

Food energy - methods of analysis and conversion factors

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Abstract: This technical workshop was convened to examine - in depth and for the first time - the issue of the energy content of foods and how it relates to energy requirements. The interplay between analytical and physiological advances has made the field of nutrition increasingly rewarding, but also increasingly complex. In the case of the macronutrients that provide energy, there are now a number of different methods of analysis and different energy conversion factors. Each of the energy-providing components of foods is associated with its own variety of analytical methods, each of which may arrive at a slightly or very different value for the actual content of protein, fat, carbohydrate or dietary fibre. Each of the components also has its own energy value (or in some cases, values) - which in the case of "subfractions" may or may not differ from the value generally assigned to the macronutrient itself. This issue is complicated further by the fact that the energy conversion factor chosen is not necessarily tied to the specific analytical method used. The possibility of using any one of several analytical results with any one of several conversion factors results in myriad possibilities for expressing the energy content of individual foods, with consequent effects on estimation of the overall energy content of diets.