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Invited Commentary

Metabolic changes after surgical fat removal: Current gaps and suggestions for future studies

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Dear Editor,

We read with interest the letter by Seretes et al. discussing the findings and limitations of our evidence synthesis regarding the metabolic implications of surgical subcutaneous fat removal (SSFR).[1] It is true that existing studies were of small sample size, heterogeneous in terms of baseline body mass index (BMI), type and amount of SSFR, gender differences, as well as participants' behaviour in terms of diet and exercise.[2] While this has a bearing on the results of this paper, a meta-analysis generates an average effect over the multiple studies and those till date[3–8] have failed to generate consensus because they did not address the heterogeneity in follow-up duration among the included studies. Our dose-response meta-analysis (DRMA)[1] aimed not only to pool previous studies to reach a bigger sample size and stronger conclusion, but also to account for differences in follow-up time. Thus, regardless of the existing heterogeneity in patient characteristics, there was a metabolic effect demonstrable for SSFR and these results are consistent with the observation that even a small amount of fat reduction can have a significant metabolic benefit on insulin sensitivity, inflammation, and blood pressure.[9,10]

With the current advancement in our understanding regarding fat tissue being an active endocrine organ rather than an energy store, as well as the accelerating increase in demand for such body contouring surgeries (that lead to SSFR) to improve body shape quickly, it is essential to further investigate the metabolic changes after these surgeries, not only to confirm the safety of these procedures, but also to help us to understand the mechanisms underpinning the link between obesity and metabolic diseases and the impact of various patient differences on metabolic sequalae. Our meta-analysis is reassuring in that metabolic safety seems plausible and therefore the focus now needs to be on additional sources of population heterogeneity such as existing comorbidities such as diabetes mellitus and history of previous bariatric surgery,[11] which could alter the metabolic trajectory after SSFR. As Seretes aptly concludes, future controlled studies with homogenous samples, proper methodology, and adequate follow-up remain of high importance to clarify the role of different patient factors on

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Abbreviations: SSFR, Surgical subcutaneous fat removal; NSSFR, Non-surgical subcutaneous fat removal; DRMA, Dose-response meta analysis

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metabolism after surgical[1] (SSFR) and non-surgical[12] (NSSFR) subcutaneous fat removal.

Ethical Approval

Not applicable.

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Conflict of interest statement

None.

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