

# MOOC 16 Exploring Intrinsic Capacity

## Chapter 1 Understanding Intrinsic Capacity


We have studied the concept of healthy ageing and the interrelation between functional ability, intrinsic capacity, and environmental characteristics in **MOOC 14 Demand on your CARE: Presentation of illness symptoms in older adults**. (You may click [here](#) for a quick revision.)

We all know that being free of diseases doesn't necessarily mean you are healthy. From experience, most older adults not only desire longevity but also want to live independently and with dignity. In this course, we will further explore what intrinsic capacity is. In this chapter, we will gain a deeper understanding of each domain of intrinsic capacity.

Let's start with the below animation.

### What is intrinsic capacity (IC)?

- The concept of intrinsic capacity was introduced by the World Health Organization in 2015.
- **Intrinsic capacity** comprises all the mental and physical capacities that a person can draw on.
- It includes their ability to walk, think, see, hear, and remember.
- The level of intrinsic capacity is influenced by several factors, such as the presence of diseases, injuries, and age-related changes.
- It represents an individual's overall combination of physical and mental abilities, which play a crucial role in maintaining functional independence and well-being as we age.
- IC was found to be associated with polypharmacy, incontinence, poor/fair self-rated health, frailty, falls, and long-term nursing home stay.


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## Why is intrinsic capacity important for healthy ageing?

Intrinsic capacity plays a crucial role in promoting healthy ageing.

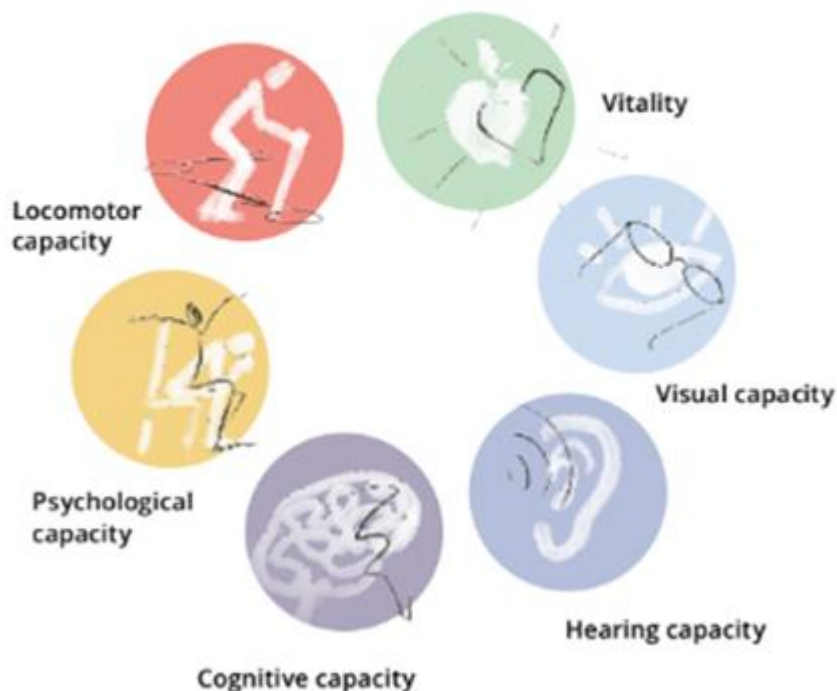
- **Holistic Approach:** Unlike traditional disease-centered models, which focus solely on specific illnesses, intrinsic capacity considers a broader perspective. It looks at an older person's functional abilities as a whole, emphasizing their ability to be and do what they value most.
- **Determinants:** Intrinsic capacity is influenced by various factors, including genetics, physiological changes due to ageing, diseases, injuries, and lifestyle choices. It interacts with the physical and social environment to enable activities of daily living (ADL) and participation.
- **Health Monitoring:** By assessing intrinsic capacity, healthcare professionals can identify fundamental determinants of functional ability in older adults. This provides an opportunity for early intervention to maintain or enhance an individual's abilities as they age.
- **Personalized Care:** Health priorities vary widely among older individuals. Intrinsic capacity allows for a personalized approach, recognizing that each person's needs and abilities are unique.

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## Domains of intrinsic capacity Increased ADRs With Age





FIG. 1.



### KEY DOMAINS OF INTRINSIC CAPACITY

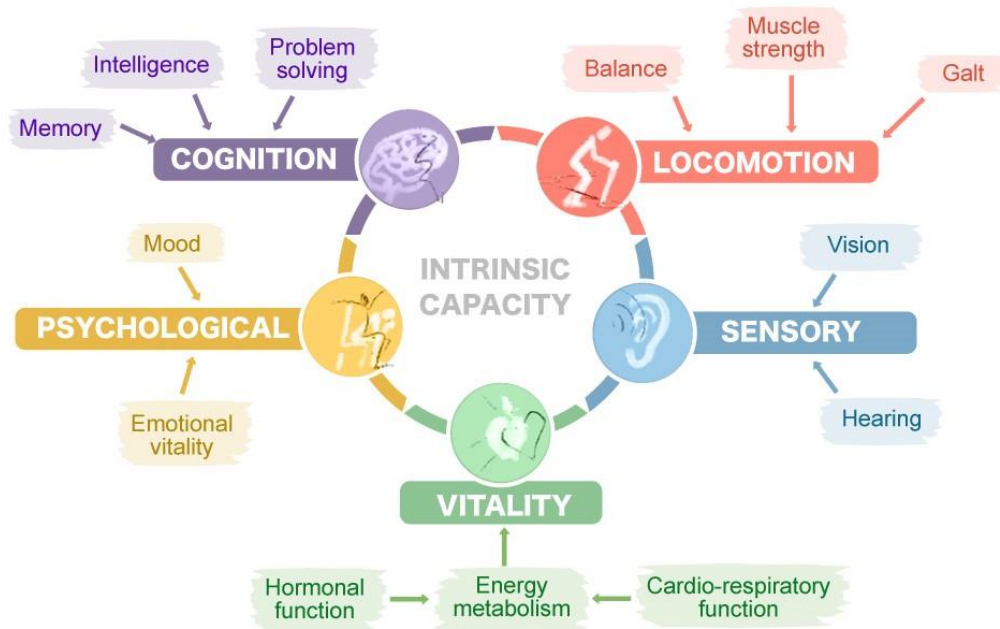


- The domains of intrinsic capacity are **interconnected**, an issue in one domain can affect multiple other domains.
- It is essential to maintain all domains effectively for healthy ageing. That means, you cannot only want to maintain your memory and ignore the others because they all have an effect in each other.
- 6 key domains of intrinsic capacity (IC):
  - Vitality
  - Locomotor capacity
  - Psychological capacity
  - Cognitive capacity
  - Hearing capacity
  - Visual capacity

## Key domains supporting the construct of intrinsic capacity in older adults

Key domains	Construct of each domain	Age-Related Changes	Impact
 <p><b>Locomotion</b></p>	Mobility, including walking speed, balance, and physical agility	Reduced walking speed, balance issues, and decreased agility	Difficulty with mobility, increased risk of falls, and limitations in daily activities
 <p><b>Vitality</b></p>	Dietary intakes, energy levels, strength, and overall physical resilience	Reduced appetite, swallowing difficulties, malabsorption, decline in muscle strength, endurance, and overall physical resilience	Malnutrition, fatigue, reduced ability to perform physical tasks, and compromised well-being
 <p><b>Cognition</b></p>	Memory, attention, problem-solving, and other mental functions	Mild memory lapses, slower information processing, and decreased attention span	Challenges in problem-solving, decision-making, and maintaining mental sharpness
 <p><b>Psychological</b></p>	Emotional well-being, mood, and mental health	Increased risk of depression, anxiety, and mood fluctuations	Affects emotional well-being, coping abilities, and overall mental health

  <b>Sensory</b> *Some studies and frameworks expand the model by splitting the sensory domain into vision and hearing capacity, making it to 6 domains of intrinsic capacity.	Vision	Presbyopia (difficulty focusing on close objects), reduced night vision, and color perception changes	Communication difficulties, social isolation, and challenges in daily tasks
	Hearing	Gradual hearing loss, especially high-frequency sounds	



(Cesari et al., 2018)

**Figure 2.** The five domains (i.e., locomotion, sensory, cognition, psychological, vitality) constituting the intrinsic capacity construct. Examples of possible subdomains are also provided.

## Reflection 1

Imagine, when an older adult walk across the road, how do these key domains of intrinsic capacity collectively enable him to navigate this everyday task safely and independently?

<b>Locomotion</b>	An older person needs to walk across the street quickly and steadily to avoid oncoming traffic.  Locomotor capacity ensures they have the strength and mobility to do this safely.
<b>Cognition</b>	While crossing the road, the older person must process information quickly, like identifying the pedestrian signal, assessing the speed of approaching vehicles, and deciding when it's safe to cross. Cognitive capacity involves their ability to think, remember, and make decisions in such situations.
<b>Psychological</b>	The confidence and emotional well-being to cross the road without feeling overly anxious or fearful.  Psychological capacity affects how comfortable and secure the older person feels in performing daily activities, including crossing the road.
<b>Vision</b>	Sensory capacity includes vision and hearing. The older person needs to see the traffic lights and hear any warnings or sounds from vehicles to cross safely. Any impairment in their sensory capacity could make crossing the road more challenging.
<b>Hearing</b>	
<b>Vitality</b>	Vitality refers to overall energy levels and physical health. An older person with good vitality will have the stamina to walk across the road at a consistent pace without becoming overly fatigued.





Reflection 2

Can you give some examples that illustrating the domains of intrinsic capacity are interconnected?



## Prevalence and distribution of intrinsic capacity in HK

### A local study in the prevalence and distribution of intrinsic capacity in 2022

Among 10007 community-dwelling people aged 60 years and older (mean age  $75.7 \pm 7.9$  years) were interviewed at baseline:

- IC impairments are highly prevalent in HK.
- 85.3% had impairments in one or more IC domains.
- Cognitive (71.3%), locomotor (45.8%), and sensory (vision) capacities (22.8%) were the three domains more frequently affected.
- The prevalence of IC impairments increased with age, and women had a greater number of impaired IC domains than men.


Among the 1,601 participants who were interviewed at each follow-up:

- Those with impairments in three or more domains had increased risks of
  - polypharmacy
  - incontinence
  - poor/fair self-rated health
  - IADL difficulty(To manage polypharmacy and incontinence, please refer to our [MOOC 15 Medication Management for Older Adults](#) and [MOOC 10 Incontinence respectively](#).)

This study:

- highlighted the need for increasing community capacity in providing assessments and interventions.
- underscored the potential of IC as a screening measure for interventions in the care of older people, supporting the World Health Organization's strategy of focusing on optimizing or maintaining IC for healthy ageing.

(Yu and Leung et al., 2022)


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