancer excess in your area, please email the Iowa Cancer Registry at [ICR-CancerConcerns@uiowa.edu](mailto:ICR-CancerConcerns@uiowa.edu)

- We will ask you about the location, cancer types, and any exposure(s) of concern.
- If possible, ICR will conduct an analysis comparing the expected number of cancers to what's been observed.
- A meeting will be held to discuss the results.



# Agricultural Health Study



The Agricultural Health Study (AHS) has been working for more than 30 years to understand factors that impact the health of farmers and their families.

**The aim of this study is to understand how agricultural, lifestyle, and genetic factors affect the health of farming populations.**

- Includes over 31,000 private and 5,000 commercial pesticide applicators from Iowa. Study is also following applicator's spouses and children
- Linked with Iowa Cancer Registry data to study risk of developing cancer among pesticide applicators



# Environmental Exposures & Health Risks Fact Sheets

Environmental Health Sciences Research Center

Include information on

- Cancer and non-cancer health risks for each environmental exposure
- How the exposures are regulated
- What you can do to limit your exposure

## Environmental Health Fact Sheets

- Arsenic
- PFAS
- Atrazine
- TCE
- Glyphosate
- Nitrate
- Radon



## Nitrate & Health Fact sheet



**IOWA**  
College of Public Health

### Introduction

"[...]consistent associations have been discovered for colorectal cancer. [...] less studied, however, positive associations have been found at levels below the MCL for cancers of the thyroid, ovary, and kidney"

### Health Risks Associated with Nitrate

#### Cancer Health Risks

The International Agency for Research on Cancer (IARC) classifies nitrate in food and water as "probably carcinogenic to humans" (1, 5). Studies conducted in Iowa have shown a positive correlation between exposure to nitrate in the drinking water and some cancers (1). Some studies conducted in Iowa have analyzed cancer risk at or above levels one-half the maximum contaminant level (MCL) over long periods of time. From these studies, consistent associations have been discovered for colorectal cancer. Cancers at other sites have been less studied, however, positive associations have been found at levels below the MCL for cancers of the thyroid, ovary, and kidney (6).

#### Non-Cancer Health Risks

Methemoglobinemia, or Blue Baby Syndrome, is a condition in which not enough oxygen is transported in the blood to the body's tissues (3). Blue Baby Syndrome can occur when infants are exposed to nitrate levels higher than 10 mg/L. Elevated prenatal nitrate exposure in Iowa has also been connected to increased risk of birth defects, including spina bifida, limb deficiencies, and cleft palate (7,8).

### How is Nitrate regulated?

- The EPA established the maximum contaminant level for nitrate to be 10 mg/L in drinking water, to protect infants against methemoglobinemia, or Blue Baby Syndrome (7, 9).
- Public water suppliers must test for nitrate and present results to consumers and the state through consumer confidence reports (3).
- Private wells are not required to be tested for nitrate, and those with water sourced from a shallow well, less than 50 feet, face a disproportionate risk of high nitrate exposure (3,10).

### What can you do?

- Test well water for nitrate once a year if the well is privately-owned.
- Water purification methods that remove nitrate include reverse osmosis, ion exchange, and distillation. Using Brita filters, refrigerator filters, and boiling water are not effective at removing nitrate (7).
- Maintain a healthy diet rich in antioxidants and limited in processed, cured, and red meats (1). **Published September 2024**  
**Questions? Visit our website EHSRC.org**

# **Center for Health Effects of Environmental Contamination (CHEEC)**

University of Iowa

CHEEC supports and conducts research to identify, measure and study adverse health outcomes related to exposure to environmental toxins.

CHEEC was established through the 1987 Iowa Groundwater Protection Act and has focused its efforts to date mainly on drinking water contaminants.

For questions about environmental contaminants, please contact CHEEC at the email address below.

The logo for the Center for Health Effects of Environmental Contamination (CHEEC) features the word "CHEEC" in a bold, blue, sans-serif typeface.

Director David Cwiertny

[cheec.uiowa.edu](http://cheec.uiowa.edu)

Email: [cheec@uiowa.edu](mailto:cheec@uiowa.edu)



# Center for Energy & Environmental Education's (CEEE) Environmental Health Program

**Highlighting upstream solutions to protect children, climate, and health.**

Raises awareness about the link between harmful chemicals and their impacts to both people and climate.

Initiatives focus on community practices and state strategies that significantly reduce Iowan's exposure to common hazardous pollutants.

Contact for more information and resources about how to reduce environmental exposures that may contribute to cancer development.



**[ceee.uni.edu](http://ceee.uni.edu) | [uni-ceee@uni.edu](mailto:uni-ceee@uni.edu)**



**University of Northern Iowa**  
Center for Energy & Environmental Education

# Other initiatives in Iowa

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The Harkin Institute



Iowa  
Environmental  
Council



Iowa  
Farmers  
Union

## Cancer and Environmental Risk Factors in Iowa

The Harkin Institute and the Iowa Environmental Council are exploring the relationship between environmental risk factors and cancer rates in Iowa.

<https://www.iaenvironment.org/our-work/cancer-and-environmental-risk-factors-in-iowa/>



Holden Comprehensive  
Cancer Center

## Expert Panel

UI Holden Cancer Center is bringing renowned national and international cancer experts together to investigate Iowa's cancer rates.



Health and  
Human Services

## Cancer Drivers in Iowa

Governor Reynolds and the legislature passed Senate File 647, which created a collaborative project with Iowa Health and Human Services and the University of Iowa College of Public Health to examine the factors behind the rise in cancer rates in Iowa.



College of Public Health

<https://iphprp.org/cancer-drivers-in-iowa/>

# Main Takeaways

Cancer is an important health issue facing your county.

There are proven ways to prevent cancer & find it early.  
You can avoid risk factors and get screened.

Iowa has a strong Cancer Plan, resources, & organizations to help fight cancer.

Policy changes at the local and state levels can have a huge impact!  
Please communicate your concerns & needs with your state representatives and local policymakers.

**This is only the first step.**

# Thank you for attending!

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If you would like to **share your thoughts** on this meeting, please participate in our brief survey. The QR code will direct you to the survey.

This brief survey should take no more than 5-10 minutes of your time.

