Topic 1: Resilience in Action: What we do (not) know

Physical Resilience

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Personalized care
Aging spectrum

Frail  Not frail  Vital
Recovery capacity

- Frail
- Not frail
- Vital

May be assumed

Geriatrics
Recovery capacity

Frail | Not frail | Vital

Geriatrics

May be assumed

‘at risk’
Personalized care

Disease

SDM

Resistance & recovery
Physical resilience

- “Ability to resist or recover from functional decline following health stressor(s)”

Physical resilience

- Dynamic response to a stressor/perturbation
- Resilience is an outcome
  - Stressor <-> older person
- No two stressors are the same
- Needs to be assessed longitudinally!

- Resilience trajectory
Resilience

• Ecology:
  • Dynamic, complex (eco)system
  • Several stable states OR equilibria
  • Resilience reflects the stability of an equilibrium
Resilience

- Ecology:
  - Dynamic, complex (eco)system
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Frailty

- Resources available for showing resilience

Resilience

- Resource recruitment
Understanding Resilience

Knowledge gap:
- How are systems across multiple spatial and temporal scales involved in the emergence of resilience of aging humans against health stressors?
  - How does resilience come about?
  - How are human systemic resilience and subsystem resiliencies related?
  - How do resilienc(ies) change across the aging life span?
  - What is the relation of resilience with type, intensity and timing of stressors?
  - How to quantify the intensity of a stressor?

Research opportunity:
- Linking research across multiple disciplines such as biology, computational science, complexity science, epidemiology, psychology
Resilience measurement

Knowledge gap:
• Can we upfront and during the recovery predict/monitor which resilience trajectory a person will follow in response to health stressor?

Research opportunity:
Development and validation of a resilience measurement framework
• Stressor (type and intensity)
• Outcome (trajectory): multidimensional
• Predictors
  • Multidimensional
  • Structure of system: static indicators of resilience, e.g., frailty
  • Process/function operated by system: dynamic indicators of resilience
Resilience management

Knowledge gap:
• How can we use physical resilience in the clinical management of older persons to support recovery?

Research opportunity:
Develop, implement and evaluate a resilience management framework
• Triage & clinical decision support systems
• Actively support resource (recruitment) available for resilience
  • Integrate with prehabilitation and (geriatric) rehabilitation support programmes for better targeting
• Teaching and training programmes