

107年度長期照護醫事人員繼續教育計畫
物理治療Level II專業課程-花蓮場(PT10720-D)

**年度專題及新興議題：
衰弱症、運動與營養**

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Frailty

- The definition of **frailty**:
- **Frailty** is a clinical phenotype of frailty as a well-defined syndrome with biological underpinnings (Fried et al., 2001).
- The prevalence of frailty was approximate 5-11% in Taiwan; And the prevalence of frailty increased with age and was greater in women (Chen, Wu, Chen, & Lue, 2010).
- Physical exercise is one of the most effective non-pharmacological interventions aimed to improve mobility and independence in older persons.
- Role model in Taiwan: age 106 years-old Mr. Jhao, Mu-Ho

Exercise prescription to reverse frailty

(Bray, Smart, Jakobi, & Jones, 2016)

- 1. Older adults can be classified as non-frail, pre-frail, or frail. Non-frail adults should follow the Canadian Physical Activity Guidelines for Older Adults (CSEP 2011) as a basic exercise recommendation.
- 2. Pre-frail older adults (exhibit 1–2 physical deficits) should exercise 3 times a week for 45–60 min per session. Frail older adults (exhibit ≥ 3 physical deficits) should exercise 3 times a week but for a shorter duration, 30–45 min.
- 3. Both pre-frail and frail older adults should perform various exercise modalities that includes aerobic, resistance, balance, and flexibility activities.

Exercise prescription to reverse frailty (Cont.)

(Bray, Smart, Jakobi, & Jones, 2016)

- 4. However, pre-frail older adults should dedicate 30–40 min of their training time to resistance- and balance-training activities while frail older adults should emphasis aerobic training (10–20 min).
- 5. For aerobic exercise, both pre-frail and frail older adults should work at an intensity that is “moderate–vigorous”, equivalent to a 3–4 (somewhat hard) on the Borg CR10 point scale. Resistance training intensity is established from an individual’s 1RM, starting light (i.e., 55%) for beginners and progressing to heavier resistances (i.e., >80%).



The effectiveness of physical exercise on frail older persons: A systematic review

(Silva, Aldoradin-Cabeza, Eslick, Phu, & Duque, 2017)

- Exercise has a positive effect on various measures used to determine frailty including cognition, physical functioning, and psychological wellbeing.
- The reviewed studies were generally long in duration (≥ 6 months) with sessions lasting around 60 minutes performed three or more times per week, including multicomponent exercises.



Effectiveness of exercise interventions on physical function in community-dwelling frail older people: an umbrella review of systematic reviews

(Jadczak, Makwana, Luscombe-Marsh, Visvanathan, & Schultz, 2018)

- Multi-component exercise interventions can currently be recommended for pre-frail and frail older adults to improve muscular strength, gait speed, balance and physical performance, including resistance, aerobic, balance and flexibility tasks. Resistance training alone also appeared to be beneficial, in particular for improving muscular strength, gait speed and physical performance. Future research should adopt a consistent definition of frailty and investigate the effects of other types of exercise alone or in combination with nutritional interventions so that more specific recommendations can be made.



Chair-based Exercise for elder adults

Chair-based exercise program DVD

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Nutrition and Health Survey in Taiwan (NAHSIT), 2014-2016

- The derived dietary pattern was characterized with a high consumption of fruit, nuts and seeds, tea, vegetables, whole grains, shellfish, milk, and fish.
- The prevalence of frailty was 7.8% and of prefrailty was 50.8%, defined using the modified Fried criteria.
- The dietary pattern score showed an inverse dose-response relationship with prevalence of frailty and pre-frailty.

Nutrition and Health Survey in Taiwan (NAHSIT), 2014-2016 (Cont')

- Individuals in the second dietary pattern tertile were one-third as likely to be frail as those in the first tertile (adjusted odds ratio (aOR) = 0.32, 95% confidence interval (CI) = 0.12-0.85), and those in the third tertile were 4% as likely to be frail as those in the first tertile (aOR = 0.04, 95% CI = 0.01-0.18).
- The dietary pattern score estimated using FFQ data from the NAHSIT 2016 was also significantly and inversely associated with frailty.
- **CONCLUSION:** Individuals with a dietary pattern with more phytonutrient-rich plant foods, tea, omega-3-rich deep-sea fish, and other protein-rich foods such as shellfish and milk had a reduced prevalence of frailty.

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