Opinion Piece by Prof. Frédéric LEROY

Freshly released NutriRECS consortium dietary advice updates on red and processed meats: a turning point in a longstanding controversy?

Brussels, 15 October 2019 - Although we are surrounded by an overwhelming abundance and variety of foods, the simple daily act of eating remains a problematic struggle. In a highly normative society, we are continuously being reminded of our poor eating habits. The animal/plant divide in dietary preconceptions seems to be an important part of the mindset, suggesting a cultural rather than a factual perspective on eating *right*. Whilst the Western diet is clearly causing havoc and undermining public health, even the dietary guidelines usually put a disproportionate emphasis on the need to reduce the consumption of red meat and the products derived thereof. This is remarkable, to say the least, as red meat is a valuable nutrient-dense food and a key component of our evolutionary diets. It has been consumed since the origin of our genus, sometimes in formidable amounts. By 1.5 million years ago, we became largely adapted to meat eating, both anatomically and physiologically, and could not have survived without it.

The received wisdom nonetheless states that we eat 'too much red meat' per capita and that we are indulging in it as never before. This may be true when compared to the rural and often underfed generations that spanned the time between the Neolithic and modernity, but many healthy hunter gatherer communities worldwide have done so in even larger quantities. One can only guess how much red meat was eaten during the Palaeolithic era, but it certainly was higher than the mere 0-14 grams per day that is now being recommended by the very restrictive Planetary Health Diet. The latter has been designed by the EAT-Lancet Commission and is symptomatic for the current existential crisis within the scientific discipline of nutritional epidemiology of chronic diseases. Stanford University's professor John Ioannidis, for instance, has dismissed the health claims of the diet as 'science fiction'. Nevertheless, fourteen cities belonging to the so-called C40 Cities network, including London, Paris, Barcelona, and Milano, have declared that they will commit to adopting the EAT-Lancet Diet by 2030 to make their diets healthy and sustainable. Even if it is mostly presented as a dietary solution to limit environmental harm, EAT's science director has admitted that its design has been based on health

considerations only. Which brings us to the primordial issue: how strong is the evidence for such a drastic change in dietary behaviour based on nutritional argumentation?

Although the levels of red meat intake have been steadily decreasing over the last decades in many Western countries, possibly as a result of dietary advice, no improvement can be seen with respect to the incidence of diseases of modernity. Well on the contrary, as diabetes and obesity are on the rise. The dietary recommendations have thus failed in their mission, whether or not they are correct in their assumptions. We can either blame this failure on the behavioural weaknesses of the general public or start asking some fundamental questions about the very nature of this approach. **As a matter of fact, the dietary guidelines have faced serious criticism since their inception during the late 1970s. Although they were able to ignore the pushback for decades, they did not overcome the inner tension this has created. Today, a decade-old problem is reaching its boiling point.**

Authorities that advocate a reduction of the intake of red and processed meats generally claim that this is an evidence-based measure that is unambiguously supported by scientific literature. **A closer look at the data, however, demonstrates that most of this literature consists of observational studies, which show weak associations between consumption levels on the one hand and incidence of mortality and certain chronic diseases on the other hand.** The consumption data feeding these studies are, however, far from being robust. They are generally self-reported and derived from food frequency questionnaires that have difficulties capturing actual eating behaviour. Moreover, the reported associations are not only weak but also heavily confounded. A main problem is the 'healthy user bias', which is due to the fact that health-conscious people are usually eating less meat because they tend to follow the dietary advice encouraging them to do so. Or, in some cases, report as if they would be following that advice. However, such people also tend to be less overweight, more physically active, smoke less, consume less alcohol, have better medical guidance, and just lead healthier lives in general.

Enter the old adagio: association is not necessarily equal to causation; it should not be treated as such until sufficient proof has been accumulated. One would assume that this would by now have been installed as a widespread principle of good scientific practice. **What observational studies are capturing is to be considered as health 'beliefs' within a society, rather than specific health 'effects' of actual foods.** In a non-Westernized context, for instance, positive associations sometimes turn into negative ones. This is also confirmed when looking worldwide: the global PURE studies found that the consumption of meat parallels *lower* mortality and *less* heart disease. And when arguing nonetheless for a causal detrimental relationship, researchers should not ignore the fact that the administration of red meat in randomized controlled trials does *not* lead to worsened risk marker profile for inflammation, oxidative stress, or cardiovascular disease.

Taken together, the conflicting 'body of evidence' has generated a lot of confusion. To set the record straight, the NutriRECS consortium has recently

performed a rigorous quality check of the evidence, published in the Annals of Internal Medicine. They clearly state that, when using the highest scientific standards, the certainty of evidence arguing for meat reduction is low to very low. They therefore recommend that adults continue current consumption, at least as far as health effects are concerned. Such authoritative intervention *within* the peer-reviewed scientific literature was urgently needed. **Time will tell if it is able to move the needle, so that we can finally start focussing on what is truly needed: adequate essential nutrition within planetary boundaries.**

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A shortlist of studies quoted in the following OpEd:

• Leroy F, Cofnas N (2019) Should dietary guidelines recommend low red meat intake? Critical Reviews in Food Science and Nutrition, DOI: 10.1080/10408398.2019.1657063
• PURE: Healthy Diet Including Dairy and Meats May Be Good For Hearts Worldwide: https://www.acc.org/latest-in-cardiology/articles/2018/08/22/14/15/tues-515am-pure-esc-2018
• Johnston BC, Zeraatkar D, Han MA, et al. (2019) Unprocessed red meat and processed meat consumption: dietary guideline recommendations from the Nutritional Recommendations (NutriRECS) consortium. Annals of Internal Medicine, DOI: 10.7326/M19-1621: https://annals.org/aim/fullarticle/2752328/unprocessed-red-meat-processed-meat-consumption-dietary-guideline-recommendations-from

You can download a PDF version of the following OpEd HERE. Translations of the following document (in German, French, Italian, Spanish, Polish) will be available on European Livestock Voice platform https://meatthefacts.eu soon.

About Prof. Frederic Leroy:

After having studied Bio-engineering Sciences at Ghent University (1992-1997), Frédéric Leroy (°1974) obtained a PhD in Applied Biological Sciences at the Vrije Universiteit Brussel in 2002, where he continued his academic career at the research group of Industrial Microbiology and Food Biotechnology (IMDO) as a post-doctoral fellow of the Research Foundation Flanders (FWO). Since 2008, he holds a professorship in the field of food science and (bio)technology.

His research primarily deals with the many ecological aspects and functional roles of bacterial communities in (fermented) foods, with a focus on animal products. In addition, his interests relate to human and animal health and wellbeing, as well as to elements of tradition and innovation in food contexts. The research is often of an interdisciplinary nature, involving collaborations with experts in microbiology, animal production, veterinary sciences, social and consumer sciences, cultural anthropology, and food history. He is also a member of the research group of Social and Cultural Food Studies (FOST).

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