

# Summary of the Informal Discussion of General Effects of Cancer on Nutrition<sup>1</sup>

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Dr. Giovanni Costa's paper (3) was discussed by Dr. Jonathan E. Rhoads, Dr. Mortimer B. Lipsett, Dr. William D. DeWys, Dr. D. Mark Hegsted, and Dr. Edward M. Copeland, III. The comments focused on the problems relative to nitrogen balance studies and to balance studies in general. The occurrence of spuriously positive nitrogen balances was recognized, but the interpretations were conflicting. Dr. Hegsted pointed out that calcium balances have also been spuriously positive. He recommended that, since conversion of calcium metabolites to gaseous products is unthinkable, caution be used in interpreting spuriously positive nitrogen balances in terms of gaseous losses. On the other hand, in numerous experiments conducted recently by respiratory physiologists, an excess of expiratory nitrogen was consistently found. It was agreed that a definitive answer must be obtained through isotopic techniques.

Dr. Vernon R. Young's paper (5) was discussed by Dr. George L. Blackburn, Dr. D. Mark Hegsted, Dr. Murray F. Brennan, Dr. Sidney Weinhouse, Dr. Christine Waterhouse and Dr. Stanley J. Dudrick, Dr. Edward Copeland, Dr. Mortimer Lipsett, Dr. Gio Gori, and Dr. Giovanni Costa. The major question was that of futile cycles, through which energy can be dissipated. The possible significance of the futile cycles was emphasized by Dr. Blackburn, Dr. Copeland, and Dr. Dudrick, who pointed out that, in a significant number of patients, hyperalimentation is not associated with a proportionate change in body weight. In these patients, motor activity cannot account for dissipation of

energy, since these patients are usually bedridden. Dr. Hegsted again emphasized that normal individuals performing similar amounts of work require substantially different amounts of food to maintain body weight. The necessity for basic research in this area was emphasized by Dr. Weinhouse and Dr. Waterhouse.

Dr. Blackburn's paper (1) elicited a vivacious discussion that dealt primarily with sodium retention, weight changes after hyperalimentation, and protein calorie ratios.

Dr. DeWys's paper (4) was discussed by Dr. S. D. Morrison, who brought forth data to exclude hypothalamic involvement as a significant factor in anorexia. Dr. Copeland suggested that anorexia might be a consequence, rather than a cause, of host depletion.

Dr. Brennan's paper (2), which defined differences among cancer, cachexia, and starvation, was discussed primarily by Dr. Blackburn. There was consensus that the cancer-bearing host resembles metabolically the patient with acute injury rather than the starved individual.

A plea for basic and applied research and for adequate funding closed the general discussion.

## References

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2. Brennan, M. F. Uncomplicated Starvation versus Cancer Cachexia. *Cancer Res.*, 37: 2359-2364, 1977.
3. Costa, G. Cachexia, the Metabolic Component of Neoplastic Diseases. *Cancer Res.*, 37: 2327-2335, 1977.
4. DeWys, W. D. Anorexia in Cancer Patients. *Cancer Res.*, 37: 2354-2358, 1977.
5. Young, V. R. Energy Metabolism and Requirements in the Cancer Patient. *Cancer Res.*, 37: 2336-2347, 1977.

<sup>1</sup> Discussion of papers presented during Session I, Conference on Nutrition and Cancer Therapy, November 29 to December 1, 1976, Key Biscayne, Fla.