

Geriatrics -

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Ageing – the most inevitable stage of human life









Geriatrics-Definition:

- The care of **aged people**
- **Sub-specialty** of internal medicine
- Prevention and treatment of **age related disabilities**
- Performed by **Geriatricians**



Geriatric age

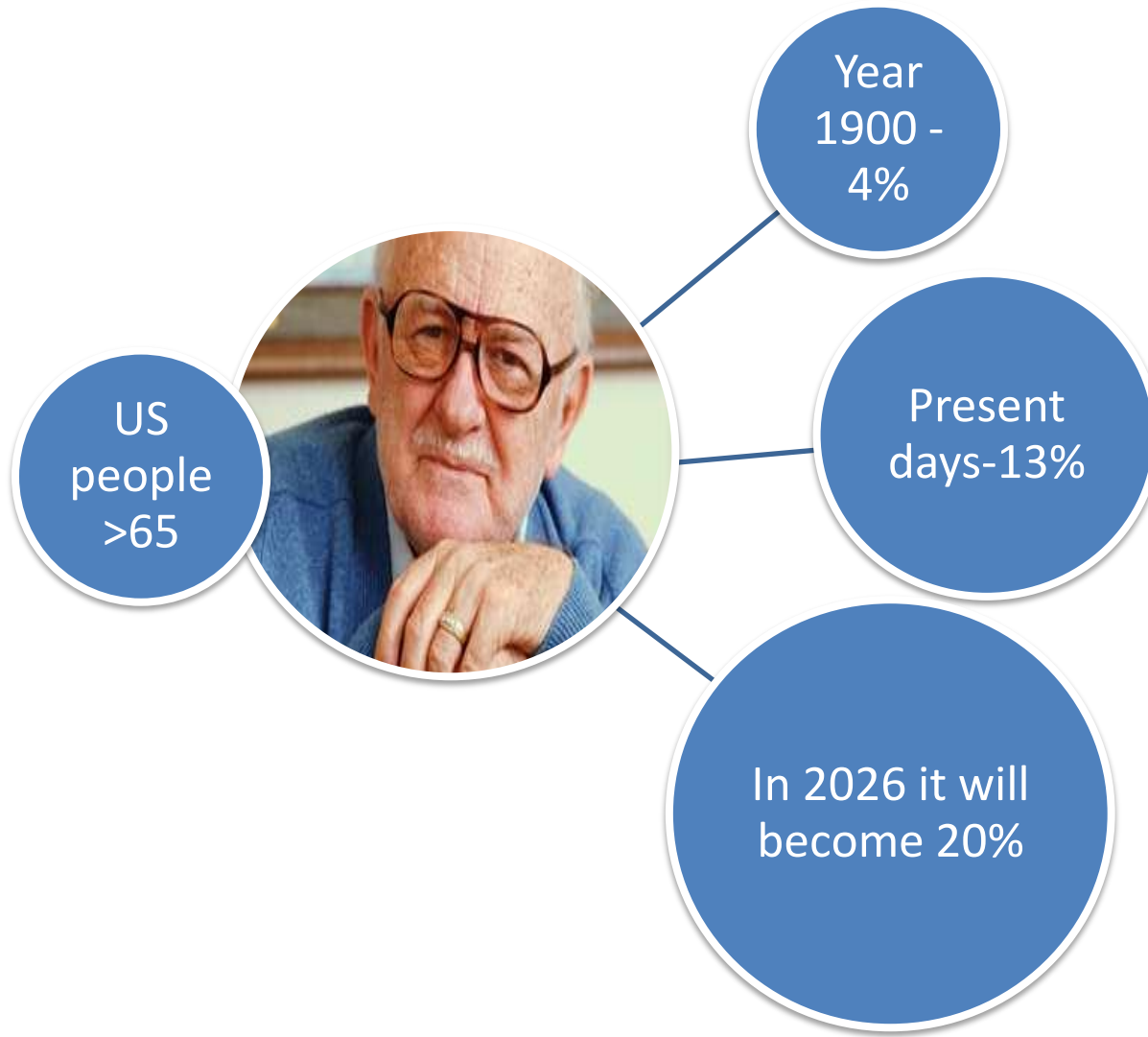
- Age group is not defined precisely
- WHO defines old age as
 ≥ 60 years (developing countries) or
 ≥ 65 years (developed countries)



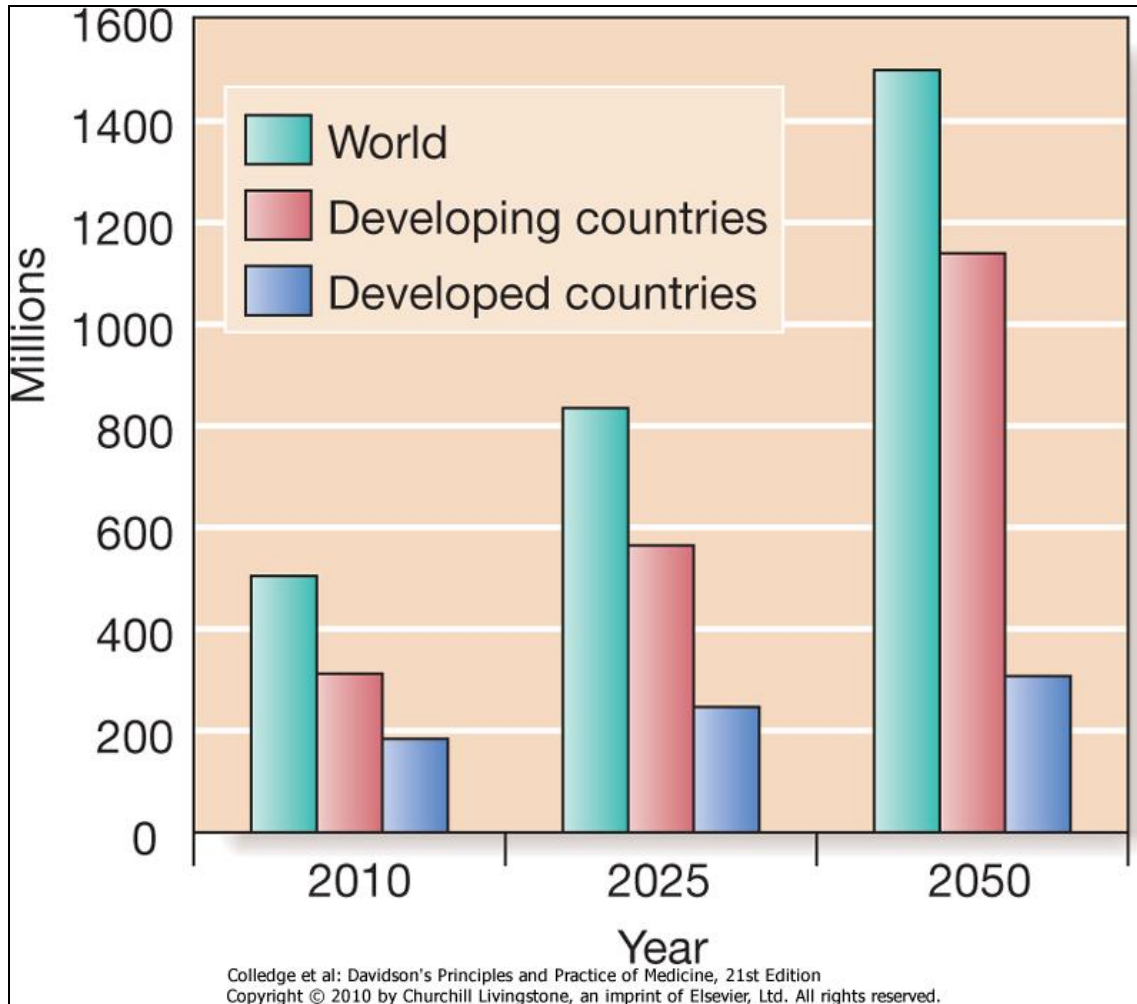
**I will never be an old man.
To me, old age is always 15 years older than I am**

FRANCIS BACON
From a painting

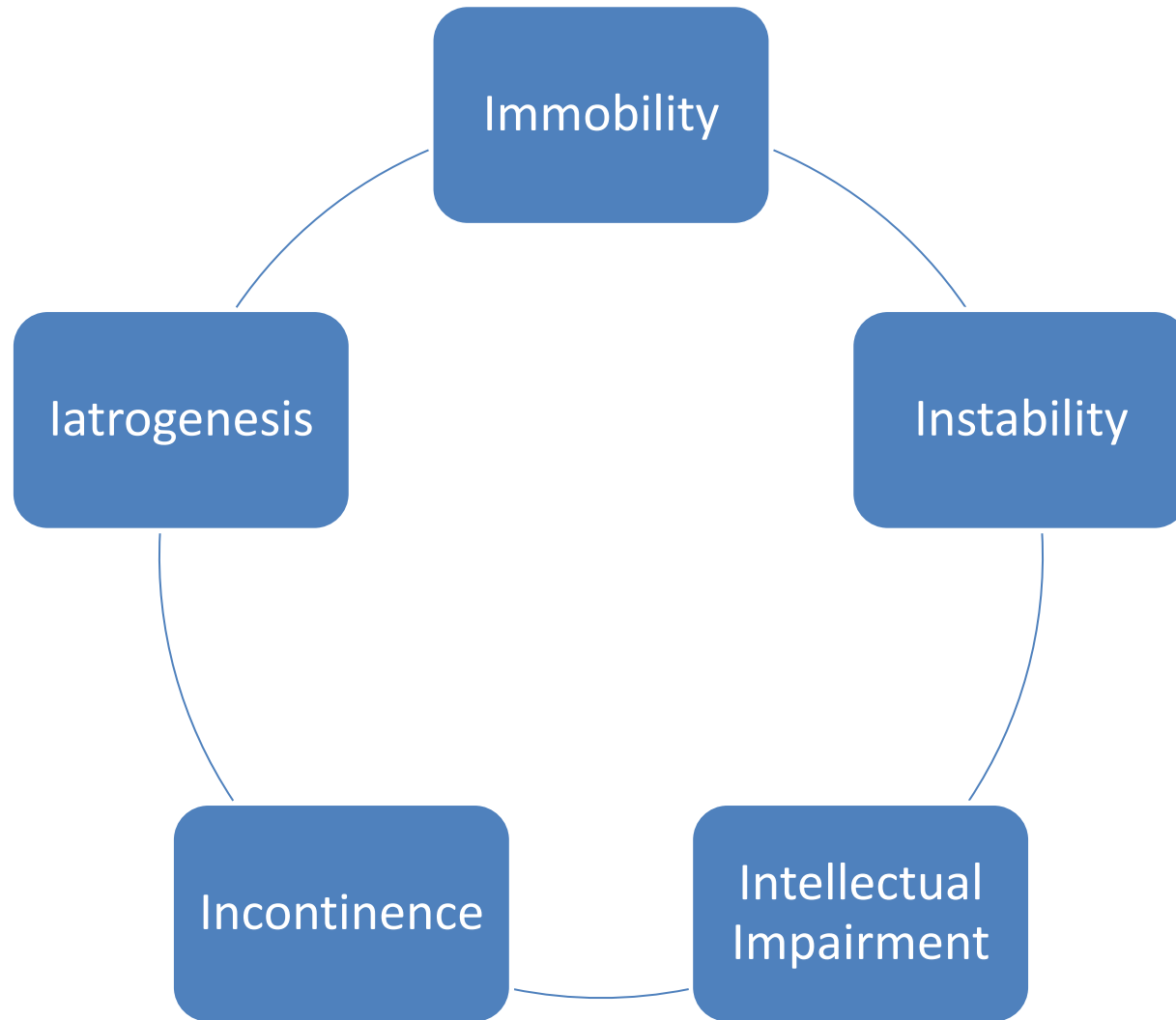
Demography



The rate of population ageing is much faster in developing country



GIANTS OF GERIATRICS (Isaacs 1970)



Presenting problems in geriatric medicine

Characteristics of presenting problems in old age

1. Late presentation

Many people (of all ages) accept ill health as a consequence of ageing and may tolerate symptoms for lengthy periods before seeking medical advice.

2. Atypical presentation

- Infection may present with delirium and without clinical pointers to the organ system affected.
- Stroke may present with falls rather than symptoms of focal weakness.
- Myocardial infarction may present as weakness and fatigue, without the chest pain or dyspnoea.
- Cognitive impairment may limit the patient's ability to give a history of classical symptoms

3. Acute illness and changes in function

Atypical presentations in frail elderly patients include:

- 'failure to cope
- 'found on floor
- confusion' and
- off feet.

4. Multiple pathology

- Presentations in older patients have a more diverse differential diagnosis because multiple pathology is so common. There are frequently a number of causes for any single problem, and adverse effects from medication often contribute

Approach to presenting problems in old age

The approach to most presenting problems in old age can be summarised as follows:

- *Obtain a collateral history.* Find out the patient's usual status (e.g. mobility, cognitive state) from a relative or carer.
- *Check all medication.* Have there been any recent changes?
- *Search for and treat any acute illness.*
- *Identify and reverse predisposing risk factors.* These depend on the presenting problem.

History

- **Slow down** the pace.
- **Ensure the patient can hear.**
- Establish the **speed of onset** of the illness.

If the presentation is vague, carry out a **systematic enquiry**.

- Obtain full details of:
 - all drugs**, especially any recent prescription changes
 - past medical history**, even from many years previously
- **usual function**
 - Can the patient walk normally?
 - Has the patient noticed memory problems?
 - Can the patient perform all household tasks?
- **Obtain a collateral history:** confirm information with a relative or carer and the general practitioner, particularly if the patient is confused or communication is limited by deafness or speech disturbance.

Examinations

- **Thorough** to identify all comorbidities.
- **Tailored to the patient's stamina** and ability to cooperate.
- Include **functional status**:
 - cognitive function
 - gait and balance
 - nutrition
 - hearing and vision

Social assessment (Functional)

Home circumstances

- Living alone, with another or in a care home.

Activities of daily living (ADL)

- Activity of daily living:
 - **domestic ADL(DADL)**: shopping, cooking, housework
 - **personal ADL(PADL)**: bathing, dressing, walking.
- **Informal help**: relatives, friends, neighbours.
- **Formal social services**: home help, meals on wheels.



7.4 Screening investigations for acute illness

- Full blood count
- Urea and electrolytes, liver function tests, calcium and glucose
- Chest X-ray
- Electrocardiogram
- C-reactive protein: useful marker for occult infection or inflammatory disease
- Blood cultures if pyrexial

Frailty-Loss of an individuals ability to withstand minor stresses

Frailty scale:

- Unintentional weight loss
- Muscle weakness
- Exhaustion
- Low physical activity
- Slowed walking speed

A healthy person scores 0; a very frail person scores 5

Falls

- Around 30% of those over 65 years of age fall each year, this figure rising to more than 40% in those aged over 80. Although only 10–15% of falls result in serious injury, they are the cause of more than 90% of hip fractures in this age group, compounded by the rising prevalence of osteoporosis



7.5 Risk factors for falls

- Muscle weakness
- History of falls
- Gait or balance abnormality
- Use of a walking aid
- Visual impairment
- Arthritis
- Impaired activities of daily living
- Depression
- Cognitive impairment
- Age over 80 years
- Psychotropic medication



7.6 Abnormal gaits and probable causes

Gait abnormality	Probable cause
Antalgic	Arthropathy
Waddling	Proximal myopathy
Stamping	Sensory neuropathy
Foot drop	Peripheral neuropathy or radiculopathy
Ataxic	Sensory neuropathy or cerebellar disease
Shuffling/festination	Parkinson's disease
Marche à petits pas	Small-vessel cerebrovascular disease
Hemiplegic	Cerebral hemisphere lesion
Apraxic	Bilateral hemisphere lesions

Dizziness

- Dizziness is very common, affecting at least 30% of those aged over 65 years in community surveys. Dizziness can be disabling in its own right and is also a risk factor for falls. Acute dizziness is relatively straightforward and common causes include
 - hypotension due to arrhythmia, myocardial infarction, gastrointestinal bleed or pulmonary embolism
 - onset of posterior fossa stroke
 - vestibular neuronitis.

Delirium

- Delirium is a syndrome of transient, reversible cognitive dysfunction. It is very common, affecting up to 30% of older hospital inpatients, either at admission or during their hospital stay.



7.8 Risk factors for delirium

Predisposing factors

- | | |
|--|--|
| <ul style="list-style-type: none">• Old age• Dementia• Frailty | <ul style="list-style-type: none">• Sensory impairment• Polypharmacy• Renal impairment |
|--|--|

Precipitating factors

- | | |
|---|--|
| <ul style="list-style-type: none">• Intercurrent illness• Surgery• Change of environment or ward• Sensory deprivation (e.g. darkness) or overload (e.g. noise)• Medications (e.g. opioids, psychotropics) | <ul style="list-style-type: none">• Dehydration• Pain• Constipation• Urinary catheterisation• Acute urinary retention• Hypoxia• Fever• Alcohol withdrawal |
|---|--|

Common cause and investigations

Pneumonia
UTI
Skin: cellulitis, abscess
Gram-negative sepsis



Infection

Full blood count, CRP
Chest X-ray
Urinalysis and culture
Others as appropriate: sputum, blood cultures, wound swabs

Acute renal impairment
Hyponatraemia/hypernatraemia
Hypercalcaemia
Hypoglycaemia
Hepatic encephalopathy
Thiamin deficiency
Hypothyroidism*
B₁₂ deficiency*



Metabolic disturbance

Urea and electrolytes
Plasma calcium
Capillary blood and plasma glucose
Liver function tests
Thyroid function tests
B₁₂ and folate

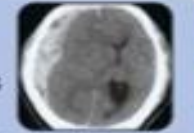
Any drug but particularly
• Anticholinergics
• Digoxin
• Opiates
• Psychotropics
• High-dose corticosteroids
Withdrawal of alcohol, opiate, SSRI or benzodiazepine



Toxic insult

Digoxin level if prescribed

Acute stroke
Subdural haematoma
Encephalitis or meningitis
Seizure (post-ictal)
Space-occupying lesion, e.g. tumour



Acute neurological conditions

CT brain: only when intracranial lesion is suspected (focal neurological signs, recent fall or head injury) or no other physical cause of delirium is identified
Lumbar puncture: only if meningitis or encephalitis is suspected

Pulmonary embolism
Pneumonia
Pulmonary oedema
COPD exacerbation
Acute MI



Hypoxia

Pulse oximetry (*arterial blood gases if low*)
Chest X-ray
ECG

Urinary incontinence

- It occurs in all age groups but becomes more prevalent in old age, affecting about 15% of women and 10% of men aged over 65

Urinary incontinence

Address contributory factors:

- UTI
- Severe constipation
- Drugs, e.g. diuretics
- Hyperglycaemia
- Hypercalcaemia
- Restricted mobility
- Acute confusion

If still incontinent:

- Establish the pattern of urinary loss (diary is helpful)
- Measure residual urine volume (by ultrasound)
- Assess for vaginal prolapse and atrophic vaginitis (women)
- Assess prostate by rectal examination (men)

Urge

Bladder retraining
Antimuscarinic drugs, e.g. solifenacin, tolterodine

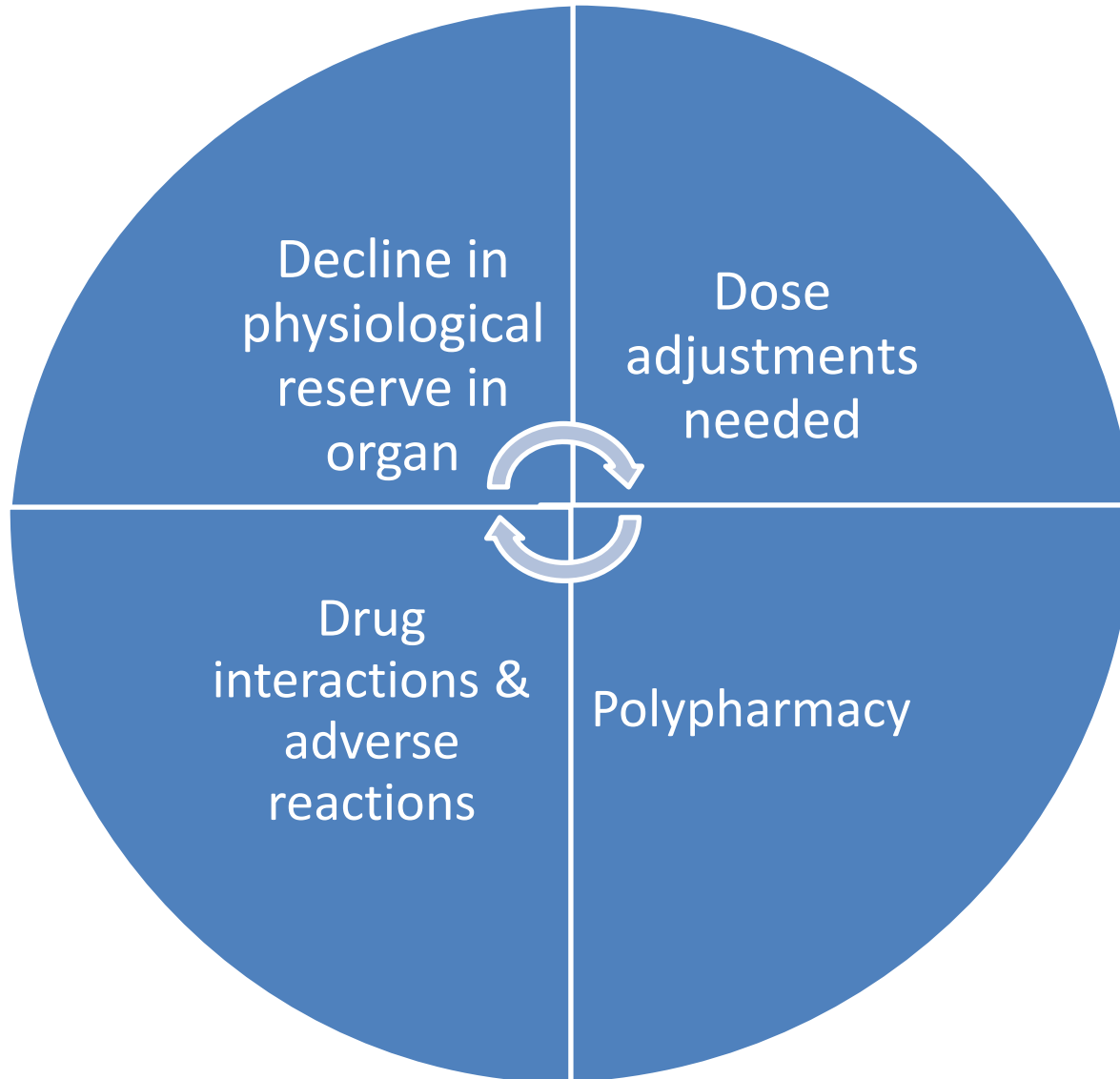
Stress

Pelvic floor muscle training
Surgical intervention if unsuccessful

Overflow

(i.e. residual volume > 100 mL)
Surgical relief of obstruction (e.g. prostatectomy)
Intermittent catheterisation if no obstruction



Drugs related Problems in geriatrics



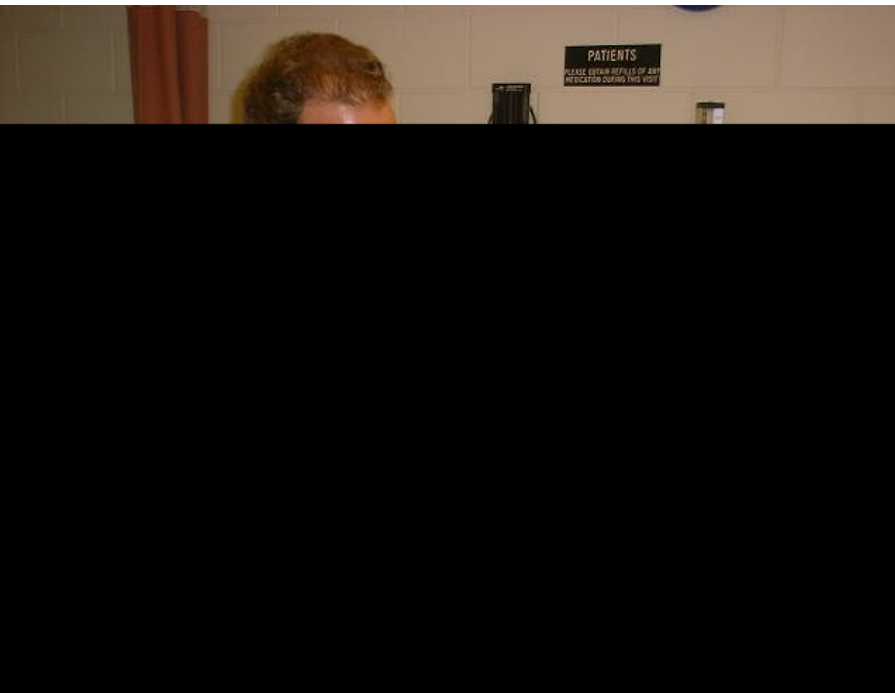
Adverse drug reactions



7.11 Factors leading to polypharmacy in old age

- Multiple pathology
- Poor patient education (see [Box 2.20](#) , [p. 35](#) )
- Lack of routine review of all medications
- Patient expectations of prescribing
- Over-use of drug interventions by doctors
- Attendance at multiple specialist clinics
- Poor communication between specialists

Comprehensive Geriatric Assessment



CGA is defined as :

- Multidisciplinary diagnostic and treatment process
- Medical, psychological and functional limitations
- Coordinated plan to maximize health

It differs from a standard medical evaluation by:

- Focus on elderly individual
- Emphasize on functional status & quality of life
- Multidisciplinary approach

Patient selection criteria for CGA:

- High risk elderly patient-frail or chronically ill
- Medical co-morbidities, heart failure or cancer
- Specific geriatric condition such as
 - dementia,
 - falls
 - functional disabilities
- Psychosocial disorders such as
 - depression or
 - isolation

Major component of CGA

Functional capacity

Fall risk

Cognition

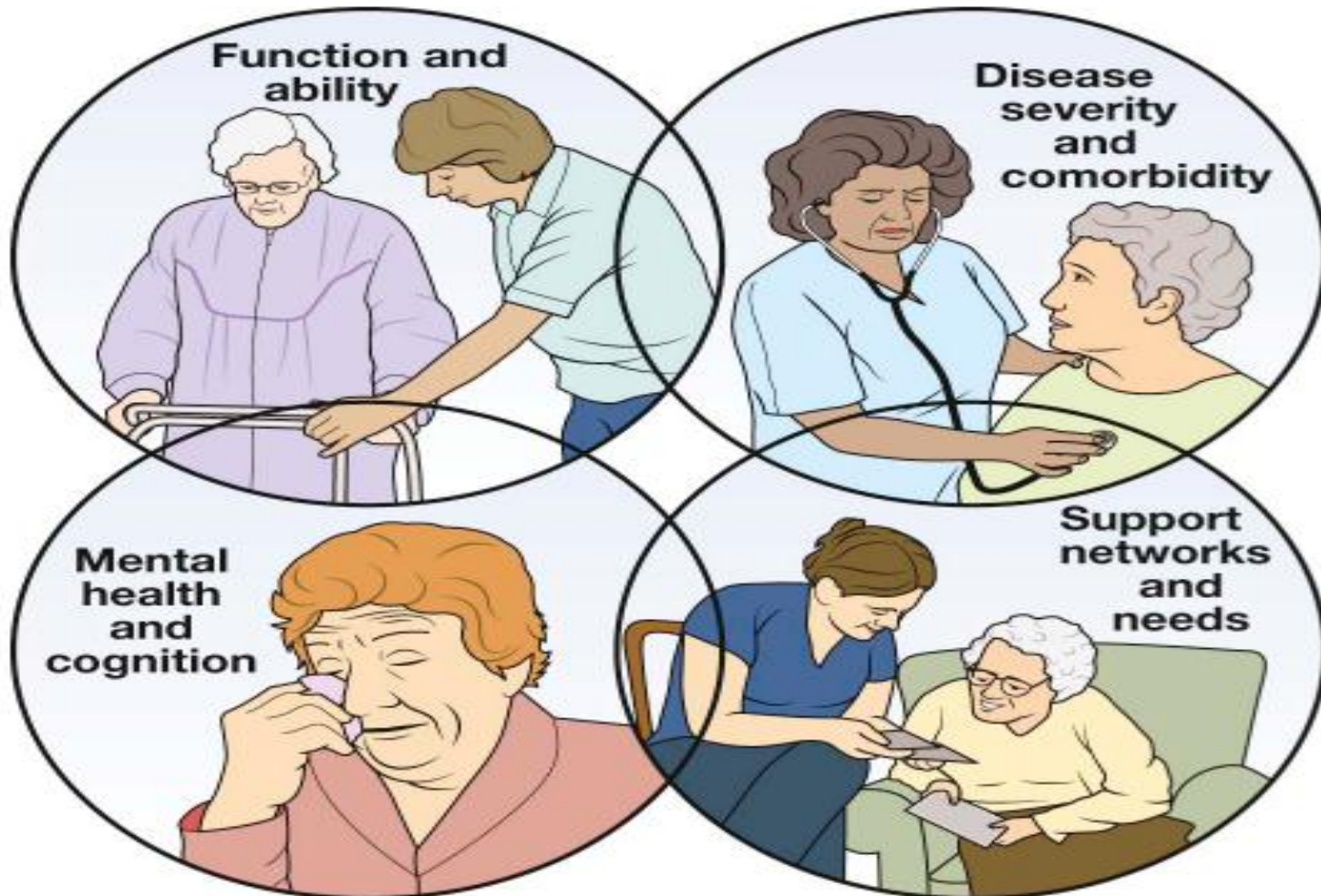
Mood

Polypharmacy

Social support

Financial concerns

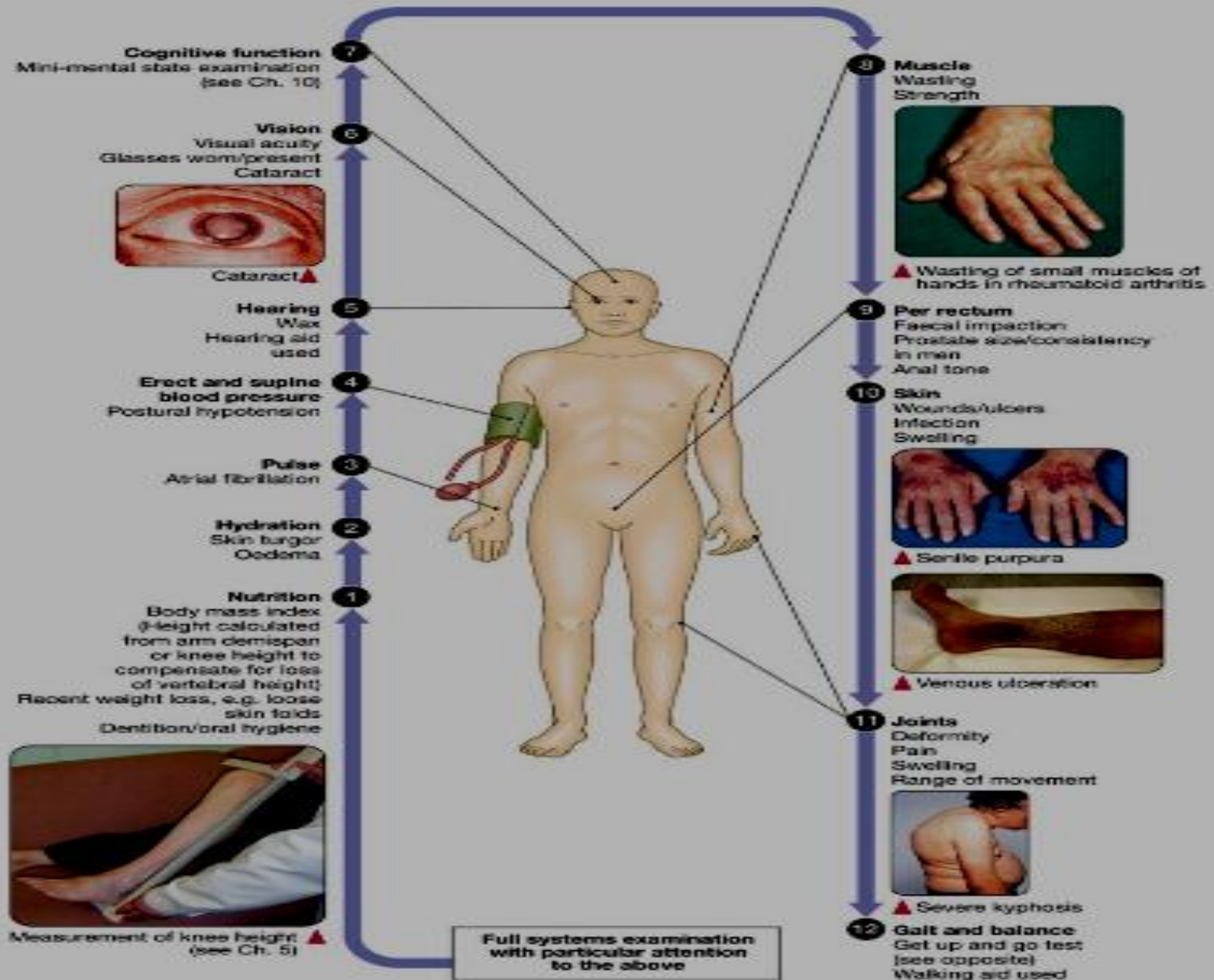
DOMAINS OF Comprehensive Geriatric Assessment



Additional components :

- Nutrition/weight change
- Urinary continence
- Sexual function
- Vision/hearing
- Dentition
- Living situation
- Spirituality

Comprehensive geriatric assessment



Subspecialties

Medicine

- Cardiogeriatrics
- geriatric psychiatry
- geriatric rehabilitation
- geriatric rheumatology, etc.

Surgical

- Orthogeriatric
- Geriatric Cardiothoracic Surgery
- Geriatric urology, etc.

Other

- Geriatric intensive-care unit
- Geriatric nursing
- Geriatric nutrition, etc.

Rehabilitation

Rehabilitation aims to improve the ability of people of all ages to perform day-to-day activities, and to restore their physical, mental and social capabilities as far as possible.

The rehabilitation process

- *Assessment.*
- *Goal-setting.*
- *Intervention.*
- *Re-assessment.*

I 7.13 International classification of functioning and disability

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Factor	Intervention required
Health condition	
Underlying disease, e.g. stroke, osteoarthritis	Medical or surgical treatment
Impairment	
Symptoms or signs of the condition, e.g. hemiparesis, visual loss	Medical or surgical treatment
Activity limitation	
Resultant loss of function, e.g. walking, dressing	Rehabilitation, assistance, aids
Participation restriction	
Resultant loss of social function, e.g. cooking, shopping	Adapted accommodation Social services

Multidisciplinary team working



Multidisciplinary team (MDT) roles

Team member	Activity assessed and promoted
Physiotherapist	Mobility, balance and upper limb function
Occupational therapist	ADL, e.g. dressing, cooking Home environment and care needs
Dietitian	Nutrition
Speech and language therapist	Communication and swallowing
Social worker	Care needs and discharge planning, including organisation of institutional care
Nurse	Motivation and initiation of activities; promotion of self-care Education Feeding, continence, skin care Communication with relatives and other professionals Assessment of care needs for discharge
Doctor	Diagnosis and management of medical problems Coordinator of assessment, management and rehabilitation programme

Research

- The Hospital Elder Life Program(HELP)
 - Designed to prevent delirium and functional decline in the hospitalized patient setting
 - 40% incidence of delirium can be prevented
 - Replicated in over 63 hospitals across the world

Acute Geriatrics-based Ward (AGW)

Geriatric-based versus general wards for older acute medical patients: a randomized comparison of outcomes and use of resources

- AGW shortened the length of hospital stay and
- May have cut down need for long-term institutional living





Biology and genetics of ageing

Ageing can be defined as a progressive accumulation through life of random molecular defects that build up within tissues and cells.

(Are) we (Are) able to slow or even stop the body's clock—at least for a little while ?





This frail elderly person needs your hands along with the stick

Please stand by him.....

Thankyou all

