



# Lack of science or bad science?

## *¿Falta de ciencia o mala ciencia?*

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This issue of the magazine is very rich, covering diverse topics, some of them directly related to controversial points and others very “fashionable” in Clinical Nutrition. On the other hand, some works have always been present in different scientific discussions, even providing basic principles of any nutritional treatment, which begins with the identification of risk, goes through the diagnosis and continues with the calculations of nutritional needs.

Pharmaco-nutrition or immunonutrition, a couple of years ago, were constant topics in scientific journals and nutrition conferences, but in their article Hardy and Manzanares answer a very interesting question “the end of an era?” Will it actually be the end of an era? Or, only, the end of this “trend” and the moment to evaluate how, for whom, when, for how long, etc.?

The sarcopenia topic appears in an original article, something that has also been observed in congresses and many scientific publications and popular media. Would this be related to the “pseudo” complexity of the issue or another reason?

Ortiz and Heyland discuss protein goals in critically ill patients and emphasize the principle of equipoise and related difficulties. In fact this point remains controversial just as caloric goals, although calorimetry is available, difficulties associated with measuring expenditure by this means continue, there is no equipment available in daily practice and other parameters should be used, but which ones?

So, I wonder why these topics are so current and at the same time so old that they have generated these articles. What is happening with our nutritional practice so that we have so many doubts, while at the same time, concepts such as sarcopenia are more fashionable than malnutrition (or could both be the same and it’s just a question of “marketing”? - topic for an upcoming editorial).

One of the explanations that may justify some of these questions is that, currently, there are so many publications that one gets lost with the different conclusions and, to solve this, meta-analysis is done. It is estimated that about one million articles are published each year. There are approximately 17 million articles or publications in Pubmed, having been made in humans, of which more than 700,000 are clinical trials, 1.8 million are reviews and 160,000 are systematic reviews<sup>(1)</sup>.

Unfortunately, the time to read all the studies, articles, reviews is short/impossible and also, for most health professionals, evaluating the quality of work is a challenge, since most have not received adequate scientific training at graduation and most have not done postgraduate studies<sup>(2)</sup>. To make matters worse, the large difference in results on the same subject, that is, controversial data, has caused an increase in meta-analysis studies to try to resolve doubts.

Meta-analyses have been transformed into a genuine industry, of poor and mistaken quality<sup>(3)</sup> that instead of helping has contributed to increased confusion. Another very complicated issue has been the geometric proliferation of open newspapers that publish as many works as possible in order to increase profits, since they charge authors for direct publication, without first guaranteeing the good quality of science<sup>(4)</sup>. In this way, it is not at all surprising that the doubts increase every day and, us in Latin America, have more and more questions to be answered.

In general, we follow patterns and use guides from American and European societies, not always in line with our populations and clinical realities, or worse, some unnecessary<sup>(5)</sup>. In addition, many of the guidelines have used clinical trials, or other types of work, including meta-analyses of questionable quality<sup>(6-9)</sup>. Consequently, the key point that seems to me to be in crisis is not the lack of science, but bad science and most of us have not been trained to evaluate it critically.

The scientific method is unique and should contemplate: the justification for executing the study (the

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introduction); the question(s) [hypothesis]; the manner in which the study is carried out - the method (just like a recipe for gastronomy - complete and detailed) including the key point that is the sample size based on the main hypothesis and not on secondary variables; the complete presentation of the data and adequate statistical analysis; the broad discussion with data from the literature or in the absence of these the discussion on the innovative contribution of research. That's how science is done!

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