In summary, the amount of protein and particularly leucine in the present study can be considered at the high end of the normal distribution of intake. The safest way to proceed is to grow older without becoming obese.

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Regular physical activity: a little is good, but is it good enough?

Dear Editor:

Ek elund et al. (1) nicely showed that physical inactivity causes an approximate twofold increase in the numbers of deaths compared...
with those attributable to obesity [BMI (in kg/m²) >30] in a European cohort (n = 334,161) that was followed up to 12.4 y on average. Physical activity (PA) levels were estimated by using a standardized questionnaire or in-person interviews and were found to be inversely associated with all-cause mortality at all levels of BMI and waist circumference. Another important finding from their study is that substantial survival benefits may be achieved by fairly small amounts of moderate-intensity PA: that is, ~20 min/d of brisk walking, which is below the current PA recommendations of ≥30 min/d on most, if not all, days of the week (or ≥150 min/wk). These important findings in Caucasians are in line with those recently reported in an Asian cohort, in whom 15 min/d or 90 min/wk of moderate-intensity PA was associated with lower all-cause mortality, even for persons at risk of cardiovascular disease (2).

The medical relevance of the study by Ekelund et al. (1) should be acknowledged. It was certainly well powered to show the mortality benefits of small PA doses and thus to provide further epidemiologic support for PA promotion worldwide. Yet we are concerned about the possibility that the finding that even small PA amounts are clinically relevant might be misinterpreted by the public as well as by some health professionals. Indeed, recognizing the benefits of small PA doses is important but at the same time might somehow dilute what we think is also a main message arising from the bulk of research in the field: that is, that the main epidemiologic benefits of exercise can be even stronger at high PA doses, with recent research also showing greater gains in life expectancy (+4.5 y; 95% CI: 4.3, 4.7 y) with PA levels equivalent to ≥450 min/wk of brisk walking (3).

On the other hand, there is growing evidence that the largest epidemiologic benefits of PA against a major cause of death worldwide, cancer, are dose-related, at least for some main cancer types, particularly colon cancer. In fact, the last World Cancer Research Fund report on PA and cancer prevention establishes the evidence of a dose-response effect for colorectal cancer, and especially for colon cancer (4). Engaging in ≥150 min/wk of recreational PA (e.g., walking) is associated with lower all-cause mortality after colorectal cancer diagnosis (5). Yet, ≥7 h/wk (≥60 min/d) of moderate-to-vigorous PA has been reported to be associated with lower risk of total cancer mortality (HR: 0.89; 95% CI: 0.84, 0.94; P < 0.001), with the link being especially strong for colon (HR: 0.70; 95% CI: 0.57, 0.85; P < 0.001), liver (HR: 0.71; 95% CI: 0.52, 0.98; P = 0.012), and lung (HR: 0.84; 95% CI: 0.77, 0.92; P < 0.001) cancers (6). Furthermore, a recent meta-analysis from our group showed that a considerably lower cancer-related mortality in those humans engaging in the highest PA levels—that are, elite athletes of various sport disciplines (n = 12,119, mostly men), including Tour de France finishers—than in the general population (standard mortality ratio: 0.60; 95% CI: 0.38, 0.94; P = 0.03) (7).

Another concern is that the PA levels of cancer survivors are high enough, because current PA recommendations of ≥150 min/wk of moderate PA might actually be insufficient for this population, as we recently reviewed (8). In the cohorts of US cancer survivors in whom PA was measured objectively by usingaccelerometry, average levels of moderate PA (brisk walking) were even below 20 min/d (see reference 7 for a review). In contrast, we recently reported, also with the use of accelerometry, that the vast majority of a cohort of Spanish middle-aged cancer survivors of both genders performed, on average, 356 min/wk (~50 min/d) of moderate-to-vigorous PA (9). Despite such apparently good news, these high PA levels were not accompanied by a “healthy” cardiometabolic profile. Notably, 33% of the subjects were obese and the mean levels of cardiorespiratory fitness (CRF; determined as peak oxygen uptake) of this cohort was 7.7 metabolic equivalents (METs), with ~50% of subjects not reaching a CRF of 8 METs. Any CRF value <8 METs is indicative of an increased risk of mortality and cardiovascular events in middle-aged men and women aged 40–60 y, on average (10), and cardiovascular disease is the leading cause of morbidity and mortality among long-term cancer survivors. In fact, men with a CRF <8 METs have a more than threefold higher risk of dying of digestive disease (bowel, colorectal, liver cancer) than those with a CRF ≥11 METs (11).

In summary, although ~20 min/d of PA is certainly much better than inactivity, as elegantly shown by Ekelund et al. (1), we question whether this fairly small dose might be enough to bring a substantial clinical benefit in certain cases, especially for cancer prevention and among cancer survivors. Further epidemiologic research is also needed using objective and reliable assessment of PA, ideally with accelerometry, to determine the optimal PA dose associated with the highest epidemiologic benefits in different population groups.

None of the authors declared a conflict of interest.

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Reply to H Pareja-Galeano et al.

Dear Editor:

We appreciate the interest from Pareja-Galeano et al. in our study and acknowledge that they considered our study well powered and clinically relevant. Similar to others (1), our results suggested that the greatest reduction in the hazard of mortality was found between the “inactive” and the “moderately inactive” group. This reduction was observed across general and abdominal obesity groups, suggesting health benefits from increasing physical activity (PA) regardless of adiposity. On the basis of our validation study (2), we estimated that the difference between the “inactive” and “moderately inactive” group was equivalent to ~20 min of brisk walking each day. This equates to 140 min/wk, which is almost in line with current PA recommendations for public health (3–5).

We do not dispute the health benefits associated with higher levels of PA, which Pareja-Galeano et al. have highlighted, but the key message from our study was that there would be substantial public health benefits from people in the inactive group engaging in even a small amount of PA each day.

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