Limitations to the chapter on UPF in NNR2023.

The draft report states that: “There is currently no consensus on classification of processing of foods, including UPFs.” This is no valid argument. There is no consensus on the definition of a “healthy diet”, still this term is being used extensively through the report.

The statement is also incorrect. The term “ultra-processed” was introduced with the NOVA framework, and is exclusively used within this context. Hence, as the authors of the UPF chapter were instructed to evaluate health effects from ultra-processed foods, their task was to sum up health effects from foods classified according to NOVA, not to evaluate health effects from industrial processing *per se*.

This argument: “The dominating UPF classification (NOVA classification group 4) contains a variety of unhealthy foods, but also a number of foods with beneficial health effects.” is invalid. For instance, the Mediterranean dietary pattern is usually encouraged, despite foods like white bread and wine, inarguably neither nutritious nor necessary, being traditional components.

Health effects. The evidence linking UPF with NCDs consistently demonstrates that a diet dominated by UPFs is the problem, not the presence of single UPFs. Still, there are quality differences within food groups, and it’s hard to argue that the ultra-processed versions of, for instance, whole grain breads and granolas are nutritionally better than their processed counterparts. Consumers should be made aware of this, and be advised to choose the less processed versions.

Food and nutrient intake. This section contains the following sentence: “Other potentially more nutrient dense foods also classified as UPF include factory-produced whole grain bread, many breakfast cereals and fish products.” This is misleading and must be revised, as several food products of this type would be categorized as processed, not ultra-processed foods.

Health effects. This section contains erroneous statements: “Regular intake of UPF encourages overeating and intake of foods in the UPF category of the NOVA classification has been suggested associated with increased risk of obesity, cardiovascular disease, type 2 diabetes, cancer, depression, and premature mortality”. It is a high intake, not *regular intake*, or *intake*, that is associated with NCDs.

Main data gaps. This section states that mechanisms are unknown. This is incorrect. The mechanisms section from the original chapter has been omitted. Biological mechanisms for reduced hunger and increased satiety were demonstrated in the study by Hall et al., and also low grade inflammation was reduced on the “unprocessed” diet. From preclinical studies, inflammation is known to interfere with regulation of homeostatic systems like appetite and weight regulation. Also, the extensive literature on pro-inflammatory properties of commonly used additives in UPFs should not be ignored. Several studies have demonstrated that effects of UPFs persist also after adjusting for BMI, energy intake and intake of several macros, supporting the role of extensive processing as a driving factor per

se, independent of energy and nutrients. This should call for precautionary action, rather than dismissing the role of UPFs in human health.
Methodological issues should be overcome by improving FFQs (look to the Nutri Net Santé cohort), not by dismissing the role of ultra-processing.

Risk groups. This section should be changed to: “High-consumers of UPFs have an increased risk of non-communicable diseases. Intake of nutrients from UPFs should be exchanged for less processed versions, when possible”. This is also more in line with the advice given for e.g. red meat, which is associated with NCDs in a less consistent manner than UPFs.

Science advice. The causality argument is invalid. We still don’t know how trans fats cause health problems, still we warn against them and introduce measures to reduce exposure. Trying to single out specific UPFs and their health effects before taking action is not justified. A high intake of UPF is associated with several health outcomes contributing significantly to the burden of disease, and diets high in whole and minimally processed foods are associated with less risk. This unequivocal fact justifies advising consumers to turn to less processed foods, also in the absence of causal evidence.

The argument “A guideline on UPF would introduce conflicting messages about some foods, for example some readymade foods, wholegrain bread, and granola”, is invalid. Firstly, not all industry made breads, granolas and readymade foods are UPF. Also, we should not underestimate the public. Giving clear advice to choose the least processed versions of foods, e.g. those containing mostly whole foods over those containing less, is easily captured, and would encourage the industry to improve products. Educating consumers on the importance of mainly choosing whole foods is in line with most dietary advice already given, but must be communicated clearly.

In relation, suggested recommendations from other chapters are not more easily captured. For instance, consuming 25 grams of vegetable oils daily or the specific shares of fatty acids in the diet, are impossible for most consumers to adhere to.

The most obvious advice generated from all the research into UPF and health outcomes is this: Increasing the intake of whole and minimally processed foods at the expense of UPF would lead to reduced risk of various health problems, like premature death, CVD, diabetes type 2, cancer, IBD and weight gain/obesity. There are no risks associated with this type of advice. Also, focusing on increasing whole and minimally processed foods is in line with most of the research into food groups and dietary patterns independent of the NOVA framework.

This argument: “Time to prepare foods, and the accessibility to foods does not make it easy to leave out highly processed foods from the diet”, is also false, because there is no need to totally leave out ultra-processed foods in the diet. It is also false because it accepts as a premise that we should not spend time cooking. Spending time otherwise taking care of our health, like with exercise, is never questioned. Taking time to cook should be encouraged in the same way.

General comments:

The committee seems to have been highly influenced by the massive food industry response to the original chapter, and the original work of the authors is not at all recognizable in the draft chapter.

In ignoring the many and diverse health outcomes linked with a high intake of UPF, despite the fact that evidence is mounting, we are missing the opportunity to point to the one most important modifiable dietary factor at a crucial stage. NNR2023 will undoubtedly influence dietary advice in many (if not all) of the Nordic and Baltic countries in the coming years. With the increasing intervals at which dietary advice is revised, this is unfortunate.

In giving dietary advice, we should always consider risks versus benefits. There are no risks in advising on a diet mainly based on whole and minimally processed foods. This could easily be adopted into NNR2023. Also, from the nutrient-centric point of view the committee is adopting, reducing the intake of UPF and increasing intake of whole and minimally processed foods will increase nutrient intake, and should be encouraged.