



## Comment on: Non-esterified fatty acids and telomere length in older adults



Dear Editor,

A recent study by Ahiawodzi and colleagues reported an inverse association between non-esterified fatty acids (NEFAs) and telomere length among the community-dwelling older adults [1]. They pointed out another critical issue that telomere shortening may reflect poor clinical outcomes of circulating NEFAs in elders. Therefore this study will arouse great interest to the researcher in providing insight into the potential pathway to preserve telomere length. However, some points are deserving of further discussion. Additional factors such as physical activity, frailty, and thyroid hormones may confound the serum NEFAs levels.

Firstly, accumulating evidence suggests that light or moderate-intensity activity promotes health by increasing fat loss and reducing cardiometabolic risk [2]. Additionally, the impact of higher daily physical activity on the decline in NEFAs concentration is one underlying mechanism for improving insulin sensitivity [2]. Therefore, the degree of daily physical activity may be covariate factors for predicting the effect of NEFAs on the aging process. Furthermore, previous observational and interventional studies demonstrated that physical activity and physical fitness have a favorable role in regulating telomere length during the aging process, potentially through anti-inflammatory and anti-oxidative mechanisms [3–7].

Secondly, the prevalence of frailty based on the phenotype is 10.6% for frailty and 59.2% for pre-frailty among individuals aged 70 to 80, similar to the average age of cases in the work of Ahiawodzi et al. [8]. A recent study highlights the critical role of low physical activity in developing frailty status [9]. Moreover, prefrail and frail phenotypes were associated with a significant telomere length shortening compared to patients without frailty [10].

Thyroid hormones influence the crucial metabolic pathways either by direct action or by modifying other regulatory hormones [11,12]. Their role in lipid metabolism attracted attention, causing a rise in concentrations of plasma NEFAs [13]. Furthermore, circulating concentrations of lipid intermediates decreased in hypothyroid patients compared to healthy subjects [14]. It is worth emphasizing that thyroid diseases have significant alterations in lipid metabolism even after restitution of the euthyroid state.

In conclusion, some additional data on daily physical activity, frailty status, and thyroid hormone level make the prediction model more accurate to detect the shorter telomere length. New obtained results may raise the value of the work, which aimed to investigate

the role of NEFAs in accelerated biological aging.

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