

# Individual Approaches to Change Behaviors Related to Appropriate Weight during Pregnancy and Postpartum

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# Risk Factors for Increasing Obesity after Pregnancy

- Excessive weight gain during pregnancy
- Weight gain in the postpartum period



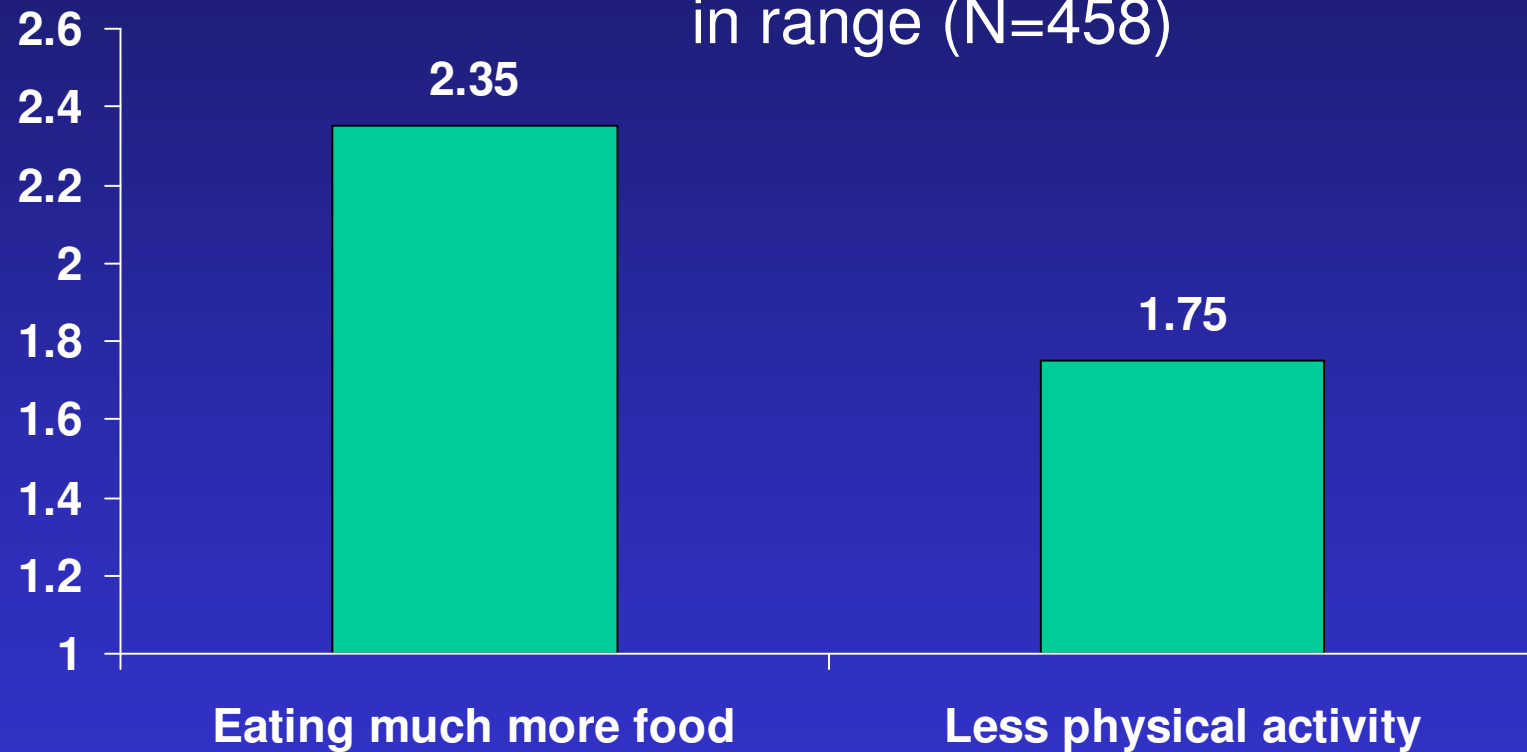
# Effective Strategies for Weight Control

- Change energy balance
  - Calorie Restriction
  - Physical Activity
- Behavioral Strategies
  - Goal setting
  - Feedback
  - Self-monitoring
  - Stimulus control
  - Problem-solving



# Behaviors Associated with Weight Gain During Pregnancy

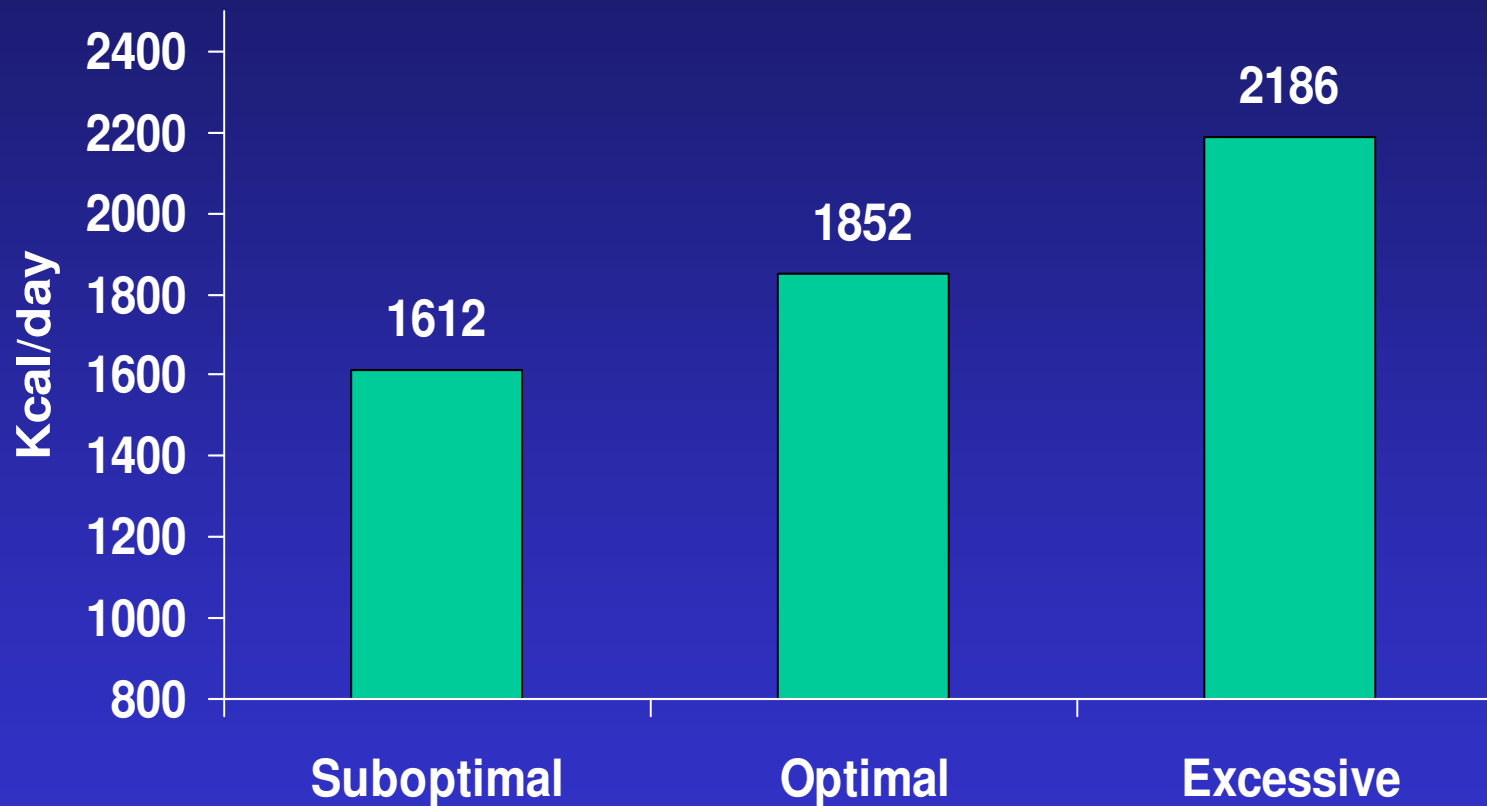
Relative risk of being above IOM guidelines vs. in range (N=458)



Olson and Strawderman, JADA, 2003



# Calorie Intake and Weight Gain in Overweight Women



Olafsdottir et al., IJO, 2006



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# Behaviors Associated with Postpartum Weight Retention

Odds ratios for major weight gain ( $\geq 10$  lb) at 1 y postpartum



Olson et al. IJO, 2003



# Randomized Controlled Trial to Prevent Excessive Weight Gain in Pregnant Women

(Polley et al., International Journal of Obesity, 2002)

- Eligibility Criteria
  - < 20 weeks gestation
  - Age  $\geq$  18 years
  - BMI  $\geq$  19.8
  - Not a high risk pregnancy
- Recruited in four categories:
  - Race (African-American/Non-Hispanic Caucasian)
  - Weight (normal/overweight or obese)



# Subject Characteristics (N=120)

<b>Age</b>	<b>25.5 years</b>
<b>Race</b>	<b>39% African-American 61% Non-Hispanic Caucasian</b>
<b>Marital Status</b>	<b>31% married 14% separated, divorced 55% never married</b>
<b>Education</b>	<b>45% high school or less</b>
<b>Employment</b>	<b>57% unemployed</b>
<b>Childbearing history</b>	<b>47% first pregnancy 30% second pregnancy 23% third pregnancy</b>



# Study Design

	Normal weight	Overweight /obese	Total
Intervention	N = 32	N = 29	N = 61
Control	N = 33	N = 26	N = 59

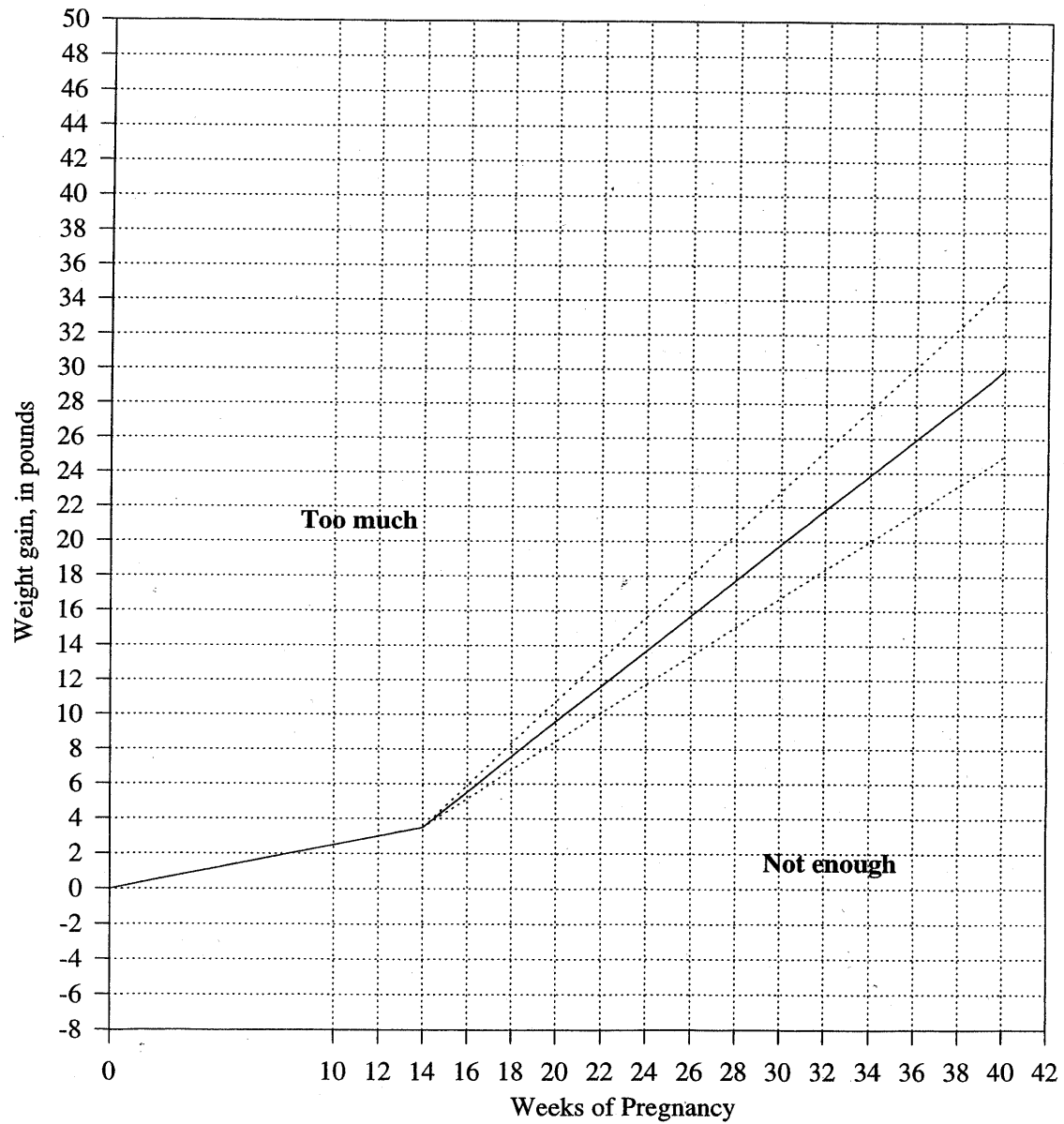


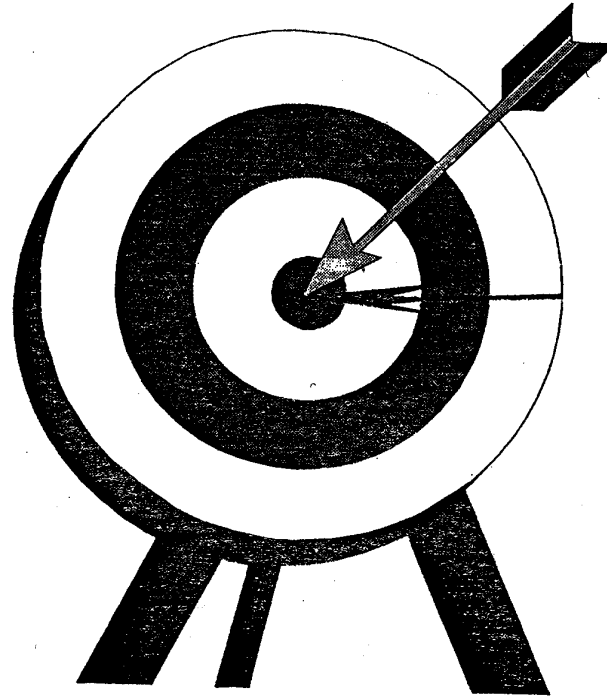
# Intervention

- Given written and oral information about:
  - Appropriate weight gain during pregnancy
  - Exercise during pregnancy
  - Healthy eating during pregnancy
- Received bi-weekly newsletters
- Goal-Setting and Feedback: Sent personalized graphs after each visit



## Recommended weight gain curve for normal weight women





## **YOU'RE RIGHT ON TARGET!!!**

Congratulations! You've gained \_\_\_\_\_ pounds and weighed \_\_\_\_\_ at your last clinic visit. You're right on track! Keep up the good work! If you have questions, please call Pam (your behavioral counselor) at 793-8955.



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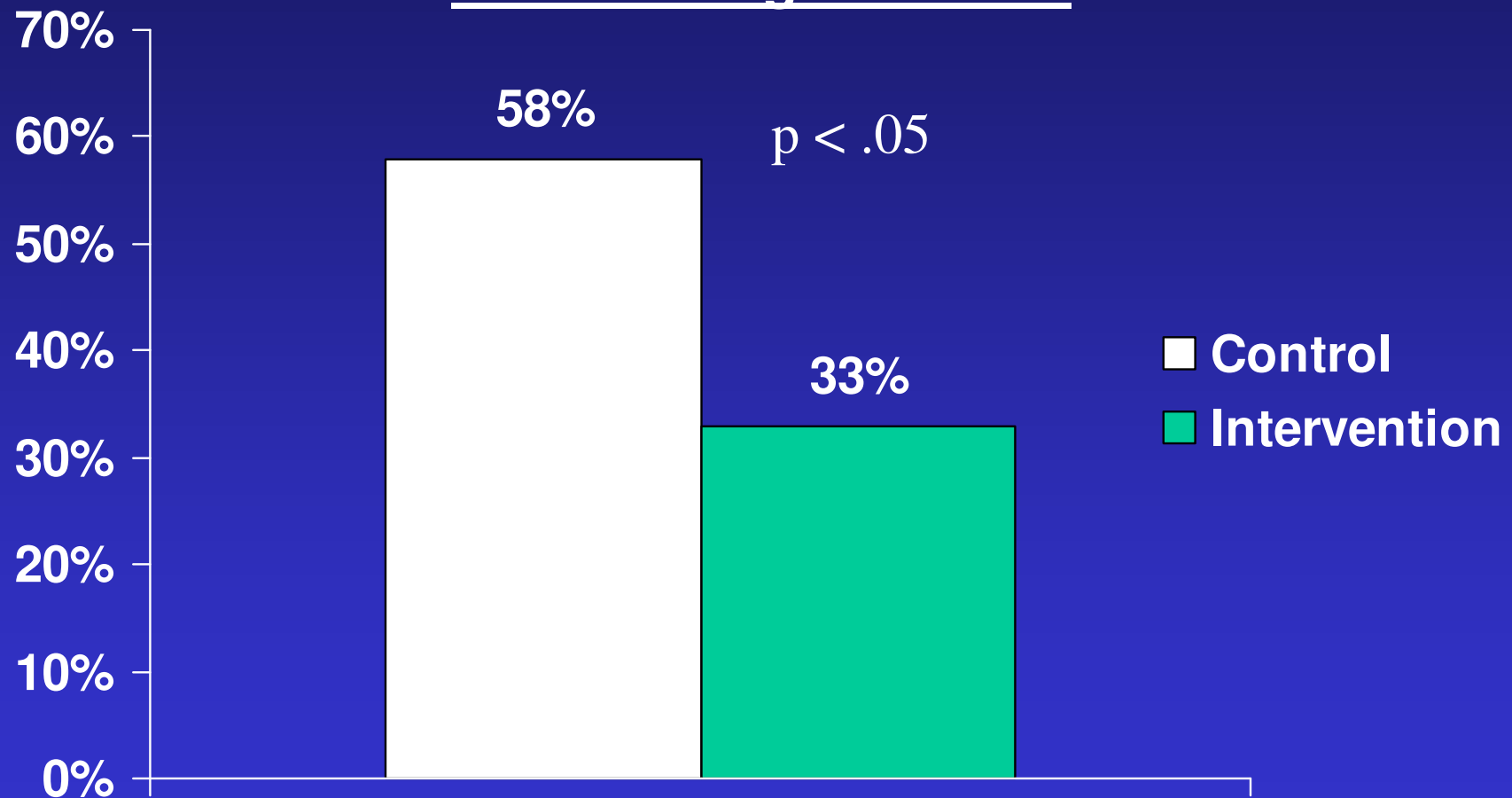
# Additional Intervention for Women Exceeding Weight Gain Goal

- Face-to-face/phone-based counseling
  - Review of progress
  - Problem-solving
  - Behavioral techniques
  - Goal setting
- Increasingly structured behavioral goals
  - Decreasing high fat food (fast food meals)
  - Structured meal plans
  - Individualized calorie goals



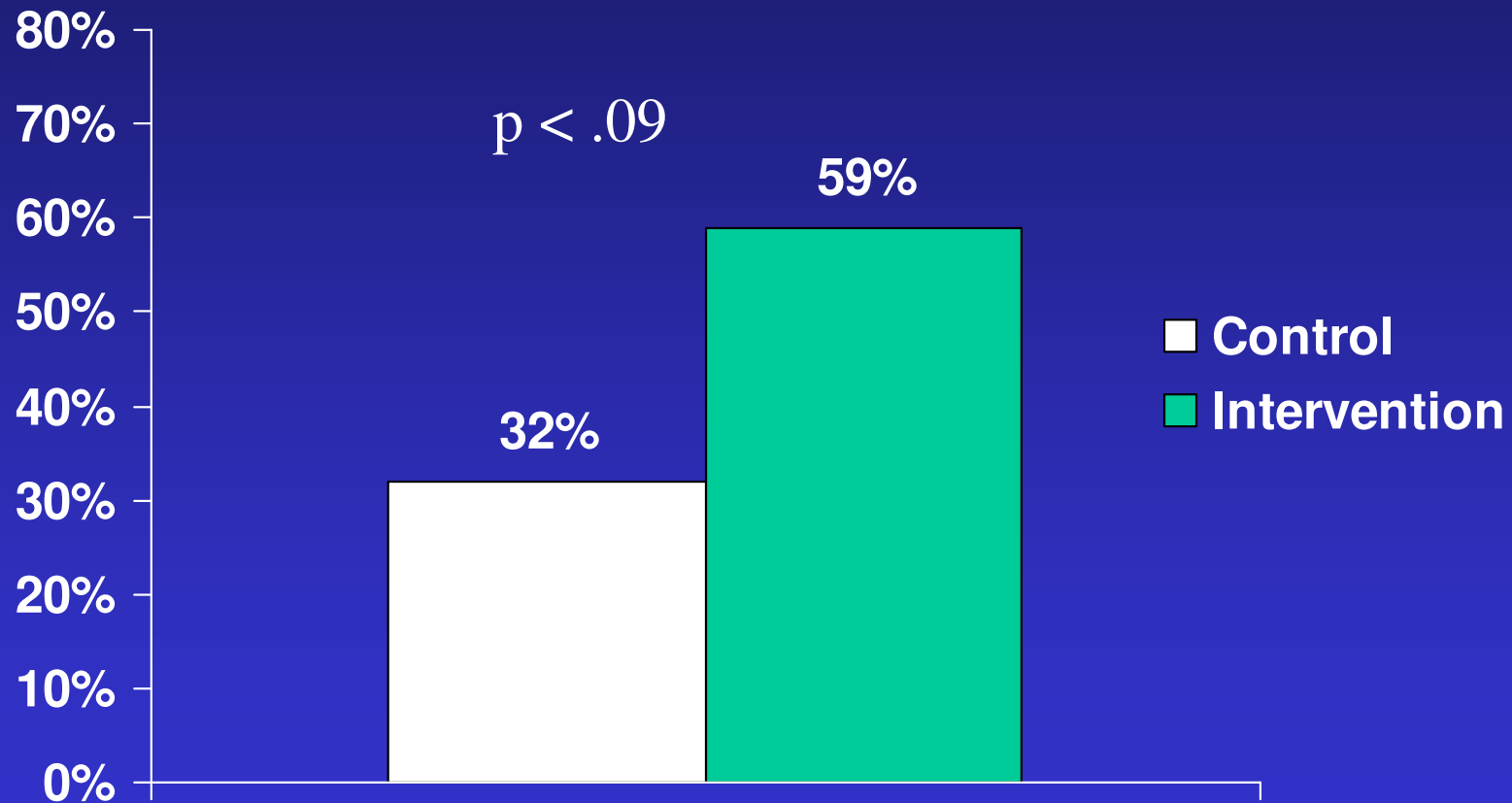
# Results: Proportion of Women Exceeding IOM Weight Gain Guidelines

## Normal Weight Women



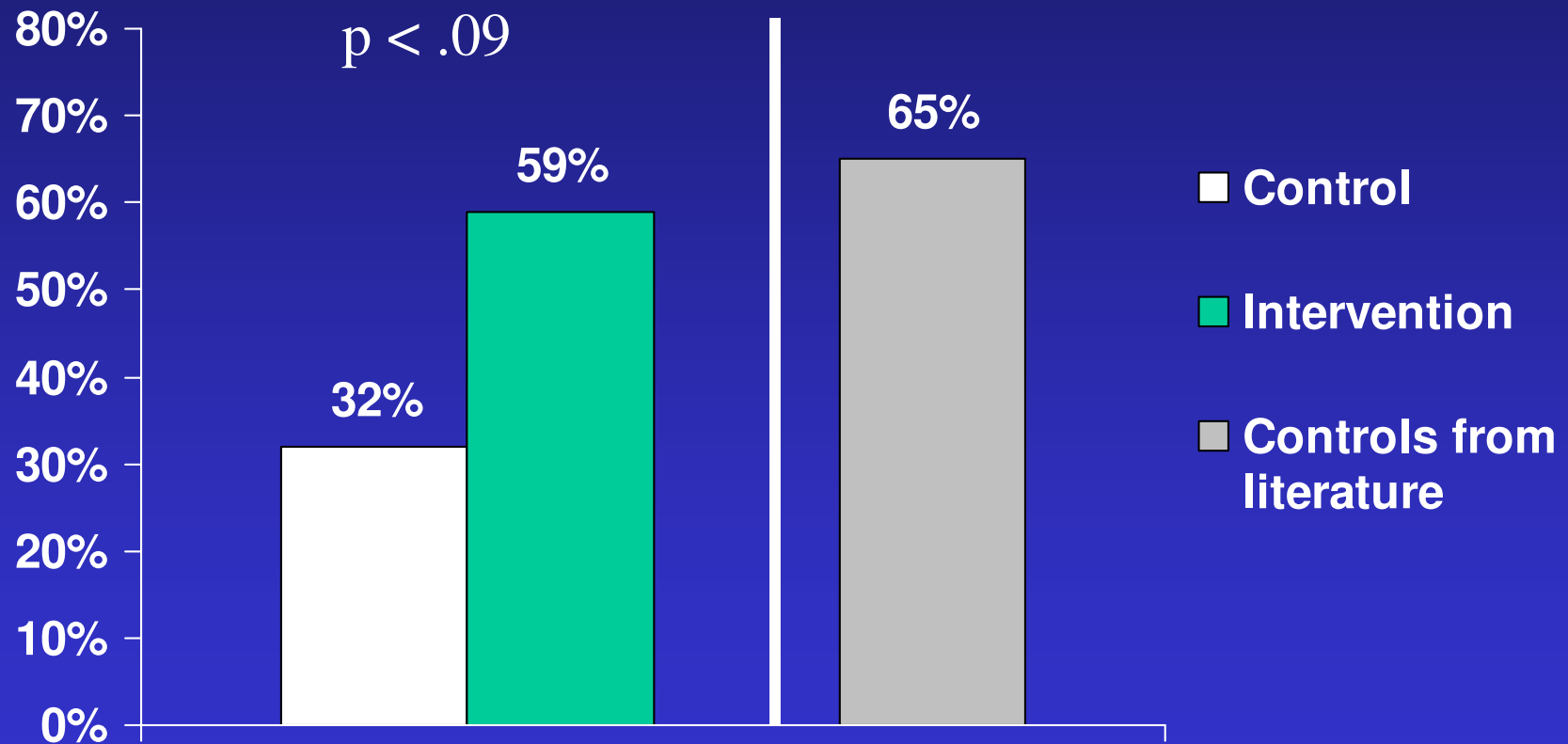
# Results: Proportion of Women Exceeding IOM Weight Gain Guidelines

## Overweight/Obese Women



# Results: Proportion of Women Exceeding IOM Weight Gain Guidelines

## Overweight/Obese Women



# Results

- More effective at preventing excessive weight gain than at reversing it
- Differences between groups in weight gain persisted 1 year postpartum (correlation:  $r = .89$ )



# Interventions During Pregnancy

## Advantages:

- Excessive weight gain during pregnancy is a strong predictor of subsequent obesity
- “Teachable moment”
- Women available at clinic for face-to-face contact
- Potential benefits to the developing baby

## Disadvantages:

- Need to be careful about safety



# Reducing Postpartum Weight Retention through Correspondence Intervention

(Leermakers et al, International Journal of Obesity, 1998)

## Subject Characteristics (N=90)

- $\geq 18$  years
- Delivered within past 3-7 months
- Exceeded pre-pregnancy weight by  $\geq 6.8$  kg  
(M=12.3 kg)
- BMI  $\geq 22$  (M = 29.8)
- Non-lactating
- 97% Caucasian



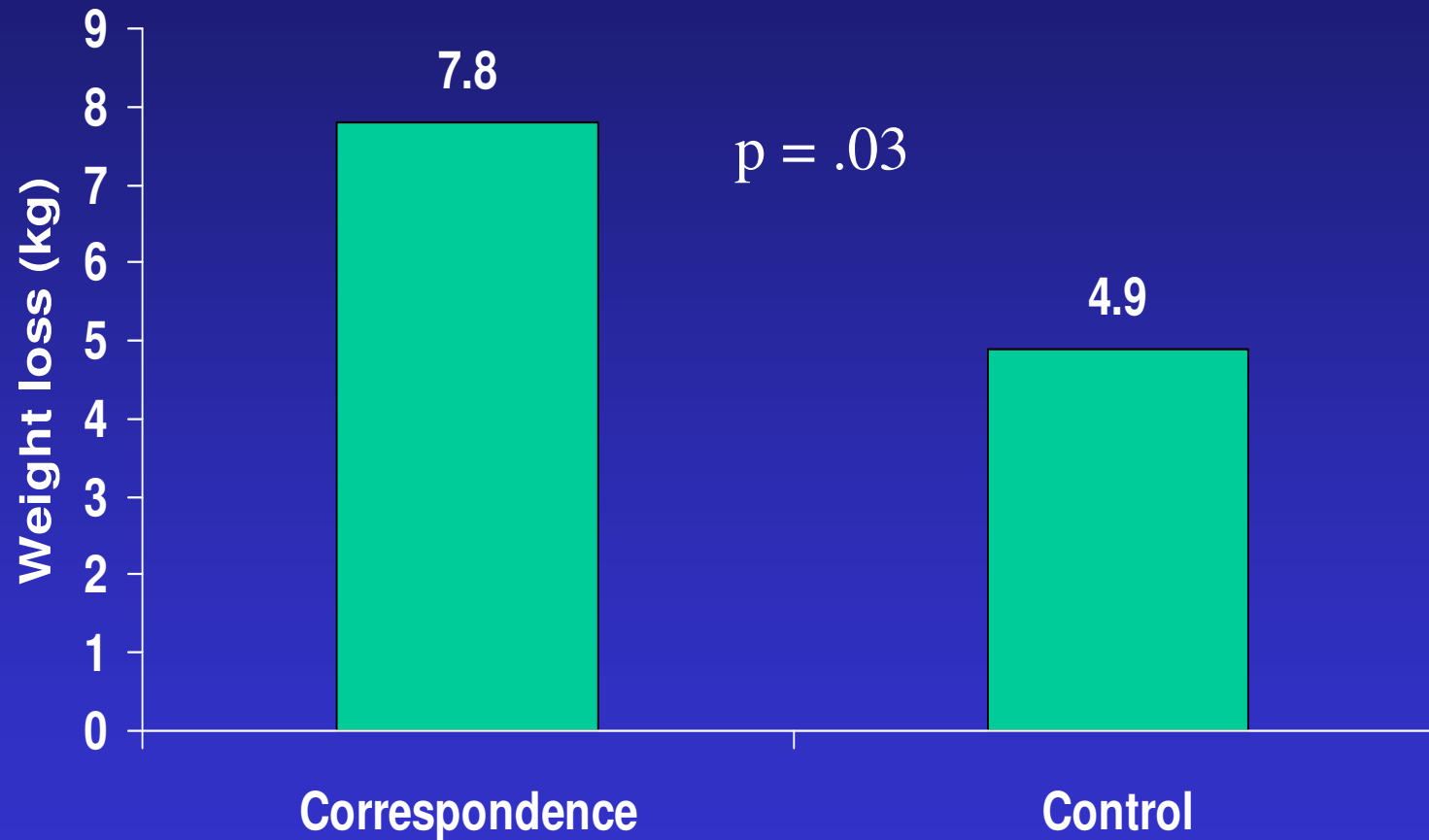
# Design

- Correspondence behavioral treatment
  - 6 month program
  - Two initial group sessions
  - 16-week correspondence materials
  - Telephone contact (weekly or bi-weekly)
- No-treatment control
  - Informational brochures



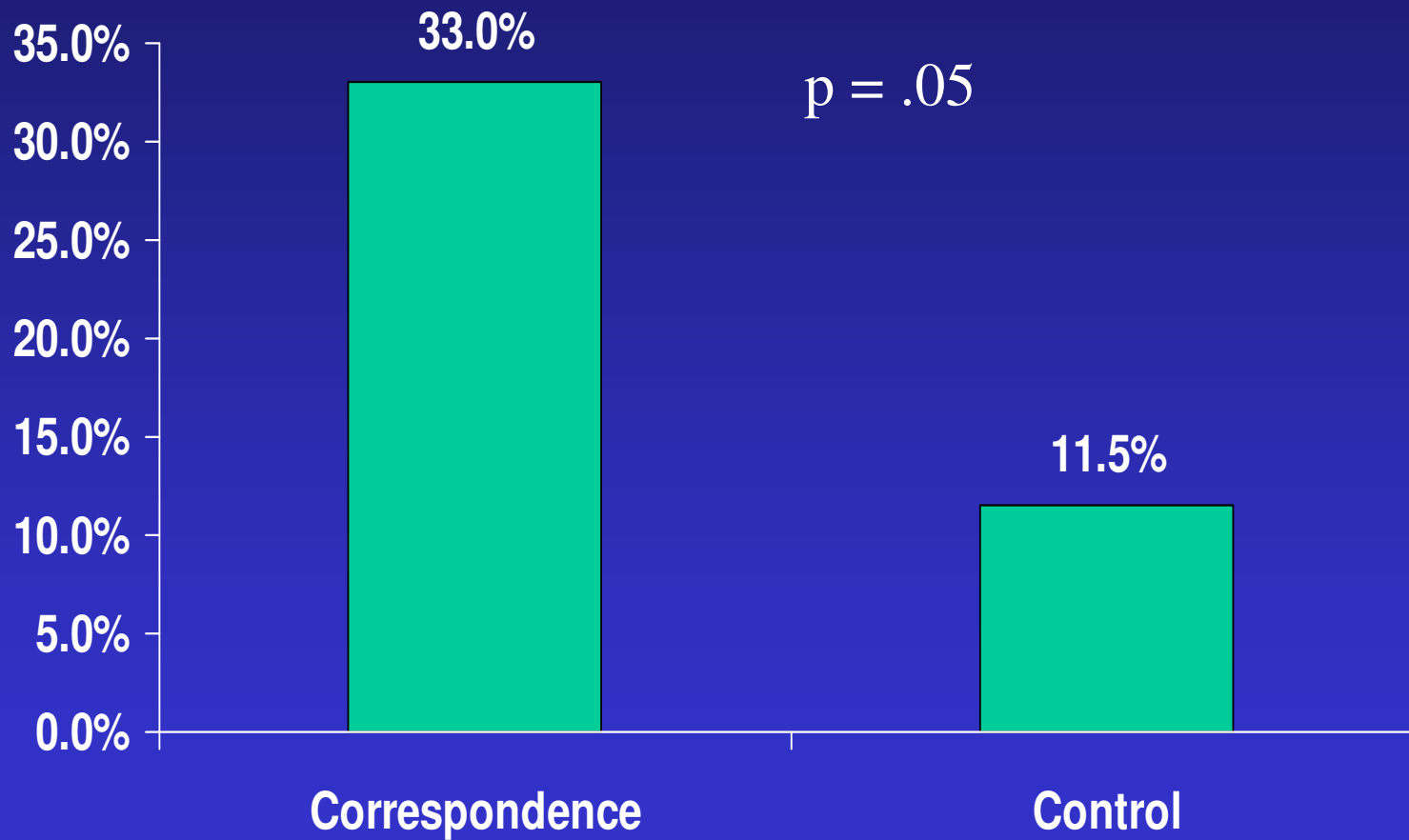
# Results

6-month weight loss (kg)



# Results

Proportion returning to pre-pregnancy weight



# Interventions During Postpartum

## Advantages:

- Can be more intensive

## Disadvantages:

- Burden for new moms (31% attrition in Leermakers et al.'s study)
- Subsequent pregnancies



# Questions

- Best to intervene during pregnancy or postpartum?
- What are the critical components of the intervention?
  - Goal-setting and feedback
  - Diet and physical activity
- Intensity of the diet during pregnancy?
  - Will changing quality of the diet be sufficient?
  - Caloric restriction?

