

Book Review

S. Allport. *The Queen of Fats: Why omega-3s were removed from the western diet and what we can do to replace them*. University of California Press, 2006, £14.95. ISBN 0502452823.

Described as a 'nutritional whodunit', this book explains the evolution in our understanding of the roles of omega-3 fatty acids in our diet and argues that there are significant consequences for our health if our intake is not increased. Susan Allport's book is an interesting history of the key developments and characters involved in the omega-3 fatty acid story. She brings to life the emergence of these molecules with an engaging style that will be accessible to a wide audience. However, if this really is a whodunit, then many readers will feel that there has been a miscarriage of justice...

Allport's central argument is that omega-3 fatty acids have been removed from our diet because commercial processing has removed α -linolenic acid (ALNA) from the foods we eat, due to its instability. What she does not acknowledge is that the majority of researchers in the area believe that conversion of ALNA to the longer chain omega-3 fatty acids, EPA and DHA, is very low and, in the case of DHA, minimal. Yet Allport states that 'DHA is made from ALNA, the most abundant fat on earth'. Furthermore, the majority of researchers believe that the health effects of ALNA are insubstantial compared with those of EPA and DHA, yet the book claims that 'eating fish is not the only way, or even the best way, to increase your omega-3 intake'. It further compounds the misconception by referring to ALNA as the 'parent' fatty acid and EPA and DHA as the 'offspring'.

This miscarriage of justice is joined by a second one based on the author's argument that the effectiveness of omega-3 fatty acids 'depends on what other fats are hanging around the body'. By this she means the omega-6 fatty acids and, in particular, linoleic acid, which she claims has become too high in Western diets and is associated with many other risk factors for heart disease, including increased blood pressure, inflammation and tendency for platelets to aggregate. She goes so far as to say that 'fish consumption counts, but our problems are probably caused not by lack of fish in our diets, but by an overconsumption of seed oils and underconsumption of greens'. This opens the can of worms that is the omega-6:omega-3 ratio debate, but the picture that Allport presents is grossly one-sided. She fails to acknowledge, for example, that conversion of ALNA to longer chain omega-3 fatty acids is determined by the absolute amounts of linoleic acid and ALNA, not by their ratios (Goyens *et al.* 2006). Furthermore, a UK Food Standards Agency workshop held in 2002 concluded that there was little, if any, benefit of ALNA relative to linoleic acid on risk factors for CVD and that the effects of fish oil supplementation were not replicated by ALNA supplementation (Sanderson *et al.* 2002). Allport includes useful highlights of interviews from a number of key people in the field; unfortunately, she has focused so heavily on the historical aspects that important topical arguments are

missed. Had she interviewed Bill Harris, for example, she might have been persuaded that omega-6 fatty acids do not, on the whole, have detrimental effects on risk factors for heart disease. In many cases, they have similar effects to omega-3 fatty acids, but correlating these risk factors with the ratio of omega-6:omega-3 fatty acids gives the incorrect impression that a decreased ratio is beneficial because of a difference in the relative magnitude of the changes (Harris *et al.* 2006).

In addition to these issues, there are some niggling inaccuracies in the book, such as the statement that 'omega-3 fatty acids have a beneficial effect on serum cholesterol' (they do not) and that 'no one knows how much brain power and visual acuity was lost in all the foot dragging of the formula companies' (improvement in visual acuity by long chain PUFA-containing formulae seems to be limited to premature infants). In her concluding remarks, Allport claims that once you switch to a high omega-3, low omega-6 diet, you can expect to see 'significant changes in your blood almost immediately, paralleled by a rapid improvement in heart function and mood'. Unfortunately, I do not believe the book actually demonstrates any evidence for this and wrongly (in my view) gives the impression that consuming large amounts of ALNA in favour of linoleic acid will produce these dramatic benefits.

In summary, this book does provide an interesting historical insight into the area of omega-3 fatty acids, but its focus on the past leaves it significantly lacking in contemporary views. The author says that 'sooner or later, the public is going to have to be presented with the whole picture about fats, complicated as it may be'. I could not agree more, but this is not it.

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