



## ABSTRACT

from presentation at the Council for Responsible Nutrition International (CRN-I) symposium:

### ***Scientific Issues Related to Codex Goals***

3 July, 2010, Geneva, Switzerland

**Jean-Michel Antoine, M.D., Ph.D.**

*Danone Vitapole, Paris, France*

#### **Evaluation of benefits and veracity of claims: what evidence is sufficient and feasible?**

Claims on *food* and *health* are as old as food itself. In the earlier ages, foods were the only way to manage diseases, and careful observations of case studies were transmitted from generation to generation, sometimes as legends, and sometimes as recipes. Modern science is deciphering some of the rationale of some of these efficient practices: Prescription of liver to prevent xerophthalmia generated by a deficit in vitamin A, consumption of seafood to prevent iodine deficient goiters, selection of specific fermented milks to cure diarrhea, and even the use of diluted wine to ease discussion during symposium. Observations generated evidence that build nutrition knowledge, such as the discovery of many vitamins, and were still critical in 1982 to identify the need for omega-6 in humans. However randomized control trials are needed to generate convincing evidence.

The first modern scientific demonstration of the efficacy of a food was conducted in 1742 in a pilot study, and one human trial was enough to convince Cook to use lime during his famous travel. Well conducted human trials are the cornerstone of evidence to support demonstration of benefits.

In the last decade, a group of European (Passclaim) scientists reviewed the criteria for scientific support of a claim, and agreed on 3 criteria:

1) a characterized food or ingredient; 2) human randomized controlled trial; 3) relevant markers. They also concluded that for innovative discovery, one trial is not enough, and that Ethic will limit the number as well as the invasiveness of human studies.

Moreover, measuring the health benefit of a food is still a dramatic challenge: Foods are very complex mixture of nutrients and molecules, triggering many metabolic pathways at the same time; humans are not a homogeneous group mixing responders and non-responders for different functions; the size of the biological effect of foods is limited. Nevertheless, it is obvious that food and diet are significant factors of health; there are convincing examples of functional benefit provided by consumption of foods/ingredients.

The real challenge is to combine rigorous scientific scrutiny with a pragmatic approach to decide when to implement progress in nutrition and health knowledge without misleading the consumer. This is critical to enabling widespread access to the potential health benefit of food without any discrimination on the basis of economics, among other factors.