

# Does Hand Grip Strength (HGS) Correlate With Shoulder Dysfunction Among Older Women?

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## Introduction

- Shoulder pain and dysfunction may lead to the inability to carry out essential household and Activities of Daily Living (ADLs) in older populations.
- Nearly 20% of those aged 65 and older reported shoulder pain in the 2011 National Health and Aging Trends Study.
- Shoulder dysfunction is underrecognized as part of routine health maintenance visits.
- Hand grip strength (HGS) is an easy measure to collect and is considered a reliable measure to assess overall muscle strength and function.
- HGS could be used to screen for occult shoulder dysfunction at primary care visits.

## Specific Aim

- To determine the association between HGS and shoulder dysfunction in older women

## Hypothesis

- HGS will be correlated with shoulder dysfunction among older women.

## Methods

**Study design:** Cross-sectional study

**Participants:** 36 community-dwelling female older adult volunteers

**Measures:**

**HGS:** assessed using Jamar Plus Digital Hand Dynamometer. We measured both hands twice and used the strongest measure for the dominant hand.

**Shoulder Dysfunction:** self-report using the American Shoulder and Elbow Surgeon survey (ASES) survey; 100 (best) to 0 (worst) to estimate disability of the shoulder based on 10 questions specific to shoulder function, each measured by a 4-point level of difficulty ordinal scale and a single pain question measured by an 11-point ordinal scale.

**Co-Variates:** age, body mass index (BMI), race.

**Analyses:** Pearson correlation coefficient was used to analyze the data

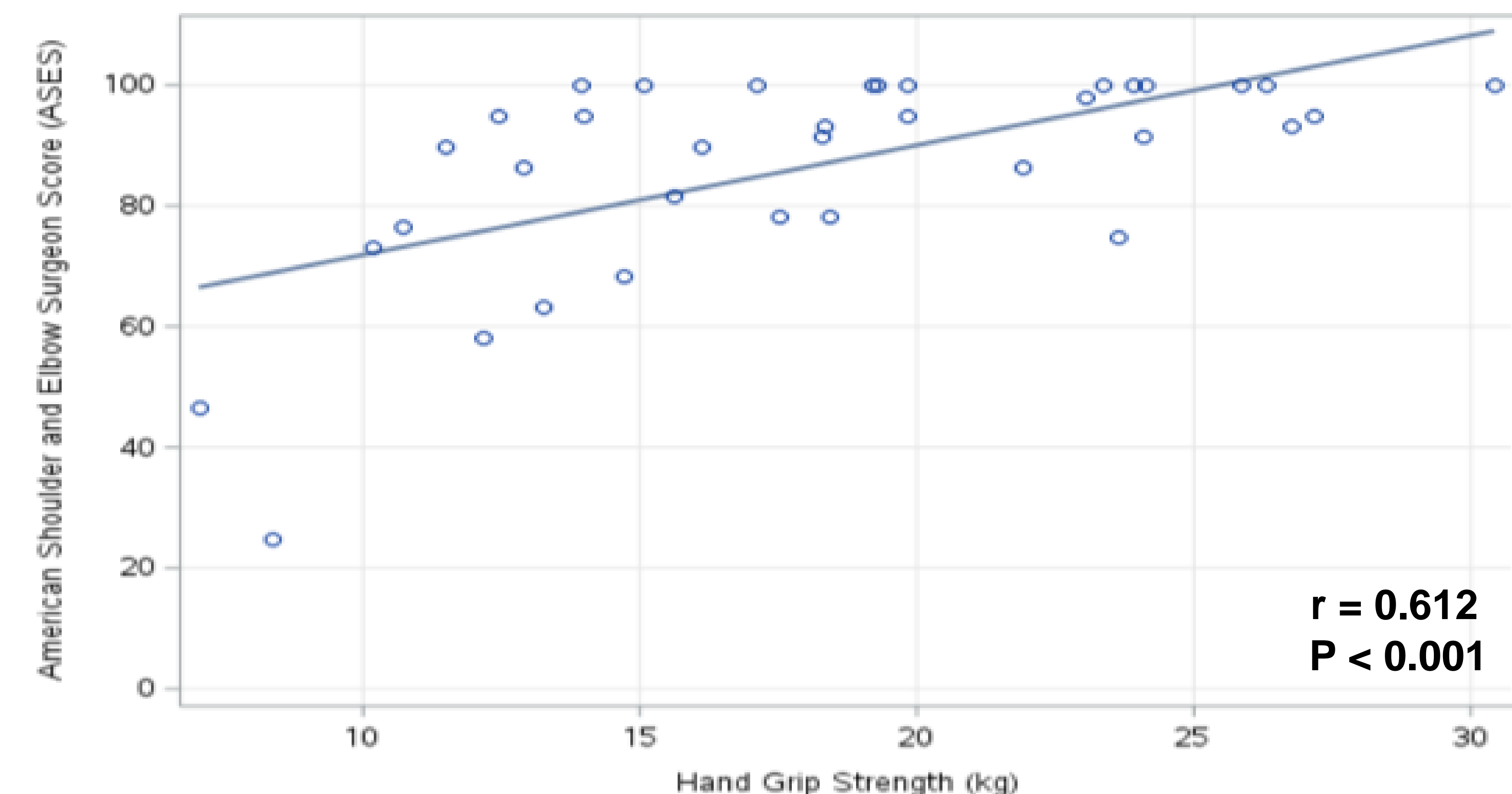
## Results

### Characteristics of participants

	Mean ± SD	Range
Age (year)	70.9 ± 5.7	62 - 84
BMI (kg/m <sup>2</sup> )	26.6 ± 6.5	14.1 - 44.3
Hand Grip Strength HGS (kg)	18.2 ± 5.8	7.0 - 30.4
American Shoulder and Elbow Surgeon (ASES) score	86.8 ± 17.2	24.9 - 100
<b>Race*</b>		
➤ Caucasian (n=17)		
➤ African American (n=13)		
➤ Other (n=1)		

\*5 were missing

### Correlation of HGS with ASES score



## Summary / Conclusion

- HGS was moderately correlated with shoulder dysfunction among older women.
- Future research is warranted to test HGS as a potential clinical screening tool for shoulder dysfunction in older populations
- Future research should include a larger diverse sample of men and women to investigate the relationship between grip strength and different types of shoulder dysfunction.