A Note on Food based dietary patterns and diseases.

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Editor Note

The amounts, proportions, variety, or combination of different foods and beverages in diets, as well as the frequency with which they are habitually consumed, are referred to as food habits. Given that food consumption is a multi-dimensional exposure, there are a plethora of possible food combinations to investigate. In nutrition research, how these combinations are described is largely determined by the research question and study design. Food consumption is specifically manipulated in intervention studies, but sensitivity to food habits is derived from self-reported intake in observational studies. In this case, two key research methods were used. The first is to use a priori specified indices to capture particular dietary habits, such as calculating dietary guidelines compliance. The second is to characterise major patterns of food intake using data-driven (exploratory) statistical methods (primarily cluster analysis, principal component and factor analysis, and reduced rank regression). Foods and drinks have been linked to an increased risk of cancer, type 2 diabetes, coronary heart disease, and stroke in the literature. For most endpoints, higher consumption of whole grains is linked to a lower risk, while processed meat and unprocessed red meat consumption is linked to a higher risk. Other foods have mixed evidence and may be disease specific. For example, fruits and vegetables are linked to a reduced risk of cancer, coronary heart disease, and stroke, but not type 2 diabetes. The function of dairy foods is still unknown, with fermented dairy products being more strongly linked to a reduced risk of cardiometabolic disease than others, while total dairy consumption appears to be relevant to colorectal cancer. A diet high in meat and other animal products, as well as (refined) cereals and sugars, is linked to a higher risk of cancer, while

a diet high in fruits and vegetables is linked to a lower risk of cancer. Researchers in the field of nutrition have also used exploratory statistical approaches to assess dietary preferences in diverse populations. However, it's difficult to extrapolate conclusions from such studies. Patterns high in processed meat, refined grains, high fat dairy, eggs, and fried food, for example, are positively associated with risk of type 2 diabetes and colorectal cancer, while patterns high in vegetables, legumes, fruits, poultry, and fish are inversely associated with risk of type 2 diabetes and colorectal cancer. Dietary habits characterised by high intakes of refined grains, processed meat, and sugar-sweetened beverages have been linked to an increased risk of type 2 diabetes, with findings repeated across several cohorts. While reduced rank regression has been used on other endpoints, the results have only been rarely replicated on other populations. Food patterns eliminate possible dietary confounding by other aspects of the diet, improve the capacity to determine stronger effects due to the combined effects of many diet features, and enable assessment of synergistic component interactions. The effects of individual foods can be obscured by evaluating overall dietary patterns; for example, exploratory patterns containing whole grains showed only a slight inverse correlation with diabetes risk, whereas whole grains were inversely correlated.

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