



Letter to the Editor regarding Mocanu et al. Ongoing Inconsistencies in Weight Loss Reporting Following Bariatric Surgery: a Systematic Review. Obesity Surgery <https://doi.org/10.1007/s11695-018-03702-6>Mocanu

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Mocanu and colleagues importantly draw attention to the continued varied reporting of weight-related outcomes after bariatric surgery and the barrier this presents to comparative analyses. They equate reporting body mass index (BMI) with weight, while of course BMI is a derived mathematical term (weight in kg/height in m)², a proxy for obesity. BMI changes should therefore reflect both a re-measured weight and re-measured height. Not unique to reports on surgical interventions, height is rarely re-measured at the time of post-intervention assessment: the preoperative height is assumed to be constant. In these circumstances, any BMI change is merely a weight change modified by the constant value of height². Statistical significance testing of BMI changes will give the spuriously identical *p* value and confidence intervals to comparisons of weight changes. While the assumption of height constancy may be valid for comparisons made over a short time period, they are probably not over longer periods of time since height decreases with age at a rate of -0.102 cm/year for men and -0.165 cm/year for women aged 50–59 so leading to artefactual increases in BMI [1]. As the authors of Baltimore Longitudinal Study of Aging concluded “True height loss with aging must be taken into account when height

(or indexes based on height) is used in physiologic or clinical studies.” Additionally, the development of osteoporosis [2] following bariatric surgery could lead to accelerated vertebral height loss and greater inaccuracies. This is not an issue addressed in the American Society for Metabolic and Bariatric Surgery recommendations [3]. Authors reporting BMI changes should be explicit as to whether these are based on an assumption of height constancy or on a re-measured height.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

References

1. Sorkin JD, Muller DC, Andres R. Longitudinal change in height of men and women: implications for interpretation of the body mass index: the Baltimore longitudinal study of aging. *Am J Epidemiol.* 1999;150:969–77.
2. Center JR, White CP. Bariatric surgery, weight loss and bone. *Nat Rev Endocrinol.* 2013;9:630–2.
3. Hopkins JC, Howes N, Chalmers K, et al. Outcome reporting in bariatric surgery: an in-depth analysis to inform the development of a core outcome set, the BARIACT study. *Obes Rev.* 2015;16:88–106.

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