May 22nd, 10:30 AM - 12:00 PM

What Works in a Pediatric Obesity Treatment Program?

Mary Savoye
Yale University School of Medicine

What Works in a Pediatric Obesity Treatment Program?

UMASS/Center for Clinical & Translational Science

May 22, 2012

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Pediatric Endocrinology &

Yale Center for Clinical Investigation

Yale University School of Medicine

Funding/Disclosure

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R01 HD40787 S Caprio

Gifts:

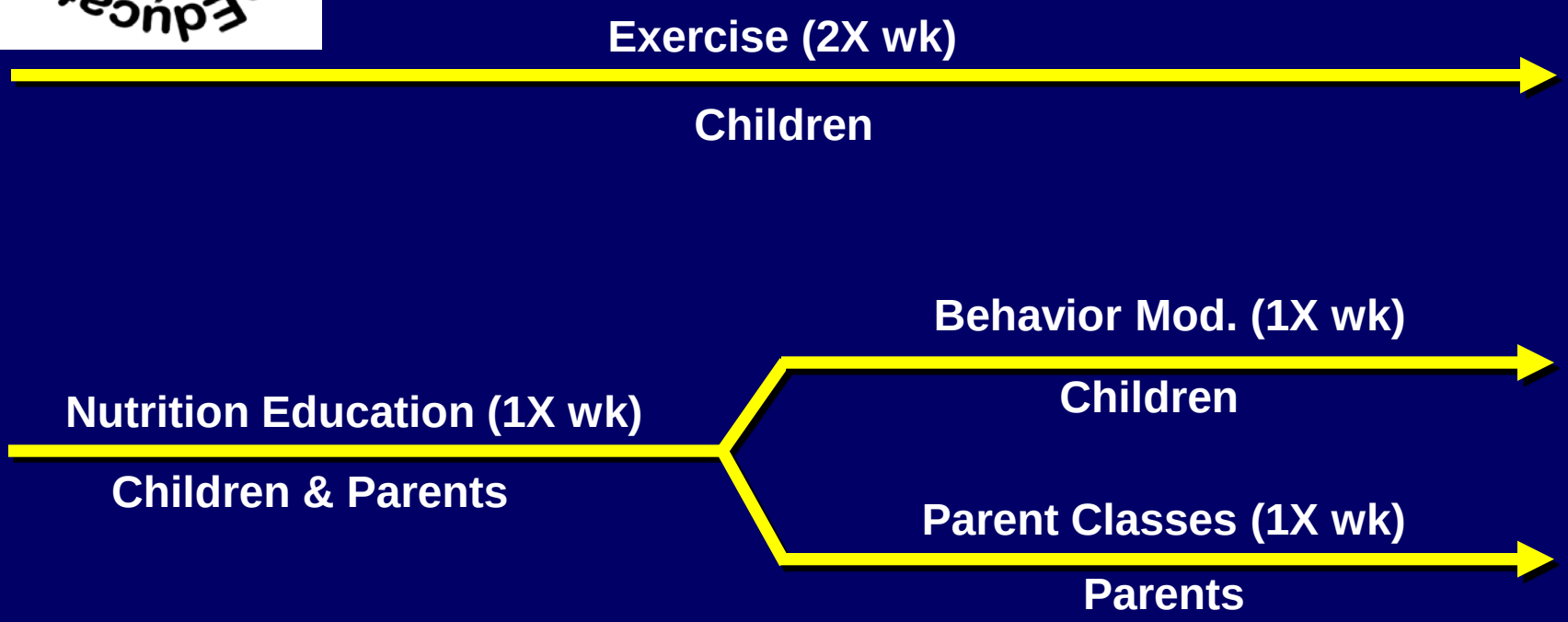
Esther Gross Estate (Unrestricted) M Savoye

Disclosure:

President, Smart Moves, LLC

Program Timeline

Each 12-week Session



Members are encouraged to complete consecutive 12-wk sessions

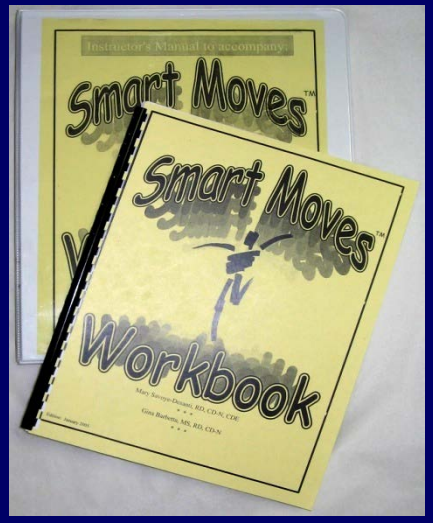
Smart Moves
Weight Management Curriculum

- 100-page workbook of nutrition & behavior modification topics for children
- Parent's guide included in workbook
- Instructor's manual to accompany work book

A Look at Food Labels

Bag It!

Meals in the Fast Lane



Risky Business: Coping with High Risk Situations

Teasers, Bullies & Other Annoying People

Oops I Slipped!— Understanding a Relapse

THE COCHRANE COLLABORATION®

Best Outcome in Health Care Setting

Effects of a Weight Management Program on Body Composition and Metabolic Parameters in Overweight Children

A Randomized Controlled Trial

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James Dziura, PhD
William V. Tamborlane, MD
Paulina Rose, RD, CD-N, CDE
Cindy Guandalini, APRN
Rachel Goldberg-Gell, APRN
Tania S. Burgert, MD
Anna M. C. Cali, MD
Ram Weiss, MD, PhD
Sonia Caprio, MD

Context Pediatric obesity has escalated to epidemic proportions, leading to an array of comorbidities, including type 2 diabetes in youth. Since most overweight children become overweight adults, this chronic condition results in serious metabolic complications by early adulthood. To curtail this major health issue, effective pediatric interventions are essential.

Objective To compare effects of a weight management program, Bright Bodies, on adiposity and metabolic complications of overweight children with a control group.

Design One-year randomized controlled trial conducted May 2002-September 2005.

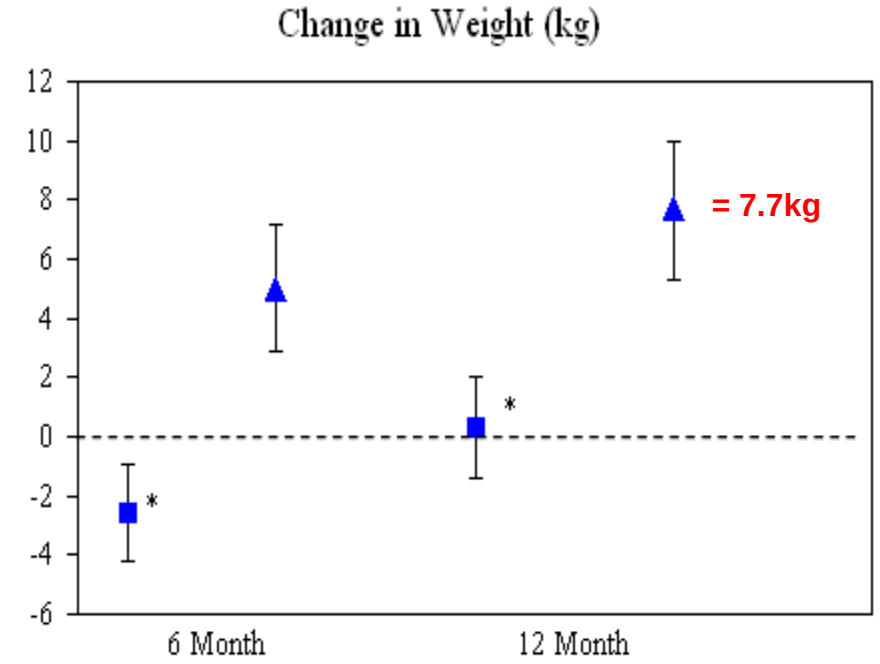
Setting Recruitment and follow-up conducted at Yale Pediatric Obesity Clinic in New Haven, Conn, and intervention at nearby school.

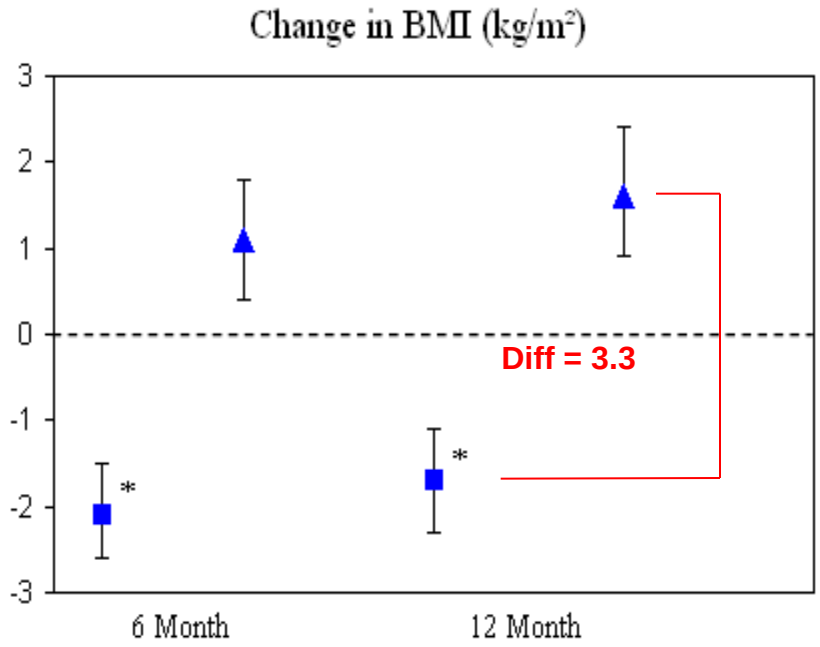
Participants Random sample of 209 overweight children (body mass index [BMI] >95th percentile for age and sex), ages 8 to 16 years of mixed ethnic groups were recruited. A total of 135 participants (60%) completed 6 months of study, 119 (53%) completed 12 months.

Intervention Participants were randomly assigned to either a control or weight management group. The control group (n=69) received traditional clinical weight man-

THE PREVALENCE OF OVER-weight among children and

Anthropometric Changes
Bright Bodies vs. Clinic



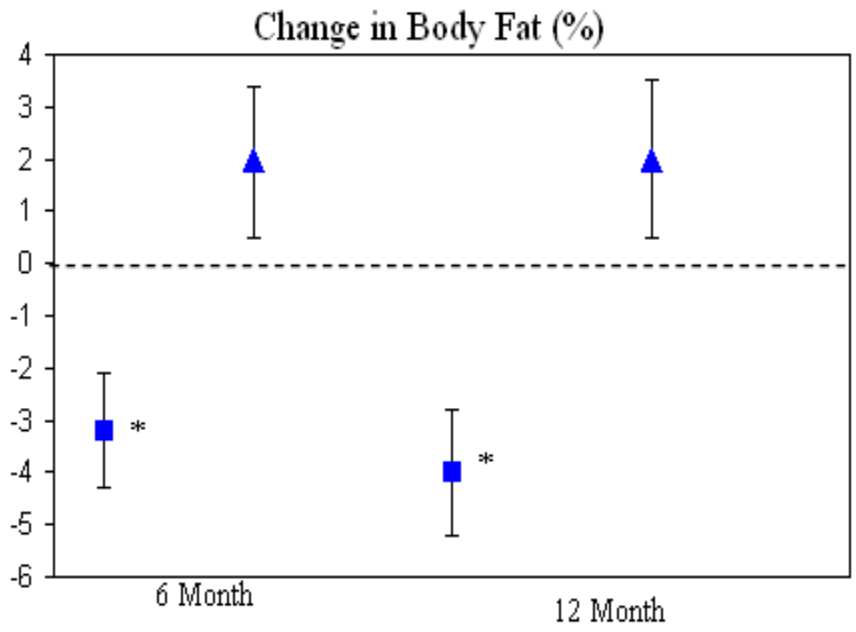


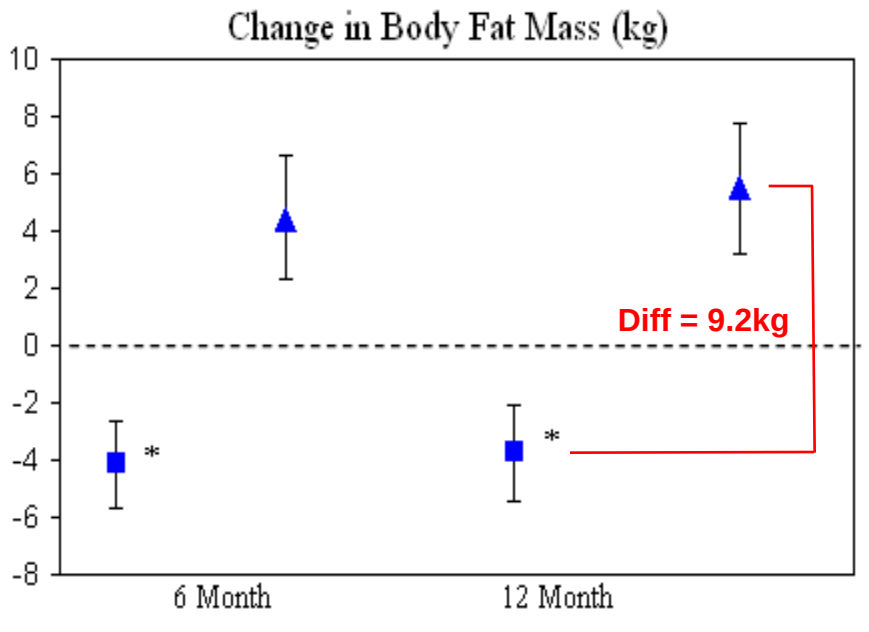
■ BB ▲ CC

At 6 and 12 months BB n=105, CC n=69 *p<0.001, Error bars represent 95% CI

Savoye M, et al, JAMA, 2007.

Anthropometric Changes
Bright Bodies vs. Clinic





BB CC

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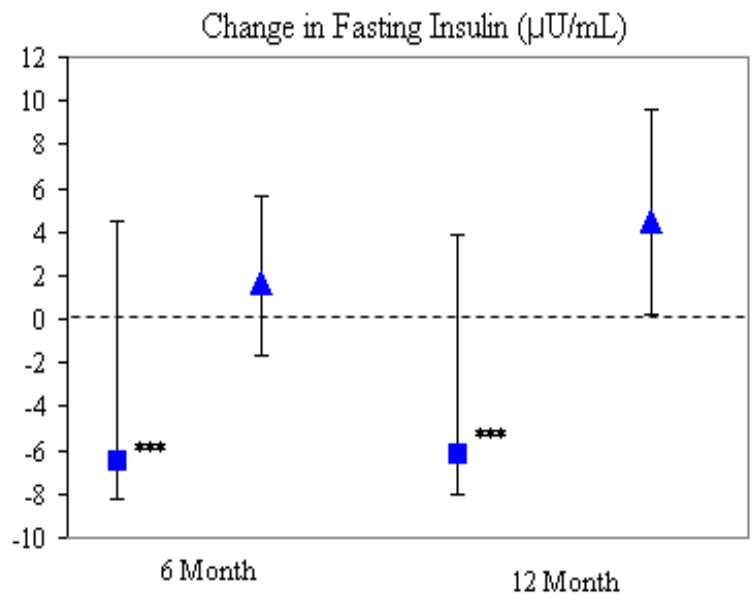
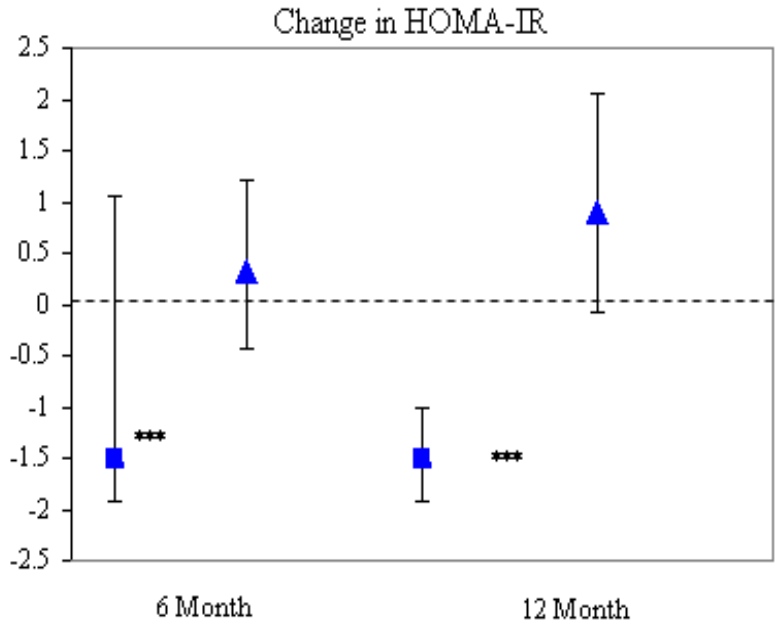
Savoye M, et al, JAMA, 2007.

Insulin Sensitivity Changes
Bright Bodies vs. Clinic





BB
CC

At 6 and 12 months BB n=105, CC n=69 ***p<0.001, Error bars represent 95% CI

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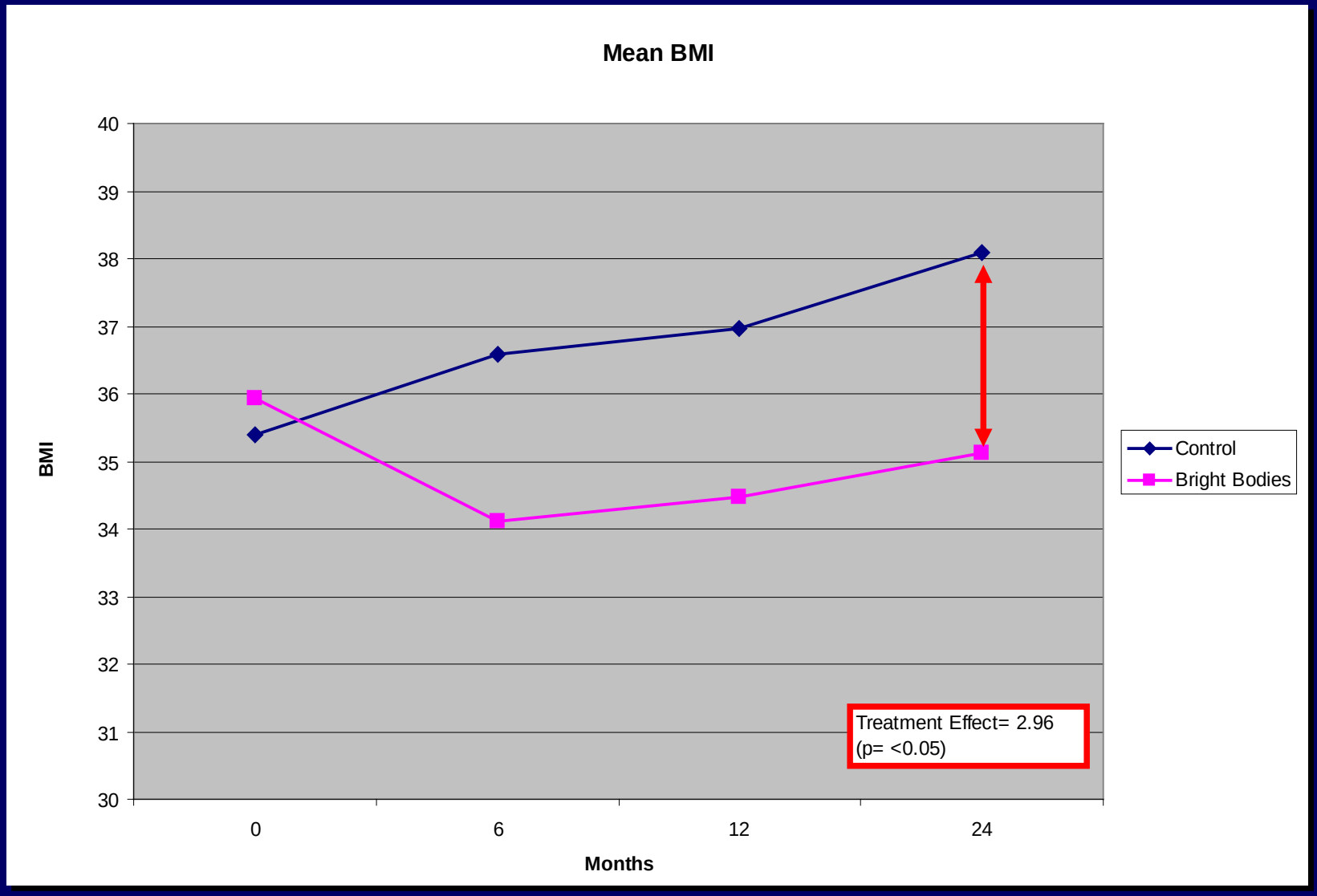
Was the treatment effect sustained at 2-yr follow up?



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Long-term Results of an Obesity Program in an Ethnically Diverse Pediatric Population

Mary Savoye, Paulina Nowicka, Melissa Shaw, Sunkyung Yu, James Dziura, Georgia Chavent, Grace O'Malley, John B. Serrecchia, William V. Tamborlane and Sonia Caprio

Pediatrics 2011;127;402-410; originally published online Feb 7, 2011;
DOI: 10.1542/peds.2010-0697

American Academy of Pediatrics

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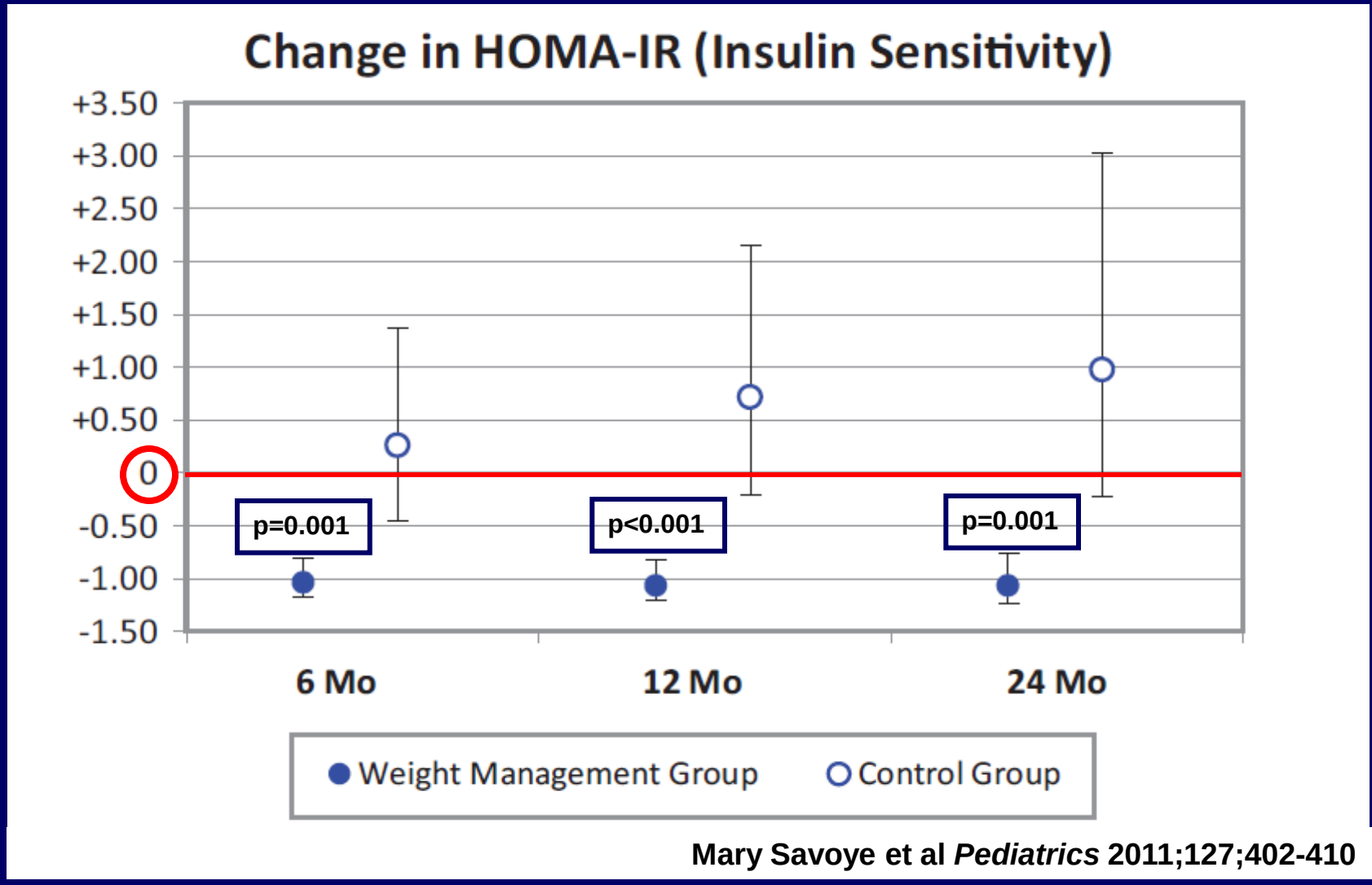
Changes from 6, 12, and 24 Months are from Baseline



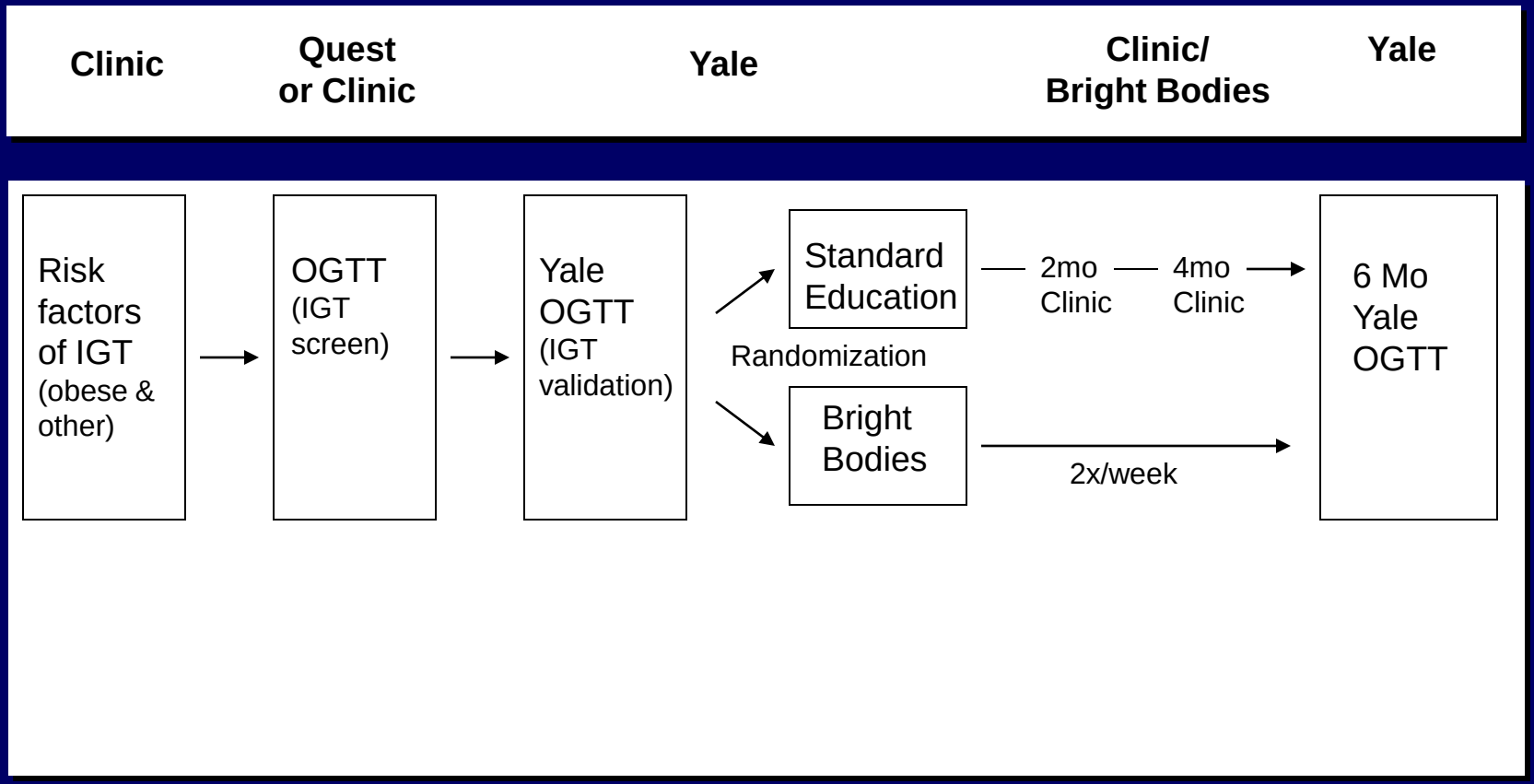
Mary Savoye et al *Pediatrics* 2011;127;402-410

Current Work: Prevention of Type 2 Diabetes In Children with Lifestyle Intervention

- ✓ Pediatric & Medical Associates
- ✓ Children's Medical Group
- ✓ Hill Health Center
- ✓ Fair Haven Community Health Center
- ✓ Yale Center for Clinical Investigation

Goal is to compare IGT status of adolescents in Bright Bodies after 6 months in comparison to Standard of Care treatment (controls).

Prevention of T2DM in Children – Aim 2 Flow



But how much does all this cost?

Program Expenses

Salaries		
Director/Dietitian	15 hr/wk or 40% FTE	
Coordinator	15 hr/wk or 40% FTE	
Ex Physiologist A	6 hrs/wk	
Ex Physiologist B	3 hrs/wk (or student)	
Ex Physiologist C	student	
Dietitian B	2 hrs/wk	
Social Worker	2 hrs/wk	
Technician	2 hrs/wk (or student)	
Total Salary Expense		$63,000.

Program Expenses

Space	$ 0.
(Celentano School, New Haven)	
Supplies (first aid kit, prizes, etc.)	$ 1,400.
Equipment	
Tanita Scale, Stadiometer, HR Monitors	
Balls, Cones, Flages, Jump Ropes	
Resistant Tubing, Stretch Mats	
	$ 3,700.
Total Expenses	$68,100.

Cost-Benefit Analysis

- $756 – 1,135 per child (cost ÷ 60-90 children/year) to decrease BMI -1.7 unit.

- $756 – 1,135 per child to decrease HOMA -1.52. If we use case-by-case analysis, ½ of the children went from IR to non-IR. The expense incurred if IR is not resolved in a child is much more peryear.

- Most people with type 2 diabetes have underlying IR.

So What Works?

- Parent Involvement (family approach) v afterschool model
- A non-diet approach that offers long-term, life skills
- Inclusion of behavior modification topics
- Standardized, culturally-sensitive curriculum
- Professional staff with the help of students in related field

- Challenges: use of school vs own space, lack of or limited insurance reimbursement, transportation

Lessons Learned

- A comprehensive, well-established program takes YEARS to develop and show positive results
- Kids want to have fun exercising, not sit on a treadmill
- Kids want to be separated from their parents when talking about eating triggers, self image, other beh mod topics
- Kids do not want to be on a diet (like their parents)
- Transportation is an ongoing issue! Include transportation in your budget.


CELENTANO PE CLASS!
Mr. Piscitelli and Mr. Lupoli

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Bright Bodies & clinic group families

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Esther Gross Estate

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Enit Colon
Brad Serrecchia, BS
Cindy Guandalini, APRN
Katie Marotto, BS
Mimmo Giannini, MD
National Institute of Health

Extra Slides

Baseline Characteristics of Children Randomized to Weight Management and Control Group

Characteristic	WMG	CG
Non-hisp, white	40 (38.1)	24 (34.8)
Non-hisp, black	40 (38.1)	27 (39.1)
Hispanic	25 (23.8)	18 (26.1)
Female	59 (56.2)	47 (68.1)
Male	46 (43.8)	22 (31.8)
Age (yr)	11.9 (2.5)	12.4 (2.3)
Weight (kg)	87.0 (25.1)	91.2 (23.3)
Height (cm)	155.2 (11.6)	157.7 (11.6)
BMI	35.8 (7.6)	36.2 (6.2)
Body fat %	47.0 (8.7)	45.8 (7.2)
Body Mass (kg)	42.1 (18.1)	42.4 (14.9)

Baseline Characteristics (continued)

Characteristic	WMG	CG
B Pressure (mm Hg)		
Systolic	123 (13.6)	122 (14.0)
Diastolic	66 (9.5)	67 (11.1)
Cholesterol (mg/dL)		
Total	167 (34.5)	158 (35.5)
HDL	44 (10.8)	43 (16.5)
LDL	98 (33.4)	92 (27.9)
Triglycerides (mg/dL)	104 (1.8)	101 (1.6)
Glucose (mg/dL)	92 (8.3)	90 (8.5)
Insulin (µIU/mL)	23 (1.8)	24 (1.7)
HOMA-IR	5.1 (1.9)	5.2 (1.7)