MEDICINE AND THE MEDIA

Mixed messages over breast milk and brainy babies

Was the media understandably confused over the link between breast feeding and IQ, asks **Margaret McCartney**

Breast feeding “is best for a brainy baby,” “unlocks IQ,” and “links to higher IQ,” said the headlines earlier this month. The *Daily Mail* (6 November) explained, “Breast feeding really does make babies brainier, a major study suggests. British researchers have found that mother’s milk in the first few months of life can boost children’s IQ by seven points. This applies in nine cases out of 10, where the youngster inherits a common but newly identified ‘brain boosting’ gene.”

The research purporting to show that breast means brains was published by the US journal *Proceedings of the National Academy of Sciences* (PNAS 2007; 0:0704292104v1-0). The researchers, from King’s College London, Duke and Yale universities in the US, and the University of Otago, New Zealand, were interested in finding a genetic variable which mediated the effects of breast feeding. In two birth cohorts, they found an “association between breast feeding and IQ . . . moderated by a genetic variant in FADS2, a gene involved in the genetic control of fatty acid pathways.” If babies had this variant—and 90% did—then breastfeeding produced a small increase in measured IQ.

The problem is that many news reports on health research appear with front page prestige, only to be flatly contradicted a little later. “Just when you thought scientists had made their minds up on a topic—from life on Mars to the health dangers of bacon butties—another study comes along to upset the consensus,” said the *Independent* in response, quite understandably.

Breast feeding owns a generous portion of controversies. In 2006, the media reported a study, published in the *BMJ*, that concluded that breast feeding made no difference to the intelligence of the babies (*BMJ* 2006;333:945).

According to last week’s reports, the reverse was now true. “The finding adds to the mounting evidence that breast fed babies

are happier, healthier, and brighter than those raised on formula milk,” said the *Daily Mail*.

But does it? What was not clear from most press reports was that some of the data—from the New Zealand Dunedin cohort—included in the *Proceedings of the National Academy of Sciences* study had already been examined, except with rather different results. The Dunedin cohort was included as part of a meta-analysis on the effect of breast feeding and intelligence—yes, the same study published in the *BMJ* in 2006, which found no effect. This study, which also included a prospective sibling pairs study, showed that crucially, once other factors including maternal intelligence had been adjusted for, there was no increased intelligence found in breast fed children. Multiple environmental influences affected child intelligence, explained the authors. The positive association of breast feeding with intelligence previously shown could be explained, not by the breast feeding itself, but by multiple confounding factors, mainly maternal intelligence, but also including maternal education, and the child’s social environment.

The abstract for the new *Proceedings of the National Academy of Sciences* study did not mention the previous meta-analysis. Instead it started with the assumption that “Breast fed children attain higher IQ scores than children not fed breast milk” without making it clear that this was (and is) unproven. Newspaper reports tended towards reporting the paper as certain evidence that breast feeding produced cleverer kids.

Was this fair? While the authors did adjust for maternal intelligence, they did not show how much of the breast feeding effect this explained. Nor did they adjust their results for

all known potential confounding factors. Last year’s *BMJ* editorial, accompanying the meta-analysis concluded that the “results may help doctors when giving advice on breast feeding to mothers with particular problems—for example, women who take drugs to prevent seizures or depression . . . These data indicate that one consideration—an adverse long term effect on cognitive function—need not be of concern.” Should this new study change practical advice to patients?

Advice about breast feeding is a common GP request. After reading the latest headlines, I went online to read the original *Proceedings* report. Only the abstract was available free, and paying the requisite \$10 allowed viewing of this complex paper for two days only. This

hardly allows for a wide dissemination of knowledge for discussion and critique.

Later I was given a “factsheet,” produced by the authors, which was seemingly given to some journalists covering the story. It ends with a cautionary note that “This study must be repeated by other research teams in other countries. Although we were able to test the finding in two countries, scientific findings only gain trustworthiness after they are repeated by different teams. Genetic findings have been particularly difficult to repeat.” This seems sensible. But it is not one that has been repeated by the press. The public get a daily onslaught of mixed messages from “researchers” whose minds seem to be in a state of flux. Who could blame lay people for being or becoming cynical, uninterested, or even angry with the apparent constant voltes-faces of research findings?

We should be thinking of better ways to engage with and explain to the public the meanings, shortcomings, and uncertainties of research rather than to constantly defend it. It would have made sense to me, for example, to put at least the abstract (and preferably the full paper) of this latest work on the web (some organisations like the Medical Research Council do make their research freely available) with a critique of what this research means, and what it does not. A statement that, in light of new research, we now need a further meta-analysis into the effects of breast feeding on intelligence, would have been most useful. This would be both an admission of uncertainty and a compass for how to reduce it.

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