

Clinical Nutrition and Nutrition Therapy in Special Populations

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Theme of Research

- **Clinical Nutrition & Nutrition Support**
 - Nutritional pharmacology/ Nutrient kinetics
 - Obesity
 - Short bowel syndrome
 - Special populations

Recent publications by graduate students:

- Neilson CH: Optimization of Vitamin D Status After Roux-en-Y Gastric Bypass Surgery in Obese Patients Living in Northern Climate. *Obes Surg.* 2015;25(12):2321-7.
- Zheng Q: Assessing Micronutrient Adherence after Bariatric Surgery: An Exploratory Study. *J Obes Bariatrics.* 2015;2(2):8.

Home Parenteral Nutrition (PN) Use in Obese Patients

Research aims:

- **Aim 1:** To understand the patient characteristics of obese adult patients receiving HPN.
- **Aim 2:** To identify the indications and weight goals for HPN among the obese patients.
- **Aim 3:** To compare the outcomes between obese vs non-obese HPN patients.
 - Sub-aim: Bariatric surgery recipients receiving HPN

Data Source:

National Home PN Registry (Sustain™)

- National web-based HPN patient registry in the U.S., launched in Feb 2011
- Developed and owned by the American Society for Parenteral and Enteral Nutrition
- Supported, in part, by unrestricted scientific grants from Baxter Healthcare Corporation and the A.S.P.E.N. Rhoads Research Foundation.
- Voluntary reporting by sites; using a joint IRB application
- 32 sites: Medical centers, hospitals, home infusion providers

Preliminary Results

Obesity Classification			
(n=154)	Class I obesity	Class II obesity	Class III obesity
n (%)	82 (53%)	43 (28%)	29 (19%)

	Mean ± SD	Median
Height (cm)	166.52 ± 9.59	165.00
Actual weight (kg)	99.76 ± 20.87	95.00
Ideal weight (kg)	59.42 ± 10.06	56.91
Adjusted weight (kg)	69.51 ± 11.60	66.72
Body Mass Index (kg/m²)	35.80 ± 5.54	34.10

Underlying diagnoses of the 154 obese patients receiving HPN

Diagnosis	n (%)
Other	75 (49%)
Bariatric surgery	37 (24%)
Cancer	30 (19%)
Short bowel syndrome	18 (12%)
GI motility disorder /GI pseudo-obstruction	16 (10%)
Crohn's disease	8 (5%)
Mesenteric ischemia	5 (3%)
Pancreatitis	5 (3%)

Home PN Regimen: Caloric and Protein Provision

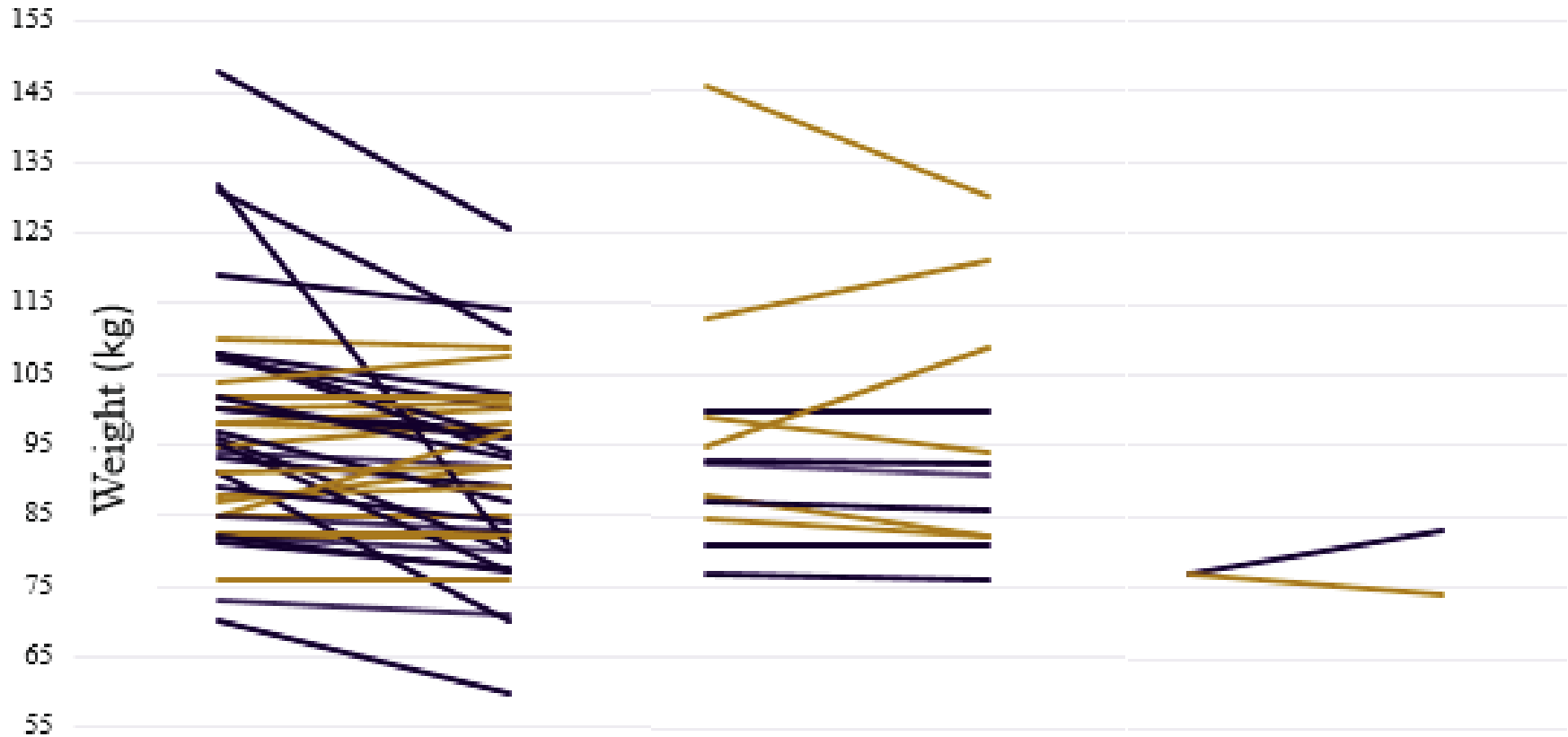
	Mean \pm SD	Median
Total Calorie (n=137)	(kcal /kg (total) /day)	
Actual Body Weight	20.41 \pm 5.66	19.65
Adjusted Body Weight	28.75 \pm 7.38	29.13
Protein (n=151)	(gram /kg (total) /day)	
Actual Body Weight	1.19 \pm 0.26	1.19
Adjusted Body Weight	1.69 \pm 0.33	1.70

Therapeutic Goal – Weight management

Goal at 1 st follow-up visit (n=154)	N (%)
Weight Loss	102 (66%)
Weight Maintenance	28 (18%)
Weight Gain	2 (1%)
Not-specified	21 (14%)
*Other	1 (1%)

* Other: weight gain + weight maintenance

Goal Attainment – Weight



Baseline 1st follow-up

**Weight Loss Group
(n=39)**

Baseline 1st follow-up

**Weight Maintenance Group
(n=13)***

Baseline 1st follow-up

**Weight Gain Group
(n=2)**

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Summary

- Preliminary findings:

- 14.5% adult patients in the registry is obese
- Mean BMI 35.80 ± 5.54 kg/m²
- Mean actual weight 99.76 ± 20.87 kg at baseline
- Leading diagnoses: s/p bariatric surgery and cancer
- Weight loss is the goal for 66% of the patients

- Ongoing work:

- Clinical outcomes assessment and comparison vs non-obese patients
- Characteristics and outcomes in all bariatric surgery cohorts
- Pediatric patients