

# Assessment of Frailty and Fall Risk

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of frailty

Mobility  
assessment

Falls risk  
assessment



# Introduction to Frailty

## Definition

A multidimensional geriatric syndrome characterized by vulnerability to stressors

Prevalence: 10–25% in community-dwelling older adults

Relevance: Predictor of disability, hospitalization, institutionalization, and mortality



# Pathophysiology of Frailty

- Dysregulation of multiple physiological systems
- Sarcopenia and reduced reserve capacity
- Chronic inflammation (“inflammaging”)
- Neuroendocrine dysregulation
- Interaction with multimorbidity



# Importance of Frailty Assessment

- Identifies at-risk older adults
- Guides clinical decision-making (medications, interventions, rehabilitation)
- Prevents adverse outcomes (falls, hospitalization, institutionalization)
- Supports resource allocation in community and hospital care



# Frailty Assessment Tools (Overview)

- Fried Frailty Phenotype (FFP)
- Frailty Index (FI)
- Clinical Frailty Scale (CFS)
- Groningen Frailty Indicator (GFI)
- Tilburg Frailty Indicator (TFI)
- PRISMA-7 Questionnaire



# Fried Frailty Phenotype (FFP)

Five criteria: weight loss, exhaustion, weakness, slowness, low physical activity  
Frail:  $\geq 3$  criteria; Pre-frail: 1–2 criteria



# Clinical Frailty Scale (CFS)

- Visual, judgment-based scale (1 = Very fit, 9 = Terminally ill)
- Widely used in acute care and ICU settings
- Quick bedside tool



## Frailty Index (FI)

Based on deficit accumulation

Number of deficits ÷ total considered = FI score

Highly predictive of outcomes but time-consuming

## Tilburg & Groningen Frailty Indicators

Multidomain: physical, psychological, social

Self-reported questionnaire

Useful in community settings



# Case Scenario 1

Mrs. K, 78 years

History: Hypertension, diabetes, weight loss (4kg/6mo), tiredness, walking speed reduced

Apply Fried Frailty Criteria → classify frail/pre-frail

Discuss implications for community nursing interventions



## Case Scenario 2

Mr. S, 83 years

Post-hospital discharge, living alone, multiple medications, reduced social contacts

Apply Clinical Frailty Scale & TFI

Care planning: fall prevention, social support, medication review



# Challenges in Frailty Assessment

Cultural and contextual variations

Self-reported vs. performance-based measures

Resource limitations in low- and middle-income countries

Integration into routine practice



# Recent Advances & Research

- Biomarkers of frailty (IL-6, CRP, albumin)
- Digital health tools & AI in frailty detection
- Wearable devices for gait speed, physical activity
- Personalized interventions



# Summary

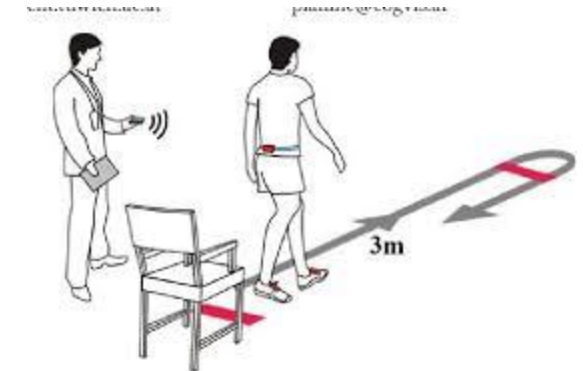
- Frailty is common, multifactorial, and reversible in early stages
- Multiple tools available – tool choice depends on setting and purpose
- Frailty assessment should be linked with CGA for best outcomes
- Early detection = better quality of life and reduced healthcare burden



# Mobility Assessment

## Physical performance tests

- Timed Up and Go (TUG) < 12 sec = normal;  $\geq 12$  sec = fall risk
- Gait Speed < 0.8 m/s = poor prognosis, frailty indicator
- Short Physical Performance Battery (SPPB)
- Combines gait speed, chair stands, balance tests
- 6-Minute Walk Test
- Endurance measure



## Case Scenario

Mrs. R, 80 years, Lives alone, history of osteoarthritis & hypertension

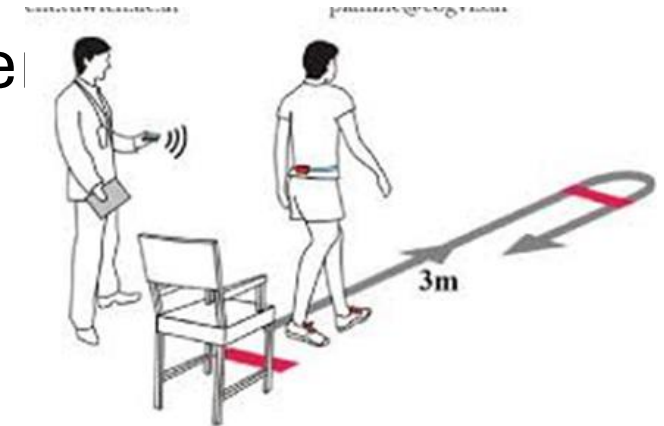
Reports difficulty climbing stairs and unsteadiness when walking outside

Assessment: TUG test = 15 seconds

Gait speed = 0.7 m/s

Needs to push up with arms for chair stand test

Interpretation: High risk for falls, reduced lower limb strength, needs intervention



# Falls Risk Assessment

## Falls in Older Adults

Epidemiology – 1 in 3 adults >65 years fall annually, leading cause of injury-related hospitalization and loss of independence

Consequences - fractures, fear of falling, institutionalization, mortality

Need for assessment - Early detection reduces risk and guides prevention



## Risk Factors for Falls

Intrinsic: Age-related changes, sarcopenia, vision impairment, cognitive decline  
Chronic diseases (stroke, diabetes, arthritis, Parkinson's)  
Medications (polypharmacy, sedatives, antihypertensives)  
Extrinsic: Environmental hazards (poor lighting, loose rugs, stairs)  
Inappropriate footwear, lack of assistive devices  
Behavioral: Risk-taking, reduced activity due to fear of falling

## Falls Risk Assessment Tools

**Morse Fall Scale** - Assesses history, gait, mental status, IV therapy, and mobility

**Hendrich II Fall Risk Model** - Includes confusion, depression, incontinence, medications, gait

**STRATIFY Tool** - Predicts falls in hospital settings

**Timed Up and Go (TUG) test** - Quick physical performance screen

**Berg Balance Scale** – comprehensive functional assessment

# Case Scenario

Mr. P, 82 years lives with spouse, history of hypertension and diabetes.

Reports 2 falls in the past 6 months (one with a minor fracture)

Current medications: antihypertensives, sedative at night

Assessment Findings: TUG = 17 sec (slow), Mild vision impairment (cataract), Polypharmacy ( $\geq 5$  medications)

Home check: loose rugs, poor lighting in hallway

Interpretation: High fall risk due to multiple intrinsic + extrinsic factors

## References

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# Thank you

