

# Letter: Sarcopenia Is Significantly Associated with Presence and Severity of Nonalcoholic Fatty Liver Disease (J Obes Metab Syndr 2019;28:129-38)

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Nonalcoholic fatty liver disease (NAFLD) is one of the most common causes of chronic liver disease in South Korea<sup>1</sup> and is closely related to abdominal obesity, dyslipidemia, type 2 diabetes mellitus, and metabolic syndrome, all of which are risk factors for cardiovascular disease (CVD).<sup>2,3</sup> Furthermore, several recently published prospective studies have shown that NAFLD is an independent risk factor for CVD.<sup>4-7</sup> Insulin resistance is regarded as the major factor contributing to the pathogenesis of NAFLD.<sup>8</sup> Given that skeletal muscle is one of the important target organs of insulin and results from previous studies showing a link between sarcopenia and insulin resistance,<sup>9</sup> the study by Chung et al.<sup>10</sup> is worthy of scientific attention. They have investigated the association between sarcopenia and severity of NAFLD with consideration of various confounders including visceral fat area (VFA) measured by computed tomography scan. Their work has strength in that they performed various stratification analyses and showed that age was a possible modifier of the association between sarcopenia and NAFLD, and that sarcopenia among relatively young (< 50 years) adults might have a more detrimental effect on NAFLD.

Although the results were interesting, they did not adjust for possible confounders in the stratification analysis. The main anal-

ysis shown in Tables 2 and 3 of Ref. 10 were adjusted for hypertension, diabetes, total cholesterol, and low-density lipoprotein cholesterol, although they considered only sex and VFA in the stratification analysis. As they explained in the Discussion, it would have been better if physical activity had been considered as a possible confounder.

As the authors<sup>10</sup> suggested insulin resistance as a possible link between sarcopenia and NAFLD, it would be more informative if they could present stratified analysis according to presence of insulin resistance or visceral obesity. Nevertheless, the authors clearly showed the association of sarcopenia and NAFLD, and this association should be confirmed in a longitudinal study.

## CONFLICTS OF INTEREST

The author declares no conflict of interest.

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