

Evaluation of balance and a timed walk on ankle brachial pressure index and potential blood measures of cardiovascular health.



OLD DOMINION
UNIVERSITY

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Introduction

Clinicians are focused on ways to preserve function, independence, and quality of life in the aging adult population. With heart disease the leading cause of death in the U.S.[1], assessing the extent of this disease is a high priority in preserving health throughout the lifespan. When determining risk of cardiovascular (CV) disease, functional assessments are becoming recognized to embed function-focused care into assessing disease risk [2]. Ankle-brachial pressure index (ABPI) is a non-invasive reliable predictor for identifying cardiovascular disease risk and mortality[3].

Purpose

To evaluate the association between functional assessments and ankle brachial pressure index in an aged population



Methods

- ❖ Data was collected from the 1999-2002 National Health and Nutrition Examination Survey
- ❖ 1696 adults (age 40-70 years)
- ❖ Functional assessments
 - ❖ Vestibular balance test
 - ❖ Timed 20ft walking test
- ❖ Laboratory measurement of right and left leg Ankle Brachial Pressure Index score

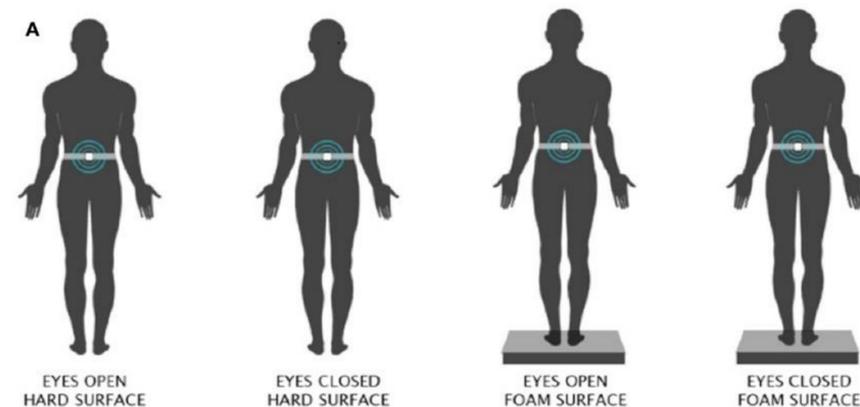


Figure A. Example of vestibular functional balance 4-state assessment

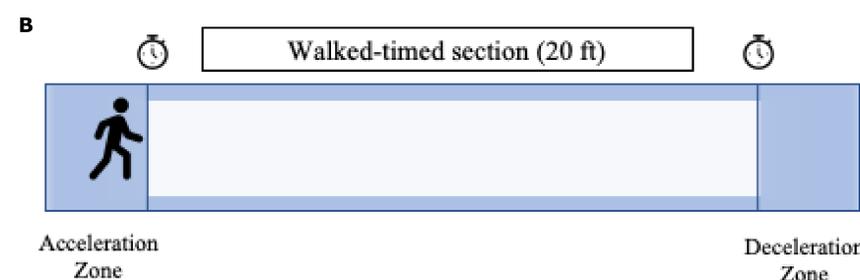


Figure B. Example of 20ft timed walk- function assessment

Results

- ❖ **Poor balance - higher odds** - high-risk ABPI category (left ABPI: 1.70; 95%CI: 0.58, 5.0 | right ABPI: 2.37; 95%CI: 0.76, 7.33)
- ❖ **Faster timed walk scores -decreased odd** -high-risk ABPI category (left:1.97; 95% 0.80, 4.85 and right 2.55; 95% 1.23, 5.79)
- ❖ **Poor balance and slower walking speed - higher odds- high-risk ABPI category** (left ABPI: 3.21; 95%CI: 1.73, 5.98 and right ABPI: 3.44; 95%CI: 2.13, 5.58)

Conclusion

- ❖ **Functional assessments of balance and walking speed are suggestive of risk category of ABPI, which indicates risk category for CV disease** [4]
- ❖ ABPI and functional assessment of balance and walking is a non-invasive clinical measure of CV disease risk



Future Directions

- ❖ Clinical measures for functional assessment to decrease CVD risk factors
- ❖ Education tool for older adults and clinicians
- ❖ Functional training measure to enhance ABPI

References

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