Cancer Screening

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Introduction

- A case: 60 year old African American female presents to have a "complete" physical to make sure that she does not have any cancers. She has not had any screenings in the past due to lapse in health and would like to catch up. She want to know what to do to live to be a 100. Her past medical history is significant for weight gain since COVID secondary to dietary changes which include more pasta than before, mildly elevated blood sugars, mildly elevated blood pressure and slightly elevated TSH. She does not drink any alcohol. Did smoke cigarettes while in college, and quit when she graduated. She is an only child. She does not know the family history of her father's side of the family. Her mother died of heart disease in her 90s.

What are the patient's actual risks?

- Heart Disease — Leading Cause of Death
- Cancer
  - Lung Cancer Death — Leading Cause of Cancer
  - Prostate Cancer
  - Breast Cancer
  - Colorectal Cancer

Additional Cancer Screening

- Cervical
- Endometrial
- Ovarian

- Patients Taking Gender Affirming Hormones

- Cancers in Younger Adults
  - Melanoma
  - Testicular Cancer
  - Lymphoma

USPSTF Recommendation Grades

Letter grades are assigned to each recommendation statement. These grades are based on the strength of the evidence and the balance of benefits and harms of a specific preventative service.

Grade	Definition
A	The USPSTF recommends the service. There is high certainty that the net benefit is substantial.
B	The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.
C	The USPSTF recommends selectively offering or providing this service to individual patients based on professional judgment and patient preferences. There is at least moderate certainty that the net benefit is small.
D	The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.
I Statement	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.

Source: https://www.uspreventiveservicestaskforce.org/uspstf/about-uspstf/methods-and-processes/grade-definitions

Lung Cancer-Leading Cause of Cancer Death

Population	Modalities	Grade
50 to 80 years 20 pack-year history Currently smoking Quit within the past 15 years	Annual screening with low-dose computed tomography (LDCT) Decreases Lung Cancer Mortality 20% Over diagnosis Rate	**B**

Prostate Cancer- Most Common Cause of Cancer in Men

Population	Recommendation	Grade
Men aged 55 to 69 years ACS African American Men Men with first degree relative diagnosed before age 65	USPSTF and AAFP recommend against screening with DRE and PSA Shared Decision Making – Risks/Benefits Screen at age 45	**C**
Men 70 years and older	Screening is not recommended	**D**

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Breast Cancer- Second Most Common Cancer in Women

Population	Recommendation	Grade
USPSTF and AAFP Women aged 50 to 74 years Women with PH/FH of breast, ovarian, tubal, peritoneal cancer or ancestry with BRCA ½ gene mutation ACS Women aged 45 to 54 years Women age 40-44 years Women 55 years and older	 Biennial screening mammography Assess familial risk assessment tool and if positive then proceed with genetic counseling and genetic testing if indicated Yearly screening mammography Shared decision making for annual screening Biennial screening mammography	**B**
USPSTF and AAFP Women aged 40 to 49 years	USPSTF recommends Shared Decision Making for biennial screening mammography	**C**

Colorectal Cancer

Population	Recommendation	Grade
USPSTF and AAFP Adults aged 50 to 75 years USPSTF Adults aged 45 to 49 years ACS Adults age 45 through 75	 Recommends screening Recommends screening Stool based test or colonoscopy	 **A** **B**
USPSTF, ACS, AAFP Adults aged 76 to 85 years	Shared Decision Making to selectively offer screening	**C**
AAFP Adults aged 45 to 49 years	Insufficient evidence to screen	**I**

Cervical Cancer

Population	Recommendation	Grade
USPSTF and AAFP Women aged 21 to 29 years Women aged 30 to 65 ACS Women age 25 to 65 years	 Screening every 3 years with cervical cytology Screening every 3 years with cervical cytology, every 5 years with high-risk HPV testing alone, or co-testing (cytology and hrHPV) hrHPV test every 5 years; if unavailable, then co-testing every 5 years or cervical cytology every 3 years	 **A**
USPSTF and AAFP Women under 21 years ACS: women under 25 years USPSTF, ACS, AAFP: Women 65 years or those who've had a hysterectomy	Screening not recommended	**D**

Endometrial Cancer

Population	Recommendation	Grade
ACS Women after menopause	Educate regarding symptoms such as postmenopausal bleeding or spotting	**C**

Ovarian Cancer

Population	Recommendation	Grade
Asymptomatic women without a known high risk hereditary cancer syndrome	USPSTF and AAFP recommend against screening	**D**

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Patients Taking Gender Affirming Hormones

Population	Recommendation
Patients with breast tissue or taking estrogen	Follow breast cancer screening guidelines
Patients with prostate tissue	Shared decision making
Patients with a cervix	Follow cervical cancer screening guidelines

"As a rule, if an individual has a particular body part or organ and otherwise meets criteria for screening based on risk factors or symptoms, screening should proceed regardless of hormone use".

Wierckx K, Elaut E, Declercq E, Heylens G, De Cuypere G, Taes Y, et al. Prevalence of cardiovascular disease and cancer during cross-sex hormone therapy in a large cohort of trans persons: a case-control study. Eur J Endocrinol Eur Fed Endocr Soc. 2013 Oct;169(4):471-8.
Wierckx K, Mueller S, Weyers S, Van Caenegem E, Roef G, Heylens G, et al. Long-term evaluation of cross-sex hormone treatment in transsexual persons. J Sex Med. 2012 Oct 1;9(10):2641-51.
Deutsch, MB. General approach to cancer screening in transgender people. UCSF Transgender Care Treatment and Guidelines. 2016.

Another Case

- 55 yo female to male patient who has been taking testosterone for greater than 20 years. He has had removal of breast tissue several years ago, with weight gain, has had increase in tissue in the chest area. He still has ovaries, uterus and cervix.
- What screening should this patient have?
- After shared decision making it was decided to get a mammogram, because of concern for residual tissue.
- Pap smear with HPV testing as they had not have HPV testing or pap smear in the last 5 years.

No screening for ovarian pathology is recommended.

Patients Taking Gender Affirming Hormones

- Health Care Disparities
  - Diagnosed at later cancer stages
  - Less likely to receive treatment
  - Have worse survival rates
- Barriers to Care
  - Lack of insurance
  - Discrimination in medical settings

Cancers in Younger Adults

Population	Recommendation	Grade
Testicular Cancer Most common solid tumor Males age 15-34	The USPSTF recommends against routine screening for testicular cancer in adolescent or adult men. Low incidence and high survival rate	**D**
Melanoma Most common cancer Women age 25-29	The USPSTF concludes that the current evidence is insufficient to recommend routine visual skin examinations. AAFP encourages physicians and patients to watch for and monitor suspicious nevi. "ugly duckling sign"	
Lymphoma Hodgkin's Males age 20-34	AAFP routine screening is not recommended, greater than 90 subtypes.	

Preventing Cancer

- Appropriate Cancer Screening
- Vaccines
  - Human Papilloma Virus Vaccine
  - Hepatitis B Vaccine
- Making Healthy Choices
  - Maintain a healthy weight
  - Avoid tobacco, or quit smoking
  - Limit alcohol intake
  - Protect your skin

Conclusion

- Shared Decision Making is essential in Cancer Screening
- Cancer Screening Modalities and Guidelines Change Frequently
- Maximize screening tests and cancer awareness for patients made vulnerable
- Decrease health care disparities to increase cancer survival rates