

Comprehensive Studies on the Trans Fatty Acid Content in Foods

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Aim: Evidence from several controlled human intervention studies indicates that consumption of diets containing sufficiently high levels of trans fatty acids (TFA) increases risk of cardiovascular disease (CVD) and therefore should be minimized. However, comprehensive studies on TFA content in food in Central Europe have been conducted around ten years ago. Therefore the aim of this project was to evaluate the present situation of TFA in foods considerably.

Material and Methods: Around 300 products, purchased between 2005 and 2006 were analysed on their TFA and total fat content. The foods were classified into the following groups: bakery products, sweet spreads, fast food, children food, fats, milk products, instant products, muesli and muesli bars, convenience products, coffee-whiteners and instant coffees, snacks and sweets.

Fat content was determined by Accelerated Solvent Extraction system (ASE®), the fatty acid pattern by gas chromatography.

Results: Around two third of the investigated products contained less than 2% TFA/total fatty acids. Household margarines, snacks, sweet spreads or biscuits which were shown to be high in TFA one decade ago are meanwhile reduced and amounted to less than 2% TFA. Milk products naturally contain TFA (<4%), but mainly vaccenic acid, which was not linked with CVD in epidemiological studies.

Very heterogeneous results were found for fast food, bakery products including their main ingredients dough and shortenings. For the latter groups TFA ranged from <0.5% up to 25% TFA/total fatty acids (or 5.6 gTFA/100g product). Alarming results were found for some microwave popcorn of up to 27% TFA or 6g/100 g product.

Conclusion: As expected the TFA contents were reduced in most products compared to former investigations. However, very high TFA values of more than 10% were found in about 8% of the products, 3% contained more than 20% TFA/total fatty acids.

Since TFA concentrations are neither labelled nor restricted in Europe (except Denmark) the consumers are not able to choose particularly low TFA products.