



North Jersey Health Collaborative

health matters



What We'll Cover...

Part I

- Cancer Basics

Part II

- Lung Cancer Screening

Part III

- Lung Cancer Risk Reduction



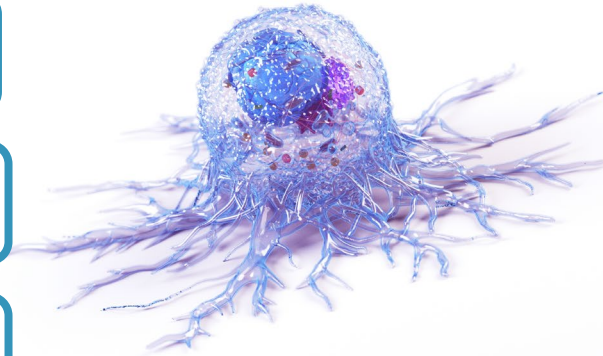
Part I – Cancer Basics

What is cancer?

Why do we care?

What causes cancer?

Cancer development



How cancer survives

Benign vs. Malignant

Metastasis



What is Cancer?



There is no one cancer

Cancer cells can start anywhere in the body

Normal cells die when damaged or old

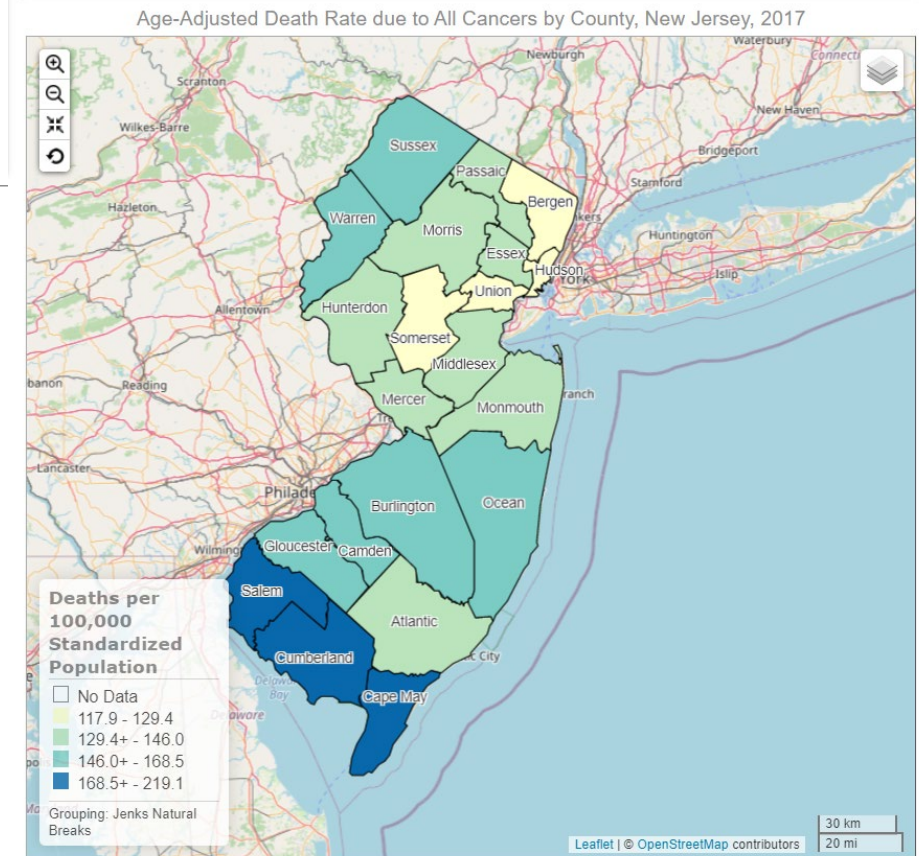
Cancer cells continue to develop when they should die, and by developing new cells continuously they can form tumors

Most cancers form solid tumors



Why do we care?

In New Jersey alone between 2012-2016 we had 254,688 new cases of cancer and 82,035 deaths.



Source: <https://www-doh.state.nj.us/doh-shad/indicator/view/CancerDeath.County.html>



What causes cancer?

Considered a genetic disease because it is caused by gene changes in cell function, growth & division

Chemicals

Infections

Smoking



Cells Dividing

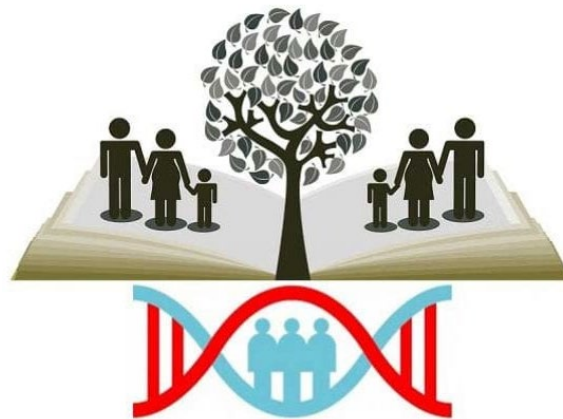
UV Radiation

Heredity

What causes cancer?

Risk factor: anything that increases your chances of getting a disease

HEREDITARY



SPORADIC



What causes cancer?

Hereditary cancers 10%

Diagnosed at an unusually young age

Multiple cancer types in one person

Unusual cases of cancer

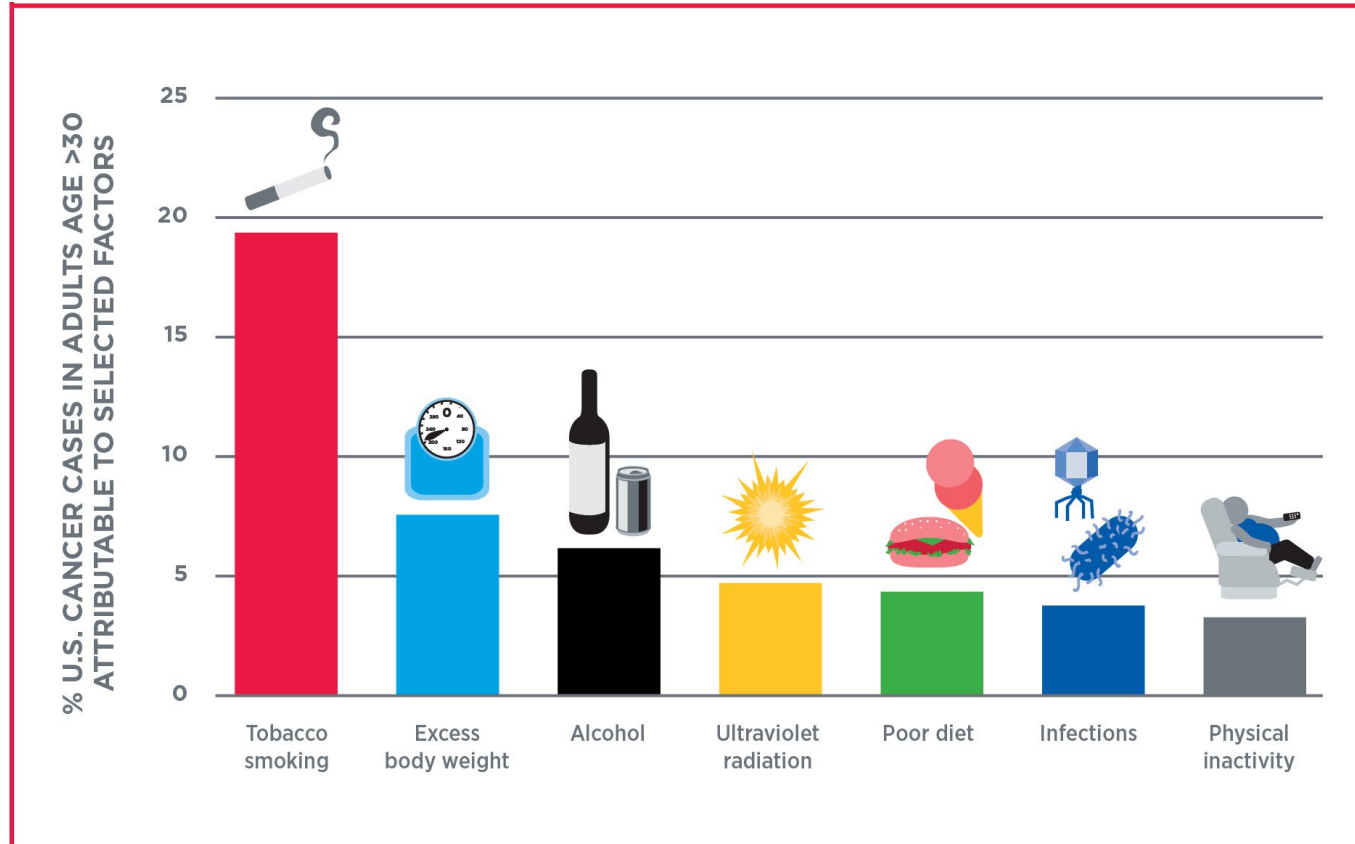
Racial/ethnic risk

Family members with cancer



What causes cancer?

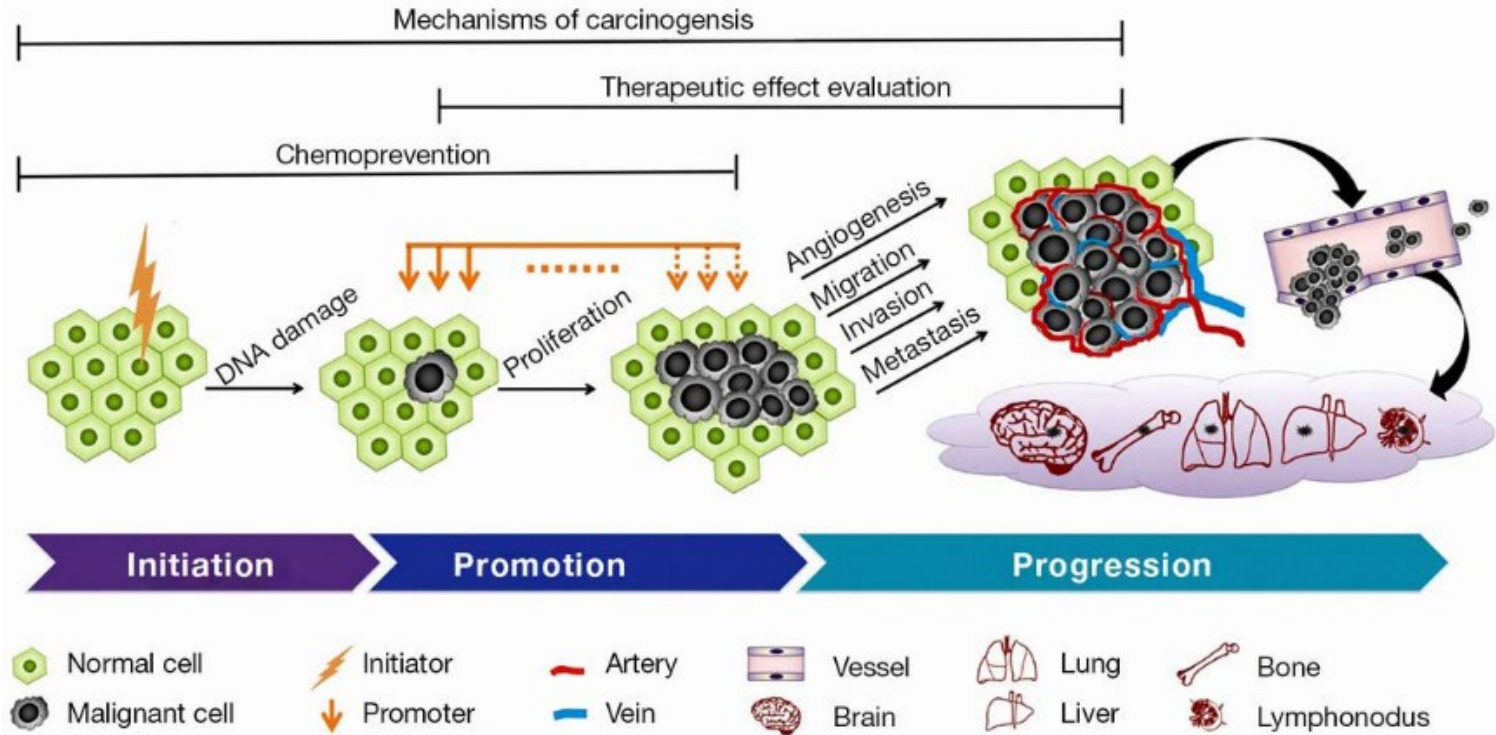
Sporadic risk factors



Source: American Association on Cancer Research, 2019

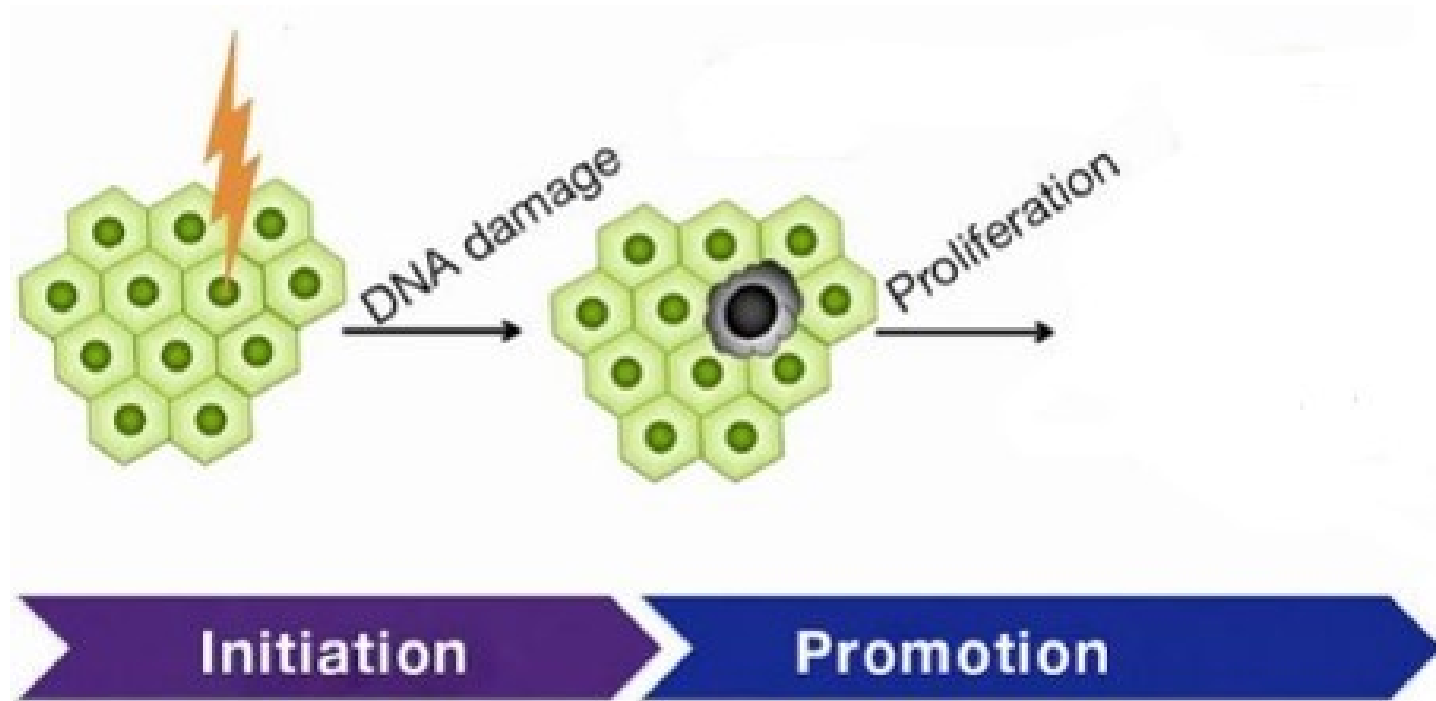
Cancer Development

Three phases of carcinogenesis



Cancer Development

Cancer
Prevention
through
Screening



Cancer Development



- Abnormal cells found
- No spread to nearby tissue
- Carcinoma in situ (CIS)
 - CIS is not cancer
- Risk of cancer

- Cancer has been found
- Higher number represents the size and rate of spread to the nearby tissues

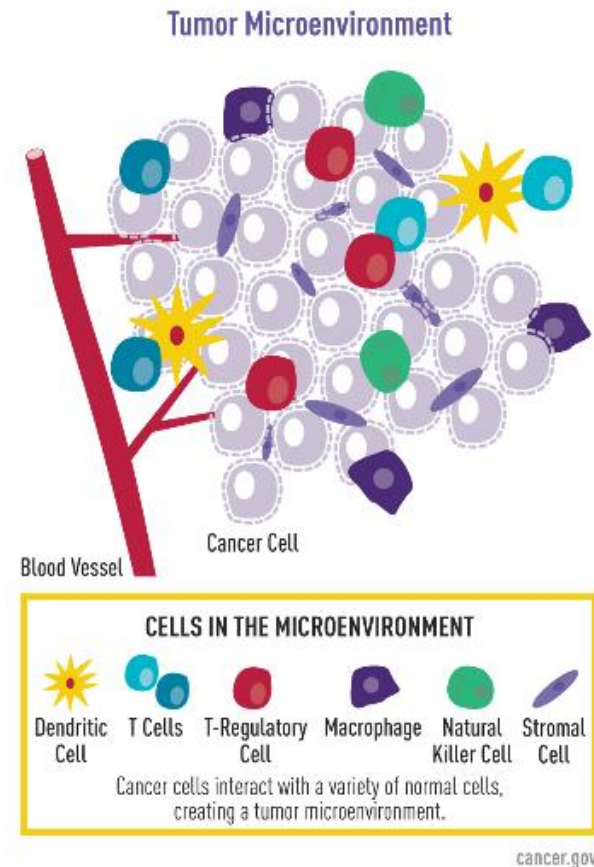
- Cancer has metastasized
- Spread to distant part of body



How Cancer Cells Survive

TUMOR MICROENVIRONMENT CANCER CELLS...

- Can influence surrounding cells, molecules, and blood vessels to create their own microenvironment
- Can influence normal cells to form blood vessels to supply the tumors with blood, nutrients, and oxygen



Benign vs. Malignant Tumors

BENIGN

- Do not spread and do not generally grow back when removed
- Can grow quite large and be life threatening, especially in the brain

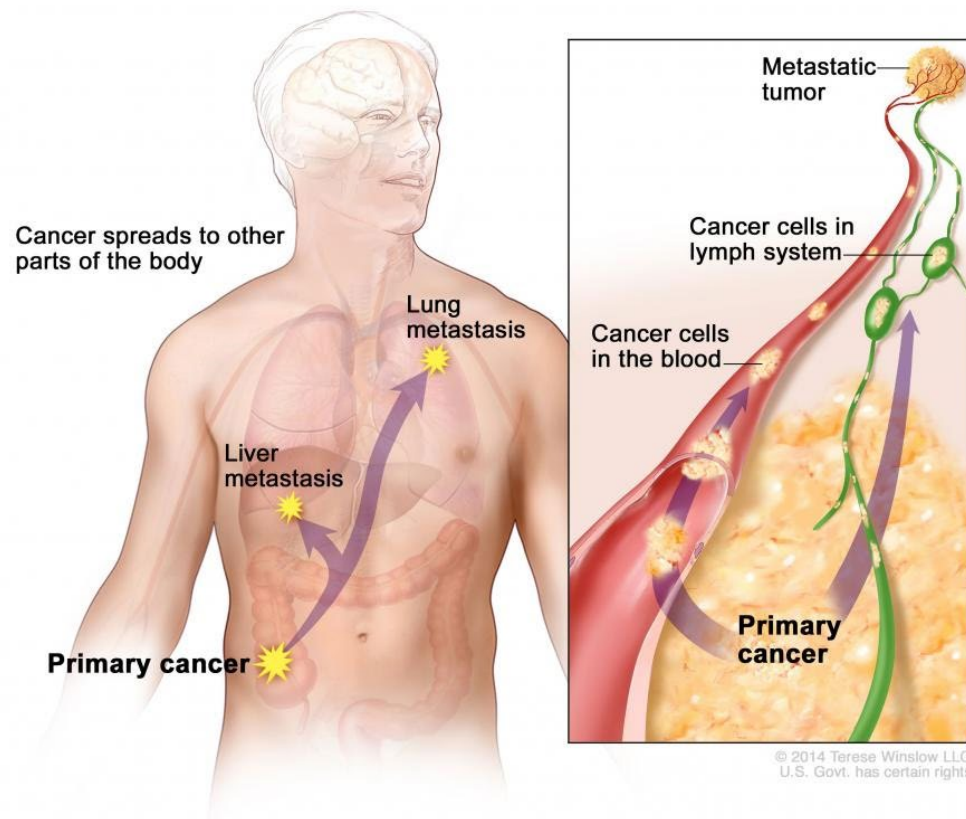
MALIGNANT

- Are cancerous and can spread to other tissues in the body
- Cancer cells can travel throughout the body via blood and lymph and form tumors in other areas



Metastasis

Metastasis



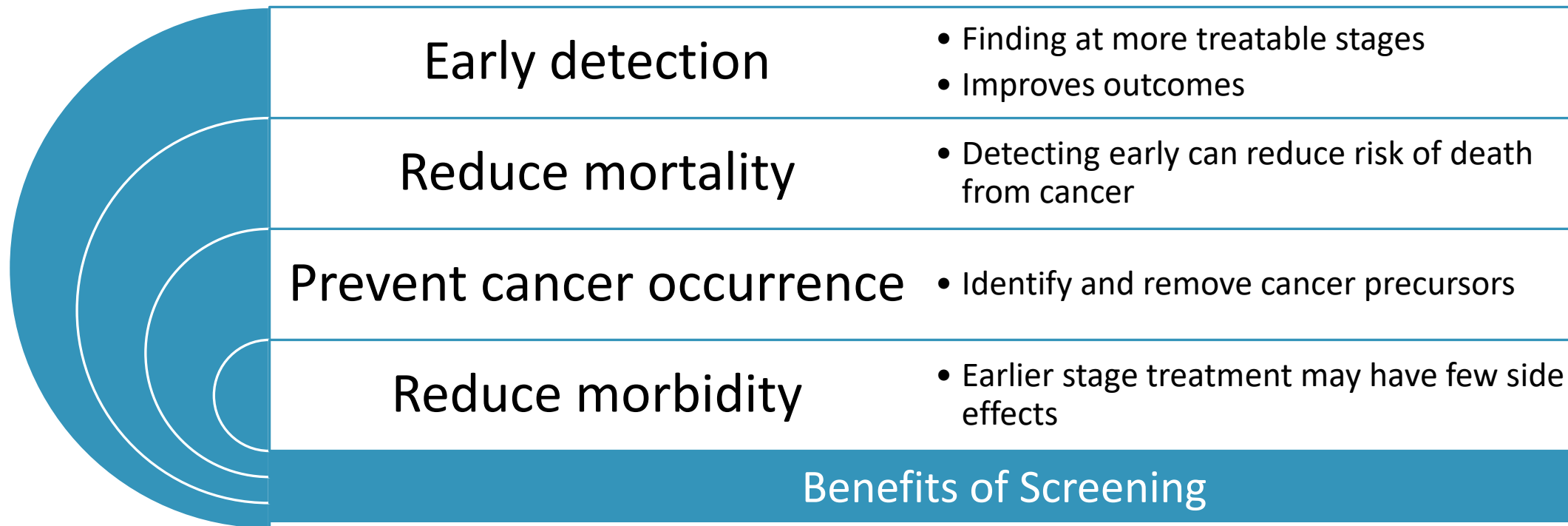
- Metastatic cancer is cancer that spreads to other parts of the body
- The process is called metastasis



Part II – Lung Cancer Screening

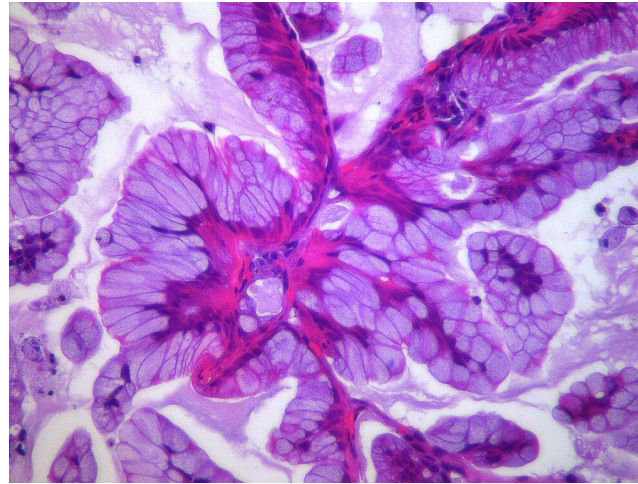


Cancer Screening



Lung Cancer Screening

Lung cancer is the leading cancer death in the U.S. for both men and women.



It is also the leading cause of preventable death

Who Is Eligible To Be Screened

- History of Heavy Smoking
 - (20 pack years)
- Smoke now or have quit within the past 15 years
- Between 50 and 80 years old



Low-Dose CT Scan

- Early detection of lung cancer through low-dose CT scans
- Reduce mortality and improve outcomes
- Annual screening



Resources for Screening

Medicare and most insurance companies cover CT scans for lung cancer screening



www.Screennj.org

American College of Radiology www.acr.org

www.acraccreditation.org/accredited-facility-search?modality=CTAP&designation=LCSC



Part III - Cancer Risk Reductions

Screening

Lifestyle

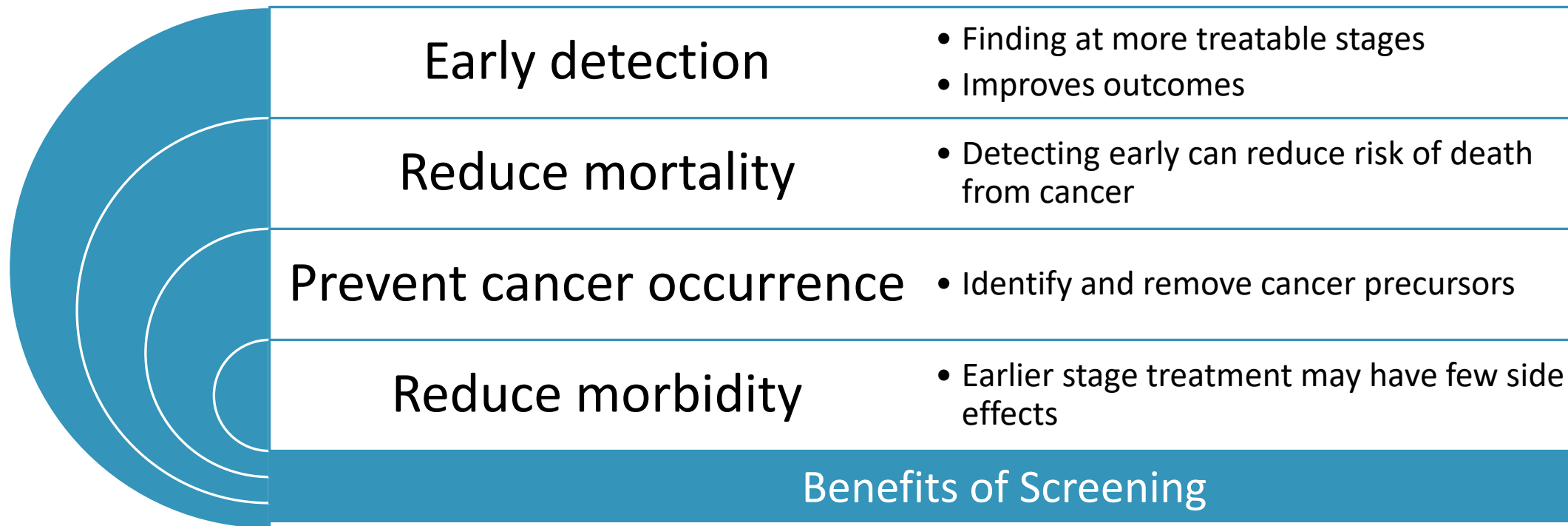
- Diet
- Obesity
- Exercise
- Alcohol
- Smoking
- Viruses

Environmental

- Pollution



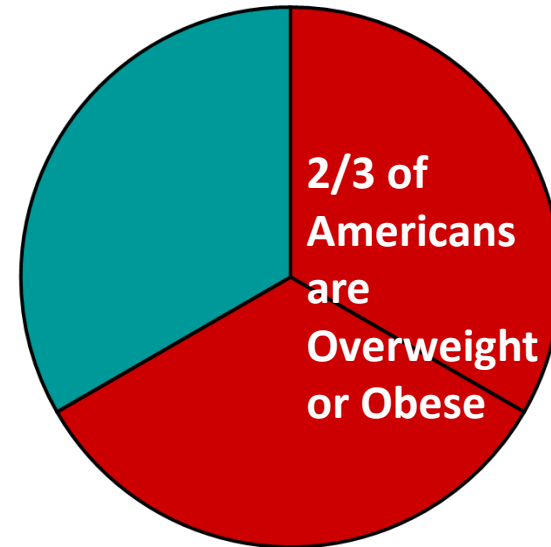
Cancer Screening



Healthy Weight

Key Drivers of Obesity

- High energy density, nutrient poor foods
- Obesogenic environment
- Behavior patterns
- Skewed perceptions of weight
- Genetic dispositions



Nutrition

- Fruits
- Vegetables – especially cruciferous
- Lean proteins
- Whole grains
- Nuts and seeds
- Drink water and green tea
- Take a vitamin D supplement



Exercise Benefits

- Reduces Obesity
- Maintain healthy weight
- Improves mood
- Sharpens Focus
- Reduces Stress
- Improves Sleep
- Improves digestion



- Control blood pressure
- Regulates bile acids
- Improves immune system function
- Reduces inflammation
- Lower blood levels of insulin
- Reduces sex hormones
- Lowers risk of certain diseases
- Reduces cancer incidence/ tumor growth



Exercise

150 minutes/ week aerobic activity

- 30 minutes 5 x week

Muscle strength training

- At least 2 times/ week

Spend less time sitting



Alcohol

Alcohol is a human carcinogen, and too much can put you at risk for cancer and other chronic diseases.



Smoking

- Quit smoking!
- Smokers who quit before age 40 reduce their chances of dying from a smoking-related disease such as lung cancer by about 90%
- Those who quit between 45-54 reduce their risk of dying by about two-thirds



Environmental Pollution



Chemical exposure may also contribute to tumor development by affecting the tumor's microenvironment

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Summary

Several factors can cause cancer such as familial risk, sporadic risk, and exposures

Screening can and does prevent certain cancers and cancer death

By avoiding certain risk factors you can reduce your cancer risk



Thank you!!



www.Screennj.org

American College of Radiology

www.acr.org

American Lung Association

www.lung.org/lung-health-diseases/lung-disease-lookup/lung-cancer/saved-by-the-scan/quiz

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Visit us at www.njhealthmatters.org

