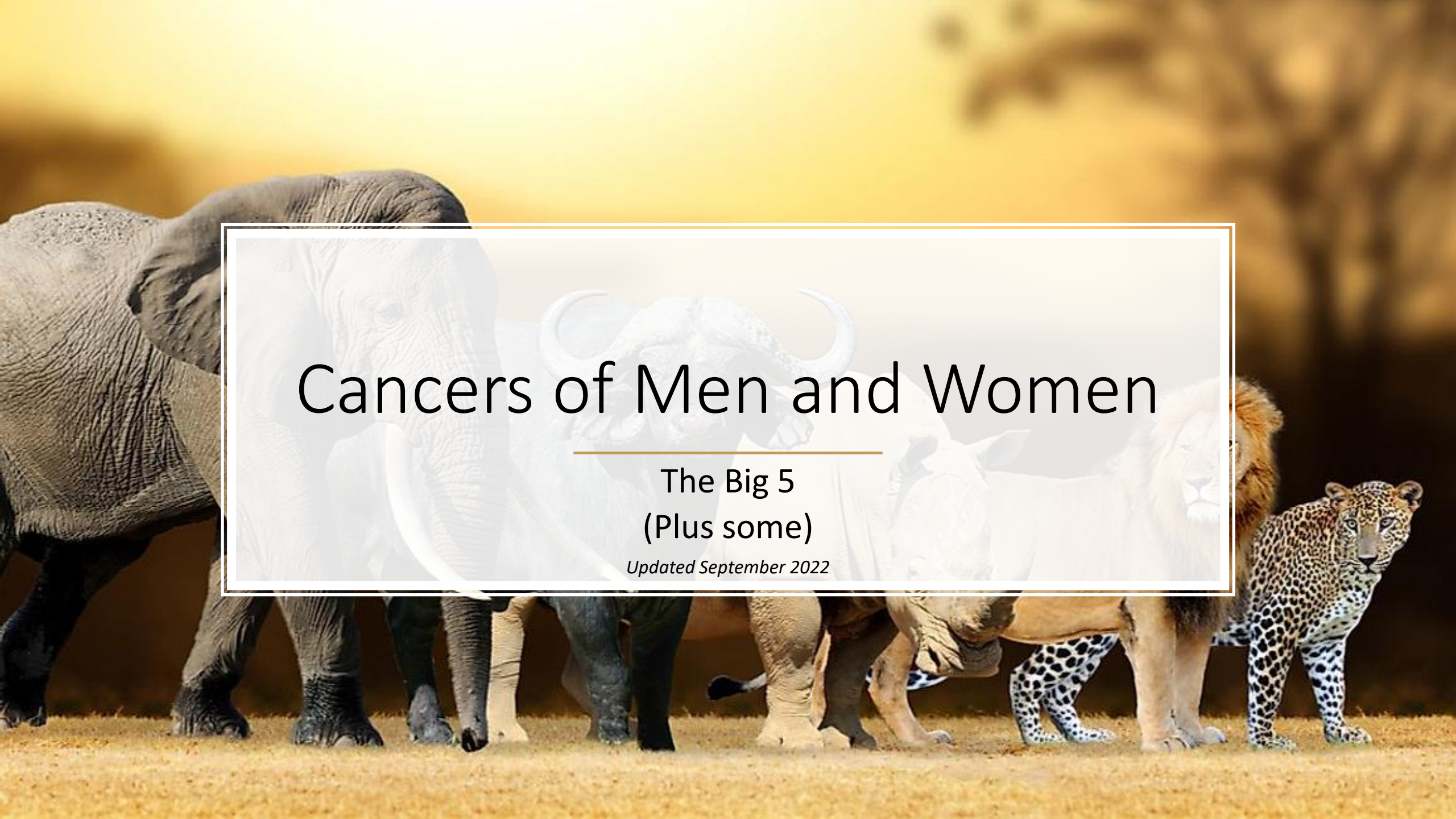


Cancers of Men and Women

The Big 5

(Plus some)

Updated September 2022

Upstream vs. Downstream

Levels of Prevention

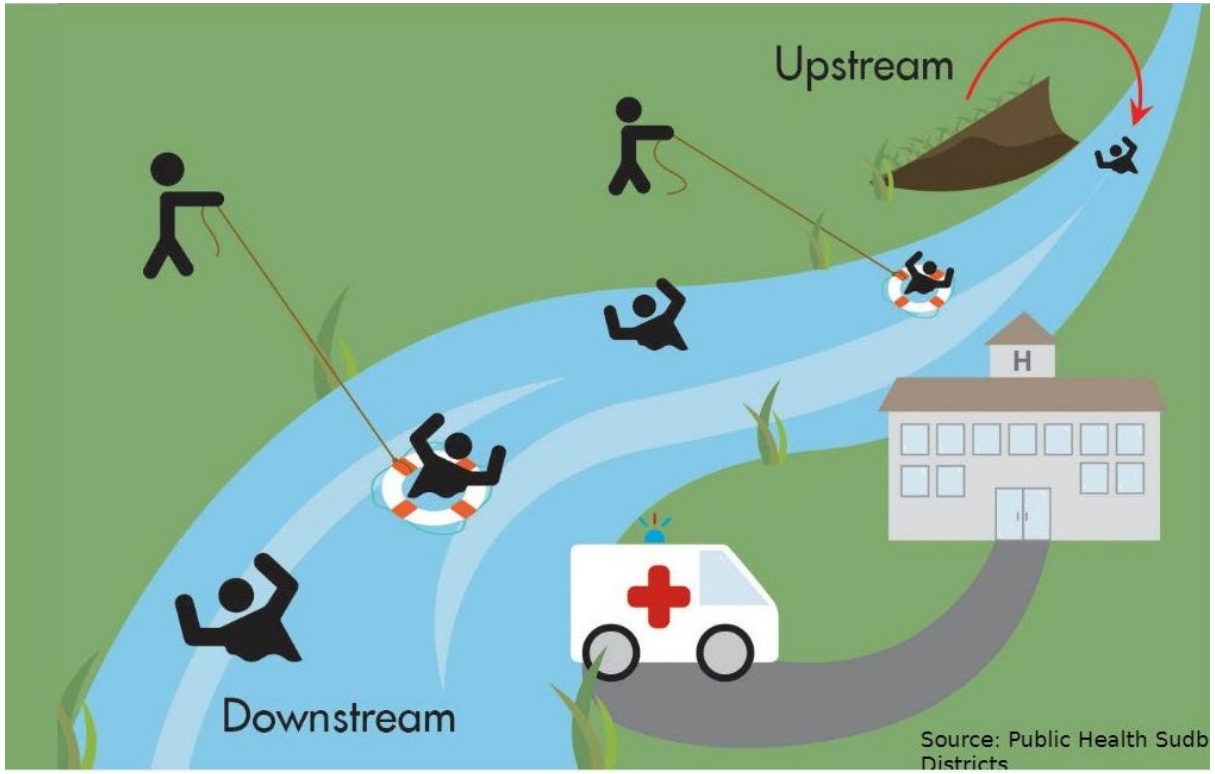
Screening Fundamentals

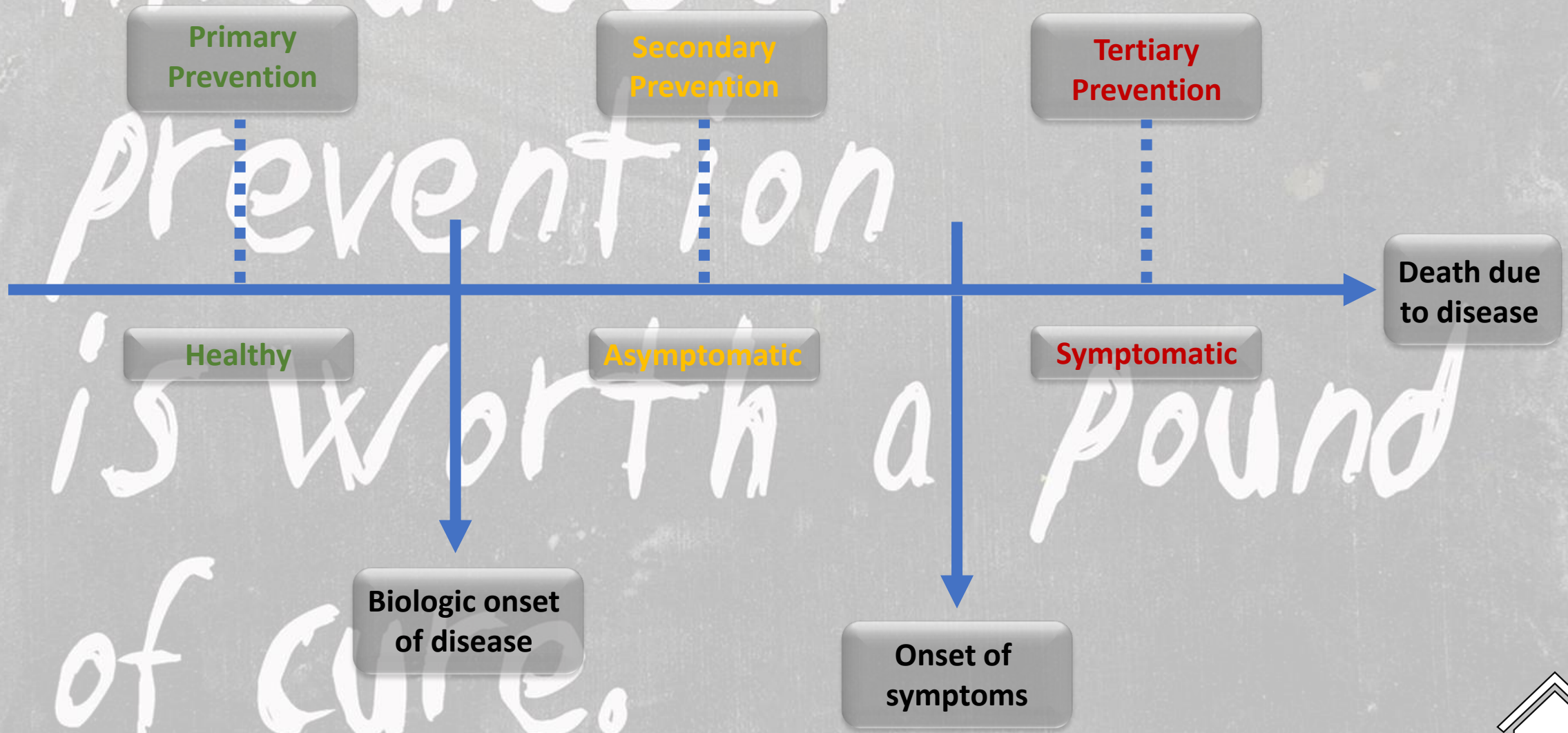
Worldwide Stats

Zambia Stats

Zambia Guidelines

Upstream vs Downstream



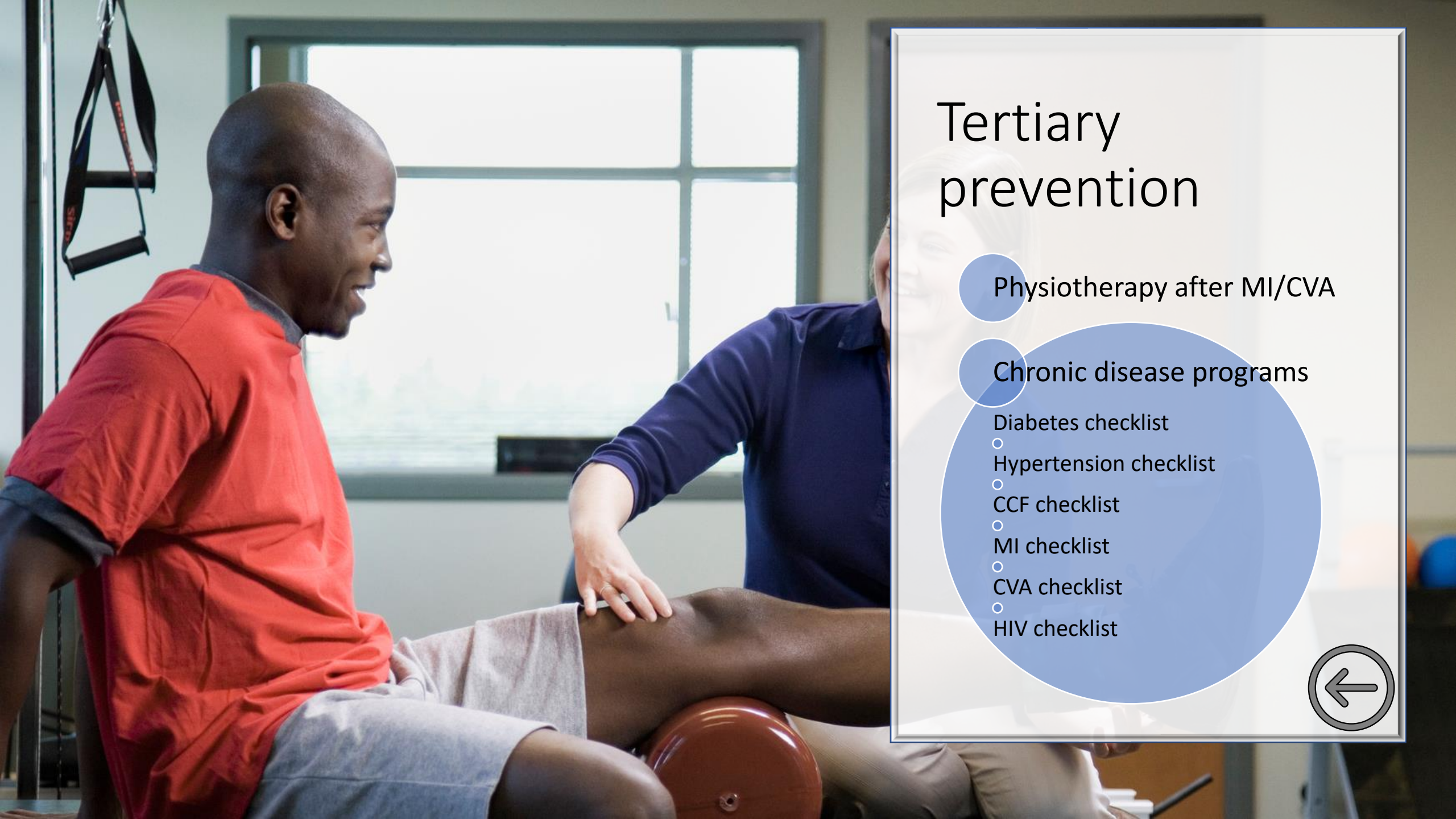

Primary Prevention
Secondary Prevention
Tertiary Prevention
Death due to disease
Healthy
Asymptomatic
Symptomatic
Biologic onset of disease
Onset of symptoms

Primary prevention

- Vaccines
- Seat belts
- Smoking education
- Alcohol education
- Healthy Eating
- Exercise

Secondary Prevention

- A1c
- Blood pressure
- Lipids
- Pap smear/HPV
- Mammogram
- PSA
- FIT/FOBT
- High dose statin/asa after MI/CVA



Tertiary prevention

- Physiotherapy after MI/CVA
- Chronic disease programs
  - Diabetes checklist
  - Hypertension checklist
  - CCF checklist
  - MI checklist
  - CVA checklist
  - HIV checklist

Screening

Disease prevalence is high in the population

Disease has serious consequences

Test has high accuracy for detecting asymptomatic disease

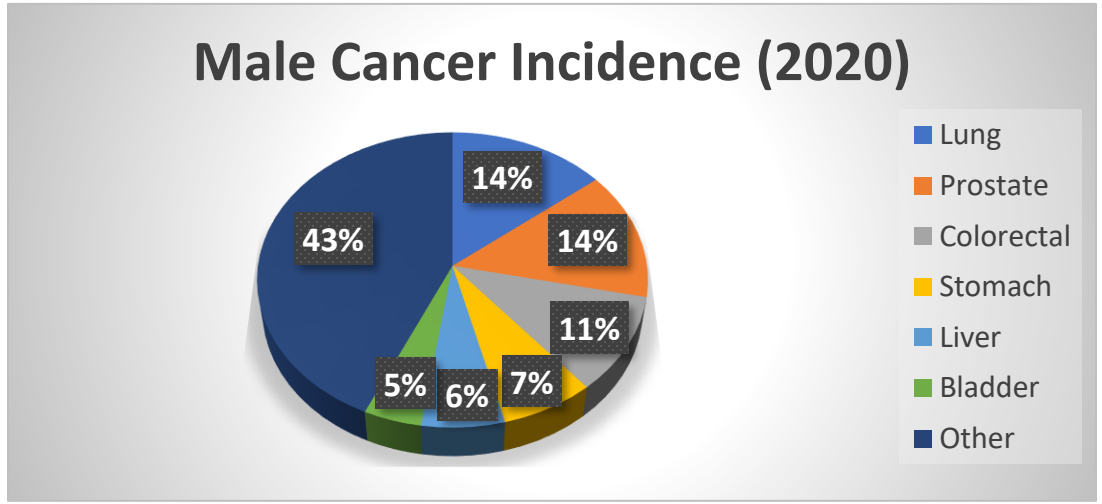
Outcomes improve with asymptomatic treatment

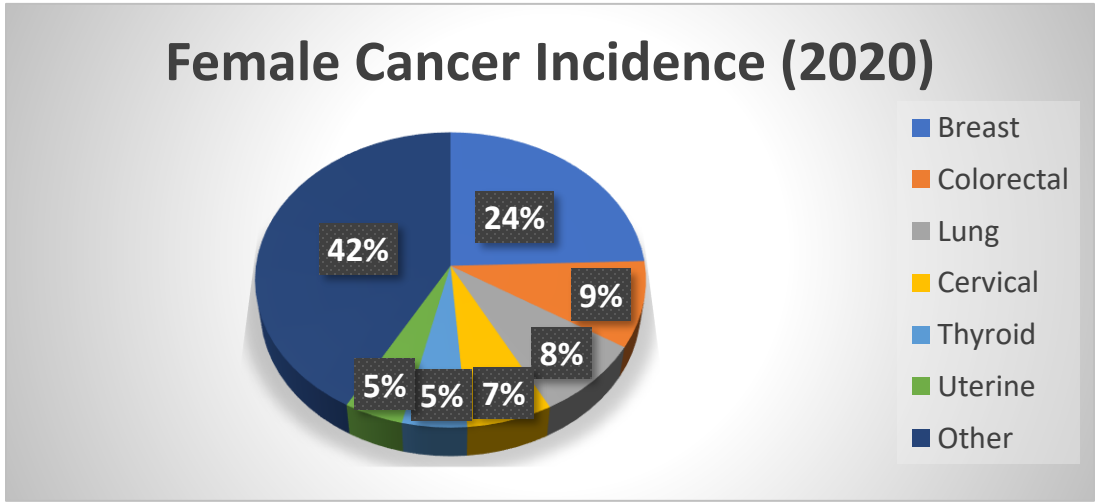
Effective treatment is acceptable

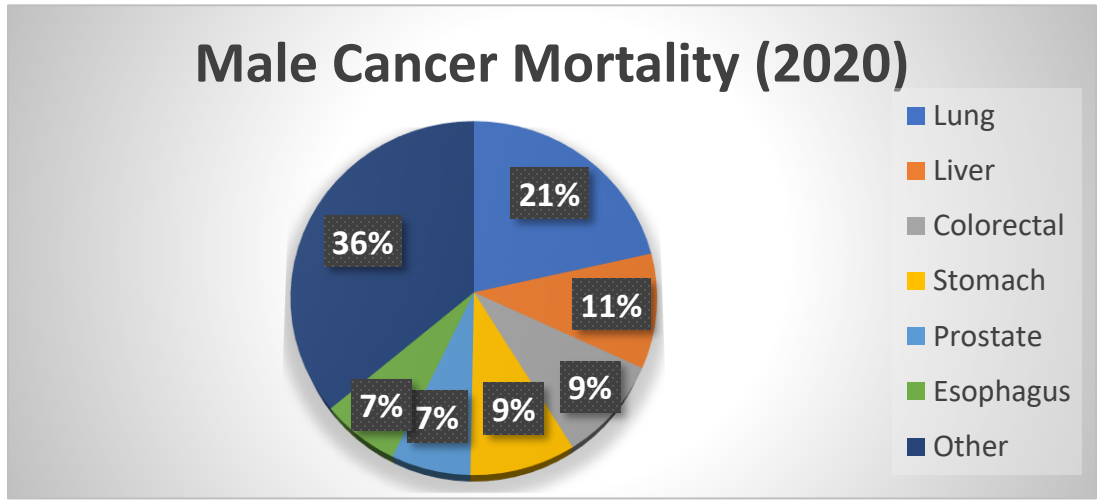
Test is acceptable and accessible to patient

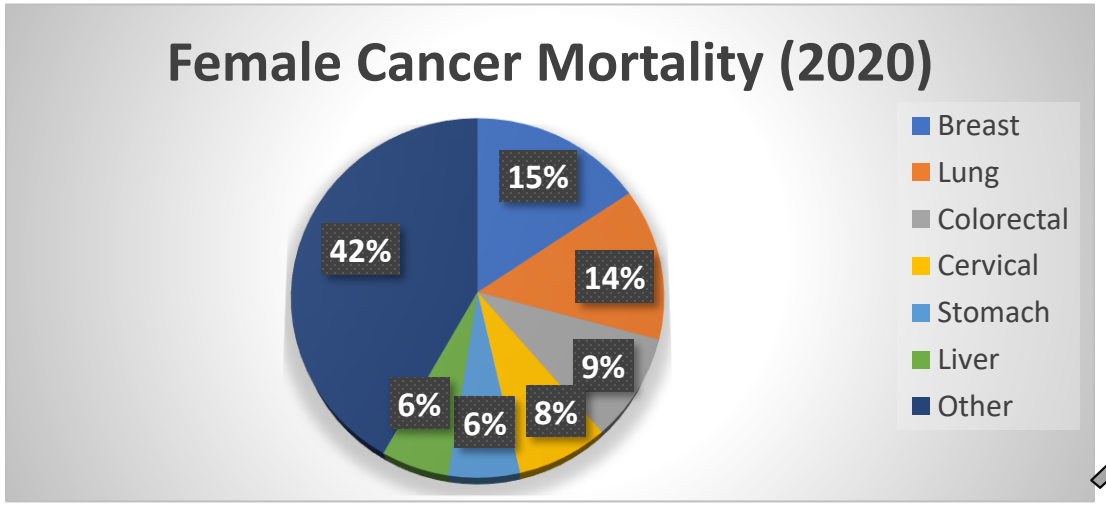
Fundamentals

Worldwide Cancer Statistics

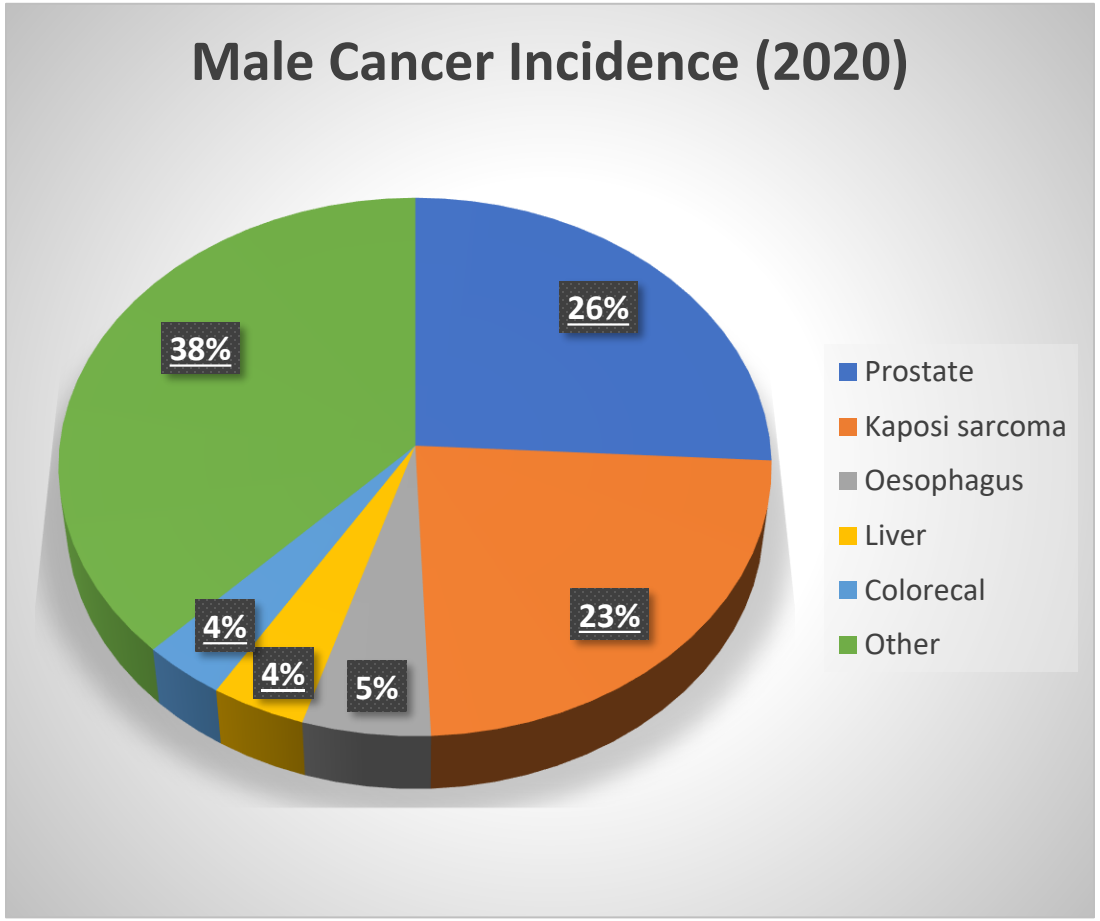




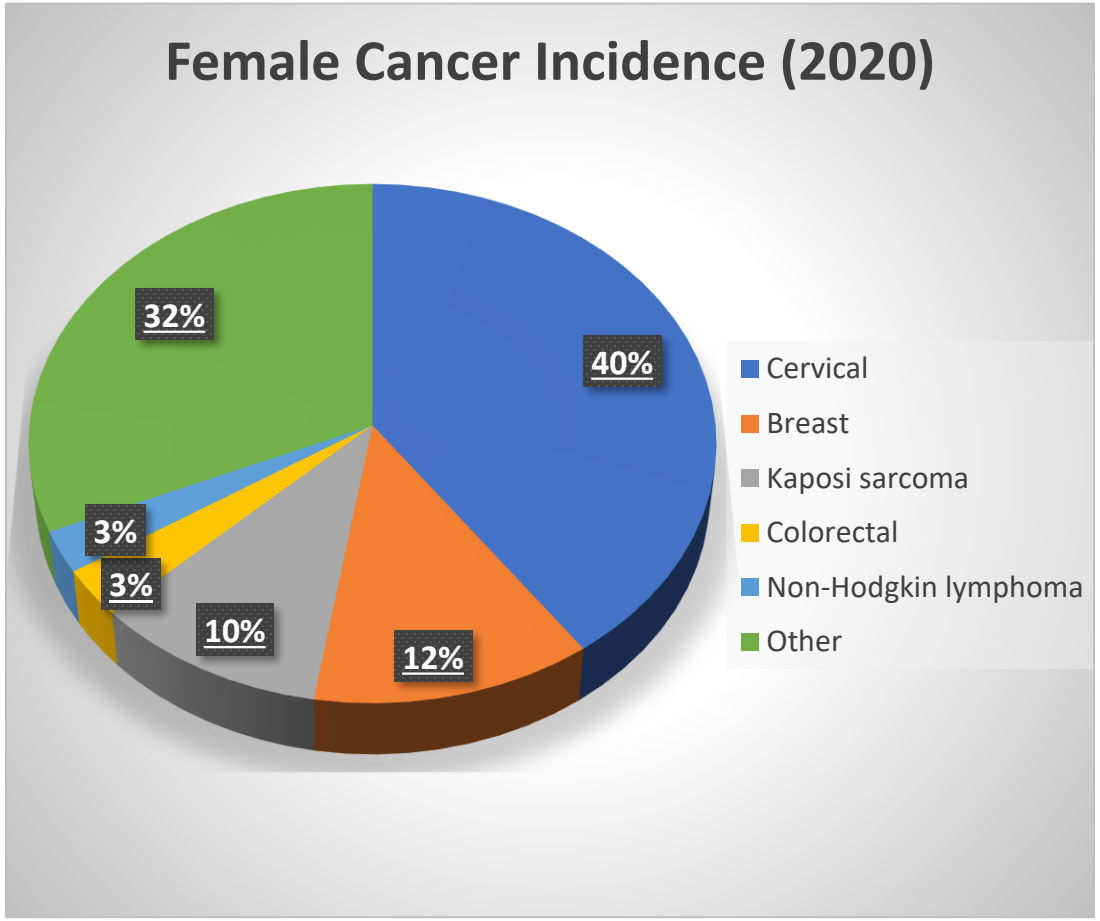




Zambia Cancer Statistics



1. Prostate
2. Kaposi Sarcoma
3. Oesophageal
4. Liver
5. Colorectal
6. Other



1. Cervical
2. Breast
3. Kaposi Sarcoma
4. Colorectal
5. Non-Hodgkin Lymphoma
6. Other

Lung

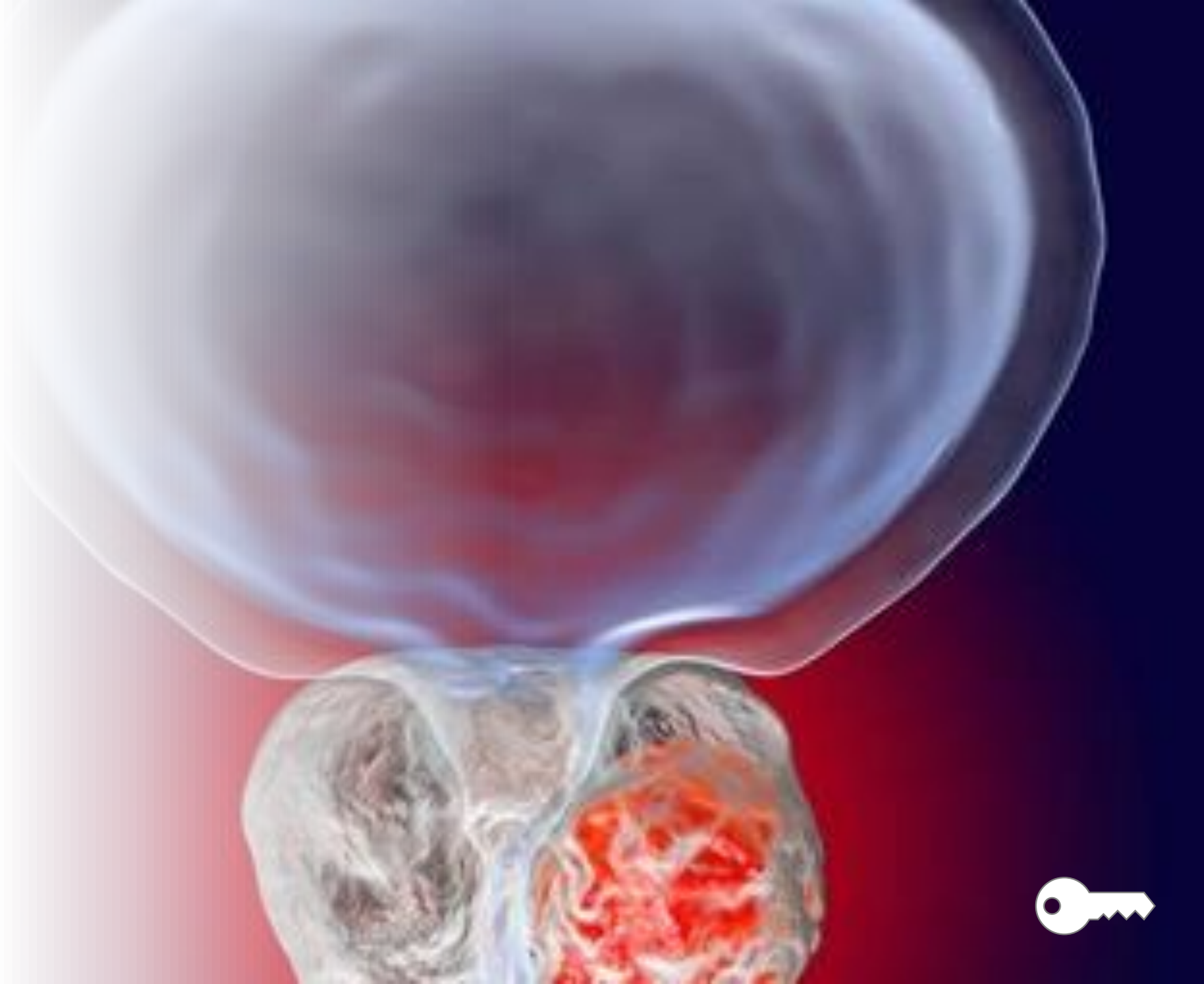
Endometrial

Testicular

Ovarian

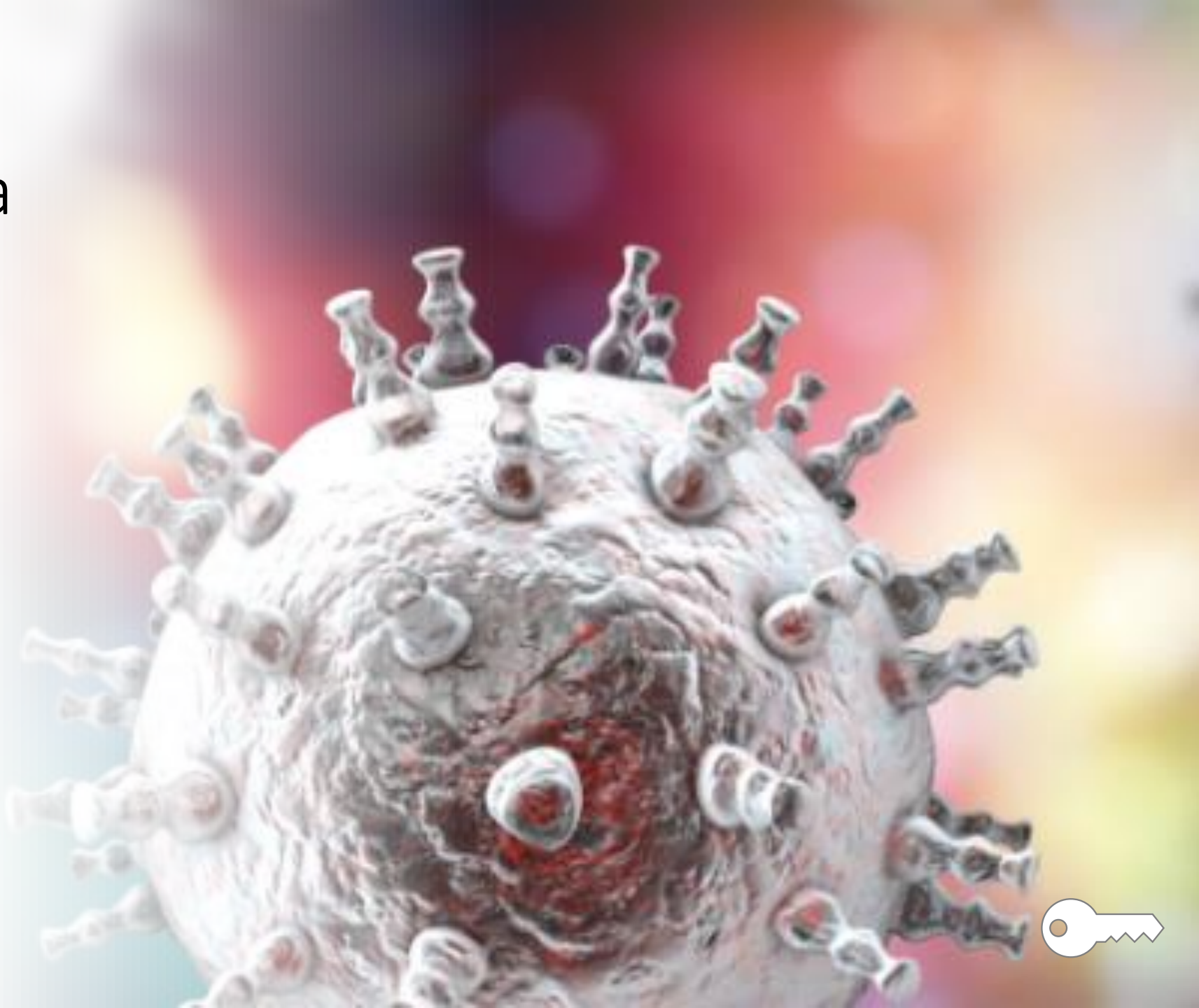
Prostate

- Risk factors
- Clinical presentation
- Diagnosis
- Treatment
- Prevention
- Screening
  - Yes/no
  - Who?
  - How?



Kaposi Sarcoma

- Risk factors
- Clinical presentation
- Diagnosis
- Treatment
- Prevention
- Screening
  - Yes/no
  - Who?
  - How?



Oesophageal

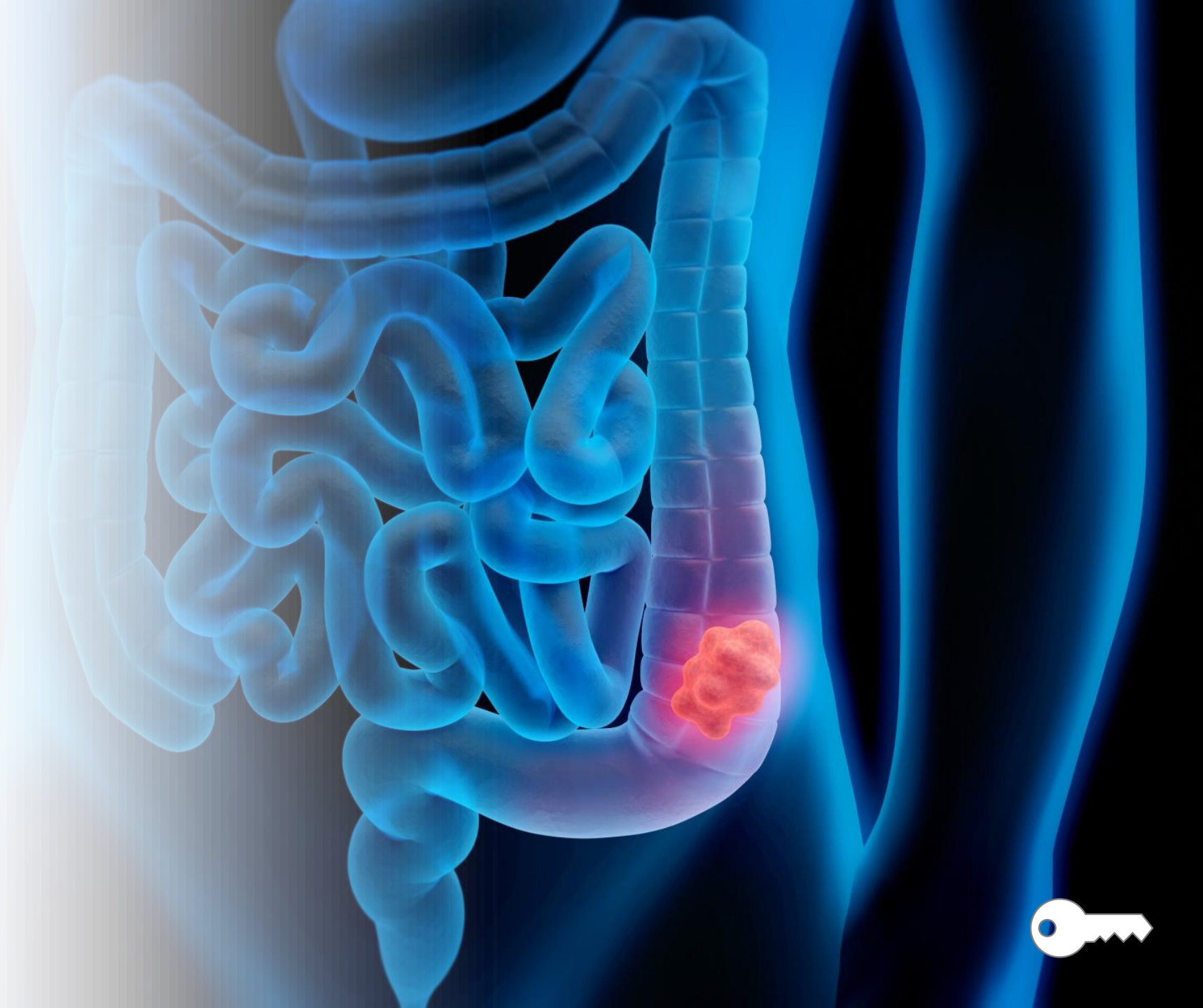
- Risk factors
- Clinical presentation
- Diagnosis
- Treatment
- Prevention
- Screening
  - Yes/no
  - Who?
  - How?

Liver

- Risk factors
- Clinical presentation
- Diagnosis
- Treatment
- Prevention
- Screening
  - Yes/no
  - Who?
  - How?

Colorectal

- Risk factors
- Clinical presentation
- Diagnosis
- Treatment
- Prevention
- Screening
  - Yes/no
  - Who?
  - How?

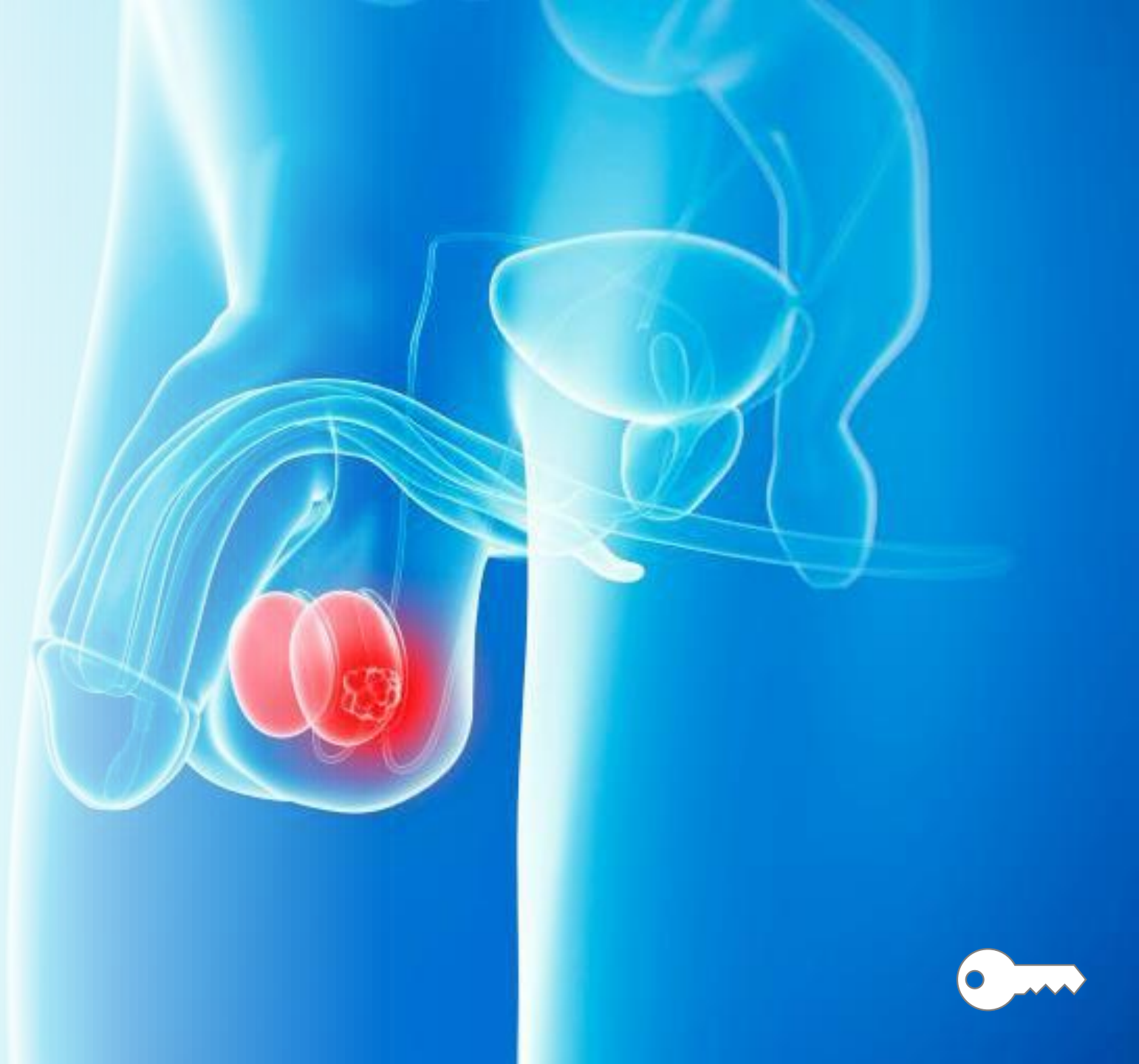


Lung

- Risk factors
- Clinical presentation
- Diagnosis
- Treatment
- Prevention
- Screening
  - Yes/no
  - Who?
  - How?

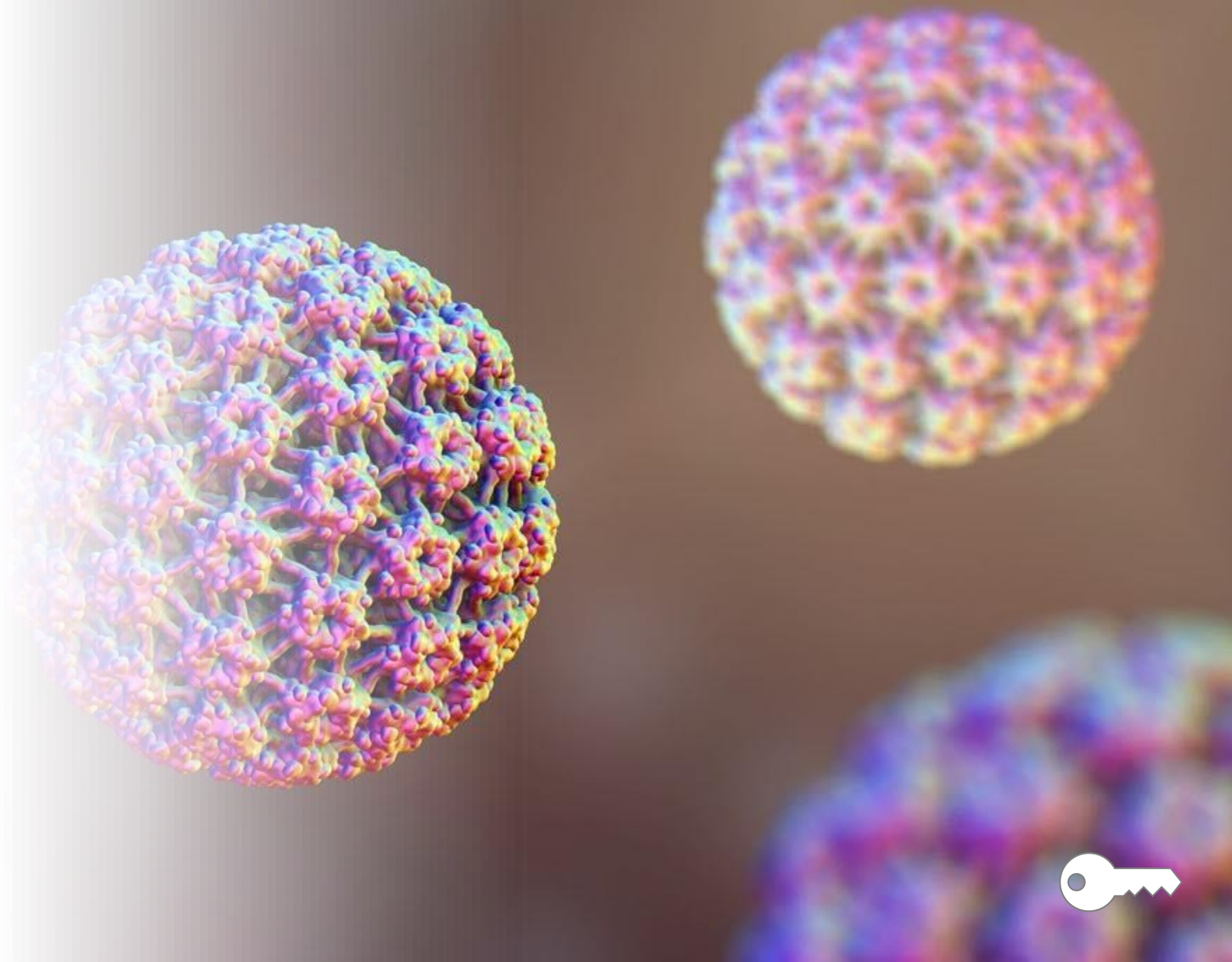
Testicular

- Risk factors
- Clinical presentation
- Diagnosis
- Treatment
- Prevention
- Screening
  - Yes/no
  - Who?
  - How?



Cervical

- Risk factors
- Clinical presentation
- Diagnosis
- Treatment
- Prevention
- Screening
  - Yes/no
  - Who?
  - How?

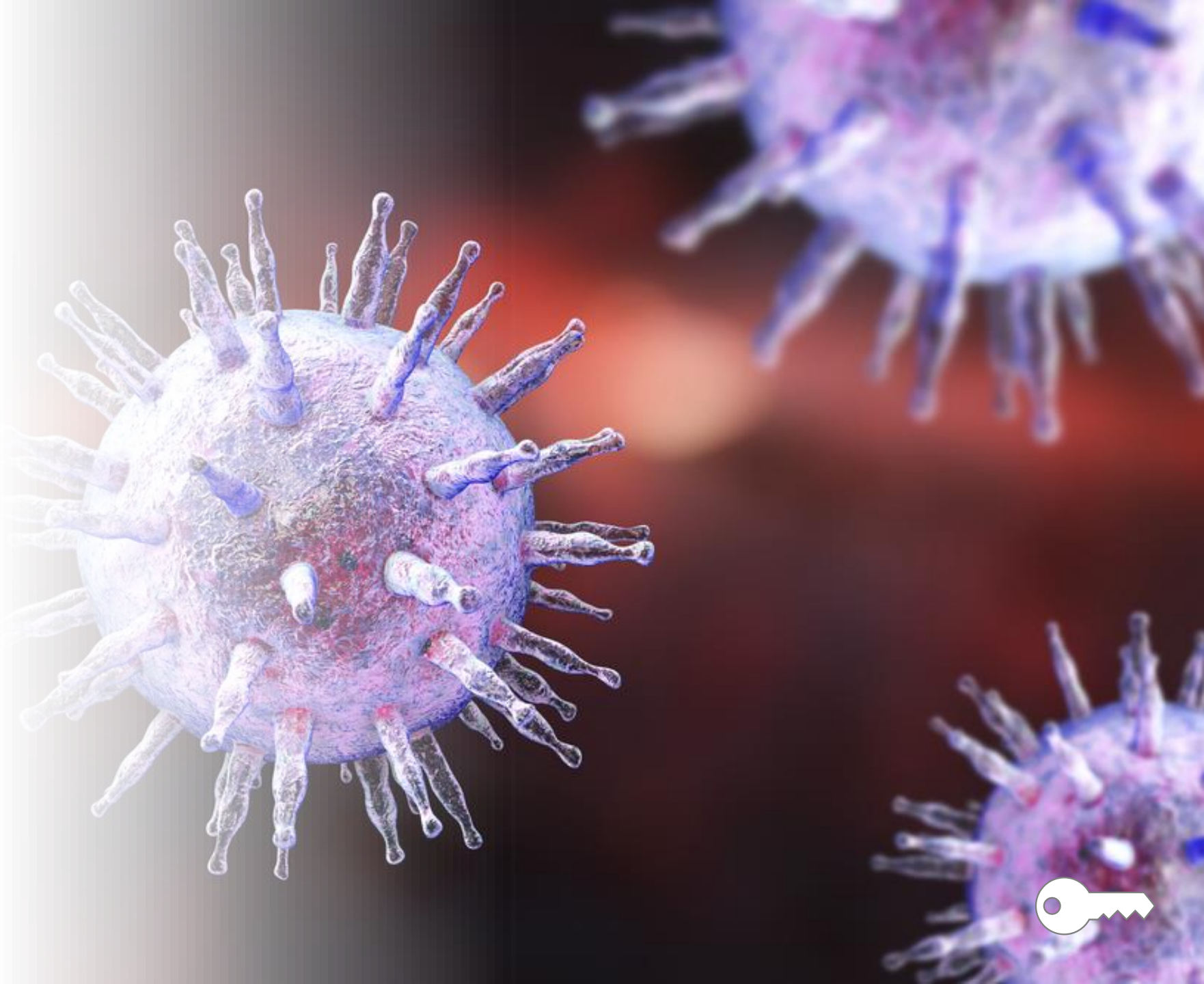


Breast

- Risk factors
- Clinical presentation
- Diagnosis
- Treatment
- Prevention
- Screening
  - Yes/no
  - Who?
  - How?

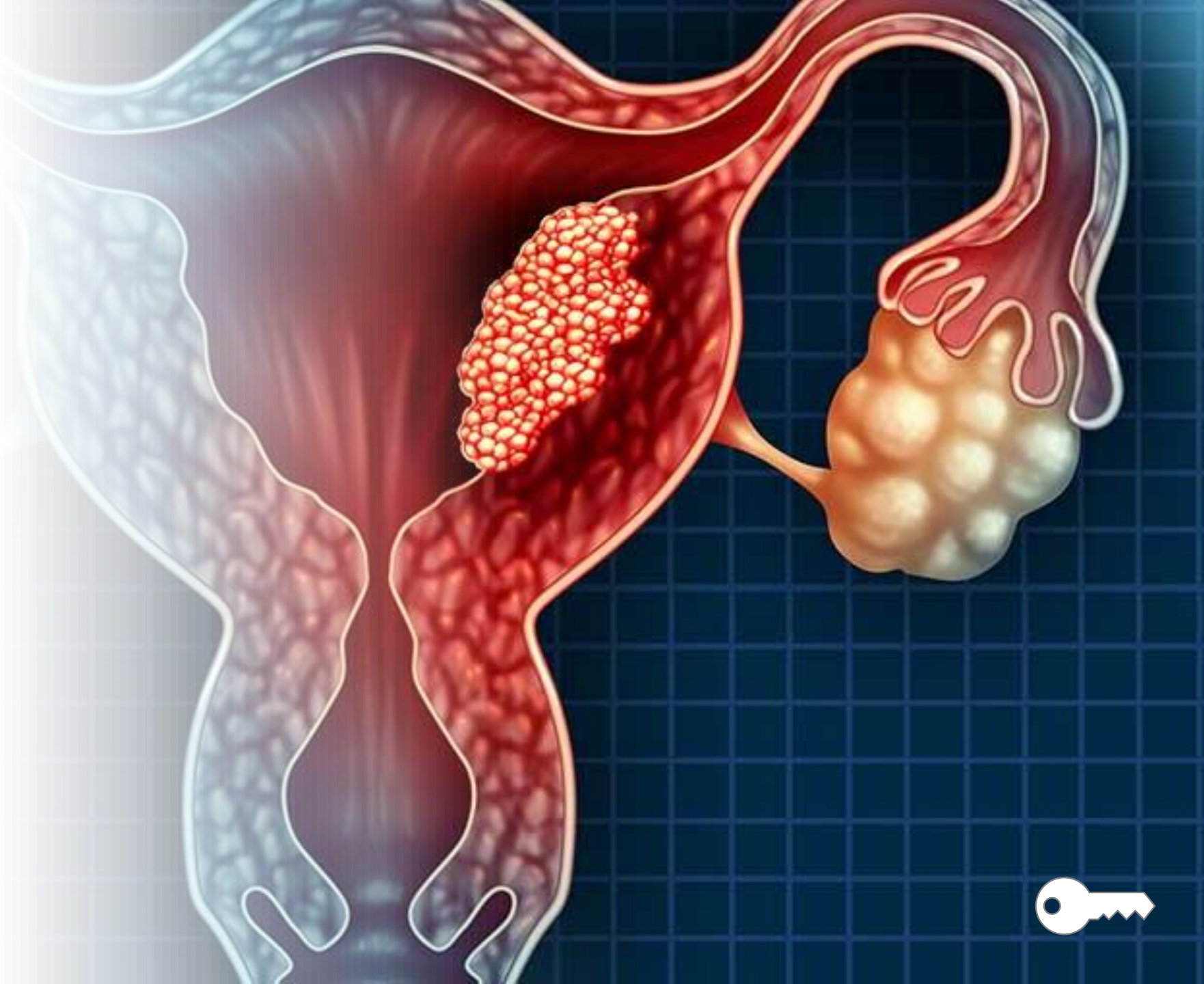
Non-Hodgkin Lymphoma

- Risk factors
- Clinical presentation
- Diagnosis
- Treatment
- Prevention
- Screening
  - Yes/no
  - Who?
  - How?



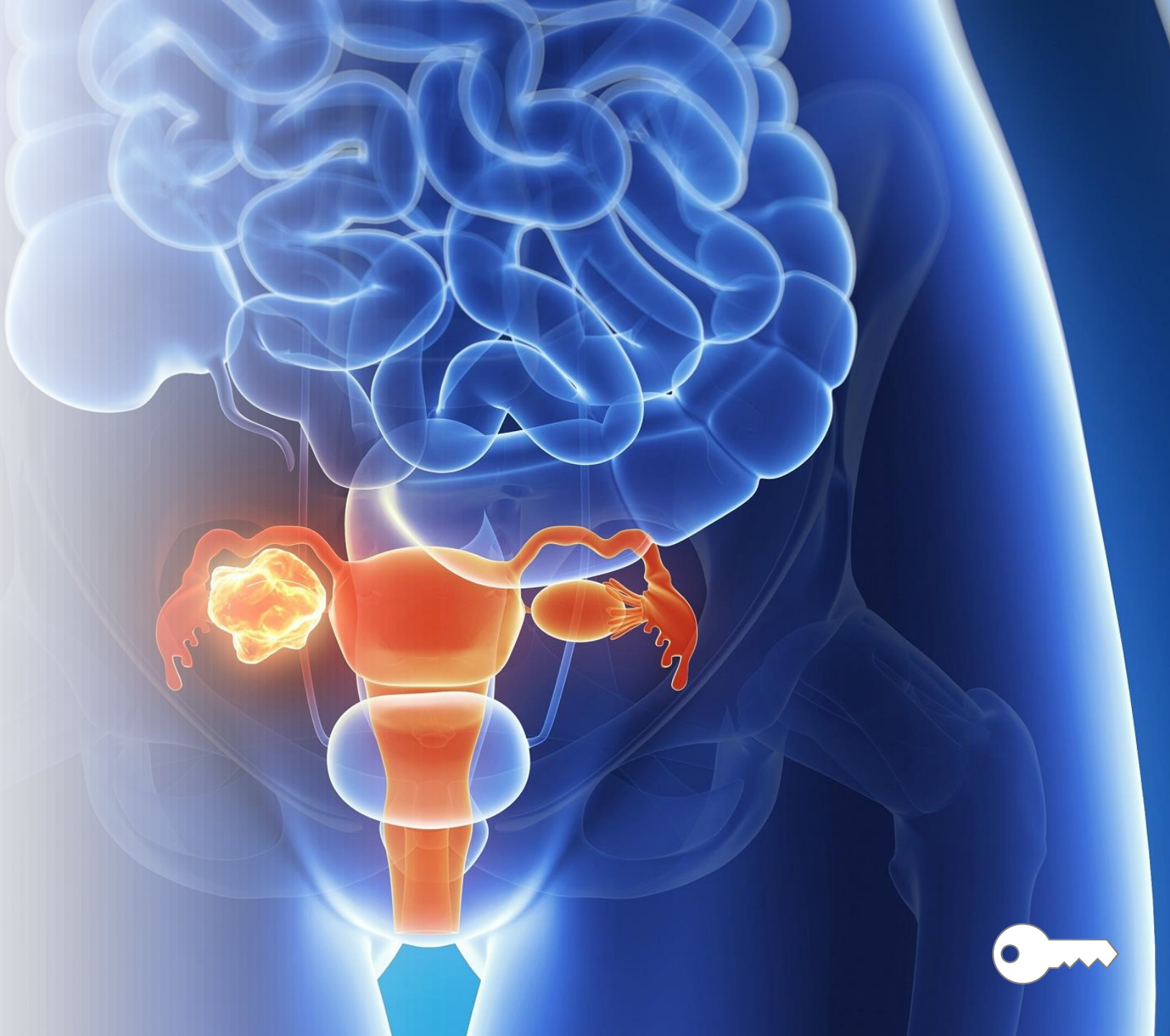
Endometrial

- Risk factors
- Clinical presentation
- Diagnosis
- Treatment
- Prevention
- Screening
  - Yes/no
  - Who?
  - How?



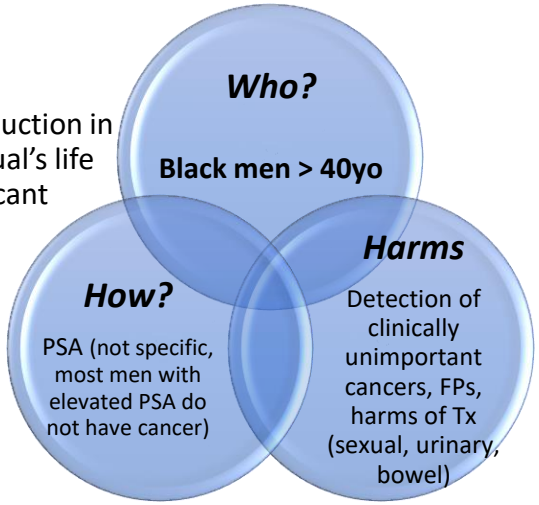
Ovarian

- Risk factors
- Clinical presentation
- Diagnosis
- Treatment
- Prevention
- Screening
  - Yes/no
  - Who?
  - How?



Prostate Cancer

- **Men > 65yo, African**, FHx
- Asymptomatic, LUTS, hematuria, ED, bone pain
- Dx: Biopsy
- Tx: Risk stratification based on disease and individual characteristics to determine conservative vs. invasive
- Prevention: 5-ARIs, ASA, eat healthy, exercise
- **Screening**: Has not consistently demonstrated a reduction in mortality. Shared decision making based on individual's life expectancy and the probability that clinically significant cancer may be present



Prostate Cancer Screening

PSA	• No cutoff level appears to have both high SN and SP for detection of prostate cancer
NCCN (strong): 45-75yo	• PSA < 1: repeat 2-4 years • PSA 1-3: repeat 1-2 years
ACS: > 50yo	• PSA > 4: annual screening and biopsy reasonable • PSA 2.5-4: annual screening • PSA < 2.5: Screen q2 years
EAU: Based on initial PSA	• PSA > 1 at age 40: q2 years • PSA > 2 at age 60: q2 years • Every 8 years for men not at risk
Consider biopsy if	• PSA > 3 or > 4 (ACS)

Kaposi Sarcoma

- HHV-8, SSA men 25-40yo (M:F 2:1 to 3:1), **HIV/AIDS related** (low CD4 count)
- Multiple painless vascular cutaneous and mucosal nodules (mouth or internal organs).
- Dx: **Clinical presentation**, risk factors, confirm with biopsy. Additional workup if confirmed.
- Tx: Based on ECOG/WHO performance status scale and extent of disease – ART, Chemo
- Prevention: **Prevent HIV, ART in patients with HIV**
- Screening: No. Patients self-discover. **Can check oral cavity of patients with HIV**

Oesophageal Cancer

- **HPV**, men (M:F 2:1 to 12:1), > 50yo, **tobacco use**, obesity, GERD
- Asymptomatic, progressive dysphagia, unintended weight loss, persistent/treatment-resistant heartburn
- Dx: Endoscopy and biopsy
- Tx: Based on ECOG/WHO performance status scale and disease stage – local, chemoradiation, surgical resection, palliative
- **Prevention: HPV vaccine, smoking cessation, limit alcohol, avoid obesity**
- Screening: No.

Hepatocellular Carcinoma

Preexisting cirrhosis and **HepB** infection. Cirrhosis – alcohol, HepC, NASH. M:F 2:1.

***HepB**: Leading cause of incidence and mortality*

Asymptomatic, jaundice, anorexia, weight loss, malaise, upper abdominal pain, hepatomegaly, ascites

Dx: High risk (cirrhosis, chronic HepB) – confirm dx with multiphase CT w/ contrast or MRI w/ contrast if imaging criteria are met. Hepatitis panel, LFTs, PT or INR, FBC, AFP, additional imaging.

Tx: Based on staging, rescectability, presence of comorbidities, functional status.

Prevention: HepB vaccine, early HepB/C Tx, alcohol awareness campaigns, alcohol treatment.

Screening: Maybe, if additional workup (CT/MRI) and interventions are available

Who?

Adults with cirrhosis, regardless of etiology.
Chronic HepB

How?

Abdominal u/s
+/- AFP q6mo.

Colorectal Cancer

- **Age, men, Black**, Native American, Native Alaskan, **obesity & DM, smoking and unhealthy alcohol**, IBD
- Asymptomatic (slow-growing polyps), rectal bleeding, stool occult blood, weight loss, abdominal pain, change in bowel habits
- Dx: Colonoscopy with biopsy
- Tx: Based on staging. Primary surgical, adjuvant chemo, adjuvant radiation.
- Prevention: No primary prevention.
- Screening: **It depends**.

Who?

Men and women ≥45yo if Dx/Tx resources available

How?

Annual stool test

or

Colonoscopy q10yrs

Lung Cancer

SMOKING. Radon, asbestos, other environmental pollutant exposure. Chronic lung disease. HIV.

Cough, hemoptysis, SOB, anorexia, weight loss, decreased appetite. s/s of mets and paraneoplastic syndromes.

Dx: FBC, CMP (Ca, LFTs), CXR. If suspected cancer, then CT chest w/ IV contrast.

Tx: Surgical resection, immunotherapy, chemo and/or radiotherapy. Dependent on stage, histology, immunotherapy biomarker testing, patient health status.

Prevention: **Tobacco cessation.** LDCT screening

Screening: Worldwide/US yes (#1 cancer mortality worldwide). **Zambia – likely no** (not a top killer, LDCT not widely available, curative lung surgery not widely available).

Who?

50-80yo with a 20 pack-year history currently smoking or quit w/in 15 years.

How?

Annual LDCT

Testicular Key

- Cryptorchidism (early orchiopexy helps), infertility, personal hx (12x ↑risk contralateral side), family hx, age (most common solid tumor males 15-34yo).
- Painless scrotal mass >>> incidental, post-traumatic, scrotal pain, s/s of mets
- Dx: Scrotal u/s (SN 92-98%, SP 95-99.8%). If mass: FBC, LFTs, tumor markers (bHCG, LDH, AFP), CXR and refer.
- Tx: Radical inguinal orchiectomy. Discuss sperm banking early. Sometimes chemo/radiation.
- Prevention: Early orchiopexy if cryptorchidism.
- **Screening: NO! Low incidence, high survival rate, catching asymptomatic disease does not change outcome, screening increases harms.**

USPSTF – D.

Choosing Wisely: **Don't screen**. No benefit due to low incidence/high cure rate even in advanced disease. Harms of screening – FPs, anxiety, dx tests/procedures.

Cervical Cancer

- Persistent **HPV (16/18), HIV**, immunosuppression, **tobacco use,** history of STIs
- Vaginal bleeding – postcoital, intermenstrual, postmenopausal, spontaneous. s/s of advanced disease.
- Dx: Colposcopically directed biopsy.
- Tx: Based on staging. Surgery, radiation, chemo.
- Prevention: **HPV vaccine. Condoms. Smoking cessation. Treatment of CIN2-3.**
- **Screening: YES!**

Who?

It depends. In Zambia, use VIA and follow CCPPZ.

- **(HIV+):** 25-59yo. If VIA negative, rescreen w/in 3yrs.
- **(HIV-)**: 30-59yo. If VIA negative, rescreen q 5 years.
- **WHO**: Screen all women 30-49yo.

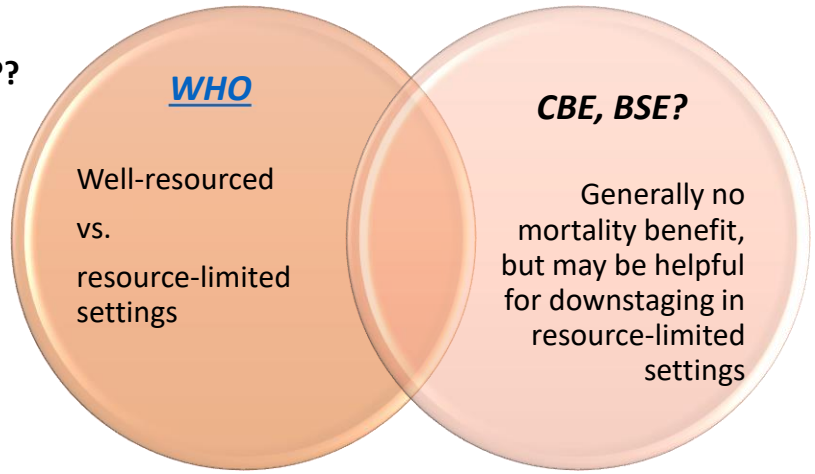
How?

VIA, HPV, cytology depending on availability.

Treat CIN2-3 with cryo or LEEP.

Breast Key

- **FEMALE, AGE,** prolonged estrogen exposure (early menarche/late menopause, nulliparity, HRT, etc.), lifestyle factors (increased BMI, alcohol, tobacco), radiation exposure
- Palpable mass, nipple discharge, skin changes (breast or nipple), asymmetric thickening or nodularity, focal breast pain, axillary mass
- Dx: PE (breast, axillary LNs), imaging (u/s, mammo, or MRI), confirmed by biopsy
- Tx: Depends on disease (stage, characteristics) and patient (comorbidities, preferences). Neoadjuvant and/or adjuvant systemic therapy, surgery (lumpectomy/mastectomy), radiation.
- Prevention: BRCA+ mastectomy. Mammography.
- **Screening: ???????? It's complicated.**



WHO: Breast Screening Recommendations

	Population Based Mammography Screening Program Recommendations by age group and by resource level		
Resource Level	**40-49 years of age**	**50-69 years of age**	**70-75 years of age**
Well-resourced settings with strong health systems[1]	**Suggested,** if conducted in the context of rigorous research, monitoring and evaluation	**Recommended**, if conditions for implementing an organized program are met, with a screening interval of 2 years	**Suggested,** if conditions are met and only after programs are established for women aged 50-69 years of age.
Limited-resource settings with relatively strong health systems[2]	Recommended **against**	**Suggested** if conditions for implementing an organized screening program are met, with a screening interval of 2 years	Recommended **against**
Limited-resource settings with weak health systems[3]	Recommended **against**	Early diagnosis of women with symptomatic lesions, followed by treatment, should be the priority in this setting. Clinical breast examination seems to be a promising screening approach for this setting.	Recommended **against**

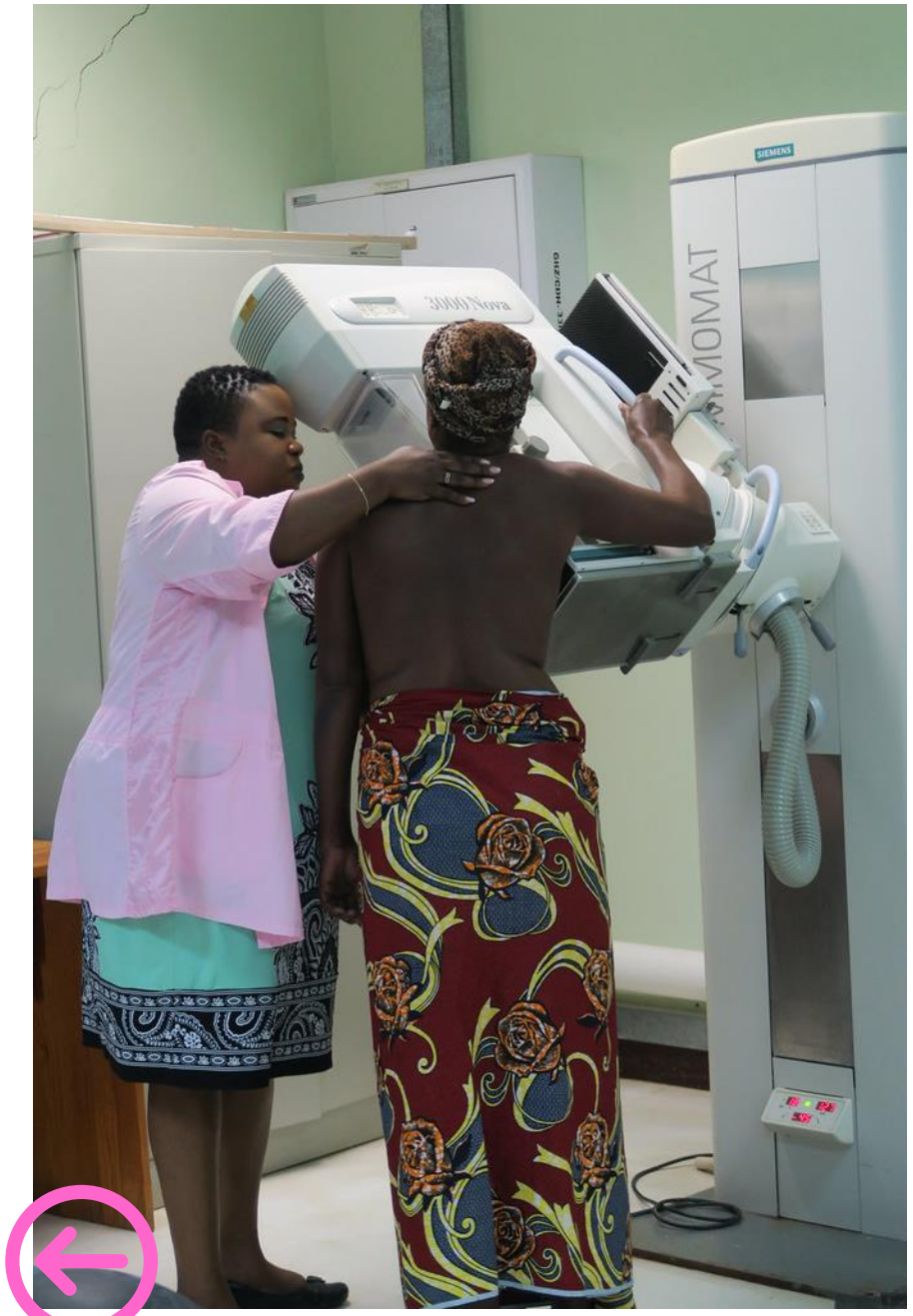


Table 3: Health Facilities Offering Mammography Imaging Services in Zambia

No	Name of the health facility	Province	Category
1	Cancer Diseases Hospital, Lusaka	Lusaka	Public
2	Levy Mwanawasa University Teaching Hospital, Lusaka	Lusaka	Public
3	Ndola Teaching Hospital, Ndola	Copperbelt	Public
4	Livingstone teaching hospital, Livingstone	Southern	Public
5	Chipata Teaching Hospital, Chipata	Eastern	Public
6	Solwezi Teaching Hospital, Solwezi	North-Western	Public
7	Mansa General Hospital, Mansa	Luapula	Public
8	Kasama General Hospital, Kasama	Northern	Public
9	Kabwe General Hospital, Kabwe	Central	Public
10	Lewanika General Hospital, Mongu	Western	Public
11	Private Medland Hospital, Lusaka	Lusaka	Private
12	Fairview Hospital, Lusaka	Lusaka	Private
13	Italian Hospital, Lusaka	Lusaka	Private
14	CFB medical centre, Lusaka	Lusaka	Private
15	Forest Park Hospital, Lusaka	Lusaka	Private
16	Coptic Hospital, Lusaka	Lusaka	Private

Mammography in Zambia

K200. FREE in October.

Non-Hodgkin Lymphoma

- **Immunosuppression, HIV, EBV, malaria** (Burkitt lymphoma), autoimmune disorders (RA, SLE).
- Painless, persistent generalized lymphadenopathy (single or multiple sites), +/- B symptoms. Jaw/facial bone/periorbital masses (Burkitt lymphoma).
- Dx: FBC, LFTs, electrolytes, LDH, uric acid, HIV, HepB, biopsies of LN and BM. CT chest/abd/pelvis with contrast.
- Tx: Dependent on the NHL subtype.
- Prevention: Prevent/treat HIV and other causes of immunosuppression.
- Screening: No, but survivors may need routine screening for additional cancers and other complications related to disease and treatments.

Endometrial Carcinoma

AGE, Prolonged estrogen exposure (early menarche/late menopause, nulliparity, h/o infertility, obesity, PCOS, long-term tamoxifen, unopposed E), Genetics (10%: FHx, Lynch syndrome), DM, HTN

AUB (90%) - **only 10-20% of postmenopausal women evaluated for uterine bleeding are dx'd with endometrial cancer (most common = endometrial atrophy).

Dx: Initial workup = EMB or u/s (endometrial thickness ≤ 4mm reassuring). If postmenopausal thickness > 5mm, biopsy to rule out endometrial hyperplasia or cancer.

Tx: TAH-BSO, +/- radiation, chemo

Prevention: **Control risk factors (obesity, DM, HTN).** If on HRT, add progesterone.

Screening: **NO** (maybe if Lynch Syndrome)

Women with AUB

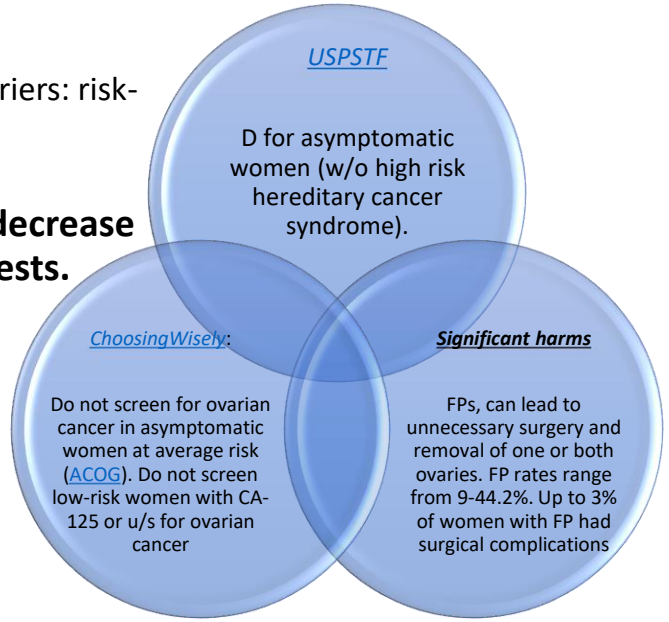
Evaluate for endometrial cancer if > 45yo, or if a h/o unopposed estrogen exposure (SOR C) – EMB or u/s

ChoosingWisely

Do not perform pap test for surveillance of women with a h/o endometrial cancer.

Ovarian Cancer : *Most lethal gyn cancer*

- **Prolonged estrogen** (early menarche/late menopause, nulliparity), Genetics (10-12%: First degree BRCA 1/2, Lynch syndrome), HRT
  - *Decreased risk: > 4 years OCPs, depo, salpingectomy, BTL, breastfeeding*
- Presents late, early stages often asymptomatic. Goff symptom index ≥ 4 occurring ≥ 12x/mo but present < 1 year = 64-69% SN, 88-97% SP for ovarian cancer.
  - *Pelvic/abdominal pain, urinary urgency/frequency, increased abdominal size/bloating, difficulty eating/early satiety.*
- Dx: Initial bimanual, often + TVUS + CA-125. Then CT abd/pelvis. Biopsy confirmation.
- Tx: Surgery +/- intraperitoneal and IV chemo.
- Prevention: Avoid > 5 years HRT. BRCA carriers: risk-reducing BSO (69=100% reduction)
- **Screening: NO. Increased harms, no decrease in mortality. No reliable screening tests.**



Zambia Cancer Screening Guidelines

Created the UNZA School of Public Health Family Medicine MMed Program

ASSOCIATION OF FAMILY PHYSICIANS OF ZAMBIA