

Lifestyle Modification for Obesity

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Topics To Be Discussed

- Lifestyle Modification
- Diet
- Exercise
- Weight Loss Maintenance
- Combining Behavior and
Pharmacologic Treatments

A Guide to Selecting Treatment: NIH Guidelines*

Treatment	BMI Category				
	25–26.9	27–29.9	30–34.9	35–39.9	≥40
Diet, physical activity, behavior therapy	Yes with comorbidities	Yes with comorbidities	Yes	Yes	Yes
Pharmacotherapy		Yes with comorbidities	Yes	Yes	Yes
Weight loss surgery				Yes with comorbidities	Yes

* Yes alone indicates that the treatment is indicated regardless of the presence or absence of comorbidities. The solid arrow signifies the point at which therapy is initiated

Lifestyle Modification for Weight Control

- Reduce energy intake by 500-1000 kcal/day (by reducing portion size, fat, and sugar).
- Exercise \geq 180 min/week.
- Record food intake, physical activity, and weight.
- Set realistic goals for weight loss and behavior change.

Dietary Plan

- Consume meals and snacks at regular intervals
- Women: 1200-1500 kcal/d
Men: 1500-1800 kcal/d
- Protein: 12%-15%;
Fat: < 30%; Carb: \geq 55%
- All foods are permitted

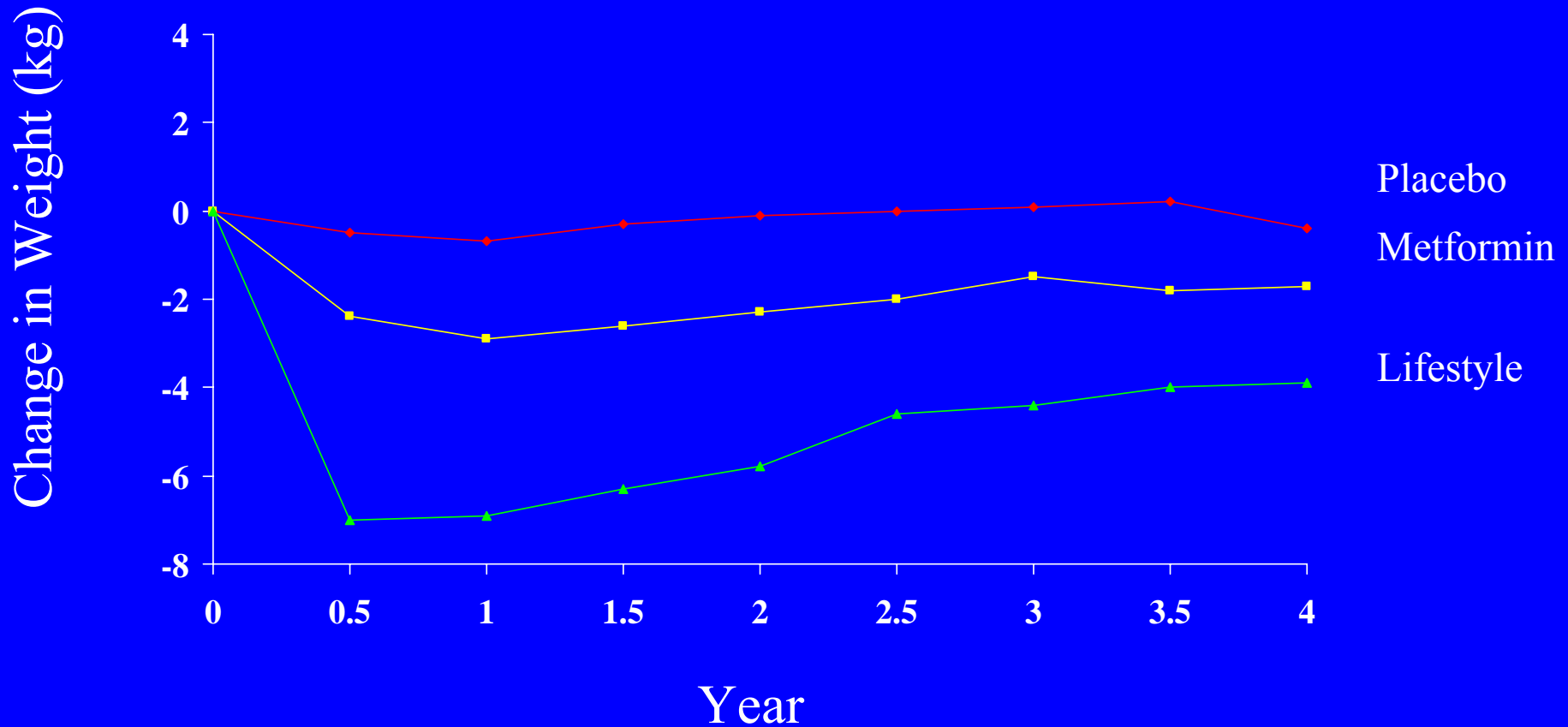
Diabetes Prevention Program

- Can a 7% reduction in initial weight, combined with increased physical activity, reduce the risk of developing type 2 diabetes in at risk individuals?
- 3234 patients; BMI = 34.0 kg/m²; Impaired glucose tolerance (95-125 mg/dl)
- Randomly assigned to 4-year trial
 - Placebo
 - Metformin (850 BID)
 - Lifestyle intervention

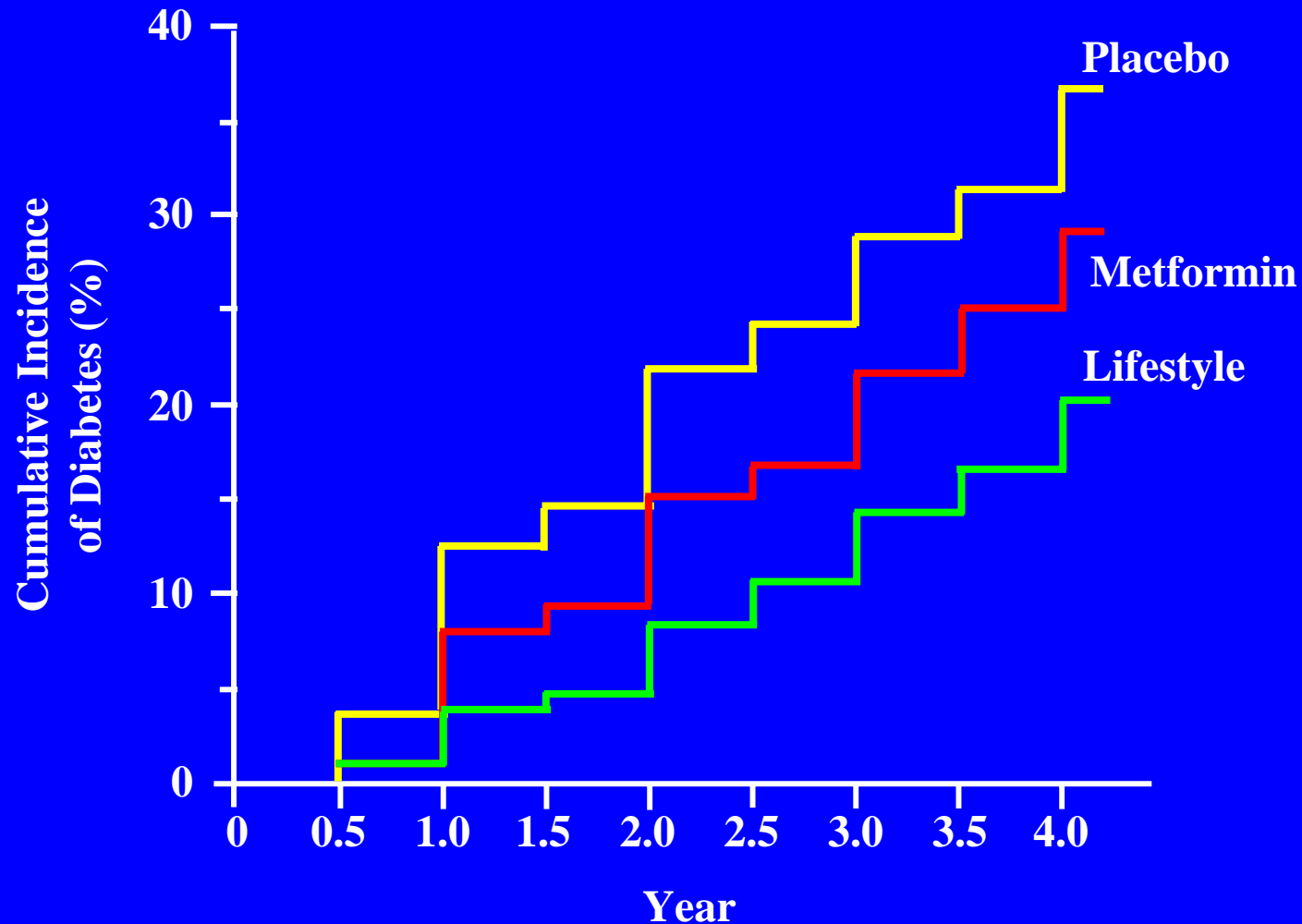
Implementing Lifestyle Modification in the Diabetes Prevention Program:

- Months 1-6: 16 individual sessions with a registered dietitian (R.D.).
- Months 7-36: Minimum of 1 session every other month with R.D.; additional support as needed.
- Focus of sessions:
 - Review food and activity records
 - Problem solve difficulties
 - Praise participants' efforts

Diabetes Prevention Program



Diabetes Prevention Program



Look AHEAD Study (Action for Health in Diabetes)

Diabetes Prevention Program:

7% weight loss, with increased activity, reduced risk of developing type 2 diabetes by 58%.

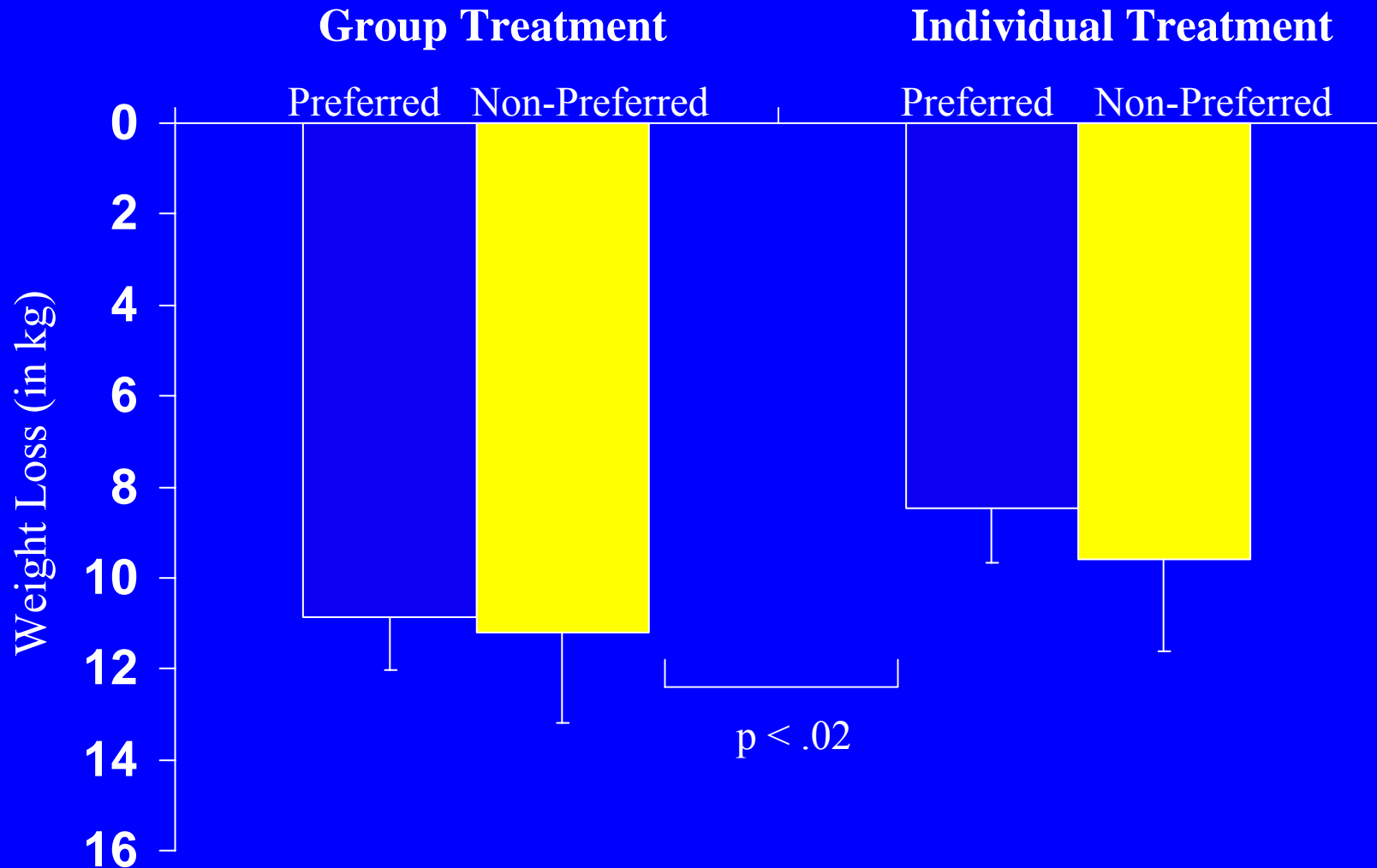
Look AHEAD Study:

Will a 7% weight loss, with increased activity, reduce risk of heart attack and stroke in obese persons with type 2 diabetes?

Look AHEAD Study Design

- 5000 obese participants with type 2 diabetes
- 2 arms
 - Usual care (Diabetes Support and Education Group)
 - Usual care + Lifestyle Intervention
- Study duration: 12 years (with 4 years of intensive intervention)
- Primary outcome: Cardiovascular deaths (fatal MI and stroke), nonfatal MI, nonfatal stroke

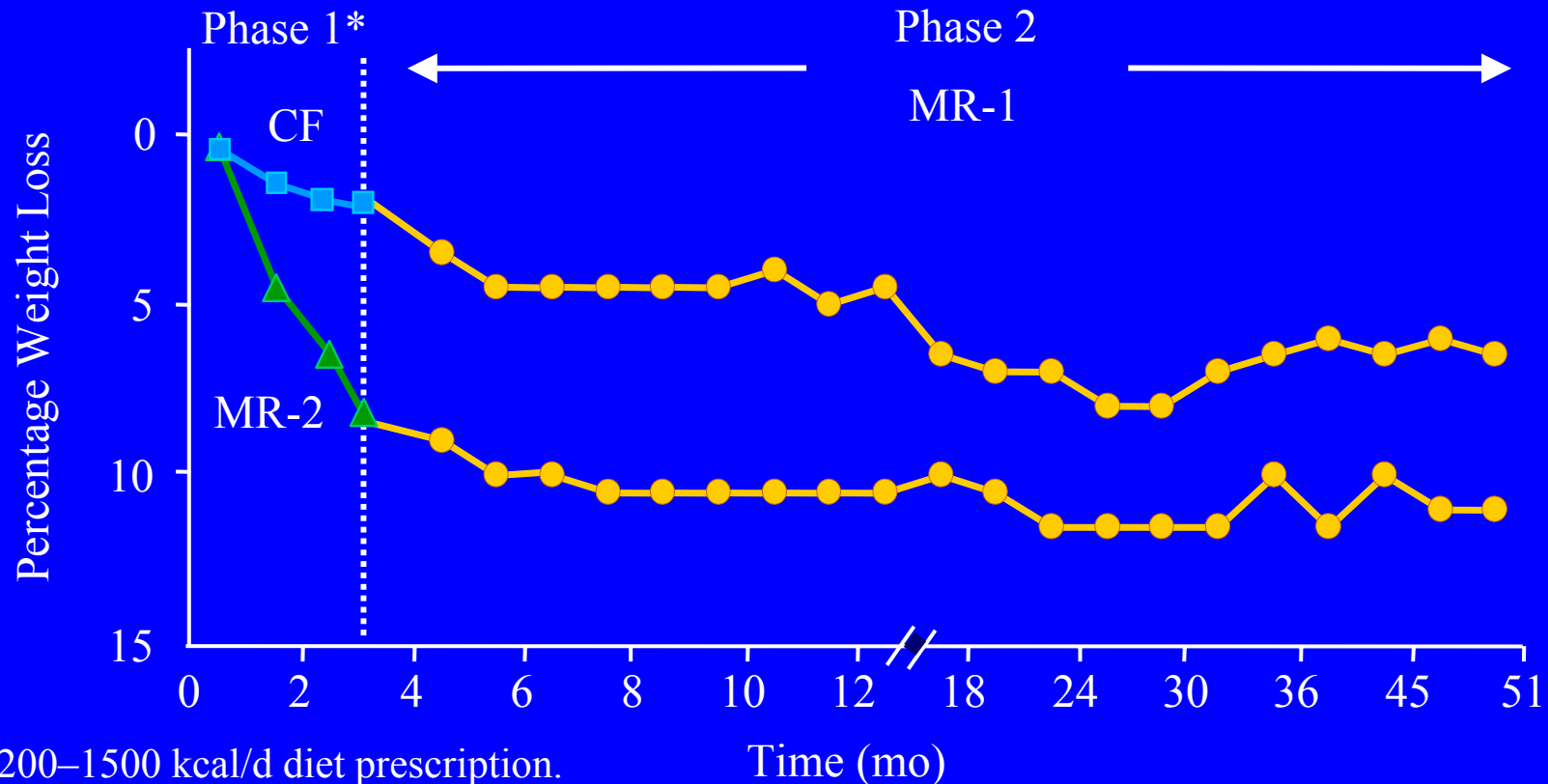
Comparison of Group vs. Individual Treatment for Weight Loss: 6 months



Portion-Controlled Meals

- Provide fixed-portion and calorie amounts
- Reduce choices and contact with problem foods
- Are convenient to use
- Satisfy appetite (monotony and sensory specific satiety)
- Facilitate dietary adherence

Meal Replacements Enhance Initial and Long-term Weight Loss



*1200–1500 kcal/d diet prescription.

CF=conventional foods.

MR-2=replacements for 2 meals, 2 snacks daily.

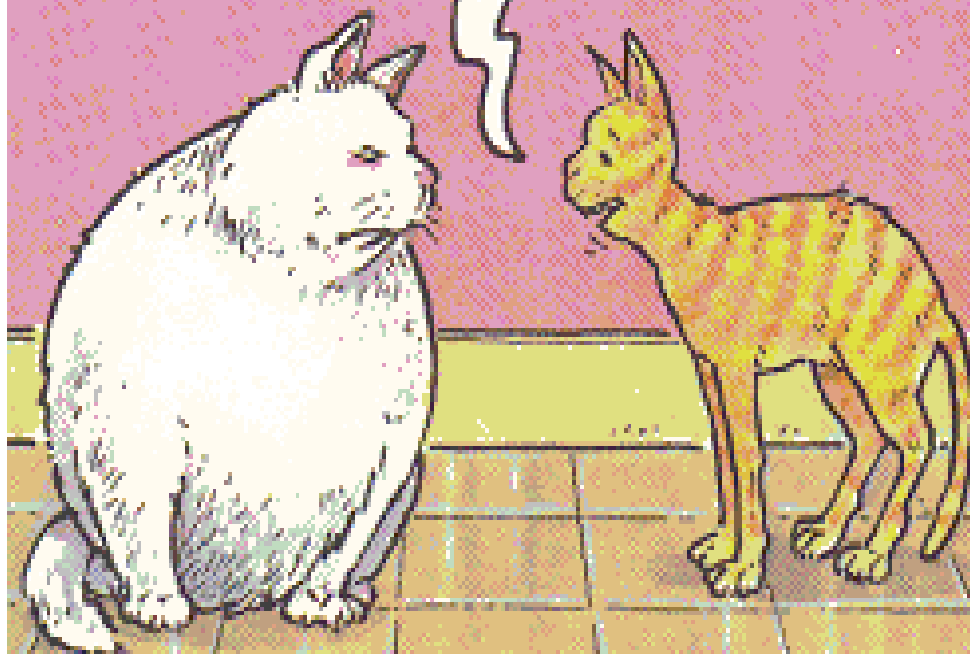
MR-1=replacements for 1 meal, 1 snack daily.

Ditschuneit et al. *Am J Clin Nutr* 1999;69:198.

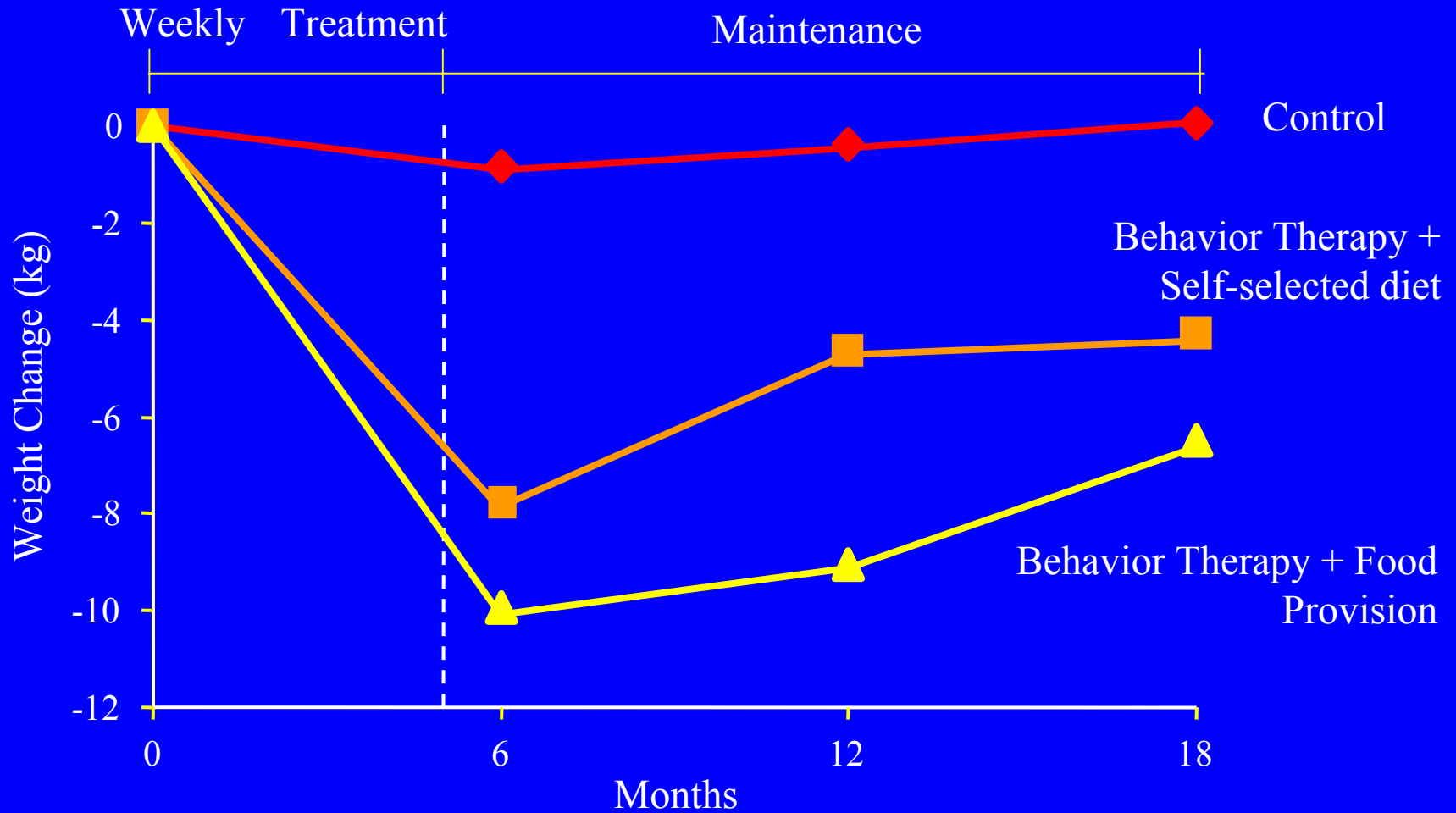
Fletcher-Mors et al. *Obes Res* 2000;8:399.

© *Walt Disney*

It's simple.
I have a shake for
breakfast, a shake for
lunch, and a rodent
of my choice for
dinner.



Providing Prepackaged Meals Enhances Weight Loss



$P=0.0001$ treatment vs control.

$P=0.0002$ behavior therapy + self-selected diet vs behavior therapy + food provision.

Jeffery et al. *J Consult Clin Psychol* 1993;61:1038.

COMPLETELY UPDATED!
The Must-Have **NEW** Edition

THE #1 *NEW YORK TIMES* BESTSELLER

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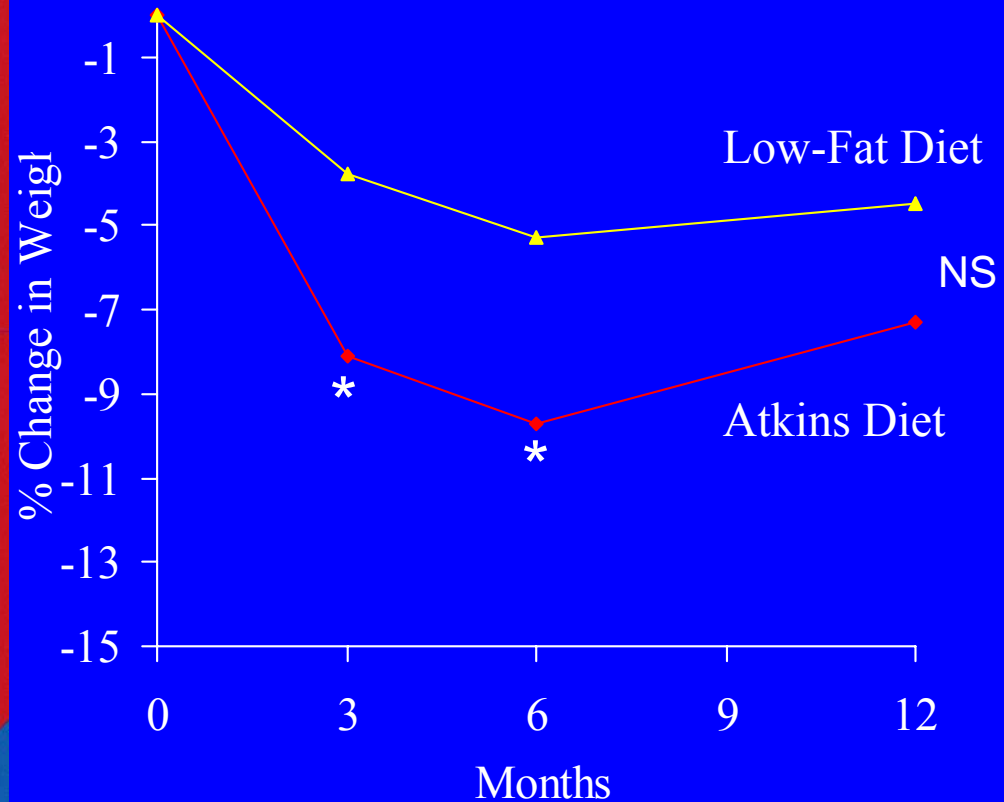


DIET
REVOLUTION

- The latest on the safety and effectiveness of the Atkins approach
- Dozens of new recipes and tips to jump-start weight loss
- The amazing #1 bestseller that's helped millions!

REVISED
and
IMPROVED

Low Carbohydrate vs. Low-Fat Diets



* $p < .05$

Foster et al. *N Engl J Med* 2003;348:2082-90.

Meta Analysis of Low-Fat (LF) vs. Low-Carbohydrate (LC) Diets

LC

LF

LF

LF

LF

LC

LC

LC

LC

LF

Traditional Low-Calorie Diets

The Food Guide Pyramid

A Guide to Daily Food Choices

Fats, Oils, & Sweets
USE SPARINGLY

Milk, Yogurt,
& Cheese
Group
2-3 SERVINGS



Vegetable
Group
3-5 SERVINGS

Meat, Poultry, Fish,
Dry Beans, Eggs,
& Nuts Group
2-3 SERVINGS

Fruit
Group
2-4 SERVINGS

Bread, Cereal,
Rice, & Pasta
Group
**6-11
SERVINGS**

KEY

-  Fat (naturally occurring and added)
-  Sugars (added)

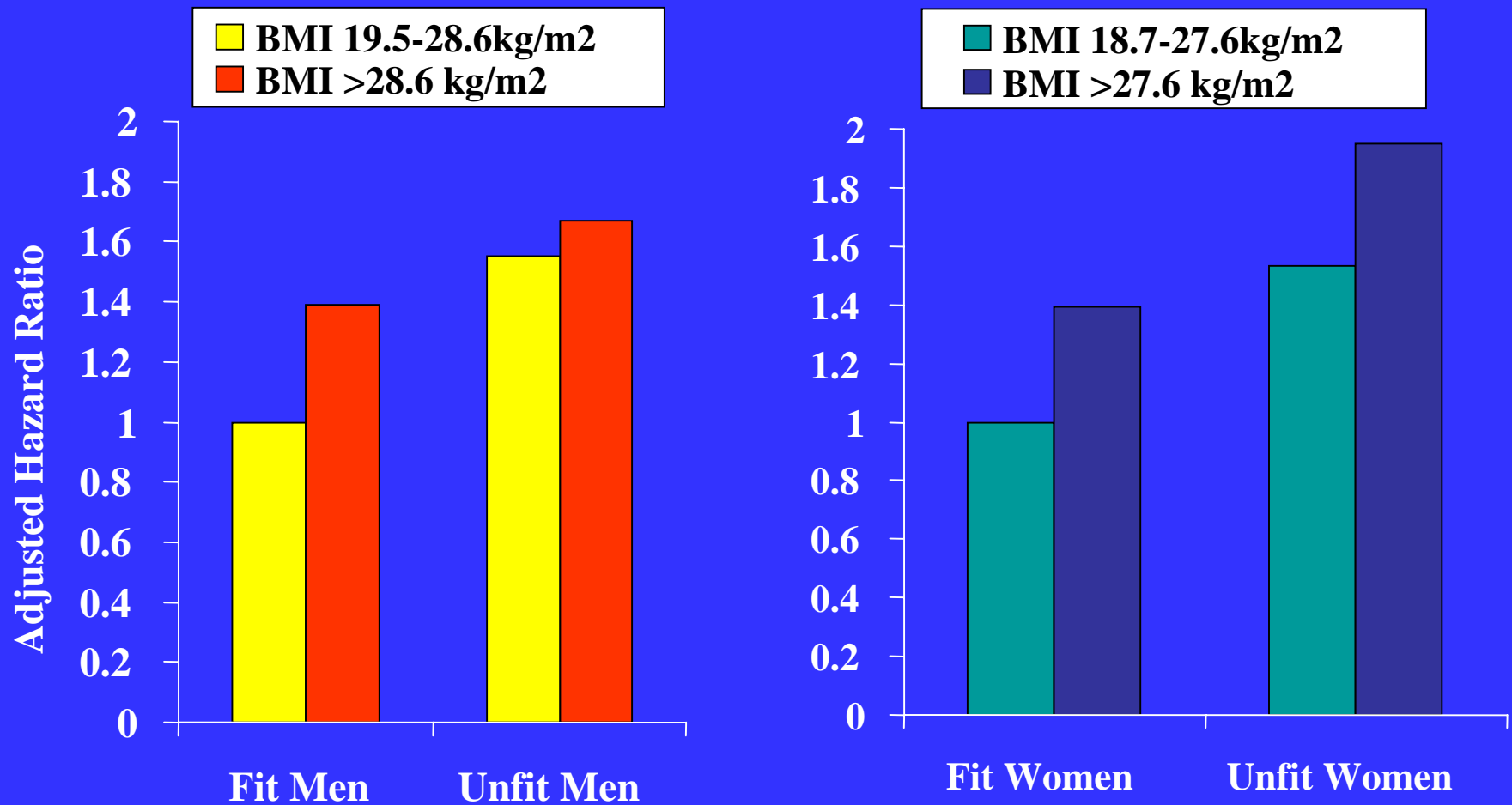
These symbols show fat and added sugars in foods.



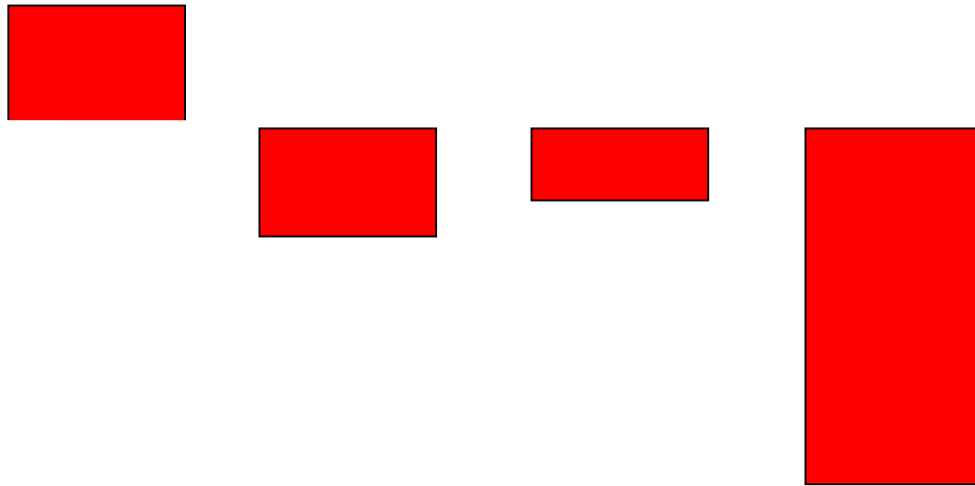
Exercise in the Treatment of Obesity

- Obese individuals are encouraged to increase physical activity for health, fitness, and pleasure.
- Aim for ≥ 30 minutes a day, most days of the week.
- Engage in strength training, as well as aerobic activity.

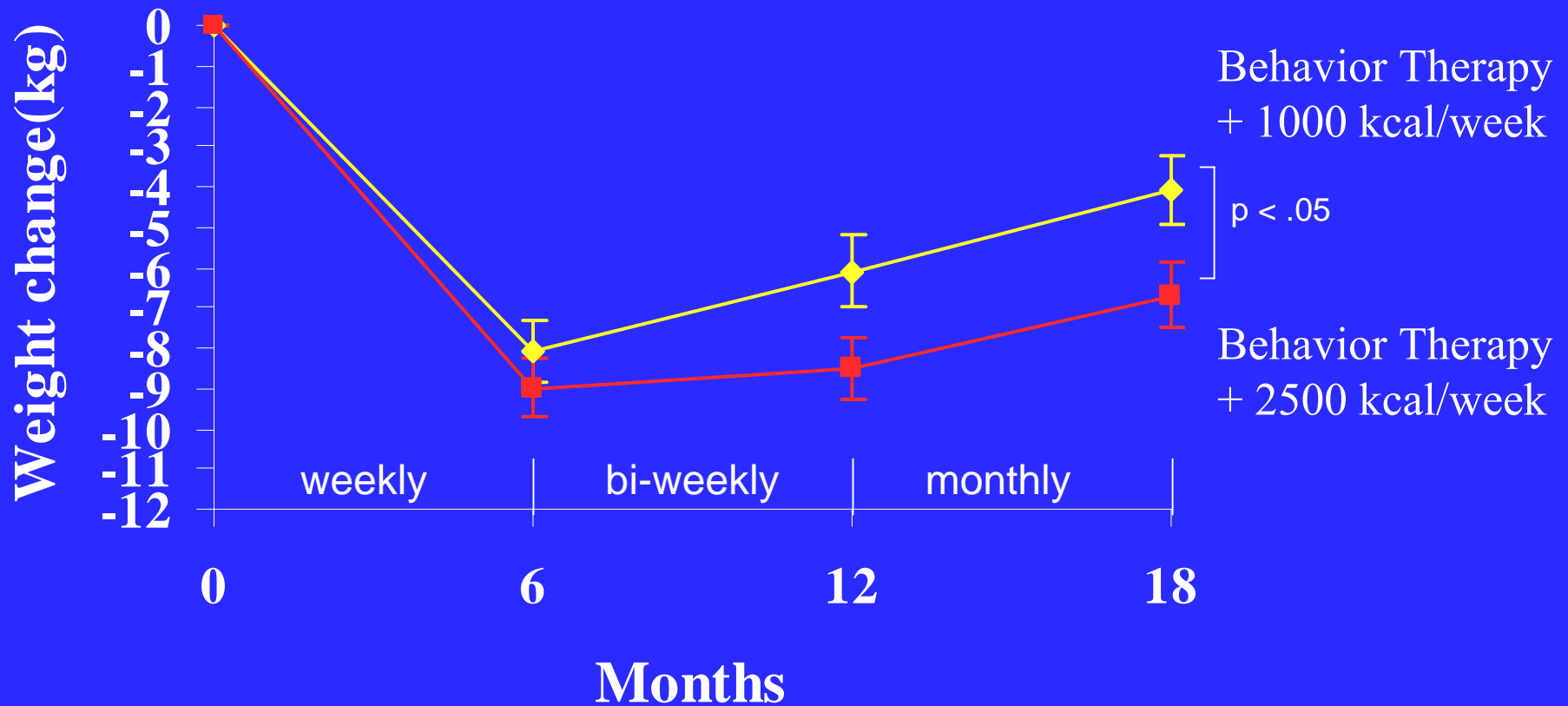
Fitness, Fatness, and Mortality from Cardiovascular Disease



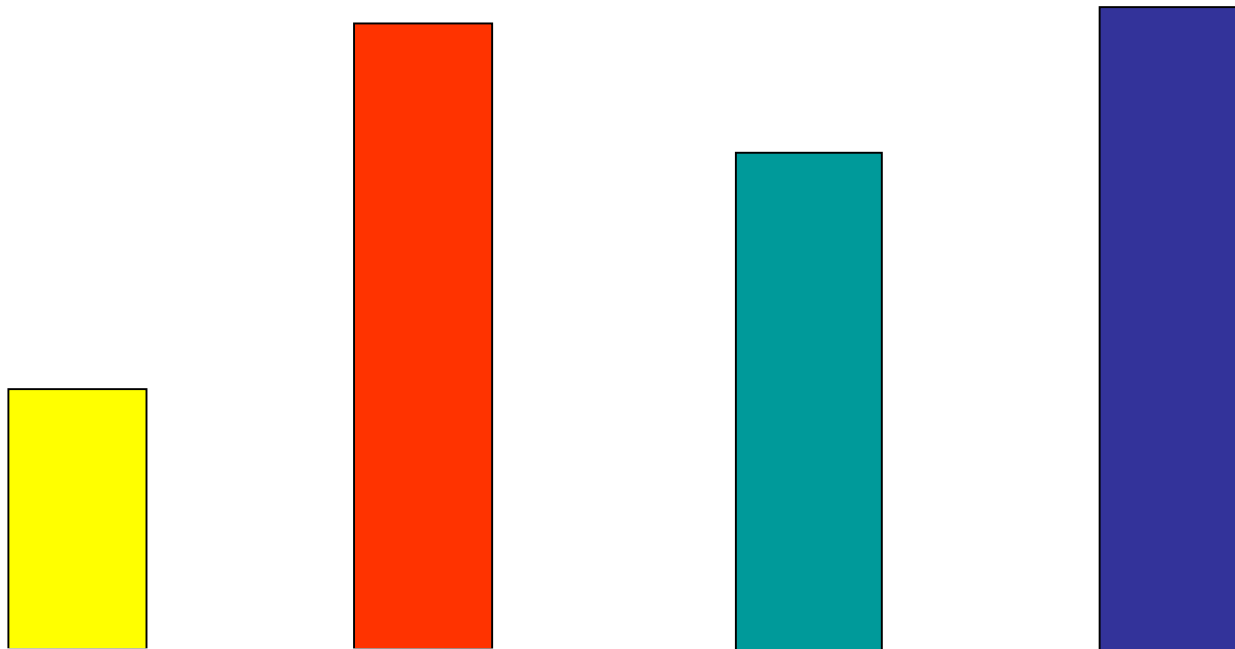
Weight Change Over 8 Months With Different Levels Of Physical Activity



Weight Loss in Low Activity (1000 kcal/week) vs. High Activity (2500kcal/week) groups.



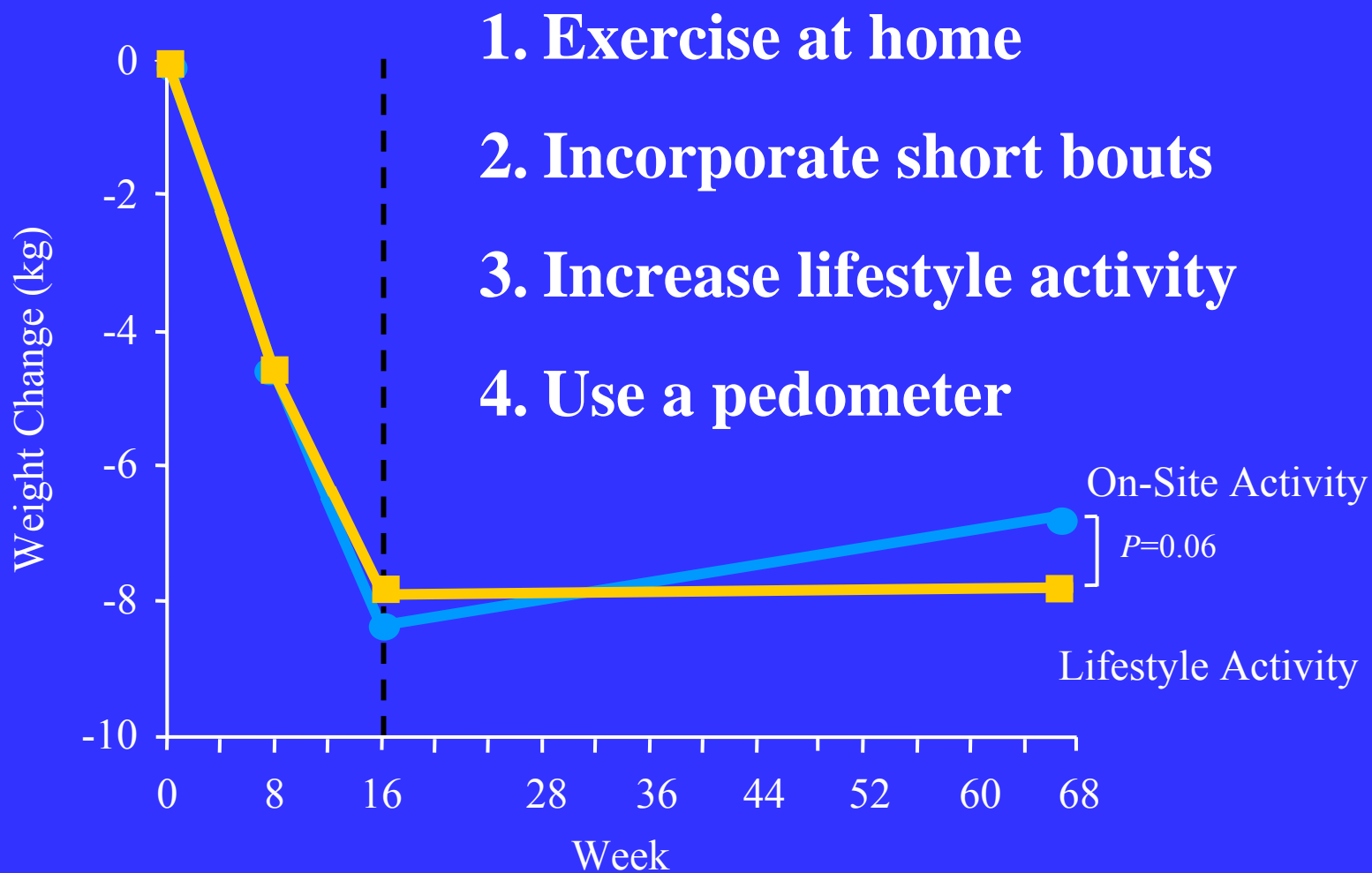
More Activity and Greater Weight Loss with Short Bouts of Exercise



Lifestyle vs. Programmed Activity

- 40 obese women assigned to two conditions
- All had 16 weekly group weight loss sessions
- **Programmed activity:** attended three step-aerobic classes/wk, 1 hour duration
- **Lifestyle:** told to accumulate 30 min/day of lifestyle activity; wore activity monitors

With Exercise, More Structure Is Not Better



Status of Behavioral Treatment for Obesity

- Treatment of 20-26 weeks
- Attrition of 15%-20%
- Mean loss of 9% of initial weight
- 1-year follow-up: mean loss of 6%

Contributors to Weight Regain

- Counter-regulatory mechanisms opposing weight loss (\downarrow leptin, \downarrow resting and nonresting energy expenditure, \uparrow NPY, ghrelin)
- Toxic Food Environment
- Behavioral fatigue (unfavorable cost/benefit ratio)

Behaviors and Reinforcement Associated with Losing Weight vs. Maintaining Weight Loss

Weight Loss

Goal is to lose large amount of weight.

Treatment is time-limited.

Support from diet program and family and friends.

Weight loss is highly reinforcing.

Do not have to exercise to lose weight.

Maintenance of Weight Loss

Goal is to lose small amount of weight, as small increases occur.

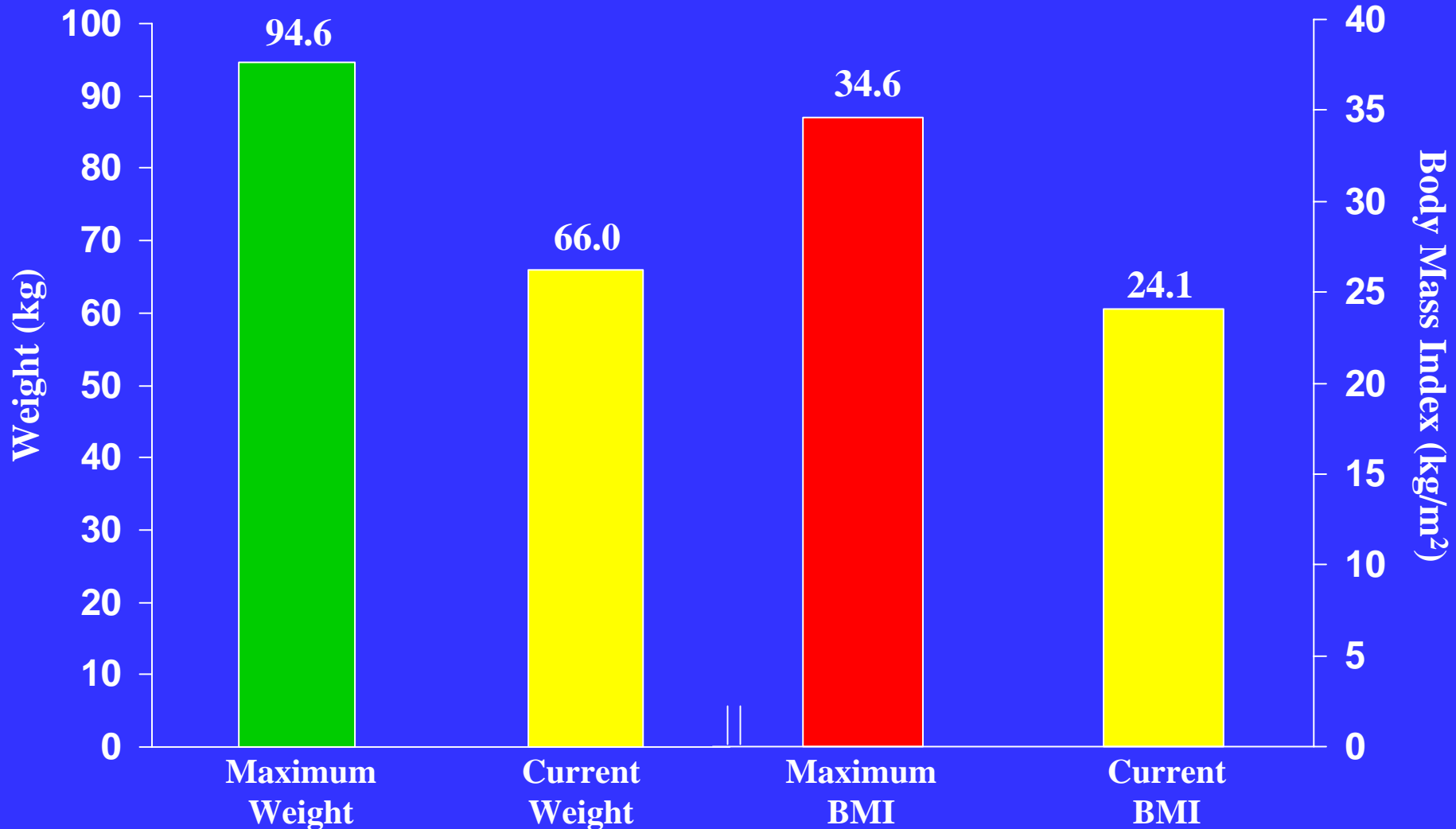
Treatment is ongoing and lifelong.

Little or no support from professionals or family members.

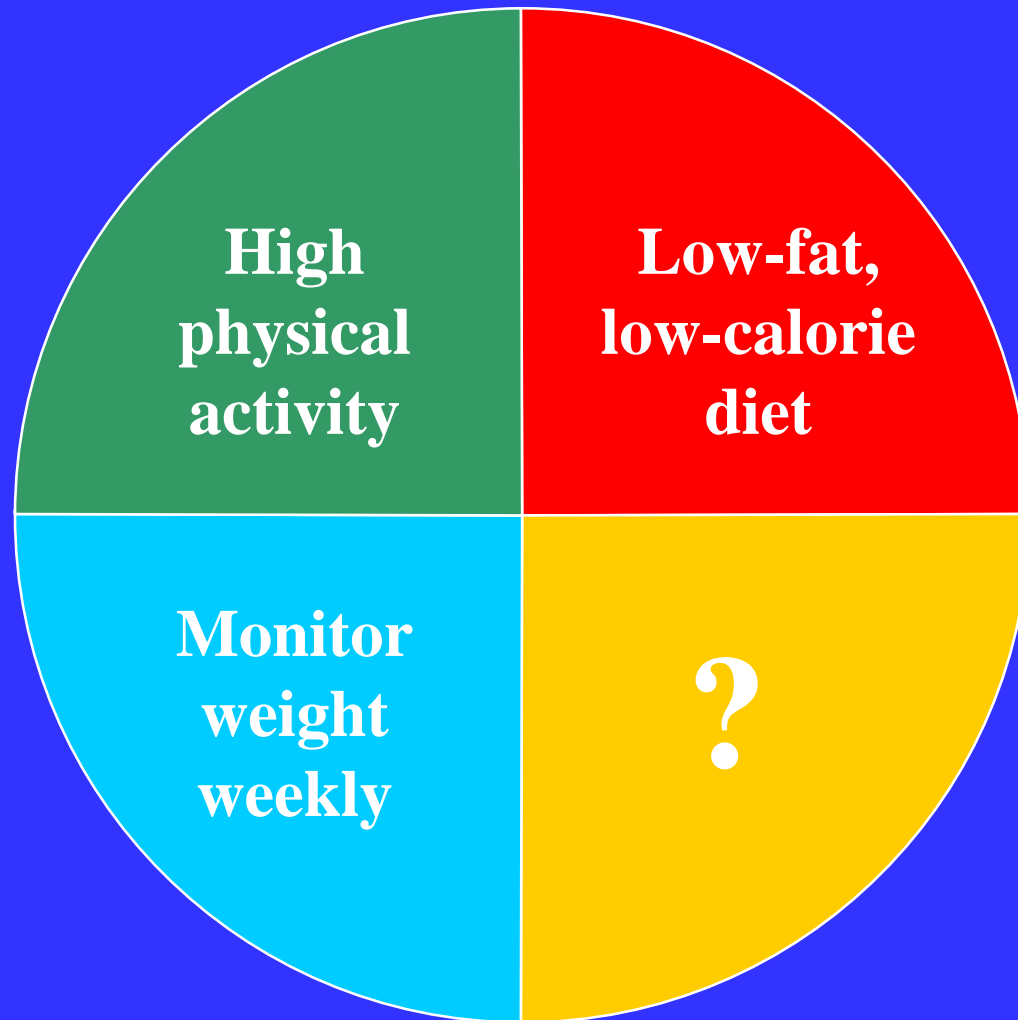
Maintenance of weight loss is not reinforcing.

Exercise appears to be critical to maintenance of weight loss.

National Weight Control Registry (629 women, 44.4 yr)



National Weight Control Registry: Behaviors to Maintain Weight Loss



National Weight Control Registry

“Almost all NWCR subjects (90%) have experienced previous unsuccessful attempts at weight loss. No obvious factor or factors distinguish this successful weight loss from previous failures...a greater commitment, structured dieting, and a greater role of exercise.”

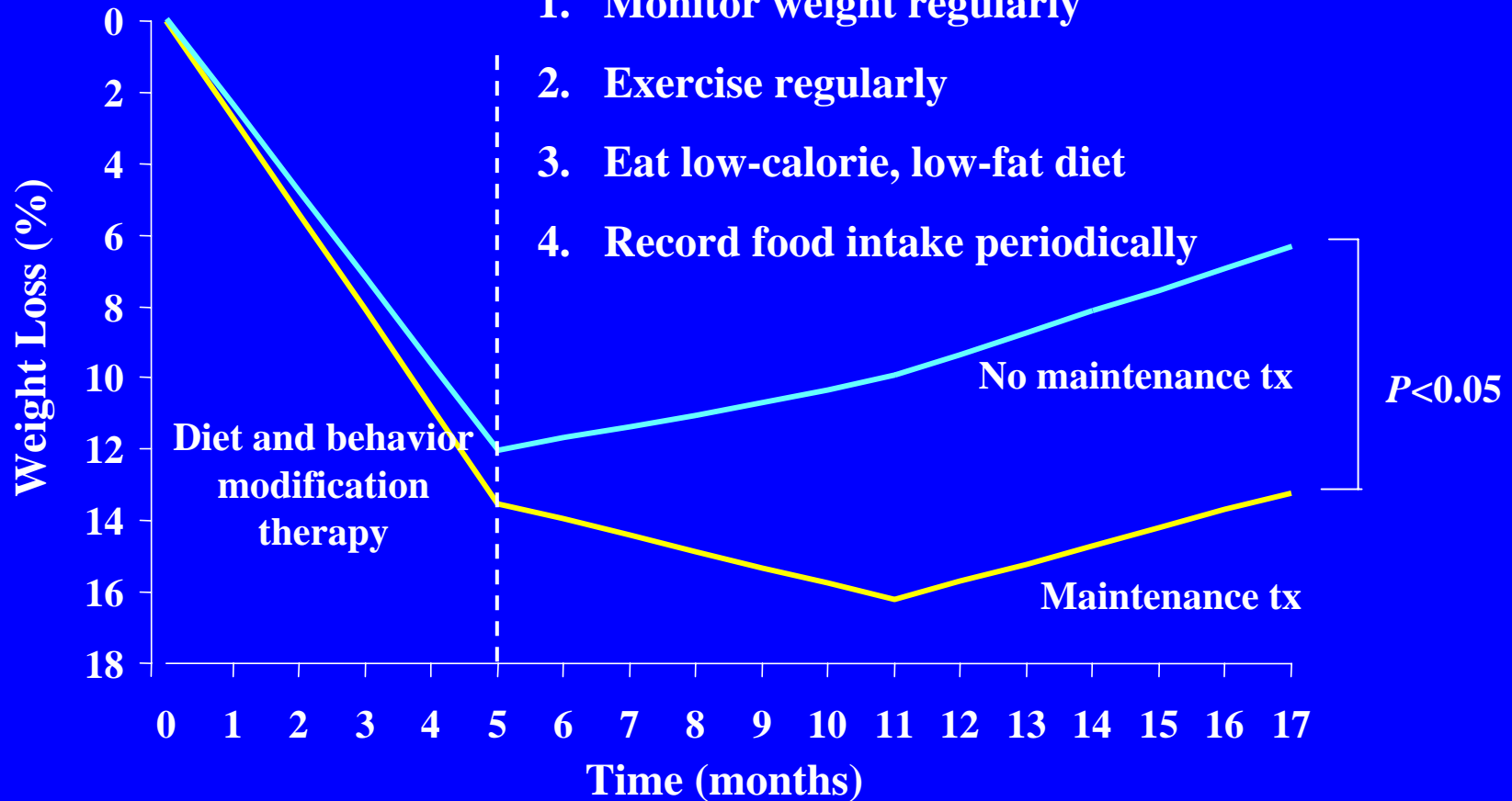
Improving the Maintenance of Weight Loss

- Recognize obesity is a chronic disorder requiring long-term care.
- Provide bi-monthly patient-provider contact on site or by telephone/e-mail.
- Long-term pharmacologic treatment.

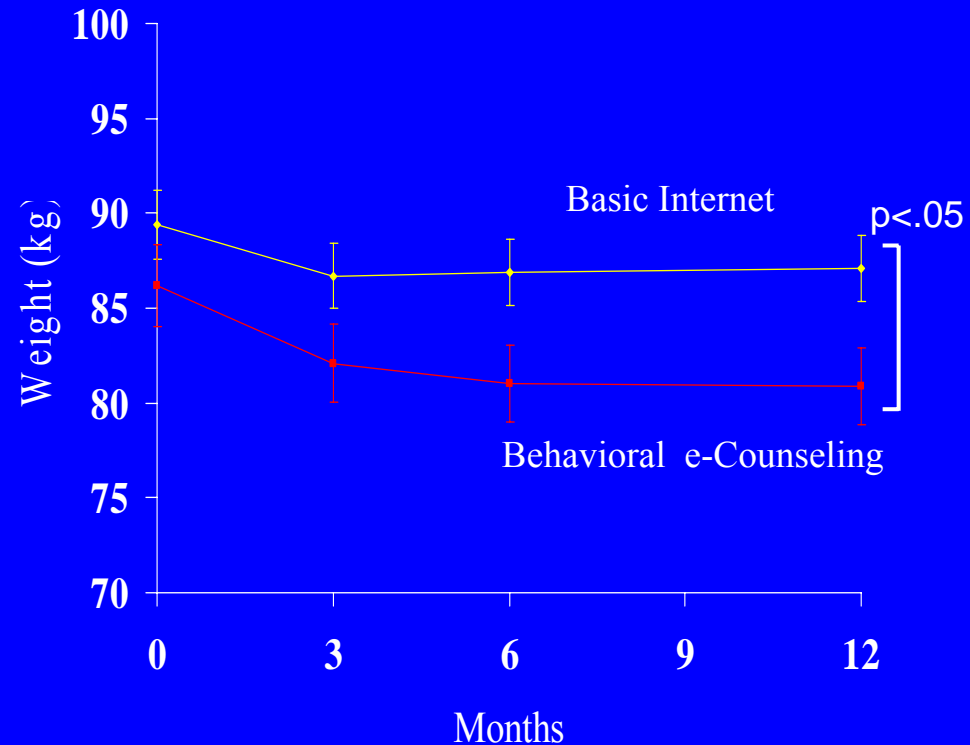
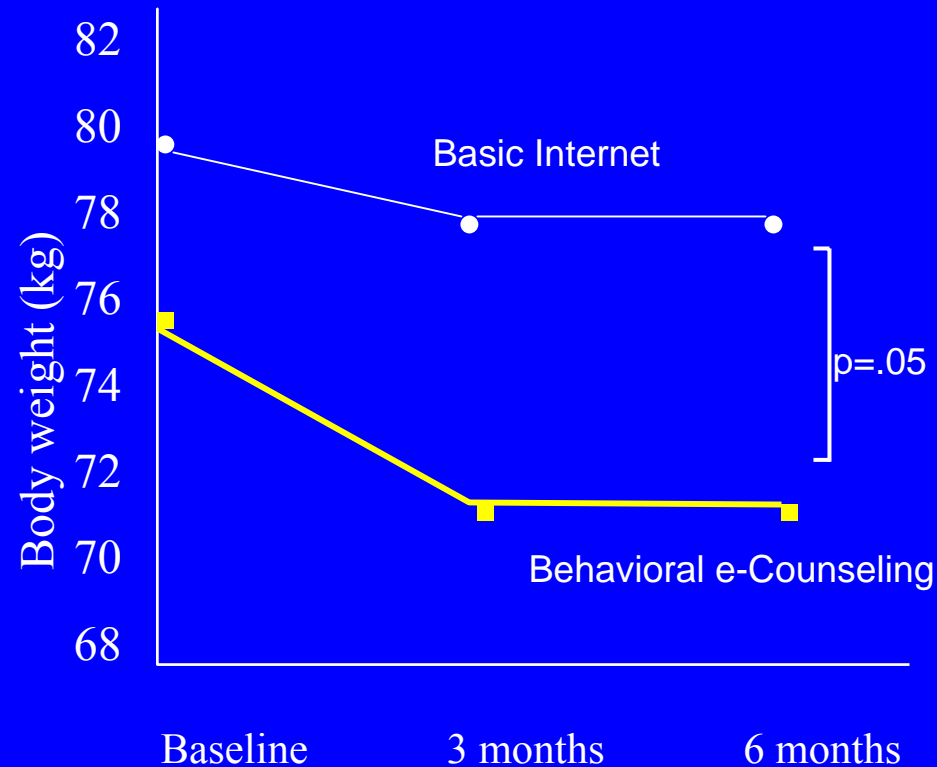
Maintenance of Weight Loss Is Improved With Long-Term Behavioral Treatment

Key Behaviors for Long-Term Weight Control

1. Monitor weight regularly
2. Exercise regularly
3. Eat low-calorie, low-fat diet
4. Record food intake periodically



Behavioral Treatment Can Be Delivered By Internet



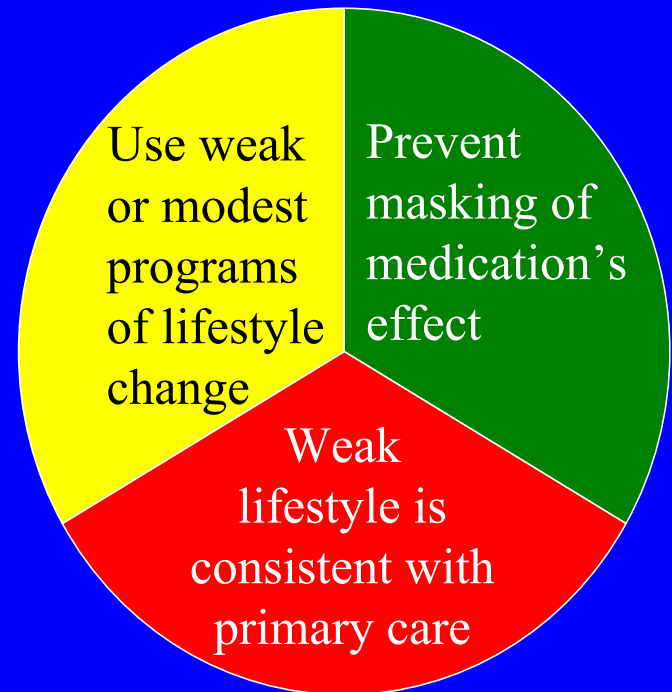
Pharmacologic Treatment of Obesity

- Patient selection
 - BMI ≥ 30 kg/m²
 - BMI ≥ 27 kg/m²
- Use weight loss meds chronically, in same manner as meds for other chronic conditions
- Medications approved for long-term use:
 - **Sibutramine**, a serotonin-norepinephrine re-uptake inhibitor: reduces food intake
 - **Orlistat**, a lipase inhibitor: decreases fat absorption

Combining Behavioral and Pharmacologic Treatments

Randomized Controlled Trials of Weight Loss Medications

“Medications are recommended for use only as an adjunct to a comprehensive program that includes diet, physical activity, and behavior therapy.”



Benefits of Combined Treatment

Pharmacotherapy

Modifies
Internal
Environment

- ↓ hunger
- ↓ food preoccupation
- ↑ satiation
- ↓ nutrient absorption

Lifestyle Modification

Modifies
External
Environment

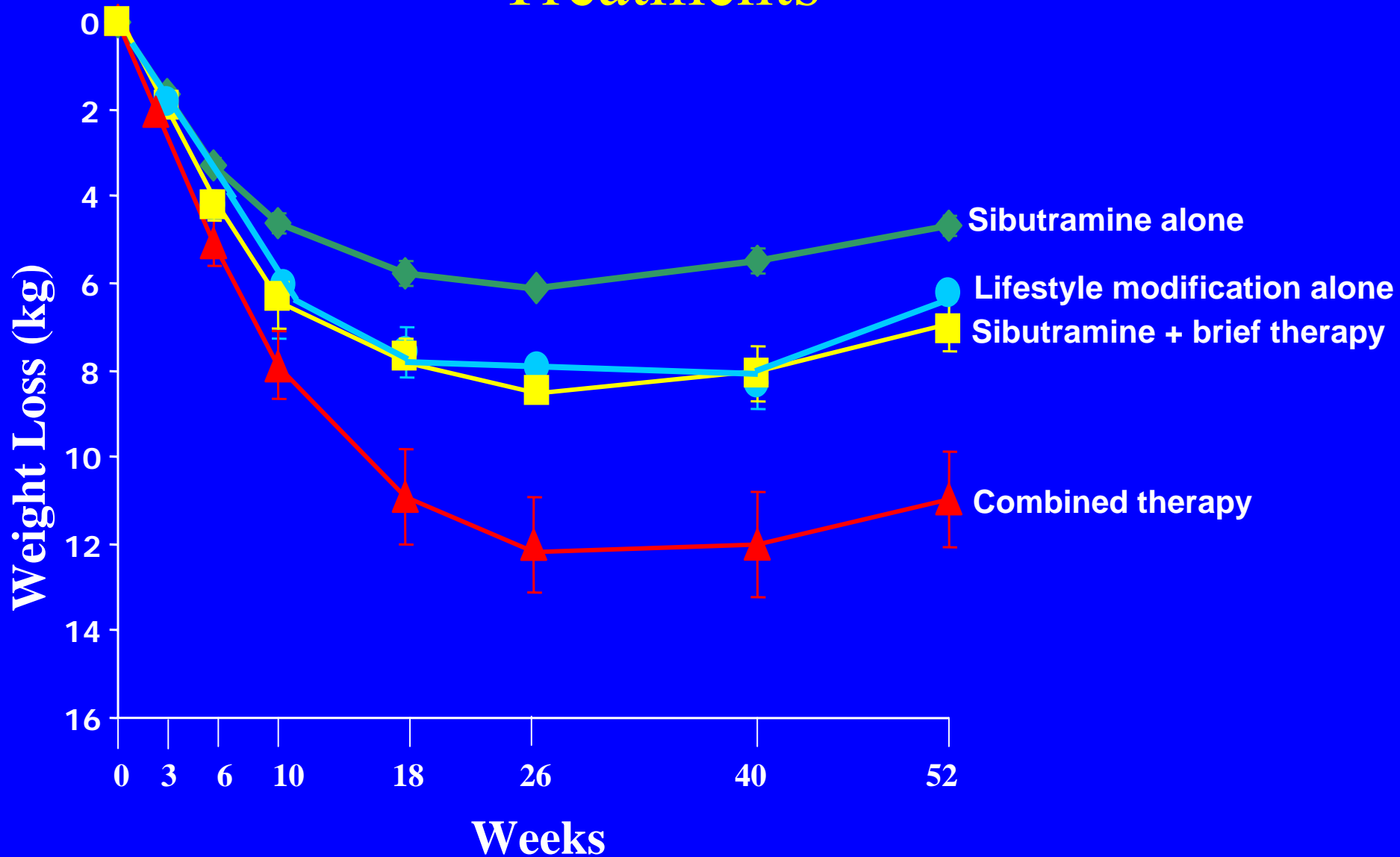
- ↓ exposure to foods
- ↓ cues to eat
- ↑ dietary restraint
- ↑ physical activity

Additive Effect

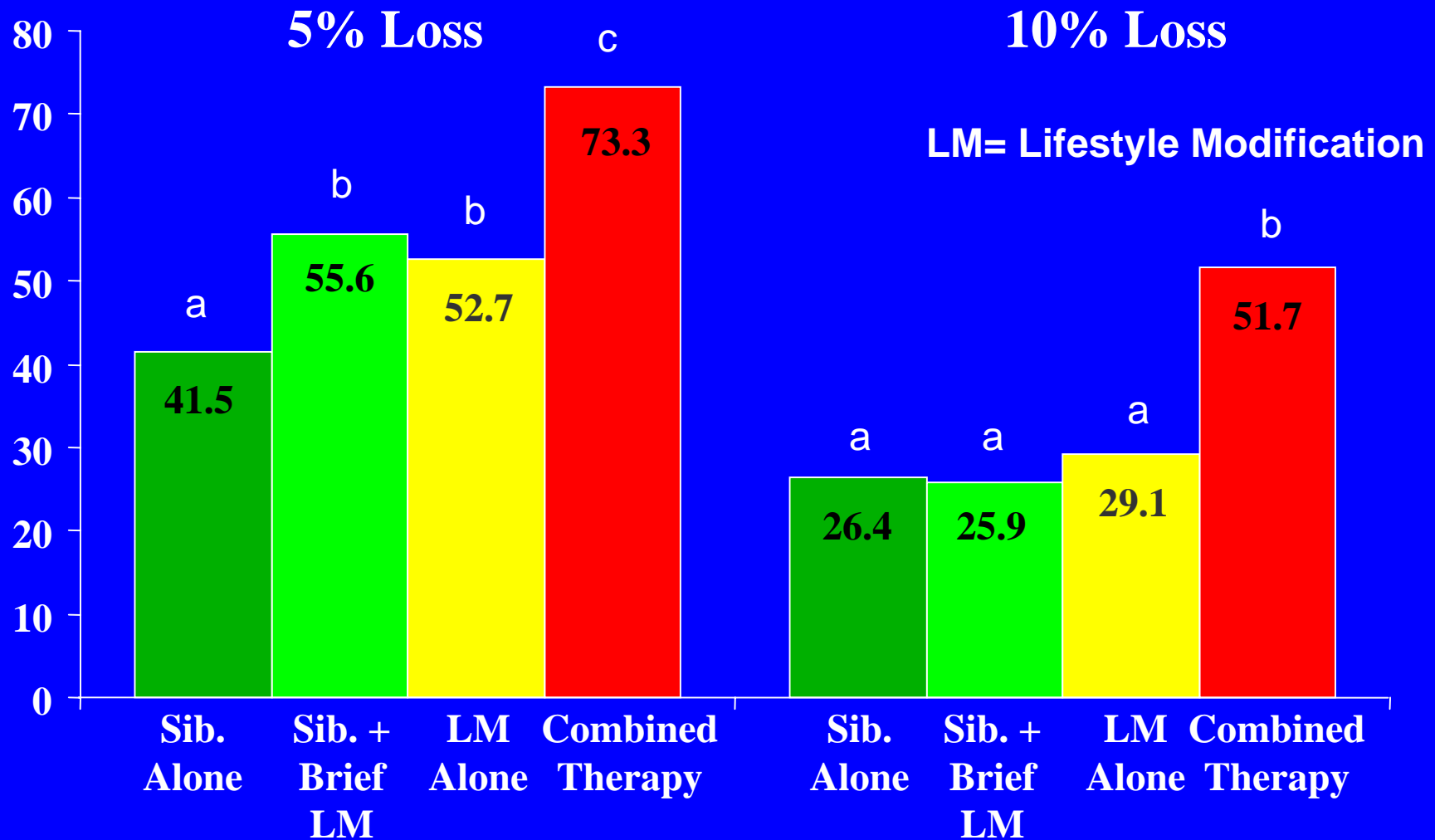
Combining Behavioral and Pharmacologic Treatment (N=224)

- **Sibutramine Alone:**
10-15mg/d sibutramine, 8 physician visits
- **Lifestyle Modification (LM) Alone:**
30 group sessions, LEARN Program for Weight Control
- **Sibutramine + LM:**
Combined Treatment
- **Sibutramine + Brief LM:**
8 physician visits with LEARN Program

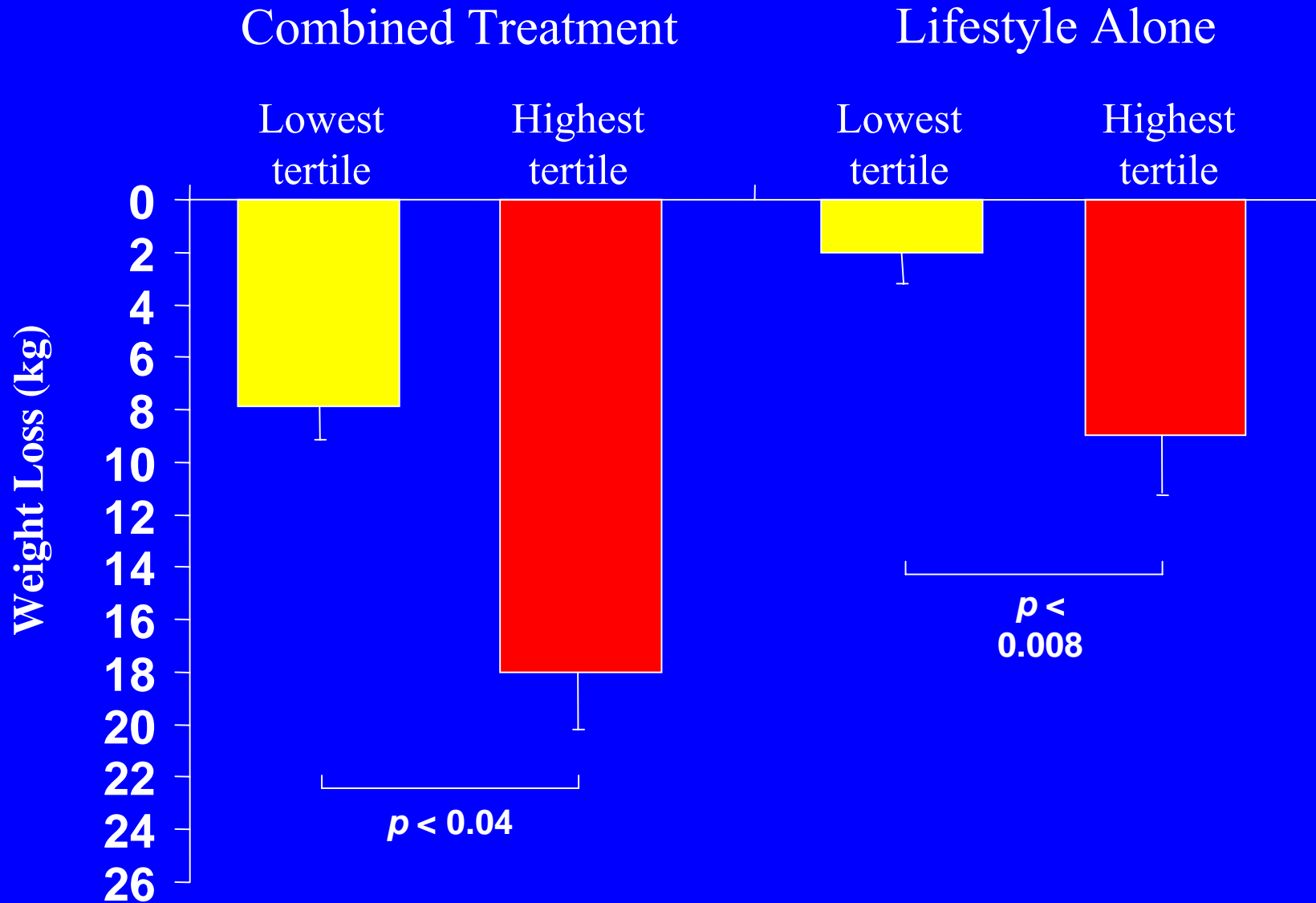
Combining Behavioral and Pharmacologic Treatments



Percentage of Patients Who Lost 5% or 10% of Initial Weight at 1 year



Benefits of Record Keeping



Diabetes Prevention Program

This Is Success!

