

CONTRIBUTION OF RAW AND PROCESSED PORK MEAT TO THE SPANISH INTAKE OF FAT AND ESSENTIAL AMINO ACIDS

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BACKGROUND :

The consumption of raw pork meat in Spain is as high as 1,992,448 tons per year which means 49.8 Kg/person/year, a 53.3 % of total meat consumption. The consumption of pork meat products is also of great importance in Spain. So, dry-cured ham and sausages represent 180,050 Tm/year (4.5 Kg/person/year) and 166,380 Tm/year (4.2 Kg/person/year), respectively. Cooked ham and other cooked meat products represent 139,590 Tm/year (3.5 Kg/person/year) and 259,810 Tm/year (6.5 Kg/person/year), respectively. The consumption trend was still slightly increasing during the last year (see figure 1). Meat is a significant source of protein while fat composition has a great significance for preventing cardiovascular diseases.

OBJECTIVE :

The main goal of this study is to elucidate the contribution of raw pork meat, dry-cured ham, dry-cured sausages, cooked ham and other cooked meat products to the intake of fat and essential amino acids in the Spanish diet.

METHODS :

Fatty acids and cholesterol were analysed by Gas Chromatography as described elsewhere (Motilva et al., 1992, 1993). Essential amino acids were extracted, hydrolyzed, derivatized by PICO-TAG method and analyzed by HPLC as described by Aristoy and Toldrá (1991). To estimate fat and protein intakes in the Spanish diet, we have used national food and meat consumption data (AICE, 1993).

RESULTS AND DISCUSSION :

The results show that consumption of pork fat represents 37.5 g/person/day, 73 % due to raw pork meat, even though this value may be a slight overestimation since there is a variable wastage (around 10%) of meat fat via trimming, cooking losses and platewaste. Anyway, raw pork meat and its products provide a considerable proportion of dietary fat. So, the average fatty acid intake for total pork meats groups is : 13.5 g SFA/person/day, 18.7 g MUFA/person/day and 5.2 g PUFA/person/day and the resulting ratio SFA : MUFA : PUFA is 2.6 : 3.6 : 1. The average contribution of product categories to daily fat intakes is shown in figure 2. There is a wide variation in the fat content of individual cuts of meat and meat products. The average daily intake of cholesterol from total pork meat groups is 93.8 mg/person.

Consumption of protein for total pork meats groups represent 31.9 g/person/day. Lysine, leucine, threonine, valine and isoleucine are the most important essential amino acids with average daily intakes of 2.34, 2.25, 1.53, 1.52 and 1.47 g/person, respectively (see figure 3). It should be emphasized that dry-cured ham constitutes an important concentrated source of free amino acids which represent 20-35 % of the total amino acids concentration (see figure 4). In the specific case of lysine, the free amino acid content in dry-cured ham represents 59% of the total amount.

CONCLUSIONS :

Although there is a wide variation in the content of individual cuts of pork meat and meat products, the daily consumption of SFA, MUFA and PUFA is 13.5, 18.7 and 5.2 g/person, respectively, in a ratio 2.6 : 3.6 : 1. Raw and processed pork meats constitute a concentrated source of high biological value protein. Dry-cured ham contains a high proportion of essential amino acids in free form.

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Figure 2.- Average contribution of raw and processed pork meats to intakes of fat in Spain.

Figure 1.- Evolution of raw pork meat intake in Spain over the period 1988-93.

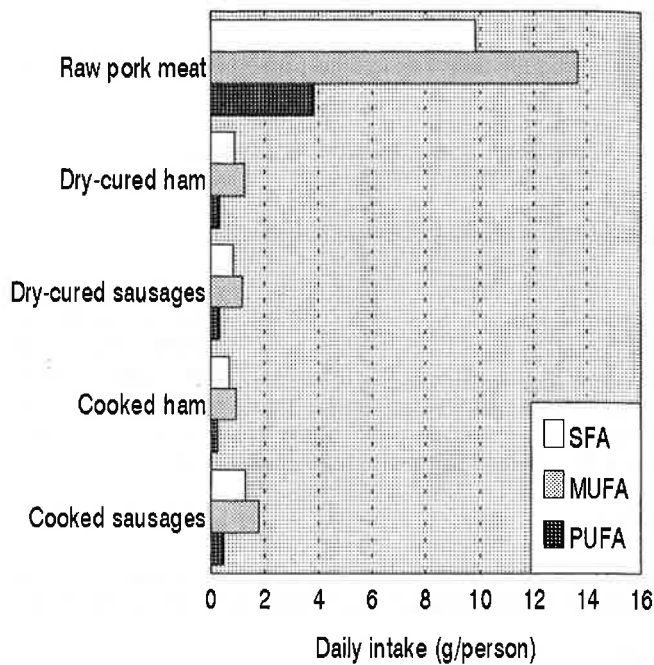
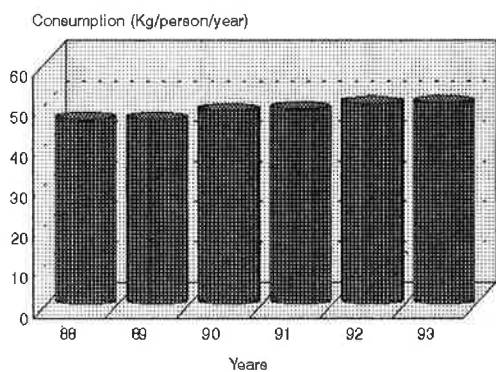


Figure 4.- Average contribution of processed pork meats to intakes of essential amino acids in Spain

Figure 3.- Average contribution of raw pork meat to intakes of essential amino acids in Spain

