



Psychological Interventions for Severe Weight Loss in Cancer

Robin Paijmans AFBPS C. Psychol *Macmillan Clinical Psychologist*
Pan-Birmingham Cancer Network

Amanda Irwin *Macmillan Dietician*
Heart of England NHS Foundation Trust

Nutrition

- Healthy individuals – can aim for a healthy balanced diet. See Eatwell Plate
 - Protein
 - Carbohydrates
 - Vitamins and Minerals
 - Fats
- Cancer patients may struggle to get all nutrients they need.
- They normally have increased nutritional requirements.

The eatwell plate



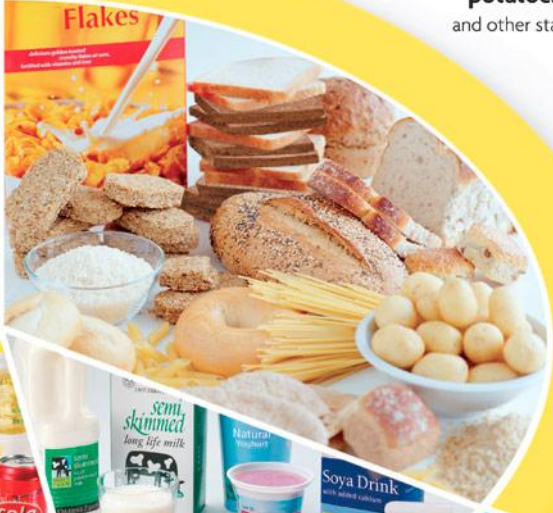
food.gov.uk

Use the eatwell plate to help you get the balance right. It shows how much of what you eat should come from each food group.

Fruit and vegetables



Bread, rice, potatoes, pasta and other starchy foods



Meat, fish, eggs, beans and other non-dairy sources of protein



Milk and dairy foods



Foods and drinks high in fat and/or sugar



Malnutrition

- Malnutrition
 - Major public health problem in the UK
 - Underweight – present in 10 – 40% patients admitted to hospital
 - Cancer associated with high levels of malnutrition
 - Weight loss and extreme eating difficulties experienced in cancer and the treatments –a cause for concern and distress to patients and their families
 - Malnutrition cannot always be prevented or reversed but patients can be supported to deal with many of the nutritional problems they encounter.

Weight and nutrition in cancer: the 10% rule

- Large survey of patients about to begin chemotherapy for cancer: one-sixth had recently lost 10% or more of their normal body weight.¹
- Greater than 10% loss of normal body weight = point at which overall health and patients' survival rates from surgery start to decline markedly.
- 6% of patients with leukemia, sarcomas and breast cancer suffer weight loss of 10% or more; 15% to 40% of gastrointestinal cancer patients & more than 40% of head and neck cancers.²
- 76%-79% of patients with advanced cancer report weight loss and/or eating less. 52% report concern about weight loss and/or eating. This is irrespective of proximity to death.³
- Substantial malnutrition (below 10% weight loss) reduces effectiveness of chemotherapy, lowers overall QoL and patients' chances of survival.^{4,5} Success rates of cancer treatments are significantly better when patients' nutritional problems are addressed.
- Cancer patients undergoing bone marrow transplantation need particularly aggressive nutritional support.

What are the clinical and financial implications of malnutrition ?

- Increased morbidity/mortality
- Increased drug costs
- Increased infection rates
- More high-tech interventions
- Increased length of stay
- Decreased response to treatment
- Increased ITU care

Nutrition Support - BMT

- Aim of nutrition support
 - Prevent occurrence of undernutrition, most BMT patients are well nourished at start of treatment.
- Goal is to maintain nutritional status.
- Nutritional needs are increased due to;
 - Stress induced catabolic state.
 - May be increased to achieve optimal blood cell reconstitution
- BMT – produces changes in metabolism with a moderate degree of hypercatabolism

Nutritional Consequences of BMT

- Neutropenia
- Taste and smell changes
- Early satiety
- Severe mucositis - Mouth to anus
- Dysphagia
- Dry Mouth
- Oral thrush
- Bleeding – oral cavity
- Diarrhoea/Constipation
- Reduced Appetite
- Nausea and vomiting
- Psychological problems – fear of eating

Nutritional Consequences of BMT

- Prolonged Isolation – low mood
- Access to food
- Pre existing aversion to hospital food
 - (from previous hospital admissions for chemotherapy etc)
- Fatigue/Lethary
- Graft versus host disease (GVHD) (Allo)
- Depression/anxiety

Nutritional Advice

- BMT patients are often adequately nourished at the start of treatment, but this can quickly change during conditioning and following the transplant.
- Many can have problems weeks to months after the transplant.
- Nutritional advice and support needed can range from-
 - Advice for overcoming eating difficulties
 - Overcoming nutritional consequences of treatment
 - Use of nutritional supplements
 - Provide non-oral feeding – tube feeding – Nasogastric, Nasojejunal, PEG, Parenteral nutrition
 - Specialist diets
 - Food Safety/Neutropenic dietary advice
- Some patients following treatment have very little oral intake for many days to weeks and these patients may be at risk of re-feeding syndrome.

Who is at risk of re-feeding syndrome?

- Unintentional weight loss greater than 15% within the last 3-6 months
- Little or no nutritional intake for more 10 days.
- Low levels of potassium, phosphate or magnesium prior to feeding.
- Low BMI – under 18.5
- Chemotherapy
- Need to re-introduce nutrition very slowly.
Build up feed or oral intake gradually over 2 -5 days.

Re-feeding Syndrome

- Definition:
 - Re-feeding syndrome is defined as severe electrolyte and fluid shifts associated with metabolic abnormalities in malnourished patient undergoing re-feeding orally, enterally or parenterally (Crook et al 2001)
- Some Consequences
 - Cardiac failure, pulmonary oedema, dysrhythmias
 - Acute circulatory fluid overload, or circulatory fluid depletion.
 - Hypophosphataemia, hypokalaemia, hypomagnesaemia, hypocalcaemia, Hyperglycaemia
- Need to monitor patient for low phosphate, magnesium and potassium seen in re-feeding syndrome.

Mechanism of re-feeding syndrome

- In starvation – main energy sources are fat (ketone bodies and free fatty acids) and amino acids rather than glucose. This leads to catabolism with an overall reduction in lean body mass.
- During re-feeding, metabolism shifts from fat to carbohydrate.
 - Glucose load stimulates the release of insulin which increases the cellular uptake of glucose, magnesium. Phosphate and water and triggers protein synthesis

The psychology of starvation: The weight loss spiral 6,7

Losing weight:

After a few days of starvation, patient stops feeling hungry; feels "*starvation induced hyperactivity*"; restlessness and disturbed sleep, agitation;

At **90% AEBW** patient looks noticeably thinner; concentration and memory suffer; can't think of anything but food, even if it makes them feel sick;

At **80% AEBW**: cognitive slowing; verbal communication impaired, word finding problems. Patient feels flat, listless, and loss of interest/motivation, body awareness. They may not be able to see how much weight they have lost anymore;

The smell, sight or thought of food makes the patient feel sick and overwhelmed, and they start avoiding it. They are unable to understand how this endangers their health. Feel cold, drowsy and tired and sleep a lot;

At **65% AEBW** the patient's weight is dangerously low and medical intervention is necessary to stop them from starving to death.

Re-gaining weight:

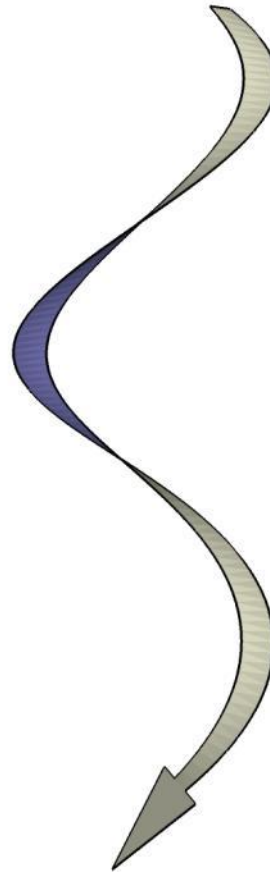
At **90% AEBW** the patient feels almost normal again. Reliable hunger sensations returns and their body tolerates normal meals. They enjoy food again.

At **80% AEBW** the patient's cognition restores and emotion and motivation returns. Verbal communication becomes easier; become more body aware and hunger feelings return;

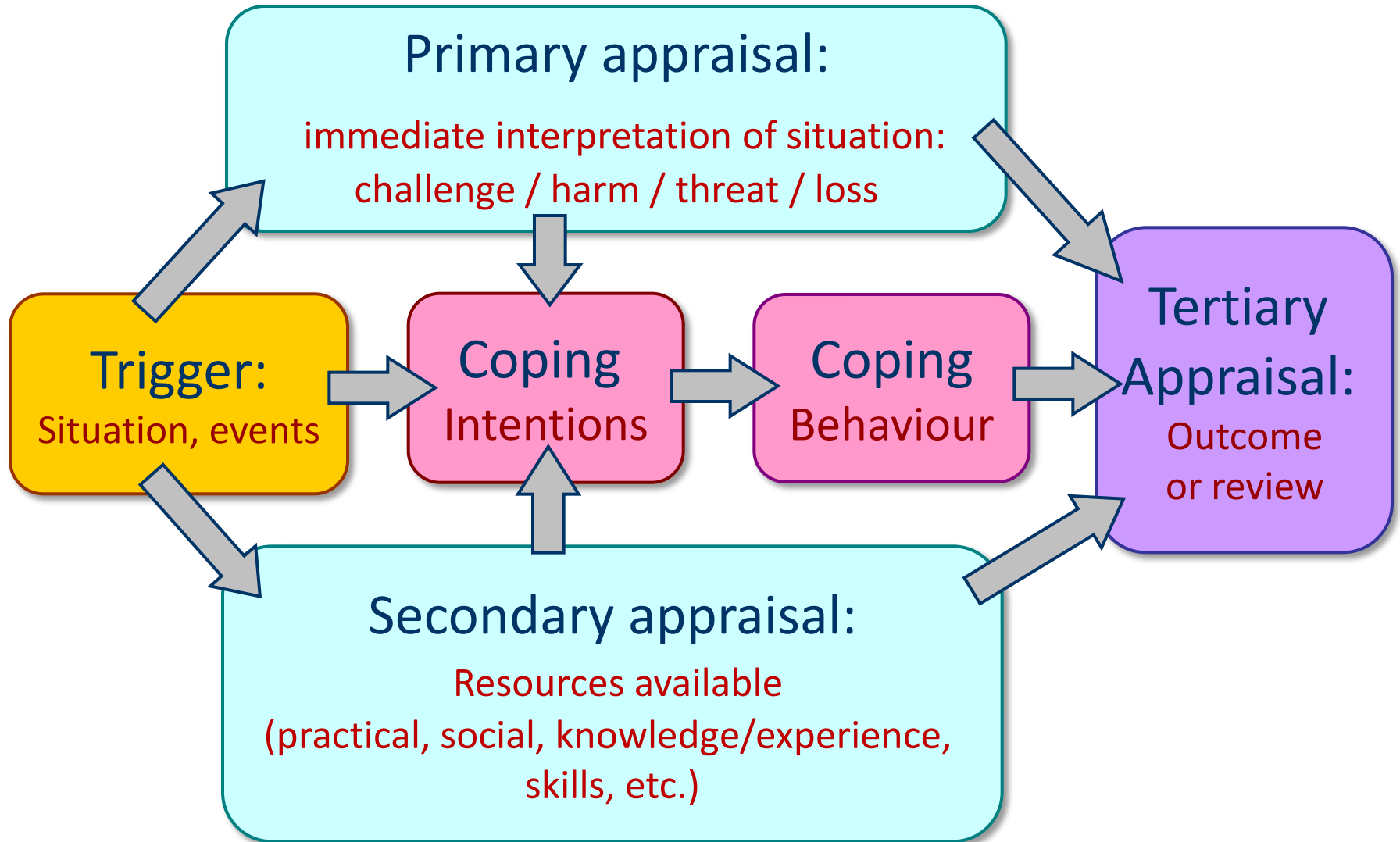
As the patients eat more, their body starts to adjust and sensations of tiredness, sickness, bloating, cramps and diarrhoea gradually start to subside.

The patient can eat/drink only very small amounts. A dietician is required to advise on a balanced diet. The patient feels sick a lot and may throw up; they have cramps and wind, and feel very tired and bloated after eating;

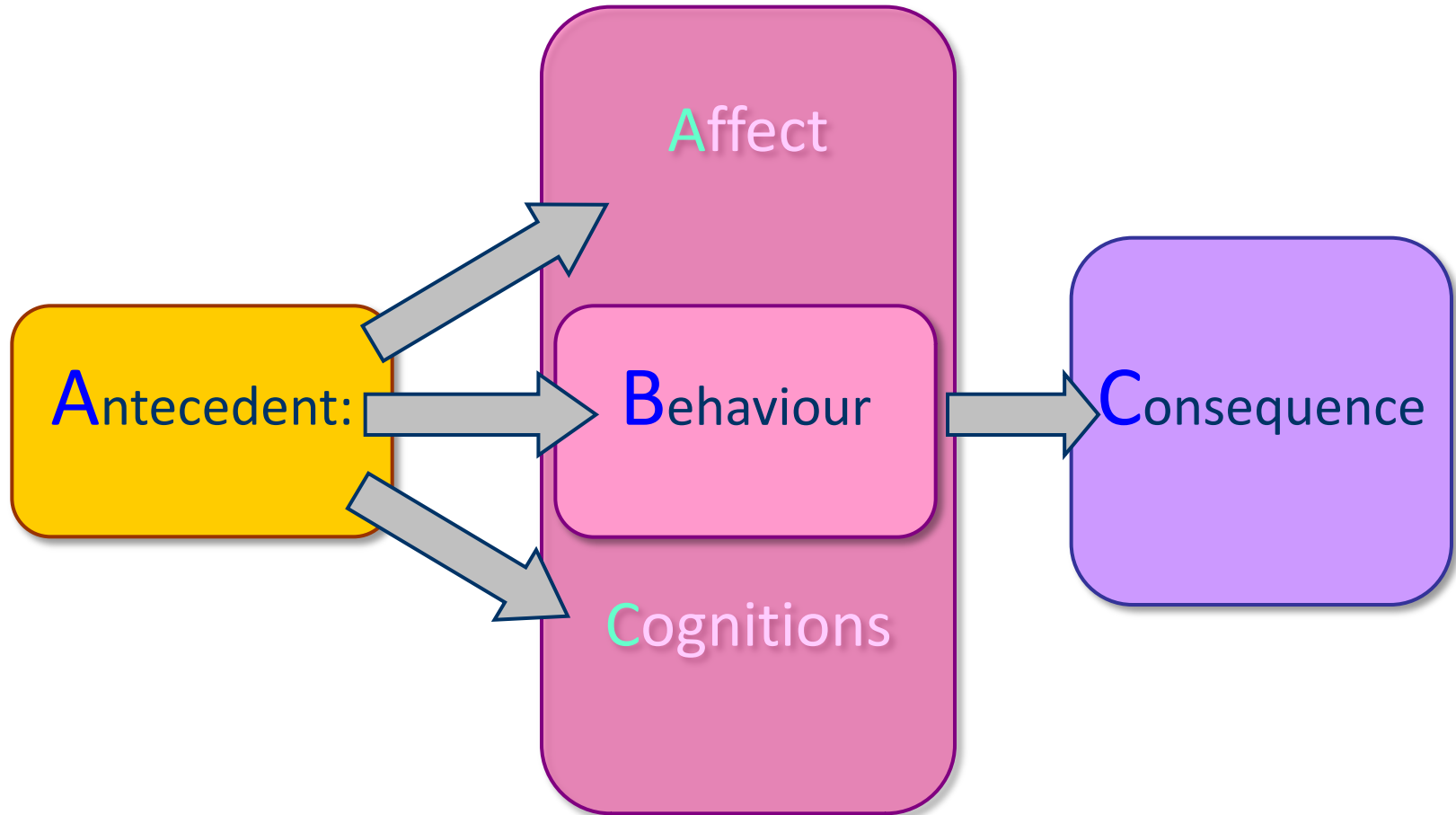
At **65% AEBW** the patient may need to be fed through a nasal-gastric tube before oral re-feeding can be considered.



Folkman and Lazarus' model of coping



Beck's Cognitive Behavioural ABC model



Case presentation:

- 34-year old male maintenance engineer with leukemia, received total body irradiation and bone marrow transplant;
- Overweight (poor dietary habits), lost 40% of his body weight following treatment;
- Severe loss of appetite; nausea and vomiting after every meal & also in response to NG tube feeding;
- The sight and thought of food triggers nausea and gag response;
- Avoided eating to avoid vomiting.

Case presentation:

- Dehydration(!);
- Flattened affect, withdrawn, loss of interest, lack of engagement with family, dissociated, “like a zombie”;
- Anxious: can’t see light at end of tunnel, feels he is going to deteriorate and die;
- Very anxious wife: worries that he is declining; son (5 yrs) “does not recognise him anymore”;
- Referred to psychology after one month on ward, continuing losing weight and not eating.

Formulation

- **Appraisal:** of food as noxious, overwhelming stimulus
- **Conditioning:** Food associated with nausea and vomiting
- **Avoidance:** of food to avoid nausea/vomiting
- **Weight loss:** results in loss of appetite, motivation & insight but increase in nausea, vomiting, discomfort
- **Anxiety and depression:** associated with catastrophic thoughts reinforces reaction of nausea and vomiting and loss of appetite
- **Self-maintaining cycle:** of conditioning, avoidance, anxiety/depression and **weight loss spiral**

Intervention

- Explanation to patient and family of the problem and formulation: re-appraisal and reassurance
- Graded exposure to food
- Systematic desensitisation of association between food and nausea/vomiting with controlled breathing, relaxation, imagery
- Response prevention of avoidance
- Gradual re-feeding to increase weight and “re-train” body to digest food, restore normal appetite and euthemic mood
- SMART targets: Specific, Measurable, Achievable, Realistic, Timed.

Graded exposure, response prevention and re-feeding: the food record sheet

Food & Drink Record

Day / Date:

Time:	Food / Drink goals	What/how much did I have?	Nausea rating (1-10); any vomiting?
9.30 am	Bowl of cereal		
11.00 am	Biscuit		
13.00 pm	1 fortisip		
3.00 pm	Slice of cake, Tea		
5.00 pm	1 piece of fruit or grapes		
7.00 pm	Bowl of cereal		
9.00 pm	Biscuit, Tea		

Food record sheet

- Set the targets together with the patient;
- Work together with the dietician;
- The patient fills out the record sheets and keeps them at their side!
- Keep in mind poor motivation; patient needs daily encouragement;
- Hospital catering is often inflexible; make arrangements with ward, dietician & patient's family so food is accessible
- Food needs to be nice, easy to eat, easy to prepare, easy to access.

Food record sheet: week 1

Food & Drink Record

Day / Date: 07/09/07

Time:	Food / Drink goals	What/how much did I have?	Nausea rating (1-10); any vomiting?
9.30 am	Bowl of cereal	1 weetabix	8 vomited
11.00 am	Biscuit	1 cracker	5 —
13.00 pm	1 fortisip	orange juice	4 - 3
3.00 pm	Slice of cake, Tea	biscuit, tea	7
5.00 pm	1 piece of fruit or grapes	satsma	6
7.00 pm	Bowl of cereal	1/2 ham sandwich	8-9 vomited
9.00 pm	Biscuit, Tea	tea	3

Food record sheet: week 3

Food & Drink Record

Day / Date: 21/09/07

Time:	Food / Drink goals	What/how much did I have?	Nausea rating (1-10); any vomiting?
9.30 am	Bowl of cereal	2 vegetable tea	2
11.00 am	Biscuit	biscuit	0
13.00 pm	1 fortisip	1 build-up	0
3.00 pm	Slice of cake, Tea	2 crackers and cheese	2
5.00 pm	1 piece of fruit or grapes	apple	2
7:00 pm	Bowl of cereal	vanilla pudding + mash	2
9.00 pm	Biscuit, Tea	biscuit, tea	0

Graded exposure to food and systematic desensitisation

- Controlled breathing and muscle relaxation;
- Imagery and hypnosis;
- **Initially keep the techniques concrete and simple because of concentration problems;**
- Patient practices every day and before and after every meal.

Outcome:

- By week 4: patient is eating normally without nausea or vomiting; he is enjoying his food again;
- Increased self-esteem and locus of control: achieved this himself;
- Feels more energetic, motivated, interested to engage with others;
- Significant reduction in anxiety, low mood;
- Wife feels that he is his “old self” again;
- At one month out-patient follow up, maintaining a healthy weight and eating pattern, already making plans to return to work.

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