

Barriers to Healthy Eating Impact Dietary Intake and Weight in a 24-Month Weight Loss Trial

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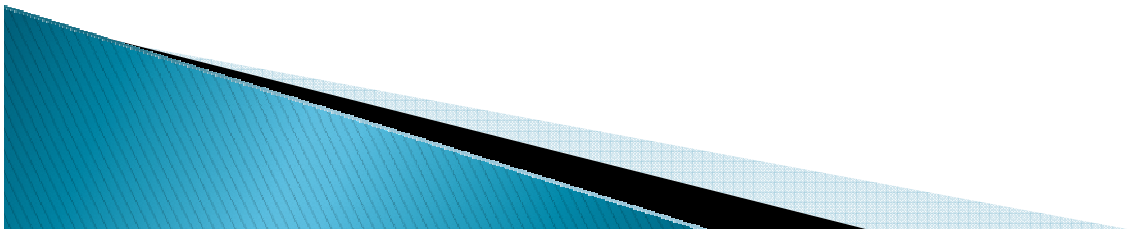
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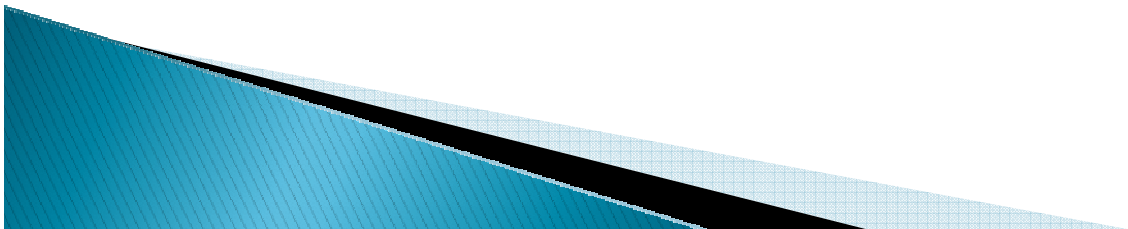
Background

- ▶ Weight loss maintenance remains a challenge
- ▶ There is a need for more effective behavioral strategies to support long-term weight loss
- ▶ Current studies on perceived barriers in obesity research primarily focused on qualitative inquiries



Purpose

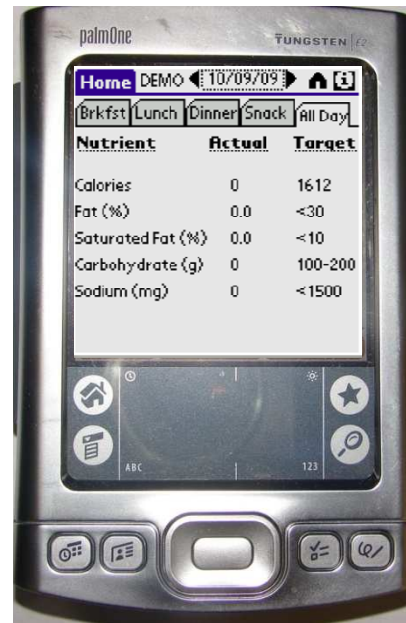
- ▶ To examine longitudinal relationships between perceptions of barriers to healthy eating and dietary intake, and their impact on weight loss over 24 months



Self-Monitoring And Recording using Technology (SMART) (N=210)

Date 9-24-04						
Calorie Goal 1500				Fat Goal 42		
H/A	Time Eat	Time Rec	Food or Beverage Amount and Description	Cals	Fat gms	
A	8:30	8:30	Mixed Fruit dip yogurt	70	0	
				180	2	
				350	2	
A	1:00	1:00	Chicken (veggie)	150	6	
			Hamburger bun	180	3	
			Mustard	0	0	
				380	11	
A	7:00	7:00	Pizza 2 slices cheese & mush rooms.	580	18	
			Pepsi (8 oz)	150	0	

Traditional PD
(n=72)



PDA with dietary
& exercise
software (n=68)

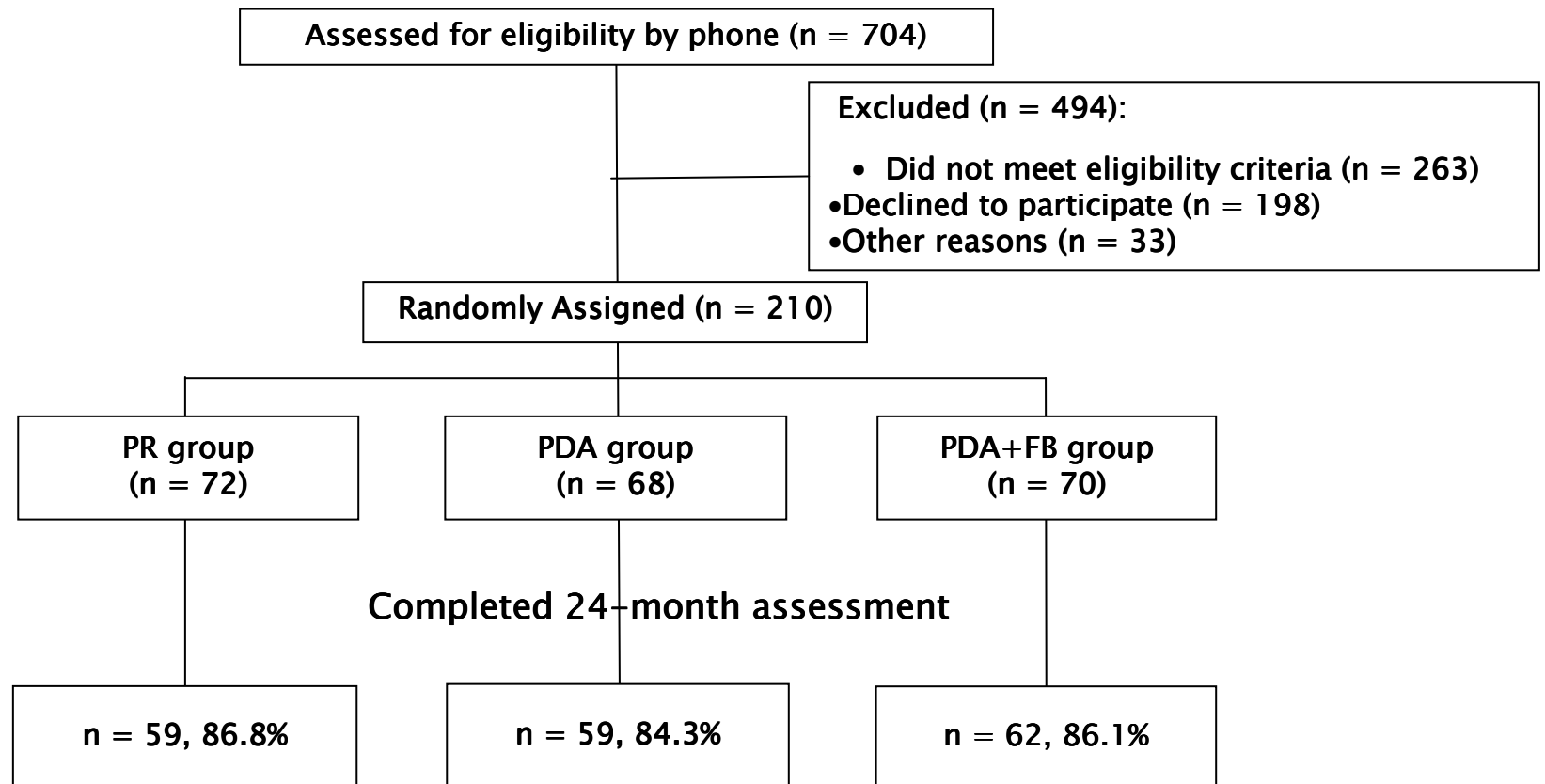


PDA + daily feedback
message (PDA+FB),
diet & exercise (n=70)

SMART Trial

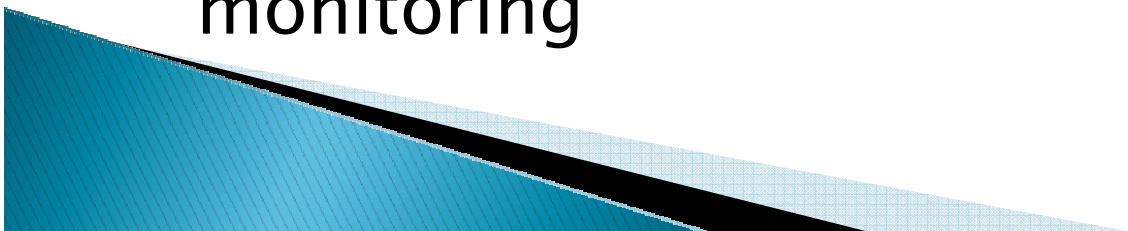
- Inclusion criteria:
 - 18–59 years of age
 - BMI of 27 to 43 kg/m²
 - Completion of a 5–day food diary at screening
- Exclusion criteria:
 - Serious medical or mental health disorders
 - Recent weight loss treatment
 - Pregnancy

CONSORT Diagram



SMART Intervention Protocol (1)

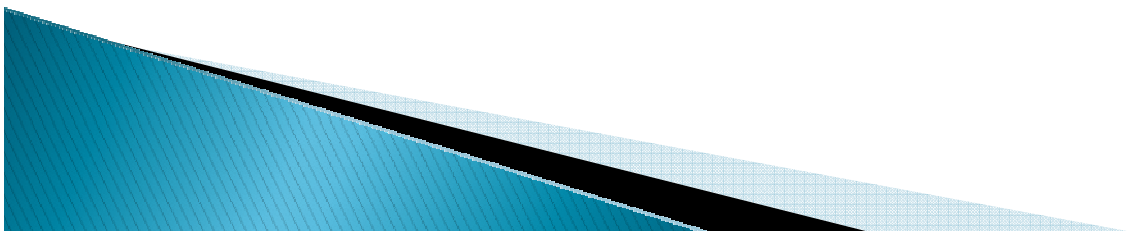
- ▶ Same standard intervention in 3 groups
- ▶ 39 cognitive-behavioral group sessions in first 21 months
 - 16 weekly sessions: months 1 – 4
 - 16 biweekly sessions: months 5 – 12
 - 6 monthly sessions: months 13 – 18
 - One maintenance session at 21 months (i.e., 84 weeks)
- ▶ Self-monitoring dietary intake and physical activity
- ▶ The groups only differed in the mode of self-monitoring



SMART Intervention Protocol (2)

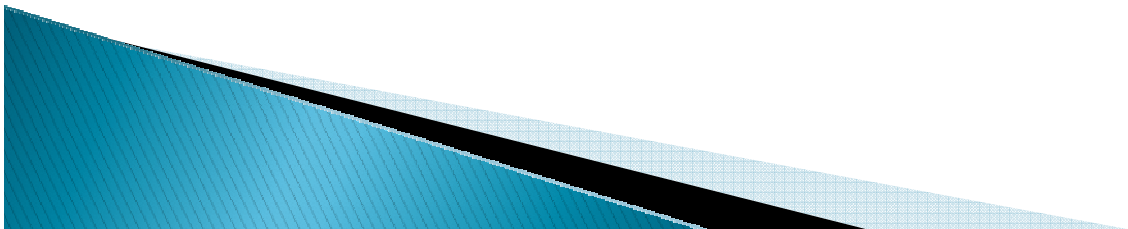
- ▶ Dietary Goals: Daily Energy and Fat Intake

Baseline body weight	<200 lb	≥200lb	
Gender	Energy (Kcal)		Fat (% kcal)
Female	1 200	1 500	25
Male	1 500	1 800	25



Measures (1)

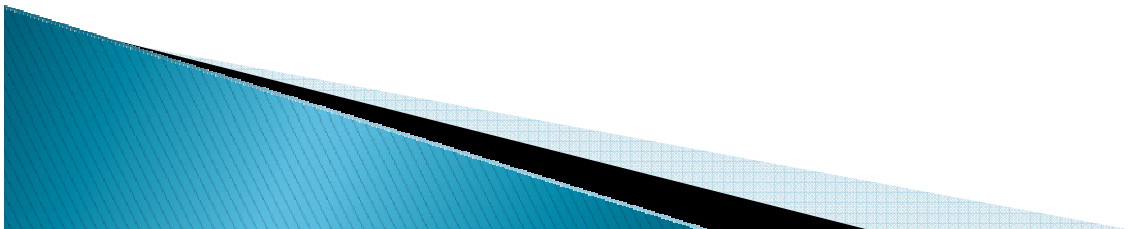
- ▶ Barriers to Healthy Eating (BHE)
 - Barriers to Healthy Eating Scale
 - 22-item scale (score range: 22–110)
 - 3 subscales:
 - Emotions
 - Daily mechanics of following a healthy eating plan
 - Social support
 - Response:
 - 1 (no problem) to 5 (a very important problem)



Measures (2)

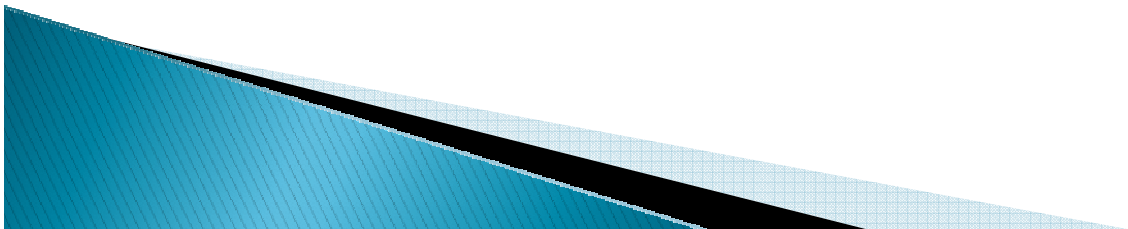
- ▶ Dietary intake: total energy and fat intake
 - Two unannounced 24-hr dietary recalls
 - Average of the two used for analysis
 - Recall interview guided by the Nutrition Data System Research (NDSR) software program

- ▶ Weight
 - Measured using a digital scale after an overnight fast and wearing light clothing and no shoes



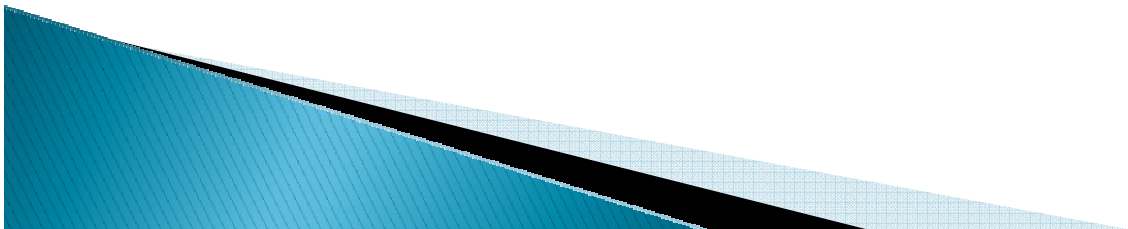
Data Analysis

- ▶ Assessments were conducted at baseline, 6, 12, 18, and 24 months
- ▶ Longitudinal mixed regression modeling

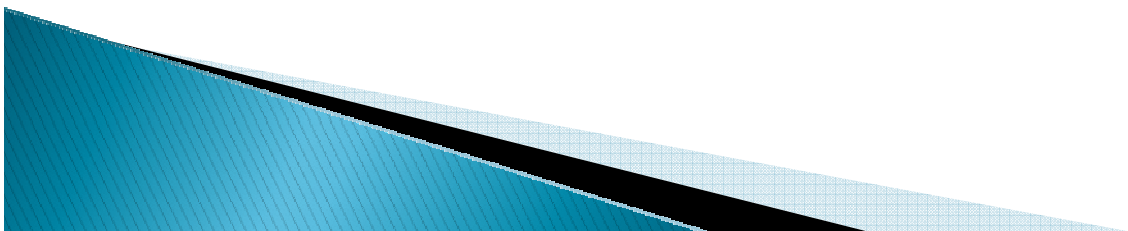
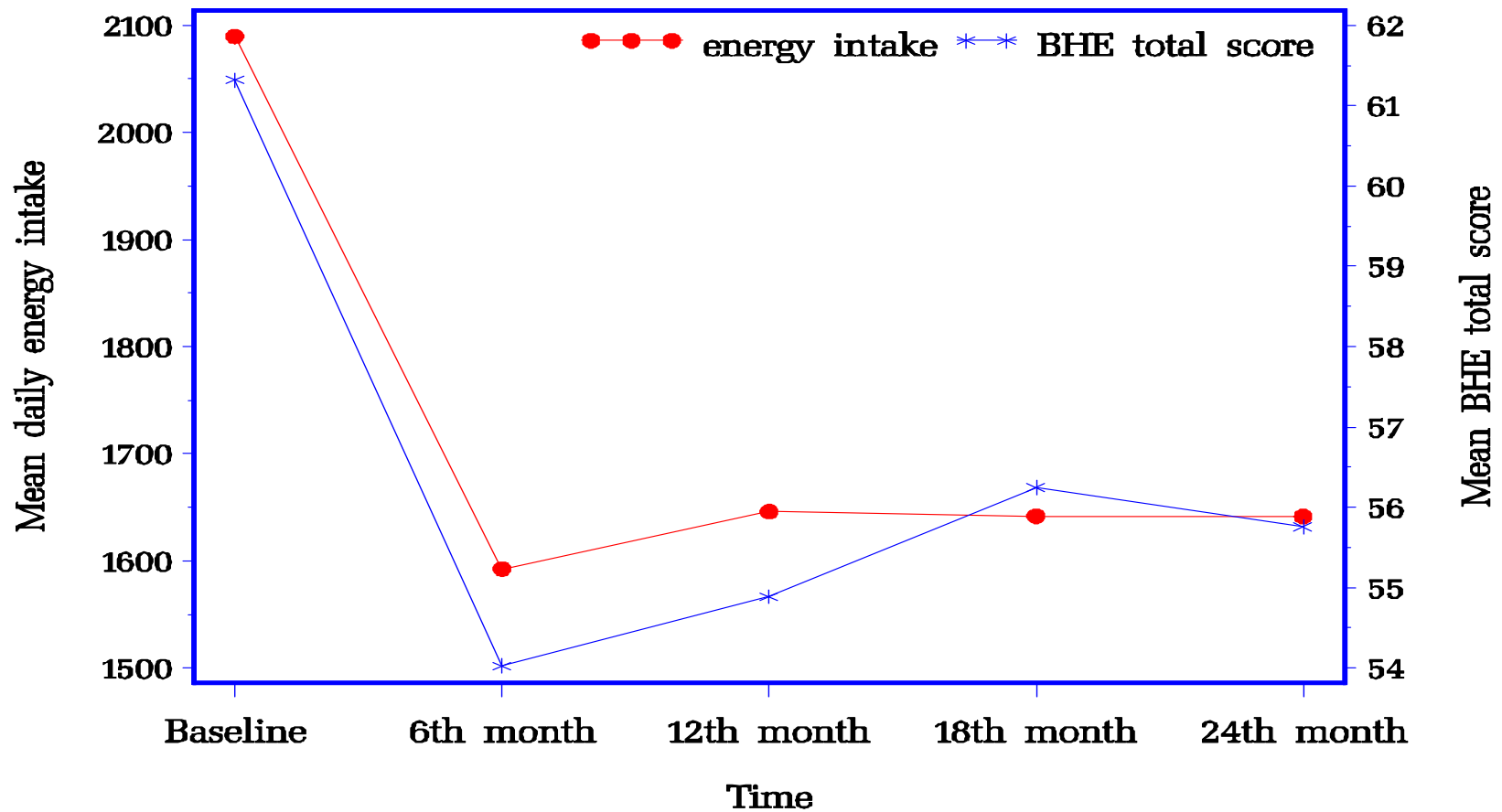


Demographic Characteristics

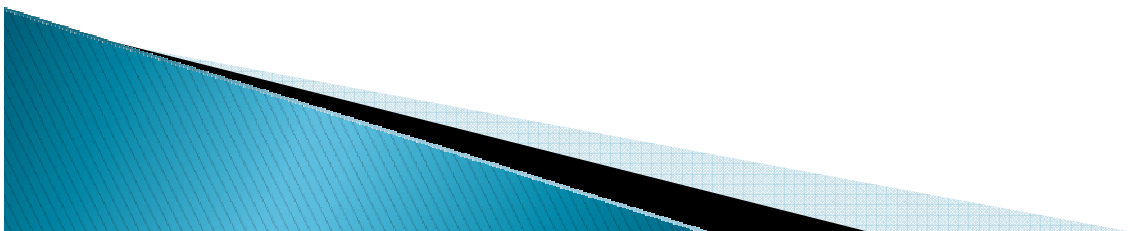
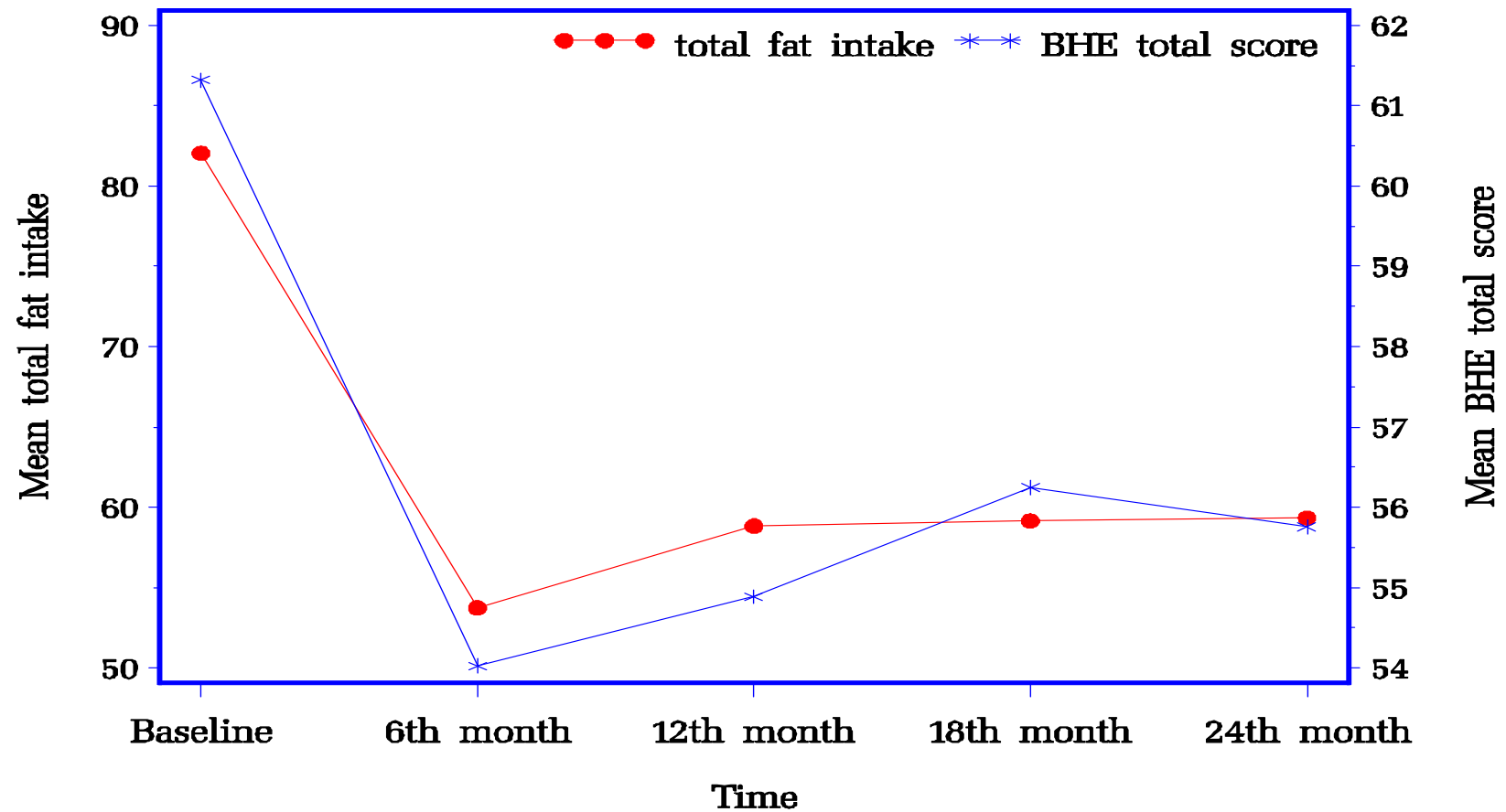
- ▶ N=210
- ▶ White 78.6%
- ▶ Female 84.8%
- ▶ Age 46.8 ± 9.0 years
- ▶ BMI 34.0 ± 4.5 kg/m²
- ▶ Married 68.6%
- ▶ Employed full-time 82.9%
- ▶ Education 15.7 ± 3.0 years



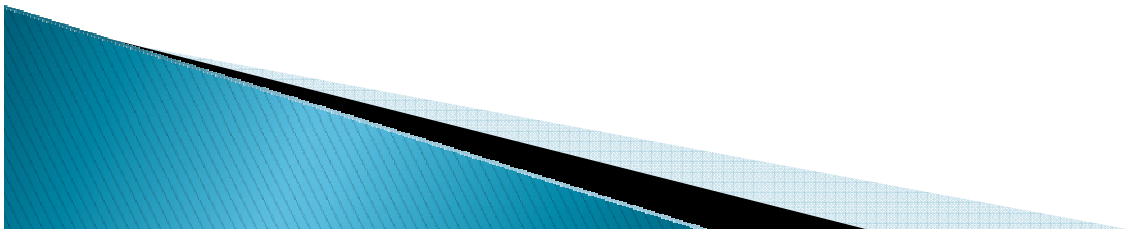
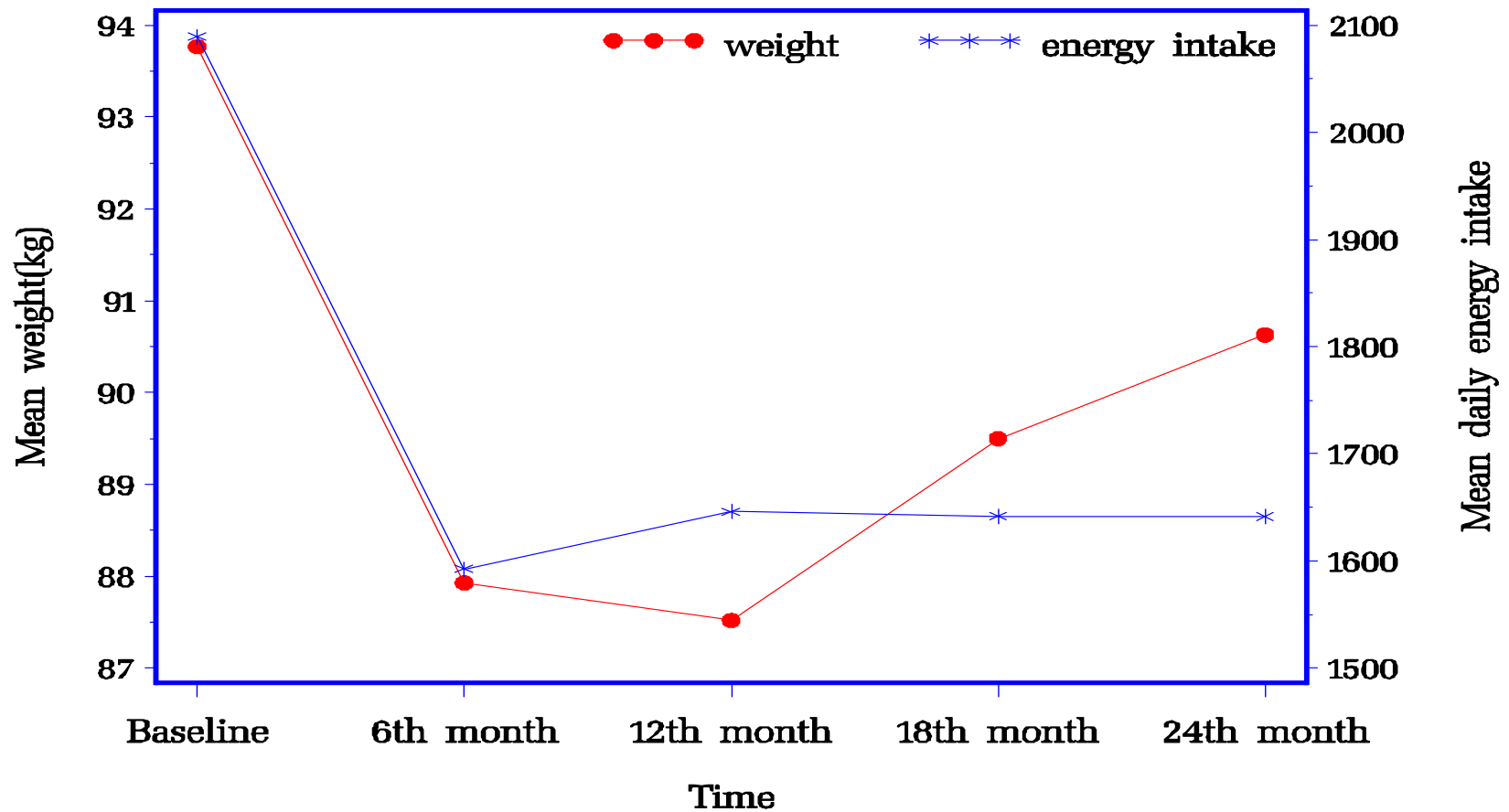
Mean Energy Intake and BHE



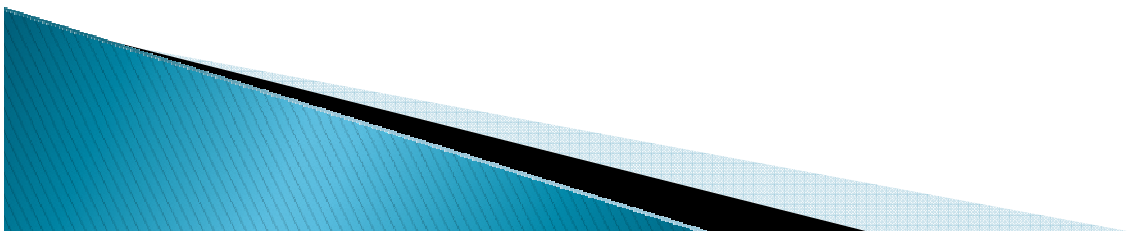
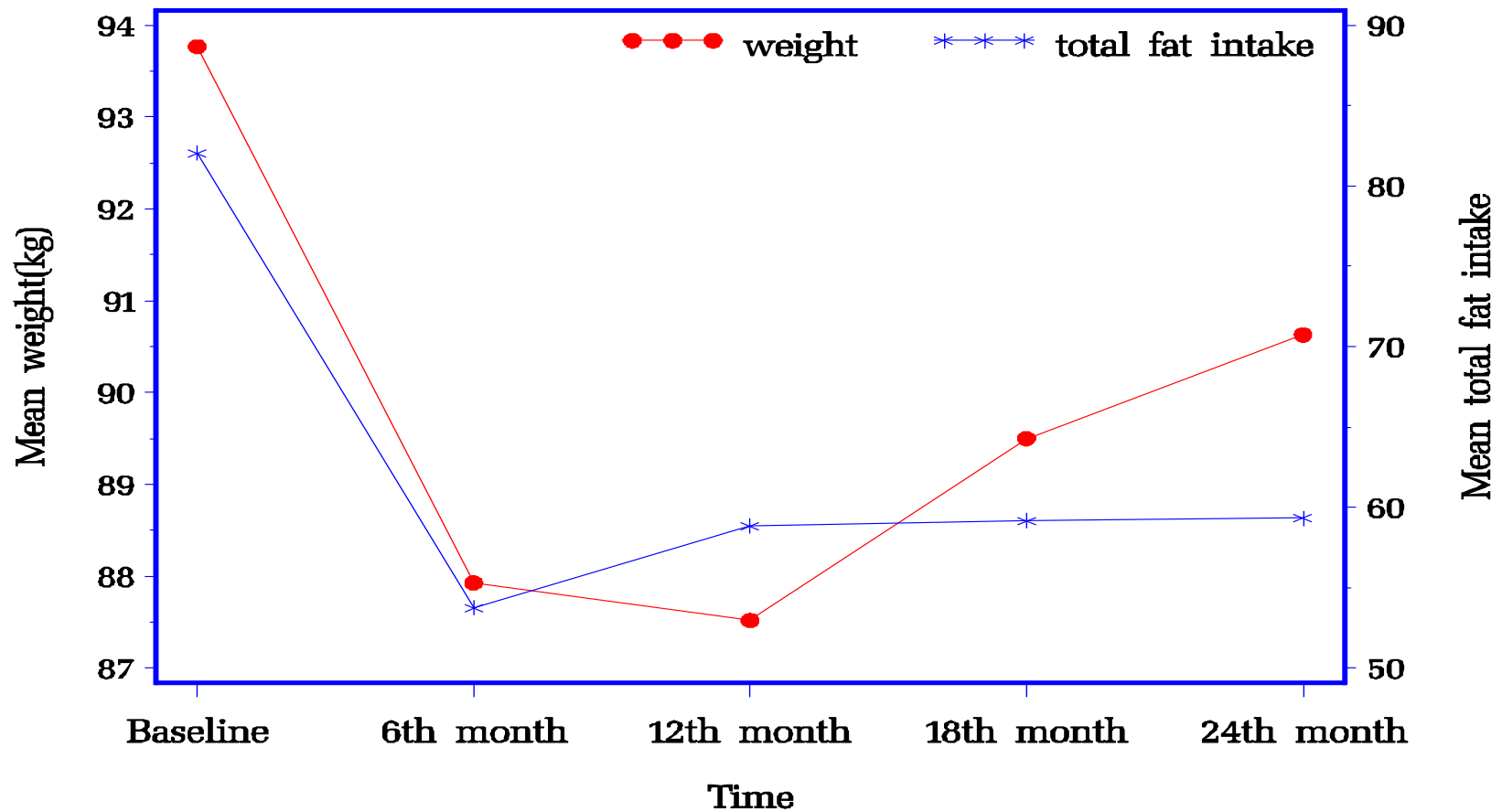
Mean Fat Intake and BHE



Mean Weight and Energy Intake

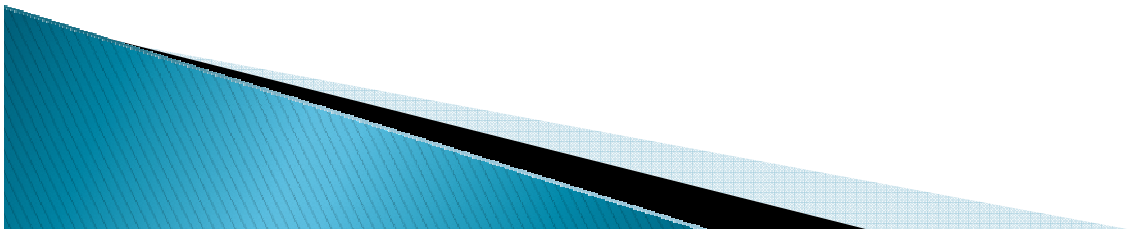


Mean Weight and Fat Intake



Discussion (1)

- ▶ Significant association between perceived barriers to healthy eating and dietary intake over 24 months
- ▶ Looking at the data over 24 months, we found a significant association between dietary intake and weight changes
- ▶ The weight increase that occurred while the self-reported energy and fat increase remained flat suggests that participants were under-reporting their dietary intake in the 2nd half of the 2-year study.



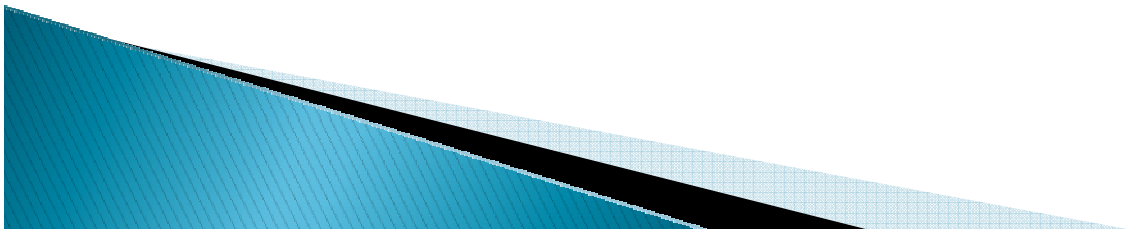
Discussion (2)

- ▶ Limitations

- 14% male representation

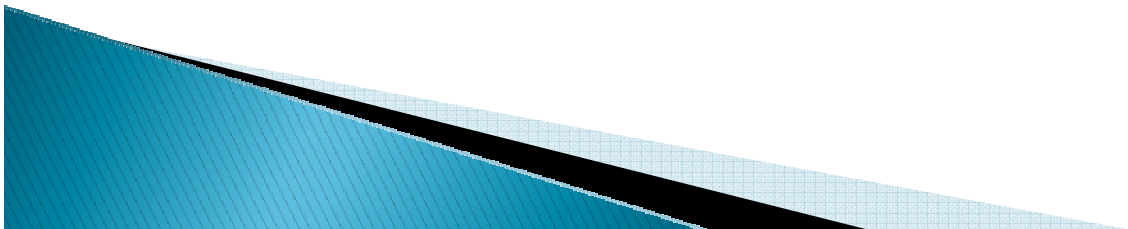
- ▶ Strengths

- 85.7% retention at 24 months
 - Validated measure of perceived barrier to healthy eating
 - Longitudinal relationships over 24 months



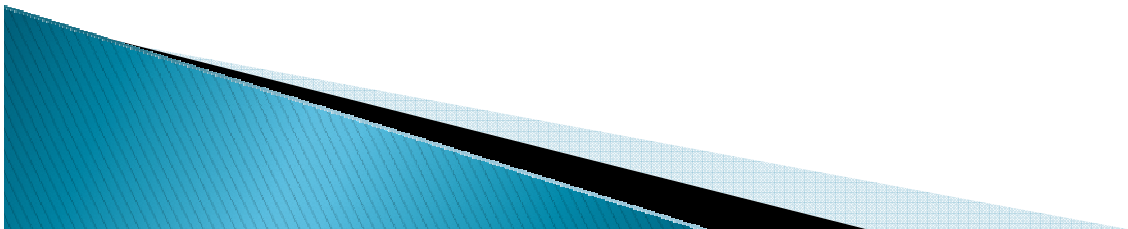
Conclusion

- ▶ Despite reductions in BHE and dietary intake, weight regain began to occur after 12 months
- ▶ Maximizing efforts to reduce barriers to healthy eating has potential to impact weight loss maintenance

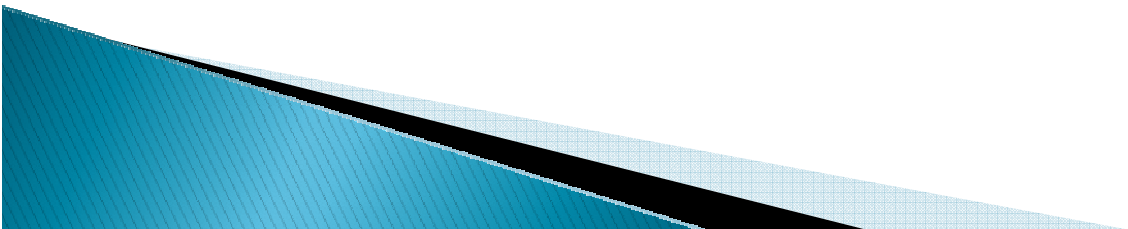


Funding Sources

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- ▶ Clinical Translational Research Center, NIH/NCRR/CTSA Grant UL1 RR024153 at the University of Pittsburgh



THANK YOU



Demographic Characteristics

Variable	PD (n=72)	PDA (n=68)	PDA+FB (n=70)	Total (N=210)
Age, years (SD)	47.4 (8.5)	46.7 (9.2)	46.4 (9.5)	46.8 (9.0)
Female, n (%)	61 (84.7)	58 (85.3)	59 (84.3)	178 (84.8)
White, n (%)	55 (76.4)	55 (80.9)	55 (78.6)	165 (78.6)
Married, n (%)	55 (76.4)	42 (61.8)	47 (67.1)	144 (68.6)
Employed full time, n (%)	62 (86.1)	58 (85.3)	54 (77.1)	174 (82.9)
Education , years (SD)	15.9 (3.1)	15.5 (2.9)	15.5 (3.0)	15.7 (3.0)
BMI, kg/m ² (SD)	33.8 (4.6)	33.9 (4.2)	34.4 (4.8)	34.0 (4.5)

