

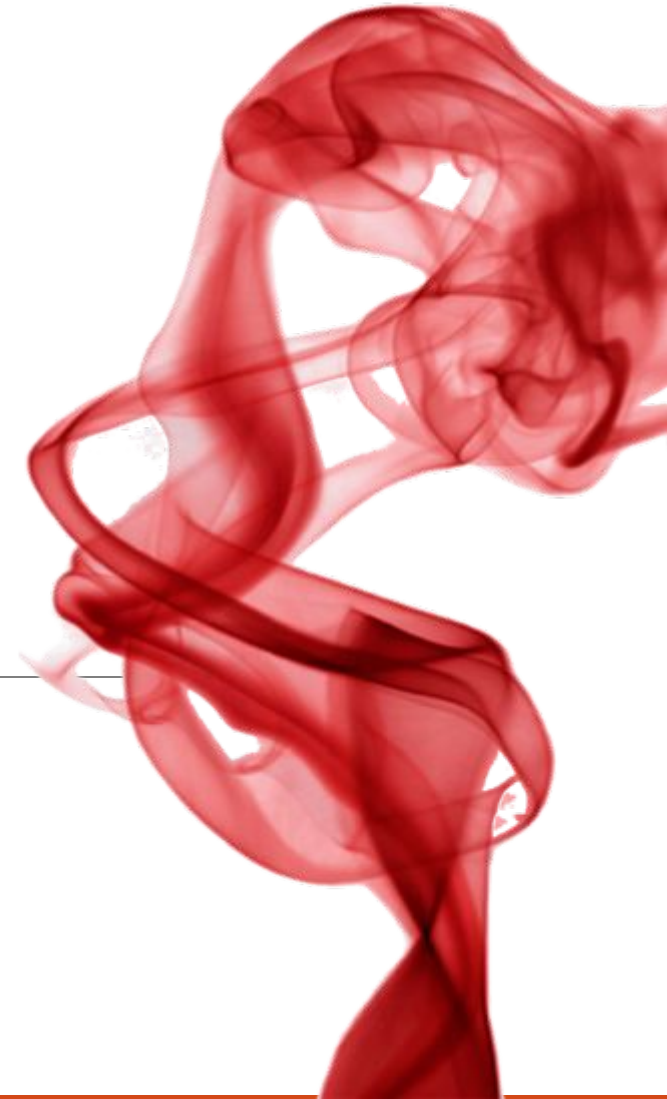
Screening and Prevention

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Objectives:



1. To define screening / prevention and its uses in family practice.
2. To identify Screening types and targeted people for each type with examples.
3. To explain pros and cons of screening.
4. To identify appropriate approaches for prevention and screening of common

problems in primary care.
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6. To justify the rational for selection of a screening test with practical case
/condition, examples like for CA. breast, Ca. colon, Ca. prostate.

Role play

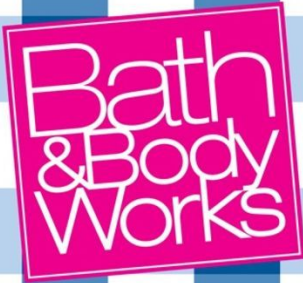


Our patient is Layla, She is a 23 year old saudi female, came to the primary care clinic, with a fear of developing Breast cancer !



- ❖ What do you want to do?
- ❖ What do you want to ask more in the history? _____
- ❖ In case she has breast cancer, do you think screening of this patient would change the prognosis?
- ❖ What are the screening tests that could be used ?





Prizes!!!

MCQs

Single best answer



**1- WHICH ONE OF THE FOLLOWING IS CONSIDERED AS
TERTIARY PREVENTION:**

- A) educational programs.
- B) palliative therapy.
- C) lifestyle modification.
- D) fecal occult blood test.

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2- Screening and diagnostic tests are the same thing?

A) True

B) False

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B) False

3- What is best method of **screening** for prostate cancer?

- a) Prostate specific antigen
- b) Digital rectal exam
- c) Pap smear
- d) Biopsy

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4- Screening tests fall under which one of the following?

- A) primordial prevention
- B) primary prevention
- C) secondary prevention
- D) tertiary prevention

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- C) secondary prevention**
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5-What is the diagnostic test for colon cancer?

- a) CT
- b) Colonoscopy
- c) Fecal occult blood
- d) Ultrasound

5-What is the diagnostic test for colon cancer?

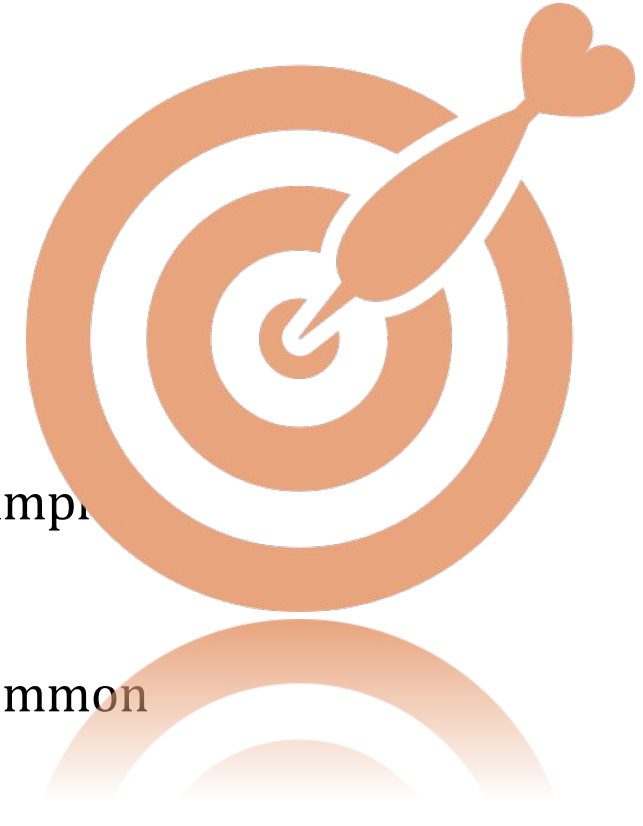
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b) Colonoscopy

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Rana Aljunidel

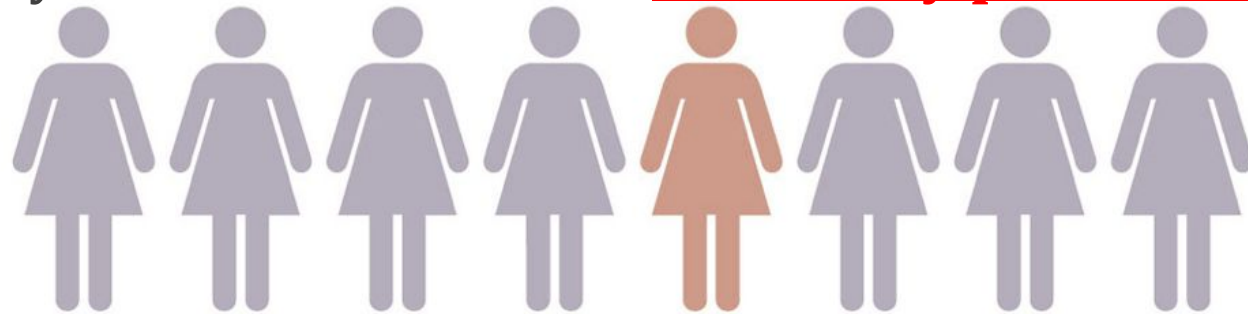
Define Screening?



Define Screening?

- The systematic testing of asymptomatic individuals for pre-clinical disease.
- The ability to diagnose and treat a potentially serious condition at an early stage when it is still treatable. (Oxford handbook of general practice).

An early disease detection or secondary prevention



Our Aim is?

The aim of screening is:

To be able to diagnose and treat a potentially serious condition at an early stage when it is still treatable.

To prevent or delay the development of advanced disease in the subset with preclinical disease.

Define Prevention?



Prevention is defined as:

- Health promoting and preventing diseases' occurrence.
- Averting and eliminating diseases and minimizing the impact of diseases.

Or simply (The action of stopping something from happening)



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Maram Alaqel

TYPES OF SCREENING



Mass screening

Screening of a whole population or a subgroup. It is offered to all, irrespective of the risk status of the individual.

Examples:

- ❖ Visual defects in school children.
- ❖ Mammography in women aged 40 years.
- ❖ Newborn screening program.
- ❖ TB screening.
- ❖ Cervical cancer screening



Selective screening

It is applied selectively to high risk groups, the groups defined on the basis of epidemiological research.

Examples

- ❖ Screening fetus for Down's syndrome in a mother who already has a baby with Down's syndrome.
- ❖ Screening for familial cancers, HTN and DM.
- ❖ Screening for cancer cervix in low social groups.
- ❖ Screening for HIV in risk groups.

Multiphasic screening

Screening involves the use of several screening tests on the same occasion to a large number of people at one time than to carry out screening tests for single diseases (e.g. an annual health check-up) including health questionnaire, clinical examination and a range of measurements and investigations.

Examples

- ❖ Chemical and hematological tests on blood and urine specimens.
- ❖ Lung function assessment, audiometry and measurement of visual acuity.



Multipurpose screening

The screening of a population by more than one test done simultaneously to detect more than one disease.

Example

- ❖ Screening of a pregnant women for VDRL, HIV, HBV by serological tests.



Opportunistic and case finding screening

A form of screening restricted to patients who consult a health practitioner for some other purpose (the GP may take your blood pressure when you come for your 'flu shot)

Advantages

- ❖ Improved prognosis for some cases detected by screening.
- ❖ Less radical treatment for some early cases.
- ❖ Reassurance for those with negative test results.
- ❖ Increased information on natural history of disease and benefits of treatment at early stage.
- ❖ Economic saving on future treatment.

Disadvantages

- ❖ Longer morbidity in cases where prognosis is unaltered.
- ❖ False reassurance for those with false-negative results.
- ❖ Anxiety, Unnecessary intervention and sometimes morbidity for those with false-positive results.

Types of prevention



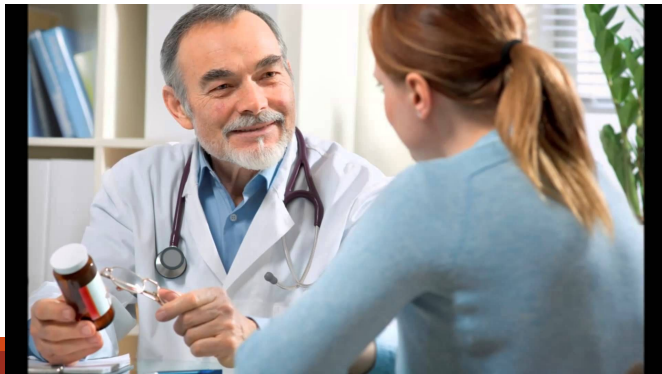
Primary prevention

- ❖ Aims to prevent disease or injury before it ever occurs.
- ❖ Done by preventing exposures to hazards that cause disease or injury.
- ❖ Altering unhealthy or unsafe behaviors that can lead to disease or injury.
- ❖ Increasing resistance to disease or injury WHENEVER exposure occur.

Examples of Primary Prevention:



- ❖ Legislation and enforcement to ban or control the use of hazardous products (e.g. asbestos).
- ❖ Education about healthy and safe habits (e.g. eating well, exercising regularly, not smoking)
- ❖ Immunization against infectious diseases.
- ❖ Removing the causal agents; like sanitation measures of nineteenth century.
- ❖ Sanitation of the environment.



Quit Smoking



Regular Exercise



Relieve Stress



Lose Excess Weight

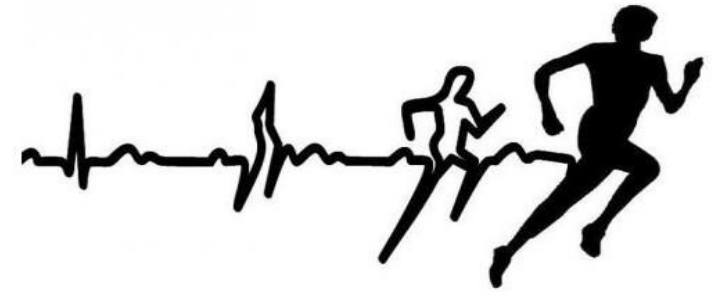


Healthy Eating

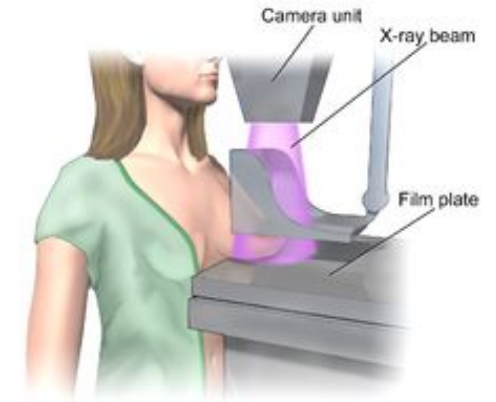
Secondary prevention

- ❖ Occurs at the early stages of the pathogenesis.
- ❖ Used to reduce the impact of a disease or injury that has already occurred.
- ❖ Done by detecting and treating disease or injury as soon as possible to halt or slow its progress
- ❖ Implementing programs to return people to their original health and function to prevent long-term problems.

Examples of Secondary Prevention:



- ❖ **Regular exams and screening tests** to detect disease in its earliest stages (e.g. mammograms to detect breast cancer).
- ❖ **Daily, low-dose aspirins** and/or diet and exercise programs to prevent further heart attacks or strokes.
- ❖ Identifying the pre-symptomatic diseases (or risk factors) before significant damage is done e.g screening for hypertension.



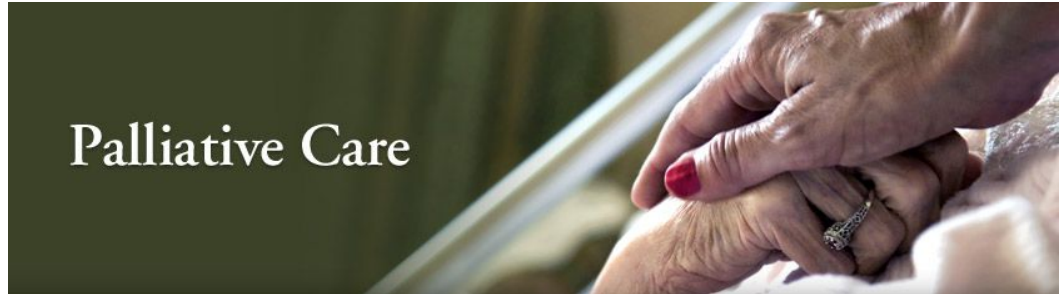
Mammogram

Tertiary prevention

- ❖ **Prevention of complications** once the disease is present.
- ❖ The **goal** is to improve the quality of life and prevent disabilities, to soften the impact of an ongoing illness or injury that has lasting effects.
- ❖ Done by helping people manage long-term, often-complex health problems and injuries (e.g. chronic diseases, permanent impairments).
- ❖ This helps to improve as much as possible their ability to function, their quality of life and their life expectancy.

Examples of Tertiary Prevention:

- ❖ **Stroke rehabilitation program.**
- ❖ **Palliative therapy.**
- ❖ **Cardiac or stroke rehabilitation programs.**
- ❖ **Limiting complications /disability in patients with established disease by regular surveillance , e.g. : trying to prevent Diabetic problems by good control , regular fundoscopic , foot care .**
- ❖ **Chronic disease management programs (e.g. for diabetes, arthritis, depression, etc.)**



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Noura Almofarej



The Wilson–Jungner criteria for screening

All screening tests should meet the following criteria before they are introduced to the target population

- ❖ The condition being screened for is an **important** health problem
- ❖ **Natural history** of the condition is well understood
- ❖ There is a detectable **early stage**
- ❖ **Treatment at early stage** is of more benefit than at late stage
- ❖ There is a **suitable test** to detect early stage disease

Cont. The Wilson–Jungner criteria for screening

The test is **acceptable** to the target population.

Intervals for repeating the test have **been determined** .

Adequate health service provision has been made for the extra clinical workload resulting from screening

Risks, both physical and psychological, are **< benefits**

Costs are worthwhile in relation to benefits gained



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Noura Almofarej

What are common conditions or diseases Where we can apply screening & Prevention?



Common Screening Conditions in the primary care



Colonoscopy

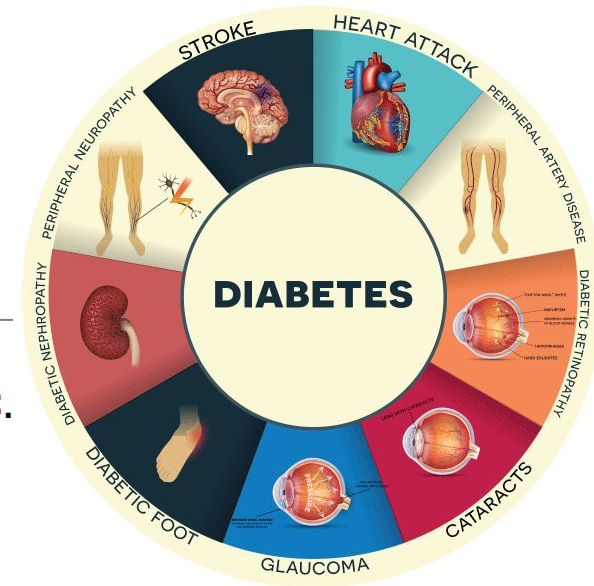


Sigmoidoscopy



Fecal occult
blood test

Diabetes Mellitus



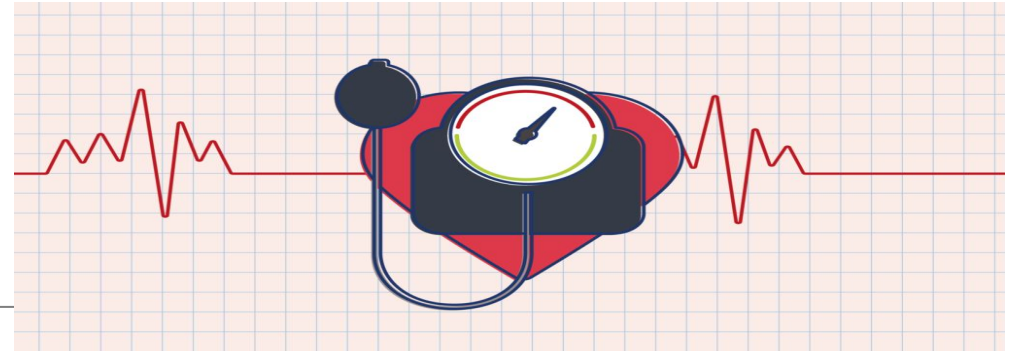
- ❖ Diabetes mellitus is one of the most common diagnoses made by **family physicians**.
- ❖ **Lifestyle (Obesity) and pharmacologic interventions** decrease progression to diabetes in patients with impaired fasting glucose or impaired glucose tolerance.
- ❖ Uncontrolled diabetes can lead to **blindness, limb amputation, kidney failure, and vascular heart disease**.
- ❖ Screening is recommended for abnormal blood glucose and type 2 diabetes in **adults 40 to 70 years of age** who are **overweight** or obese, and repeating testing every 3 years if results are normal.
- ❖ Screen all adults who are overweight (BMI \geq 25 kg/ m²) and have additional risk factors.
- ❖ Screening for type 1 diabetes is not recommended

Screening for diabetes

Table 2.2—Criteria for testing for diabetes or prediabetes in asymptomatic adults

1. Testing should be considered in all adults who are overweight (BMI ≥ 25 kg/m² or ≥ 23 kg/m² in Asian Americans) and have additional risk factors:
 - physical inactivity
 - first-degree relative with diabetes
 - high-risk race/ethnicity (e.g., African American, Latino, Native American, Asian American, Pacific Islander)
 - women who delivered a baby weighing >9 lb or were diagnosed with GDM
 - hypertension ($\geq 140/90$ mmHg or on therapy for hypertension)
 - HDL cholesterol level <35 mg/dL (0.90 mmol/L) and/or a triglyceride level >250 mg/dL (2.82 mmol/L)
 - women with polycystic ovary syndrome
 - A1C $\geq 5.7\%$ (39 mmol/mol), IGT, or IFG on previous testing
 - other clinical conditions associated with insulin resistance (e.g., severe obesity, acanthosis nigricans)
 - history of CVD
 2. For all patients, testing should begin at age 45 years.
 3. If results are normal, testing should be repeated at a minimum of 3-year intervals, with consideration of more frequent testing depending on initial results (e.g., those with prediabetes should be tested yearly) and risk status.
-

Hypertension



- ❖ Also common in KSA (26.1%) of adults aged 30-70 years of age, It is the most commonly diagnosed condition at outpatient office visits.
- ❖ High blood pressure is a major risk factor to heart failure, heart attack, stroke, and chronic kidney disease.
- ❖ An important feature of hypertension is that it **remains asymptomatic until target tissue damage has already happened**, hence the importance of screening programs.

Cont. Hypertension

- ❖ The USPSTF recommends screening for high blood pressure **in adults aged 18 years or older.**
- ❖ **Adults between 18 and 39 years** should also be screened at least **annually** if they **have risk factors for hypertension** (eg, obesity) or if their previously measured blood pressure was 130-139/85-89 mmHg.
- ❖ **Adults between 18 and 39 years** whose latest blood pressure was <130/80 mmHg and have no risk factors for hypertension should be screened at least **every three years.**
- ❖ **Adults 40 years or older** should have their blood pressure measured at least **annually.**

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Sara Aljebrin

Breast Cancer



- ❖ The commonest cause of death in women aged 35-55.
And generally, the most frequent cancer in women.
- ❖ Early diagnosis of breast cancer could very likely save the patient.
- ❖ Mammography is the only screening test shown to reduce breast cancer-related mortality.

Cont. Breast Cancer



- ❖ Screening should be offered at least every other year to women 50 to 74 years of age.
- ❖ High-risk women <50y: women with family history of breast cancer may benefit from earlier screening and/or genetic screening.
- ❖ Women known to have a genetic mutation should be offered annual MRI surveillance from 20y if TP53 mutation, and from 30y if BRCA1/2 mutation.

Colorectal Cancer



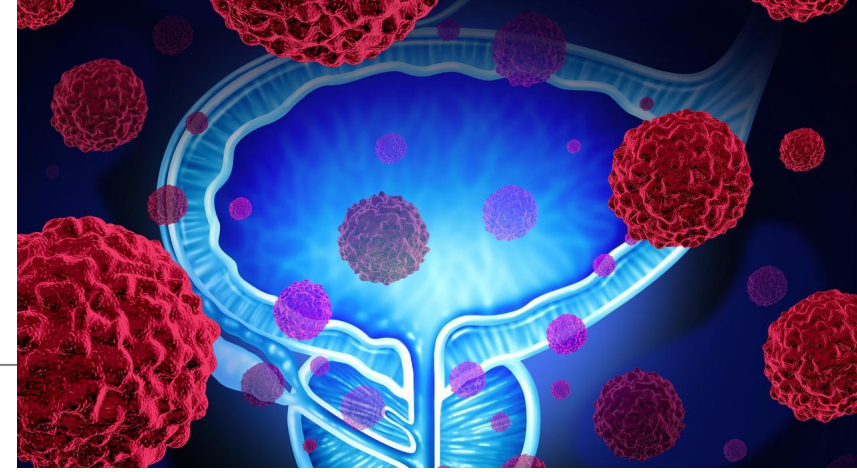
- ❖ Most common cancer in Saudi males and 3rd in Saudi females.
- ❖ 25-30% of patients present with distant metastasis.
- ❖ Patients at risk:
 1. Lifestyle factors: Dietary factors. Alcohol. Physical activity.
 2. First-degree relative afflicted by it.

Colorectal Cancer



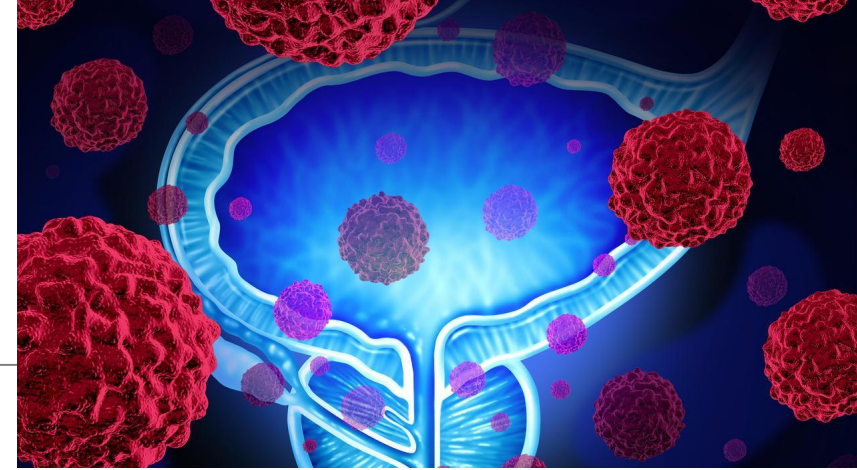
- ❖ Screening in average person's should **begin at 50 years** of age.
- ❖ Recommended every 2y to all patients aged 60–74y.
- ❖ **Screening tests:**
 - High-sensitivity fecal occult blood testing **annually**.
 - Flexible sigmoidoscopy every five years with high-sensitivity fecal occult blood testing **every three years**.
 - Colonoscopy **every 10 years**.

Prostate Cancer



- ❖ Second most common cancer in men.
- ❖ **Risk factors:**
 1. Age >65.
 2. Genetics.
 3. Diet (low intake of fruit, high intake of fat, meat, and Ca²⁺).

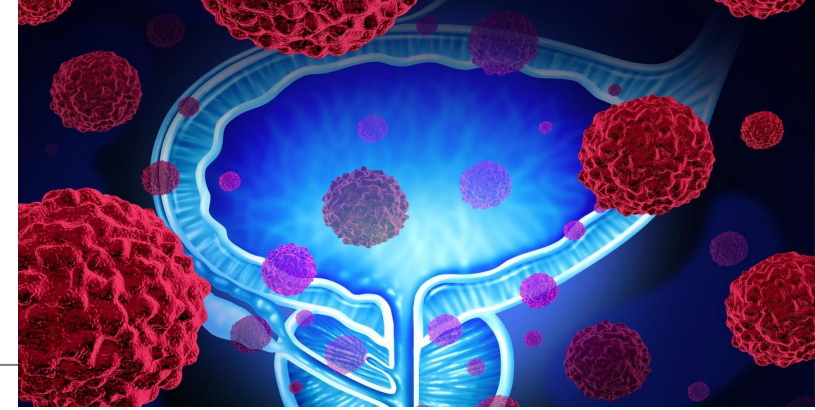
Prostate Cancer



❖ Screening tests:

- Prostate-specific antigen (PSA).
- Digital rectal examination (DRE) **Operator-dependent**, annual screening in the USA and Germany has not decreased mortality.
- Transrectal ultrasound (TRUS) **Too expensive.**
- The most effective screening regime involves rectal examination and PSA.

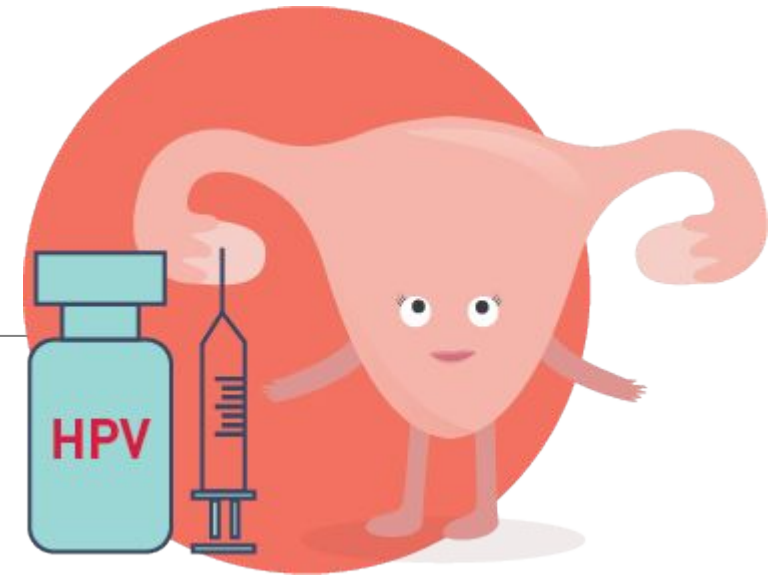
Prostate Cancer



❖ A digital rectal examination and PSA test are recommended for patients with any of the following unexplained symptoms:

1. Erectile dysfunction.
2. Hematuria.
3. Lower back pain.
4. Bone pain
5. Lower urinary tract symptoms.
6. Weight loss (in elderly particularly)

Cervical Cancer



- ❖ 0.6% of women universally will be diagnosed with cervical cancer.
- ❖ There is a strong association between cervical cancer and HPV (types 16 and 18).
- ❖ There exists an HPV vaccine that is best given between ages 11-12.

Cervical Cancer

LET'S TALK ABOUT AGE, LADIES:

21 AND UNDER

Don't need a Pap test or HPV test, even if they are sexually active. That's because cervical cancer is rare at this age, and dysplasia usually disappears by itself.

21-29

Should have a Pap test alone every three years.

30-65

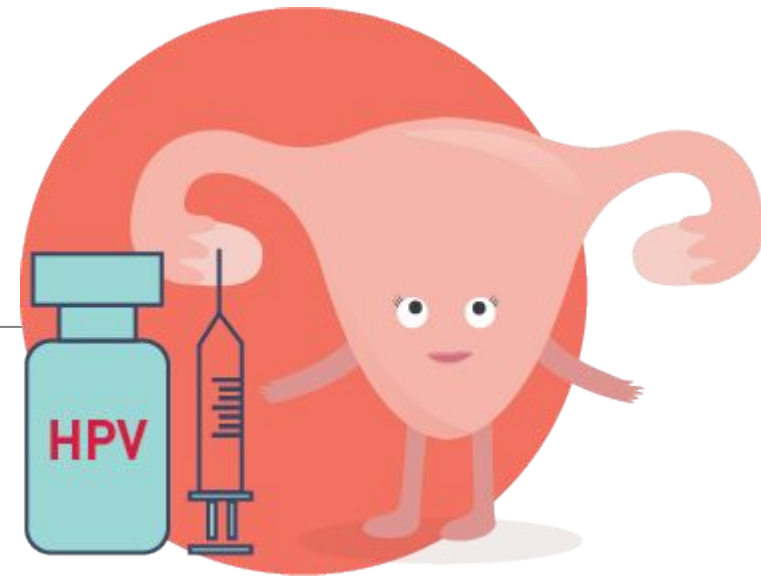
Should have a Pap test plus an HPV test every five years (called co-testing) or a Pap test alone every three years. Co-testing offers extra vigilance and is preferred because dysplasia doesn't clear up as quickly as women age.

65+

Don't need any screening if they've had three normal Pap tests in a row or two consecutive normal HPV tests within the last decade and no history of moderate or severe dysplasia within the last 20 years.

N/A

Women who have had hysterectomies don't need screening if they don't have a cervix and no history of moderate or severe dysplasia, cervical cancer or uterine cancer.



Thank you!