Cancer Screening and Prevention Saving Women's Lives

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Gynecologic Oncology
Stephenson Cancer Center

Lifetime probability of developing cancer for females, US, 2018–2019, 2021

Site	Risk
All sites[a]	1 in 3 (39.0%)
Breast	1 in 8 (13.1%)
Lung & bronchus	1 in 18 (5.6%)
Colon & rectum	1 in 26 (3.8%)
Uterine corpus	1 in 32 (3.1%)
Melanoma of the skin[b]	1 in 40 (2.5%)

[a]Excludes basal cell and squamous cell skin cancers and in situ cancer except for urinary bladder. [b]Probabilities for non-Hispanic White individuals only.
Data source: DevCan 6.9.0, National Cancer Institute, 2024.

Important News from the Data

- Cancer incidence is Increasing in Women
- Dramatically increasing in women under 50 yr
- Endometrial cancer is the only cancer increasing in incidence and mortality
- Endometrial cancer deaths > ovary
- Cancer prevention is feasible
  - cervix, endometrial, colon, ovary, HPV related CA
  - Disparities exist in mortality-Blacks and Native/AI

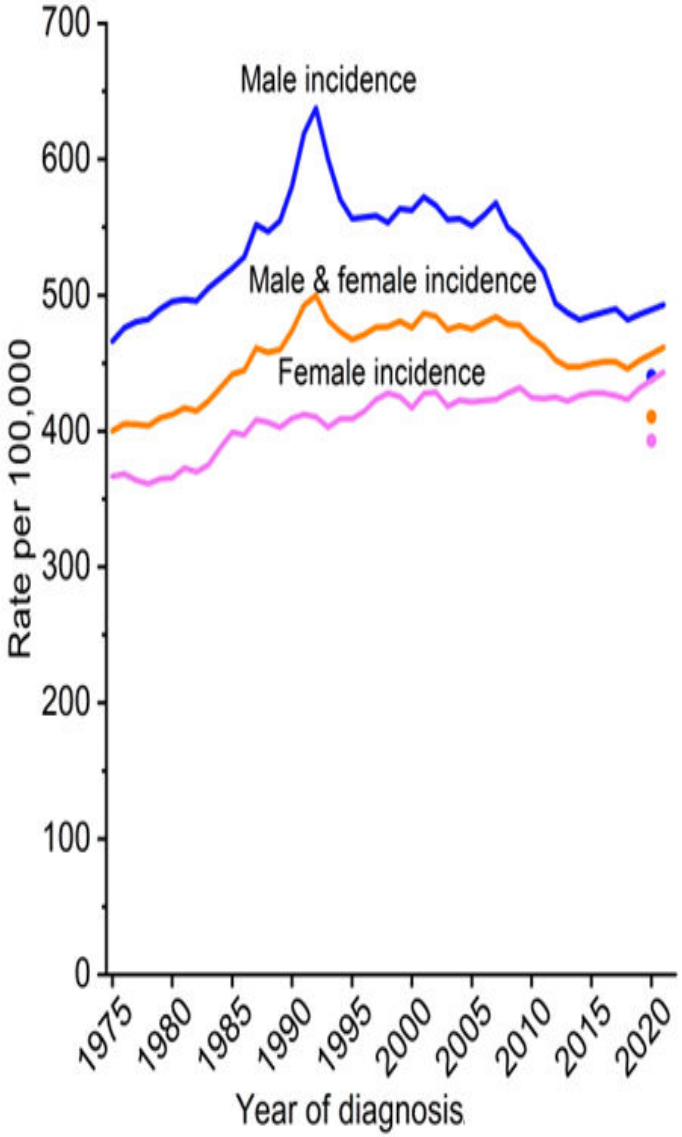
Estimated number of new cancer cases in the US in 2025

American Cancer Society

Male			Female		
Prostate	313,780	30%	Breast	316,950	32%
Lung & bronchus	110,680	11%	Lung & bronchus	115,970	12%
Colon & rectum	82,460	8%	Colon & rectum	71,810	7%
Urinary bladder	65,080	6%	Uterine corpus	69,120	7%
Melanoma of the skin	60,550	6%	Melanoma of the skin	44,410	4%
Kidney & renal pelvis	52,410	5%	Non-Hodgkin lymphoma	35,210	4%
Non-Hodgkin lymphoma	45,140	4%	Pancreas	32,490	3%
Oral cavity & pharynx	42,500	4%	Thyroid	31,350	3%
Leukemia	38,720	4%	Kidney & renal pelvis	28,570	3%
Pancreas	34,950	3%	Leukemia	28,170	3%
All sites	**1,053,250**		**All sites**	**988,660**	

Excludes basal cell and squamous cell skin cancers and in situ carcinoma except urinary bladder.
Source: Cancer Facts & Figures 2025.

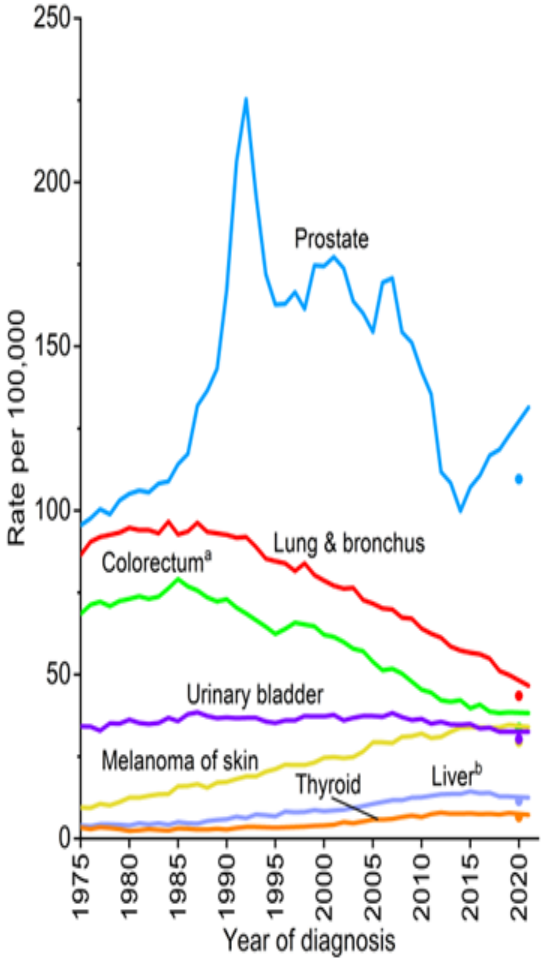
Trends in cancer incidence rates, US, 1975–2021



Rates are age adjusted to 2000 US standard population and adjusted for delays in reporting. Data for 2020 is shown separate from trend line.
Data source: Surveillance, Epidemiology, and End Results program, National Cancer Institute 2024.

American Cancer Society

Trends in cancer incidence rates among males, US, 1975–2021



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[a]Excludes appendix

[b]Includes intrahepatic bile duct.

Data source: Surveillance, Epidemiology, and End Results program, National Cancer Institute, 2024.

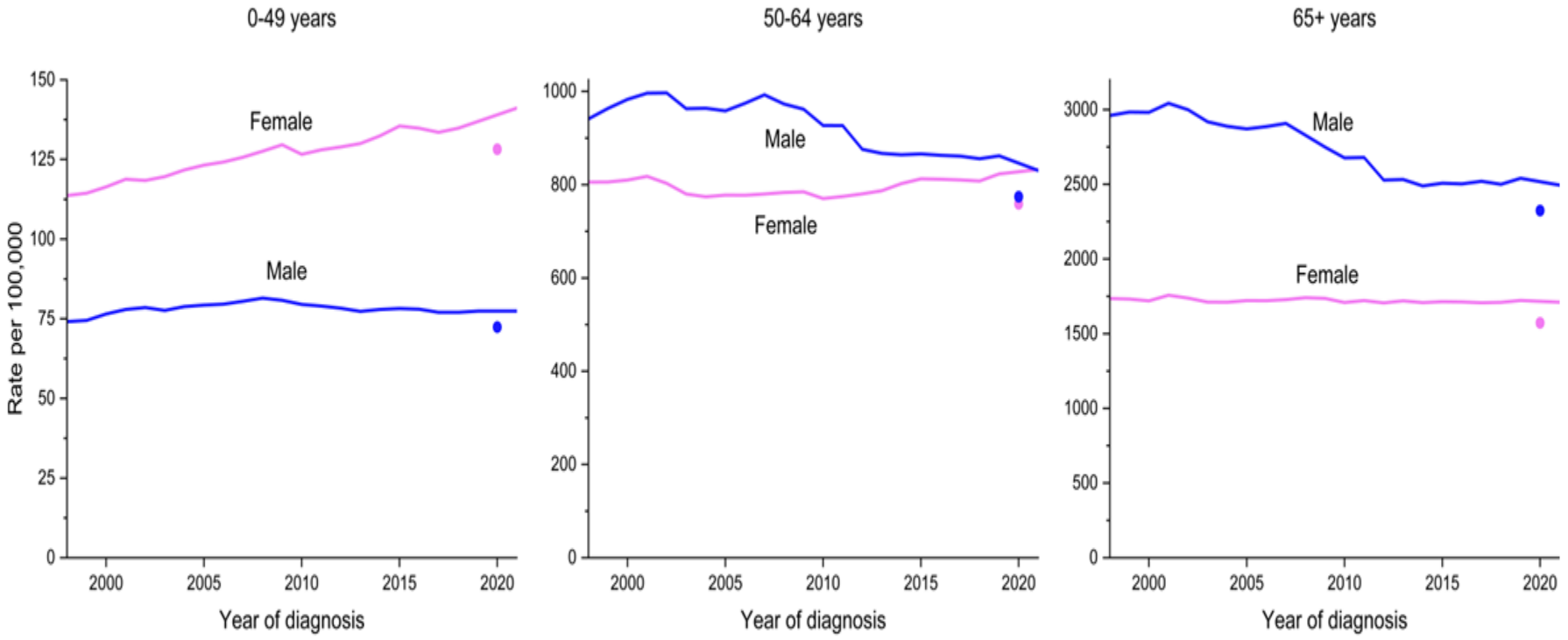
American Cancer Society

Lifetime probability of developing cancer for males, US, 2018–2019,2021

Site	Risk
All sites[a]	1 in 3 (39.9%)
Prostate	1 in 8 (12.8%)
Lung & bronchus	1 in 17 (5.8%)
Colon & rectum	1 in 24 (4.1%)
Melanoma of the skin[b]	1 in 29 (3.5%)
Kidney & renal pelvis	1 in 45 (2.2%)

[a]Excludes basal cell and squamous cell skin cancers and in situ cancer except for urinary bladder. [b]Probabilities for non-Hispanic White individuals only.
Data source: DevCan 6.9.0, National Cancer Institute, 2024.

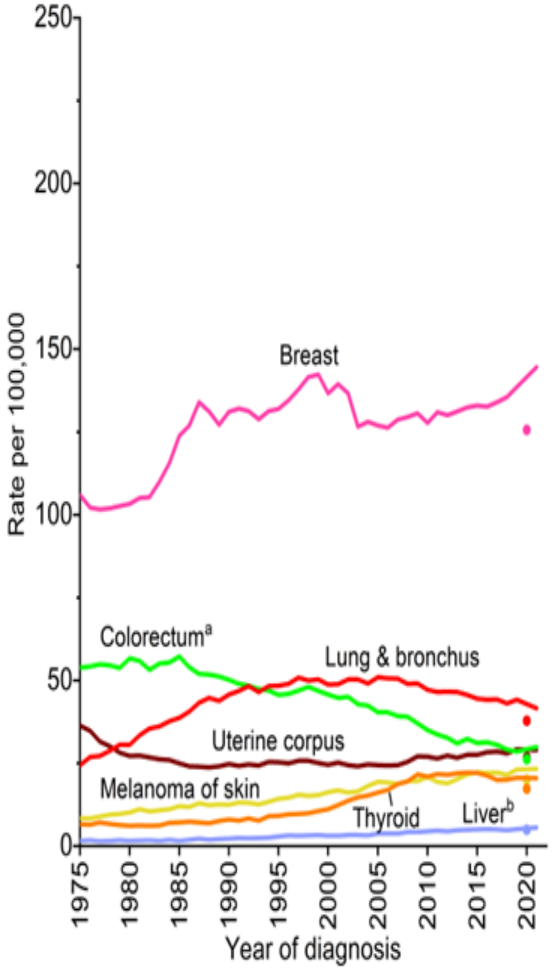
Trends in cancer incidence rates by sex and age, 1998-2021



Rates are age adjusted to the 2000 US standard population and adjusted for delays in case reporting. Data for 2020 are shown separate from trend lines.

American Cancer Society

Trends in cancer incidence rates among females, US, 1975-2021



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[a]Excludes appendix

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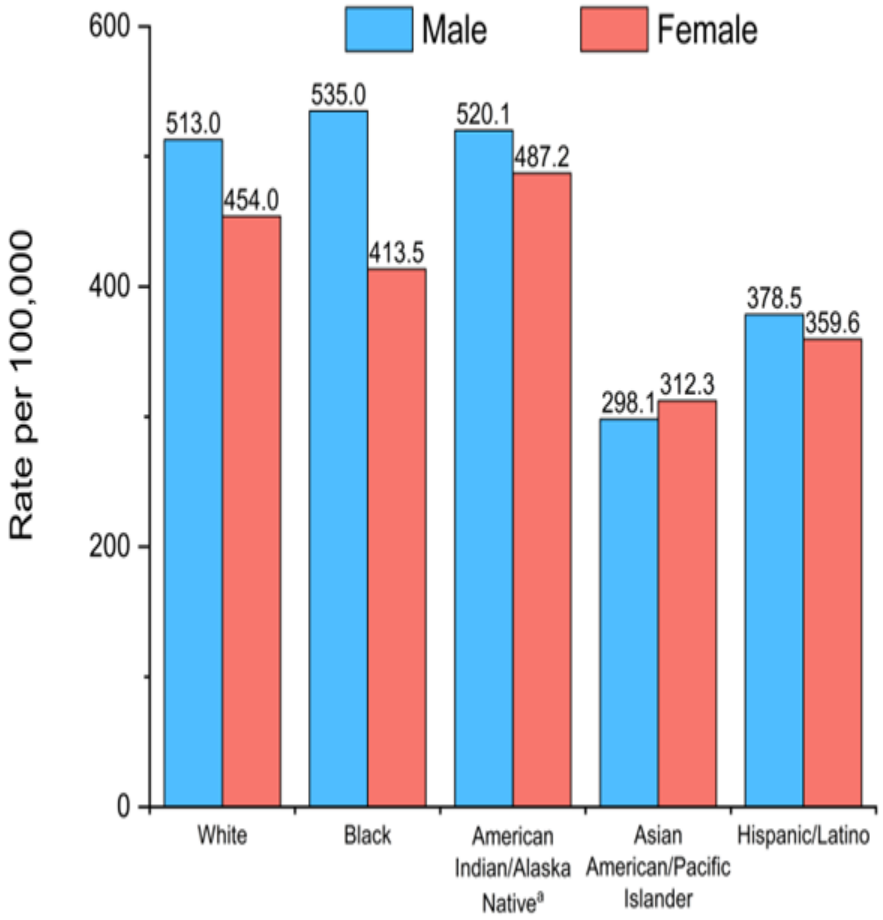
Data source: Surveillance, Epidemiology, and End Results program, National Cancer Institute, 2024.

Cancer incidence rates by race and ethnicity, US, 2017-2021



Rate is age adjusted to 2000 US standard population and adjusted for delays in reporting. Race is exclusive of Hispanic origin.
[a]Rates for American Indian/Alaska Native people are restricted to Purchased/Referred Delivery Care Areas.
Data source: North American Association for Central Cancer Registries, 2024.

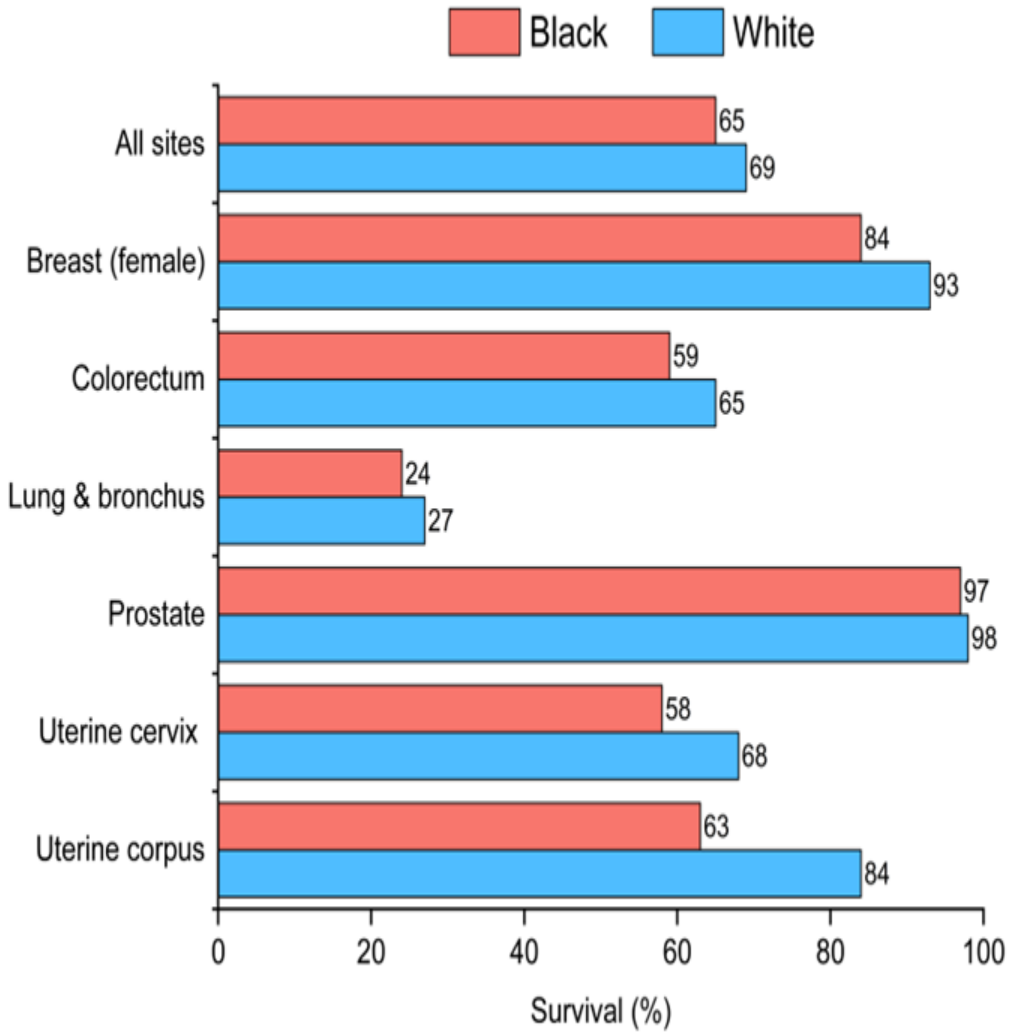
Trends in five-year relative survival (%), US, 1975–2020

Site	1975-77	1995-97	2014-2020
All sites	49	63	69
Breast (female)	75	87	91
Colon & rectum	50	61	64
Leukemia	34	48	67
Liver & intrahepatic bile duct	3	7	22
Lung & bronchus	12	15	27
Melanoma of the skin	82	91	94
Non-Hodgkin lymphoma	47	56	74
Ovary	36	43	51
Pancreas	3	4	13
Prostate	68	97	97
Uterine cervix	69	73	67
Uterine corpus	87	84	81

Survival is age adjusted for normal life expectancy and are based on cases diagnosed in the Surveillance, Epidemiology, and End Results (SEER) 9 areas for 1975-1977 and 1995-1997 and in the SEER 22 areas for 2014-2020; cases followed through 2021.
Data source: Surveillance, Epidemiology, and End Results program, National Cancer Institute, 2025.

American Cancer Society

Five-year relative survival (%) by race, US, 2014-2020



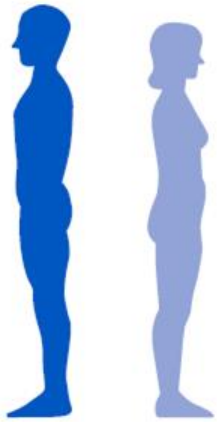
Survival is age adjusted for normal life expectancy and are based on cases diagnosed in the Surveillance, Epidemiology, and End Results (SEER) 22 areas for 2014-2020 and cases were followed through 2021. Race is exclusive of Hispanic origin. Colorectum excludes appendiceal cancer.
Source: Surveillance, Epidemiology, and End Results program, National Cancer Institute, 2024.

Cancer Statistics 2025

Estimated number of new cancer deaths in the US in 2025

American Cancer Society

Male		
Lung & bronchus	64,190	20%
Prostate	35,770	11%
Colon & rectum	28,900	9%
Pancreas	27,050	8%
Liver & intrahepatic bile duct	19,250	6%
Leukemia	13,500	4%
Esophagus	12,940	4%
Urinary bladder	12,640	4%
Non-Hodgkin lymphoma	11,060	3%
Brain & other nervous system	10,170	3%
All sites	**323,900**	

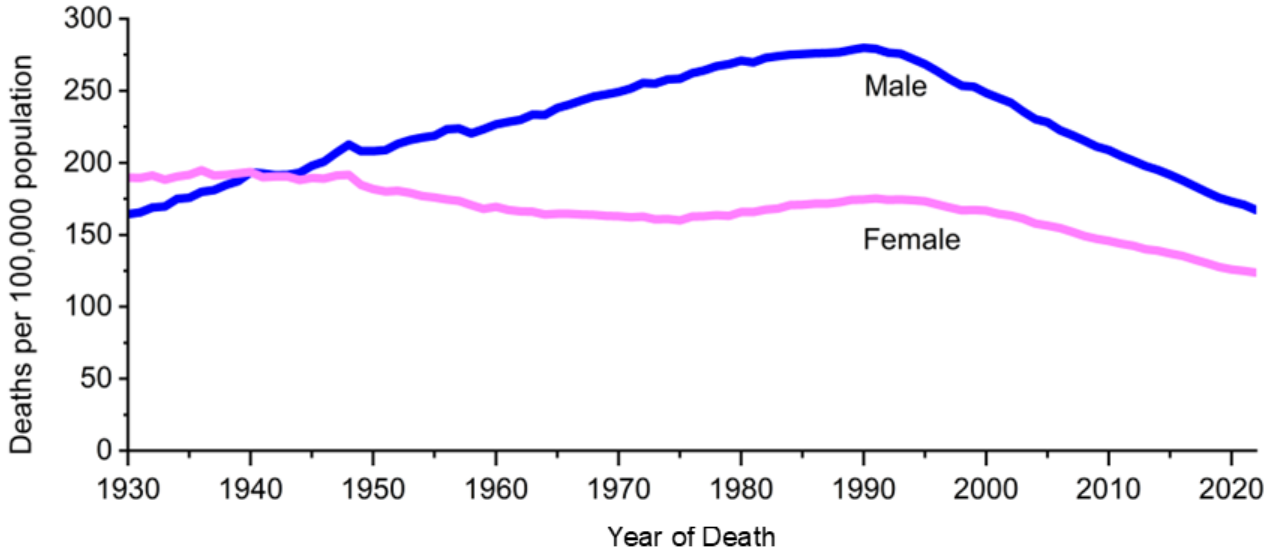


Female		
Lung & bronchus	60,540	21%
Breast	42,170	14%
Pancreas	24,930	8%
Colon & rectum	24,000	8%
Uterine corpus	13,860	5%
Ovary	12,730	4%
Liver & intrahepatic bile duct	10,840	4%
Leukemia	10,040	3%
Non-Hodgkin lymphoma	8,330	3%
Brain & other nervous system	8,160	3%
All sites	**294,220**	

Excludes basal cell and squamous cell skin cancers and in situ carcinoma except urinary bladder.
Source: Cancer Facts & Figures 2025.

Cancer Statistics 2025

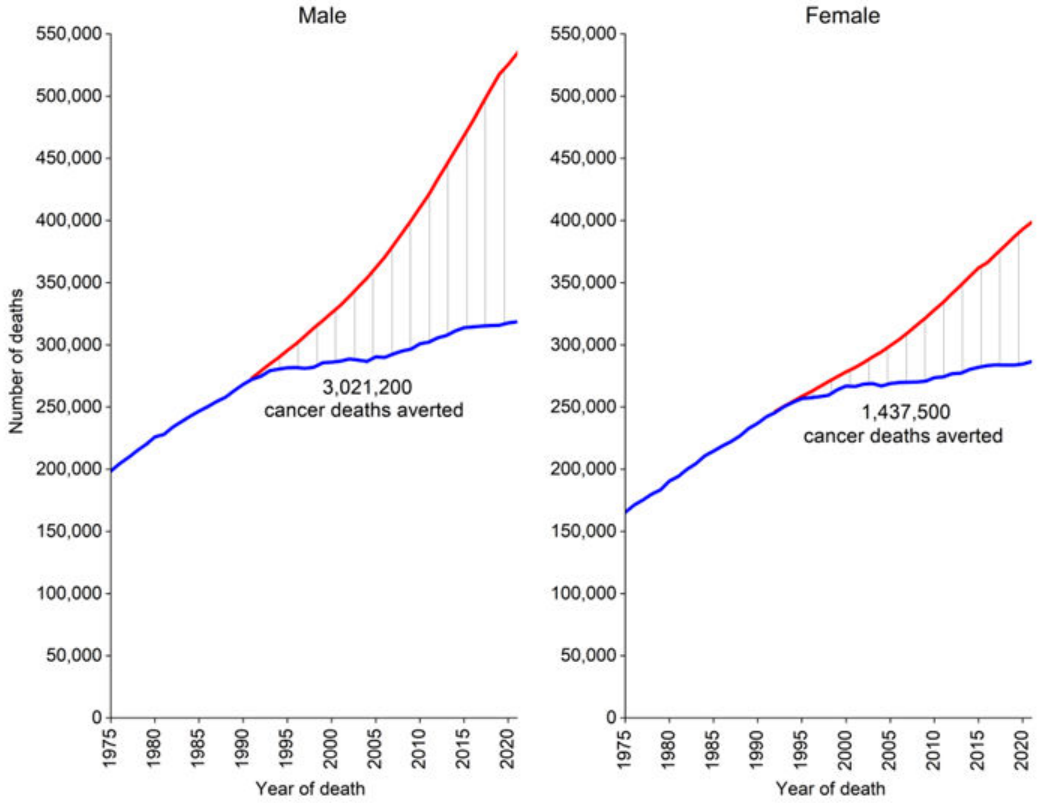
Trends in cancer death rates, US, 1975–2022



Rates are age adjusted to the 2000 US standard population.
Data source: National Center for Health Statistics, Centers for Disease Control and Prevention, 2024.

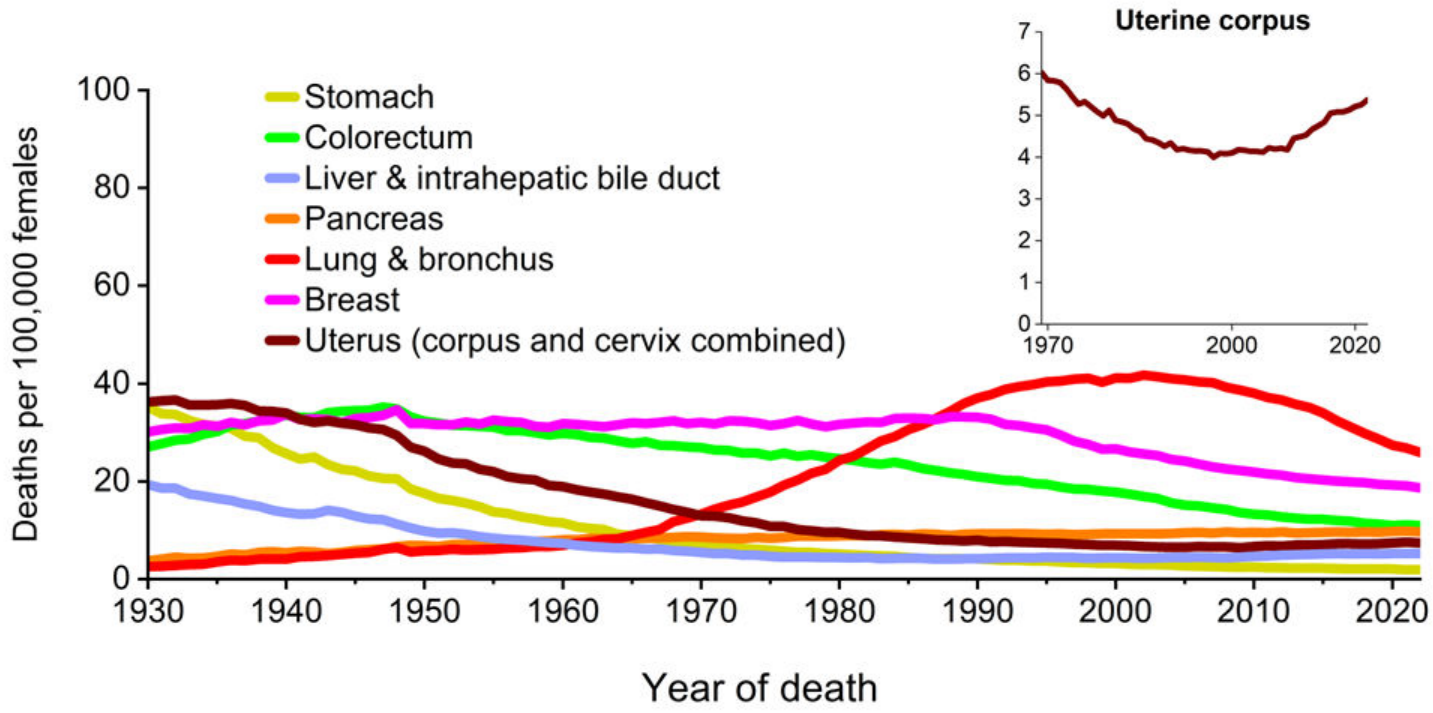
Cancer Statistics 2025

Total number of cancer deaths averted in men (1991 onward) and women (1992 onward), US



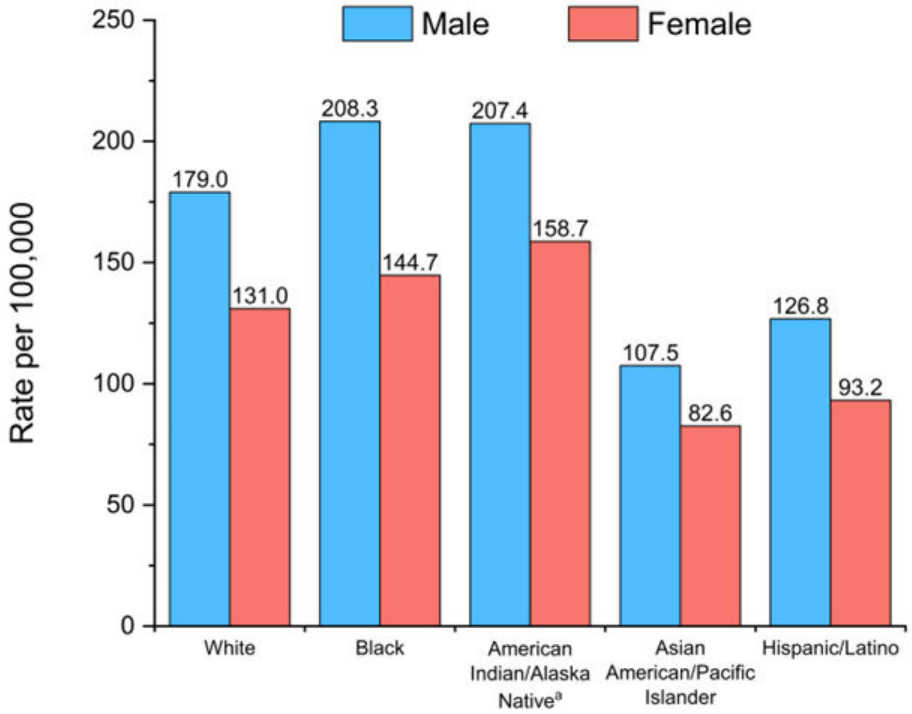
The blue line represents the actual number of cancer deaths recorded each year, and the red line represents the number of cancer deaths that would have been expected if cancer death rates had remained at their peak.

Trends in cancer death rates among females, US, 1930–2022

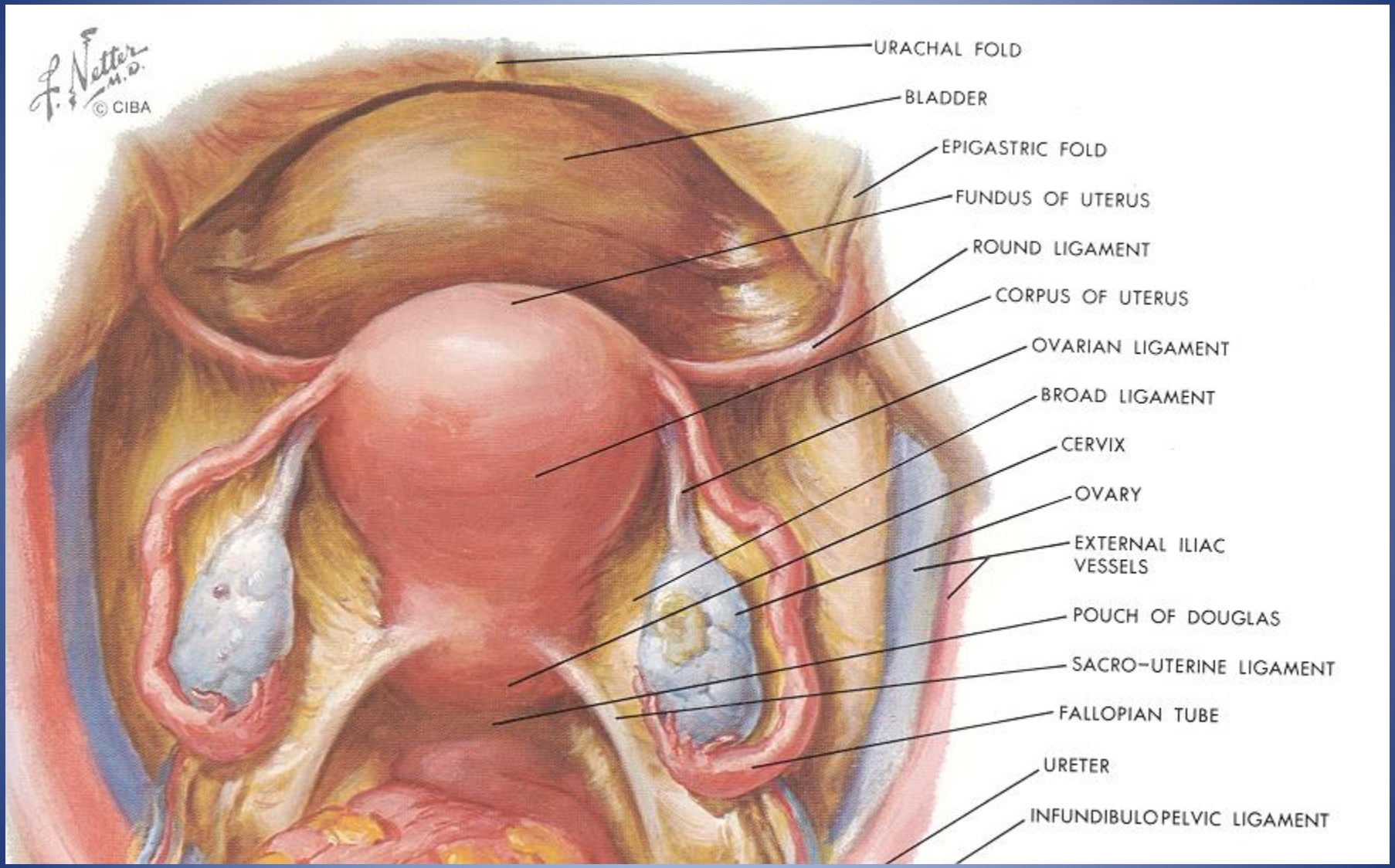


Rates are age adjusted to the 2000 US standard population and exclude deaths in Puerto Rico and other US territories. Due to improvements in classification, site-specific information differs from contemporary data for cancers of the liver, lung and bronchus, colon and rectum, and uterus.
Data source: National Center for Health Statistics, Center for Disease Control and Prevention, 2024.

Cancer death rates by race and ethnicity, US, 2018–2022



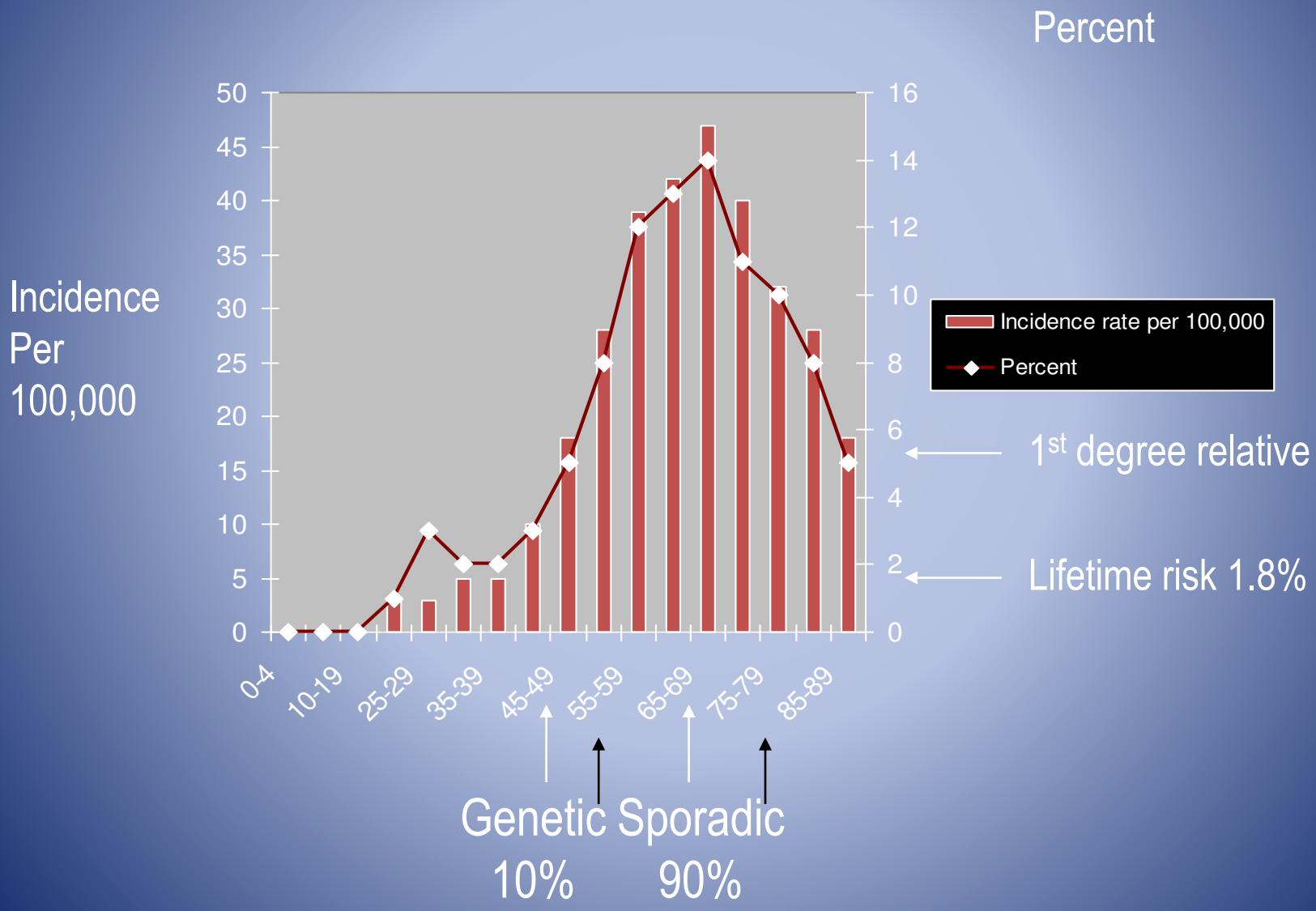
Rate is age adjusted to 2000 US standard population and adjusted for delays in reporting. Race is exclusive of Hispanic origin. [a]Rates for American Indian/Alaska Native people are adjusted for racial misclassification on death certificates.
Source: National Centers for Health Statistics, Center for Disease Control and Prevention, 2024


F. H. Netter M.D.
© CIBA
URACHAL FOLD
BLADDER
EPIGASTRIC FOLD
FUNDUS OF UTERUS
ROUND LIGAMENT
CORPUS OF UTERUS
OVARIAN LIGAMENT
BROAD LIGAMENT
CERVIX
OVARY
EXTERNAL ILIAC VESSELS
POUCH OF DOUGLAS
SACRO-UTERINE LIGAMENT
FALLOPIAN TUBE
URETER
INFUNDIBULOPELVIC LIGAMENT

CANCER CASES AND DEATHS

	CASES	OK CASES	DEATHS	LIFETIME RISK	RISK OF DEATH
ENDOMETRIAL	69,120	690	13,250	1:38	1:190
OVARY	19680	250	12,740	1:70	1:100
CERVIX	13,820	200	4,360	1:147	1:441
VULVA	6,900	100	950	1:300	
VAGINA	2,680	50	840		
other	8650		1870		
ALL GYN	118,179		29,910		

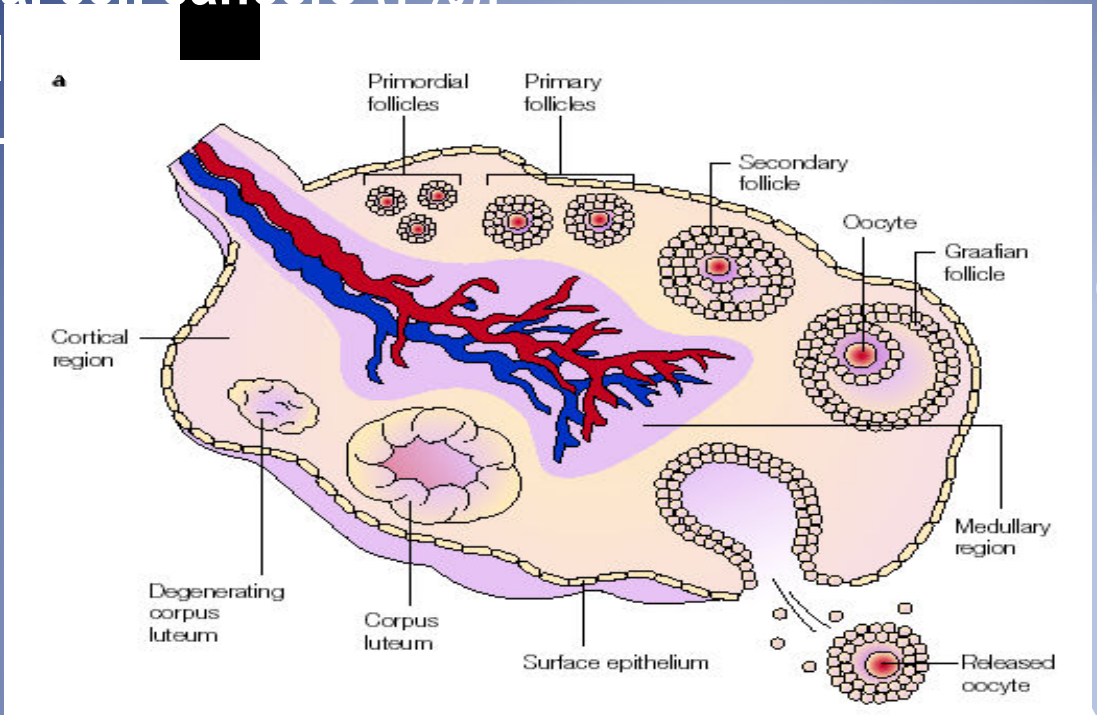
Incidence of Ovarian Cancer by Age



Stromal cell cancers (7%):

Granul

Sertoli-



Germ cell cancers (2-3%

Dysgerminoma

Immature teratoma

Embryonal carcinoma

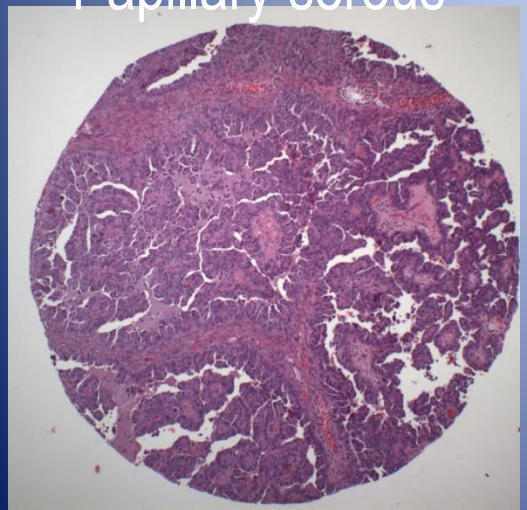
Choriocarcinoma

Endodermal sinus tumor

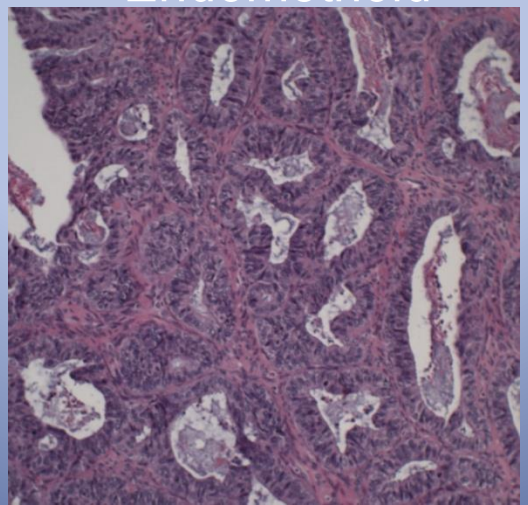
Naora H *Nat Rev Cancer* 2005

Epithelial cell cancers (90%)

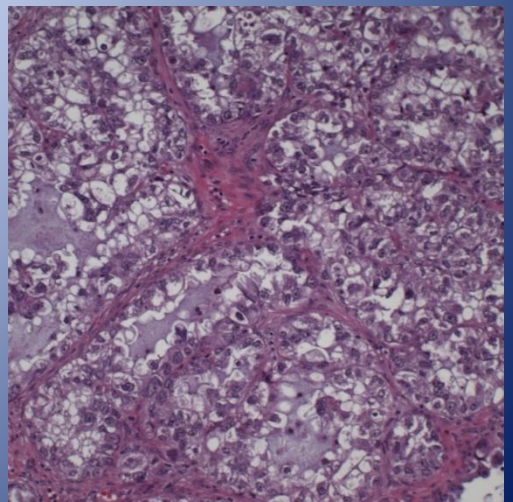
Papillary serous



Endometrioid



Clear cell



Latest Theories

- Low grade ovarian epithelial cancer-
  - Estrogen and endometriosis associated
  - Prevented by oral contraceptives
  - 20% of deaths
- High grade serous ovarian epithelial cancer
  - Starts in fallopian tube
  - Rarely stage I
  - Prevented by salpingectomy-RRSO
  - 80% of deaths

Risk Factors
Epithelial Ovarian Cancer

- Age
- Family History RR=2.8 1FDR, 4.6 2FDR
- BRCA1 60%
- BRCA2 30%
- Lynch II Syndrome (HNPCC) 13%
- Endometriosis 3%
- Infertility/Nulliparity
- PCOS

Protective Factors

- Prophylactic salpingectomy- OPPORTUNISTIC
- Oophorectomy
- Oral contraceptives
  - Risk reduction proportional to duration of use
  - Large cohort, n=103,551
    - Ever-users RR=0.6 (95% CI 0.5-0.7)
    - Long-term users (≥15 years) RR=0.1 (95% CI 0.01-0.6)
  - Lesser protection with progestin-only methods
- Tubal ligation
- Pregnancy

Kumle, Br J Cancer; 2004.

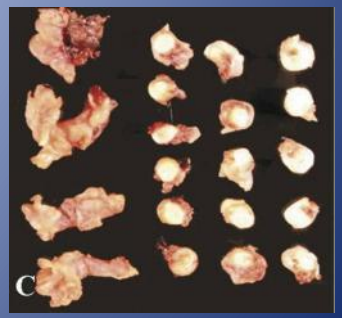
Occult RRSO malignancy is often tubal

Table 1. Frequency of fallopian tube carcinoma in women with BRCA mutations.

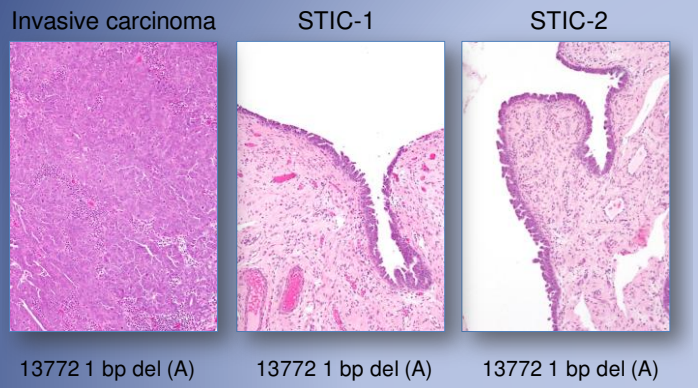
Authors	Number	Cancer (%)	Fallopian tube (%)	Comments
Finch[43]	159	7 (4.4)	6 (84)	
Olopade[6]	170	3	0	All classified as stage I ovary
Kauff[33]	98	1	0	One classified as peritoneal
Powell[42]	41	7	4 (56)	Three additional cases classified as ovary
Medeiros[50]	13	5 (5)	5 (100)	Four cases involved fimbria
Total	481	28	15	

Table 1. Involvement of the FT in Patients With Invasive Pelvic Carcinomas and in High-Risk Popula

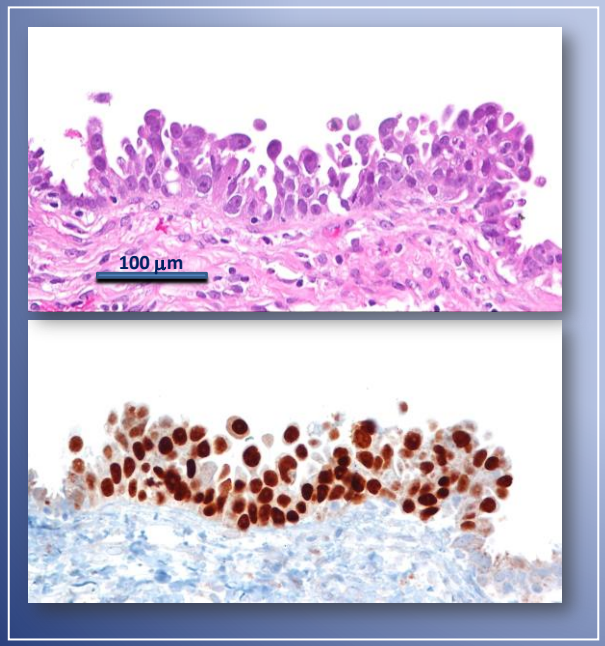
Study	No. of Patients	*BRCA* Mutations Status		Pelvic Carcinoma		Involvement of FT	
		No.	%	No.	%	No.	%
		Unknown, 47	35				
Lamb et al[84]	113	*BRCA1*, 40	35	7/113	6.2	5/7	71
		BRCA2, 22	19				
		Not tested or no mutation, 51	45				
Finch et al[85]	159	*BRCA1*, 94	59	7/159	4.4	6/7	85
		BRCA2, 65	41				
Callahan et al[86]	122	*BRCA1*, 60	49	7/122	5.7	7/7	100
		BRCA2, 60	49				
		Not specified, 2	2				

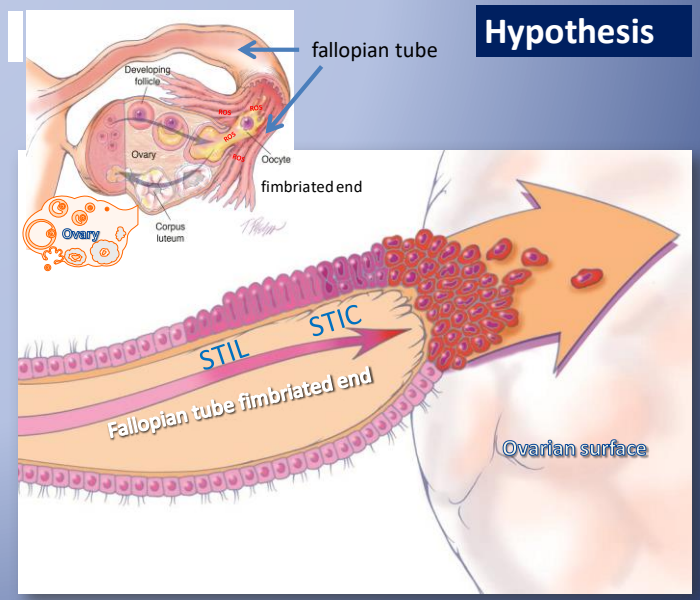


Serous Tubal Intra-epithelial Carcinoma (STIC) has same TP53 mutations as invasive tumors

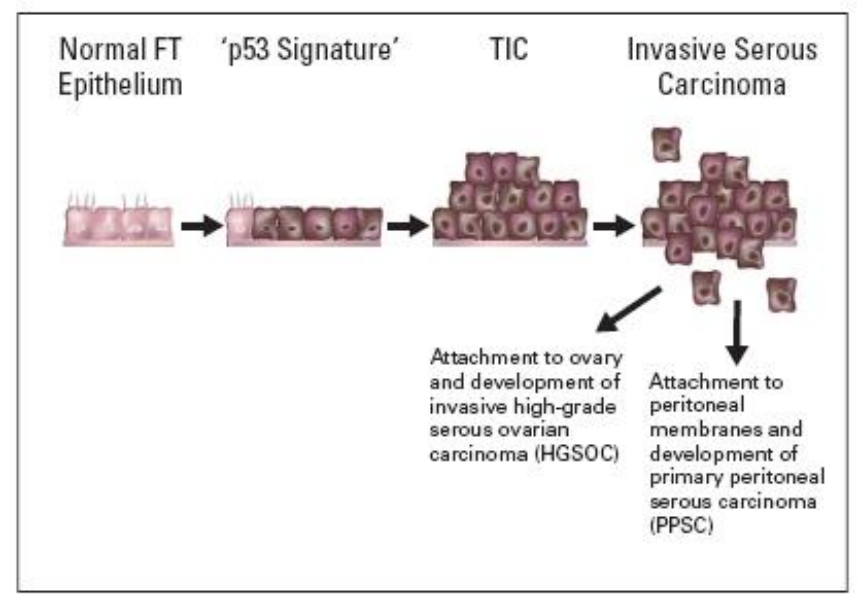


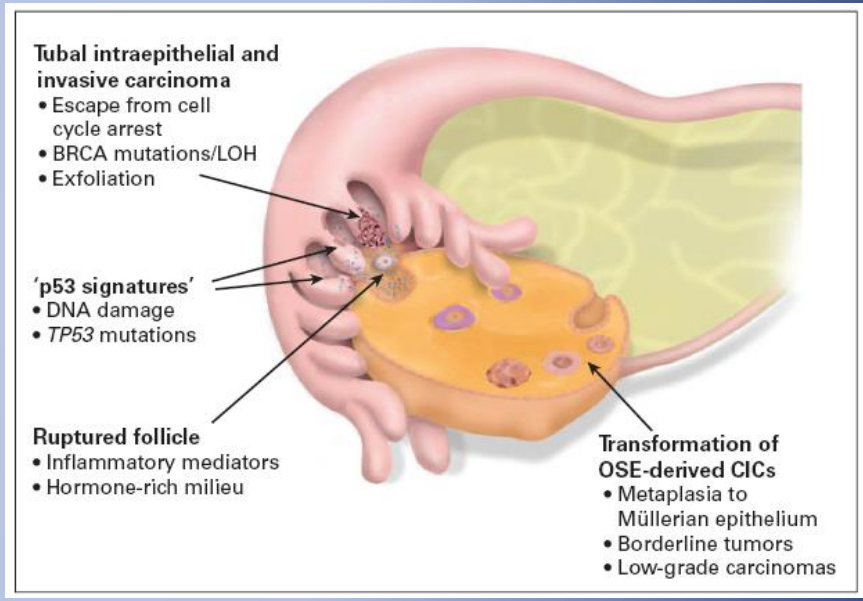
- Not circumstantial
- Quite convincing
- Precursor lesion identified





Models of 'Ovarian' Tumorigenesis



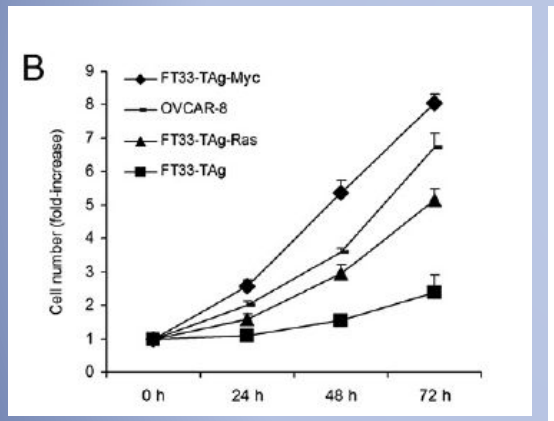


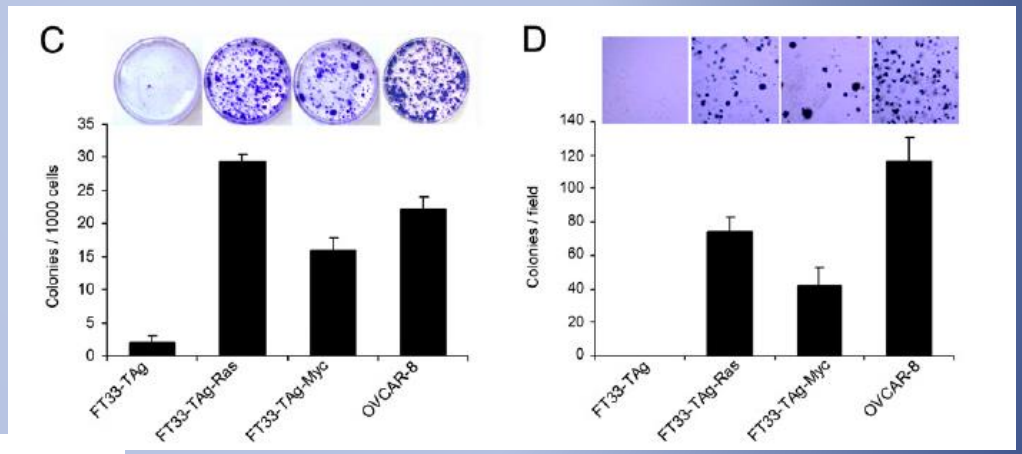
Levanon K et al JCO 2008

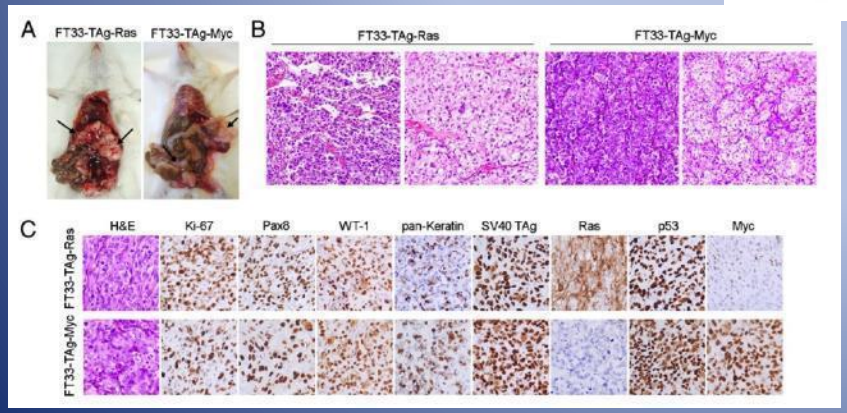
Modeling high-grade serous ovarian carcinogenesis from the fallopian tube

Alison M. Karst[a], Keren Levanon[a,1], and Ronny Drapkin[a,b,2]

- FTSEC can be dissociated from fresh tissue and grown in culture
- Viral oncogenic transformation leads to increase proliferation, colony formation, and growth on soft agar
- Phenotype mimics HGSOC based on morphology and IHC







- FTSEC can be transformed to mimic HGSOC
- Excellent and elegant model created

PNAS | May 3, 2011 | vol. 108 | no. 18 | 7547–7552

New Prevention Strategy

- Oral contraceptives when not pregnant
- Salpingectomy after last child
- Salpingectomy during any abdominal surgery
- Genetic testing
- Salpingo-Oophorectomy for genetic high-risk individuals near menopause
- Early detection with symptoms
  - Abd distension, early satiety, fatigue, abd pelvic pain

Estimated number of new cancer cases in the US in 2025

American Cancer Society

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Prostate	313,780	30%
Lung & bronchus	110,680	11%
Colon & rectum	82,460	8%
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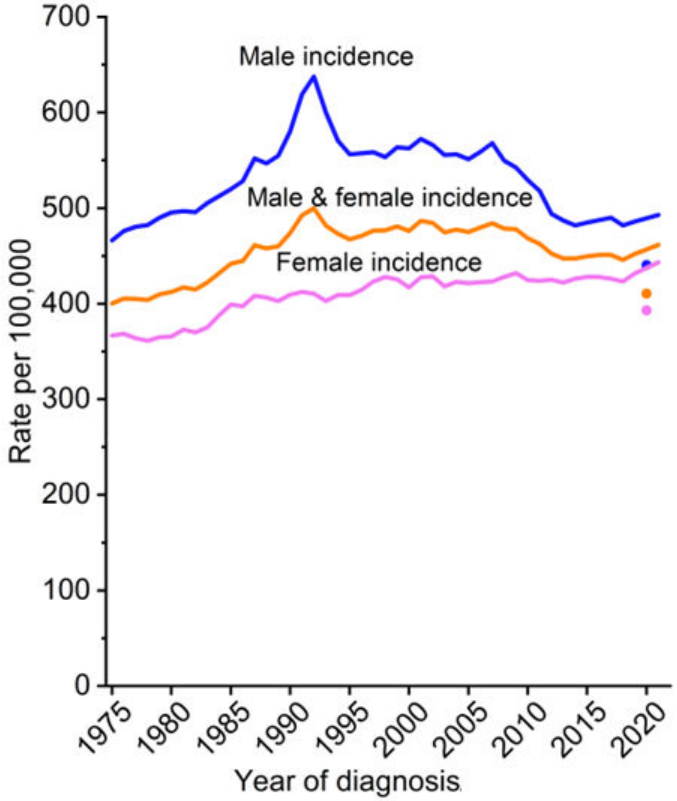
Non-Hodgkin lymphoma	45,140	4%
Oral cavity & pharynx	42,500	4%
Leukemia	38,720	4%
Pancreas	34,950	3%
All sites	**1,053,250**	

Female		
Breast	316,950	32%
Lung & bronchus	115,970	12%
Colon & rectum	71,810	7%
Uterine corpus	69,120	7%
Melanoma of the skin	44,410	4%
Non-Hodgkin lymphoma	35,210	4%
Pancreas	32,490	3%
Thyroid	31,350	3%
Kidney & renal pelvis	28,570	3%
Leukemia	28,170	3%
All sites	**988,660**	

Excludes basal cell and squamous cell skin cancers and in situ carcinoma except urinary bladder.
Source: Cancer Facts & Figures 2025.

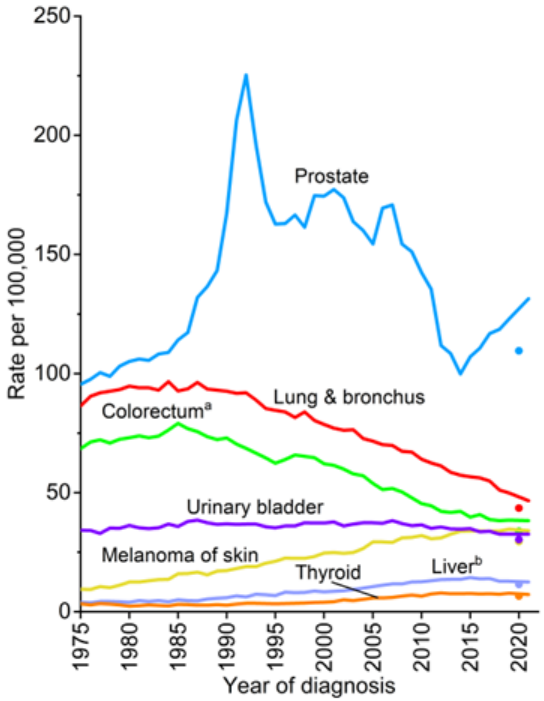
American Cancer Society

Trends in cancer incidence rates, US, 1975–2021



Rates are age adjusted to 2000 US standard population and adjusted for delays in reporting. Data for 2020 is shown separate from trend line.
Data source: Surveillance, Epidemiology, and End Results program, National Cancer Institute 2024.

Trends in cancer incidence rates among males, US, 1975–2021



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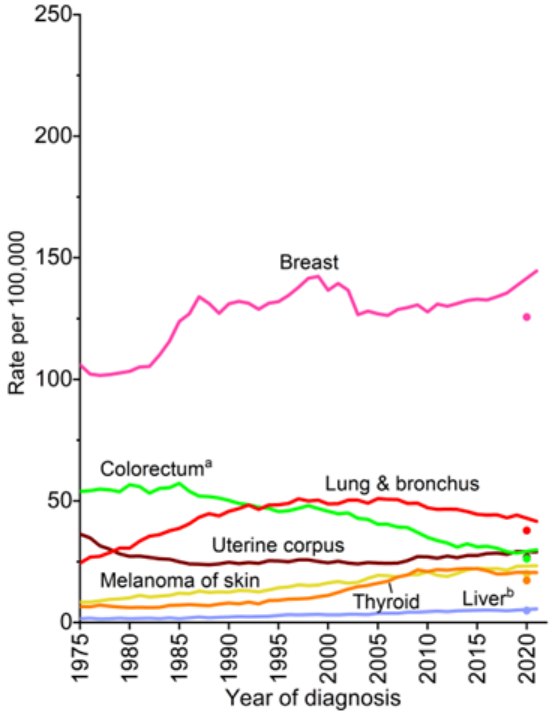
[a]Excludes appendix
[b]Includes intrahepatic bile duct.
Data source: Surveillance, Epidemiology, and End Results program, National Cancer Institute, 2024.

Trends in cancer incidence rates among females, US, 1975–2021



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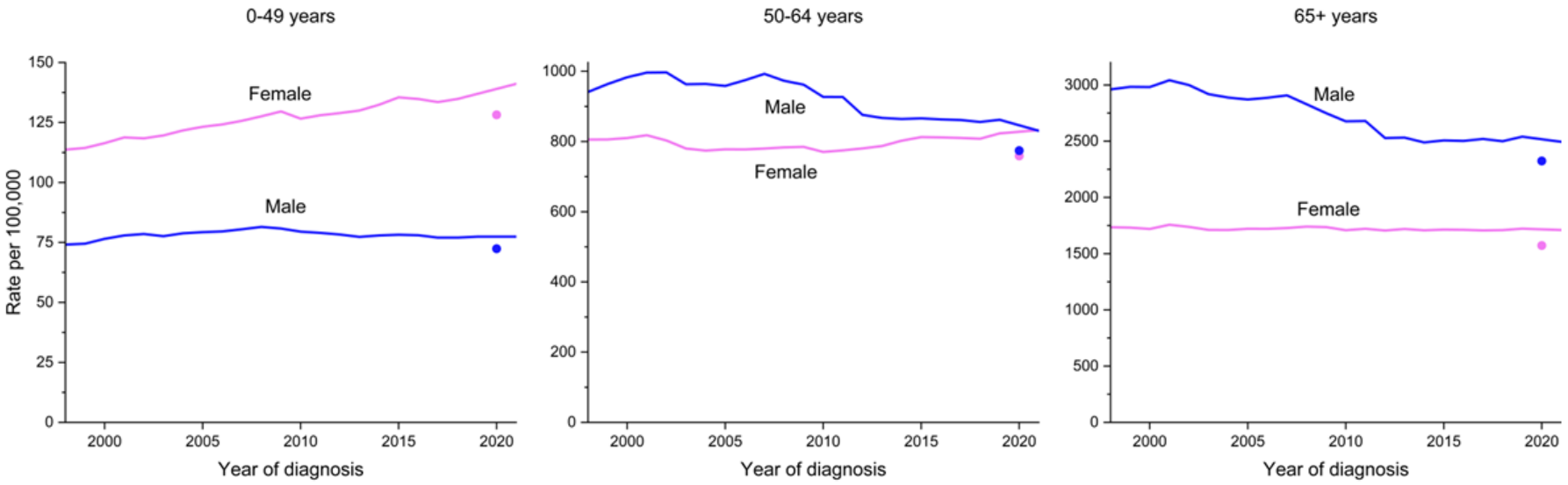
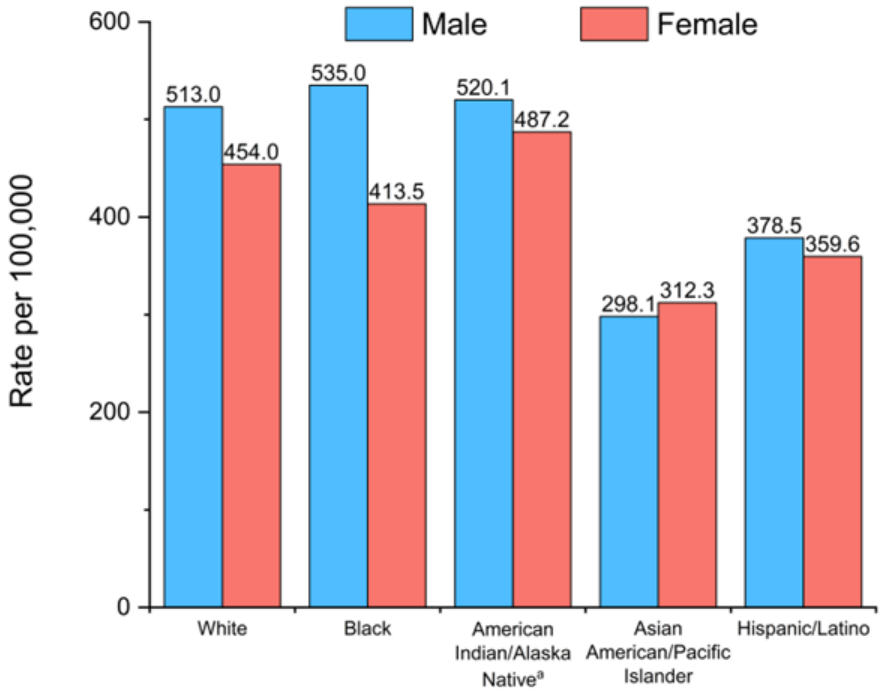
Cancer Statistics 2025

Trends in cancer incidence rates by sex and age, 1998-2021



Rates are age adjusted to the 2000 US standard population and adjusted for delays in case reporting. Data for 2020 are shown separate from trend lines.

Cancer incidence rates by race and ethnicity, US, 2017–2021



Rate is age adjusted to 2000 US standard population and adjusted for delays in reporting. Race is exclusive of Hispanic origin.
[a]Rates for American Indian/Alaska Native people are restricted to Purchased/Referred Delivery Care Areas.
Data source: North American Association for Central Cancer Registries, 2024.

American Cancer Society

Lifetime probability of developing cancer for males, US, 2018–2019,2021

Site	Risk
All sites[a]	1 in 3 (39.9%)
Prostate	1 in 8 (12.8%)
Lung & bronchus	1 in 17 (5.8%)
Colon & rectum	1 in 24 (4.1%)
Melanoma of the skin[b]	1 in 29 (3.5%)
Kidney & renal pelvis	1 in 45 (2.2%)

[a]Excludes basal cell and squamous cell skin cancers and in situ cancer except for urinary bladder. [b]Probabilities for non-Hispanic White individuals only.
Data source: DevCan 6.9.0, National Cancer Institute, 2024.

American Cancer Society

Lifetime probability of developing cancer for females, US, 2018–2019, 2021

Site	Risk
All sites[a]	1 in 3 (39.0%)
Breast	1 in 8 (13.1%)
Lung & bronchus	1 in 18 (5.6%)
Colon & rectum	1 in 26 (3.8%)
Uterine corpus	1 in 32 (3.1%)
Melanoma of the skin[b]	1 in 40 (2.5%)

[a]Excludes basal cell and squamous cell skin cancers and in situ cancer except for urinary bladder. [b]Probabilities for non-Hispanic White individuals only.
Data source: DevCan 6.9.0, National Cancer Institute, 2024.

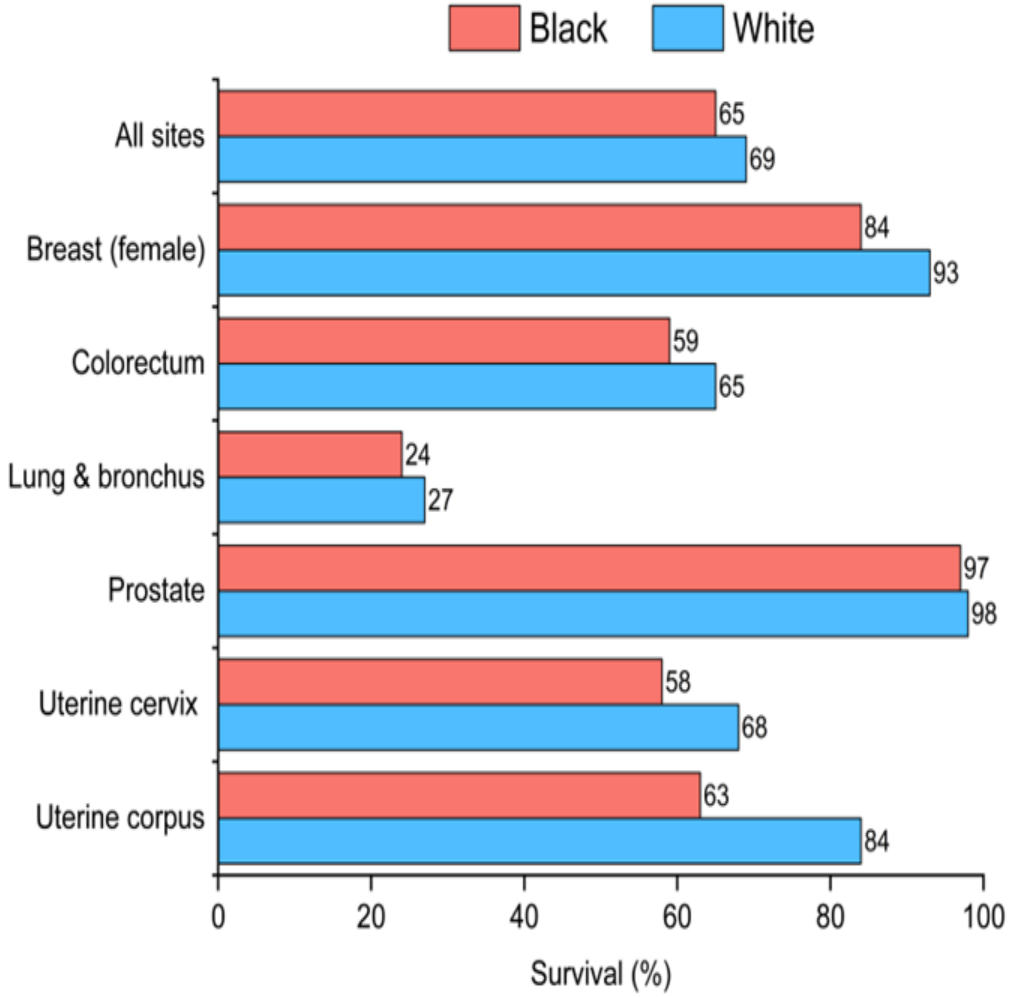
Trends in five-year relative survival (%), US, 1975–2020

Site	1975-77	1995-97	2014-2020
All sites	49	63	69
Breast (female)	75	87	91
Colon & rectum	50	61	64
Leukemia	34	48	67
Liver & intrahepatic bile duct	3	7	22
Lung & bronchus	12	15	27
Melanoma of the skin	82	91	94
Non-Hodgkin lymphoma	47	56	74
Ovary	36	43	51
Pancreas	3	4	13
Prostate	68	97	97
Uterine cervix	69	73	67
Uterine corpus	87	84	81

Survival is age adjusted for normal life expectancy and are based on cases diagnosed in the Surveillance, Epidemiology, and End Results (SEER) 9 areas for 1975-1977 and 1995-1997 and in the SEER 22 areas for 2014-2020; cases followed through 2021.
Data source: Surveillance, Epidemiology, and End Results program, National Cancer Institute, 2025.

American Cancer Society

Five-year relative survival (%) by race, US, 2014-2020

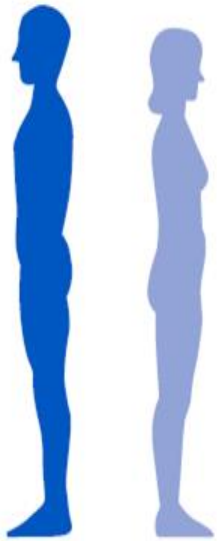


Survival is age adjusted for normal life expectancy and are based on cases diagnosed in the Surveillance, Epidemiology, and End Results (SEER) 22 areas for 2014-2020 and cases were followed through 2021. Race is exclusive of Hispanic origin. Colorectum excludes appendiceal cancer.
Source: Surveillance, Epidemiology, and End Results program, National Cancer Institute, 2024.

Estimated number of new cancer deaths in the US in 2025

American Cancer Society

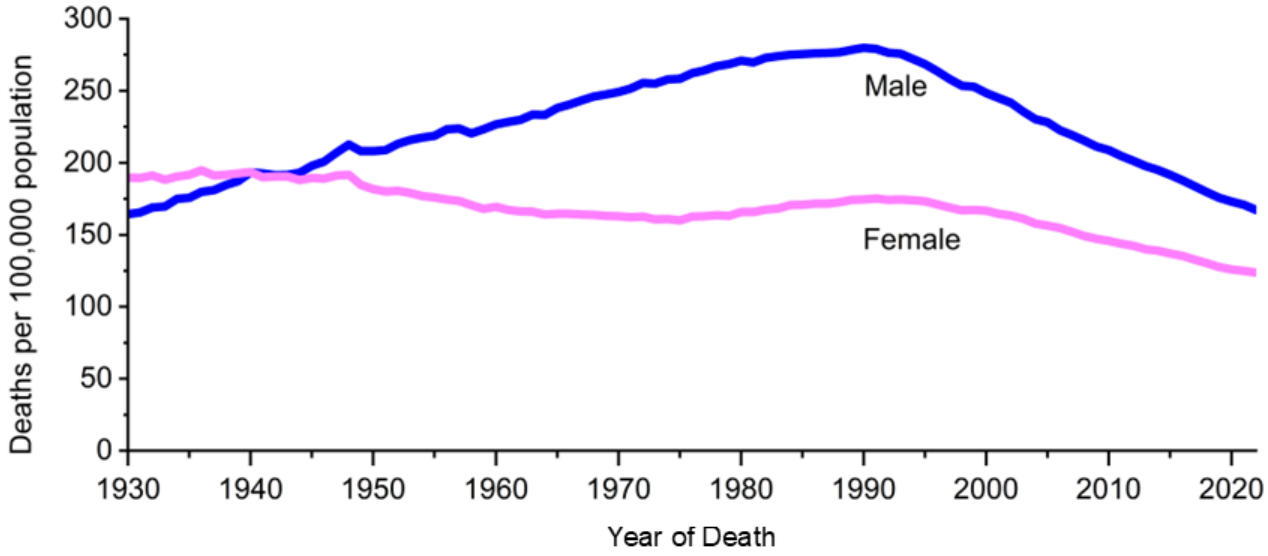
Male			Female		
Lung & bronchus	64,190	20%	Lung & bronchus	60,540	21%
Prostate	35,770	11%	Breast	42,170	14%
Colon & rectum	28,900	9%	Pancreas	24,930	8%
Pancreas	27,050	8%	Colon & rectum	24,000	8%
Liver & intrahepatic bile duct	19,250	6%	Uterine corpus	13,860	5%
Leukemia	13,500	4%	Ovary	12,730	4%
Esophagus	12,940	4%	Liver & intrahepatic bile duct	10,840	4%
Urinary bladder	12,640	4%	Leukemia	10,040	3%
Non-Hodgkin lymphoma	11,060	3%	Non-Hodgkin lymphoma	8,330	3%
Brain & other nervous system	10,170	3%	Brain & other nervous system	8,160	3%
All sites	**323,900**		**All sites**	**294,220**	



Excludes basal cell and squamous cell skin cancers and in situ carcinoma except urinary bladder.
Source: Cancer Facts & Figures 2025.

Cancer Statistics 2025

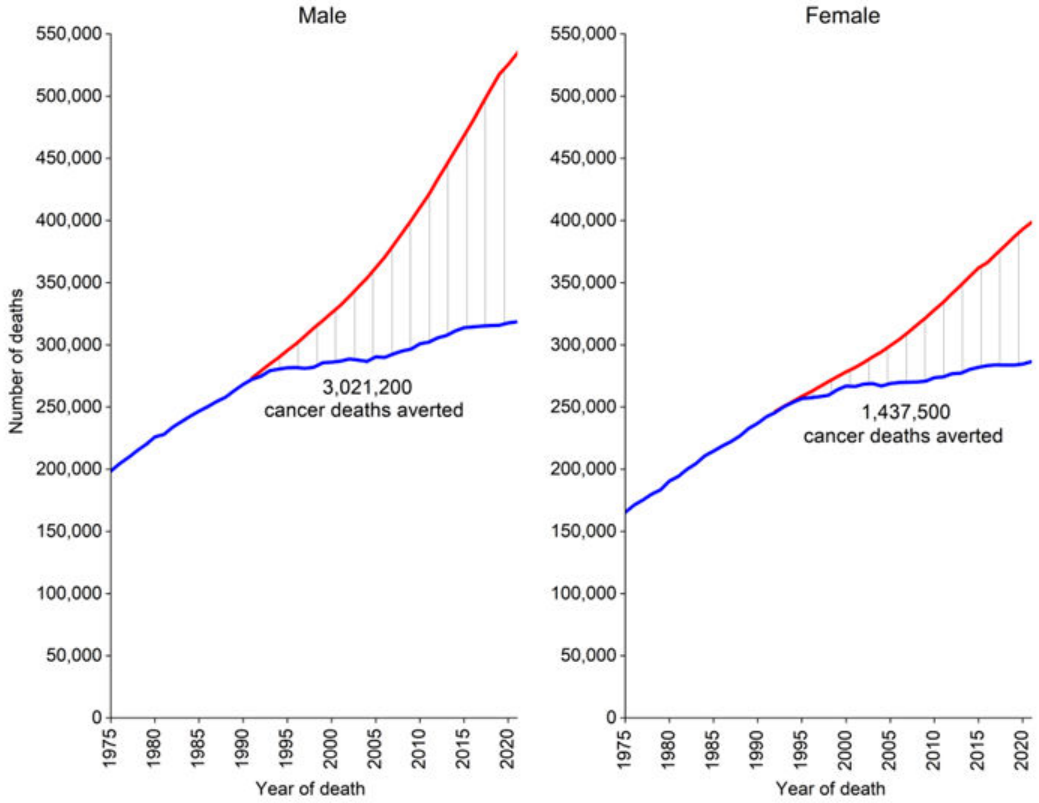
Trends in cancer death rates, US, 1975–2022



Rates are age adjusted to the 2000 US standard population.
Data source: National Center for Health Statistics, Centers for Disease Control and Prevention, 2024.

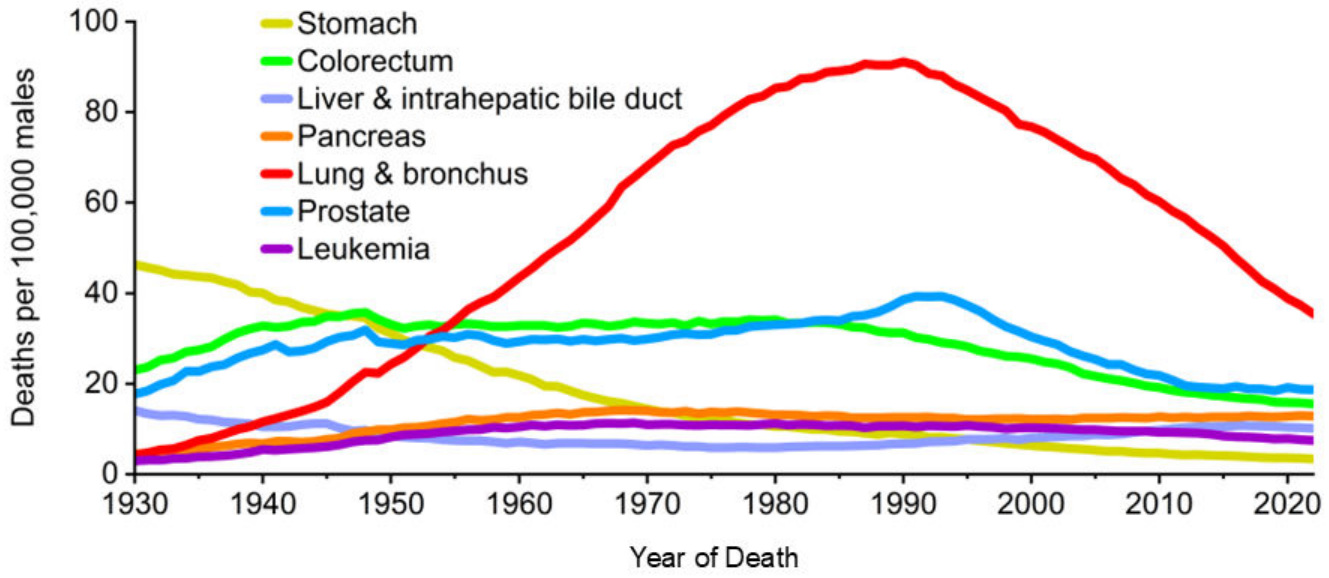
Cancer Statistics 2025

Total number of cancer deaths averted in men (1991 onward) and women (1992 onward), US



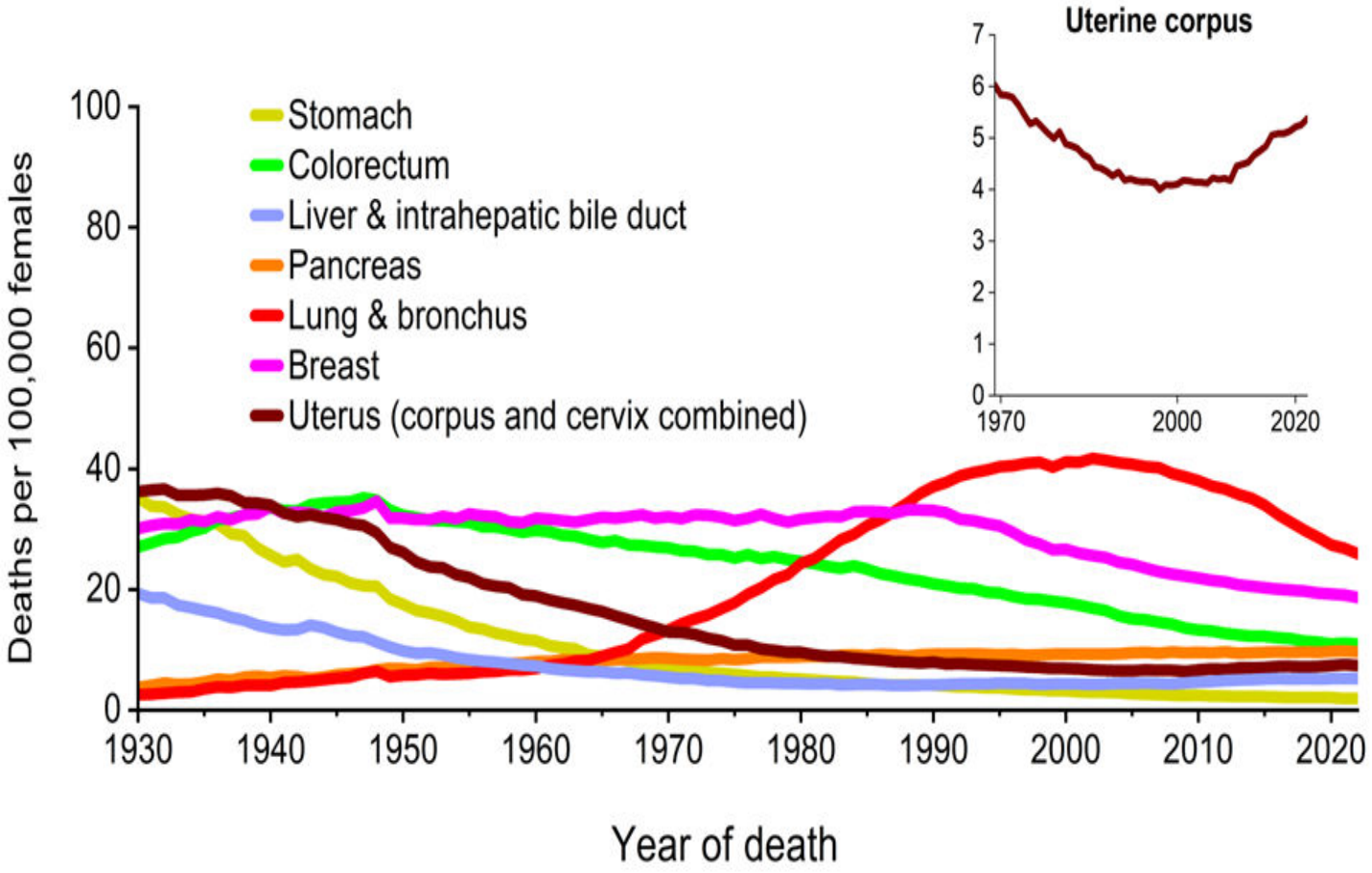
The blue line represents the actual number of cancer deaths recorded each year, and the red line represents the number of cancer deaths that would have been expected if cancer death rates had remained at their peak.

Trends in cancer death rates among males, US, 1930–2022



Rates are age adjusted to the 2000 US standard population and exclude deaths in Puerto Rico and other US territories. Due to improvements in classification, site-specific information differs from contemporary data for cancers of the liver, lung and bronchus, and colon and rectum.
Data source: National Center for Health Statistics, Center for Disease Control and Prevention, 2024.

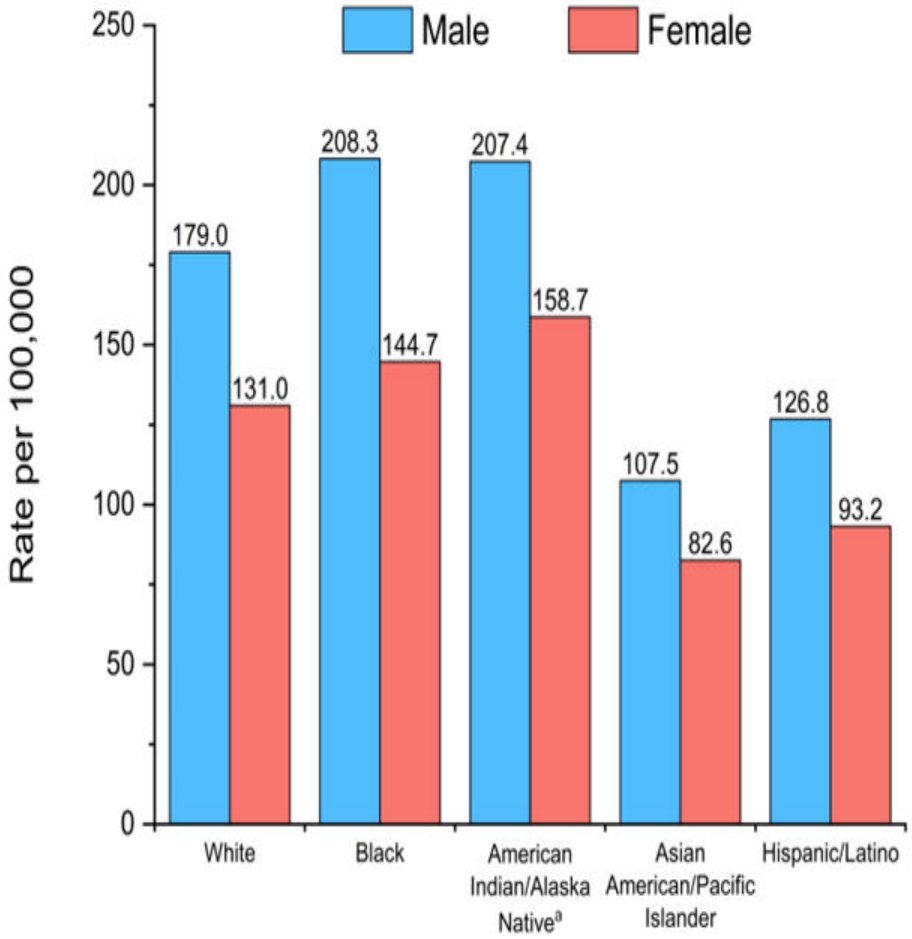
Trends in cancer death rates among females, US, 1930–2022



Rates are age adjusted to the 2000 US standard population and exclude deaths in Puerto Rico and other US territories. Due to improvements in classification, site-specific information differs from contemporary data for cancers of the liver, lung and bronchus, colon and rectum, and uterus.

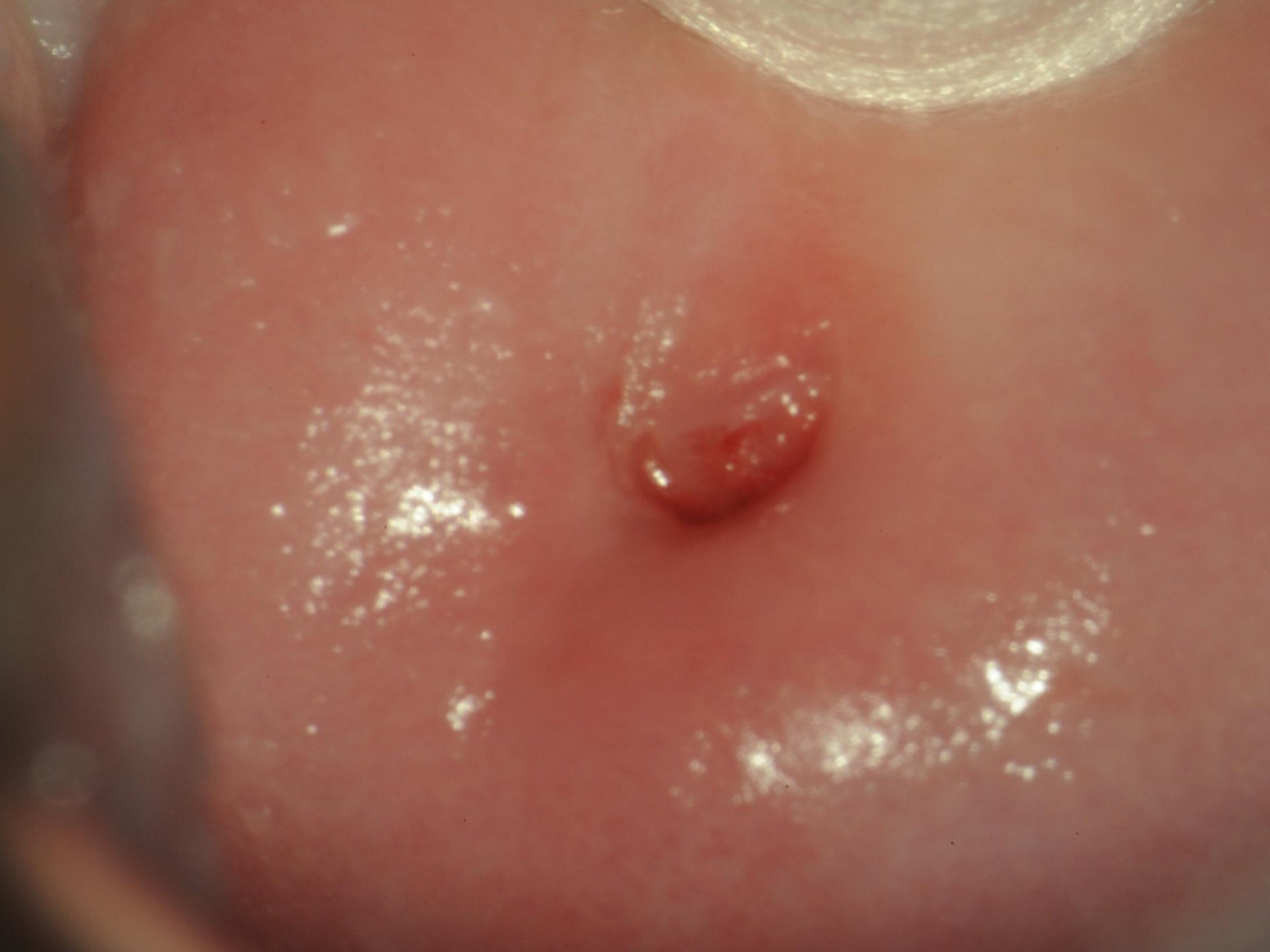
Data source: National Center for Health Statistics, Center for Disease Control and Prevention, 2024.

Cancer death rates by race and ethnicity, US, 2018–2022

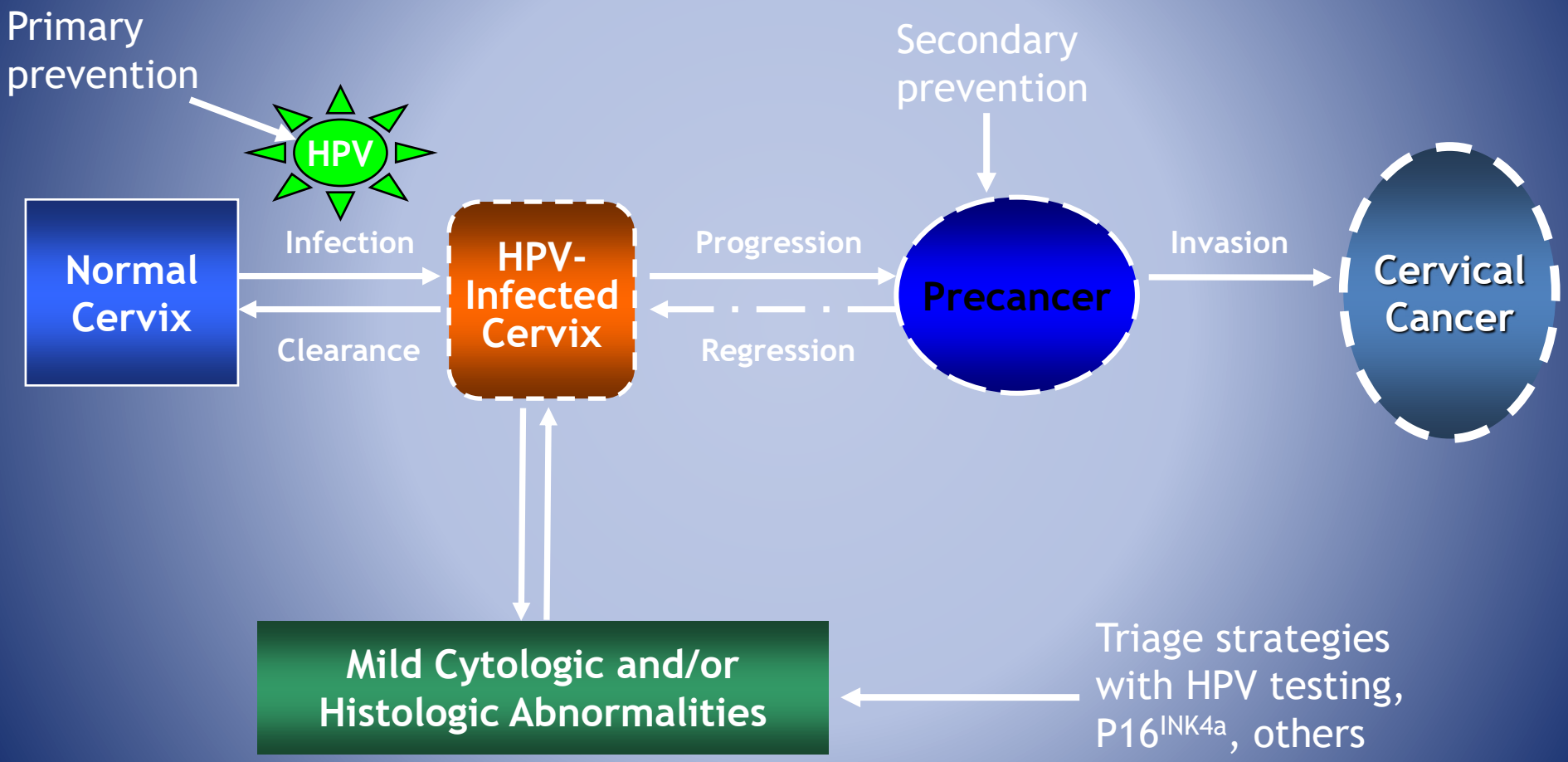


Rate is age adjusted to 2000 US standard population and adjusted for delays in reporting. Race is exclusive of Hispanic origin. [a]Rates for American Indian/Alaska Native people are adjusted for racial misclassification on death certificates.

Source: National Centers for Health Statistics, Center for Disease Control and Prevention, 2024



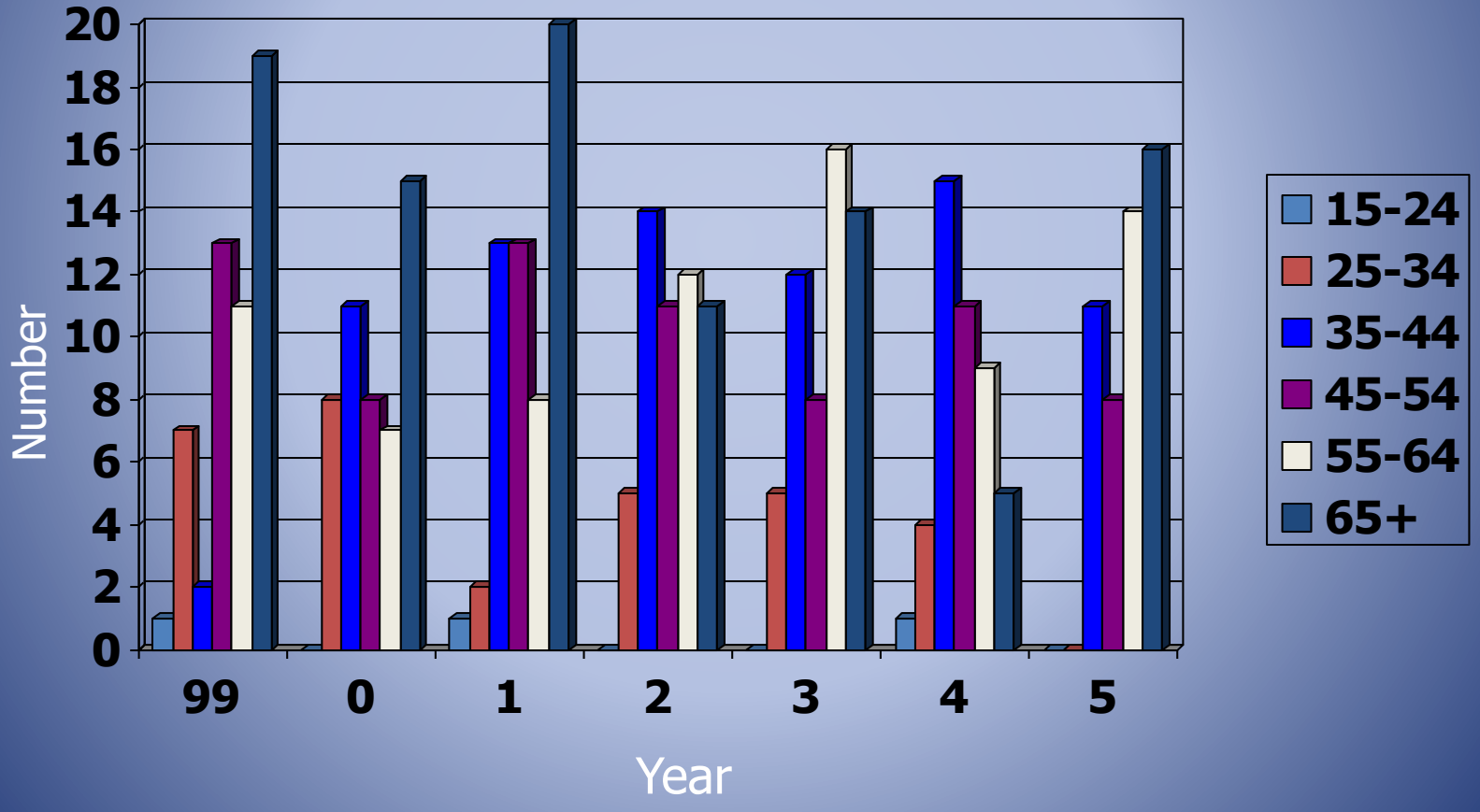
Natural History of Cervical Carcinogenesis

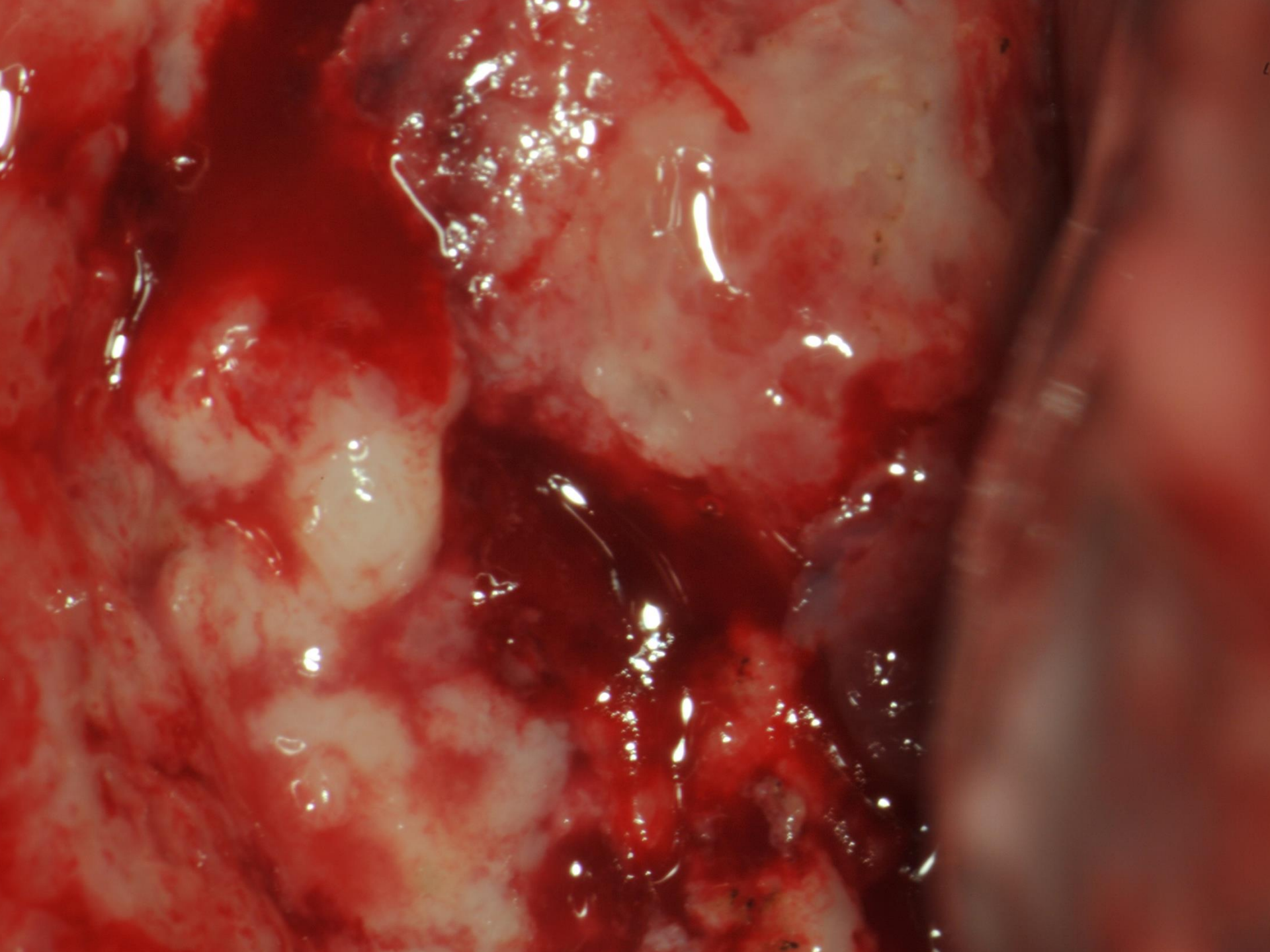


HPV=human papillomavirus.

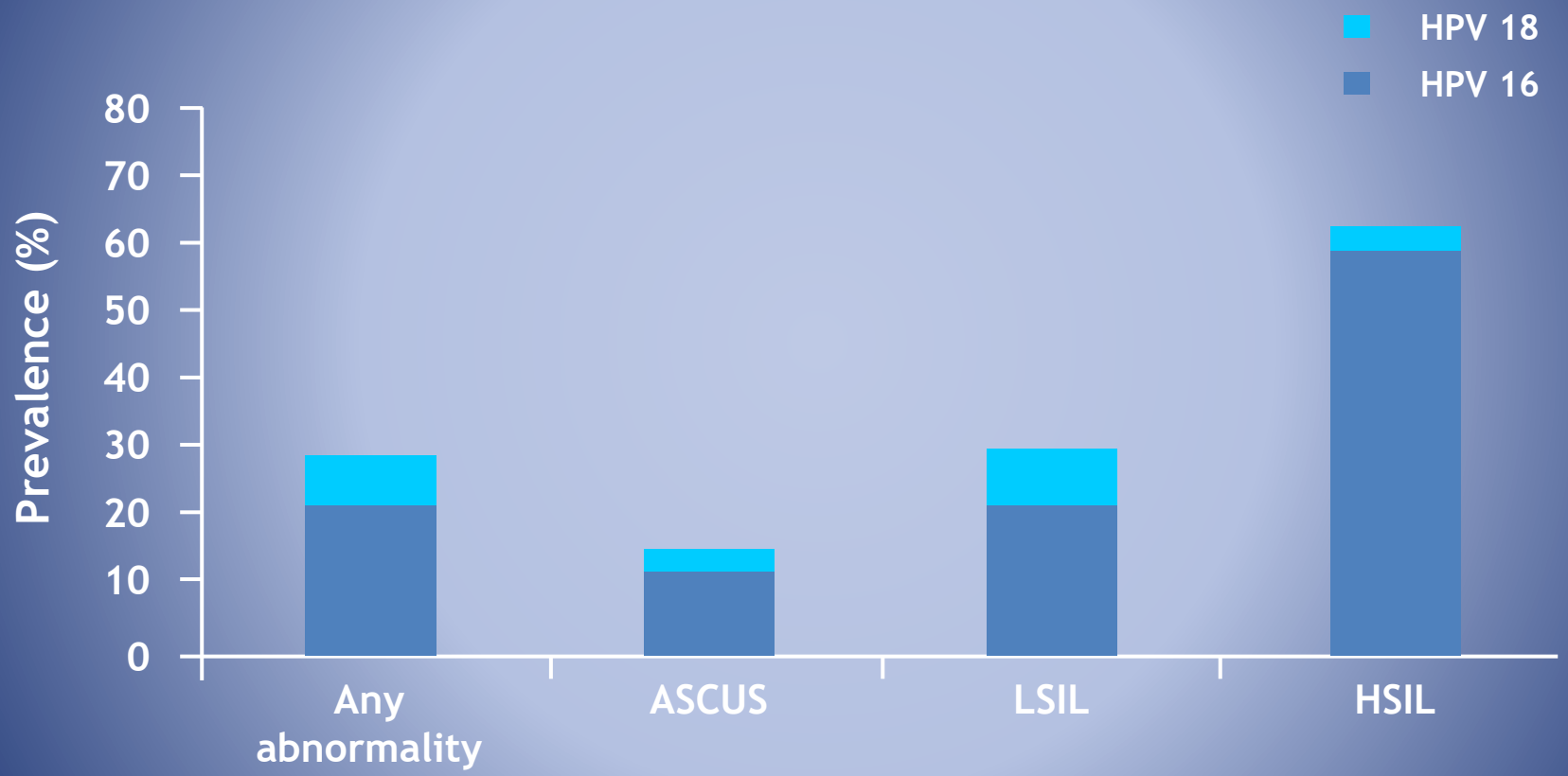
Schiffman M, Kjaer SK. *J Natl Cancer Inst Monogr*. 2003;(31):14-19.

Cervical Cancer Deaths
Oklahoma





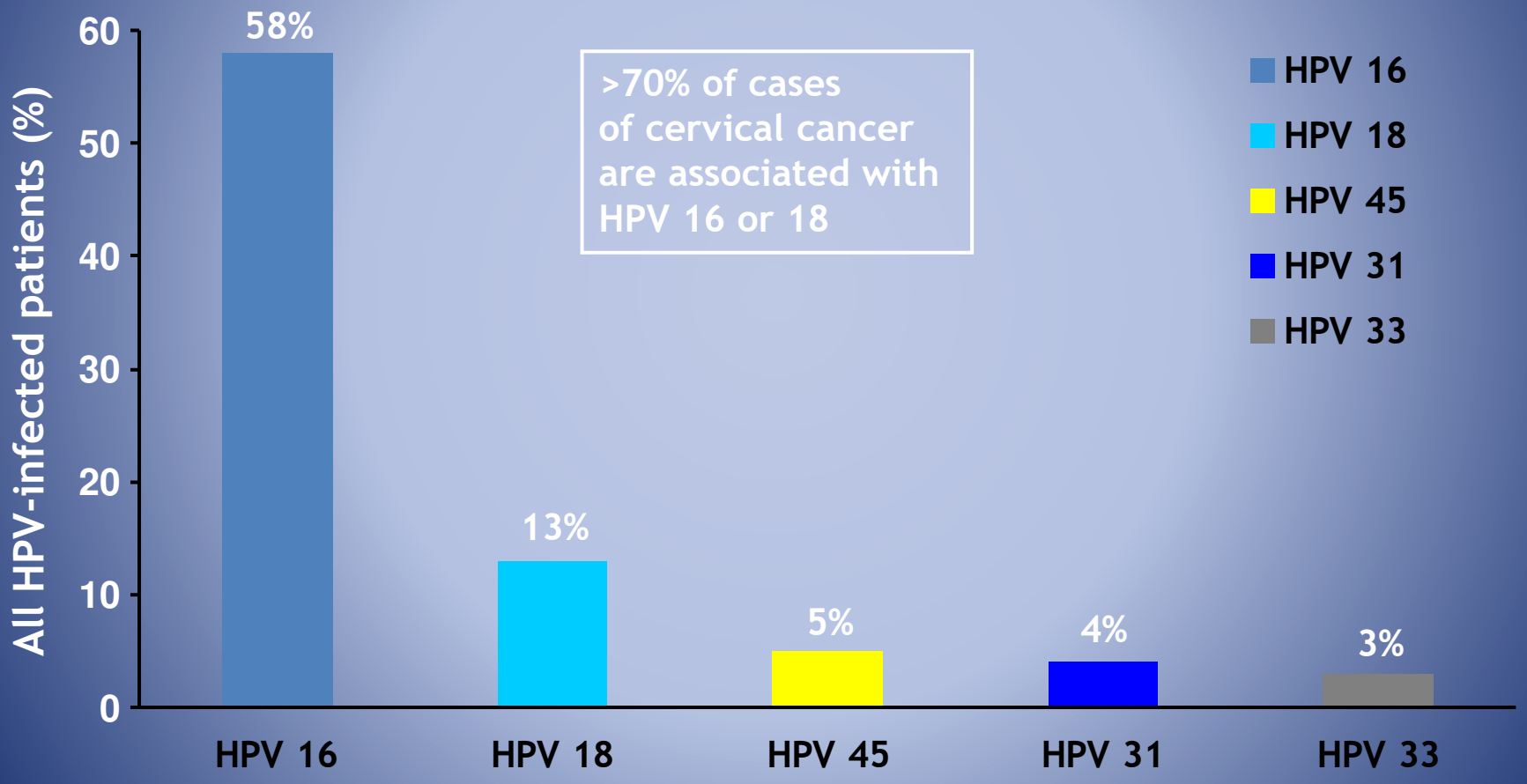
HPV 16 and 18 Prevalence by Cytology Sentinel Surveillance (2003-2004)



ACSUS=atypical squamous cells of undetermined significance; HSIL=high-grade squamous intraepithelial lesion; LSIL=low-grade squamous intraepithelial lesion.

Centers for Disease Control and Prevention, preliminary/unpublished data.
Modified from Advisory Committee on Immunization Practices. June 2006.
Available at http://www.cdc.gov/nip/ACIP/slides/mtg-slides-jun06.htm#hpv. Accessed on March 3, 2007.

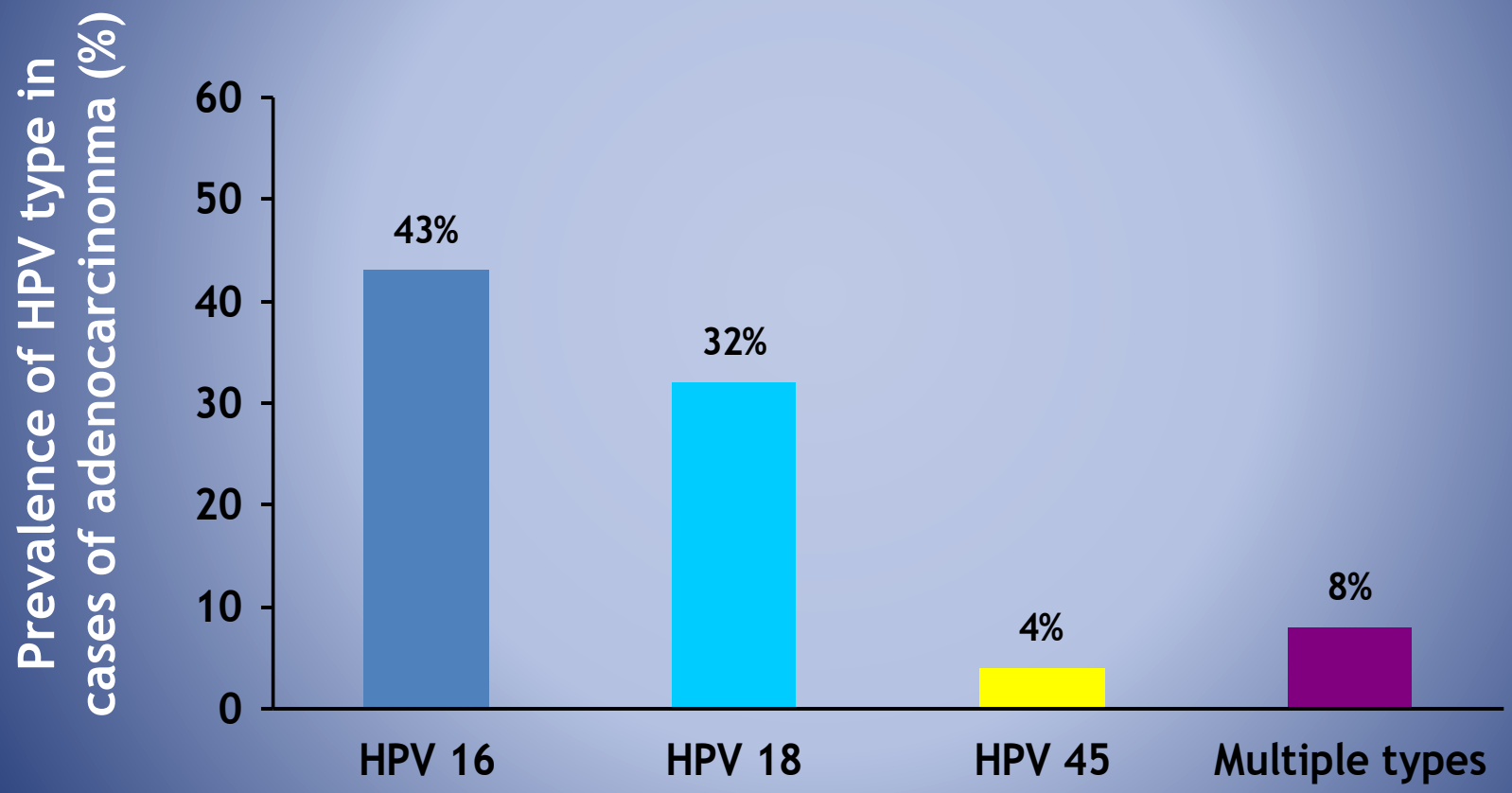
Most Prevalent HPV Types That Cause Cervical Squamous Cancer



N=1918 patients.

Munoz et al. *N Engl J Med*. 2003;348:518-527. Based on a worldwide survey.

Most Prevalent HPV Types That Cause Cervical Adenocarcinoma



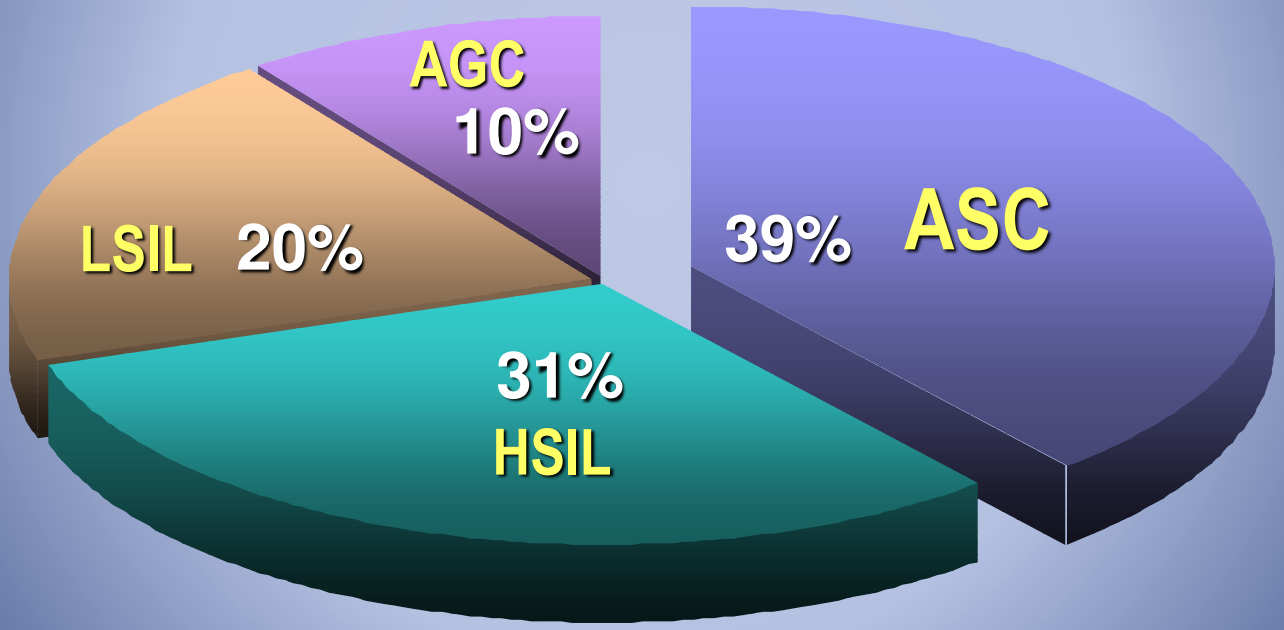
HPV DNA was detected in 93% of patients with cervical adenocarcinoma.

Castellsague X et al. *J Natl Cancer Inst*. 2006;98:303-315.

Absolute Risk of CIN 2+

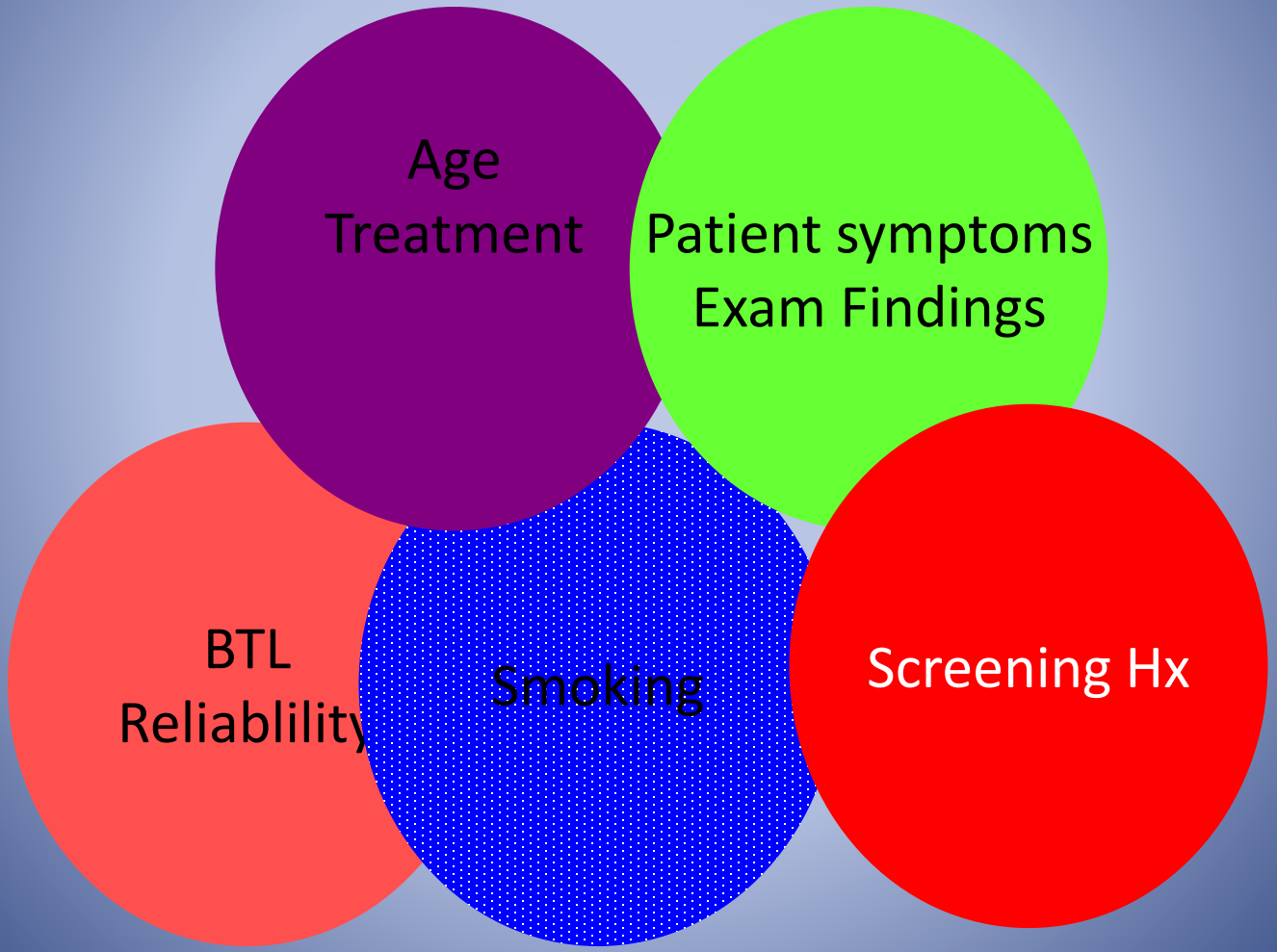
- CIN 1 post LSIL – 12%
- ASC/HPV+ = LSIL = 25%
- ASC-H- 25-40%
- AGC – 30-50%
- HSIL- 60-80%
- HSIL pap and Low Grade Colpo = 40%
- HSIL and High Grade colpo = 70-85%
- Post LEEP for CIN 3 = 5-15%
- Post Cone for AIS = 8%

Pap Diagnoses Preceding Histologic High-Grade Neoplasia



Modified from Kinney W, et al. *Obstet Gynecol.* 1998;91: 973-976.

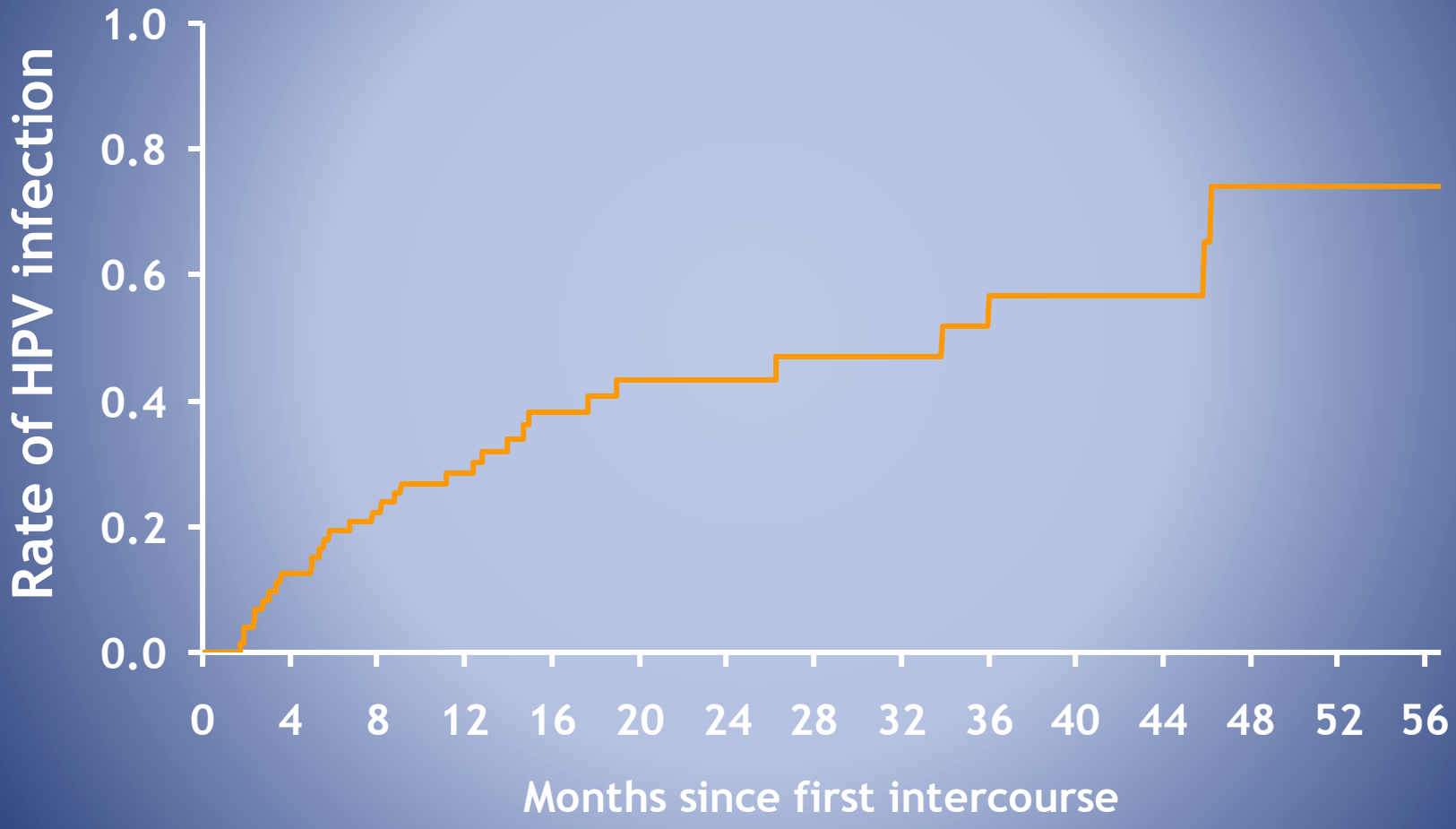
Risk of Cervical Cancer



Limitations of Secondary Prevention

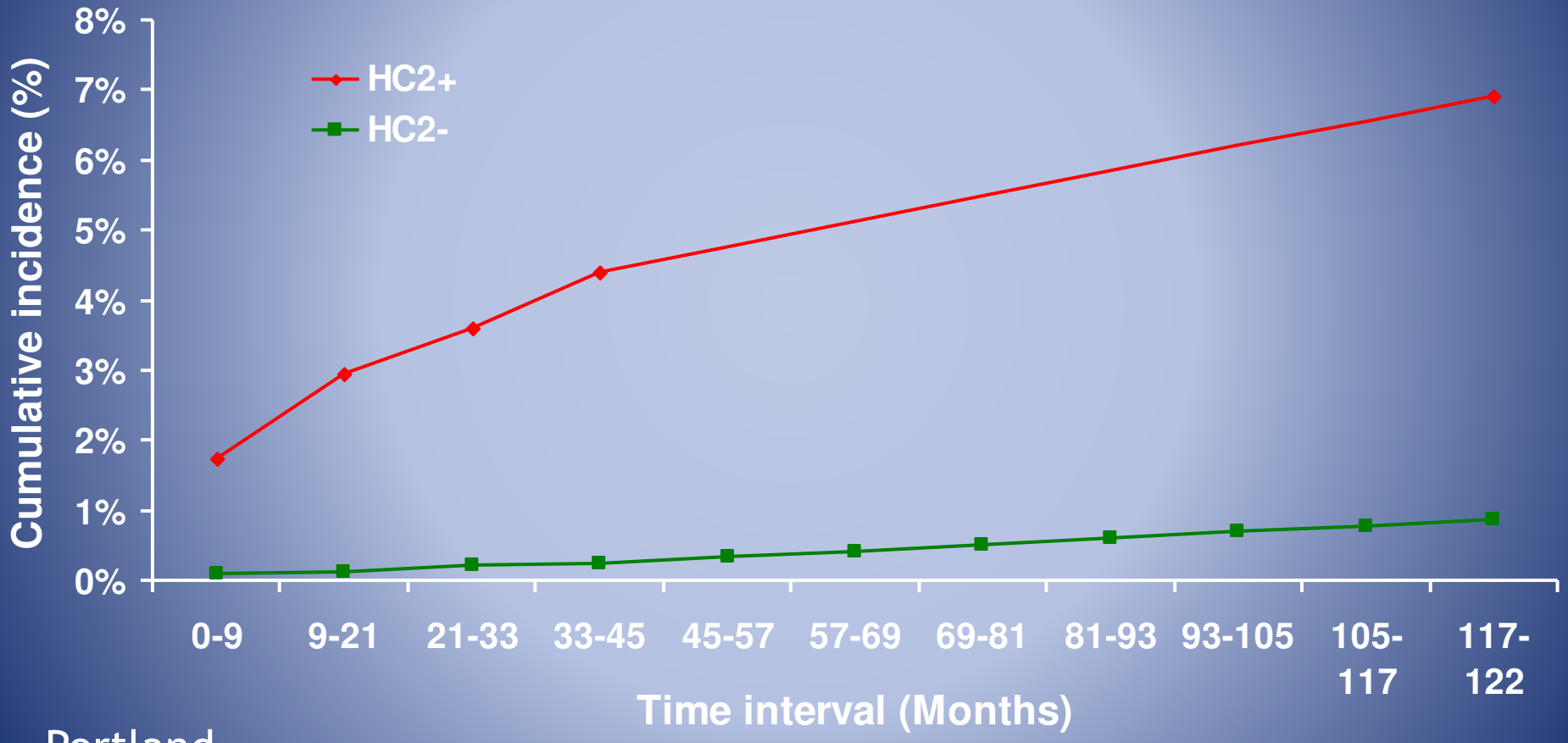
- Screening compliance
- Identifying true precursors from 3 million ASC and LSIL smears per year in the US
- Over treatment of patients with trivial lesions
- All of these problems are overcome if primary prevention with vaccines works

Risk of Genital HPV Infection From Time of First Sexual Intercourse



Winer RL et al. *Am J Epidemiol*. 2003;157:218-226.

Cumulative Incidence of Cervical Precancer/Cancer After A Single HC2 Test

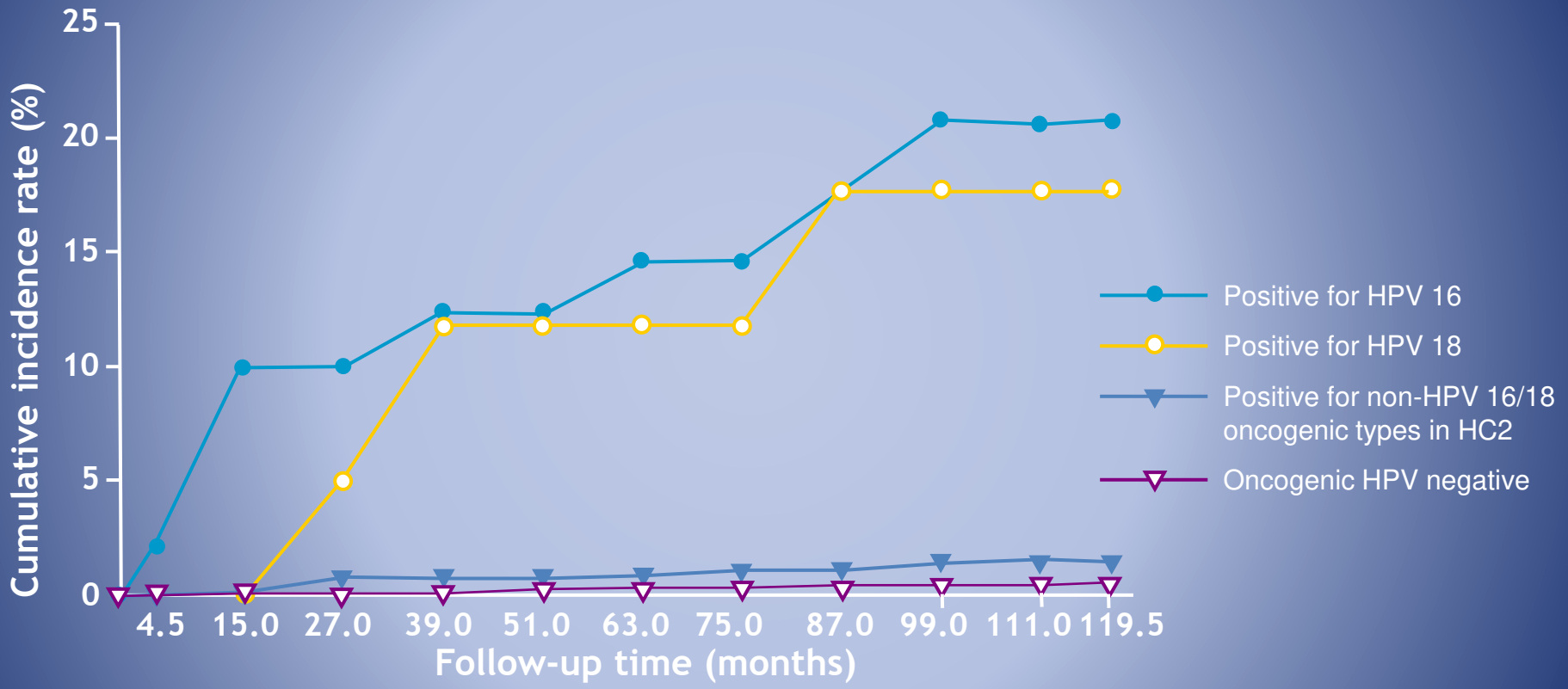


Portland

HC2=Hybrid Capture 2 HPV Test.

Sherman ME et al. *J Natl Cancer Inst.* 2003;95:46-52.

Cumulative Incidence of CIN 3+ in 12,976 Women Older Than 30 Years of Age



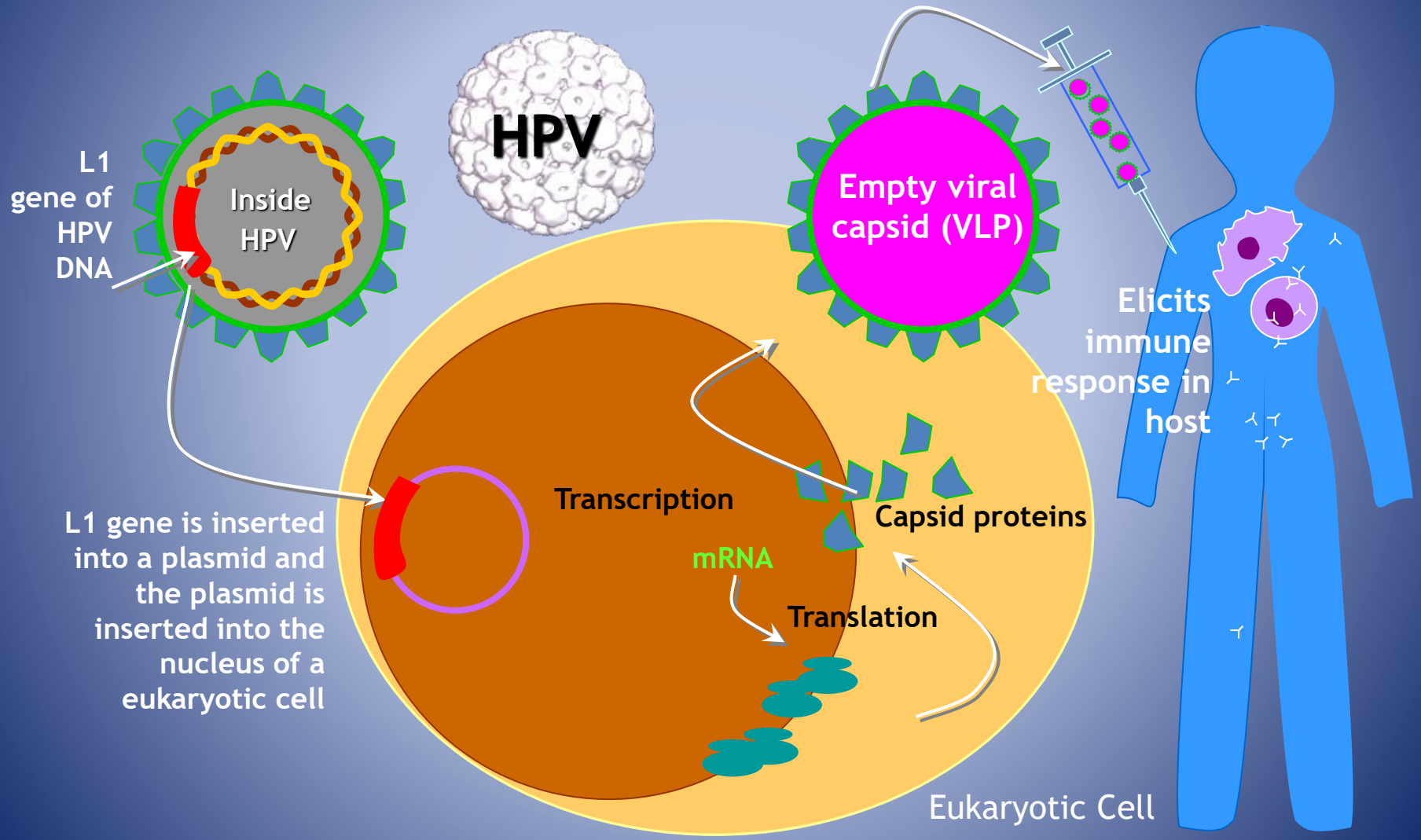
No. of women seen during follow-up interval											
HPV16+	93	50	39	38	36	39	28	28	27	11	1
HPV18+	38	18	20	14	15	12	9	15	11	3	0
HC2+	890	498	463	419	370	353	310	276	288	127	7
HC2-	1174	676	623	578	536	4923	461	428	414	205	13
	1	3	1	4	9		9	1	0	1	3

Khan M. et al. *J Natl Cancer Inst* 2005;97:1072-1079.

HPV Types in Cancer

- 16 54%
- 18 16%
- 33 4.4%
- 45 3.7%
- 31 3.5%
- 58 3.4%
- 35 1.8%
- 59 1.1%
- 56,51,39,73,68,82,

HPV L1 Virus-Like Particle (VLP) Vaccine Synthesis



HPV=human papillomavirus; mRNA=messenger RNA; VLP=virus-like particles.

Gardasil – Merck
HPV 6, 11, 16, 18 vaccine
SKB HPV 16-18

- FDA approved- females and males
- 9-45 yrs
- Target age 9
- Health Dept+CDC make it free
- AGE <18 VFC

Clinical Impact of HPV Infection

- Cervical cancer (CIN)
  - 60 million Pap tests
  - 3 million abnormal Paps
  - 300,000 cases of high-grade dysplasia (CIN 2/3)
  - 9710 cervical cancer cases (3700 deaths)
- Vulvar cancer (VIN) 3740 cases, 880 deaths
- Vaginal cancer (VaIN) 2420 cases, 820 deaths
- HEAD AND NECK IS FASTEST GROWING
- Anogenital warts & anal cancer in women and men
  - 1.4 million annual subject-visits for care
  - 4660 anal cancer cases

VaIN=vaginal intraepithelial neoplasia; VIN=vulvar intraepithelial neoplasia.
Source: National Cancer Institute and American Cancer Society.

Impact on Screening

- 75% reduction of cervical cancer in 25 years
  - HPV 16 – 50-60%
  - HPV 18 – 20-30%
- Decrease in CIN 3
- ASC/LSIL continue with less CIN 3
- Decrease in cost-effectiveness of cervical cytology and colpo

CA: A Cancer Journal for Clinicians. 53(1):27-43, 2003.

Endometrial Cancer

1/30 Lifetime Risk- increasing

Cases: 69,129

Deaths: 13,250

White

- BMI 40- 10%
- MORE GRADE 1
- > 65 yrs – 80.8% 5 yr survival

Blacks

- MORE SEROUS
- ADVANCED STAGE
- >65 yrs -53.3%

  5 yr survival

Etiology

- Type I- survival
  - Low Grade
  - Unopposed estrogen
  - Obesity
  - Diabetes
  - Anovulation
  - Colon cancer
- Type II- death
  - P53 – Serous carcinoma
  - Associated with breast cancer
  - Age
  - tamoxifen

Prevention

- Lean body weight
- Mirena IUD- progestin
- Aromatase inhibitors instead of tamoxifen
- Lynch syndrome screening- prophylaxis

Early Detection- OBESE POPULATION

- PROGESTIN CHALLENGE TEST
- PROVERA 10 MG X 10 DAYS PO
- Biopsy for bleeding
- LEVONORGESTREL IUD- PROGESTIN FOR LIFE
- BMI 40= 10% LESION- CANCER OR AEH
- BMI 30 – 4% (AGE)
- Endometrial hyperplasia
- ATYPICAL ENDOMETRIAL HYPERPLASIA -AEH
  - Hysterectomy
    - 40% of Atypical endometrial hyperplasia patients will have cancer