'Hot' topics in dietary management for CVD prevention:
Ultra-processed foods and the risk of CVD - Are all ultra-processed foods bad?

Processed foods and especially ultra-processed foods (UPFs) are gaining widespread attention in the media based on associations with negative health outcomes found in numerous observational studies.

What are ultra-processed foods?

Although extensively used, the term UPFs lacks a standardized definition. The UPFs concept classifies foods by their level of processing rather than on their nutrient profile. The most frequently used classification system is the NOVA system which distinguishes between unprocessed or minimally processed, processed and ultra-processed foods (1). UPFs are packaged as ready-to-eat or -heat foods, designed to be convenient, shelf-stable, and appealing. These foods typically contain several manufactured ingredients, such as additives (preservatives, stabilizers, flavours, colours) next to being energy-dense and high in sugars, fats (particularly saturated and trans fatty acids) and salt.
The UPFs group includes for instance flavoured yogurts, pastries, confectionary, processed meat products, as well as whole-grain bread, wholewheat cereals, dairy alternatives, meat-replacers and margarine.

UPFs consumption and adverse health outcomes

Several meta-analyses based on data from observational studies, such as large cohort studies, have linked high consumption of UPFs with adverse health outcomes like increased risk of obesity, type-2-diabetes, cardiovascular disease (CVD) and cancer (2-5). For instance, a recent umbrella review reports consistent evidence for a direct association between UPFs exposure and thirty-two health parameters covering mortality outcomes, certain cancers, cardiovascular, gastrointestinal, metabolic, mental, and respiratory health outcomes (2). Another systematic review and meta-analysis found a positive linear relationship between UPFs intake and risk of cardiovascular events (CVEs) with a 10% increase of UPFs by daily weight proportion being associated with a 1.9% increase of CVEs (95% CI, 1.007–1.031; P = 0.002) (3).

Are all ultra-processed foods bad for you?

Higher UPFs consumption (per 1 standard deviation increment, ~260 g/day) was found to be associated with an increased risk of multimorbidity of cancer and cardiometabolic diseases (HR: 1.09, 95% CI: 1.05, 1.12) (5). However, the disease risk differs according to UPF subgroups. While associations were most notable for animal-based products (HR: 1.09, 95% CI: 1.05, 1.12), and artificially and sugar-sweetened beverages (HR: 1.09, 95% CI: 1.06,1.12) other subgroups such as breads and cereals (HR: 0.97, 95% CI: 0.94, 1.00) or plant-based alternatives (HR: 0.97, 95% CI: 0.91, 1.02) were not associated with risk (5). Hence different UPFs subgroups appear to impact health outcomes differentially, and UPFs subgroups with a better nutrient profile seem not to affect disease risk. When adjusting for the two UPFs subgroups; animal-based foods and artificially and sugar-sweetened beverages, or when excluding both of these subgroups from the statistical analysis, the association between UPFs exposure and disease risk disappeared (6). Another recent observational study with 34 years of follow-up found that dietary quality was a more predominant influence on mortality outcomes than UPFs consumption (7). Higher UPFs intake was associated with slightly increased all-cause mortality, while no associations were found for mortality due to cancer or CVD. Associations varied across UPFs subgroups and were mainly driven by meat, poultry or seafood based ready-to-eat products and sugar and artificially sweetened beverages (7).
Based on these findings a more nuanced analyses of UPFs and health risk is warranted as not all UPFs seem to be bad.

Conclusion

Taken together, the level of food processing should not be the only criterion when assessing the health impact of UPFs. Combined with the dietary advice for a predominantly plant-based diet including fruits and vegetables, whole grain foods, pulses, plant-based fats and oils, consumers should choose foods based on their nutrient quality (low in salt, sugar and saturated fat, high in protein, dietary fibres, vitamins and minerals) and not only their level of processing.

More information about a healthy diet can be found in the e-learning tutorial 'Diet at the Heart 'https://www.dietattheheart.com, which is hosted at the EAS website.

References:

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