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P Laurent, J Guisnet, F Dhuyme, Jm Lecerf

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ogous days were identical; the midday and evening meals were eaten at the Investigation Centre, and breakfast was supplied by the centre the evening before. The subjects' physical activity remained stable. The ingesta were evaluated by weighing the aliments and the leftovers. The subjects' weight did not vary significantly during the 'beer' and 'water' periods. The caloric intake and consumption of total glucides, lipids and proteins were not significantly different between homologous weeks and beer weeks despite the surplus of energy caused by the beer. The distribution of energy provided was significantly different during the 'beer' period, with a decrease of energy intake during snacks (beer vs water during 4th week;  $99.2 \pm 17.8$  vs  $194.2 \pm 39.5$ ,  $p < 0.05$ ). The caloric supply of the afternoon snacks represented 3.2% of the overall energy supply at the end of the 'beer' period, while it was 6.2% at the end of the 'water' period. The caloric content of the dinner increased during the first 2 weeks, to become once again comparable to that observed during the 'water' period. These variations were essentially related to the carbohydrate consumption. The daily consumption of 660 mL of beer, representing extra an 268.4 kcal, was offset by a reduction in caloric intake, particularly interprandial. This consumption did not result in a weight gain in the subjects of normal, stable weight.

### **Comparison of eating habits between 2 towns in northern and southern France using a food frequency questionnaire.**

JM Lecerf, B Lefebvre, O Arade, V Boulinguez, D Isorez (*Service de nutrition, Institut Pasteur de Lille, 1, rue du Professeur-Calmette, 59019 Lille cedex, France*)

In spite of a relative standardization of some dietary habits, are there still north-south differences? A food frequency questionnaire

about actual intake for many foods was filled in (by 2 investigators) in January 1993 by 100 people in a small town in the north (Estaires) and 100 people in a medium-sized town in Lot-et-Garonne (Villeneuve-sur-Lot). The 2 samples were similar in age, gender, social and professional status.

In the south, there was a higher frequency in the consumption of raw vegetables ( $p < 10^{-6}$ ), soup ( $p < 10^{-6}$ ), raw garlic ( $p < 10^{-6}$ ), cooked garlic ( $p < 10^{-4}$ ), raw onion ( $p < 10^{-4}$ ), cooked onion ( $p < 10^{-4}$ ), fruit ( $p < 10^{-3}$ ), dried fruits ( $p < 10^{-4}$ ), cooked fruits ( $p < 10^{-2}$ ), wine ( $p < 0.05$ ) and cheese ( $p < 0.05$ ). In the north the frequency was higher for the consumption of potatoes ( $p < 10^{-6}$ ), beer ( $p < 10^{-5}$ ), fried potatoes ( $p < 10^{-4}$ ), and meat ( $p < 10^{-2}$ ). There was no difference in the amounts of cooked vegetables, fish, pork products, other alcoholic beverages, or wine consumed. With respect to the different kinds of meat, the frequency of calf ( $p < 0.05$ ) and poultry ( $p < 10^{-3}$ ) consumption was higher in the south, and that of horse ( $p < 10^{-3}$ ), beef ( $p < 10^{-5}$ ) and pork ( $p < 10^{-5}$ ) was higher in the north. The frequency of olive oil ( $p < 10^{-4}$ ) and grapeseed oil ( $p < 10^{-2}$ ) consumption was higher in the south. The use of butter on bread was higher in the north ( $p < 10^{-2}$ ). More oil was consumed for cooking meats, fish, vegetables and potatoes in the south while the butter was used more often in the north for cooking meats and fish.

In conclusion, many differences remain in the consumption of fruit, vegetables, garlic, onion, meat varieties and fats between the 2 investigated towns. This may explain the north-south gradient that exists for coronary heart disease.

### **Dietary intake in building trade workers using thermos flask or warmed-up mess tins.**

P Laurent<sup>1</sup>, J Guisnet<sup>1</sup>, F Dhuyne<sup>2</sup>, JM Lecerf<sup>2</sup> (<sup>1</sup> *Médecine du travail, rue*

*Solférino, 59000 Lille;*<sup>2</sup> *Institut Pasteur de Lille, Service de nutrition, 1, rue du Professeur-Calmette, 59019 Lille cedex, France)*

We have demonstrated a high rate of post-prandial gastrointestinal disorders (27%) in 1 005 building workers. These are more frequent in warmed-up mess tin users than in thermos flask (bottle) users ( $p < 0.001$ ). The microbiological quality of meals is however more satisfying in warmed-up mess tins ( $p < 0.01$ ). We therefore looked for dietary factors to explain this difference.

A 24 h dietary recall was produced from 30 randomly chosen workers (15 mess-tin users and 15 bottle users). The daily caloric nutrient intake was  $3\,408 \pm 1\,113$  kcal/d (38% of lipids, 17% of proteins, 45% of carbohydrates). The midday meal accounted for  $1\,069 \pm 358$  kcal (29% of lipids, 22% of proteins, 49% of carbohydrates). The daily alcohol intake was of  $218 \pm 221$  kcal/d (32 g/d), which was 6% of the total caloric intake. It was  $92 \pm 138$  kcal of the midday meal (8% of total caloric intake). There was no difference between the mess-tin group and the bottle group concerning calories, lipids, proteins, carbohydrates, or alcoholic intake (in absolute value or percent of calories), neither during the day nor at the midday meal. The recall revealed a significant difference ( $p < 0.05$ ) concerning fats which were added (to the sauce) at the midday meal. These were twice as high in mess-tin users than in bottle users. Moreover, there was a significant correlation ( $p < 0.05$ ) between the added fats and the alcohol consumption at noon.

Although there was no difference between the 2 groups concerning nutrient intakes, there was a greater amount of added fats to the meal of the warmed-up-mess-tin users, and a correlation existed between the added fats and alcohol consumption. This may explain, in part, the greater rate of post-prandial gastrointesti-

nal disorders in this group of building trade workers.

**Dietary habits in 102 young underprivileged women.** S Beun, JM Lecerf, D Isolez, C Fressin, G Zylberberg (*Institut Pasteur de Lille, service de nutrition et centre d'examen de santé, 1, rue du Professeur-Calmette, 59019 Lille cedex, France*)

More and more people are living precariously from the social and professional points of view. They are confronted with economic difficulties which negatively affect their dietary habits. This fact and other behaviour can increase morbidity. It seems important to have a better knowledge concerning these dietary habits, in order to carry out a nutrition education programme.

A food frequency questionnaire about actual consumption for most foods was filled in between March and November 1993 during a check-up in the Centre d'examen de santé de l'Institut Pasteur de Lille of 102 women aged 16–25 years (79% of French descent, 21% North African), admitted during a period of social and professional training in Nord-Pas-de-Calais.

An analysis of the responses revealed that 21.5% have a body mass index  $> 25$ ; 55.4% are smokers; 25% never have breakfast; 51.9% do not eat breakfast more than 4 times a week; 38.3% do not eat a noon meal more than once a week; 33.3% do not eat an evening meal more than once a week; 88.2% pick at food between meals; 27.5% have already been on a diet; 54.5% take sweet drinks several times a day; 27% never eat soup; 36.6% never eat fish; 46% eat cooked vegetables/raw vegetables/fruits less than once a day; 39% eat cheese/dairy products less than once a day; 57.4% eat fried potatoes more than twice a week and 17.9% potatoe chips. Only 30.7% eat bread more than twice a day and 51.5% do not eat legumes. Of those who have already