Printed in Great Britain

International Journal of Epidemiology 2003;**32**:493–495
DOI: 10.1093/ije/dyg183

REPRINTS AND REFLECTIONS

Malnutrition in England*

J Pemberton

It is the aim of this article to show that a large section of the community at the present time is not able to buy the amount of food necessary for maintaining health and activity.

The truth of this statement has been brought home to me after comparing the report of the British Medical Association[1] on adequate diets with the present rates of unemployment benefit. It is impossible for the unemployed man and his family to purchase the diets recommended by the BMA, which, it should be noted, are minimum, not optimum, diets.

To determine whether a person is in a state of undernourishment or not, it is necessary to know his daily calorific requirements and whether the amount of food he ingests each day is sufficient to supply that value. Obviously the former is not a constant for every man, but varies with the man's weight, the nature of his work and his age. In the BMA Report the figure aimed at was an approximate one, being the number of calories required per day to keep an average man in health and working capacity. The figure of 3400 cal. was eventually decided upon as being the requisite energy value of the daily ration as bought, giving a useful energy value of about 3000 cal. after allowing for loss in cooking and in transit through the alimentary canal. Starling[2] gives a value of 3300 cal. as the daily food requirement of an average working man, and Winton and Bayliss[3] 3000 to 3500. We can therefore take it that 3400 is a suitable figure to use in constructing a minimum diet for an average man. The coefficients of Lusk were used by the BMA commission for determining from this figure the requirements of an average woman and of children of various ages. For example, the coefficient for a woman is 0.83 giving a daily caloric requirement of $0.83 \times 3400 = 2840$ cal.

Let us now consider the composition and cost of the diets constructed by the Commission on this basis.

Probably the most useful diet is Diet No. 2, which is that given as a minimum weekly ration for an adult man suitable for prolonged consumption. It is this diet that has received some attention from the Press, for it has provided an approximate standard of reference in determining whether or not a man is undernourished (see Table 1).

This diet has been given in full for two reasons. Firstly to show that the quantities of what we normally regard as staple constituents of a diet, e.g. milk and butter, are allowed in extremely small quantities, i.e. ¼ pint and just over ½ oz. per diem respectively; secondly to show that the prices given are rock-bottom and in several instances are almost certainly too low. For example, tea at 1s. a lb. and cod at 5d. a lb. must sound remarkable to anyone who has a practical knowledge of buying these commodities.

Table 1

	Quantity	Cost s.d.		Quantity	Cost s.d.
Beef	1lb	6	Sugar	1lb	2¼
Minced meat	½lb	2½	Jam	¾lb	3¼
Bacon	½lb	3	Potatoes	5lb	3¾
Corned beef	½lb	3	Peas (dried)	¼lb	1
Ox liver	¼lb	1¾	Tea	¼lb	3
Egg	2oz	1	Oatmeal	½lb	1¼
Cheese	½lb	3¼	Yeast	–	–
Milk	1¾pints	5	Rice	¼lb	¾
Fish (cod)	¼lb	1¼	Syrup	½lb	2
Butter	¼lb	2½	Cabbage	1lb	1
Suet	1oz	¼	Beans (butter)	¼lb	¾
Lard	¼lb	1½	Barley	½lb	1
Flour or	4½lb	1 0½	Fresh fruit and		7
Bread	7¼lb		green vegetables		
					5 10½

Providing 3386 cal. per diem.

* First published in the University College Hospital Magazine, July–August 1934.

Further, it is illuminating to speculate on the character and amount of one's daily pennyworth of fresh fruit and green vegetables, and lastly, since the price of milk has been under the control of the Milk Marketing Board it has never been so low as 2¾d. a pint, but most of the time has stood at 3½d. a pint.

Diets for children of 1 to 2 and 8 to 10 years of age are given which cost 2s. 6d. and 4s. 2d. respectively, and in the text of the report we find the statement: 'It has not been found possible to prepare a diet for a child alone at a less cost than 2s. 6d. a week.'

The allowance made for a child in the present Unemployment Act, whether of 1 year of age or 14 years of age, is 2s. a week.

A typical diet constructed by the Commission was for a family consisting of a man and wife and three children aged 6 to 8, 10 to 12, and 12 to 14. The total cost of this diet is 22s. 6½d. a week. The statutory unemployment benefit of such a family is 29s. 3d. a week, that is 15s. 3d. for the man, 8s. for the wife and 2s. a week for each child. Assuming that the mother spends the requisite 22s. 6½d. on the minimum diet recommended by the BMA Report, the family is left with 6s. 8½d. with which to pay for rent, light and fuel, clothes and household materials. The rent for two rooms in poor districts lies between 10s. and 15s. a week; light and fuel will come to between 2s. and 4s., and cleaning materials to, say, 6d. a week. No allowance is made for clothes in the calculation, for it is a fact that the very poor spend little or nothing on clothes, but make do with what they have or what they are given. In spite of that, the family which we are considering will have incurred a debt for the week of between 5s. 10½d. and 11s. 10½d. In practice this debt is avoided by reducing the expenditure on food by the necessary amount. We see, therefore, that they can only buy at the least 48 per cent, and at the most 74 per cent of the requisite quantity of food to keep them in health and working capacity. The same kind of result can be deduced from the data of the BMA Report for a family of any size.

It is interesting to recall that a similar investigation to that undertaken by the BMA was carried out in 1932 by Dr GP Crowden and his co-workers at the London School of Hygiene and Tropical Medicine. The Report was entitled '*The Minimum Cost of Physiologically Adequate Diets for Working Class Families*.'[4] In it the writer comes to the conclusion that 'The sum of 7s a week (per man-value) appears to be the absolute minimum of expenditure on food under the best possible conditions of household management and economic purchasing by the mother at the present time.'

When that was written in January, 1932, the Ministry of Labour cost of living index stood at 131; at the present time, February 1934, the index is 122, so that in considering this report we should reduce the sum of 7s. by the appropriate amount, which is 6½d., giving us a figure of 6s. 5½d., that is 7d. more than the BMA figure. The same report gives an example of a physiologically adequate diet for a man and wife and three children, aged 8, 6, and 3 years, and which is thus comparable with the one quoted from the BMA report. The weekly cost of this diet at that time was 25s. 3d.; at the present cost of living this is equivalent to 22s. 3d., corresponding closely with the sum of 22s. 6½d. of the BMA Report.

These two reports, taken in conjunction with the rates of unemployed benefit, show conclusively that the majority of the unemployed and their families must at the present time be suffering from chronic undernourishment.

It is to be noted that in order to simplify our calculation some assumptions have been made that are unlikely to be wholly borne out in practice. For instance, it has been assumed that the mother has an elementary knowledge of dietetics; that she knows the approximate proportions in which carbohydrates, fats and proteins should be taken and that she knows, intuitively or otherwise, that certain minerals and accessory food factors are necessary if health is to be maintained. It has been assumed also that the family lives in the neighbourhood of a cheap market, the kind that is associated with the great centres of distribution, for it is only at such a market that the prices as quoted in the BMA report are likely to obtain. Finally, it has been assumed that no money is spent on newspapers, trams, tobacco or even clothes, but only upon the bare necessities of life.

It is true that there are, in some cases, factors to be considered which tend to alleviate these conditions. For example, the mother may have part-time employment; the children, if they are fortunate, may receive free milk, and in some instances free dinners. These benefits are, however, fortuitous and cannot be counted upon.

The example of the unemployed man and his family has been selected because it is these families that are likely to have the greatest effect on the national health. Unemployed juveniles and unmarried men and women are in little better position, if any, for buying an adequate diet. Those unemployed who have exhausted their statutory benefit are in many cases worse off, for they are then liable to being compelled to depend on their relatives who may be unwilling to provide for them.

In July the cuts in the Unemployment Insurance which were made in October 1931 are to be restored. This does not affect the allowance for the child because this was not reduced in 1931 and it does not apply to the payment of Transitional Benefit. The income of the family we have considered will become 32s. instead of 29s. 3d. a week. If the same allowances are made as in the previous calculation it is found that this sum is sufficient to provide for between 68 per cent and 86 per cent of the minimum amount of food required, as recommended by the BMA Commission. In short it cannot be assumed that the restoration of the cuts will prevent any further manifestations of malnutrition.

Of the effects on the health of the industrial workers of the bad economic conditions of the last three years there can be no doubt. Reports from Medical Officers of Health in the manufacturing areas give direct and indirect evidence of the effects of insufficient food. They report an increasing number of undersized and malnourished children and a diminished resistance to infection, and amongst women, slower recoveries from childbirth and an increased incidence of Hypochromic Anaemia. In 1932 the Medical Officer for Durham reported, 'One is forced to the conclusion that want and impoverishment following in the train of long continued unemployment of low wages are among the chief causative factors of such an unduly high Phthisis rate.' The Tuberculosis Officer for Sheffield reported in the same year that 'a relatively larger number of children required treatment in 1932 than in 1931. The majority of these children were suffering from minor Tuberculosis and there can be little doubt that the increase was associated with the economic depression in the city. If a more liberal dietary had been possible at home a number of these children would have spontaneously overcome their tubercular infection without presenting any symptoms.'

Table 2

	Height		Weight		Anaemia	
Group	Above standard	Below standard	Above standard	Below standard	Previous Respiratory illness	Under 75 per cent haemoglobin
Poor children	2	47	11	55	39	80
Well-to-do children	25	5	48	13	4	16

Further evidence of malnutrition is afforded by the official recruiting figures of 1933. Of 95 270 men who presented themselves as recruits for the army only 28 841 were finally approved. Seventy-three per cent were rejected as unfit.

In a recent investigation into the Health and Nutrition of Pre-School children in Newcastle,[5] Dr JC Spence has established some striking facts concerning the effects of undernourishment and bad housing conditions on the health of children; 125 children were selected from unemployed and low-paid workers families for investigation, and a further 125 children were chosen from professional and well-to-do families as a control group. The following table summarizes the results of the investigation. The figures are percentages (see Table 2).

Out of the 125 poor children, 45 were found to be unhealthy or unfit, they were also found to be living in overcrowded conditions averaging 2.6 persons per room. The conclusion drawn was that the low standard of health in the poor children was preventable, since it did not appear in the control group, and that their condition was mainly due to overcrowding and undernourishment.

It is certain, therefore, that undernourishment is widespread and that its effects on the national health are becoming increasingly obvious. That the medical profession will be called upon to deal with the effects is equally certain, that they will be allowed to play any part in their prevention is, on the other hand, extremely doubtful. It is difficult, indeed, to see how, even if given the opportunity, they could deal satisfactorily with the situation. It is true that more generous rates of unemployment benefit might be recommended to the Government, but there is little reason to believe that any attention would be paid to such recommendations.

Since the above was written a number of London doctors, convinced that widespread undernourishment is having a deleterious effect on the National Health, have formed a Committee Against Malnutrition.[6] The objects of the Committee are to undermine the general complacency which exists towards the subject by the publication of extracts and reports demonstrating the effects of inadequate nutrition and by lectures and public meetings to give the widest possible publicity to the subject.

Without doubt much can be done by a movement of this sort. If public interest is sufficiently aroused, legislation increasing unemployment benefit and extending welfare services will possibly ensue. Whether such measures would provide the complete solution is doubtful.

We live in a world where large quantities of food and raw materials are burnt annually, where factories are closed and labour is idle and where a multitude of people are ill-clothed and underfed. The final solution is in the resolution of this paradox and lies neither within the Art of Medicine or the scope of this article.

References

[1] *Brit Med Journ*. Supplement, November 25, 1933.

[2] 'Starling's Principles of Human Physiology,' sixth edition.

[3] Winton and Bayliss's' Human Physiology.

[4] *Lancet*, 1932, vol 1, p. 899.

[5] *Lancet*, May 12, 1934, p. 1029.

[6] Headquarters, 19c Eagle Street, WC 1.