

For Debate

Routine weighing in pregnancy

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Routine weighing of women in pregnancy has been a part of formal antenatal care since its inception more than 50 years ago.<sup>1</sup> Like other aspects of antenatal screening, however, weighing has largely escaped the critical assessment to which more recently introduced screening procedures have been subject.<sup>2</sup> Doubts have recently been raised about the efficacy and desirability of continuing to weigh all pregnant women at every antenatal appointment.<sup>1,3,4</sup> The reasons for routine weighing are unclear: not only have different reasons for its use been advanced at different times and by different people but none has been supported by convincing theoretical or clinical evidence. Some of the commonest justifications for weighing are discussed below.

**Maternal Nutrition**—The initial aim of routine weighing was to monitor maternal nutrition. However, even this limited role has not been evaluated. Regular weighing may be useful to monitor nutritional needs in certain groups such as teenagers and women with eating disorders, and perhaps in areas where there is severe malnutrition,<sup>5,7</sup> but any wider role in assessing dietary needs in pregnancy seems doubtful. Conflicting and confusing views about what constitutes a “normal” weight gain in pregnancy also continue to cloud the issue.<sup>8</sup>

**Pre-eclampsia**—Early detection of pre-eclampsia has for many years been one of the main reasons cited for regular weighing (and often weight reduction) in pregnancy.<sup>8</sup> Though pre-eclampsia is associated with a higher than average weight gain in the second half of pregnancy, the weight gains in women with and without pre-eclampsia overlap to such an extent that the rate of weight gain in an individual woman is of little predictive value.<sup>3,9</sup> Recent guidelines on antenatal

care emphasise that high weight gain should not form part of screening for pre-eclampsia, which can be reliably detected only by measuring blood pressure and analysing urine for protein.<sup>10,11</sup>

**Fetal growth**—Evidence that routine weighing is a useful screening test for poor fetal growth is also lacking. Birth weight is positively related both to maternal weight before pregnancy and to weight gain in pregnancy, but these factors account for only about 10% of the variation in birth weight.<sup>12-15</sup> The pattern of weight gain in individual women is unlikely to be helpful in detecting abnormalities of fetal growth.<sup>3,16</sup>

**Maternal obesity**—The fear of long term postpartum obesity remains an important concern of both staff and pregnant women, particularly in the United States.<sup>17-20</sup> Many of the studies on postpartum obesity are seriously flawed and difficult to interpret because of cross sectional collection of data and a lack of adequate controls for aging and secular trends. The more rigorous studies suggest that for most women weight gain during pregnancy has little or no influence on long term weight gain.<sup>20-22</sup>

Survey of professional views

As we were unable to find any formal account of current attitudes and practices among professionals in the maternity services with regard to routine weighing we undertook a survey of their views. We sent questionnaires to all 314 general practitioners, 31 hospital doctors (consultants, registrars, and senior house officers) in obstetrics, 58 community midwives, and 198 hospital midwives working in Oxfordshire. A total of 412 (68%) questionnaires were completed and returned. Analysis was restricted to the questionnaires completed by the 200 general practitioners, 25 hospital doctors, 65 hospital midwives, and 33 community midwives who stated that they provided antenatal care. Full results of the survey are available elsewhere (M G Dawes. Clinical studies on the routine measurement of maternal weight gain in pregnancy. MD thesis submitted to University of London).

Over 95% of our respondents weighed women at every antenatal visit. This is consistent with a recent survey of antenatal care in Europe which reported that routine weighing was used as a screening test by 98% (309) of obstetricians.<sup>1</sup> Respondents gave a wide variety of reasons for routine weighing (table I). Detection of preeclampsia (43%), the assessment of fetal growth (35%), and the monitoring of maternal obesity (12%) were among the most commonly mentioned. There was little consensus about the reason for weighing, and even the most common reason, pre-eclampsia, was mentioned by less than half the respondents. A third of respondents gave reasons such as “monitoring maternal

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TABLE 1—Reasons given by 323 respondents for routinely weighing patients during pregnancy (most respondents gave more than one reason)

Reason	No of respondents	Reason	No of respondents
Fetal growth	114	Diet	49
Intrauterine growth retardation	10	Anorexia	2
SFD	13	Maternal obesity	40
Failure to thrive	1	Weight:height ratio	2
Large babies	1	Assessment of maturity at term	2
Fetal well being	50	Need for induction	1
Pre-eclampsia	138	Onset of labour	1
Hypertension	5	Hydramnios	27
Fluid retention or oedema	12	Multiple pregnancy	12
Monitor maternal weight gain	95	Diabetes	12
Monitor pregnancy	23	Hyperemesis	11
Placental function	12	Renal problems	5
Reassure patient	7	Congenital abnormalities	5
Tradition	33	Loss of fetus	1
Regulations	1		

Other reasons were deep venous thrombosis (2), pulmonary embolus (1), anaemia (1), cardiac problems (1), intrapartum difficulties (1), type of delivery (1), hydrops (1), digohydramnios (2), determining induction (1), obesity (1), should not be taken in isolation (2).

weight gain" and "monitoring the pattern of pregnancy" which suggested that they were unsure of the purpose of routine weighing. One in 10 gave tradition as a reason for weighing.

A total of 216 respondents thought the pattern of weight gain in pregnancy was quite important, 58 thought it very important, and 49 not important. When asked to assess the usefulness of the pattern of weight gain in detecting certain specified conditions, 237 thought it very or quite useful for detecting pre-eclampsia, 206 for assessing dietary needs, 155 for detecting small babies, and 113 for detecting large babies. Differences between the four groups of respondents were seen with hospital doctors, in general, being least impressed, and hospital midwives most impressed with routine weight gain as a screening test (table II).

TABLE II—Respondents' views on ability of weight gain to detect conditions in pregnancy. Figures are numbers (percentages)

Detection of	General practitioners (n=200)	Hospital doctors (n=25)	Hospital midwives (n=65)	Community midwives (n=33)
Small babies:				
Very well	5 (3)	1 (4)	9 (14)	
Well	92 (46)	5 (20)	28 (43)	15 (45)
Not well	103 (52)	19 (76)	28 (43)	18 (55)
Pre-eclampsia:				
Very well	34 (17)	1 (4)	17 (26)	9 (27)
Well	114 (57)	13 (52)	35 (54)	14 (42)
Not well	52 (26)	11 (44)	13 (20)	10 (30)
Dietary needs:				
Very well	15 (8)	1 (4)	14 (22)	9 (27)
Well	108 (54)	9 (36)	35 (54)	15 (45)
Not well	77 (39)	15 (60)	16 (25)	9 (27)
Large babies:				
Very well	4 (2)	1 (4)	6 (9)	2 (6)
Well	51 (26)	7 (28)	30 (46)	12 (36)
Not well	145 (73)	17 (68)	29 (45)	19 (58)

#### NORMAL WEIGHT GAIN

Respondents were asked what weight they would consider abnormally low or high at 32 weeks' gestation in a 25 year old primigravid woman who had weighed 58 kg at 10 weeks' gestation. The mean (SD) value given as abnormally low weight was 60.3 (5.1) kg. This figure would indicate an average gain of 104 g a week between 10 and 32 weeks' gestation. The mean abnormally high weight was 68.8 (5.6) kg (average gain of 490 g a week). Sixty five respondents did not regard lack of weight gain or actual weight loss as abnormal. If there was any typical view, it was that a gain of about 295 g a week was neither too low nor too high.

Respondents were also asked what weight change they would regard as abnormally low or high at 32 weeks' gestation in the woman described above if her weight at 28 weeks' gestation had been 64 kg. The mean (SD) weight considered abnormally low was 63.2 (1.5) kg (an average weight loss between 28 and 32 weeks of 200 g/week) and the mean (SD) weight considered abnormally high was 67.8 (1.1) kg (average gain 950 g/week). Half of the respondents did not consider a weight loss, or no weight gain, between 28 and 32 weeks' gestation to be abnormally low.

In all, 216 respondents said they would always act solely on the basis of low weight gain. Hospital midwives were most likely to take action (59 (91%)) and hospital doctors the least likely (13 (52%)); 121 (61%) general practitioners and 23 (70%) community midwives would take action. The most commonly reported actions were examination by ultrasonography, giving dietary advice, referral for consultant opinion, exclusion of maternal illness, and reviewing the woman more frequently. Advice to increase weight gain was given frequently by six respondents and sometimes by the remaining 317.

A similar picture was found after asking respondents

what actions they would take if a similar patient had abnormally high weight gain: 168 would sometimes and 119 always investigate for pre-eclampsia, and most would give dietary advice, examine by ultrasonography, or refer to a consultant.

Only 27 respondents reported that they never advise women to restrict weight gain; 44 gave this advice frequently and 252 sometimes. This emphasis on weight restriction is disturbing, although in line with the traditions of antenatal care.

The idea that restricting weight gain may be beneficial has persisted for most of this century, and remains influential, particularly in the United States.<sup>23-25</sup> Various reasons have been given to support it, the prevention of pre-eclampsia being probably the most influential and the prevention of maternal obesity currently the most respectable. In fact there is no evidence to support weight restriction even in obese women, and it may do harm by reducing infants' birth weight.<sup>8 26 27</sup>

#### Does unnecessary weighing matter?

Though there is little consensus on the purpose or value of routine weighing, it continues to influence antenatal care. Its potential disadvantages are rarely considered, yet unnecessary weighing and interventions based on unfounded interpretations of weight gain (or lack of it) may cause, at the least, unnecessary anxiety to women and staff.

The impact of routine weighing on pregnant women is difficult to assess as there is little direct evidence available. Many women seem to be worried about weight gain (usually about excessive weight gain) in pregnancy,<sup>24 25 28</sup> as might be expected in societies in which concern about obesity is a major factor in many women's lives. There is certainly evidence that medical advice influences women's weight gain in pregnancy.<sup>23 24 29</sup>

We believe that routine weighing of pregnant women should be reassessed. A randomised controlled trial would be the best way to evaluate potential benefits and risks. Nevertheless, almost 20% of our respondents said they would probably continue with routine weighing regardless of evidence against its use from retrospective or prospective studies.

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## Medicine in Europe

### Alcohol and drugs

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There has been an extraordinary diversity of substance problems in Europe, mirroring historical, cultural, religious, and political differences. The nature and extent of the problems associated with substance use vary, as do the moral, medical, social, and scientific responses.

In northern Europe people have drunk spirits, leading to a pattern of intermittent and explosive drunkenness, while in the south wine drinking has been integrated into a way of life with little public drunkenness and high risks of liver cirrhosis. In between there has been a belt of beer drinkers in Germany, the low countries, and Britain. The north has favoured Alcoholics Anonymous and fostered the temperance movement, while in France moderation was defined until comparatively recently as not more than a litre of wine a day.

A myriad of groups and organisations are involved in alcohol and drug policy in Europe, but the lack of a health directorate has rendered much of the data and issues impenetrable. Data need to be collated on a community wide basis. The Maastricht summit has committed the European Community (EC) to some responsibility for health,<sup>1</sup> and drugs have been incorporated in the remit that will take effect in 1993.

#### Alcohol

The rates of alcohol consumption and alcohol related problems vary greatly. Rates of consumption are higher in southern Europe. A consensus has developed among policy makers that the level of alcohol related problems in a society reflects the level of consumption,<sup>23</sup> which is affected by cost and availability.<sup>4</sup> Traditionally, the northern European states have imposed higher levels of taxation and restricted availability. These are the countries which have invested more in medical and social research on alcohol and alcohol related problems and taken the problems more seriously by developing prevention and treatment programmes. Despite such polarities France has reduced consumption from 17.3 litres of 100% alcohol a head in 1970 to 13.2 litres a head in 1989,<sup>4</sup> and Italy has shown an even more dramatic reduction, from 16 litres to 9.7 litres a head between 1970 and 1989. Meanwhile, some of the countries with a low consumption have moved up—for instance, the United Kingdom

moved from 5.3 to 7.3 litres a head between 1970 and 1989.<sup>4</sup>

#### TAXATION

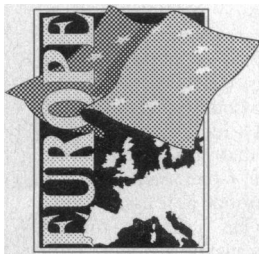
McGuinness has reviewed the impact of proposed EC legislation on alcohol consumption in the United Kingdom.<sup>5</sup> The right of individual countries to determine their own policy for controlling alcohol consumption and to modify it in the light of the rising incidence of alcohol related mortality and morbidity encapsulate some of the difficulties of European integration.<sup>6</sup> The proposed legislative change aims to introduce the single internal market to remove trade barriers. The community wants to standardise the legislation on the production, packaging, and presentation for sale of goods, and it is in this remit that standardised health warning labels and standard measures may be introduced on alcohol and tobacco products.

The original discussion of the single internal market and fiscal harmonisation failed to recognise the important role of alcohol taxation as an element of health policy. It was originally proposed to have a single rate of duty for each product group in all member states, but after considerable protest the European Commission relented to allow a 10% range to take greater account of the health aspects of alcohol consumption. According to McGuinness this fundamentally conceded the connection between alcohol taxation and health.<sup>5</sup> Having moved down this path the commission has now stated that it will allow each country to determine its own level of taxation on substances that may influence the nation's health.<sup>7</sup>

In the original discussion the acceptance of differential rates of taxation was viewed as a transitional arrangement where ideally countries would evolve to a position of equalisation. Countries with high tax rates may move down to come in line with other member states. The free flow of low cost alcohol across borders is likely to have marginal effect on national consumption rates in the United Kingdom but may pose problems for other countries.

#### CONSUMPTION AND MORBIDITY

A limited amount of collated data exists on European morbidity and mortality related to alcohol consumption. The table shows the most recent reports on national rates of alcohol consumption. The most



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