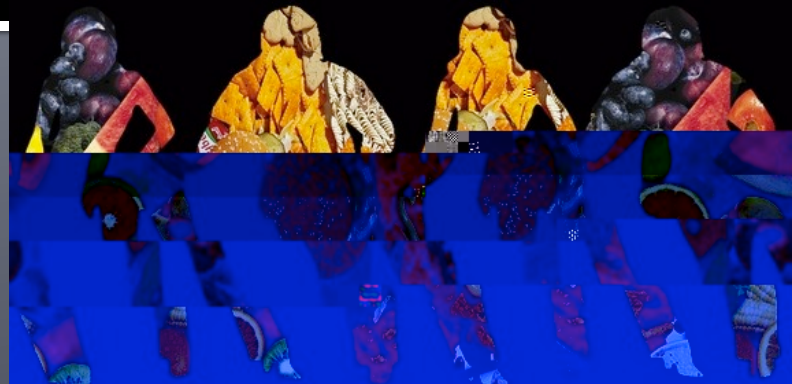


The Impact of a Health At Every Size[®] Versus a Weight Loss Intervention on Diet

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Conflict Disclosure Information:

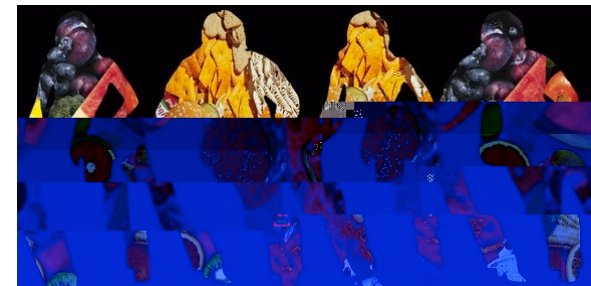
Presenter: Brooke Noble

Title of Presentation: The Impact of a Health At Every Size® Versus a Weight Loss Intervention on Diet

I have no financial or personal relationships to disclose

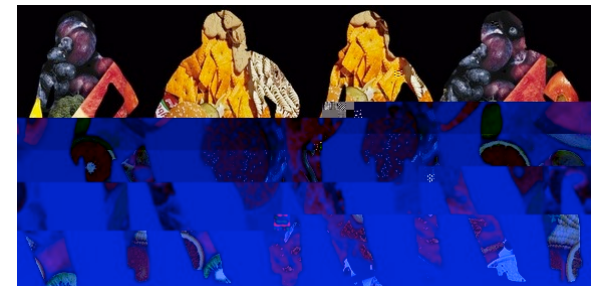
Agenda

- Introduction
- Objectives
- Methods
- Results
- Discussion and Implications
- Limitations



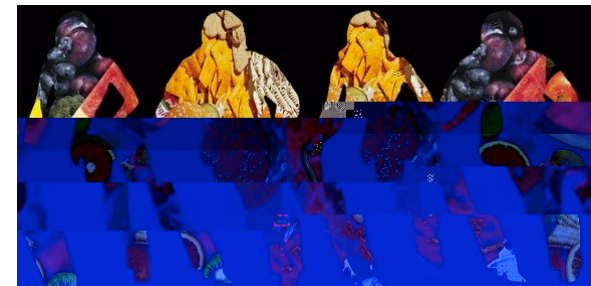
Introduction

- Weight loss is not often sustained
- Weight focus has not reduced the rates of overweight and obesity
- Health can improve independent of weight loss
- A shift away from weight focus to a non-diet/ mindful approach has started



Health at Every Size

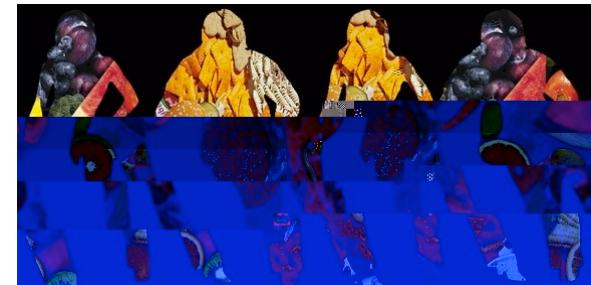
- Focus to improve health
- Acceptance of diversity of body shape and size
- Relaxed and enjoyable eating according to internal hunger and fullness cues
- Recognizes the importance of social, emotional, spiritual and physical factors to health and happiness



Literature Findings

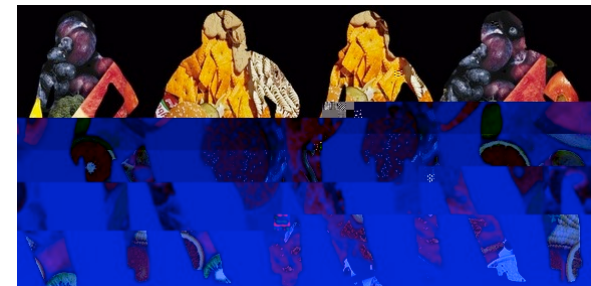
In HAES studies:

- **Psychological and quality of life improved**
- **Mixed findings on**
 - Blood pressure
 - Blood sugar
 - Blood lipids
 - Changes in physical activity
- **No decrements reported**



Gap in Knowledge

- Few HAES studies examined diet
- No studies compared diet in a HAES vs. traditional weight loss group
- No studies examined HAES & Healthy Eating Index (HEI) score



Healthy Eating Index

HEI- 2010 ¹ component	Maximum	Standard for maximum score	Standard for minimum score of zero
▲ Adequacy (higher score indicates higher consumption)			
Total Fruit ²	5	≥ 0.8 cup equiv. / 1,000 kcal ¹⁰	No fruit
Whole Fruit ³	5	≥ 0.4 cup equiv. / 1,000 kcal	No whole fruit
Total Vegetables ⁴	5	≥ 1.1 cup equiv. / 1,000 kcal	No vegetables
Greens and Beans ⁴	5	≥ 0.2 cup equiv. / 1,000 kcal	No dark-green vegetables, beans, or peas
Whole Grains	10	≥ 1.5 ounce equiv. / 1,000 kcal	No whole grains
Dairy ⁵	10	≥ 1.3 cup equiv. / 1,000 kcal	No dairy
Total Protein Foods ⁶	5	≥ 2.5 ounce equiv. / 1,000 kcal	No protein foods
Seafood and Plant Proteins ^{6,7}	5	≥ 0.8 ounce equiv. / 1,000 kcal	No seafood or plant proteins
Fatty Acids ⁸	10	(PUFAs + MUFAs) / SFAs ≥ 2.5	(PUFAs + MUFAs) / SFAs ≤ 1.2
▼ Moderation (higher score indicates lower consumption)			
Refined Grains	10	≤ 1.8 ounce equiv. / 1,000 kcal	≥ 4.3 ounce equiv. / 1,000 kcal
Sodium	10	≤ 1.1 gram / 1,000 kcal	≥ 2.0 grams / 1,000 kcal
Empty Calories ⁹	20	≤ 19% of energy	≥ 50% of energy

¹ Intakes between the minimum and maximum standards are scored proportionately.

² Includes 100% fruit juice.

³ Includes all forms except juice.

⁴ Includes any beans and peas not counted as Total Protein Foods.

⁵ Includes all milk products, such as fluid milk, yogurt, and cheese, and fortified soy beverages.

⁶ Beans and peas are included here (and not with vegetables) when the Total Protein Foods standard is otherwise not met.

⁷ Includes seafood, nuts, seeds, soy products (other than beverages) as well as beans and peas counted as Total Protein Foods.

⁸ Ratio of poly- and monounsaturated fatty acids (PUFAs and MUFAs) to saturated fatty acids (SFAs).

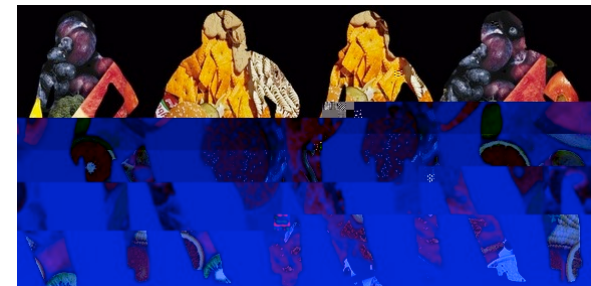
⁹ Calories from solid fats, alcohol, and added sugars; threshold for counting alcohol is > 13 grams/1,000 kcal.

¹⁰ Equiv. = equivalent, kcal = kilocalories.

Objectives

Examine:

- Diet in HAES vs. weight loss groups
- Diet changes within each group
- Weight and waist circumference outcomes for each group



Population

- Participants
 - ≥ 18 years old
 - Registered to one of the 4 physician's offices
- Exclusion criteria
 - Diabetes
 - Eating disorder (self-reported)
- Exclusion criteria specific to HAES group
 - Trying to lose weight
 - Enrolled in a weight loss program



Methods

Study Design

- Convenience sample
- Controlled trial
- 12-week interventions in different communities

Health At Every Size



4 Parallel Groups

Traditional

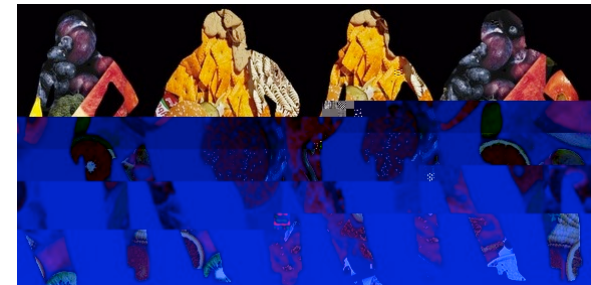


2 Parallel Groups



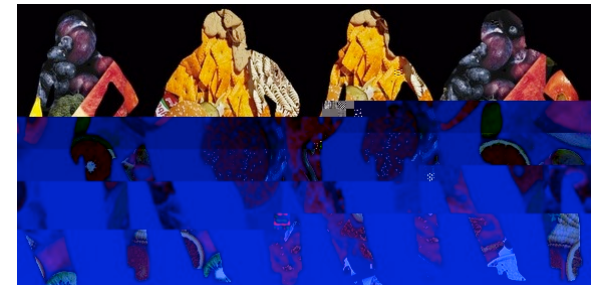
Measurements

All measurements were taken at baseline and 12 weeks (post-intervention)



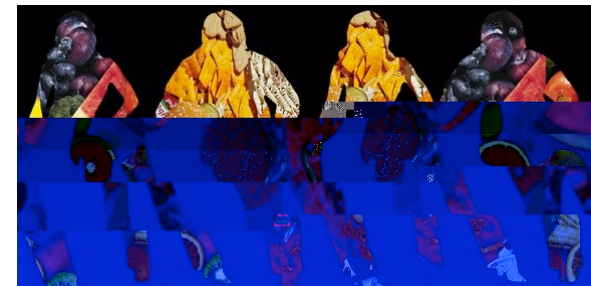
Primary Measurement

- 24-hour dietary recall
 - ASA24™ website



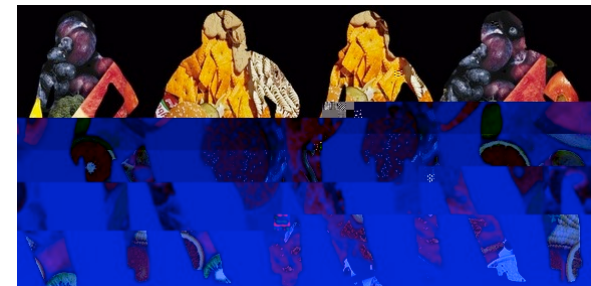
Secondary Measurements

- Weight
- Waist circumference



Treatment Conditions

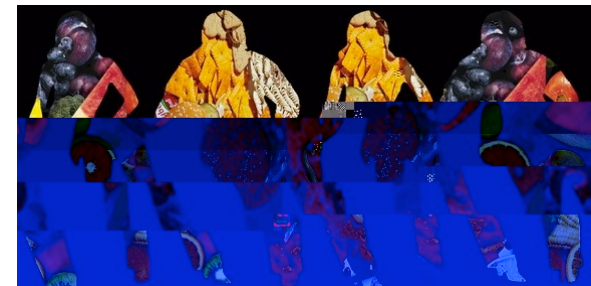
- 12 consecutive 1-2 hour weekly sessions
- Parallel
- Group size varied (3-9)
- Primary investigator facilitated 4 HAES
- 2 Lifestyle coaches facilitated 2 traditional



Treatment Conditions

Health At Every Size Focus

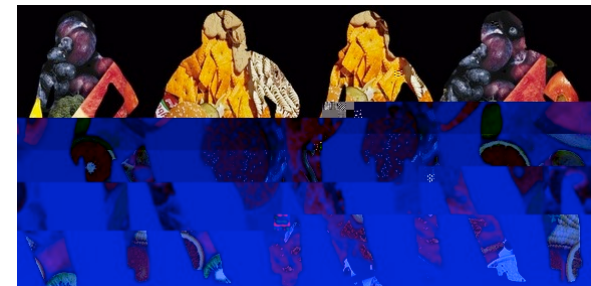
- Healthy lifestyle
- Mindful eating
- Body awareness
- Hunger & fullness
- Nutrition
- Emotional eating
- Cravings
- Mindful movement
- Evolving tastes
- Optimizing energy
- Body acceptance
- Media



Treatment Conditions

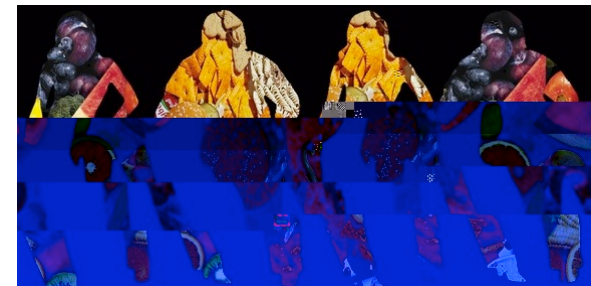
Traditional Focus

- Calories and fat
- Healthy eating
- Lifestyle change
- Physical activity
- Calories in/out
- Taking charge of environment
- Social outings
- Problem solving
- Healthy restaurant eating
- Getting back on track
- Staying motivated



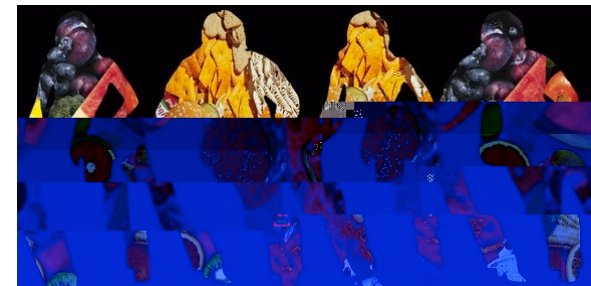
Statistical Analysis

- ASA24TM website analyzed nutrients
 - Batch of all diet information run and downloaded
- SAS[®] statistical software to calculate HEI scores
 - Calculation for HEI score provided on ASA24TM website
- STATA[®] software (version 14 College Station, TX: StataCorp LP)
 - Used to run statistical tests
- Significance set to $p \leq 0.05$



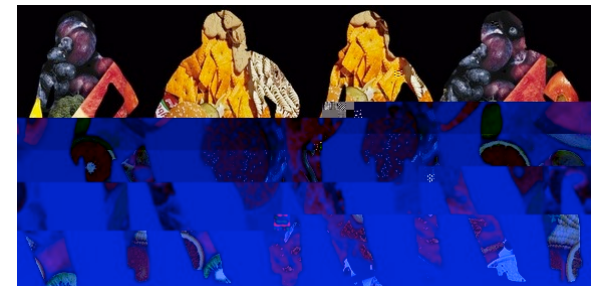
Statistical Tests

- **Baseline characteristics**
 - T-test to compare groups
- **Follow-Up characteristics (not diet)**
 - Linear regression to compare between groups
 - Controlled for age & baseline value
 - Determined if group was significant
- **Within Group Changes**
 - Paired t-test



Statistical Analysis

- **Diet changes**
 - Mixed model regression
 - Accommodated for:
 - Missing data, different facilities
 - Controlled for significant variables (age and calories)
 - Determined if group was significant



Results

Participants

- 62 participants recruited and screened
- 46 were eligible & agreed to participate

Health at Every Size

n=29

Attrition= 4

(14%)

Traditional

n=17

Attrition = 10

(59%)

Results

- **Baseline Data were similar**

Except:

- **Mean age (years)**

- HAES 52.14 ± 1.90 vs. Traditional 59.76 ± 2.35 ; $p=0.02$

- **Refined Grains (ounces Equivalent)**

- HAES = 5.05 ± 0.61 vs. Traditional = 2.61 ± 0.51 ; $p=0.01$

- **Starchy Vegetables (cup Equivalent)**

- Traditional = 0.25 ± 0.07 vs. HAES = 0.07 ± 0.26 ; $p=0.01$



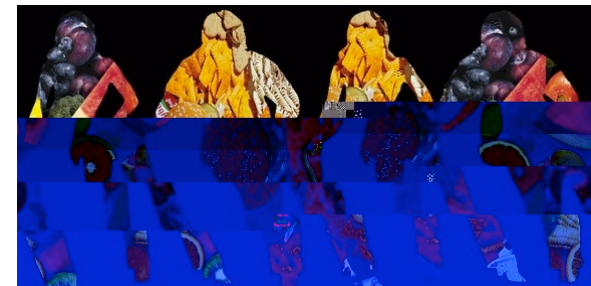
Results

- **Follow-Up Diet Data Between Groups**
 - **HEI between groups trending toward significance**
 - HAES was 70.77 ± 3.00 vs. traditional was 55.97 ± 6.57 ; $p=0.06$
 - **Higher calories by traditional**
 - Traditional: 2096.52 ± 254.86 vs. HAES: 1525.63 ± 120.91 ; $p=0.04$
 - **Less fiber consumed by traditional**
 - Traditional: 12.74 ± 3.28 vs. HAES 23.70 ± 1.50 g; $p=0.01$
 - **More vegetables consumed by HAES**
 - HAES: 1.92 ± 0.14 vs. Traditional: 0.98 ± 0.31 cup Equiv; $p=0.01$



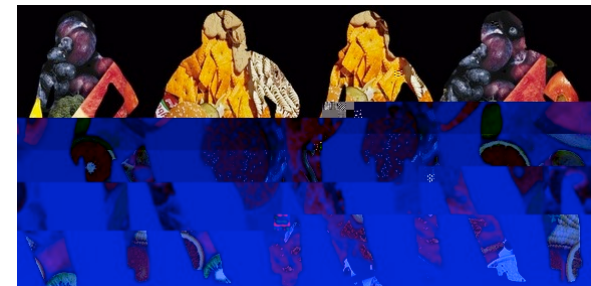
Results

- **Follow-Up Diet Data Within Groups**
 - **Improvement in HEI score within HAES**
 - 7.41 ± 2.31 ; $p=0.01$
 - **Decrease in sodium intake within HAES**
 - -1298.26 ± 612.20 ; $p=0.05$
 - **Decrease in vitamin C in traditional group**
 - -46.63 ± 17.77 mg; $p=0.05$



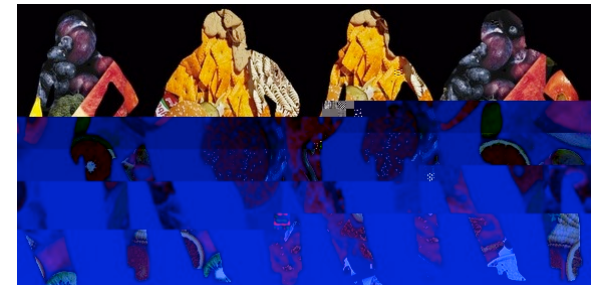
Results

- **Follow-Up Characteristics Between Groups**
 - **Traditional - lower waist circumference**
 - 40.06 ± 0.70 vs. 41.69 ± 0.39 inches ($p=0.04$)
 - **No difference in mean weight, physical activity**
 - Age was not significant in any of these variable



Results

- Changes **Within** Groups
 - Decrease % weight loss in both groups
 - HAES: -2.05 ± 0.74 %; $p=0.01$
 - Traditional: -6.71 ± 1.26 %; $p=0.01$
 - Decreased waist circumference in traditional
 - -2.13 ± 0.49 inches; $p=0.01$



Diet vs. Dietary Recommendations

Variable	Initial HAES	F/U HAES	With-in	Recommended	Initial Trad	F/U Trad	Within
HEI Score	60.60±2.41	70.77±3.00	7.41±2.31	≥ 80 = good 51-70 –need ↑ Average=57.7	65.46±2.41	55.97±6.57	N/S
Grains (oz)	7.25±0.6	5.85±0.5	N/S	3 oz. (F); 6 Avg	5.34±0.9	5.95±1.1	N/S
Refined (oz)	5.05±0.6	2.61±0.5	N/S	Max ½ of grains	2.61±0.51	4.24±0.9	N/S
Fiber (g)	27.89±2.8	23.70±1.5	N/S	25 grams Avg: 15 g/day	22.50±1.9	12.74±3.3	N/S
Dairy (cEq)	1.82±0.4	1.18±0.2	N/S	3 cup Equiv	1.65±0.38	1.63±0.32	N/S
Calcium (mg)	1022±150	860.37±119.08	N/S	1000 30- 70 1200 > 70	752.95±45	757.58±98	N/S
Veg (cEq)	2.0±0.21	1.92±0.1	N/S	2.5 cup Equiv	2.34±0.16	0.98±0.3	N/S
Fruit (cEq)	2.51±0.6	1.32±0.2	N/S	2.5 cup Equiv	1.79±0.4	1.22±0.5	N/S
Sodium (mg)	4089±482	2918.59±102	-1300±600	1500-< 2300 Avg 2126 mg	3336±296	3369±421	N/S

Implications

- Findings provide preliminary evidence that a HAES approach resulted in positive dietary changes, had a lower attrition while showing no decrements, suggesting that a shift to a HAES approach may be effective for improving health.



Limitations

- Small sample size
- Sample sizes not equal in each intervention
- High attrition rate
- Short duration
- Majority of participants were female and Caucasian

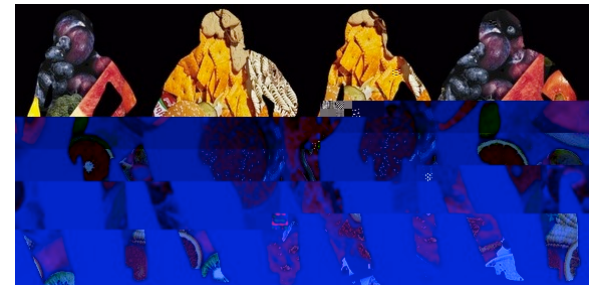


Suggested Future Direction

- More focus on exercise
- Randomized controlled trial
- Larger population and longer duration
- More ethnically diverse participants
- More male participants
- Replicating findings of the current study

Questions?

Feel free to contact me @ bnoble@mcfht.ca



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