

Role of Partial Meal Replacement in Obesity Management

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Disclosures - Sarah Chapelsky

Faculty

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Relationships with commercial interests

- Speakers Bureau/Honoraria: Novo Nordisk, Valeant
- Consulting Fees: FEMME HOMME Medical

Disclosures - Sherry Waroway

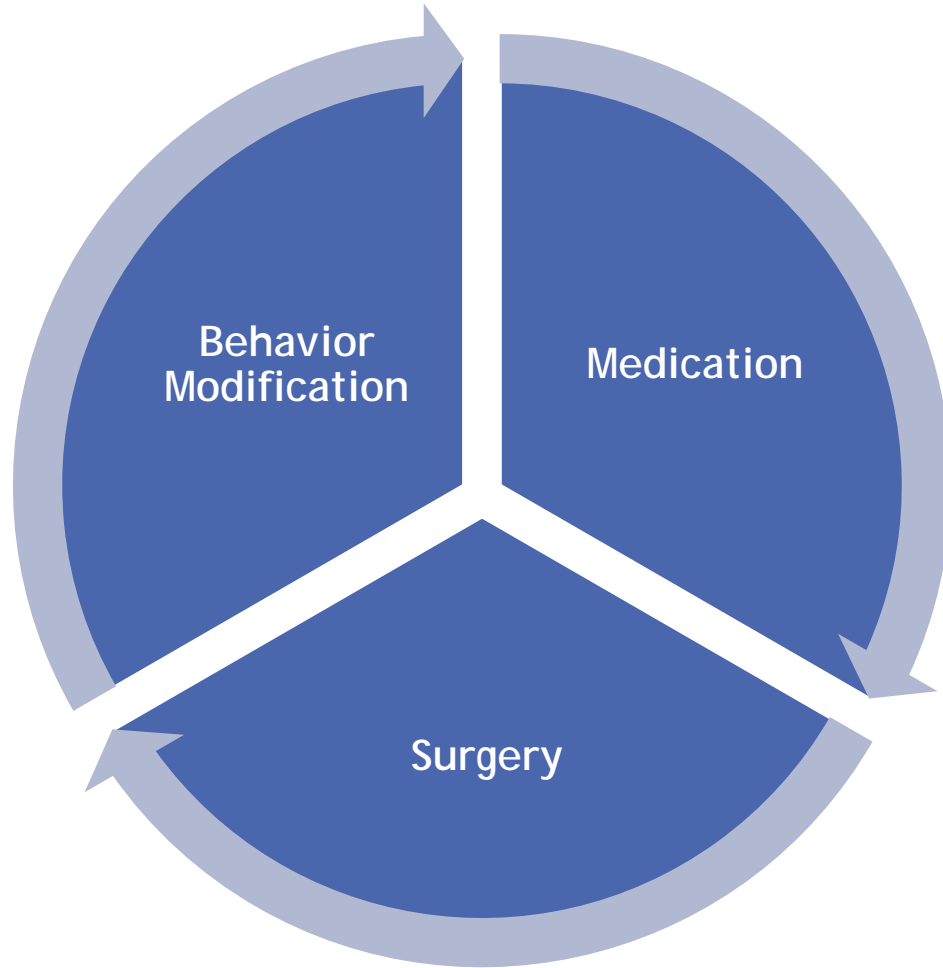
- BSc Nutrition and Food Science
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No relevant financial or nonfinancial relationships to disclose.

Learning Objectives

1. Describe the difference between a formulated liquid diet, meal replacement, and nutritional supplement.
2. Differentiate the role of partial vs full meal replacement strategies in weight management.
3. Review the outcomes of adding a partial meal replacement strategy to a hypocaloric diet.
4. Discuss the clinical approach to initiating a PMR strategy.

Treatment of Obesity



Meal Replacement Strategies

Full Meal Replacement (FMR)

- used for weight loss
 - acute weight loss
 - combined with a multidisciplinary lifestyle program to support weight maintenance
- patients must be medically monitored
- needs to meet Health Canada regulations
- 900 kcal/day

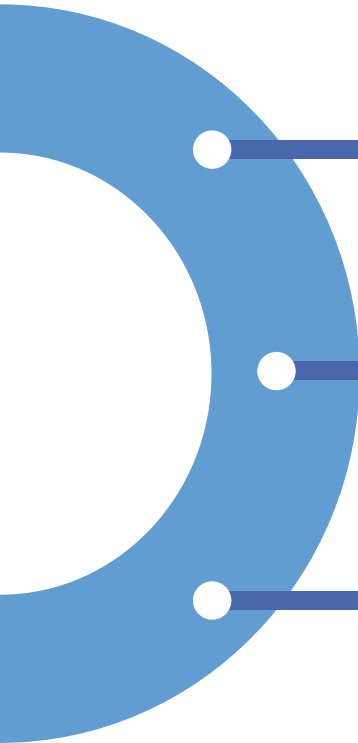
Partial Meal Replacement (PMR)

- used for weight loss or weight loss maintenance
- part of a low calorie diet with food
- replaces 1 - 2 meals or snacks per day
- typically 1200-1500 kcal/day

Rationale for Meal Replacements

- Portion and calorie control
- Structured eating
- Improved nutrition
- Stimulus narrowing: avoid contact with certain food
- Stimulus control: avoid contact with problem foods or triggers
- High protein

PMR Improves Low-Calorie Diet Outcomes

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- Greater weight loss¹
 - Better preservation of lean mass²
 - Better nutritional outcomes²

PMR Improves Weight Loss Outcomes

Meta-analysis of 6 studies. 487 patients. Mean age: 46.1 years; mean BMI 31 kg/m².

Treatment Group	Dropout at 1 year	Mean weight loss at 1 year	≥5% weight loss at 1 year
Low-calorie diet	64%	4%	33%
Low-calorie diet + PMR	47%	7%	74%

PMR Improves Lean Mass Preservation

RCT of 117 patients. Mean age: 70 years; mean BMI 40 kg/m².
All groups received an exercise intervention. Study duration of 4 months.

Outcome	Dietary advice	Hypocaloric diet (-500 kcal/day)	2-3 MR + 1 meal per day
Mean weight loss	3.7%	5.1%	11.1%
Fat mass loss	5.7%	6.1%	16.8%
Lean mass loss	1.7%	2.8%	4.8%
Fat mass to lean mass loss (kg)	1 : 0.33	1 : 0.5	1 : 0.32

PMR Improves Nutrition Outcomes

RCT of 117 patients. Mean age: 70 years; mean BMI 40 kg/m².
All groups received an exercise intervention. Study duration of 4 months.

- 37% increase in vitamin D levels
- 19% increase in vitamin B12 levels
- 11% increase in ferritin

Partial Meal Replacements-Indications for use in Weight Loss

- 1) Weight loss: in an energy restricted diet as part of treatment plan for obesity.
- 2) Other medically supervised treatment plans:
 - Before bariatric surgery, for a fixed length of time to facilitate weight loss, reduce liver volume and decrease surgical risk.
 - Before non-bariatric surgery, for a fixed length of time, where lower body weight would decrease surgical risk and improve recovery.

Partial Meal Replacements-Contraindications for Use in Weight Loss

- There appear to be no absolute contraindications.
- There appear to be no relative contraindications.
- The contraindication occurs when weight loss is not appropriate (pregnancy, early post partum, lactation, active eating disorder, substance abuse disorder).
 - However, these products could be used (under Registered Dietitian supervision) to supplement a diet to support improved nutrition.

What is a Meal Replacement?

FDR (Food and Drug Regulations) provides requirements for products that are “Foods for Special Dietary Use.”

- 1) Formulated Liquid Diets (FLD): Nutritionally complete. Considered full nutrition (Oral or Tube feeds).
- 2) Meal Replacements (MR): Nutritionally complete. Meets requirements for calories, (min. 225 kcal), macronutrients, vitamins and minerals to replace a meal (or all meals) in energy restricted diets.
- 3) Nutritional Supplements (NS): Not nutritionally complete. Supplement a diet. Meets different requirements for calories (min of 150 kcal), macronutrients, vitamins and minerals. Not all NS products (drinks, shakes, bars) are appropriate for weight loss.

Products available

Formulated Liquid Diet	Meal Replacement	Nutrition Supplement
Ensure Protein Max (Enlive)	Boost High Protein	Ensure scFOS Fibre
Ensure Compact	Ensure High Protein	Ensure Regular
Tube Feed Products	Glucerna Nutritional Drink	Carnation Instant Breakfast
	Optifast [®] 900	Boost Fruit Beverage
		Boost Diabetic

Other Products

Frozen Meals	Bars	Protein Shakes/Drinks
Healthy Choice Steamers	Premier Protein Bar	Premier Protein
Healthy Choice Power Bowl	Pure Protein Bar	Muscle Milk Protein Shake
Blue Menu	Cliff Bar	Equate Pro Meal Replacement
Lean Cuisine	Lara Bar	Ultra Shake PC
Smart Meals	Slim Fast Bar	Kirkland Meal Replacement
Stouffers Fit Bowls	Kirkland Protein Bar	
	Quest Bar	
	Detour Simple Bar	

- Often marketed as “meal replacements.”
- Do not meet nutrition requirements to be used as a Meal Replacement.
- Often do not meet nutrition requirements to be used as a Nutrition Supplement.
- May be used for calorie reduction, in combination with a well balanced diet, to meet a client’s daily needs (under Registered Dietitian supervision).

Things to Consider- Product Selection

- Allergies and Intolerances.
- Cost/Access.
- Client is on Vitamins and Minerals.
- Client is using other Health related products (supplements).
- Other medical conditions (diabetes, kidney stones, renal disease, bariatric surgery).
- Nutrition knowledge, beliefs and attitudes, behaviors, adherence, taste preferences, taste fatigue, over reliance on products...

Getting Started

You and your client have decided to target weight loss with energy reduction.

- In the absence of a Registered Dietitian.
- Awaiting to see a Registered Dietitian.
- Awaiting Initial Assessment at the Edmonton Adult Bariatric Specialty Clinic.
- Awaiting assessment at another specialty clinic for treatment.

Getting Started

- 1) Review diet history
 - “Walk me through a typical day.”
 - “Tell me about your breakfast, lunch and supper regime.”
 - “Tell me about your morning, afternoon and evening snack regime.”
- 2) Which meal is the biggest barrier?
- 3) You and the client decide which meal to replace
 - Fits the best with their lifestyle (work schedule, family dynamics, QOL)
 - Has the biggest caloric reduction
- 4) Select a product
- 5) Start the proposed intervention and start food journaling
- 6) Follow up and assess progress

Remember: By adding a meal replacement, you are adding calories. Without adjusting the total calorie intake, this can increase your caloric intake and can result in weight gain.

When to Refer to a Dietitian

- 1) If you have access to an RD in your practice.
 - 2) If wanting or needing to use more than 1 meal replacement/day.
 - 3) Considerations are extensive, and the patient requires further assessment, intervention and follow up.
- Allergies and Intolerances
 - Cost/Access
 - Client is on Vitamins and Minerals
 - Client is using other Health related products (supplements)
 - Other medical conditions (diabetes, kidney stones, renal disease, bariatric surgery)
 - Nutrition knowledge, beliefs and attitudes, behaviors, adherence, taste preferences, taste fatigue, over reliance on products...

Referring to a Dietitian

Please refer to:

Nutrition II: Long Term Post -op Care

Case Study #1

Eats out Lunch Daily at Work

Case Study #3

Meal skipper

Case Study #2

High BMI: Needs Aggressive Weight Loss Now

Case Study #4

Struggling to Meet Protein Requirements