

# CODEX ALIMENTARIUS COMMISSION



Food and Agriculture  
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Agenda Item 7

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## JOINT FAO/WHO FOOD STANDARDS PROGRAMME CODEX COMMITTEE ON NUTRITION AND FOODS FOR SPECIAL DIETARY USES

Fortieth Session

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### REPLY FROM WHO IN RESPONSE TO THE REQUEST FOR ADVICE ON ESTABLISHING NRV-NCD FOR EPA AND DHA

(see CX/NFSDU 18/40/8, Annex I)

As we have now completed the evidence review and analysis for all polyunsaturated fatty acid, we are in a position to answer your queries.

Please find below our responses to the questions posed in the bullet points noted in your message below.

As informed previously, the findings from the two systematic reviews shared with the eWG, and also presented by the respective lead authors of the systematic reviews at a side event which we organized at the 39<sup>th</sup> session of the CCNSFDU, will inform the recommendations on polyunsaturated fatty acid intake to be contained in the forthcoming WHO guideline on *Polyunsaturated fatty acid intake in adults and children*.

Recommendations on the intake of long-chain polyunsaturated fatty acids, including EPA and DHA, will be included in the forthcoming WHO guideline and will supersede any recommendations regarding EPA and DHA described in the *Joint FAO/WHO Expert Consultation on the Risks and Benefits of Fish Consumption*, *Joint FAO/WHO Expert Consultation on Fats and Fatty Acids in Human Nutrition*, and *Joint WHO/FAO Expert Consultation on Diet, Nutrition and the Prevention of Chronic Diseases*.

The recommendations on polyunsaturated fatty acid intake will be finalized at the 12<sup>th</sup> meeting of the WHO NUGAG Subgroup on Diet and Health, to be held on 3-6 December 2018. The draft guideline will then be issued for public consultation.

As far as the systematic reviews are concerned, the results of randomized control trials (RCTs) by Abdelhamid et al., which is now published (<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD003177.pub3/full>), show that increasing n-3 long chain polyunsaturated fatty acid intake has little to no effect on all-cause deaths and cardiovascular events, and makes little to no difference to cardiovascular deaths, coronary heart disease deaths, stroke, or heart irregularities. There was a suggestion of a small reduction in coronary heart disease events. However, this effect was not maintained when studies were limited to those at low risk of bias. Higher intakes of n-3 long chain polyunsaturated fatty acids slightly reduce serum triglycerides and raise HDL cholesterol. The vast majority of RCTs identified and included in the systematic review assessed the effects of n-3 long chain polyunsaturated fatty acid supplements; very few studies assessed fish intake per se.

Contrary to the RCTs, virtually all cohort studies included in the systematic review by de Souza et al, assessed the effects of n-3 long chain polyunsaturated fatty acid intake through fish intake. Results show that higher intakes of n-3 long chain polyunsaturated fatty acids are associated with decreased risk of all-cause mortality, and mortality from cardiovascular and coronary heart disease, though the association was not significant. No significant effects were observed for other cardiovascular disease outcomes. It should be noted that assessment of n-3 long chain polyunsaturated fatty acids in the

identified cohort studies was based almost entirely on fish intake as noted above. It is therefore not possible to determine with certainty if it is the n-3 long chain polyunsaturated fatty acids, other components in the fish, or the fact that fish intake is also associated with healthier diet (including less meat intake) and lifestyle that is responsible for the observed associations. Therefore, the NUGAG Subgroup on Diet and Health, while recognizing the potential health benefits of consuming fish, did not find strong evidence that intake of n-3 long chain polyunsaturated fatty acids per se was beneficial in preventing cardiovascular and coronary heart disease outcomes.

Regarding serum triglycerides, as indicated, the systematic review conducted by Abdelhamid et al. (<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD003177.pub3/full>) reported a statistically significant decrease in serum triglycerides with higher intake of long chain polyunsaturated fatty acids. Although there is an increasing body of evidence that suggests increased serum triglycerides may be a risk factor for cardiovascular disease, whether this relationship is entirely independent of other blood lipid measures remains unclear. Further research is therefore needed to clarify the role of serum triglyceride concentration as an independent risk factor, including evidence from randomized intervention studies specifically targeting triglycerides, demonstrating that lowering triglycerides in those with elevated serum triglycerides reduces the risk of cardiovascular diseases. Accordingly, at this time, the NUGAG Subgroup on Diet and Health did not consider serum triglyceride concentration to be a critical outcome for decision-making as related to the formulation of recommendations and development of guidelines.

Based on these evidence reviews carried out for developing and updating the polyunsaturated fatty acid recommendations, we do not consider EPA and DHA to be critical nutrients for reducing coronary heart disease mortality as suggested by the eWG.

We very much hope the information above together with that provided in the systematic reviews, would help the eWG and CCNFSDU to make decisions regarding NRV-NCD for EPA and DHA with respect to coronary heart disease mortality.