# Consumption of added fats and oils in EPIC

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**(for the EPIC working group on dietary pattern)**

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## Purpose

The discussion on the health consequences of dietary fat intake in terms of quantity and quality (fatty acid composition) continues today. Added fats and oils provide an important contribution to the total fat intake. This evaluation aims at describing the differences in the intake of added dietary fats and oils between centres participating in EPIC (European Prospective Investigation into Cancer and Nutrition).

## Methods

Single 24-h recalls were assessed in 22 924 women and 13 031 men aged 35–74 years. The participants constitute a representative subsample of each of the EPIC cohorts located in 10 European countries. The amount of added fats and oils consumed was calculated in total as well as for several food subgroups. Furthermore, the intake of lipids originating from the consumption of added fats and oils, including fats and oils used for sauce preparation, was analyzed. All results were adjusted for age of the participants as well as the recall weekday and season. Analysis of variance was applied to identify factors significantly modulating the intake results.

## Results

Mean daily intake of total added fats and oils varied between 16.2 g (Varese, Italy) and 41.1 g (Malmo, Sweden) in women and between 24.7 g (Ragusa, Italy) and 66.0 g (Potsdam, Germany) in men. Expressed in terms of lipid (nutrient) intake, it was possible to further include fats and oils used for sauce preparation. Total mean lipid intake by consumption of added fats and oils, including those used for sauces, ranged from 18.3 g/day (Norway) to 37.2 g/day (Greece) in female EPIC participants and from 28.4 g/day (Heidelberg, Germany) to 51.2 g/day (Greece) in males.

In the Mediterranean EPIC centres, a rather high lipid intake was observed, with an overwhelming contribution of olive oil and a low intake of animal fats. This contrasts with the Central and Nordic European EPIC centres where few vegetable oils, more animal fats, and a high proportion of margarine were chosen. The consumption patterns in EPIC France included both a high contribution of animal fats and vegetable oils. The German EPIC centres were at the top in animal fat (butter) consumption and revealed the highest animal fat:vegetable fat ratio.

Among all EPIC centres, the contribution of added fats and oils (including sauces) to total energy intake was lowest in Norwegian women (8.3% of energy) and highest in Greek women (21.8% of energy). In most EPIC centres, female and male participants revealed mean values in the range of 11%±1% and 12%±1% of energy intake, respectively, Spanish centres being an exception with about 15% of energy intake originating from fat and oils.

Besides total energy intake, the consumption of added fats and oils was significantly ($P<0.001$) affected by the following factors: centre, gender, age, smoking and education. Higher age as well as smoking were predictive for a higher consumption of added fats and oils (with energy adjustment), while a higher educational level was associated with a lower intake.

## Conclusions

The data demonstrate a high variability in the consumption of added fats and oils across all EPIC centres. Although added fats and oils represent only one of the main lipid sources in the diet, the differences at the nutrient level observed are high as well. This provides a good chance for EPIC to give further insight into the relationship between dietary fat intake and chronic disease risk.