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PROTEIN-ENERGY REQUIREMENTS AND INTERACTIONS: INTRODUCTION

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The nutritional characteristics of a diet must be viewed as a whole and not only in terms of one of its specific components. This is specially true when questions arise concerning the adequacy of dietary energy or dietary proteins. Proteins and energy sources are the two major components of the human diet most frequently related to problems of inadequate intakes, whether deficient or excessive. These two dietary factors are so closely related that it is almost impossible to think about one without considering the other. From a physiological point of view, the needs and metabolic utilization of protein vary depending on total energy intake and utilization. Conversely, protein intake and utilization will influence energy metabolism. Furthermore, although carbohydrates and fats have long been recognized as the human body's preferred energy fuels, proteins are also energy substrates. From a public health point of view, deficient energy and protein intakes are the major nutritional problems in the developing world and they often occur simultaneously. In industrialized countries, there is a growing concern about excessive energy intakes and inadequate dietary proteins, mainly due to changes in eating habits which are often induced by mass media publicity and commercial practices.

From clinical and physiopathological points of view, protein deficiencies which in severe cases can result in the clinical syndrome known as kwashiorkor, are almost always accompanied by dietary energy deficits. On the other hand, the clinical syndrome of marasmus, in which the consequences of energy deficiency predominate, there

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are also clinical and metabolic consequences of protein deficiencies.

As a result of these close links between the two dietary components, nutritionists, clinicians, physiologists, food policy planners and other nutrition specialists frequently address both simultaneously. Examples of this are the title of this symposium and the presentations that will be made by Dr. Vernon Young and I. Those presentations will revise and open to discussion some of the ways in which the intake or metabolic utilization of total energy affects proteins and viceversa. The influence of a function of our daily lives, namely physical exercise, on protein and energy metabolism will be analyzed.

Another example of the frequency with which dietary protein and dietary energy are addressed together and by the same groups of specialists, are the committees of experts convened by international bodies to study their requirements for humans and to recommend the dietary intakes of these nutrients. One such committee will meet in Rome, Italy, in October of this year, under the auspices of three organizations of the United Nations system: the Food and Agriculture Organization (FAO), the World Health Organization (WHO) and the United Nations University (UNU). They will analyze the scientific and epidemiological evidence that is currently available in order to uphold or modify existing dietary recommendations, most of which are derived from the joint FAO/WHO Expert Committee which met in 1971. The difficult task of such expert groups and some of its limitations will be addressed by Dr. John Waterlow in this symposium.

There are, however, peculiar dietary and metabolic characteristics of either proteins or total energy that must be regarded independently of each other. Among such particular characteristics are the metabolic and behavioral changes that allow the human being to compensate, within certain limits, to excessive or deficient energy intakes or expenditures in order to maintain energy balance. This issue will be part of Dr. Lars Garby's discussion.

I am quite honored to share the podium of this Congress with scientists whose names speak for themselves and their achievements: Dr. Vernon Young, Professor of Nutritional Biochemistry at the Massachusetts Institute of Technology,

in the United States, who is Co-chairman of this symposium; Dr. Lars Garby, Professor of Physiology at Odense University in Denmark; and Dr. John Waterlow, Professor of Human Nutrition at the London School of Hygiene and Tropical Medicine, in the United Kingdom. The presentations will address some traditionally accepted concepts as well as some areas that are not yet clear or are highly controversial. I hope they will provide food-for-thought and that the presentations will be followed by hearty and open discussions by the audience.