The Preventable Cancer Burden in Connecticut

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NATIONAL CANCER INSTITUTE
Surveillance, Epidemiology, and End Results Program

Preventable Cancers

- This year an estimated **1,735,350** people in the US will be diagnosed with cancer, and an estimated **609,640** people will die from cancer [1]
- Recent research from the ACS [2] indicates that 42% of new cancer cases and 45% of cancer deaths in the US are attributable to modifiable risk factors
  - Potentially preventable through changes in behavior/lifestyle
- **What does this mean for Connecticut?**

[1] American Cancer Society: Cancer Facts and Figures 2018. Atlanta, GA: American Cancer Society, 2018.

[2] Islami F, Goding Sauer A, Miller KD, et al. Proportion and number of cancer cases and deaths attributable to potentially modifiable risk factors in the United States. *CA Cancer J Clin.* 2018 Jan;68(1):31-54.

Cancers Attributable to Potentially Modifiable Risk Factors (Islami et al.)

CA CANCER J CLIN 2018;68:31–54

Proportion and Number of Cancer Cases and Deaths Attributable to Potentially Modifiable Risk Factors in the United States

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Additional supporting information may be found in the online version of this article.

Abstract: Contemporary information on the fraction of cancers that potentially could be prevented is useful for priority setting in cancer prevention and control. Herein, the authors estimate the proportion and number of invasive cancer cases and deaths, overall (excluding nonmelanoma skin cancers) and for 26 cancer types, in adults aged 30 years and older in the United States in 2014, that were attributable to major, potentially modifiable exposures (cigarette smoking; secondhand smoke; excess body weight; alcohol intake; consumption of red and processed meat; low consumption of fruits/vegetables, dietary fiber, and dietary calcium; physical inactivity; ultraviolet radiation; and 6 cancer-associated infections). The numbers of cancer cases were obtained from the Centers for Disease Control and Prevention (CDC) and the National Cancer Institute; the numbers of deaths were obtained from the CDC; risk factor prevalence estimates were obtained from nationally representative surveys; and associated relative risks of cancer were obtained from published, large-scale pooled analyses or meta-analyses. In the United States in 2014, an estimated 42.0% of all incident cancers (659,640 of 1570,975 cancers, excluding nonmelanoma skin cancers) and 45.1% of cancer deaths (265,150 of 587,521 deaths) were attributable to evaluated risk factors. Cigarette smoking accounted for the highest proportion of cancer cases (19.0%; 298,970 cases) and deaths (28.8%; 169,180 deaths), followed by excess body weight (7.8% and 6.5%, respectively) and alcohol intake (5.6% and 4.0%, respectively). Lung cancer had the highest number of cancers (184,970 cases) and deaths (132,960 deaths) attributable to evaluated risk factors, followed by colorectal cancer (76,910 cases and 28,290 deaths). These results, however, may underestimate the overall proportion of cancers attributable to modifiable factors, because the impact of all established risk factors could not be quantified, and many likely modifiable risk factors are not yet firmly established as causal. Nevertheless, these findings underscore the vast potential for reducing cancer morbidity and mortality through broad and equitable implementation of known preventive measures. **CA Cancer J Clin 2018;68:31-54.** © **2017 American Cancer Society.**

Source data:

- Modifiable risk factors identified for inclusion based on work published by IARC and WCRF/AIRC
- National cancer incidence data from US Cancer Statistics (USCS)
  - NCI SEER Program
  - CDC NPCR Program
- Prevalence of exposures derived from data from national surveys
  - National Health and Nutrition Examination Survey (NHANES)
  - National Health Interview Survey (NHIS)
- Relative risks from large-scale pooled analyses or meta-analyses

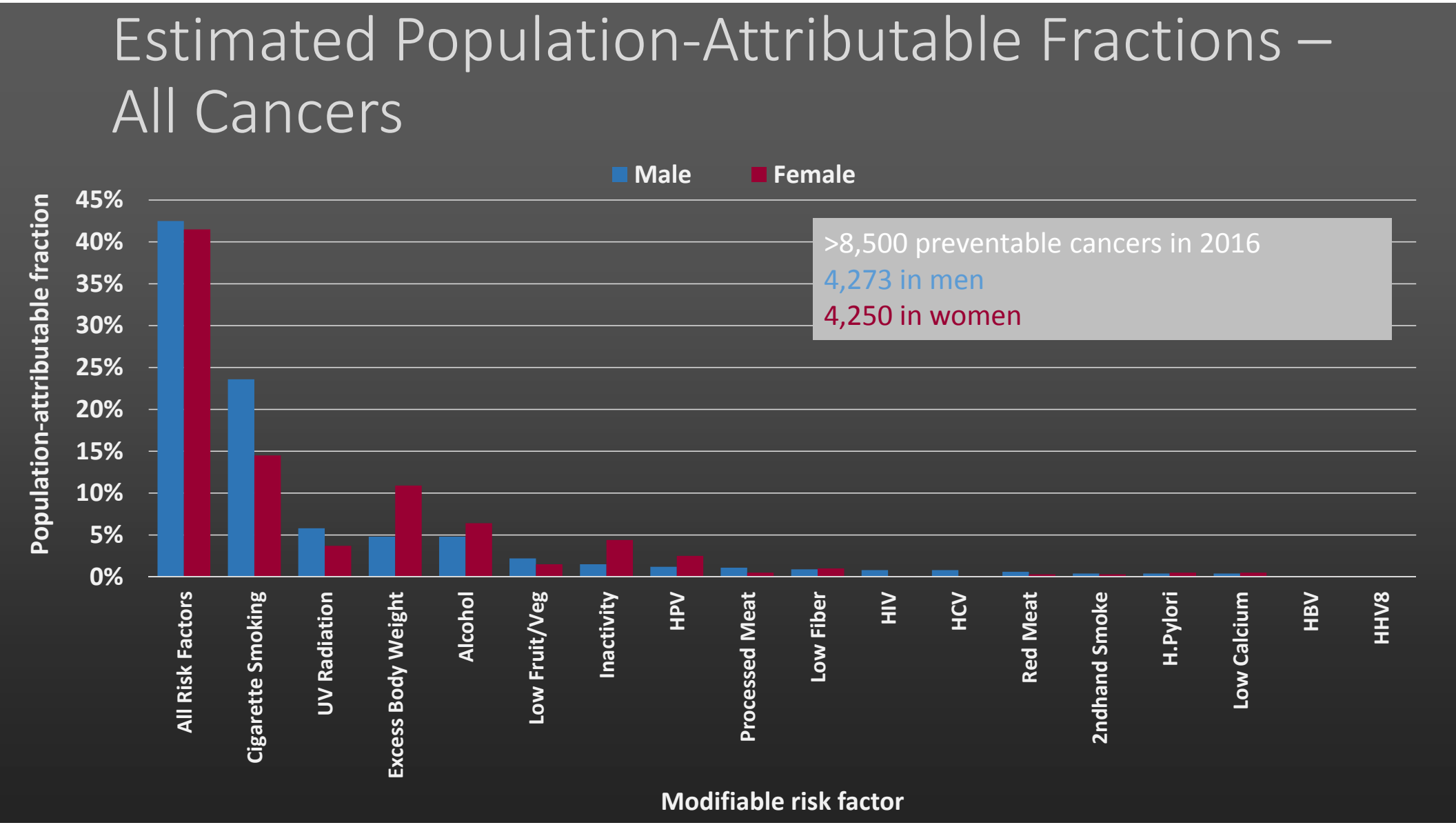
Cancers Attributable to Potentially Modifiable Risk Factors in Connecticut

- Population-attributable fraction (PAF) from Islami et al. study
- Applied to 2016 cancer incidence data for Connecticut (Connecticut Tumor Registry)

Modifiable Risk Factors and Cancers Included in Study

Risk Factor	Cancer Type
Smoking	Lung; larynx; esophagus; oral cavity/pharynx/nasal cavity/sinus; liver; cervix; kidney; stomach; myeloid leukemia; colorectum; pancreas
Second hand smoke	Lung
Excess body weight	Uterus; gallbladder; liver; kidney; esophagus; stomach; pancreas; thyroid; multiple myeloma; breast; colorectum; ovary
Alcohol intake	Oral cavity; larynx
Poor diet	
Red meat	Colorectum
Processed meat	Colorectum; stomach
Low fruit/veg	Oral cavity; larynx; lung
Low dietary fiber	Colorectum
Low dietary calcium	Colorectum
Physical inactivity	Colon; female breast; uterus
UV radiation	Melanoma
Infections	
Helicobacter pylori	Stomach
Hepatitis B	Liver
Hepatitis C	Liver; NHL
HHV-8	Kaposi sarcoma
HIV	Anus; Kaposi sarcoma; cervix; Hodgkin lymphoma; NHL
HPV	Oral cavity/oropharynx/tonsils/base of tongue; anus; cervix; vulva; vagina; penis

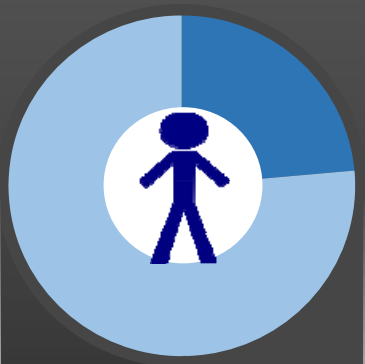
Estimated Population-Attributable Fractions – All Cancers



Cigarette Smoking

19%

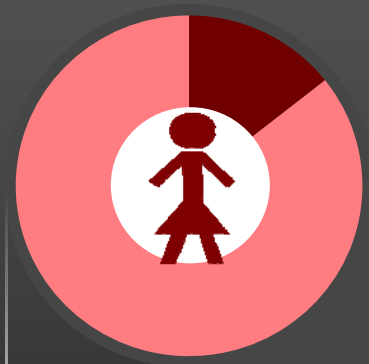
Smoking accounted for 3,856 newly diagnosed CT cancer cases in 2016



24%

Male Cancers

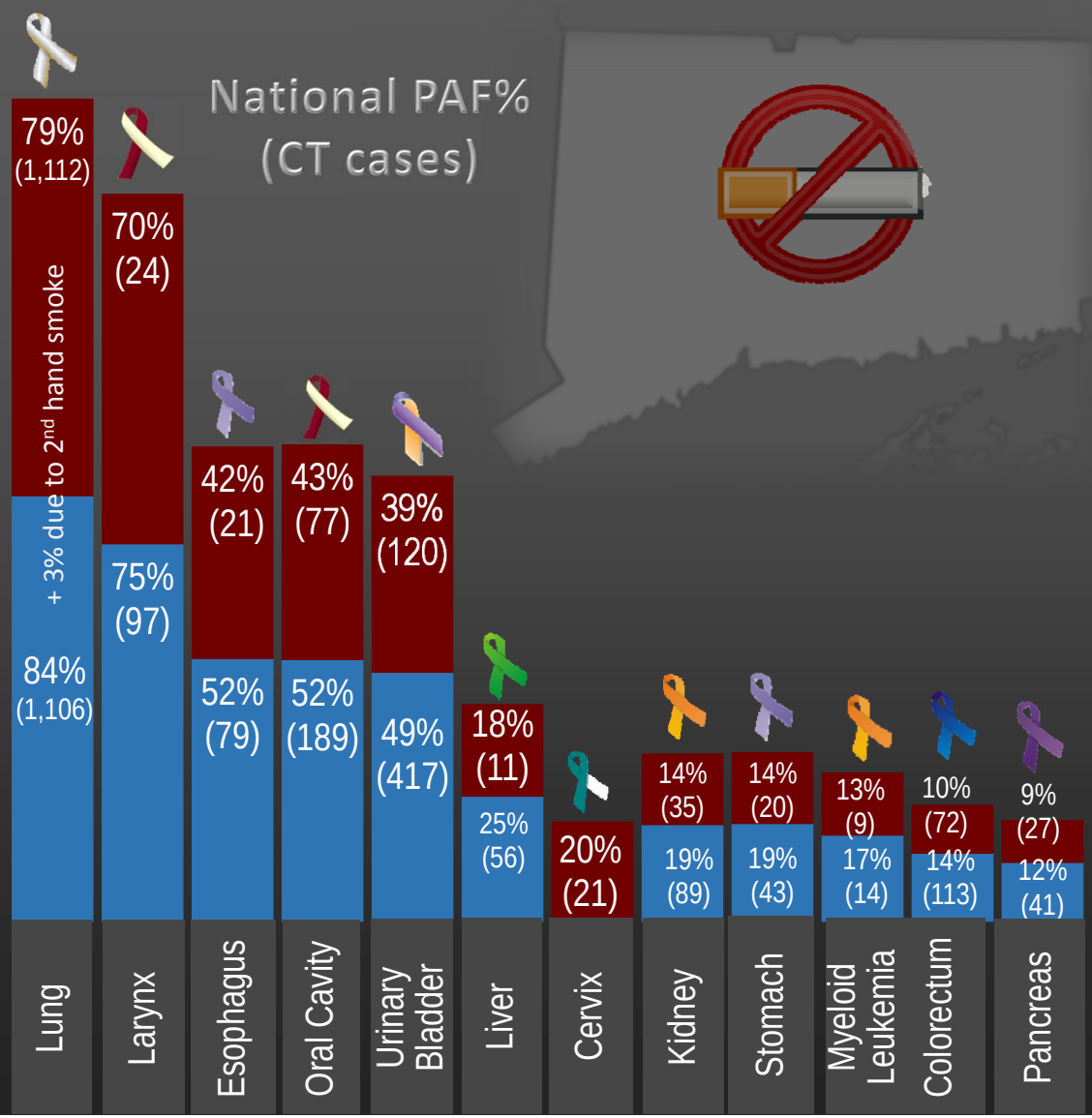
- Smoking accounted for 2,373 newly diagnosed cancer cases in CT men in 2016



15%

Female Cancers

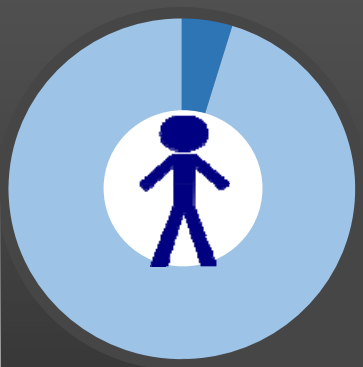
- Smoking accounted for 1,485 newly diagnosed cancer cases in CT women in 2016



Excess Body Weight

8%

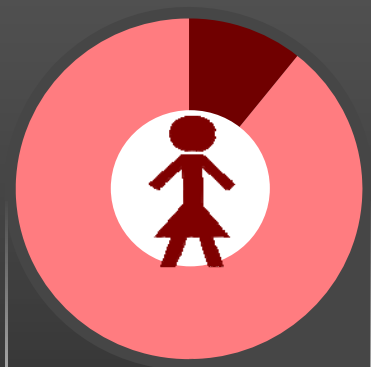
Excess body weight accounted for 1,583 newly diagnosed CT cancer cases in 2016



5%

Male Cancers

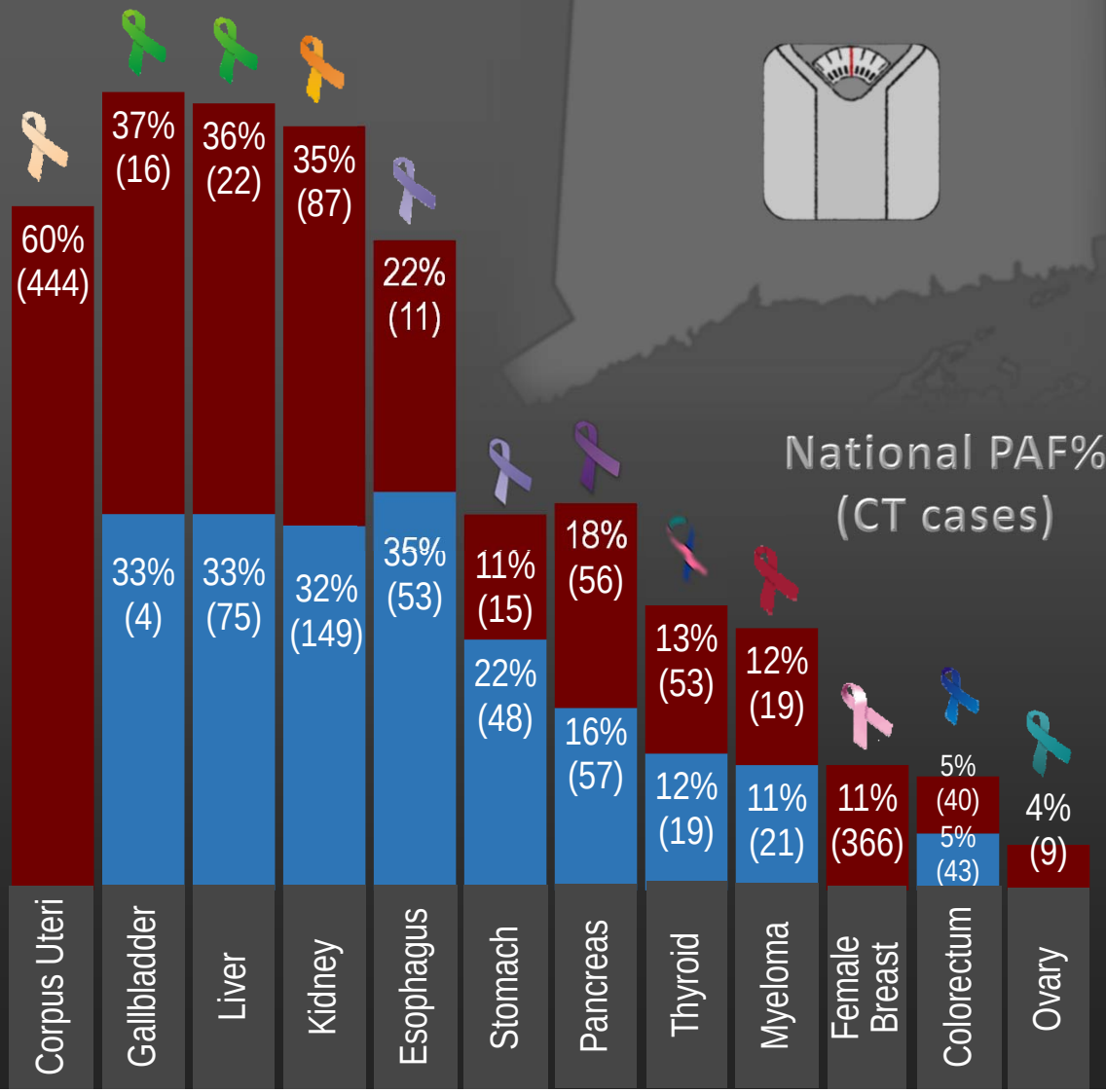
- Excess body weight accounted for 483 newly diagnosed cancer cases in CT men in 2016



11%

Female Cancers

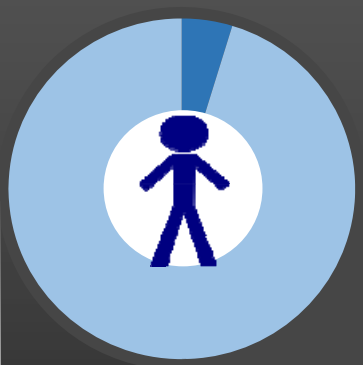
- Excess body weight accounted for 1,116 newly diagnosed cancer cases in CT women in 2016



Alcohol Intake

6%

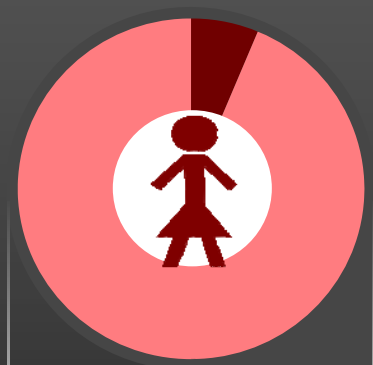
Alcohol intake accounted for 1,136 newly diagnosed CT cancer cases in 2016



5%

Male Cancers

- Alcohol intake accounted for 483 newly diagnosed cancer cases in CT men in 2016



6%

Female Cancers

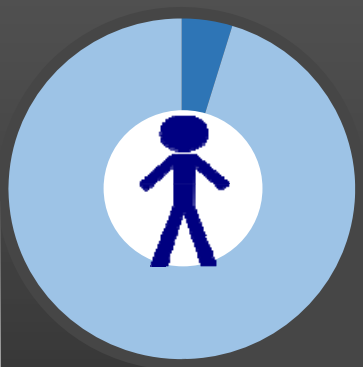
- Alcohol intake accounted for 655 newly diagnosed cancer cases in CT women in 2016

National PAF% (CT cases)

Poor Diet

4%

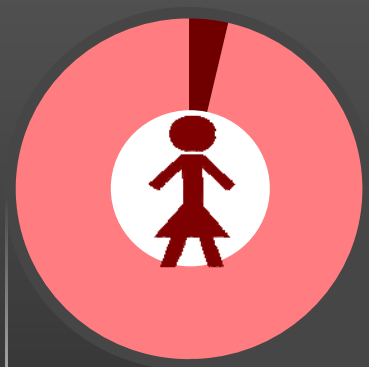
Diet accounted for 852 newly diagnosed cancer cases in 2016



5%

Male Cancers

- Poor diet accounted for 483 newly diagnosed cancer cases in men in 2016

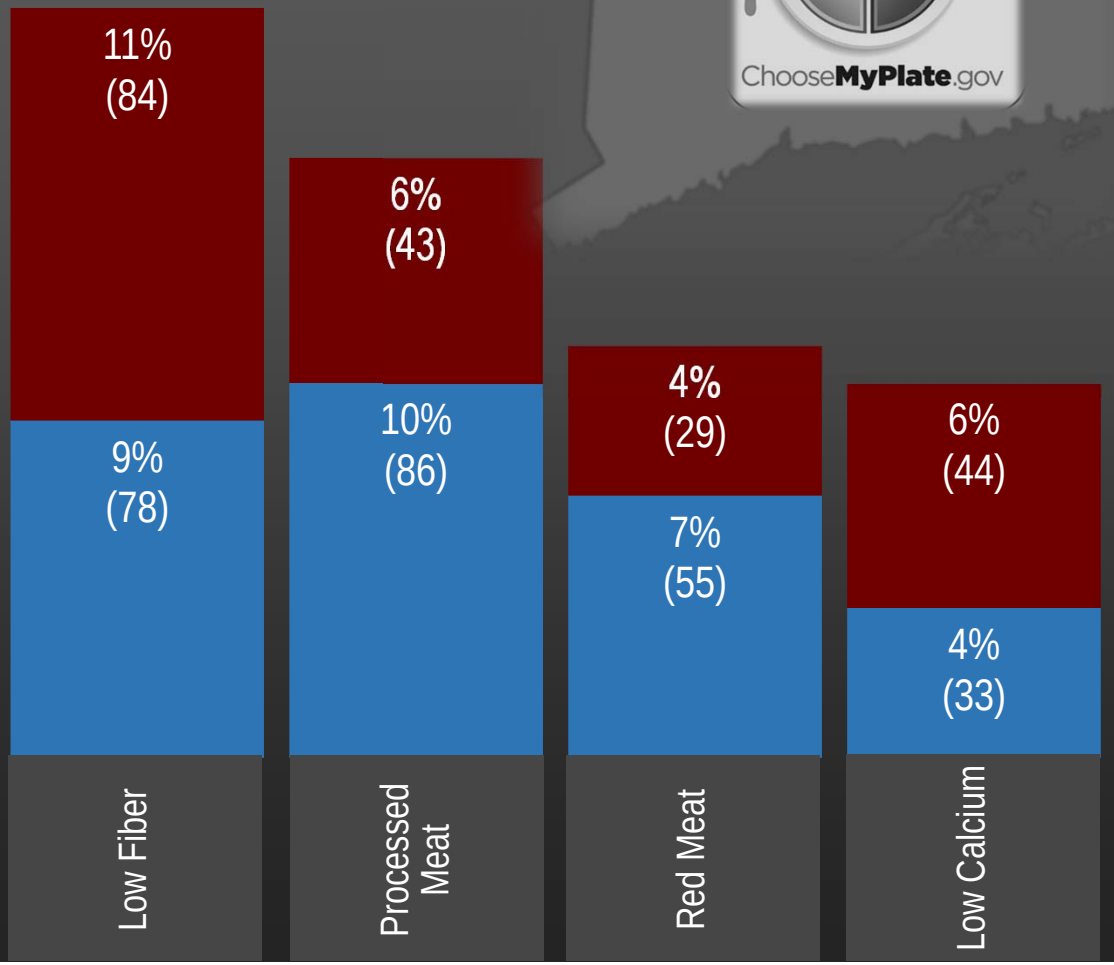


4%

Female Cancers

- Poor diet accounted for 379 newly diagnosed cancer cases in women in 2016

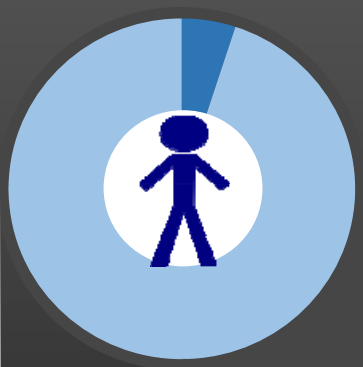
Diet-Related Colorectal PAF% (CT Cases)



Ultraviolet Radiation

5%

UV radiation accounted for 846 newly diagnosed CT cancer cases in 2016



6%

Male Cancers

- UV radiation accounted for 513 newly diagnosed cancer cases in CT men in 2016

4%

Female Cancers

- UV radiation accounted for 334 newly diagnosed cancer cases in CT women in 2016

UV Radiation-Related Melanoma of the Skin PAF%

96%

Male Cancers

- Although it is only associated with melanoma, UV radiation was the 2nd largest contributor to total cancer cases in men.

94%

Female Cancers

- Although it is only associated with melanoma, UV radiation was the 5th largest contributor to total cancer cases in women

Infection

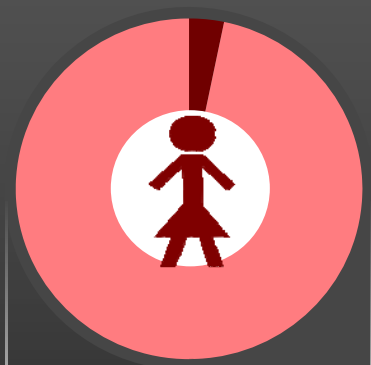
3%

Infection accounted for 670 newly diagnosed CT cancer cases in 2016

3%

Male Cancers

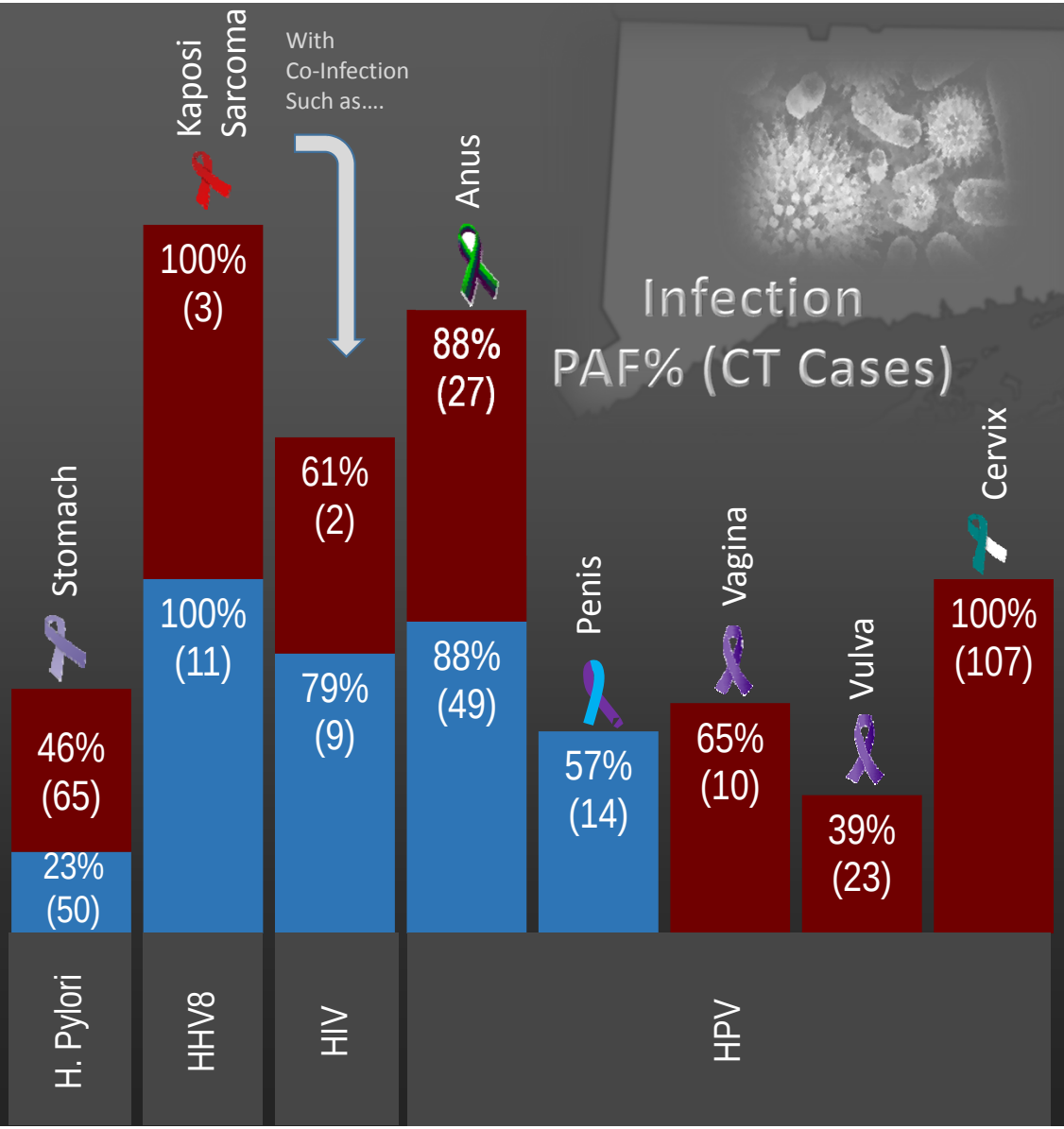
- Infection accounted for 332 newly diagnosed cancer cases in Ct men in 2016



3%

Female Cancers

- Infection accounted for 338 newly diagnosed cancer cases in CT women in 2016



Thank you!

Any questions?