

## MINIMUM WEIGHT RANGE

### Points to consider when setting the minimum weight range

- Ideally, the minimum weight range will be determined by the GP at the beginning of treatment, with some reference to the ultimate goal of full weight recovery.
- The minimum weight range should be of at least 2 kilograms (e.g. BMI: 20 + 2 kg i.e. 56-58kg) to allow for diurnal and day-to-day fluctuations in body weight.
- Normal sex hormone levels are dependent upon maintenance of a healthy weight and essential for the achievement of maximum bone density, thereby minimizing the risk of future osteoporotic bone changes<sup>i</sup>.
- The resumption of regular menses (without the contraceptive pill) in female clients usually indicates a return to a healthy weight and adequate body fat. However this is not invariable, as clients may menstruate at a lower or higher weight. A detailed weight and menstruation history noting normal pre-morbid weight and measurements of current bone density should give a clear indication of where to target the weight range. Pelvic sonography can be used to indicate that ovulation has returned<sup>ii</sup>.
- Body fat percent can also be used to indicate a healthy weight because normal menstruation will not resume if body weight and fat levels remain abnormal<sup>iii</sup>.

### Calculating the minimum weight range

#### A. Determining a healthy weight range for Children/Adolescents<sup>iv</sup>

- Determining a healthy weight range (HWR) helps clients, their family and the treating team plan management and assess progress. That said, physical recovery is the best indicator of healthy weight; hence HWR will be unique to each individual.
- A HWR rather than a target weight should be set.
- It is important to avoid long discussions or negotiations about HWR as this may 'collude' with the eating disorder and encourage a focus on weight rather than the physical health as an outcome
- Normal vital signs are indicators of physical recovery. However these can return to normal below a HWR or if weight loss has been rapid they can be abnormal within a HWR.
- For girls, a return to or commencement of menses is an indicator of physical recovery. Menses may take some time to return after weight restoration, and may sometimes return at a low weight.

The following factors should be considered when setting a target weight range for children & adolescents:

- Previous growth records
- The stage of puberty
- Parental height
- Body build
- Ethnic background
- The expected height from bone estimates

If the child is very tall, the percentile corresponding to weight may be unrealistically high and a lower target may be necessary. If there has been growth stunting, allow around 10% extra on the corresponding weight percentile, to encourage catch-up growth. It should be emphasized to younger clients that their target weight will need to increase as they progress through adolescence for normal growth and development<sup>v</sup>.

## Approximating a Healthy Weight Range for children & adolescents<sup>vi</sup>

- A normal BMI is 5th percentile to <85th percentile. The 5th percentile is often too low for physical recovery to occur for clients with eating disorders. A BMI between the 25th and 85th percentiles is recommended, as this is more likely to correlate with physical recovery.
- BMI for 25th and 85th percentiles (ages 12 -18) are listed below in Table 1.
- Using BMI-for age *an estimation* of a HWR range can be made.
- Assess previous growth trajectory and set a HWR. HWR must allow for continued growth along the individual clients growth trajectory. Example: a 12yr old girl who is 150cm tall would need to be 37-47kg to achieve a BMI of 16 to 21. If her growth has always previously been around the 25-50thpercentiles her HWR may be set as 37-41kg.

The Eating Disorders Toolkit provides a table of 25th and 85th body mass index percentiles for ages 12 -18 years (p26), which may be helpful for you (See Resources Module 3)

## B. Determining a healthy weight range for adults

Use Body Mass Index (BMI) for this age group - calculated as weight (kilogram's) divided by height (metres) squared.

Although BMI is a useful clinical indicator, you should also consider its limitations (Glendining and Phillips 1993);

- Clients may have manipulated weight measurement to give a false reading
- It is not useful for children who are still growing
- It is not as reliable if the client is engaging in severe purging
- It is less reliable in extremes of height<sup>vii</sup>

A healthy weight for adults 18 years and older is within the BMI range of 20 – 25<sup>viii</sup>.

For clients with anorexia nervosa, the short term minimum weight range is often calculated as BMI:20 plus 2 kgs. This same minimum weight range may also be appropriate for physically mature older female adolescent clients. A slightly lower minimum weight range may be appropriate for persons of Asian descent (e.g. BMI of 18 plus 2kg) and a higher range may be appropriate for males and Pacific Islanders<sup>ix x xi</sup>.

## ACHIEVING REGULAR WEIGHT GAIN

Ideally clients should gain 0.25 - 1.5kg per week. Initially energy requirements will be low and will increase disproportionately during the course of refeeding<sup>xii xiii xiv</sup>. Suggested reasons for this are increased activity levels and increases in post glucose thermogenesis in low weight clients with anorexia nervosa<sup>xv</sup>. The calculation of an adequate diet for refeeding is difficult because of changing basal metabolic rate and abnormal behaviours, such as hiding food, purging, drinking excessive amounts of water before a weight (water loading). Food diaries, regular weighing and monitoring blood biochemistry will assist in the construction of an appropriate refeeding regimen.

- Explain that diurnal and day-to-day fluctuations in body weight are normal and will influence the reading on the scales.
- Weight can fluctuate by as much as 2.0kg during the week<sup>xvi</sup>
- Menstruation, constipation and dehydration also affect weight and as such, the longer term weight changes give a more accurate picture of the accumulation of new tissue.
- A weight graph can be a useful tool for both physician and client.
- Unexpectedly high weight gain may be indicative of oedema or binge eating.
- A decision should be made between the health professionals involved with the client as to the frequency of weighing and which clinician will be responsible for weighing (usually the dietitian or GP). Clients and parents should be discouraged from weighing at home.

---

<sup>i</sup> Serpell L and Treasure J. (1997) Osteoporosis – a serious health risk in chronic anorexia nervosa. Eur. Eat. Dis. Rev. September Vol 15 pp149 – 157

<sup>ii</sup> Treasure J and Ward A. (1997) A practical guide to the use of motivational interviewing in anorexia nervosa. European Eating Disorder Review Vol 5: pp 102 - 114.

<sup>iii</sup> Frisch RE. Fatness and Fertility. Sci Am (1988) Vol 258: pp 88 - 95.

- 
- <sup>iv</sup> MH-Kids (2007) Eating Disorder Toolkit – A practice-based guide to the inpatient management of adolescents with eating disorders in regional and rural areas. Nexua, John Hunter Hospital, Newcastle NSW.
- <sup>v</sup> Hammer L, Kraemer H, Wilson D, Ritter P and Dornbusch S. (1991) Standardised percentile curves of body mass index for children and adolescents. *AJDC* Vol 145: pp259- 263.
- <sup>vi</sup> MH-Kids (2007) *ibid*
- <sup>vii</sup> Murphy, B., Manning, Y., (2003) An introduction to anorexia nervosa and bulimia nervosa. *Nursing Standard*. 18(14-16):45-52.
- <sup>viii</sup> Hebebrand J, Himmelmann GW, Hesecker H, Schafer H and Remschmidt H. (1996) Use of percentiles for the body mass index in Anorexia Nervosa: Diagnostic, epidemiological and therapeutic considerations. *International Journal Eating Disorders* vol 9(4) pp 359- 369.
- <sup>ix</sup> Inoue S, Zimmet P. (2000) Asia Pacific perspective. Redefining obesity and its treatment. Health Communications Australia Pty Ltd . ISBN 0-9577082-1-1
- <sup>x</sup> Swinburn BA, Ley SJ, Plank LD. (1999) Body size and composition in Polynesians. *Int . J. Obesity*. vol23 pp1178-1183
- <sup>xi</sup> World Health Authority (1997). Preventing and Managing the Global Epidemic of Obesity. WHO, Geneva, June
- Zalin AM and Lant AF. (1984) Anorexia nervosa presenting as a reversible hypoglycaemic coma. *J. Royal Soc. Med* Vol 77: pp193 – 195.
- <sup>xii</sup> Schebendach J, Golden NH, Jacobson MS et al . Indirect calorimetry in the nutritional management of eating disorders. *Int. J. Eat. Disord* 1995 Vol 17 pp 59 - 66.
- <sup>xiii</sup> Krahn DD, Rock C, Dechert RE, Nairn KK and Hasse SA. Changes in resting energy expenditure and body composition in anorexia nervosa clients during refeeding. *J. Am. Diet Assoc* 1993 Vol 94 pp 434 - 438.
- <sup>xiv</sup> Russell J and Byrnes S. (1998) Nutritional Management. *Neurobiology in the treatment of Eating Disorders*.
- Solomon SM and Kirby DF. (1990) The refeeding syndrome: a review. *J. Parenteral and Enteral Nutrition* vol 14: pp 90 - 97.
- <sup>xv</sup> Russell J, Beumont P, Buckley C et al. (1996) Energy expenditure in anorexia nervosa. Poster presentation at 7th International Conference on Eating Disorders. New York, April.
- <sup>xvi</sup> Robinson MF, Watson PE (1965). Day to day variations in body weight of young women. *British Journal of Nutrition*. Vol 19 pp225-233.