

Joint meeting of the Société Française de Nutrition and The Nutrition Society, 6–7 December 2007

Dietary factors and breast cancer risk: a case–control study among a population in Southern France

F. Bessaoud¹, J. P. Daurès¹ and M. Gerber²

¹Laboratoire de Biostatistiques et d'Epidémiologie, Institut Universitaire de Recherche Clinique, Montpellier, France and ²Centre de Recherche en Cancérologie, Centre Régional de Lutte Contre le Cancer, Montpellier, France

Findings on the relationship between foodstuffs and breast cancer remain inconsistent. Thus, the association between diet and breast cancer has been examined using a different statistical dose–response approach.

Between 2002 and 2004 a total of 437 cases and 922 controls matched according to age and area of residence were interviewed. Diet was measured by a validated FFQ organised mainly by food groups. OR and 95% CI were computed across various dietary intake levels identified by a free-knot spline for logistic model and adjusted for established risk factors of breast cancer and total energy intake. Free-knot splines allow investigation of the dose–response relationship by detecting the non-linear effects of the explanatory variable and determining threshold values. Thus, continuous estimates were calculated when the relationship was linear and the threshold was retained as a cut off when the spline analysis indicated one to three knots.

Total consumption of cooked vegetables, legumes and fish were associated with a non-significant decrease in breast cancer risk. There was an approximate twofold increase in the risk of breast cancer with each additional 100 g meat consumption/d. Cereal intake >44 g/d (e.g. two slices of bread) significantly decreased breast cancer risk. The consumption of oil olive was associated with a significant decrease in breast cancer for a moderate consumption. Intake of dairy products, raw vegetables and fruit did not show an association with breast cancer risk.

Foods	Dose–response relationship	Thresholds	Type	Modalities (g/d)	OR	95% CI
Fruit	Linear	–	Continuous	100	1.02	0.95, 1.10
Meat	Linear	–	Continuous	100	1.95	1.08, 3.53
Cooked vegetables	Linear with one knot	105	Discrete	≤105	1	
				>105	0.86	0.60, 1.24
Cereals	Linear with one knot	44	Discrete	≤44	1	
				>44	0.29	0.15, 0.55
Fish	Linear with one knot	23	Discrete	≤23	1	
				>23	0.80	0.61, 1.06
Olive oil	Linear with three knots	2	Discrete	≤2	1	
				>11.6	0.53	0.35, 0.84
				11.6–20.5	0.60	0.37, 0.96
				>20.5	0.71	0.44, 1.14

In conclusion, the results showed an association between red meat consumption and breast cancer risk, and cereals and olive oil were associated with a reduction in breast cancer risk. In future, a new approach of analysing dietary patterns rather than dietary food should be developed.