REFEEDING GUIDELINE

Refeeding is indicated only when there is evidence of nutritional deficiency, e.g., if the patient is significantly underweight or there is evidence of metabolic changes associated with malnutrition. The primary aim of refeeding is to alleviate the short and long term physical and psychological sequelae of malnutrition. Refeeding should be directed by a medical practitioner and facilitated by a qualified dietitian.

KEY POINTS FOR ASSESSMENT

- Conduct a thorough patient assessment (including recent diet, menstrual and weight history).
- Assess the risk of refeeding syndrome. If risk is indicated, follow the "Refeeding Syndrome: Risk Assessment and Management" section.
- It is essential, particularly in children and adolescents, that a dietitian determines the appropriate nutrition requirements for refeeding.
- Thorough medical assessment and monitoring is essential prior to and during refeeding. Electrolytes and cardiac status must also be monitored.

REFEEDING OPTIONS

Preferred options for refeeding include:

1. Oral intake (normal food and fluids)
2. Use of oral supplements
3. Nasogastric feeding

Oral intake should be encouraged as the preferred refeeding option. If the patient is medically unstable, however, naso-gastric feeding would be preferred.

Providing choice around refeeding may reinforce the message of variety and flexibility in eating and may enhance adherence to the nutrition plan. Choice around the *process* of refeeding should be provided for patients not at risk of refeeding syndrome. Time will need to be allocated to talk through the choices available and for providing the opportunity to consume foods and fluids orally.

Examples of providing choice may include :
Drinking more supplements, consuming more energy-dense foods or having larger portions of food at mealtimes.
Consuming food and fluid orally with the assistance of a menu plan, use of oral nutritional supplements or naso-gastric feeding.

Key points when considering choice include the following:

- It may not be practical to provide choice for extremely medically compromised or severely malnourished patients.
- Some components of treatment will be considered as "non-negotiable" (e.g., weekly weight gains and consuming a specified amount of nutrition at meals and mid-meals). Lengthy discussions and negotiations around this should be avoided.
- If the patient has difficulty adhering to the chosen method of refeeding within a specified period of time (e.g., 4-24 hours depending upon the urgency of the situation), the team will need to reconsider the most appropriate feeding method.
- If the patient becomes increasingly anxious in the face of choice, the number of choices and the negotiations offered may need to be reduced.

ORAL REFEEDING

Key points to consider for oral refeeding include the following:

- The main aim of intervention should be to establish regular and appropriate meals and snacks to allow for nutritional rehabilitation (without compensatory behaviours).
- The amount, type and timing of meals and snacks to be consumed should be facilitated by a dietitian.
- Meal and snack choices should be appropriate in type and quantity for normal eating, and higher energy choices can be added to allow for weight gain. Once acceptable growth has been achieved, higher energy choices can be reduced.
- The nutrition plan should work towards achieving a healthy, balanced, nutritionally adequate daily intake. Oral intake should progress to meeting minimum daily requirements within food groups, with flexibility and variety.
- Meals and snacks should be spread throughout the day.
- Small goals should be set and gradually built upon (e.g., commence with ¼ meal at each meal). It may take up to two weeks for patients to be able to eat full meals and snacks.
- Adequate post-meal support is essential (see section titled “Meals and Snacks”).

ORAL SUPPLEMENTS

Medical nutrition supplements (e.g., tetra packs or puddings) may be a useful and acceptable solution for patients with high nutritional needs. This may be an easier alternative to increased oral intake, and may be less invasive than naso-gastric feeding. Supplements may also be offered in place of naso-gastric feeds as a way of encouraging improved oral intake and reduced reliance on enteral feeds. The use of oral nutritional supplements is not considered normal, healthy eating and should be considered as a short-term option only.

NASO-GASTRIC FEEDING

Naso-gastric feeding should be considered as a short-term intervention only. This may be used initially as the predominant source of nutrition and should be tapered off as oral nutrition improves.

The following should be considered when commencing naso-gastric feeding:

- Feeds may be commenced as the sole source of nutrition or may be accompanied by oral nutrition if the patient is managing a portion of requirements orally.
- The use of nutrient dense feeds are not recommended in the early stages of re-feeding a patient who is at risk of re-feeding syndrome. Hypo-osmolar or iso-osmolar feeds may be used initially. Higher energy feeds may then be considered if energy requirements are substantial or to reduce the total volume of feed. High fibre feeds may be preferable in those with constipation or abdominal discomfort.
- There are various ways to administer feeds including continuous, overnight or bolus feeds. The mode is flexible according to the individual needs of each patient.
- Feeds are usually started at a low rate and continued through the day (continuous feeds). This will reduce the nutritional load and allow for physical and psychological adjustment to increased nutritional intake.

- Once patients are tolerating an adequate amount of feed, feeding may become intermittent (e.g., overnight) or may progress to bolus feeding (administering a particular volume of feed at regular intervals, as opposed to a continuous rate of feed). Overnight feeding may be used as a step towards bolus or oral feeding and may allow for increased appetite during the day. Bolus feeding can be given at meal and snack times to assist with establishing regular nutritional patterns throughout the day. Feeds may be given 3 times per day at mealtimes or as 6 smaller bolus feeds, depending on tolerance and preference. Tampering with continuous or overnight feeds should be monitored.

Continuous naso-gastric feeding is less likely than bolus feeding to result in metabolic abnormalities or subjective discomfort and may be better tolerated by patients.

- Commence refeeding slowly. It may take 7-10 days to reach a goal rate.
- Monitor electrolytes, cardiac status and signs of refeeding syndrome.
- Energy requirements may increase after the first few weeks of re-feeding due to increases in the metabolic rate and increased physical activity. Once an adequate weight gain has been achieved, nutritional intake can be reduced to allow for maintenance of growth.

NUTRITIONAL REQUIREMENTS

Determining appropriate energy requirements for refeeding can be difficult due to physical changes occurring during re-feeding (including metabolic rate), actual energy consumed and energy lost through activity or purging behaviours. The starting regime will also depend on many factors including the age, body size, level of nutrition and medical stability of the patient.

There is limited evidence in the literature to support recommending a specific refeeding regime in adolescents with eating disorders. Recommendations for commencing refeeding have ranged from 10-60kcal/kg/day (actual body weight) and may reach as high as 70 –100 kcal/kg/d or 3,500-4,500 calories (15,000-18,000kJ) depending on individual requirements.

In consideration of the current evidence and expert opinion, the following recommendations have been made (it is essential that patients are supplemented and monitored appropriately, please refer to the “Refeeding Syndrome” section):

- Patients may be commenced on 700-1,500kcal/day depending on individual needs.
- For younger or smaller adolescents, or those at higher medical risk, a lower rate of refeeding should be initiated. For those at risk of re-feeding syndrome, nutrition may be initially restricted to 700-900kcal/day with caloric intake spread throughout the day to minimise excessive nutritional load (eg continuous 24 hour feeding if using naso-gastric feeds). Nutritional intake can then be increased by gradual amounts over the proceeding two weeks or until the final requirements have been met.
- For older adolescents who are medically well, and at low risk of refeeding syndrome, initial nutrition plans may begin with 1,200-1,500 calories (5,000-6,300 kJ) per day. This may be continued for the first few days to allow for physical and psychological adjustment. Intake may then be increased by 500 calories (2,100 kJ) every 4-5 days until a desired rate of weight gain is achieved.
- Once an adequate weight has been achieved, nutritional intake can be reduced to allow for maintenance of growth.

Other nutrient requirements that will need to be considered include protein, carbohydrates, fluids, fibre, vitamins and minerals.

Refeeding Case Study 1

Example of how one could progress with implementing a refeeding regime in an older adolescent who was medically stable and at low risk of refeeding syndrome:

17 year old girl, height 163cm, weight 43kg, estimated energy requirements for 1kg/week weight gain 12,500kJ/3000calories, some oral intake over past 2 weeks, electrolytes normal.

First 24 Hours

Commence iso-osmolar feed at 40mls per hour for 12 hours.
If tolerated, increase rate to 60mls/hr for 12 hours.
This will provide, for example, 1200mls fluid (plus fluid flushes), 1260kcal (5280kJ) energy and 53g protein.

Following 24 Hours

60mls/hr X 24/24
This will provide, for example, 1440mls fluid (plus fluid flushes), 1500kcal (6340kJ) energy and 63g protein.

Gradually increase feeds to a final rate of 3000kcal (12,500kJ), which may take 7-10 days to reach. This may be achieved by increasing feeds by 500kcal (2,100kJ) every 4-5 days to allow for physical and psychological adjustment. Concentrated feeds may need to be used to avoid excess fluid input.

Refeeding Case Study 2

Example of how one could progress with implementing a refeeding regime in a younger adolescent who was at risk of refeeding syndrome:

12 year old girl, height 152cm, weight 28kg, estimated energy requirements for 1kg/week weight gain 11,000kJ/2600calories, minimal oral intake over past 2 weeks, serum phosphate lower end of normal.

First 24 Hours

Commence hypo-osmolar feed at 30mls per hour for 24 hours
This will provide, for example, 750mls fluid (plus fluid flushes), 750 kcal (3150kJ) energy and 28g protein.

Following 24 Hours

If tolerated, increase rate to 40mls per hour for 24 hours.
This will provide, for example, 960mls fluid (plus fluid flushes), 1000kcal (4200kJ) energy and 35g protein.

Gradually increase feeds by 10ml/hour per day to a final rate of 2600kcal (11,000kJ) (e.g., 110ml/hour continuous feed), which may take 7-10 days to reach. Concentrated feeds may need to be used to avoid excess fluid input.

MANAGING MEALS AND SNACKS

Key points to consider when planning or managing mealtimes include:

- Tailor mealtime management to the specific needs of the patient.
- There is no 'right approach' however it is important that staff and the family work as a team.
- Disagreements regarding mealtime approach should be dealt with away from the table.
- If adults are unable to work together, it is more likely that mealtimes will be difficult for the patient.

Normal Healthy Eating includes…

- Eating a variety of foods from all food groups
- Eating a variety of foods within food groups
- Eating adequate amounts of food for normal growth and development
- Being able to eat when hungry and to stop eating when full
- Being able to be flexible about what foods are eaten and at what times of the day

THE USE OF MEAL PLANS

- Individual meal plans may facilitate common nutritional goals and awareness of appropriate types, quantities and timing of foods.
- A qualified dietitian, with the treating team, patient and their family, should facilitate devising the meal plan. A dietitian will ensure nutritional adequacy and assess the risk associated with re-feeding.
- It is not advisable to discuss calories with the patient. Instead talk in terms of a healthy intake or whole foods. If the patient asks to discuss calories (e.g., "How many calories are on my meal plan") gently explain that it is unhelpful to discuss and attempt to direct the conversation towards healthy eating and whole foods.
- Provide a copy of the meal plan to the patient, parents/carers and other members of the treating team to optimise consistency in approach and minimise the potential for splitting. It is sometimes helpful to explain to the family and staff the importance of supporting the patient to adhere to the meal plan, and of not giving in to requests to alter the amounts of food listed. Ideally, changes to the meal plan should only occur with the dietitian and patient to avoid confusion and miscommunication amongst the team.
- Questions about meal plans or substitution should be referred to the dietitian.

SOCIAL EATING

- Ideally the patient should sit with other young people at a dining table to eat meals. If the patient has to sit in their room to eat they should be seated at a table and not on their bed. Ideally, someone else should also sit with the patient – family and friends can be encouraged to eat a meal with the patient to model social eating behaviours.
- As this is a highly anxiety-provoking situation for patients, staff members should be present to model healthy eating and support the patient when necessary.

- Staff members can also help to direct conversation away from food and calories and promote normal social interaction. It is essential that staff do not discuss their own issues with dieting or body image concerns in front of patients.
- Acknowledge that the patient will find meal times difficult - the team may decide to allow the patient to initially eat separately from other children and gradually work towards eating in a more social setting.
- If the patient is being fed nasogastrically they should sit at the table during meal times and be given every opportunity to consume a meal and participate in this social event.

MEAL AND SNACK CHOICES

- Nutrition goals must work towards three regular meals and three snacks.
- Although it may seem a lot to the patient, six smaller meals may be better tolerated (physically and psychologically) than three larger meals.
- Food 'dislikes' are common among patients with eating disorders, and may be a way of limiting the intake of 'scary' foods. The management of food dislikes should be approached as a team and consideration given to premorbid food preferences and dislikes (discuss with parents/carers). It may be necessary to include foods on the meal plan that the patient does not want in order to meet nutrition and treatment related goals. It may be helpful to initiate basic 'rules' for the unit regarding food dislikes, e.g., the patient can nominate three foods he/she dislikes but must eat all other foods (within reason).
- Vegetarian menus are generally only allowed if the patient became vegetarian well before the onset of the eating disorder.
- Reported "allergies" to specific foods must be discussed with the medical officer and treated with caution. This may be part of the eating disorder as opposed to a "true" food allergy.
- Provide the regular hospital menu. Paediatric menus are generally not appropriate for adolescents.
- Aim to decrease or eliminate low fat foods and beverages during the admission.
- Limit chewing gum, lollies and excessively high carbohydrate fluids with little nutritional value.
- Food and beverages from outside sources are usually not an option unless there has been consultation and agreement with the team.

POST MEAL SUPPORT

It may be helpful to initiate routine post meal support for patients, especially if they are anxious or agitated after meals. Such support may include:

- Relaxation (using techniques previously learned) and breathing exercises
- Distraction (e.g., activity, talking, reading, watching television, talking on the telephone)
- Hand massage
- Social activity

SETTING GOALS AND LIMITS

Goals and limits around meal times should be individually tailored to the patient and developed in consultation with the patient. Examples of mealtime goals may include:

- Not playing with food
- Touching food to the lips
- Eating 3/4 of the meal
- Eating a particular 'scary' food
- Siting at the table for a specified time period

Staff should ensure that foods chosen are appropriate in terms of…

- Quantity of food
- Type of food
- Meal time

- It is useful to set time limits on meals, e.g., 30mins for main meals, 15mins for snacks.
- To prevent purging, it is recommended that no access to toilets/bathrooms be allowed for 1 hour after meals. Patients should be encouraged to use the toilet before meal times as part of the ward routine.
- It can often be difficult to be firm about nutrition requirements, especially when the patient is distressed. It is very important, however, to be clear that nutrition requirements are not negotiable.

OBSERVATIONS

- Accurately document all food and fluids consumed on a food record chart (including the type and quantity of foods). It can be helpful for the patient if this is done discretely (i.e., without talking loudly about food eaten in front of other patients, or at the dining table).
- Observe and document conversations about diet/food and any disordered eating behaviours during meal consumption.
- Ensure that mealtimes remain as relaxed as possible and not experienced as examining every mouthful consumed.

EXAMPLE MEAL PLAN

Meal Plan for Weight Maintenance

Breakfast

1 bowl (1 ½ cups) cereal (1 box)

Milk (~200ml)

1 – 2 pieces of toast with margarine & topping

150ml juice

Morning Tea

1 Piece of fruit

3 biscuits & cheese

250ml drink (e.g., water)

Lunch

1 sandwich with salad & cheese/ meat

250ml drink (e.g., water)

200ml yoghurt

1 piece of fruit

Afternoon Tea

1 piece of fruit

Small handful of nuts

250ml drink (e.g., water)

Dinner

¼ plate meat, ½ plate vegies, ¼ plate pasta/ rice/ potato

Dessert (e.g., pudding or custard)

250ml drink (e.g., water)

150ml juice

Supper

250ml milky hot drink

(e.g., hot chocolate)

2 sweet biscuits

Note: depending on nutritional status, patients may be required to commence on ¼ of suggested meals and snacks and gradually build up to an adequate intake.

For patients in a hypermetabolic state, or needing to gain weight, the amount of food required would most likely be much greater than that presented in the above example (allowing for individual variation). For such patients the use of high energy, high protein nutrition principles is indicated and may involve the inclusion of high energy foods such as cake, chocolate, potato crisps, sweet biscuits and nutrition supplements.

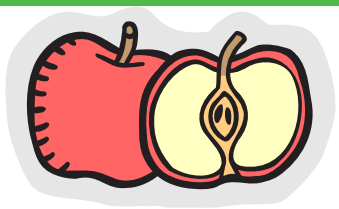
The ability of the patient to include full fat dairy foods in the meal plan may be an indicator of recovery.

MEAL PLAN TEMPLATE

Date ..... / ..... / .....

Name.....

Dietitian.....



Breakfast

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Morning Tea

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Lunch

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Extra Fluids

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