

<b>Paper Category:</b>	Prevention and Public Health
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## Short Physical Performance Battery Cutoff Points Using Clinical Outcomes for At-Risk Older Adults in Singapore

### BACKGROUND

Short Physical Performance Battery (SPPB) is an established assessment tool for physical function, sarcopenia and frailty. However, SPPB cutoffs are population and outcome-dependent as evidenced from recommendations of European ( $\leq 8$ ) and Asian ( $\leq 9$ ) sarcopenia consensus groups (EWGSOP2 and AWGS-2019). A local study recommended higher cutoff ( $\leq 11$ ) for sarcopenia diagnosis for well community dwelling older persons. However, there are no current studies identifying SPPB cutoffs which evaluates clinically meaningful outcomes in at-risk older adults.

### OBJECTIVES

Our study aims to determine SPPB performance and cutoffs for assessing functional ability and frailty in an at-risk population of older adults against healthy controls.

### METHOD

We studied 165 community-dwelling older adults from a tertiary Falls clinic (FC) (N=27) and the GeriLABS study (N=138). We used area under Receiver Operating Characteristic curve (AUC) and cross-tabulation to evaluate SPPB's discriminatory capability in identifying at-risk older adults for reduced functional ability defined by Lawton Instrumental Activities of Daily Living (IADLs) <21 and Frenchay Activities Index (FAI) <31, and frailty defined by FRAIL scale >0 and gait speed (GS)  $\leq 0.8$  m/s. SPPB cutoffs were determined using Youden Index to optimize both sensitivity and specificity.

### RESULTS

The GeriLABS-1 cohort was younger (mean age:  $67.3 \pm 7.3$  vs  $77.1 \pm 6.9$  years), more robust (mean FRAIL score  $0.17 \pm 0.45$  vs  $1.2 \pm 0.83$ ), and with higher mean SPPB scores ( $11.6 \pm 0.79$  vs  $7.0 \pm 3.2$ ,  $p < 0.001$ ) compared to FC group. SPPB has fair to good performance in assessing reduced functional ability (AUC: 0.586 and 0.872 for FAI <31 and IADL <21 respectively) and good to excellent performance in assessing frailty (AUC: 0.762 and 0.972 for FRAIL >0 and GS  $\leq 0.8$  m/s respectively). The optimal SPPB cutoff in discriminating poor functional ability and frailty is  $\leq 9$ .

**DISCUSSIONS AND CONCLUSIONS**

SPPB cutoff values should consider population characteristics and clinically meaningful outcomes. In at-risk older adults, SPPB  $\leq 9$  cutoff is analogous to AWGS-2019 cutoff for sarcopenia and has good specificity albeit lower sensitivity for functional ability and frailty.

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