



Are the Obese Metabolically Different?

The still unsolved question is: Are fat people metabolically different from those of normal weight? The final answer as applied to man is not yet on hand; however, several interesting reports have recently cast doubt on the concept that the obese have a metabolic system identical in every way with the lean.

Alonzo and Maren,¹ for example, have recently shown that while weight gain can be decreased in genetically obese mice by food restriction, the mice still had body fat concentrations two to four times as great as their lean siblings, who received more food. Under the conditions of the experiment as described, the obese mouse on an unrestricted diet had a normal total amount of protein in his carcass (total animal), but when the mouse was placed on a restricted diet, the body protein was lost in proportion to the restriction of food. In addition, these workers make this provocative statement: "Since increased activity and decreased food intake for several months did not seem to change fundamentally the fat content of the obese mice, it appears reasonable to believe that these animals metabolize their food in such a manner that more fat is deposited per gram of food intake than is the case for the lean mice."¹

These results confirm a study on the "hypothalamic" hyperphagic rat in which, although pair-fed with *ad libitum* eating controls, these

animals were found to have an increased amount of fat in their carcasses.² Operating here must be one or more of the "endogenous factors, as yet by no means well understood, which on occasion will enable two individuals of approximately the same size and age, having 'normal metabolic rates,' and indulging in about the same amount of daily activity, to move in different directions in regard to weight, even though their food consumptions be identical."³

There are, to be sure, many more questions to be asked and many more details to be filled in, but it seems to this writer that a fundamental metabolic "error" will be found in some obese persons. This disturbance will very likely be found to be an imbalance in enzyme reaction rates modified by various hormones. . . . There are, indeed, exciting days ahead.

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REFERENCES

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Eutrophy

Quite by accident I came across the word *eutrophy* which, from its Greek derivation—*eu* = well or normal and *trophe* = nourishment — means the state of good nutrition. Why the word (a cousin to atrophy) hasn't been more commonly used is, perhaps, a mystery. Certainly the term "well nourished," that is, eutrophic, is used widely enough.

At times it has been used too widely, or, at least, too loosely. For one must not forget to ask in this age of relativity—eutrophic when and where? The concepts of eutrophy held by Neanderthal man or by the Babylonians or by the Park Avenue gourmet are not similar; and even today the eutrophic male looks different in Bostonian and Bantu eyes.