

Response to Invited Commentary

Becofsky et al. Respond to “Misclassifying Fitness and Depression”

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We appreciate Dr. Mukamal’s thoughtful commentary (1) on our paper (2). We are in agreement with Dr. Mukamal on a number of points, but wish to re-affirm and clarify our stance on others.

In his commentary, Dr. Mukamal says, “To some degree, this [fit versus fat] debate is poorly suited to epidemiologic inquiry” (1, p. 321). He stresses that it is difficult to ascertain repeated, quality measurements of fitness in epidemiologic studies. This point speaks to the importance of our paper and others published on the topic using data from the Aerobics Center Longitudinal Study cohort (3–6), from which “reasonable measures of both fitness and fatness” are available, as Dr. Mukamal notes (1, p. 322).

In speaking of fitness and fatness, Dr. Mukamal notes that “their strong interrelationships raise legitimate questions about the clinical utility of trying to parse their separate roles too finely” (1, p. 321). Perhaps in terms of clinical utility, his statement is sound; if obese patients begin exercising and lose weight, it is unnecessary to pick apart which physiological adaptations are responsible for the numerous downstream health benefits. From a messaging perspective, though, we believe it is critical to understand which factor, low fitness or high fatness, is a stronger predictor of negative health outcomes. As many persons struggling with weight management can attest, being active does not always translate to weight loss. Alternatively, underactive persons in the “normal” range of body mass index should not be made to believe that “skinny” means “healthy” because of a cultural and clinical emphasis on weight loss. If fitness is a better predictor of negative health outcomes than is fatness (as has been shown repeatedly (7)), clinicians and public health professionals alike have a responsibility to emphasize that leading an active lifestyle is more important than having a body mass index in the “normal” range.

Dr. Mukamal’s critique of our study focuses on the possibility that responses to 2 items from the Center for Epidemiologic Studies Depression Scale (“inability to ‘get going’” and “the feeling that everything is an effort”) might have been influenced by lack of fitness. We explicitly acknowledged this possibility in the limitations section of our paper. We also

would like to stress that fatigue and loss of energy are core symptoms of depression and that it would be inappropriate to claim that “unfit” participants endorsing these items are doing so because of their fitness level rather than their mental health status. Further, these questions could be interpreted by participants as referring to a lack of motivation or concentration, in other words, a psychological “inability to get going” and “feeling that everything is an effort” rather than physical fatigue.

As Dr. Mukamal points out, depression is complex and multidimensional. It is also prevalent and debilitating. We cannot shy away from studying modifiable risk factors, such as cardiorespiratory fitness and fatness, simply because they might overlap with a few of the many possible symptoms of depression. Dr. Mukamal mentions that, when possible, subscales of larger instruments might be helpful in studying relationships among specific aspects of complex diseases. We agree but recognize that many epidemiologists interested in the fitness-depression relationship might not have this option. In these cases, the overlap between the exposure (fitness) and the composite outcome variable should always be acknowledged and considered (as in our article), but it should not be viewed as damning. These variables are clearly separate entities, and understanding their relationship has important implications for public health.

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