

# Association between hospital inpatient stay and hand grip strength; an observational study



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# CURRENT SITUATION



- *“10 days = 10 years”*

- *#EndPjparalysis*



- *“last 1000 days”*



# “UNDISPUTED” FACTS?



Healthy older adults show a 14% reduction in leg and hip muscle strength and a 12% reduction in aerobic capacity after ten days of bed rest

<http://apps.einstein.br/revista/arquivos/PDF/1528-EC%20v7n3p140.pdf>

Episodes of bed rest are associated with decline in functional ability T M Gill, et al, 2004

***No research actually completed in hospital!***

# RESEARCH QUESTIONS



- **Is a hospital admission a trigger for muscle aging in frail older people?**
  - **Will an older person's hand grip measurements deteriorate in hospital?**
  - **Is there a difference between the change in hand grip measurements in inpatients over and under 75 years of age?**

# WHY HAND GRIP MEASUREMENTS?



- Grip strength is the recognised tool for assessing muscle strength in the identification of sarcopenia.
- 70% of people living with frailty have sarcopenia
- Useful in debating the “muscle aging” concept of inpatient stays

# METHOD



- **Case-Control Study**
  - Cases: people 75+ admitted unto the Acute Medical Unit of RBTH
  - Controls: people <75 admitted unto the Acute Medical Unit of RBTH
  - Exposure: inpatient hospital stay
  - Outcome measured: hand grip strength on Days 1, 3, 7 and discharge. Odds ratio of developing worsened grip strength in Cases vs. Controls

# NULL HYPOTHESIS



- Muscle aging in older people is unaffected by an inpatient hospital stay
- The Odds Ratio of change in hand grip measurements in inpatients 75+ compared with inpatients <75 years is 1

# ETHICAL CONSIDERATIONS



- Will need to know the age of everyone admitted to the AMU *but* do not need to know diagnosis, treatment plan or other information.
- Will need to know if/when moved to a different ward and/or discharged in order to complete measurements
- The measurements do not influence or impact on treatment being received.
- Written/verbal consent

# CONCLUSION



- “When older frail people are admitted to hospital they risk deterioration, and we know that the environment and the way they are treated significantly impacts both on the patient’s experience and on their recovery. Research and evidence are crucial in ensuring organisations can be confident they are delivering really good care and achieving the best possible outcomes.”
  - Lesley Carter, Age UK