ELDERLY CARE: CONCEPT AND PRINCIPLES

Objectives:

- What is aging?
- What is the meaning of geriatric medicine?
- General principles of geriatric care
- Common geriatric syndromes
- Comprehensive geriatric assessment
- Common home care services
- Home care teams and their roles in medical practice.
- Home safety

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Color index: Doctors' note Team432 Oxford general practice

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OBJ 1:

- **What's Aging?** Aging is not a disease, it's only a risk factor

  - Aging is a physiological process is associated with complex changes in all organs.
  - Aging can be defined as the decline and deterioration of functional properties at the cellular, tissue, and organ level.
  - The accumulation of biological changes over time leading to decreased biological functioning and impaired ability to adapt to stressors.

- **Who is old?**

Depends on country.

Elderly age: classified as group for the risk of diseases

  - 60 & + years of age (**UN**)
  - 65 & + (**developed countries)**
  - 50 & + (**African countries**, **birth certificates problem**) b/c developing countries have more life stresses.

- **The typical "geriatric" patient have:**

  - chronic disease
  - multiple disease (co-morbidity)
  - multiple drugs (poly-pharmacy)
  - social isolation and poverty
  - ↓ physiological function

] **LOSS OF RESERVE**

- **Geriatricians involved in:**

  - Diagnose, treat & manage diseases & conditions
  - Special approach for aging patients
  - Serve as Primary Care Physicians & consultants for older adults.

OBJ 2:

- **Geriatric Medicine:**

MALTA Definition

- Geriatric medicine exceeds organ orientated medicine
- Additional therapies are offered through multidisciplinary team, to optimise functional status, quality of life and autonomy.
- Most patients will be over 65 years of age but the problems best dealt with by the speciality of Geriatric Medicine are in the 80+ age group.

OBJ 3:

- **General principles of geriatric care:**

  - Multi-factorial disorders are best managed by multi-factorial interventions
  - Atypical presentations need to be considered
  - Not abnormalities require evaluation and treatment
  - Complex medication regimens, adherence, problems, and poly-pharmacy are common challenges

- **Why elderly is special group?**

  - Frailty
  - Dementia
  - Mental problems
  - Polypharmacy and iatrogenic
  - Agitation and anxiety
  - Risk of falls
  - Driving issues
  - Executive function

Why we care about them specially?

- Medical incidents: IHD, HTN DM, Cancer "GI/prostate/lung/breast", Psychological problems, Geriatric syndrome: "Osteoporosis + Urine incont. + falls + bed sores", Sleep problems, OsteoArth., Hearing/Visual problems.

- **Normal Aging vs Disease:**

Normal aging	Disease
"Crow's feet": wrinkle at the outer corner of a person's eye.	**Macular degeneration**
Presbycusis: loss of hearing due to old age.	**Tympano-sclerosis**
Seborrheic keratoses; loss of skin elasticity	**Basal cell CA**
Benign forgetfulness	**Dementia**
Decreased blood vessel compliance	**Athero-sclerosis**
Increase in % body fat	**Hypertension**

- **Principles of Geriatrics:**

1. **Aging is not a disease.**
   - Aging occurs at different rates
   - Between individuals
   - Within individuals in different organ systems
2. **Geriatric conditions are chronic, multiple, multifactorial**
3. **Reversible conditions are underdiagnosed and undertreated**
4. **Function and quality of life are important outcomes**
5. **Social support and patient preferences are critical aspects**
6. **Geriatrics is multidisciplinary issues**
7. **Cognitive and affective disorders prevalent and undiagnosed at early stages**
8. **Iatrogenic disease common and often preventable**
9. **Care is provided in multiple settings**
10. **Ethical and end of life issues guide practice.**

OBJ 4:

- **Common Geriatric Syndromes:**
  - Dementia and Delirium Progressive chronic post neuro-degenerative for dementia, Acute organic/medication caused for delirium and requires ER.
  - Falls Usually caused by medication such as anti-HTN drugs.
  - Polypharmacy Check guideline last page
  - Pressure Ulcers
  - Urinary Incontinence

- **Chronic Disease Burden on elderlies:**

Condition	Age 65	Age 75
Arthritis	**50 %**	**54 %**
Hypertension	**36 %**	**39 %**
Heart	**32 %**	**39 %**
Hearing	**28 %**	**36 %**
Cataracts	**16 %**	**24 %**
Diabetes	**10 %**	**11 %**
Vision	**8 %**	**11 %**

- **Decline in quality of elderly life Causes:**

(Saudi Study, 2015)

- chronic disease
- Falls (**more** with **DM** (58%) & **HTN** (29%))
- sedentary lifestyle (69%; more in joint / bone pain (90%))
- low physical activity (63%)
- sleep disturbances
- Sensory impairments-depression risk
- decreased self-sufficiency.

OBJ 5:

- **Assessment of old patient:**
  - **Comprehensive geriatric assessment (CGA):**
    - Co-ordinated multidisciplinary assessment
    - Identify medical, functional, social & psychological problems
    - The formation of a plan of care including appropriate rehabilitation
    - The ability to directly implement treatment recommodations by the multidisciplinary team
    - Long term follow up
    - Targeting (age & frailty)

- **Elderly care Assessment:**
  - **History**:

Many elderly patients ignore symptoms they may feel that their symptoms are a normal concomitant of aging.

- The past medical history should include previous surgeries, major illnesses, and hospitalizations –within the previous 5 years.
- Immunization status and past results of TB testing.
- Review all medications, both prescription and OTC. "brown bag" technique, where the patient brings all his medications, can be useful.

  - **Physical Examination:**

- Mini-Mental Status Examination +/- formal cognitive testing.
- Blood pressure should routinely be checked both sitting and standing (orthostatic hypotension).
- Sensory loss is common and hearing and vision screens are important for detecting impairment.
- Careful inspection of the oral cavity is part of the nutritional assessment.
- Palpation of the temporal arteries = screen for temporal arteritis.
- The abdominal examination = large aortic aneurysm.
- Rectal and genitourinary examination = uterine prolapse, hernias, and testicular atrophy.
- Gait (↑ risk of falls) = correctable causes of unsteadiness
- Signs of abuse = trauma, burns, and weight loss.

  - **Diagnostic Evaluation**:

- Basic testing such as a CBC, chemistry profile, UA, and TSH.
- Mammography and colon cancer screening (fecal occult blood and/or endoscopy) are recommended for patients until age 75.
- Pap smears can be discontinued at age 65 if there has been regular testing and a Normal Pap smear within the previous 3 years.

Structured Approach	
Multidimensional	**Multidisciplinary**
▪ **Functional ability** ▪ **Physical health (pharmacy)** ▪ **Cognition** ▪ **Mental health** ▪ **Socio-environmental**	▪ **Physician** ▪ **Social worker** ▪ **Nutritionist** ▪ **Physical therapist** ▪ **Occupational therapist** ▪ **Family**

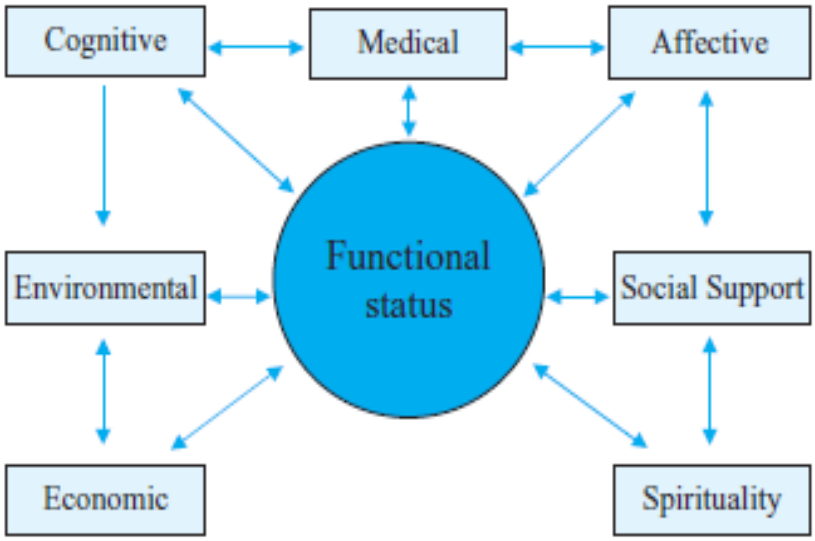


FIGURE 11-1. Interacting dimensions of geriatric assessment.

➢ **Areas of assessment:**

- Functional assessment
- Mobility, gait and balance
- Sensory and Language
- impairments
- Continence
- Nutrition
- Cognitive/Behavior problems
- Depression
- Caregivers.

➢ **Example of Assessment areas:**

- ❑ **Cognitive and affective disorders are prevalent and commonly undiagnosed at early stages: Delirium, multi-infarction dementia.**
- ❑ **Geriatric depression is often undiagnosed**
- ❑ **Iatrogenic illnesses are common and many are preventable:**
  - Polypharmacy, adverse drug reactions.
  - Complications of hospitalization, falls, immobility, and deconditioning.
- ❑ **End Of Life care:**
  - Advance directives are critical for preventing some ethical dilemmas.
  - Palliative care and end-of-life care are essential good quality of life.

➢ **Supporting the Normal Changes in elderlies:** Check Table 9.1

❖ **Changes in Vision:**
- Decreased peripheral vision
- Decreased night vision
- Decreased capacity to distinguish color
- Reduced lubrication resulting in dry, itchy eyes
-

❖ **Changes in Hearing:**
- Sensitivity to loud noises
- Difficulty locating sound
- More prone to wax build up that can affect hearing

❖ **Changes in Smell and Taste:**
- Decreased taste buds and secretions
- Decreased sensitivity to smell

❖ **Changes in Skin:**
- Decrease in moisture and elasticity
- More fragile- tears easily
- Decrease in subcutaneous fat
- Decrease in sweat glands -less ability to adjust body temperature.
- Tactile sensation decreases- not as many nerves
- May bruise more easily

❖ **Changes in Elimination:**
- Bladder atrophy- inability to hold bladder for long periods
- Constipation can become a concern because of slower metabolism
- Men can develop prostate problems causing frequent need to urinate
- Incontinence make occur because of lack of sphincter control

What's the most significant change?

Hearing loss.

Blind elderly can socialize, joke and talk with people easily. Deaf elderly are hard to communicate with, are very loud when they talk; they can't hear you, and they get irritated if you speak to them with a loud voice. Deaf elderly tend to become more socially isolated (↑ depression).

Cognitive functions: Memory, thinking, language, calculation, speech, orientation of TPP, Executive function, Multi-tasks function.

Memory loss causes: Alzheimer "start with atrophy in temporal hippocampus region", Ischemic, Vit B12, Encephalopathy, Frontal temporal dementia "behavior/motor func./personality", infection "syphilis, HIV", Trauma, Lew's bodies " Visual hallucinations".

❖ **Changes in Bones and Joints:**

- Decreased height due to bone changes
- Bones more brittle – risk of fracture
- Changes of absorption of calcium
- Pain from previous falls or broken bones
- Joints less lubricated – may develop arthritis

Short memory loss characterized by: Repeating stories or Qs – forgetting names

❖ **Changes in Cognitive Ability:**

- Don't lose overall ability to learn new things but there are changes in the learning process
- Harder to memorize lists of names and words than for a younger person
- Sensory and motor changes as well as cognitive ability may affect ability to respond – hard to know which is which.

❑ **Functional Ability:** Functional status refers to a person's ability to perform tasks that are required for living.

- **Two key divisions of functional ability:**
  - Activities of daily living (ADL).
  - Instrumental activities of daily living (IADL).

❑ **Sedative Medications:** anti-Histamine, Tricyclic anti-depressants "anticholinergic effect", anti-convulsive, NSAIDs "causing interstitial nephritis", Diuretics "causing Dehydration and risk fall due to urinations", Panadol PLUS "codeine effect causing addiction and constipation", Panadol EXTRA "having Caffeine disturbing sleep".

❑ **Complications of Diseases:** due to asymptomatic diseases, culture believe, isolation or neglected patient.

❑ **Functional Assessment:**

- **Activities of Daily Living (ADL):** Feeding, dressing, ambulating, toileting, bathing, transfer, continence, grooming, communication. If patient can't do them (at least one) with no organic causes then it's **Dementia**

- **Instrumental ADL (IADL):** Cooking, cleaning, shopping, meal prep, telephone use, laundry, managing money, managing medications, ability to travel. If patient can't do them (at least one) with no organic causes then it's **Dementia**

❑ **Cognitive Assessment:**

- **MOCA :** The Montreal Cognitive Assessment MoCA is a brief cognitive screening tool for Mild Cognitive Impairment
- **MMSE :** The Mini–Mental State Examination (MMSE) or Folstein test is a 30-point questionnaire that is used extensively in clinical and research settings to measure cognitive impairment.
- **Clock Drawing test :** The clock-drawing test is used for screening for cognitive impairment and dementia and as a measure of spatial dysfunction and neglect.

➢ Frailty:

Frail people suffer from three or more of five of following symptoms:

1. **Unintentional weight loss** (**≥10 lbs in last year**).
2. Muscle loss.
3. A feeling of fatigue.
4. Slow walking speed.
5. Low levels of physical activity.
6.

These people are vulnerable to significant functional decline. And they are typically 75 years of age or older with multiple health conditions; acute and chronic; as well as functional disabilities.

➢ Prevention:

- **Falls:** Ambulatory Adults >65 30% per year (I.e. 30% of old people who are able to move, will end up falling). It's a major cause of disability and the leading cause of death due to injury in people aged +75.
- **Causes of falls:**
    - **Extrinsic:** Environment (Home safety)
    - **Intrinsic:**

a. **Age**	b. **Disease**
Gait/Balance Disorder	Dementia
Sarcopenia	Depression
Vestibular	Drugs
Orthostatic Hypotension	Foot problems
Special Senses–Vision/Hearing	Incontinence

- **Consequences:**
    - Death
    - Injury:
        - Fractures (10-15%)
        - Hip (1-2%)
    - Long Lie
    - Fear of Falling
    - Reduced Activity/Independence (25%)

- **Reducing the risk of falling:**
    - **Treatable risks:**
        - Problem walking or moving
        - Orthostatic hypotension
        - Four or more meds or one psychoactive
        - Unsafe footwear or foot problems
        - Environmental hazard (home safety)

- **Prognostic factors & risk points for 4 year mortality rates for elderly living at home:**

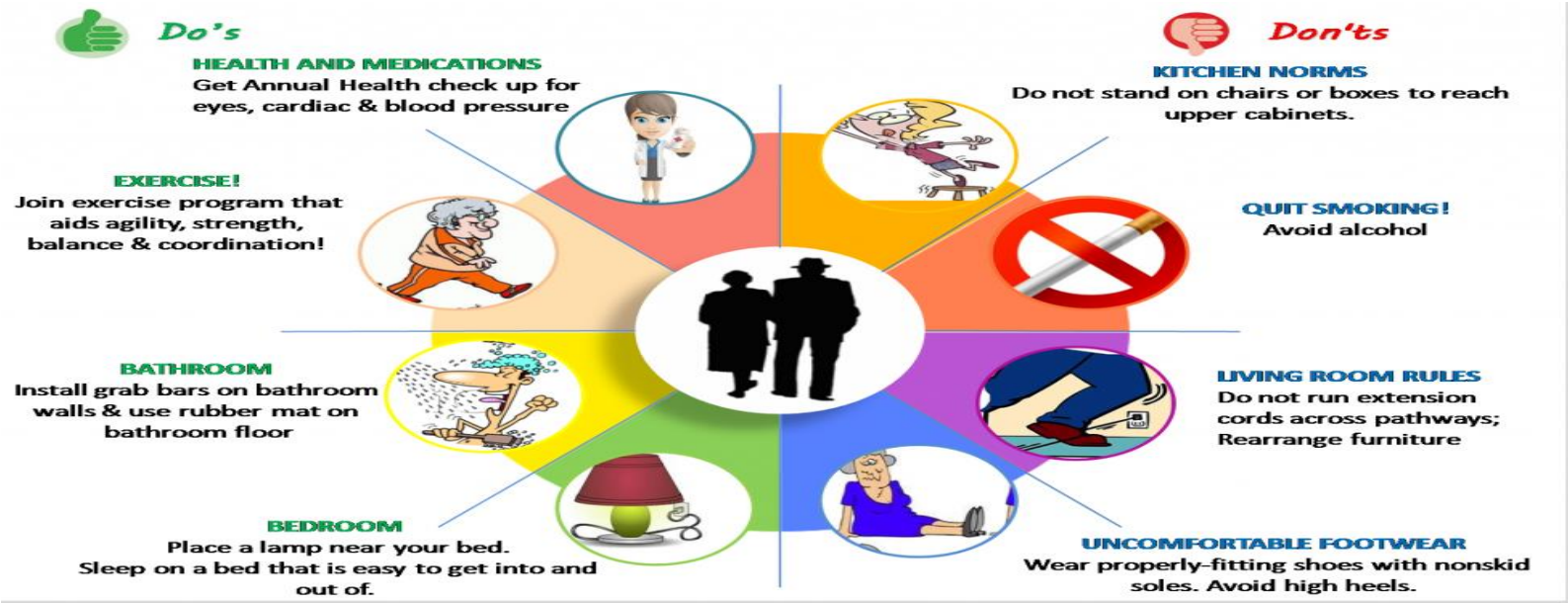
Prognostic Factor	Risk points	Prognostic Factor	Risk points
Age 60-64 yrs	1	BMI < 25 kg/m^2	1
64-69	2	Current smoker	2
70-74	3	**Function:**	
74-79	4	Bathing difficulty	2
80-84	5	Difficult handling finance	2
85 +	7	Difficult to walk several blocks	2
Male sex	2	**Sum of Risk Points**	**4 year Mortality**
Diabetes Mellitus	1	1-2	2%
Cancer	2	3-6	7%
Lung Disease	2	7-10	19%
Heart Failure	2	> 10	53%

➢ **Physical Exercise:** needed to prevent muscle atrophy
Reduces fall risk by 47% **"30 mins daily"**

➢ **Health Maintenance in the Elderly:**
- Recommend primary and secondary disease prevention screening.
- Review all medications.
- Control all chronic medical problems.
- Optimize functions
- Verify the presence of an adequate support system
- Discuss and document advanced directives

➢ **Prevention and Promotion:**
- Smoking in middle age is a risk factor
- Exercise
- Osteoporosis (Calcium)
- Vaccines (influenza)
- Treatment of HTN & management of risk factors

Immunization:
-Tetanus immunization should be updated every 10 years.
-All patients over 65 years of age should receive pneumococcal and influenza vaccines.
- Herpes zoster as a one-time injection after age 60.
- Patients at risk because of travel hepatitis A or B vaccines.



Those objectives are missing due to lack of the sources and they are covered in another lecture :

- Common home care services
  (ماذا يحتاجون "الحالة الاجتماعية" و مالمشاكل التي تكون لديهم عادة)
- Home care teams and their roles in medical practice.
  (عندما ذكر اننا نحتاج الى سيارة و سائق و طبيب و ممرضة و معالج نفسي و معالج طبيعي و ادوية و اجهزة قياس بسيطة عند زيارة منازلهم للفحص عليهم)
- Home safety :
  (عندما ذكر الدكتور عن تجهيز المنزل بالأسرة الطبية و الأدوية المرقمة و كثرة المساند الجدارية حتى لا يصاب المريض)

  This is in brief to avoid any shortages .

Over all Summary:

- Elderly: ≥ 60 years.
- Normal aging: some hearing loss, loss of skin elasticity and benign forgetfulness (dementia is pathological).
- Many normal changes in vision, hearing, feeling, and others, need good support.
- Problems: many chronic diseases with polypharmacy, iatrogenic problems, many underdiagnosed illnesses and social isolation.
- Causes of decline in quality of life in Saudi elderly: chronic illnesses then falls.
- Geriatric assessment is an interdisciplinary approach.
- Functional ability is tested by (1) activities of daily living and (2) instrumental activities of daily living.
- Along with assessment of vision and gait, an environmental assessment and education of the family should be included to help with the prevention of falls.
- Most patients should have basic testing such as a CBC, chemistry profile, UA, and TSH.

Table 9.1 Normal changes of ageing

System	Clinical/functional effects
Cardiovascular	Cardiac enlargement/left ventricular hypertrophy ↓ cardiac output → ↓ exercise capacity ↓ response of heart rate to exercise Systolic hypertension Left ventricular failure
Respiratory	↓ FEV_1/FVC and ↑ residual volume ↑ susceptibility to infection ↑ susceptibility to aspiration
Endocrine	↓ insulin sensitivity → impaired glucose regulation ↓ thyroid hormone production
Gastrointestinal	↑ in gastric acid production Constipation
Genito-urinary	↓ glomerular filtration rate not reflected by ↑ creatinine Benign enlargement of the prostate (25–50% of men >65y) → prostatism Slowing of sexual function; erectile dysfunction Dry vagina and ↑ susceptibility to urinary infections (♀)
Musculoskeletal	Sarcopenia—↓ muscle strength/power, ↓ lean body mass (30–40%), ↑ fat body mass ↓ mobility ↑ likelihood of falls ↑ osteoporosis /susceptibility to fractures
Nervous	Slower thought processes/reaction times General decline in performance ❗ Dementia is *not* a normal change of ageing
Vision	Presbyopia (difficulty focussing on near objects); ↓ visual acuity; cataract; impaired dark adaptation
Hearing	High frequency hearing loss/presbyacusis—deafness affects 80% of 80y olds Degenerative changes in the inner ear → impairment of balance causing falls
Immune	Atrophy of the thymus Reduced immune function resulting in ↑ infectious disease, reactivation of latent disease (e.g. TB, shingles), ↑ cancer, and ↑ autoimmune disease
Skin/hair	Dry skin, wrinkles, tendency to bruise easily, and slower healing Greying of the hair ↓ sweating, heat generation, and heat conservation → heat stroke; hypothermia ↓ sensitivity to touch, pain, and temperature discrimination → burns, pressure sores

Guidelines for prescribing for the elderly

Think before prescribing

- Is the drug needed?
- Is there another non-pharmacological way of managing the problem?
- Are you treating the underlying condition or the symptoms of it?
- What are the pros and cons of the patient taking this drug?
- What is the evidence base for its use in this age group?
- Will the patient be able to take the drug (formulation; packaging)?
- Will the patient be concordant?
- Will the patient comply with any necessary monitoring?

Limit the range of drugs you use Prescribe from a limited array of drugs that you know well.

Repeats and disposal

- Tell patients how to get more tablets, and monitor frequency of repeat prescriptions
- Review repeat prescriptions regularly (📖 p. 144)
- Tell patients what to do with any leftover if a drug is stopped

↓ the dose

- Start with 50% of the adult dose
- Avoid drugs likely to cause problems (e.g. long-acting antidiabetic agents such as glibenclamide)

Review regularly

- Consider on each occasion whether each drug could be stopped or the regime simplified
- Consider lowering dosage of drugs if renal function is deteriorating
- Involve carers, community pharmacists, and other PHCT members

Simplify regimes

- Use od or bd regimes wherever possible
- Avoid polypharmacy

Explain clearly

- Put precise instructions on the drug bottle—avoid 'use as directed'
- Give written instructions about how the drug should be taken
- Ensure explanations are given to carers as well as patients where appropriate

Consider method of administration

- Bottles with childproof tops are often impossible for arthritic hands to open. Suggest the patient asks the chemist for a standard screw cap
- Drug administration boxes, in which the correct tablets are stored in slots marked with the day and time of administration can be helpful. Available from pharmacists and can be filled by the patient, a carer, friend or relative, or the pharmacist
- Medication reminder charts can also be helpful