MOOC 14 Presentation of Illness Symptoms in Older Adults
Chapter 3 - Illness Symptoms in Older Adults

Geriatric Syndrome

What is a *Syndrome*?
"Syn" and "Drome"

- Combining its two Greek roots.
- Syndrome means basically "running together".
- So when diagnosing a condition or disease, doctors tend to look for a group of signs and symptoms existing together.

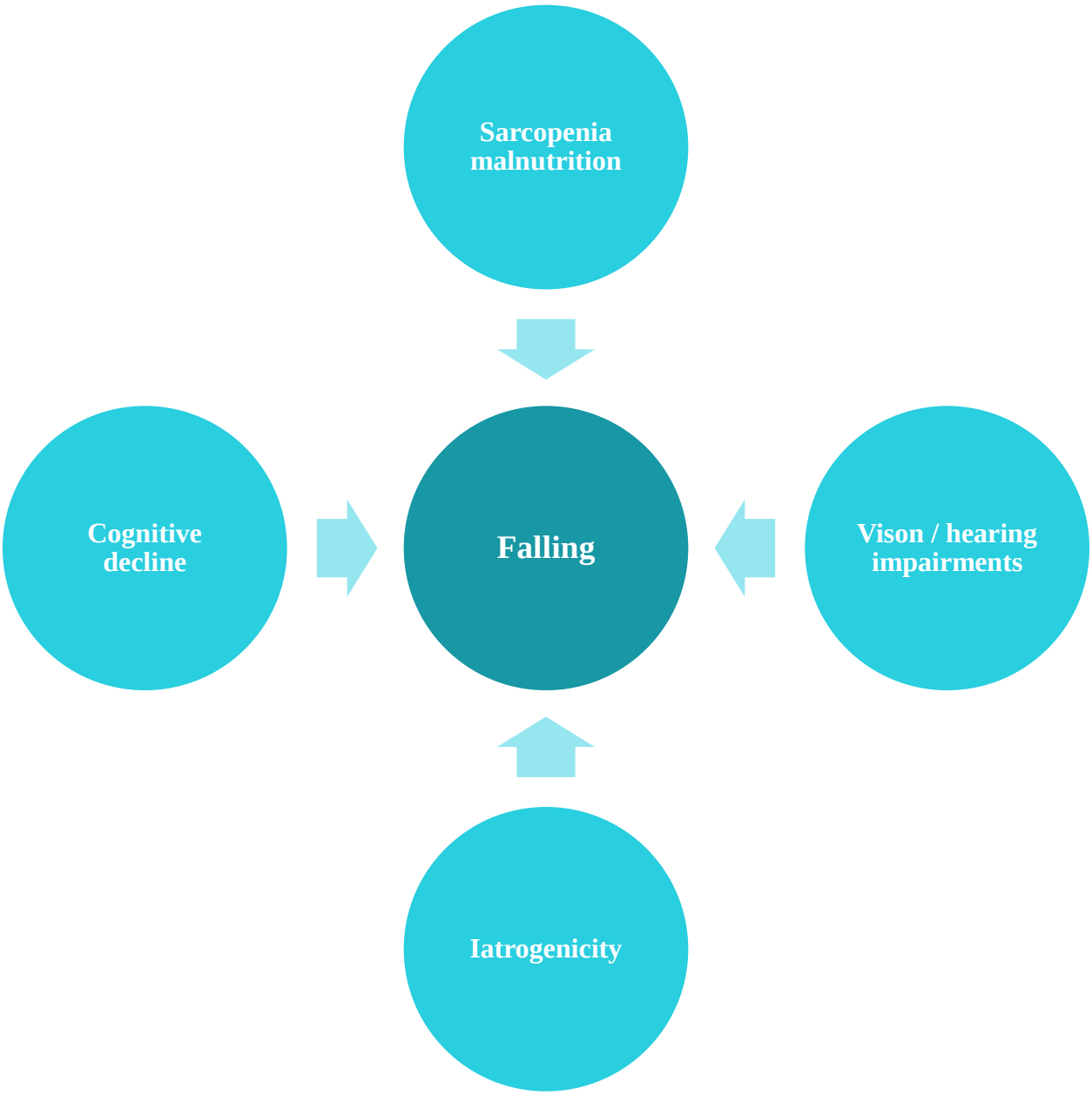
What is a Geriatric Syndrome?

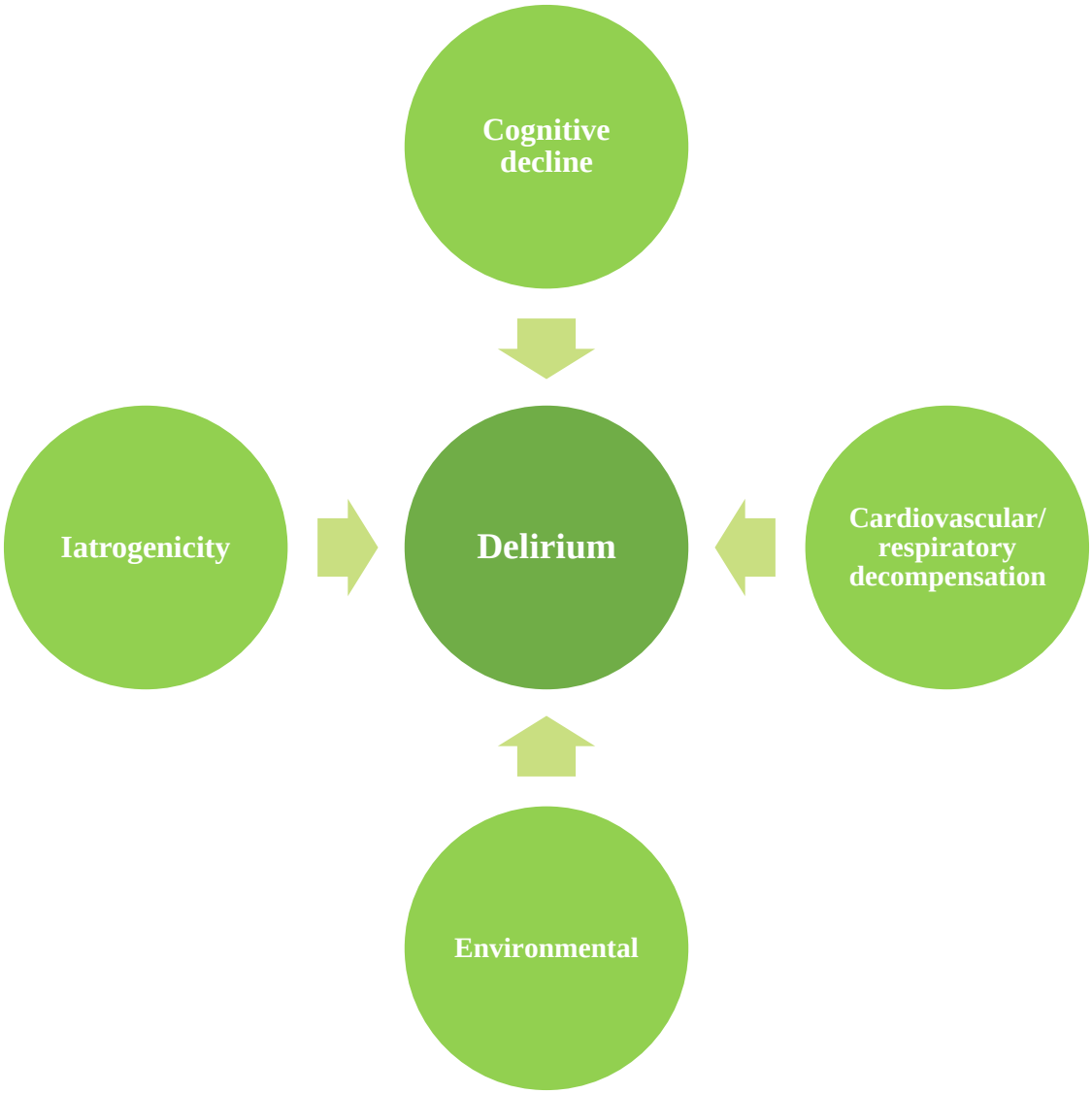
Geriatric Syndromes

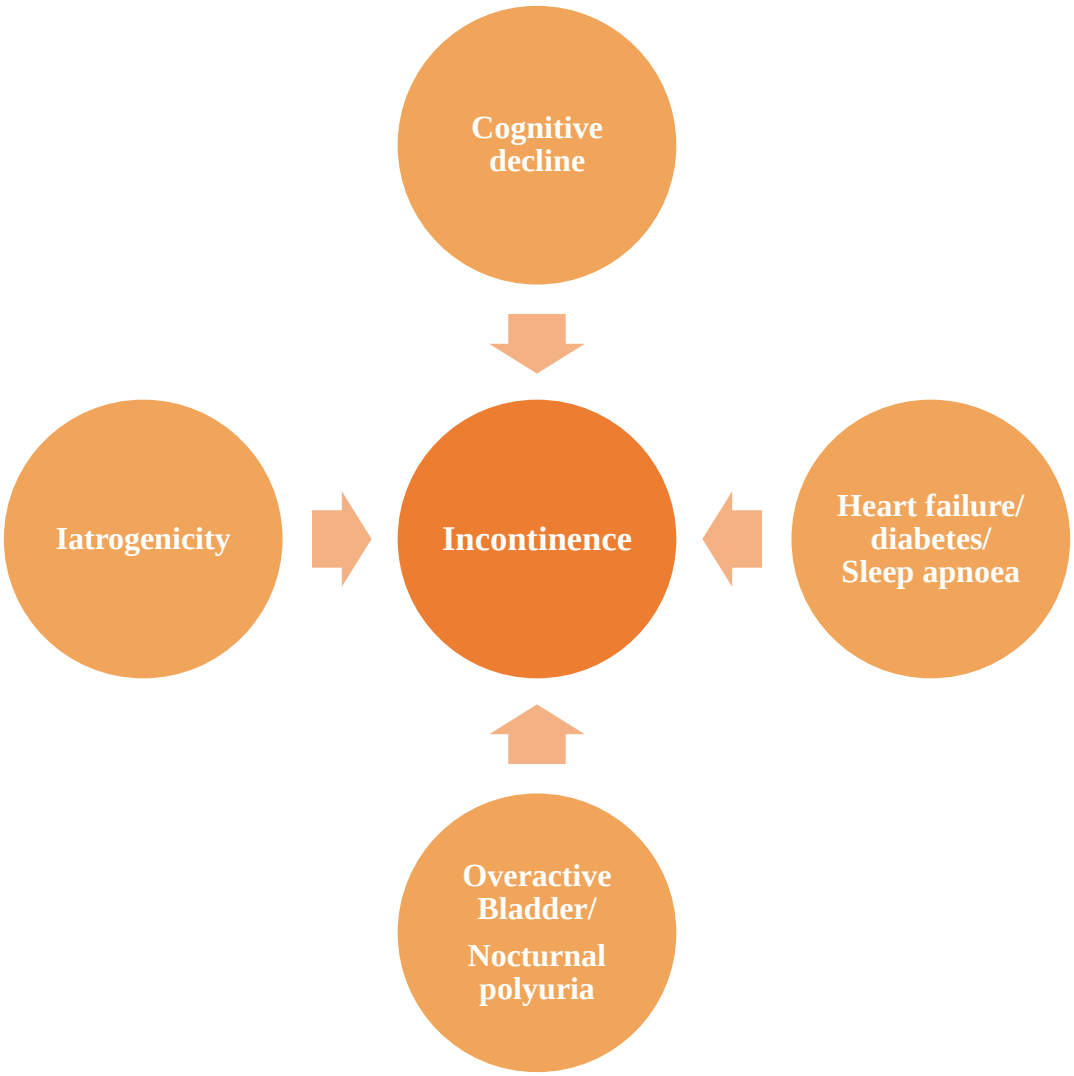
- Geriatricians have embraced the term "geriatric syndromes" or "geriatric giants", using it extensively to highlight the unique features of common health conditions in the older adults.
- Unlike other classical syndromes, like Down's Syndrome where a single and unique pathology (Trisomy 21) has been identified, geriatric syndromes are not caused by specific pathology or disease, rather, are a **manifestation** of multifactorial conditions affecting several organ systems.

Geriatric Syndromes: Three "I"

- **Three "I":**
  - Instability (Falling)
  - Insanity (Delirium)
  - Incontinence
- They are common geriatric syndromes in older patients and characterized by the presence of other disorders (multifactorial) clustering at the same time. (*refer to diagrams*)
- These clusters are only examples, and the surrounding co-morbidities can be variable.


Sarcopenia malnutrition
Cognitive decline
Falling
Vison / hearing impairments
Iatrogenicity


Cognitive decline
Iatrogenicity
Delirium
Cardiovascular/ respiratory decompensation
Environmental



- With time, there are other geriatric syndromes described other than the three classical giants.
  - Iatrogenicity (any injury or illness that occurs as a result of medical care)
  - Pressure injury
  - Failure to thrive, or unintentional weight loss
  - Refusal to eat, etc
- All these syndromes are manifestations of underlying multiple comorbidities and should not be regarded as a single disease alone.
- They are associated with substantial morbidity and poor outcomes.

Atypical Presentations in Older Adults

What Are Atypical Presentations?

- They are also called non-specific presentations.
- **Weakness, fatigue, dizziness, as well as impaired mobility** are among the most frequently reported non-specific complaints (NSCs)
- In contrast to specific complaints such as chest pain, which can be caused by a small number of diseases, NSCs can be caused by numerous underlying conditions.
- Non-specific presentations, which are specific for older people, challenge models of care that are based on single system problems.

Atypical Presentations of Illness

- Traditional signs and symptoms of illness can be less obvious (or are less frequent) in older people.
- For example, respiratory and non-respiratory symptoms are less commonly reported by older patients with pneumonia (in 20% they do not complain of cough, in 35% neither dyspnoea nor sputum was reported, in 50% no fever, in 60% no tachycardia)
- Therefore, acute illness can present with non-specific signs and symptoms such as functional decline or weakness.
- The **three geriatric syndromes: Falling, Delirium and Incontinence** can also be regarded as NSCs because they are manifestations of a cluster of other co-morbidities, which are not easy to notice or diagnose in the initial stage.
- Sometimes NSCs are also taken as “atypical presentations” because the complaint may not indicate the culprit condition and often can lead to a wrong diagnosis.

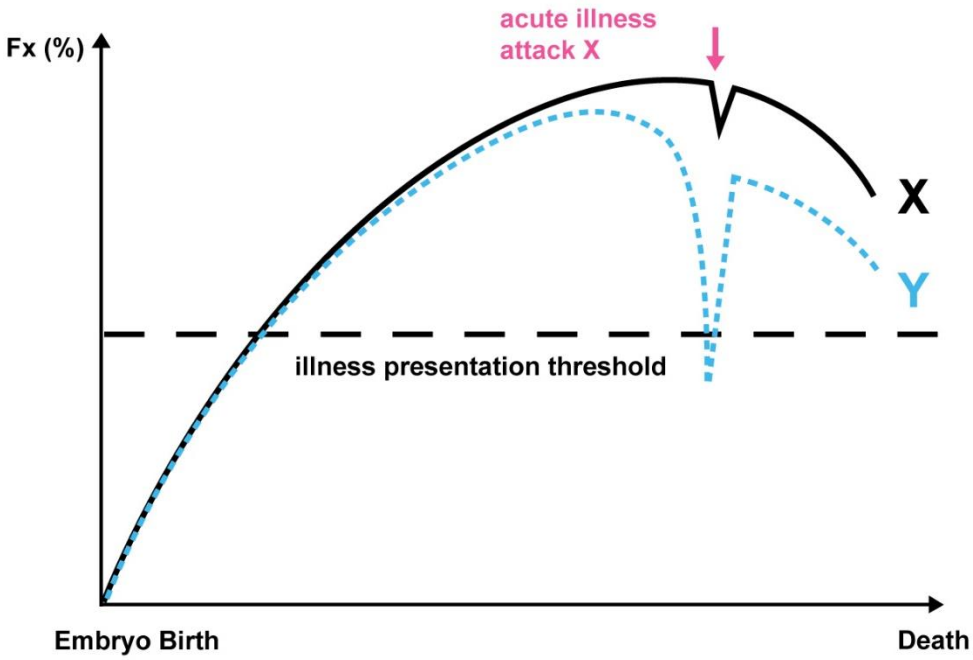
Why Do Older Adults Present Atypically?

1. Age-related physiology factors:
    - such as immuno-senescence – age-associated immuno-deficiency.
    - There may be absence of fever or high white cell count even when having infection.

2. Communication failure:
    - The classification of complaints as ‘non-specific’ is subjective and depends on physician related factors such as clinical experience, training, and the setting.

- Patient-related factors include the patient's ability to articulate symptoms, cognitive status. Under reporting of symptoms may occur.

3. Variation in physiological reserve and cross system presentation:
   - All organs or systems in our body are inter-connected in order to function in a co-ordinated manner.
   - Therefore, when an organ X is being stressed, all other organs will be stressed too.
   - In the diagram (organ development and degeneration trajectory) organ X is having ample reserve and organ Y is marginal in reserve (most vulnerable). When organ X is stressed, its function drops modestly while organ Y's function can drop dramatically below the line of illness presentation threshold. Therefore, organ Y will act as the presenting system instead of organ X, making the presentation atypical and can mis-direct the diagnosis process.
     ➔ The most vulnerable system (lowest reserve) acts as the presenting system instead of the system being stressed.



Case Illustration

Let's take a look on the below 3 cases to illustrate "Cross System Presentation".

Case 1

- Mrs. Wong, a 75-year-old female, complaining of poor short-term memory for 6 months. She left keys in door lock and lost her way in familiar MTR stations and forgot what overcoat she had worn when leaving barber shop.
- Physical examination did not reveal any remarkable abnormalities.

Think about it: Is she suffering from dementia?

- She underwent all basic investigations for suspected dementia.
- All tests were normal except the thyroid function.
- She had **hypothyroidism**.

Atypical presentation in this case:

- Hypothyroidism in Mrs. Wong was presented as ***cognitive decline*** instead of the ***classical symptoms of cold intolerance, weight gain, lethargy***…

But will she have excess risk of dementia in future?

- The answer is yes.
- The brain reserve is marginal in this woman.
- The brain is the vulnerable organ in her and therefore it acts as the presenting organ.
- In future, therefore she will have higher risk of dementia.

Case 2

- Mr. Chan, a 78-year-old male, who was a smoker and living alone.
- One day he was found lying on floor with wetted pants by his neighbours.
- He was brought to the emergency department by ambulance.
- Physical examination revealed no fever. The pulse was fast, and the blood pressure was on the low side.
- He was delirious and uncommunicable.

Can you guess what was happening?

- Urine multi-stix test revealed that there were white blood cells, nitrite and glucose.
- The diagnosis was **urosepsis in underlying undiagnosed diabetes**.

Atypical presentation in this case:

- Mr. Chan's illness presentation was the 3 geriatric giants:
    - Instability (falling on ground)
    - Incontinence (wetted pants)
    - Insanity (delirium)
- In this case of urinary tract infection, there is no fever due to immune-senescence.
- The system being stressed is the urinary tract.
- The typical or specific complains should have been ***urinary frequency, dysuria and fever***, which were all absent in this case.

However, instead, the vulnerable systems, X, Y and Z had acted as the illness presentation systems.

What is X, Y, and Z?

The vulnerable systems (presentation systems) are:

- X: Locomotor system – falling on ground
- Y: Urological system – wetted pants or incontinence
- Z: Brain – delirium

Case 3

- Mrs Lam, 83-year-old woman, attended the geriatric clinic with her daughter (collateral informant), complaining of forgetfulness for one year.
- She enjoyed good past health and was living alone independently in a village house.
- She liked planting flowers and gardening.
- She could manage cooking and shopping.
- Physical examination revealed that:
    - She had a blunted affect.
    - She did not speak much or spontaneously but she was communicable.
    - Her face was erythematous, swollen and there was generalized eczema all over the body.

- Her daughter did not recall any drug or allergen exposure.
- However, there was a strong temporal relationship between the cognitive decline and the skin problem.

What is the diagnosis?

Mrs Lam was suffering from severe eczema and she had depression secondary to the skin disease.

Atypical presentation in this case:

- The disease was presented as a cognitive complaint instead of saying feeling unhappy, insomnia or loss of appetite.
- This is called "pseudo-dementia". That is the dementia is not real and the true diagnosis is depression.
- She was treated with topical steroid and anti-pruritic therapy with urgent referral to dermatology since it affected her mood.

After treatment:

- Follow up 4 weeks later with normal skin and appeared cheerful.
- She could manage her own affairs again and resumed planting flowers in her backyard.
- Her memory problem recovered.

The story did not end here…

One year later:

- The daughter complained that her mother's cognitive problem recurred.
- Her skin condition was perfect.
- This time the dementia was real, indicating that her brain had limited reserve and was vulnerable.
- Therefore, the cognitive domain had acted as the presenting system while in fact it was the affective domain (mood) being stressed.
- This is an illustration of cross system presentation accounting for the atypical presentation of illness in old age.

Take Home Message

- Geriatric syndromes are common presentation of illness in older adults while specific complaints indicating one disease are rare.
- Geriatric Syndromes are just manifestations of a cluster of co-morbidities behind the scenes.
- They can act as cross-system presentation systems and often mis-guide the diagnostic process in clinicians unfamiliarized with older patients.
- This phenomenon challenges traditional models of care that are based on single system problems.

Common Illness Symptoms in Older Adults

Dizziness and Syncope

- Non-vertigo dizziness is a common non-specific complaint and may only represent feeling weak which may demand a workup for general frailty. However, it is important to rule out iatrogenic causes like use of psychotropic medications causing "dizziness".
- Syncope though is not as common as dizziness, may indicate serious underlying medical conditions and warrants prompt medical attention.
- The causes are various and many a times can co-exist. It is essential to rule out readily treatable conditions, like overtreatment of hypertension causing postural dizziness or syncope, or over-treated diabetes mellitus causing hypoglycaemia. Other specific causes include cardiac arrhythmias, low cardiac out diseases, vasovagal episode (relatively uncommon in older persons), neurological diseases etc. All these require specific investigation with equipment in a specialist setting and therefore referral to a specialist is sometimes warranted.

Delirium

- Defined as an acute and transient global cognitive impairment due to widespread disturbance of cerebral metabolism.
- Not easy to differentiate delirium from dementia and often they co-exist.
- Knowing the pre-morbid cognitive function from a collateral informant is critical in making the diagnosis.
- Cause
    - Unlike younger people, the causes of delirium in older adults usually are extra-cranial
    - Adverse drug reactions (anti-cholinergic, psychotropics etc.)
    - Hospitalization in an unfamiliarized environment

- Poor lighting
- Metabolic and electrolyte disturbance
- Hypoxia due to various reasons
- Severe constipation or acute urinary retention
- Severe pain
- Systemic infection and reversible causes
- Generally, these causes can occur together

- Management
  - Placing the older adults in a quiet and calm environment accompanied by the usual caregiver and treating the underlying reversible conditions.
  - Restraints can aggravate the condition and should be avoided as far as possible. They often cause more harm than good.
  - Sedation is only indicated for uncontrollable agitation after failure of all non-pharmacological methods. They should be reviewed regularly and weaned off as soon as possible.

Hypothermia

- Defined as having a body core temperature below 35 degrees Celsius.
- Multiple age-related physiological changes that predispose an older adult to hypothermia:
  - Cognitive decline can impair recognition of a cold environment. The shivering activity to generate heat to regulate normal body temperature is impaired in old age.
  - In face of coldness, peripheral vasoconstriction is inefficient to reduce body heat loss. The basal metabolic activity is diminished and cannot generate body heat readily.
  - The mobility or muscle activity is low to generate adequate body heat.
  - The loss of subcutaneous fat reduces heat insulation and cannot prevent body heat loss.
  - A frail older adult can have one or more of these characteristics and therefore it is not uncommon that he or she can suffer from hypothermia in winter.

- Preventive measures
  1. Avoid sitting or lying for a long period. Move around regularly. Muscle activity can generate heat.

2. Eat well and eat warm food.
3. Maintain a warm home environment.
4. Wrap up well with multi-layer clothes. Wear a hat, gloves and stockings even indoors.

Hypothermia is a medical emergency, and these older adults need urgent hospitalization for rewarming.

References

Perissinotto, C.M., & Ritchie C. (2014). Atypical presentations of illness in older adults. Williams B.A., & Chang A, & Ahalt C, & Chen H, & Conant R, & Landefeld C, & Ritchie C, & Yukawa M(Eds.), *Current Diagnosis & Treatment: Geriatrics, Second Edition*. McGraw Hill. https://accessmedicine.mhmedical.com/content.aspx?bookid=953&sectionid=53375629

Ranajit, S. C. (n.d.). *UNCOMMON PRESENTATION OF COMMON DISEASES IN GERIATRIC POPULATION* [PowerPoint slides]. http://bsmedicine.org/congress/2018/Dr._Ranjit_Sen.pdf

Rikkert, M.G.M.O. (2017). Conceptualizing geriatric syndromes. *Oxford Textbook of Geriatric Medicine (3 edn)*, Pages 355–362. https://doi.org/10.1093/med/9780198701590.003.0048

-- End of Chapter 3 --