Correspondence

BMI and duration of breast feeding

SIR—We read with interest the study by Rutishauser and Carlin[1] which showed that, after adjusting for the effects of confounding factors, body mass index (BMI) had a significant independent effect on the rate of cessation of breast feeding. The authors further suggest that concern regarding the lack of weight loss while breast feeding may be the basis for the association found between BMI and the duration of breast feeding. We have recently[2] examined the effect of breast feeding on postpartum maternal BMI in 9428 women who gave birth in Jerusalem. Our results support earlier observations[3] that women who breast feed their children for long periods may tend to gain more weight. These findings also agree with reports pointing out that current recommendations for energy intake during breast feeding are higher than necessary, as the non-lactational components of maternal energy expenditure are reduced during breast feeding[4] and the calculated energy content of breast milk is substantially lower than that commonly reported when milk is obtained physiologically.[5] A recent study[6] found similar six month postpartum weight loss in both breast feeding and non-breast feeding mothers despite large differences in energy intake. Brewer *et al*[6] concluded that breast feeding does play a role in postpartum weight and body fat loss, but that the current recommended allowance may be too high to permit such losses.

Concern has been expressed that attitudes favouring slimness may relate to lower maternal weight gains during pregnancy and thus adversely affect fetal outcome.[7] However, as we,[8] and others, have shown, weight gain during pregnancy may have a much smaller effect on fetal weight gain in women with a high BMI. We are therefore less concerned in obese women about the possibility that "dieting could compromise the ability to breast feed successfully".[1] Although more data are definitely needed, it seems that body conscious obese women could be allowed to reduce their energy intake or even choose a weight reducing diet after delivery without a substantial negative influence on prolonged breast feeding. Rutishauser and Carlin[1] have identified an important group at risk for early cessation of breast feeding. Careful dietary instructions and reassurance that breast feeding may actually aid in losing the extra body fat which has been laid down during pregnancy[9] may encourage overweight women to breast feed for longer.

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1 Rutishauser IHE, Carlin JB. Body mass index and duration of breast feeding: a survival analysis during the first six months of life. *J Epidemiol Community Health* 1992; **46**: 559–65.
2 Seidman DS, Ever-Hadani P, Gale R. The effect of breast feeding on post-partum maternal mass. *J Obstet Gynaec* 1991; **11**: 431 5.
3 Rookus MA, Rokenbrand P, Burema J, Deurenberg P. The effect of pregnancy on the body mass index 9 months postpartum in 49 women. *Int J Obesity* 1987; **11**: 6909 18.
4 Illingworth PJ, Ung RT, Howie PW, Leslie P, Isles TE. Diminution in energy expenditure during lactation. *BMJ* 1986; **292**: 437–41.
5 Lucas A, Ewing G, Roberts SB, Coward WA. How much energy does the breast fed infant consume and expend? *BMJ* 1987; **295**: 75–7.
6 Brewer MM, Bates MR, Vannoy LP. Postpartum changes in maternal weight and body fat depots in lactating vs nonlactating women. *Am J Clin Nutr* 1989; **49**: 259–65.
7 Palmer JL, Jennings GE, Massey L. Development of an assessment form: attitude toward weight gain during pregnancy. *J Am Diet Assoc* 1985; **85**: 946–9.
8 Seidman DS, Ever-Hadani P, Gale R. The effect of maternal weight gain in pregnancy on birth weight. *Obstet Gynecol* 1989; **74**: 240–6.
9 Drife JO. Weight gain in pregnancy: eating for two or just getting fat? *BMJ* 1986; **293**: 903–4.

Reply

We are aware of the view expressed by Seidman and others[1 4] that current recommendations for energy intake during breast feeding may be higher than necessary because they do not adequately allow for a reduction in the non-lactational component of maternal energy expenditure at this time,[5] and are based on a level of energy output in human milk which seems to represent the upper limit of normal rather than the average.[6] We also fully endorse the need for more data which will give us a better understanding of the metabolic adjustments which occur during human lactation so that future recommendations for breast feeding can be more soundly based. Having said this, however, we would caution against recommendations that could have the effect of promoting the adoption of weight-reducing diets by women who wish to breast feed their infants successfully as well as to lose weight. This is not to say that we do not believe that breast feeding women should not lose any weight at this time, but rather that "dieting", interpreted in the sense of minimising energy intake, while breast feeding, may not only adversely affect the milk supply[7] but also compromise the intake of nutrients other than energy, such as calcium, which are required in larger than usual amounts to provide for their loss in the milk. Clearly appropriate dietary counselling of overweight and obese women is desirable to help them to lose weight while at the same time continuing to breast feed their infants successfully. This, however, is not the same as saying that the current recommendations for energy intake during lactation are too high, simply because women who are apparently consuming less energy than that currently recommended are not losing weight while breastfeeding.

Firstly, it is well recognised that self-reported energy intake may underestimate habitual intake, on average by as much as 20%,[8] and to an even greater extent in women who are overweight or obese.[9] Secondly, recommendations for energy intake, as for other nutrients, are only guidelines for group needs of healthy individuals of normal weight and are not intended to apply to specific individuals or groups with different needs such as obese individuals. Recent data obtained in 10 women using the doubly-labelled water technique to measure total energy expenditure in well nourished lactating women at four, eight, and 12 weeks of lactation, and when not pregnant and not lactating,[10] show that although different energy balancing strategies were observed in individual women, the energy cost of lactation in the group as a whole was met in two ways. An increase in energy intake contributed, on average, just over half the calculated energy cost of lactation (2675 kJ/day). The remainder was met by a reduction in total energy expenditure, primarily by a reduction in physical activity, although there was also evidence of an adaptive decrease in BMR, which did not increase in line with the predicted cost of milk synthesis. In the group as a whole, body fat was not mobilised from four to 12 weeks of lactation, nevertheless most subjects reported that they had returned to their normal weight at the time of the "not pregnant—not lactating" measurement conducted three months after weaning.

Given that a return to the prepregnancy weight can be achieved by an appropriate reduction in energy intake once breast feeding has stopped, even if significant weight loss does not occur while breastfeeding, we believe that it is more appropriate to advise women that substantial weight loss may not necessarily occur in association with successful breast feeding than to recommend that breast feeding women, as a group, should restrict their energy intake *while* breast feeding in order to achieve weight loss at this time.

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2 Manning-Dalton C, Allen LH, The effects of lactation on energy and protein consumption, postpartum weight change and body composition of well nourished North American women. *Nutr Res* 1983; **3**: 293 308.
3 Sadurskis A, Kabir N, Wager MD, Forsum E. Energy metabolism, body composition, and milk production in healthy Swedish women during lactation. *Am J Clin Nutr* 1988; **48**: 44–9.
4 Brewer MM, Bates MR, Vannoy LP. Postpartum changes in maternal weight and body fat depots in lactating vs nonlactating women. *Am J Clin Nutr* 1989; **49**: 259–65.
5 Illingworth PJ, Ung RT, Howie PW et al. Diminution in energy expenditure during lactation. *BMJ* 1986; **292**: 437–41.
6 Lucas A, Ewing G, Roberts SB, Coward WA. How much energy does the breastfed infant consume and expend? *BMA* 1987; **295**: 75–7.
7 Strode MA, Dewey KG, Lonnerdal B. Effects of short-term caloric restriction on lactational performance of well-nourished women. *Acta Paediatr Scand* 1986; **75**: 222–9.
8 Black AE, Goldberg GR, Jebb SA, *et al*. Critical evaluation of energy intake data using fundamental principles of energy physiology: 2. Evaluating the results of published surveys. *Eur J Clin Nutr* 1991; **45**: 583–99.
9 Prentice AM, Black AE, Coward WA *et al*. High levels of energy expenditure in obese women *BMA* 1986; **292**: 983–7.
10 Goldberg GR, Prentice AM, Coward WA *et al*. Longitudinal assessment of the components of energy balance in well-nourished lactating women. *Am J Clin Nutr* 1991; **54**: 788–98.

Mortality in forestry and construction workers in Finland

SIR—One of the findings of a recently reported follow up study of forestry and construction workers[1] in Finland was an increased risk of suicide in the forestry workers. Differences in socioeconomic status, marital status, or region of residence did not account for the high suicide rates observed. These findings parallel the results of our cohort mortality study of forestry workers at a Canadian public electrical utility in which an excess number of deaths due to suicide was found. The standardised mortality ratio for suicide of 210 based on 11 deaths observed in the study group compared with 5·25 expected was statistically significant (95% confidence interval 105, 375).[2]

Because herbicide use was common to the workers in this cohort, we speculated on the biological plausibility of phenoxy acid herbicide exposure and the increased risk of suicide.[3] This was prompted by previous research suggesting central nervous system toxicity from exposure to phenoxy acid herbicides.[4 6]

We would be interested in knowing whether phenoxy acid herbicide exposures are relevant to the group studied by Notkola *et al* and whether further analyses could be carried out taking these exposures into account.

We are in the process of extending the follow up of our cohort and shortly hope to report whether the excess has persisted.

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1 Notkola VJ, Martikainen P, Leino PI. Time trends in mortality in forestry and construction workers in Finland 1970–85 and impact of adjustment for socioeconomic variables. *J Epidemiol Community Health* 1993; **47**: 186–91.
2 Green L.M. A cohort mortality study of forestry workers exposed to phenoxy acid herbicides. *Br J Ind Med* 1991; **48**: 234–38.
3 Green L.M. Suicide and exposure to pheonxy acid herbicides. *Scand J Work Environ Health* 1987; **13**: 460.
4 Nielsen K, Kaempe B, Jensen-Holm J. Fatal poisoning in man by 2, 4-dichlorophenoxyacetic acid (2, 4-D); determination of the agent in forensic materials. *Acta Pharmacologica et Toxicologica* 1965; **22**: 224–34.
5 Oliver RM. Toxic effects of 2, 3, 7, 8-tetrachlorodibenzo-1, 4-dioxin in laboratory workers. *Br J Ind Med* 1975; **32**: 49–53.
6 Hogstedt C, Westerlund B. Cohort study of the fatality causes in forest workers exposed and unexposed to phenoxy acid preparations. *Lakartidningen* 1980; **77**: 1828–31.

Reply

In her letter Dr Green is interested in knowing whether phenoxy acid herbicide exposures are relevant to the increased risk of suicide of forestry workers in Finland.

Firstly, in this follow up, which is based on census records in Finland, there is no direct information about possible phenoxy acid herbicide exposure and this kind of information can only be collected by personal interview.[1] In Finland we have undertaken a suicide mortality study in which case histories of all suicide deaths for the year 1987 were analysed.[2] This material is to be used in the future too in the forestry workers project.

Secondly, exposure of Finnish forestry workers to chlorinated phenoxy acid herbicides has been investigated in some studies.[3 4] Exposure to chlorinated phenoxy acid herbicides was evaluated by hygiene measurements and biological monitoring. The results showed that exposure did not affect the health status of workers. The total amount of pesticides used in a year (about 1000 tn) is relatively small compared with that in many other countries. From this point of view the role of phenoxy acid herbicide exposure as a factor in the increased risk of suicide might be small in Finland. In addition, the rate ratio of suicidal death in our study declined considerably after the adjustment for socioeconomic factors.[1]

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2 Lönnqvist J. National suicide prevention in Finland. *Psychiatra Fennica* 1988; **19**: 125–32.
3 Kangas J, Klen T. Exposure of workers to herbicides (In Finnish). *Silva Fennica* 1982; **16**: 323–34.
4 Manninen A, Kangas J, Mononen I, Heikkinen P, Klen T, Husman K. Effect of exposure to chlorinated phenoxy acid herbicides on the health of Finnish forest workers in silvicultural clearing work (In Finnish). *Silva Fennica* 1986; **20**: 181–8.

Assessing the need for health status measures

SIR—We should like to correct several errors of fact and interpretation in the paper by Donovan, Frankel, and Eyles on "Assessing the need for health status measures".[1]

Health needs assessment is not best served by the use of measures such as the Nottingham Health Profile (NHP) or the SF36 which were clearly not designed for such a purpose. Indeed, the whole concept of health needs remains to be elucidated. Clearly, measuring health status as such will not necessarily lead to conclusions about health *needs*. A major issue which was not addressed was that of who decides what *is* needed, the lay person or the professional?

Particular attention was given to the NHP, a measure of perceived distress (not health) in physical, emotional, and social domains. This measure was carefully developed over a number of years with particular emphasis placed on allowing lay people to dictate its content and scoring system. Its items are in the form of statements derived from several hundred interviews with patients and non-patients. Donovan *et al* suggest that no information is provided concerning the criteria by which items were chosen for the measure. This is not correct. Full details of these criteria are given in our book *Measuring Health Status*[2] and in several other publications. To describe the statements as complex is misleading. One of the reasons for the wide use of the NHP is that the items are drawn directly from lay language and are thus easily understood by respondents. Equal attention was paid to the response system and the "yes/no" format was found by respondents to be the easiest to understand and answer.

There is a wealth of published material about the development of the NHP, its testing for reliability and validity, and the many studies in which it has been used, which Donovan *et al* would have found helpful to consult. To quote individual negative comments from some respondents does not constitute scientific proof of lack of validity, particularly in the light of a large number of published papers establishing the usefulness of the measure with several thousand respondents from a variety of patient groups. Moreover, the ability of the NHP to allow for individual adaptation to chronic ill health is an asset not a liability. The whole philosophy behind the measure was that it should reflect lay perceptions not professional assumptions about how people *ought* to feel. While this may not be helpful to health service planners, it is highly relevant to how patients perceive and respond to their health problems.

The developers of the measure have always made it clear that the measure has limitations. For example, it covers relatively severe distress, making it most appropriate for elderly respondents and those with chronic illness. To suggest that zero scores imply perfect health indicates the authors' lack of familiarity with the published reports.

We would agree that qualitative research, when well conducted, has advantages over quantitative methods—particularly as it allows a clearer focus on specific issues. However, there are also disadvantages. Qualitative research allows a greater potential for researcher bias and the procedure is time-consuming, expensive, and less generalisable than the use of standardised measures.

A comment should be made about references in the paper to the SF-36 (or the "RAND 36—Item Health Survey 1·0, RAND Health Services Program" as it should now be referred to). This measure cannot be said to be "replacing" the NHP, as the two instruments assess different aspects of health. The items in the RAND measure were derived from "experts" not lay people and thus collect information of interest to professional groups. Consequently, responses cannot be considered to be representative of perceived health. It is important to be clear about the difference between a self administered questionnaire and one which addresses the concerns of the patient. No convincing evidence of the reliability or validity of the SF36 has yet been published, even in the USA where it was developed. Careful reading of the Brazier paper[3] shows that the UK adaptation is neither valid nor reliable.[4 5] Indeed, it has recently been brought to our attention that use of the measure has had to be abandoned in a study of stroke patients, as the respondents (who were able to complete other measures) were unable to understand the questions in the RAND measure, even with the help of an interviewer.

Nor can the NHP be said to have "replaced" the Sickness Impact Profile (SIP) since these measures also address separate issues and the SIP was rarely used in Britain, partly because of its length.

It is not very helpful to potential users of questionnaires to characterise instruments as somehow being in competition. This is a stance which totally disregards the fact that measures are developed for different purposes and assess different aspects of human experience. There are a number of questionnaires available in Britain which are useful for gathering information pertinent to health policy. The important issue is not which of these is the most "fashionable" but which is the most appropriate for the task in hand.

In summary, well developed generic measures of perceived health, distress, discomfort, or disability can be valuable tools in the proper context but cannot be considered suitable for all purposes in which the views of lay people are to be sought. There is a case for the development of more specific measures targeted at the assessment of health needs once a clear operational definition of this term has been produced. Rather than criticising existing measures for not achieving what they were never designed to do, time might be better spent in the conceptual and methodological work needed to address the topic of health needs assessment.

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1 Donovan JL, Frankel SJ, Eyles JD. Assessing the need for health status measures. *J Epidemiol Community Health* 1993; **47**: 158–62.