Future Trend and Research Directions in Risk-benefit Assessment

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Risk-benefit assessment (RBA) of foods is a relatively new discipline that incorporates knowledge on nutrition, toxicology, microbiology, chemistry and epidemiology for integrated health assessments. The overall aim of RBA is to estimate the beneficial and negative health impacts of foods, food ingredients or diets, and compare them using common health metrics. RBA is useful to inform food safety policies or to provide dietary advice based, with the ultimate aim of preventing food-associated diseases and promoting wellbeing of consumers.

While several national-level and international projects have in the last decade led to substantial developments in RBA methodologies, several challenges remained. These include data and knowledge gaps, methodological limitations, lack of harmonization of concepts and new research questions and agendas, for example linked to sustainability and economic issues.

Recent RBA developments have been equally evident in terms of data collection and analysis, and of method development and modelling. As examples, while the first RBA studies focused on one single food (e.g. fish) or one single food compound (e.g. folic acid) and investigated risks and benefits in the population as a whole, recent work accounts for the health effects of substitution of foods in overall dietary patterns, or for the variation in the population in terms of susceptibility or dietary preferences.

By sharing ongoing research at DTU Foods’ Risk-Benefit Research Group, as well as the views of a recently established Risk-Benefit Assessment International Network, we present current progress with RBA of foods, discuss how to further develop and optimize RBA methodology, and present our arguments to increase collaboration within RBA internationally.