




Learning Objectives



FRAILTY

Frailty

At the conclusion of the module addressing frailty in the older adult, the learner should:

<p>KNOW</p> <ul style="list-style-type: none"> Definitions and conceptual frameworks describing frailty Prevalence and impact of frailty in the U.S. Frailty screening, assessment, and treatment 	<p>DO</p> <ul style="list-style-type: none"> Apply evidence-based screening, assessment, and intervention for the prevention and treatment of frailty
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FRAILTY

Case

Mrs. Rodriguez


- 80-year-old female seeing PCP for new onset cough and chest congestion
- PMHx: 8 months s/p L THA. L hip fracture, falls, depression, knee OA, HTN, osteoporosis, weight loss
- SOCHx: lives with daughter, can't live alone, lost dentures 2 weeks ago, desires return to her home
- Current function: Ambulatory with a RW, assist to stand, assist with ADLs


Medications

- Sertraline (Zoloft) 50 mg once daily
- Alendronate (Fosamax) 10 mg daily
- Atenolol (Tenormin) 100 mg daily
- Acetaminophen (Tylenol) 500 mg every 8 hours prn
- Acetaminophen/ diphenhydramine (Tylenol PM) 500/25 mg
- Calcium citrate 400 mg/vitamin D3 500 IU (Citracal) daily

Visit Summary

- Prescribed OTC cough suppressant and prescription appetite stimulant



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FRAILTY

Definitions



-  **Geriatric Syndrome**
-  **Screening**
-  **Assessment**
-  **Treatment**
-  **Frailty**
-  **Physiologic Reserve**
-  **Sarcopenia**

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4Ms
FRAMEWORK

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FRAILTY

Definitions

! Geriatric Syndrome

- A multifactorial condition prevalent in older adults that develops when an individual experiences accumulated impairments in multiple systems that compromise their compensatory abilities.

Overarching Topics	Geriatric Syndromes		
Age-Friendly Care	Chronic Pain	Falls	Polypharmacy
Ageism	Cognitive Impairment	Frailty	Pressure Injury
	Delirium	Incontinence	Sleep Disturbance
	Depression	Malnutrition	



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Definitions

☑ Screening ²

- Screening tools are tests or measures to evaluate for diseases and health conditions before symptoms appear.
- Screenings allow for earlier management and referral to appropriate providers.
- An age-friendly provider conducts screenings for conditions that are prevalent in older adults.



WHAT MATTERS
MEDICATION
MOBILITY
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FRAILTY

Definitions

🔍 Assessment ³

- Assessment tools are tests and measures used to evaluate the patient's presenting problem, confirm a diagnosis, determine its severity, and aid in identifying specific treatment options.
- An age-friendly provider uses appropriate assessments, makes referrals, and communicates with the patient's care providers.



WHAT MATTERS
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Definitions

🏠 Treatment

- An age-friendly care provider considers the 4Ms when making treatment recommendations so that **what matters** to the patient is always part of the plan of care.
- An age-friendly provider communicates with the patient, family, and interdisciplinary team.





WHAT MATTERS
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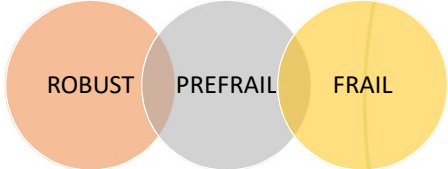
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FRAILTY


Definitions

★ **Frailty** ⁴

- An age-related syndrome of physiological decline, characterized by marked vulnerability to adverse health outcomes.
- Medical syndrome with multiple causes and contributors that is characterized by diminished strength, endurance, and reduced physiologic function that increases an individual's vulnerability to developing increased dependency and/or death.



ROBUST PREFRAIL FRAIL



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Definitions

★ **Physiologic Reserve** ⁵

- The capability of an organ to carry out its activity under stress is known as physiologic reserve.


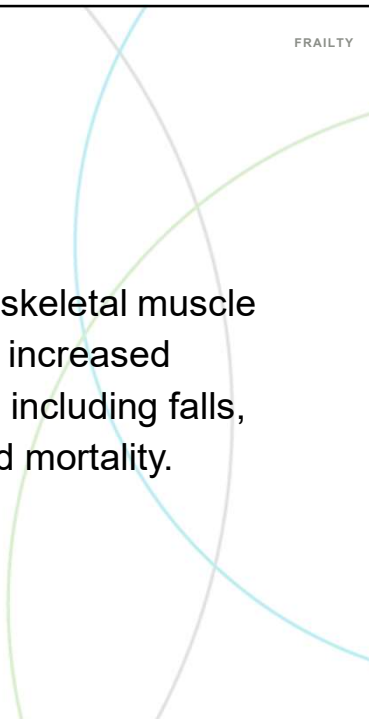


FRAILTY

Definitions


★ **Sarcopenia** ⁶

- A progressive and generalized skeletal muscle disorder that is associated with increased likelihood of adverse outcomes including falls, fractures, physical disability and mortality.


Know and Use the Shared Language...

we are all connected




GLOSSARY

<https://mercer.libguides.com/AFH>



FRAILTY

FRAILTY

Frailty: Conceptual Models

The diagram consists of two overlapping circles. The left circle is light blue and labeled 'Phenotype'. The right circle is light green and labeled 'Deficit Accumulation'. The overlapping area in the center is a darker shade of green.

Phenotype Deficit Accumulation

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Frailty Phenotype ^{7,8}

- Capture representative S/S of frailty in community-dwelling older adults most vulnerable to adverse health outcomes due to multisystem physiologic decline leading to specific symptoms such as weight loss, weakness, & walking speed

Robust = presence zero criteria
Pre-frailty = presence of 1 to 2 criteria
Frailty = presence of 3 or more of 5 criteria.

- **Weight Loss** (≥ 5 percent of body weight in last year)
- **Exhaustion** (+ response regarding effort required for activity)
- **Weakness** (decreased grip strength)
- **Slow Walking speed** (gait speed > 6 to 7 seconds to walk 15 feet)
- **Decreased Physical Activity** (Kcals spent per week)

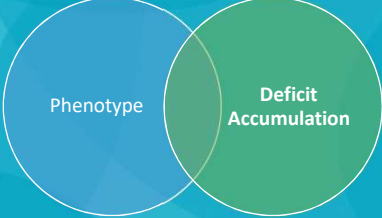
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Phenotype Deficit Accumulation

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Deficit Accumulation




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Deficit Accumulation ⁹

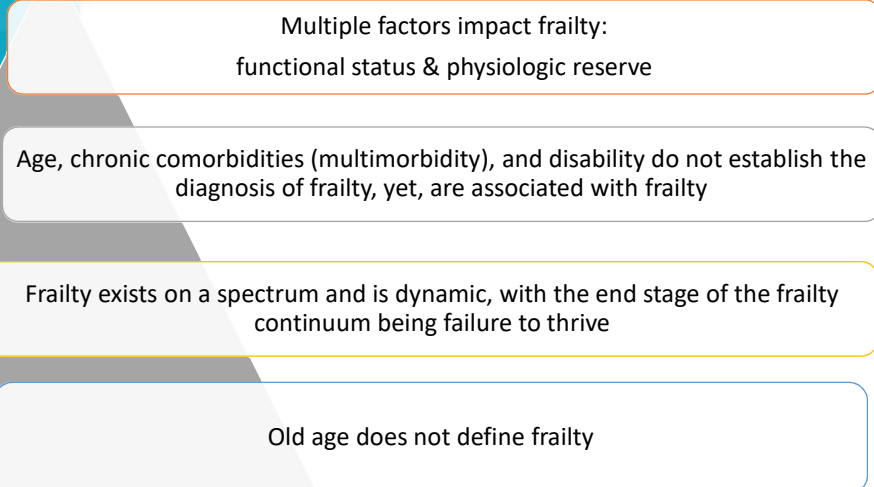
- Considers frailty as an age-related dynamic state, expressed as the ratio between the number of health deficits present compared to a predetermined list of 30 or more variables, **Frailty Index (FI)**
- FI scores range from 0-1
- Higher FI = greater risk of frailty

<h3>Domains</h3> <ul style="list-style-type: none"> • Physical Function • Multi-morbidities • Cognition • Psychosocial Factors 	<h3>Predicts</h3> <ul style="list-style-type: none"> • Mortality • Disability • NH / Hospital Admission • Functional Decline • Surgical risk
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Physical Frailty



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Conceptual Commonalities ¹⁰

Multiple factors impact frailty:
functional status & physiologic reserve

Age, chronic comorbidities (multimorbidity), and disability do not establish the diagnosis of frailty, yet, are associated with frailty

Frailty exists on a spectrum and is dynamic, with the end stage of the frailty continuum being failure to thrive

Old age does not define frailty

Frailty Prevalence


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Prevalence ¹¹


- Elevated in persons with lower education, socioeconomic status, among ethnic minorities and women more than men
- 15% for adults ≥ 65 years of age
 - Increases with age
 - Phenotype Model
 - 9.9% Frailty
 - 44.2% Pre-frailty
- Clinical Presentation
 - Non-specific fatigue, unexplained weight loss, frequent infection, falls, delirium, & fluctuating disability

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Screening Assessment Treatment


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Screening 

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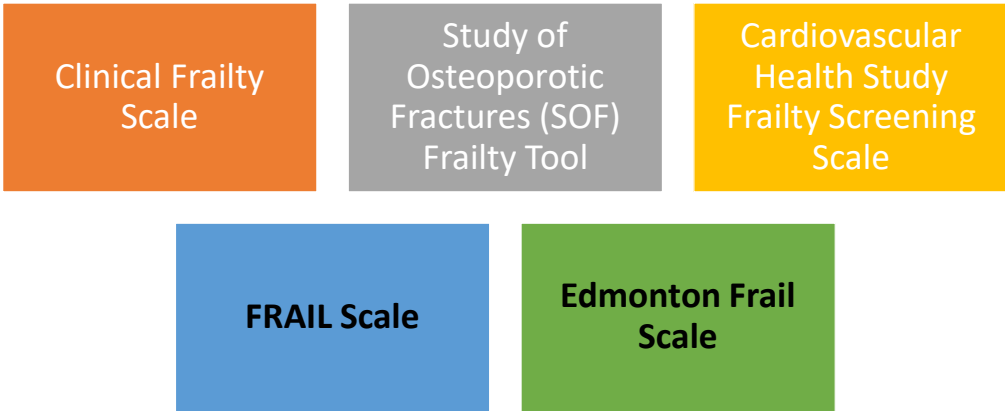
Screening for Frailty ^{10,12}

- All persons older than **70 years** of age and all with significant weight loss ($\geq 5\%$) due to chronic disease should be screened for frailty using a validated rapid frailty instrument, suitable to the setting or context
- Most based on concepts of physical (phenotypic) frailty versus deficit accumulation (index) frailty
- Most commonly used frailty measurement tools do not include cognitive assessment
- Frailty is associated with an increased risk of cognitive decline

Screening 

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Frailty Screening Tools



- Clinical Frailty Scale
- Study of Osteoporotic Fractures (SOF) Frailty Tool
- Cardiovascular Health Study Frailty Screening Scale
- FRAIL Scale
- Edmonton Frail Scale

Screening

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FRAIL Scale ¹³

- FRAIL Scale Scores (0=Best to 5=worst)
 - Robust (0)
 - Prefrail (1-2)
 - Frail (3-5)
- Question scoring:
 - YES=1
 - NO=0
 - unless otherwise noted

Fatigue	YES=1, NO=0
• "Have you felt fatigued? Most or all of the time over the past month?"	
Resistance	YES=1, NO=0
• "Do you have difficulty climbing a flight of stairs?"	
Ambulation	YES=1, NO=0
• "Do you have difficulty walking one block?"	
Weight Loss	YES=1, NO=0
• "Have you lost more than 5 percent of your weight in the past year?"	
Illness	Five or greater = 1; fewer than 5 = 0.
• "Do you have any of these illnesses: hypertension, diabetes, cancer (other than minor skin cancer), chronic lung disease, heart attack, congestive heart failure, angina, asthma, arthritis, stroke, or kidney disease?"	

Screening

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Edmonton Frail Scale (EFS) ¹⁴


Robust →

Prefrail →

Frail →

- Scoring (0- 17 points)
 - Non-frail:
 - <5 points
 - Vulnerable
 - 6-7 points
 - Mild Frailty
 - 8-9 points
 - Moderate Frailty
 - 10-11 points
 - Severe Frailty:
 - 12-17 points

Cognition Clock Draw (0-2)	General Health Status (0-2) / (0-2)	Functional Independence (0-2)
Social Support (0-2)	Medication Use (0-1) / (0-1)	Nutrition (0-1)
Mood (0-1)	Continence (0-1)	Functional Performance TUG (0-2)

Assessment 

FRAILTY

Frailty: Further Assessment Considerations ^{12,15,16}

Polypharmacy

- 59% of older persons take ≥ 5 medications
- Medication Management / Deprescribing
- STOPP Criteria


Weight Loss

- MEALS ON WHEELS**
Pneumonic


Sarcopenia

Fatigue

- First symptom to manifest
- Reversible causes of fatigue¹⁸
 - Sleep Apnea
 - Depression
 - Anemia
 - Hypotension
 - Hypothyroidism
 - Vitamin B12 deficiency



Prevention is the first line of intervention for frailty


Assessment 

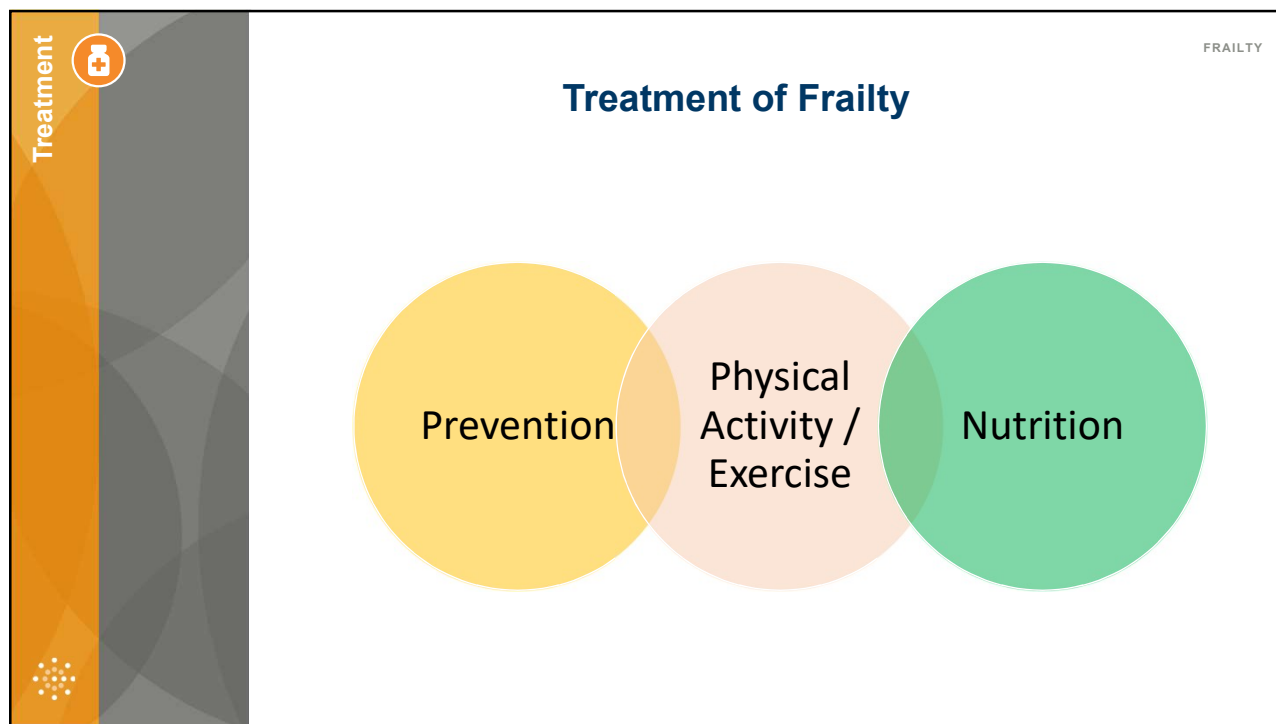
FRAILTY


MEALS ON WHEELS ¹⁷

- M**edications
- E**mootional (depression)
- A**lcoholism, anorexia tardive, abuse (elder)
- L**ate life paranoia
- S**wallowing problems
- O**ral Problems
- N**osocomial infections, no money (poverty)
- W**andering/dementia
- H**yperthyroidism, hypercalcemia, hypoadrenalism
- E**nteric problems (malabsorption)
- E**ating problems
- L**ow salt, low cholesterol diet
- S**hopping and meal preparation problems, stones (cholecystitis)

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Treatment 

FRAILTY

Age-Friendly Treatment

- Goals of Care
 - Medical care tailored to the patient's goals
 - Engage patients and families
 - Robust Older Patients (Prevention)
 - Treat known conditions
 - Manage intermittent acute illness/events
 - Age-appropriate screenings and preventative care
 - Moderate to Severely Frail Older Patient
 - Less is More
 - Complications from aggressive screening/intervention for non-life-threatening conditions
 - Procedures/Hospitalizations may increase:
 - Burden of care
 - Decrease the quality of life
 - Increase risk for mortality & morbidity



Treatment

12,19,20,21

Physical Activity & Exercise

- Prevention is the optimal intervention (Pre-frailty)
- Physical Activity & Exercise most feasible treatments for frailty
 - Done by referral (Physical Therapy)
 - Group more successful than individual
 - Multicomponent programs
 - Progressive Resistance Training
 - Higher level muscle contractions than usual activity
 - Endurance Training
 - Balance Activities
 - Reducing sedentary time

FRAILTY

Treatment

12,20,22-25

Nutrition

- Protein/caloric supplementation for the person with diagnosed weight loss or undernutrition.
 - Optimal when paired with a physical activity program
 - Nutritional Screening
 - Mini-Nutritional Assessment
 - Malnutrition Universal Screening Tool
 - Energy-dense foods (food fortification)
 - Referral to a Registered Dietician

FRAILTY

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Treatment

FRAILTY

Frailty: Models of Care ²⁶

Comprehensive Geriatric Assessment (CGA)	Program for All-Inclusive Care of the Elderly (PACE)	Acute Care for Elders (ACE)
<ul style="list-style-type: none"> • Team: <ul style="list-style-type: none"> • Geriatrician, RN, MSW, PharmD, OT, PT, RD • Goals <ul style="list-style-type: none"> • Improve physical and psychological function • Optimize medication prescribing & use • Decrease SNF placement, hospitalization, mortality risk • Improve satisfaction 	<ul style="list-style-type: none"> • Medicare/Medicaid • Keep older adults in communities, prevent institutionalization • Interdisciplinary care in OP day clinic setting 	<ul style="list-style-type: none"> • Acute care model • Prevent functional decline & restore functional independence • Specially designed environment • Comprehensive DC planning • Decreased nursing home placement / ADL decline w/o increased LOS/costs

Treatment

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Referral

Clinical



- PACE Program
- Skilled Home Health Services /Community Nursing
- RD/PT/OT


Community

- AAA /Senior Centers –nutrition and physical activity programs
- Faith organizations-Parish Nursing
- Meals on Wheels
- Health Insurance Plan Benefits / Silver Sneakers

FRAILTY

Remember Mrs. Rodriguez?

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Case - Mrs. Rodriguez


Phenotype

- Weight loss
- Fatigue
- Weakness
- Slow Walking Speed
- Decreased Physical Activity

FRAIL Scale = 4


- Fatigue = 1
- Resistance = 1
- Ambulation = 1
- Illness = 0
- Weight Loss = 1

EFS Score = 10: Moderate

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Deficit Accumulation

- **Physical Function**
 - Impaired ADLs/IADLs
 - Impaired gait
 - Weight loss
- **Multi-Morbidities**
 - Depression
 - Osteoarthritis
 - Osteoporosis
 - Hypertension
- **Psychosocial Factors**
 - PLOF living independently
 - 8 months living with daughter
 - Social Isolation
 - Loss of dentures
- **Cognition:** further assessment



FRAILTY

Un-Age-Friendly Care (4Ms)

- Did not listen and validate
- Did not screen and refer
- Not including independent living in a care plan that works to mitigate or prevent further signs of the frailty of deficit accumulation

- Prescription of appetite supplement adding to polypharmacy

- No referrals for physical activity, physical therapy, nutrition

- Failure to address social isolation
- Not addressing depression

FRAILTY

Age-Friendly Care (4Ms)


- Listen & validate
- Care maximizing independence
- FRAIL Score =4, care plan addressing deficit areas
- Refer to RD for nutritional assessment
- Advocate for denture replacement
- PACE program or HHC referral

- PACE program referral
- Refer for MTM to determine a patient-specific therapeutic plan that includes appropriate medications that are affordable
- Assess polypharmacy

- Refer to PT for a multicomponent exercise program
- Treat sarcopenia

- Refer to PACE program or HHC
- Screen for depression and social isolation
- ACE unit if hospitalized

Frailty



FRAILTY

Clinical Pearls

Evaluating Frailty

- Screen using validated, rapid instruments at all healthcare encounters for those > 70 years of age or unintentional weight loss >5% body weight in the prior year
- Comprehensively assess for pre-frailty and frailty (CGA)



Managing Frailty

- Provide prevention for robust & pre-frail patients
- Management plans address polypharmacy, sarcopenia, weight loss, fatigue
- Use of multi-component physical activity programs including progressive resistive training and reducing sedentary time
- Consider protein/caloric supplementation when weight loss or undernutrition is diagnosed; if prescribed it is optimized in conjunction with a physical activity program

About Engage

An interdisciplinary team of clinician-educators

David W.M. Taylor, PT, DPT
Leslie F. Taylor, PT, PhD, MS
Susan W. Miller, BS Pharm, PharmD
Jennifer de la Cruz, MMSc, PA-C

Engage is part of Georgia Gear, a multi-institute partnership whose goal is to improve clinical care and quality of life for older adults and their families.

Contact us at engage@mercer.edu

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Continue to ENGAGE...

**with your patients, their families,
your colleagues, and your
communities.**

Together for Tomorrow

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