

2.D. Oral presentations: Risk factors in cardiovascular diseases

Daily composition of movement behaviors with cardiovascular disease incidence in elderly

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Background:

Moderate-to-vigorous physical activity (MVPA) is proposed as key for cardiovascular diseases (CVD) prevention. At older ages, the role of sedentary behavior (SB) and light intensity physical activity (LIPA) remains unclear. Evidence so far is based on studies examining movement behaviors as independent entities ignoring their co-dependency. This study aims to examine the association between daily composition of objectively-assessed movement behaviors (MVPA, LIPA, SB) and incident CVD in older adults.

Methods:

Whitehall II accelerometer sub-study participants free of CVD at baseline (N = 3319, 26.7% women, mean age=68.9 years in 2012-2013) wore a wrist-accelerometer from which times in SB, LIPA, and MVPA were extracted. Compositional Cox regression was used to estimate the hazard ratio (HR) for incident CVD for daily compositions of movement behaviors characterized by 10 (20 or 30) minutes greater duration in one movement behavior accompanied by decrease in another behavior, while keeping the third behavior constant, compared to reference composition.

Results:

Of the 3319 participants, 299 had an incident CVD over a mean (SD) follow-up of 6.2 (1.3) years. Compared to individuals with daily movement behavior composition composed with MVPA at recommended 21 minutes per day (150 minutes/week), composition with additional 10 minutes of MVPA and 10 minutes less SB were associated with smaller risk reduction -8% (HR, 0.92; 95% CI, 0.87-0.99) - than the 14% increase in risk associated with a composition of similarly reduced time in MVPA and more time in SB (HR, 1.14; 95% CI, 1.02-1.27). For a given MVPA duration, the CVD risk did not differ as a function of LIPA and SB durations.

Conclusions:

An increase in MVPA duration at the expense of time in either SB or LIPA was associated with lower risk of incident CVD.

This study lends support to public health guidelines encouraging increase in MVPA or at least maintain MVPA at their current duration.

Key messages:

- Older adults should be encouraged to increase their moderate-to-vigorous physical activity or at least maintain at their current levels to lower risk of incident cardiovascular disease.
- Highly sedentary older adults should increase their moderate-to-vigorous physical activity by decreasing sedentary time rather than light-intensity activity to prevent cardiovascular disease.