ABC of Nutrition

A STEWART TRUSWELL

OBESITY: DIAGNOSIS AND RISKS

6% of men and 8% of women aged over 15 were obese in 1981 (weight/height² > 30)
 7% of 40 million = 2.8 million people
 There are 715 wte dietitians and 24 000 general practitioner principals
 Thus 1 dietitian to every 4000 obese people and 115 obese people for every principal

NHS consultants

Cardiologists	105
General surgeons	629
Ophthalmologists	384
Rheumatology	28
Obesity specialists	1 (? more)

It is easy to diagnose moderate and gross obesity before the patient undresses. The difficulty with these patients is to organise the time and summon up the enthusiasm to embark on treatment which will be lengthy and may be unsuccessful. When our profession can transplant a human heart, manage in vitro fertilisation, and eliminate smallpox, to treat obesity is a challenge for a conscientious practitioner. A health service, like the British NHS, which provides an annual fee per patient is a suitable framework.

Obesity is different from most other serious diseases. If the general practitioner feels he is not the best person to look after a patient's haemorrhoids or backache or poor vision there is usually a specialist at the nearest big hospital who has the skills and equipment and will be happy to manage this part of the patient. But there is unlikely to be a consultant with special skills or equipment for looking after obesity.

Many obese patients are referred to dietitians but there are too many obese people for the number of dietitians in Britain, and hospital staff are not well placed for looking after obese "outpatients"—that is, people who live at home and have to go out to work each weekday.

To put in the hard work of treating the obese people on the practice's list reduces the likelihood of having to treat them later for complications of obesity.

Managing obesity: the advantages of general practice

The best conditions for managing obesity are:

- Regular visits, at least once a fortnight.
- Weighing the patient under the same conditions on the same scale.
- About ¼ hour talk with the same practitioner each visit.
- Opportunity to bring wife or husband.
- The therapist not be obese.

The first four conditions are easier for the patient in general practice.

Two general practitioners' books about their work with obese patients can be recommended.

Complications of obesity

Most of the medical complications of obesity are well known. The social complications are more immediate and may be very painful. Religious, racial, and gender prejudice are now unacceptable in mainstream Western societies, as is prejudice against the disabled. But prejudice against fat people is undisguised. It starts at school, affects the job opportunities and social status of obese people—and it is so pervasive that it probably colours many doctors' attitudes towards their obese patients.

Mild obesity

By contrast, for mild obesity diagnosis and recognition are where the management goes wrong. Yet there are several people with mild obesity for every case of obvious obesity in a practice. Mild obesity is much easier to treat, and prevention of gross obesity is much easier than cure.

People with mild obesity do not usually come to their practitioner complaining that they are too fat. The adiposity has been slowly creeping up on them and does not cause pain, distress, or fear. They present with any other symptom and disease.

Measuring the patient

- Beam and lever scales are more reliable but take more space and are slower to use
- For screening it is a good idea to have a lever scale in the reception area and for the receptionist or nurse to weigh the patient with shoes and coat removed
- Obese patients being treated can be weighed (ideally in their underclothes) at each visit by the doctor in his consulting room on the same platform scale with a quick reading dial.
- The patient's height can be measured with a rule or tape measure attached to a flat wall and recorded on the record. Heights are lower in the evening than in the morning. If the patient has any weakness or deformity an assistant is needed to get him as straight as possible for the measurement.

Patients may become mildly obese under their doctor's eyes, during the course of an illness which the practitioner is following and concentrating on: bed rest after myocardial infarction; giving up smoking; pregnancy and lactation; anxiety or depression from stress at work or at home. Recognition of mild obesity can be more difficult too in a patient in bed.

It is part of good practice to have a system so that a patient who has not been seen for (say) eight months is routinely weighed by the receptionist or nurse. The weight is entered on the record. Knowing the patient's height (without shoes) the doctor can then decide whether he or she is: underweight, in the normal range, mildly overweight, or obese. Comparison with previous weights shows if the patient is putting on weight.

Measuring obesity

*No woman can be too thin
or too rich.*

—DUCHESS OF WINDSOR

Weight measurements are objective. To show the patient his or her weight against the standards for his or her height is impressive and, if outside the normal range, the basis for action.

There are two methods for deciding whether someone is too fat. One is social or according to fashion. The doctor's role here is to advise patients not to make themselves too thin, not to take unphysiological diets or drugs to lose weight unnecessarily, and not to start on the road to anorexia nervosa.

The other method for deciding whether someone is too fat (or too thin) is actuarial. Above (or below) a range of weights for a given height the risk of developing illness or of mortality increases. Weight/height² (in kg/m²) is a convenient index of relative weight. It gives a single number and is almost independent of height. It is also called the body mass index or Quetelet's index.

Guidelines for body weight in adults

Height without shoes		Weight (kg) without clothes		
m	feet, inches	Acceptable	Obese	Grossly obese
1.45	4,9	42-53	64	(85)
1.48	4,10	42-54	65	(86)
1.50	4,11	43-55	66	(88)
1.52	5,0	44-57	68	(90)
1.54	5,1	44-58	70	(93)
1.56	5,1	45-58	70	(93)
1.58	5,2	51-64	77	(102)
1.60	5,3	52-65	78	(104)
1.62	5,4	53-66	79	(105)
1.64	5,5	54-67	80	(106)
1.66	5,5	55-69	83	(110)
1.68	5,6	56-71	85	(113)
1.70	5,7	58-73	88	(117)
1.72	5,8	59-74	89	(118)
1.74	5,9	60-75	90	(120)
1.76	5,9	62-77	92	(122)
1.78	5,10	64-79	95	(126)
1.80	5,11	65-80	96	(128)
1.82	6,0	66-82	98	(130)
1.84	6,0	67-84	101	(134)
1.86	6,1	69-86	103	(137)
1.88	6,2	71-88	106	(141)
1.90	6,3	73-90	108	(144)
1.92	6,4	75-93	112	(150)

Acceptable weights are W/H² 20-25.
Obesity is taken to start at W/H² 30 and gross obesity at W/H² 40.
[Partly based on table I from Royal College of Physician's report *Obesity*, 1983, and Garrow (1981) *Treat Obesity Seriously*, 1981.]

Suggested cut offs for overweight children

Age (years)	Boys		Girls	
	Average height (cm)	97th percentile weight (kg) for average height	Average height (cm)	97th percentile weight (kg) for average height
2.0	86	14.9	84	14.2
2.5	90	16.9	90	15.3
3.0	95	17.3	94	16.8
3.5	99	18.5	98	18.0
4.0	103	19.7	102	19.0
4.5	107	20.8	105	20.1
5.0	110	22.0	108	21.3
5.5	113	23.2	112	22.4
6.0	116	24.6	115	23.7
6.5	119	26.1	118	25.2
7.0	122	27.5	121	27.0
7.5	124	29.5	123	28.6
8.0	127	31.2	126	31.4
8.5	130	33.1	129	34.1
9.0	132	35.2	132	36.7
9.5	135	37.8	135	40.3
10.0	138	40.2	—	—

There are other standards but most are similar or related. The upper and lower ends of the acceptable range here are close to, respectively, the lowest weight for small frame and highest weight for large frame for men in the "desirable weights" of the Metropolitan Life Insurance Company of New York (1959).

The unisex table given here is a new practice: older standards had somewhat lower cut off points for women than men, but the numbers of women taking out life insurance were probably inadequate. Modern prospective data show no significant differences between men and women.

Obesity is taken in this table and generally as starting at 20% above the upper end of the acceptable range of weights. Grades of obesity can thus be expressed: 20% above acceptable, 30% above, 40%, etc. The figures in the grossly obese column are 60% above the upper acceptable figure. Men of this weight have at least 200% the mortality of people with normal ("acceptable") weight.

The cut off values in the table have to be read from the viewpoint of the individual patient, like normal ranges for laboratory tests. People with gracile bones should weigh less than heavy boned people. Unusual muscle development (as in weight lifters) and oedema increase body weight.

In children there are no actuarial data on which to base cut off weights for obesity. However, the 97th percentile weight for age of the US National Center for Health Statistics standards can provide objective figures for overweight. They need to be adjusted if the child is unusually short or tall.

For adolescents it is recommended that the start of obesity be taken at 20% above average weight for height. No single column of numbers can be given for this, however, because of the varying times of onset of puberty. A four-page table in the Royal College of Physicians "*Obesity*" report (1983) can be referred to.

Make less thy body hence, and more thy grace;
Leave gormandising; know the grave doth gape
For thee thrice wider than for other men.
SHAKESPEARE, *King Henry IV* Part II, V, v.

Professor A Stewart Truswell, MD, FRCP, is Boden professor of human nutrition, University of Sydney.