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Connor McElwee

Jessica Vitale

Cynthia Cheng, MD, PhD

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**Sidney Kimmel  
Medical College™**  
at Thomas Jefferson University

# Impact of Medical Nutrition Therapy on Blood Pressure

Connor McElwee, Jessica Vitale\*\*, Ketav Patel\*\*, Ayesha Baig\*\*, Dr. Cynthia Cheng\*



# Introduction

- Medical Nutrition Therapy (MNT) has been proposed as a potential treatment modality for obesity, which affects over 40% of Americans and is associated with a host of comorbidities
- Though various studies involving MNT have been performed, none have directly examined the relationship between MNT and change in blood pressure
- By investigating the impact of MNT on patients' blood pressure, we hope to uncover a treatment modality that not only reduces obesity but also improves blood pressure and its damaging sequelae

# Objectives & Hypothesis

- Research Question:
  - How does participating in Jefferson’s longitudinal MNT program affect patients’ blood pressure?
- Hypothesis
  - Participation in Jefferson’s MNT program will result in reduced blood pressure

# Approach & Results

- Study design:
  - Medical chart review
  - Retrospective study
- Study sample:
  - 33 patients from Jefferson’s longitudinal MNT program: 29 females, 4 males
- Intervention (if applicable):
  - Jefferson MNT program: strict 12 week dietary modification followed by long term maintenance nutritional counseling
- Data source and collection:
  - Patient medical records beginning 3 months before starting program
  - Jefferson MNT program files, tracking weight change and dates of sessions attended
  - Medical students working on project were required to demonstrate 95% accuracy in data entry before performing chart reviews on their own in order to ensure consistency

# Approach & Results (Overall)

Variable: WTCHANGEYR1

N	Mean	Std Dev	Std Err	Minimum	Maximum
14	23.6250	22.7828	6.0889	-4.6000	67.6700

Mean	95% CL Mean	Std Dev	95% CL Std Dev
23.6250	10.4706 36.7794	22.7828	16.5165 36.7040

DF	t Value	Pr >  t
13	3.88	0.0019

Variable: WTCHANGEYR2

N	Mean	Std Dev	Std Err	Minimum	Maximum
15	-8.7547	15.5278	4.0093	-48.0000	18.6700

Mean	95% CL Mean	Std Dev	95% CL Std Dev
-8.7547	-17.3537 -0.1556	15.5278	11.3683 24.4889

DF	t Value	Pr >  t
14	-2.18	0.0465

- Significant weight loss over first year
  - Mean: 24 lbs (10% of body weight)
- Weight gain over second year
  - Mean: 9 lbs (6% of body weight): NET 4% weight loss
- MNT is a potentially effective strategy for weight loss, though weight maintenance is a key challenge

# Approach & Results (BP)

## Variable: SBPDiff

N	Mean	Std Dev	Std Err	Minimum	Maximum
13	-2.4354	11.7121	3.2483	-18.5000	13.0000

Mean	95% CL Mean	Std Dev	95% CL Std Dev
-2.4354	-9.5129 4.6422	11.7121	8.3986 19.3335

DF	t Value	Pr >  t
12	-0.75	0.4679

## Variable: DBPDiff

N	Mean	Std Dev	Std Err	Minimum	Maximum
14	-1.8571	6.0615	1.6200	-15.6700	9.0000

Mean	95% CL Mean	Std Dev	95% CL Std Dev
-1.8571	-5.3570 1.6427	6.0615	4.3943 9.7654

DF	t Value	Pr >  t
13	-1.15	0.2723

- Data from 13 (systolic) and 14 (diastolic) study participants): systolic and diastolic BP increased slightly: NOT significant
- Literature and intuition would lead one to think that BP would decrease with weight loss
  - Unexpected results due to small sample size?
    - Not controlled for BP meds
  - Fluctuations in weight negate effect of net weight loss on BP?
  - **Preliminary** data: BP reduction anticipated with larger sample size

# Future Directions

- A cohort of MS1s will continue data collection with control groups, aiming for 200-300 reviews by end of spring
- Using current hospital-based MNT model for future student-driven MNT program
- Success of pilot program will hopefully fund further projects investigating usefulness of MNT



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