

An innovative treatment programme for Anorexia Nervosa

John Court,¹ Michael Carr-Gregg,¹ Cecilia Bergh,² Ulf Brodin,² Monica Callmar,² Jan Ejderhamn²
and Per Södersten²

¹Albert Road Centre for Health, Melbourne, Victoria, Australia ²Anorexibeam, Karolinska Institutet, Stockholm, Sweden

Abstract: We present the case of an Australian girl with severe anorexia nervosa who had previously been resistant to treatment, and who was subsequently treated successfully by an innovative programme at the Karolinska Institute in Stockholm. The programme is based on a distinctive concept of causation of eating disorders in which it is postulated that they develop as a consequence of starvation rather than a primary mental disorder. The treatment focuses on relearning how to eat and perceive satiety using a unique feed-back system, together with provision of warmth, limitation of exercise and facilitating social adaptation.

Key words: anorexia nervosa; eating disorders; Karolinska programme; mandometer.

Management of eating disorders in adolescents and young adults varies from one centre to another, although many eventually have a favourable outcome, treatment is often lengthy, with a substantial risk of relapse and expensive in professional care. There is little evidence that any one of the present conventional treatments is more effective than another and some evidence that outcomes of current treatment are little better now than when the disorder was first recognized.¹

An innovative method of treatment has been developed at the Karolinska Institute in Sweden.² This is based on a conceptual difference from conventional therapy in that it hypothesizes that the symptoms of anorexia relate to starvation rather than to a mental disorder and that there is a reversible change in neurophysiologic state as anorexic behaviour develops.³ Psychopathology is a consequence rather than a cause of starvation. The treatment is thus directed at disordered eating behaviour and an altered perception of satiety, hypothermia, physical hyperactivity and a disordered social life.

The patients re-learn how to eat and how to perceive satiety. They are treated with warmth, their physical activity is restricted and they are trained to re-adapt socially. In learning to eat, patients are given feedback during their meals via a computer screen which enables them to adapt their eating to a normal rate. This procedure involves use of the Mandometer, a computer-based device that measures food intake and the perception of satiety.²

The Mandometer also allows objective measurement of the patient's progress by recording these parameters over the course of treatment.

A randomized controlled trial using this treatment showed that it provided an effective intervention in anorexia and bulimia nervosa. The estimated rate of remission with this treatment is 75% with only a 10% relapse rate over the 5-year period of follow-up.³

This is a substantial improvement compared to other treatments¹ and has been estimated to reduce the cost of treatment substantially.⁴

We report a patient who had not responded to conventional treatment in Australia and subsequently was taken to Sweden for treatment.

CASE REPORT

A 15-year-old girl, previously in good health, was a student at a girls' school which provided a year's residential programme of outdoor activity in a country location. She enjoyed the physical activity and was complimented for looking 'extremely fit'. Her body mass index (BMI) was 18.5 kg/m². The urge to exercise became irresistible and was associated with reduced food intake. This became out of control and led to progressive weight loss and a reduction of BMI to 14.7. Her poor physical and mental health when she returned home later in the year led her parents to seek professional care.

A diagnosis was made of an eating disorder associated with depression (MRC C-G). She underwent psychotherapy and was provided with a meal plan under the supervision of a dietician. Despite prescribed restrictions on her physical activity and careful supervision and support from her parents, she continued excessive exercising, with very inadequate food intake. Her deteriorating physical state led to admission to hospital where she gained weight over a 2-week period.

She left hospital, deeply upset by her weight increase and resumed excessive activity. She was clearly not responding to therapy, with continuing weight loss to BMI of 14.3.

At that time an ABC radio programme 'Health Report' was presented describing the Karolinska programme and at her parents' request, a decision was made to refer her to the Swedish centre to enter the programme.

On admission to the Karolinska programme in Stockholm, it was noted that she ate small amounts of food at a slow rate and perceived a high level of satiety (Fig. 1). Blood tests were normal except for an increased serum concentration of alanine-aminotransferase (Fig. 1). (For more health reports see www.abc.net.au/rn/talks/8.30/helthrpt/stories/s883176.htm; accessed 23 June 2003.)

She engaged in the programme using the Mandometer. All meals were supervised in an environment in which heat and exercise were controlled, for a period of 108 days, including an initial period of inpatient care. She was accompanied by her mother throughout this period. During this time her intake of

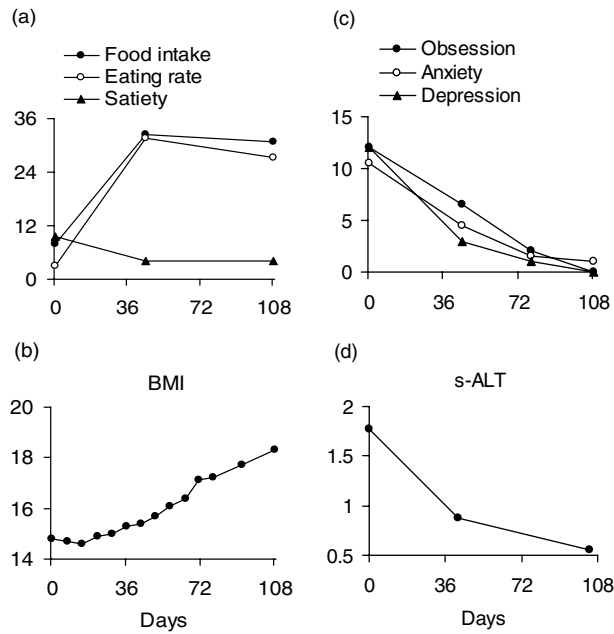


Fig. 1 The patient's response to treatment. (a) The amount of food ($\text{g} \times 10$) the patient ate, the rate (g/min) at which she ate and the level of fullness (satiety) that she felt during treatment. The normal food intake is about $300\text{--}350 \text{ g}/10\text{--}15 \text{ min}$ and the normal level of satiety is $5\text{--}6$ on a 10-point scale (for details see ref. 3). (b) BMI (kg/m^2), (c) psychopathology (Comprehensive Psychopathological Self-Rating Scale for Affective Syndromes, ref. 2). (d) Serum concentration of alanine-aminotransferase (s-ALT, $\mu\text{kat}/\text{L}$) during 108 days of treatment.

food and rate of eating increased and her perception of satiety decreased. Coincident with this, her psychiatric symptoms diminished and her physical state returned to normal with a normal BMI (Fig. 1).

She has since returned to Australia and over a period of 11 months has satisfied remission criteria, engaging in full school sporting and other social activities. Her BMI is currently 19.9.

The positive outcome for our patient and the previously published controlled trial² suggest that further examination of this treatment should be considered in Australia.

ACKNOWLEDGEMENT

We thank the patient and her parents for allowing her case to be reported.

REFERENCES

- 1 Ben-Tovim DI, Walker K, Gilchrist P, Freeman R, Kalucy R, Esterman A. Outcome in patients with eating disorders: A 5-year study. *Lancet* 2001; **357**:1254–7.
- 2 Bergh C, Eklund S, Eriksson M, Lindberg G, Södersten P. A new treatment of anorexia. *Lancet* 1996; **348**: 611–2.
- 3 Bergh C, Brodin U, Lindberg G, Södersten P. Randomized controlled trial of a treatment for anorexia and bulimia nervosa. *Proc. Natl Acad. Sci. USA* 2002; **99**: 9485–91.
- 4 Bergh C, Södersten P. Anorexia nervosa: Rediscovery of a disorder. *Lancet* 1998; **351**: 1427–9.