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[Int J Obes Relat Metab Disord](#). 1996 Apr;20(4):353-60.

Immune response to obesity and moderate weight loss

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Abstract

Objective: To study the effect of moderate energy restriction (4.19-5.44 MJ or 1200-1300 kcal per day) in obese females on a variety of both innate and adaptive immune function measures including mitogen-stimulated lymphocyte proliferative response, and monocyte and granulocyte phagocytosis and oxidative burst. Obese and nonobese subjects were also compared at baseline.

Design: Measurement of body composition and immune function was conducted in all subjects before and after a 12-week diet intervention period for the obese subjects, with data analyzed using a two (obese and nonobese groups) x two (pre- and post-study) repeated measures design.

Subjects: Thirteen obese (42.3 +/- 0.8% body fat) and 10 nonobese (21.2 +/- 1.0%) healthy, normoglycemic, premenopausal females.

Measurements: Pre- and post-study body composition, nutrient intake, and immune function, with the reducing diet monitored through weekly random 24-h dietary recalls.

Results: Data from this study indicate that despite large differences in body fat mass between the obese and nonobese groups, immune function, as measured in this study, was similar between groups. Weight loss, however, even though relatively moderate (9.9 +/- 1.4 kg), was associated with significant decreases relative to the nonobese in several measures of T, B, monocyte and granulocyte function.

Conclusion: These data do not support the contention that mild-to-moderate obesity is associated with alterations in immune function. The data are consistent, however, with the viewpoint that weight loss, even at a moderate rate, is associated with a decrease in the function of certain aspects of the immune system.

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