

personality factors related to individual eating patterns and will improve our knowledge of the relationships between factors associated with EB and food intake.

Influence of consumption of beer without alcohol on resumption of diuresis after exertion. D Boute ¹, R Cappelaere ², JM Antoine ³, JM Borys ¹, M Robin ² (¹ *Nutrika, 2, rue du Président-Kennedy, 59280 Armentières*; ² *Lille Olympique Sporting Club, 59000 Lille*; ³ *Brasseurs de France, 25, bd Malesherbes, 75008 Paris, France*)

Exertion is responsible for a state of anti-diuresis, depending on the intensity, the duration of the activity and the surrounding climatic conditions. Water and sodium retention persist despite cessation of the exertion, sometimes hindering anti-drug tests. The influence of the consumption of beer without alcohol on the resumption of diuresis after 45 min of a football match was evaluated in 23 sports players, during 2 training matches played at an interval of 2 weeks. Each player was selected randomly at the end of the match according to the type of drink, either 750 mL of beer without alcohol (BWA) or the same volume of water (WATER). The weight, blood pressure, urinary volume, urinary osmolality and density, natriuresis, kaliuresis and chloruresis were recorded during the 2 h following rehydration.

The player's feelings of thirst, well-being and hunger were analysed by questionnaire. The clinical parameters did not differ significantly between the 2 groups. The total urinary volume in the 2 h following the end of the exertion was significantly higher in the BWA group than in the WATER group respectively 168 ± 19.9 mL vs 127.9 ± 5.9 mL ($p = 0.04$). The urine osmolality and density tended to remain lower in the BWA group but the differences were not statistically significant. Natriuresis and chlorure-

sis increased in a parallel fashion in the 2 groups. Kaliuresis was significantly lower in the BWA group in comparison to the WATER group 30 and 60 min after rehydration (at 30 min, it was respectively 68.1 ± 5.6 mEq/L vs 84.2 ± 6.6 mEq/L; $p = 0.03$). There was no demonstration of intolerance in the BWA group.

Due to its composition, beer possesses diuretic properties that are also found in the beer without alcohol. Beer induces aqueous diuresis, which is more effective against the anti-diuresis induced by physical activity. This effect is independent of its alcohol content, and is probably due to the ionic composition of beer without alcohol, which reduces the potassium loss observed during the phase of diuresis resumption.

Influence of beer ingestion on weight and food consumption. JM Borys ¹, S Cavare ², X Pelletier ², D Boute ¹, C Marti ¹, JM Antoine ³, G Debry ² (¹ *Nutrika, 2, rue du Président-Kennedy, 59280 Armentières*; ² *Centre de Nutrition Humaine, 40, rue Lionnois, 54000 Nancy*; ³ *Brasseurs de France, 25, bd Malesherbes, 75008 Paris, France*)

The impact of a moderate and regular consumption of beer on weight evolution and food consumption was studied in 13 subjects of normal, stable weight. These subjects, of a mean age of 23.4 ± 0.4 years, had a BMI of 22 ± 0.4 kg/m² (20.4–24.9 kg/m²). For 28 d, they consumed 330 mL of beer at the midday and evening meals in addition to a free and balanced glucido-lipido-protein intake (50% carbohydrate, 35% fat and 15% protein). The intake was *ad libitum*. The addition of the beer ensured an extra caloric intake of 268.4 kcal (21 g of glucides, 2.5 g of proteins and 25 g of alcohol); the rest of the hydric requirements were supplied by water. After a free period of 15 d, the subjects entered a homologous phase of water consumption. The menus on homol-

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 ± 17.8 vs 194.2 ± 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.

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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.

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