

FOOD CHOICE AND HABITS AND NUTRITIONAL STATUS IN GROUPS OF CHILDREN, ADULTS, ELDERLY, PREGNANT AND LACTATING WOMEN IN THE PERUGIA AREA (CENTRAL ITALY).

Adalberto Alberti-Fidanza

Istituto di Scienza dell'Alimentazione - Università degli Studi - Perugia, Italy

For several years we have been carrying out epidemiological nutritional studies on different groups of the population in the Perugia area (Central Italy): growing people, adults, the elderly and pregnant and lactating women. These studies may be defined as nutritional integrated studies as they examine a set of variables. They include measurements of anthropometric variables, food habits, (using different techniques) vitamin and mineral nutritional status, blood lipid pattern and physical activity. Food preferences and aversions, nutritional knowledge, prejudices and beliefs and smoking history are also evaluated.

FOOD HABITS

General observations

For all groups examined the protein intake (particularly from meat) and fat intake are too high. Consequently the percent of energy from protein and fat is at too high a level while energy from carbohydrates is rather low. Generally a low polyunsaturated/saturated fatty acid ratio is observed. The consumption of milk, fish and legumes is very low, mainly due to cultural reasons. High percentages of people have a very light breakfast. Vitamin A, thiamin and riboflavin are the

vitamins which are most frequently found at a low level in the diet.

The food habits observed in this area certainly cannot be defined as strictly Mediterranean.

From longitudinal studies (in the context of the Seven Countries Study) on food habits carried out for 31 years with follows-up every 5-10 yrs we observed considerable modifications. From 1960 to 1991 the two rural population groups being studied (Crevalcore in Northern Italy and Montegiorgio in Central Italy) gradually gave up the traditional Mediterranean diet (Alberti-Fidanza, et al. 1993) (1).

Children

From a recent longitudinal study (Alberti-Fidanza, in press) (2), carried out for three years on 100 children (3-6 years old) and from other cross-sectional studies on preschool children we found some irrationalities in diet (Alberti-Fidanza, et al. 1991) (3).

In 22% of the cases vegetables were never or only occasionally eaten, and yoghurt was not eaten in about 40% of cases. Some foods such as cheese, fish, milk and legumes were not consumed by 11% of the children and eggs by 7%; and this without valid reasons. High percentages of children eat fish and legumes at the school canteen once a week, but never or only occasionally at home. Milk consumption is one cup/day for about 40% of children. Only in about 60% of cases could breakfast be considered nutritionally adequate.

From the interviews carried out indirectly through the mothers we were informed on children's food preferences and aversions. It seemed interesting to verify to what degree the children's food consumption corresponded to their real preferences. Several contrasts were found.

The children liked legumes and fish but generally ate them only once a week, while meat was eaten every day by high percentages of children, although it was not among the foods they preferred most.

This means that the mothers' opinions influenced consumption, at least for those foods with a high symbolic value as being necessary for good health as in the case of meat.

In conclusion it seemed that the children's natural eating tendencies were more rational and more Mediterranean than those which they were induced to follow. The knowledge of mothers' attitudes towards children's nutritional problems can be very useful to prevent and correct unbalanced nutritional habits.

From other studies carried out on older Italian children we observed that by the age of 7 to 8 years, diet begins to become more consumer-oriented, richer in total lipids (with a relative increase in saturated fatty acids) and saccharose; the consumption of sugar, and gassy, industrially produced drinks increases with age.

In general, it was found that the children did little physical activity and this was also true of those who practiced sport.

Strange ideas on the nutritional needs of children who practiced sport and how to satisfy them were found.

From food habit surveys carried out simultaneously on groups of 11-14 year old students and their parents we obtained interesting results. With age increase there was a considerable but gradual alignment with parents' food habits, that is, habits worsened. The number of meals during the day decreased, breakfast was lighter and the percentage of students who had breakfast decreased. Milk intake diminished.

Adults and the elderly

The food habits of these groups showed different characteristics according to age and sex, but they were similar (as has already been mentioned) for meat, fat, fish, milk and legume intake. The diet of women in fertile age deserves particular attention regarding iron intake, which was often considerably lower than the recommended values. In addition, in this group (especially for very young women) we found the highest percentages of vitamin and energy intakes which were too low. This occurred prevalently when women were living alone (students).

The diet of women aged 50-59 yrs and over frequently showed too high an energy intake, considering their lifestyles were sedentary or else involved very light physical activity.

For men ^{an} ~~the~~ additional inadequacies ~~were~~ observed in diet apart from those more widely observed: too high an intake of alcohol.

Alcohol intake (almost exclusively from wine) increased with age from 20-39 yrs to 60-69 yrs. At this age the mean alcohol intake was 22% of daily energy intake and at the 80th percentile reached 25% (Fidanza, F. et al., 1987) (4).

Wine intake decreased in men aged 70 yrs and over although it was still high. In general elderly men and women show thiamin, riboflavin and vitamin A intakes lower than the recommended values.

In general a low level of nutritional knowledge was observed. Meat and pasta were indicated as the most suitable foods. Vegetables, fruit, milk, cheese were indicated as important only by low percentages of both sexes; fish, eggs, rice were practically ignored (Alberti-Fidanza, 1984) (5).

Pregnant and lactating women

From cross-sectional and longitudinal studies carried out during the entire pregnancy a low milk and cheese intake and a rather high meat intake were observed. Small quantities of eggs and fish, and about 200 g/day of cereals were consumed. Cakes, desserts, sugar and honey made up about 70% of the total carbohydrate quota. The daily energy intake was, on average, about 2000-2200 kcal. This figure may be considered satisfactory due to the light physical activity observed during the whole pregnancy. However in some cases there was a markedly low energy intake. Protein and fat as a percentage of energy were high during the whole pregnancy (about 16% and 40% respectively). The eating pattern was rather similar

during all three trimesters; in the second trimester a higher intake of energy was observed, about 140 kcal more than in the 1st and 3rd trimester due prevalently to higher fruit intake. Calcium and iron intake of women were deficient in large percentages as was the polyunsaturated/saturated fatty acid ratio. Retinol intake was mostly below the recommended amounts as were riboflavin and thiamin intakes, although to a lesser extent (Alberti-Fidanza, 1986; 1995) (6,7). After delivery, marked changes took place between 3rd trimester and 1st month post partum: milk, meat, cheese, fish, sugar and honey intakes increased.

From 1st to 6th month post partum differences were observed. Energy, milk, sugar and honey intakes decreased significantly.

Generally when women were interviewed about their preferences and aversions during pregnancy they informed us that they would have liked to eat more pasta and bread or other cereals, but as these food were considered fattening they unwillingly ate other foods, not realizing that the amount of energy was practically the same (Alberti-Fidanza, 1995) (6).

NUTRITIONAL STATUS

The most frequent defect inadequacies at sub-clinical level were observed for folates, riboflavin, thiamin, ascorbic acid and iron, particularly in pregnant women, (Alberti-Fidanza, et al. 1986, 1991) (7,8), young women and the elderly (Fidanza, et al., 1991) (9). With the exception of

riboflavin, no correlation was observed between vitamin intake and corresponding nutritional status.

As pregnancy advanced, not only did the number of deficiencies increase, but deficiency rate also become more serious (Alberti-Fidanza, et al. 1995) (7).

The vitamin nutritional status of newborns assessed in cord blood was generally satisfactory, but the lowest values were found for those infants whose mothers showed inadequacies.

Longitudinal studies on nutritional status both in the mother and newborn along with other factors recorded simultaneously and in mutual relationships at each trimester during the entire pregnancy and lactation are relatively rare, particularly in developed countries where, however, nutritional inadequacies at subclinical level exist with a certain frequency.

References

- 1) Alberti-Fidanza, A. et al. (1993) Dietary studies on two rural Italian population groups of the Seven Countries Study. Food and nutrient intake at the thirty-first year follow-up in 1991. Eur. J. Clin. Nutr. 48, 85-91.
- 2) Alberti-Fidanza, A. (1995) Nutritional Behaviour of Groups of Italian Children (in press). Congress on "Nutrition and Health in Europe" Prague, May 22-24th, 1994.
- 3) Alberti-Fidanza, A. et al. (1991) The child of today and the Mediterranean Diet. Infantile Nutrition - An Update 4th International Symposium "Progress in Infantile Nutrition", Karger 27, 152-160.
- 4) Fidanza, F. and Alberti-Fidanza, A. (1987) Indagini di epidemiologia nutrizionale sulla popolazione Umbra. "Collana di monografie dell'Istituto di Scienza dell'Alimentazione, Università degli Studi di Perugia".
- 5) Alberti-Fidanza, A. (1984) Nutrition Status of Elderly. IV. Nutritional knowledge, Food Preferences and Life Styles Connected with the Nutritional Process. Internat. J. Vit. Nutr. Res. 54, 361-369.
- 6) Alberti-Fidanza, A. and Fidanza, R. (1986) A Nutrition Study Involving a Group of Pregnant Women in Assisi, Italy. Part 1: Anthropometry, dietary intake and nutritional knowledge, practices and attitudes. Internat. J. Vit. Nutr. Res. 56, 373-380.
- 7) Alberti-Fidanza, A. et al. (1995) Nutritional Studies on Pregnant Women in Umbria (Italy). Bibl. Nutr. Diet. (in press).
- 8) Alberti-Fidanza, A. et al. (1986) A Nutrition Study Involving a Group of Pregnant Women in Assisi, Italy. Part 2: Determination of Vitamin Nutriture. Internat. J. Vit. Nutr. Res. 56, 381-386.
- 9) Fidanza, F. et al. (1991) Nutritional Status of Elderly. Internat. J. Vit. Nutr. Res. 61, 346-355.