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Sarcopenia, a hidden link of the cardiovascular risk in long sleep duration?

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Background/Aims: Long sleep duration has been consistently reported as a cardiovascular (CV) risk, however, the mechanistic link has rarely been discussed. Since sarcopenia, a novel CV risk factor, increases with long sleep duration, we aimed to identify the potential role of sarcopenia on the relationship between long sleep duration and CV risk. **Methods:** We reviewed the data of 15,497 adults who participated in the Korea National Health and Nutrition Examination Surveys. Sleep duration was assessed by questionnaire; the 10-year CV risk was estimated using the Framingham Risk Score, and the appendicular skeletal muscle mass (ASM) was used an indicator of sarcopenia. **Results:** In multivariate generalized additive model (GAM) plot, a J-shaped relationship between sleep duration and 10-year CV risk was observed (P for smoothed sleep duration <0.001). The lowest Akaike's information criterion (AIC) score was observed for 6 hours of sleep. Moreover, we found increased sleep duration to be associated with decreased ASM with inverted J-shape relationship, and the lowest AIC at 6.6 hours of sleep duration in multivariate GAM plot. In subgroup analysis by ASM quartiles, the 10-year CV risk showed J-shaped increase in the first ASM quartile, and subsequently, an L-shaped decrease in the second, with increased sleep duration. Contrarily, the third and fourth ASM quartiles showed no association between sleep duration and 10-year CV risk. **Conclusions:** Long sleep duration was independently associated with increased CV risk, possibly by increasing the risk of sarcopenia. ASM status may modify the effect of sleep duration on CV risk. **Keywords:** Appendicular skeletal muscle mass, cardiovascular, long sleep duration, risk factor, sarcopenia

