

The Need for an Integrative Approach to Pediatric Obesity

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Results of Conventional Obesity Treatment

Adults

- Subjects remaining in weight loss programs lose approximately 10% of their weight
- About 50% of weight loss is regained in 1 year
- Almost all of weight loss is regained by 5 years

NIH consensus statement
Ann Int Med 1993, 119:764

Results of Conventional Obesity Treatment

Children

“Most pediatric obesity interventions are marked by small changes in relative weight or adiposity and substantial relapse . . .”

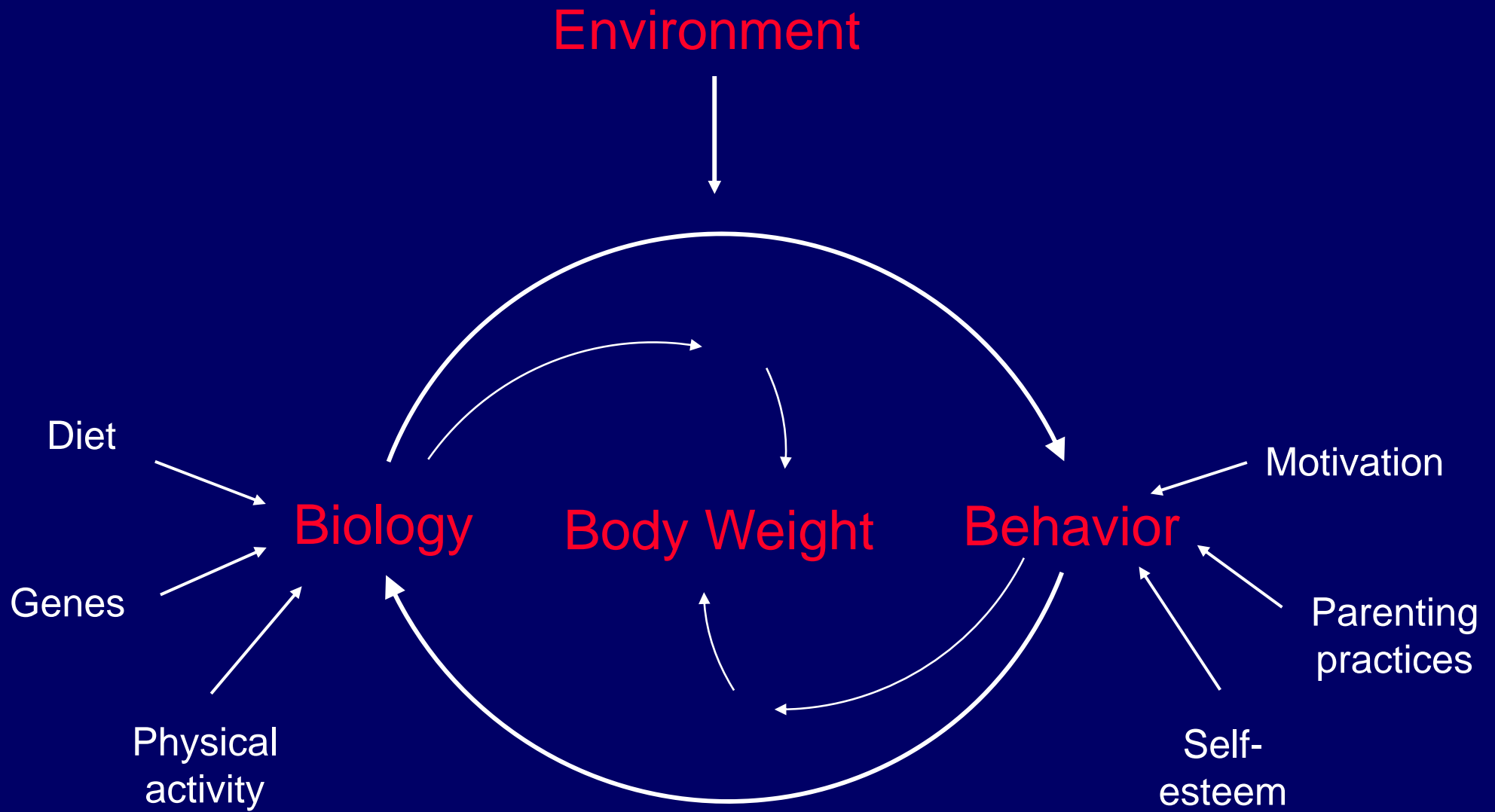
Epstein et al. *Pediatrics* 1998, 101:554-70

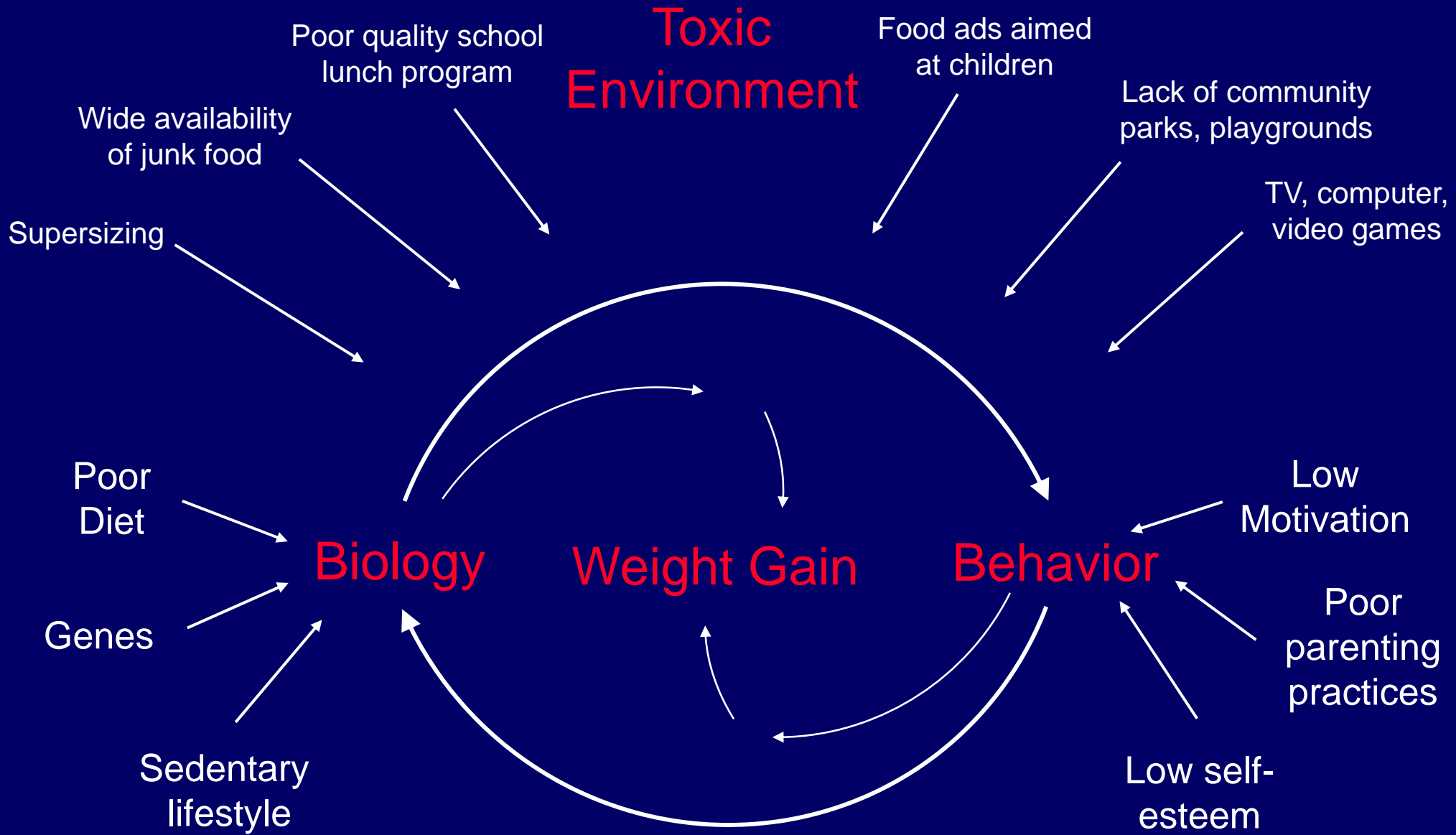
Why have conventional approaches to weight loss been largely unsuccessful?

Biology: The Thrifty Gene Hypothesis

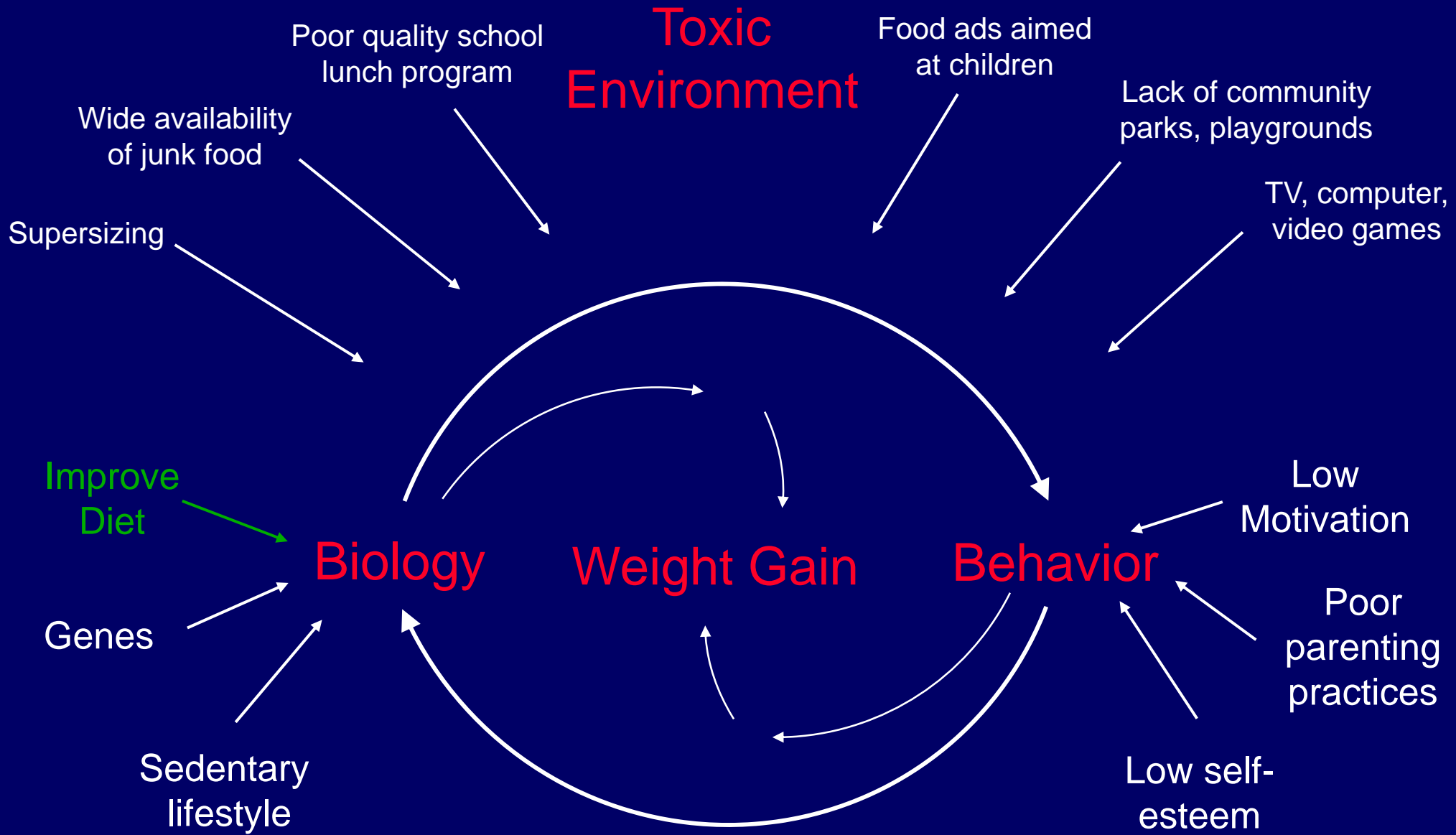
Thrifty Genes and Obesity

- Human populations have maintained relatively stable body weight over time amidst an abundance of food
- However, our genes haven't changed much in the last several decades

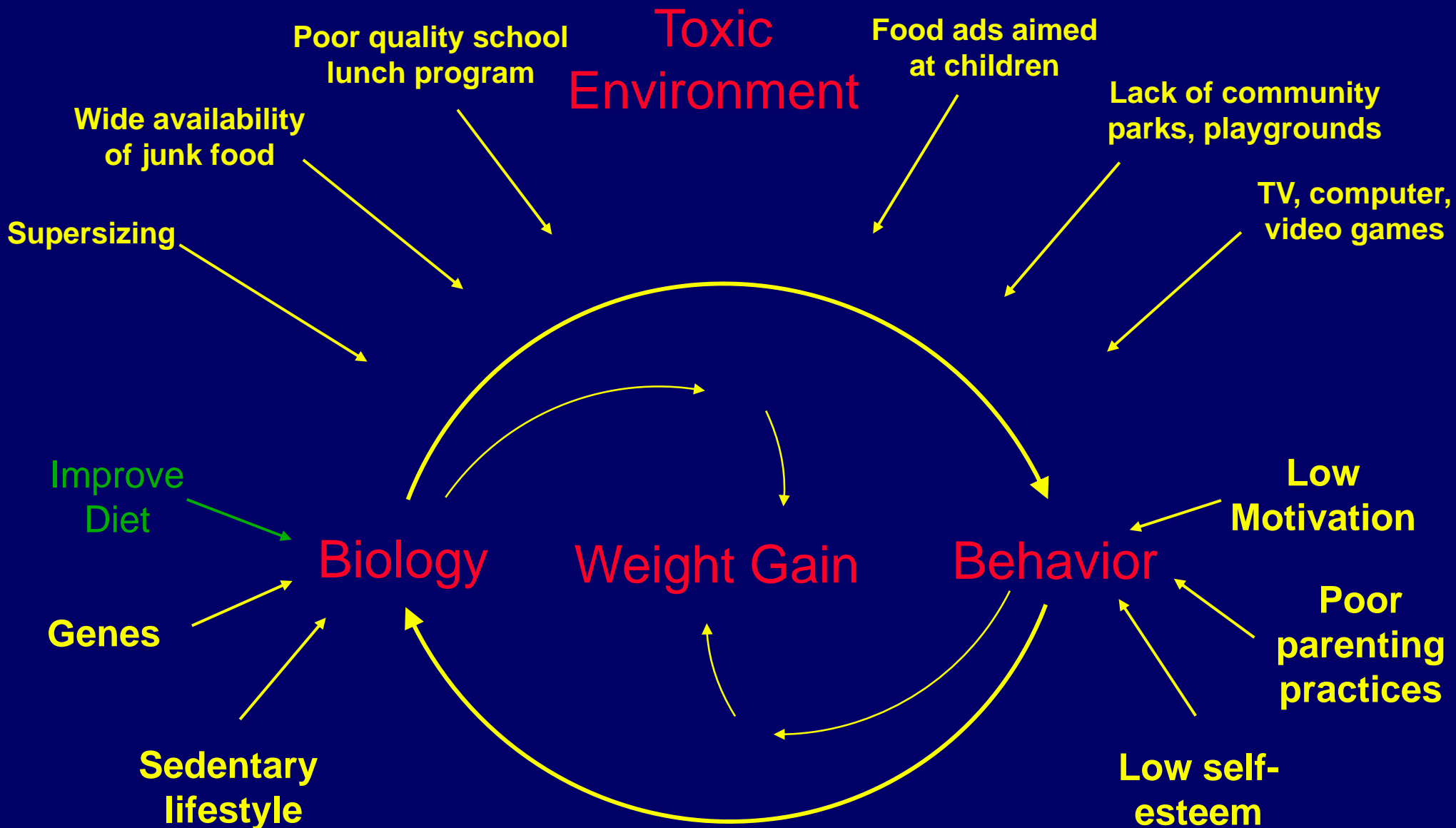




A Vicious Cycle



A Vicious Cycle



A Vicious Cycle

Need for a Integrative Approach

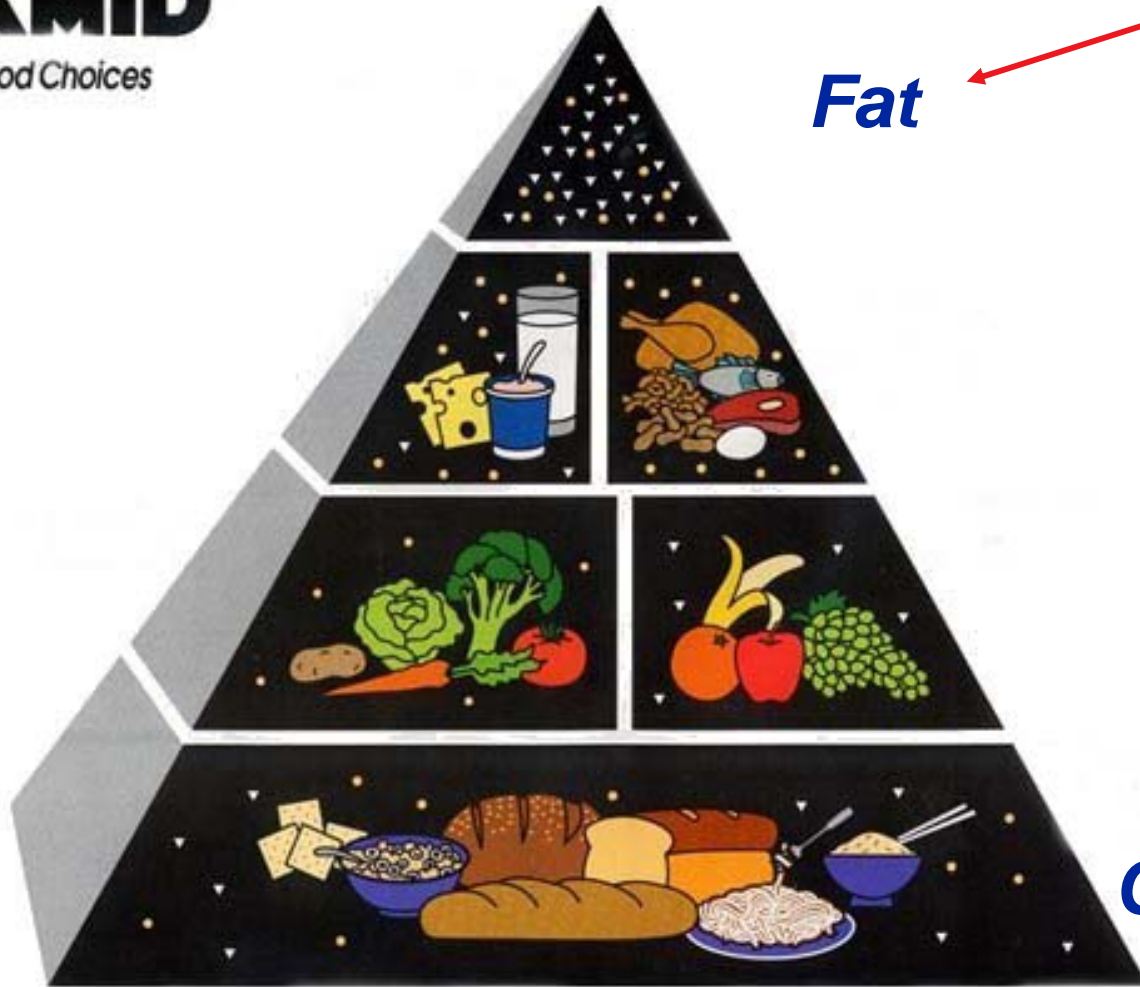
Incorporating a comprehensive approach to :

- Diet
- Physical Activity
- Parenting practices
- Environmental change

Diet

FOOD GUIDE PYRAMID

A Guide to Daily Food Choices



Fat

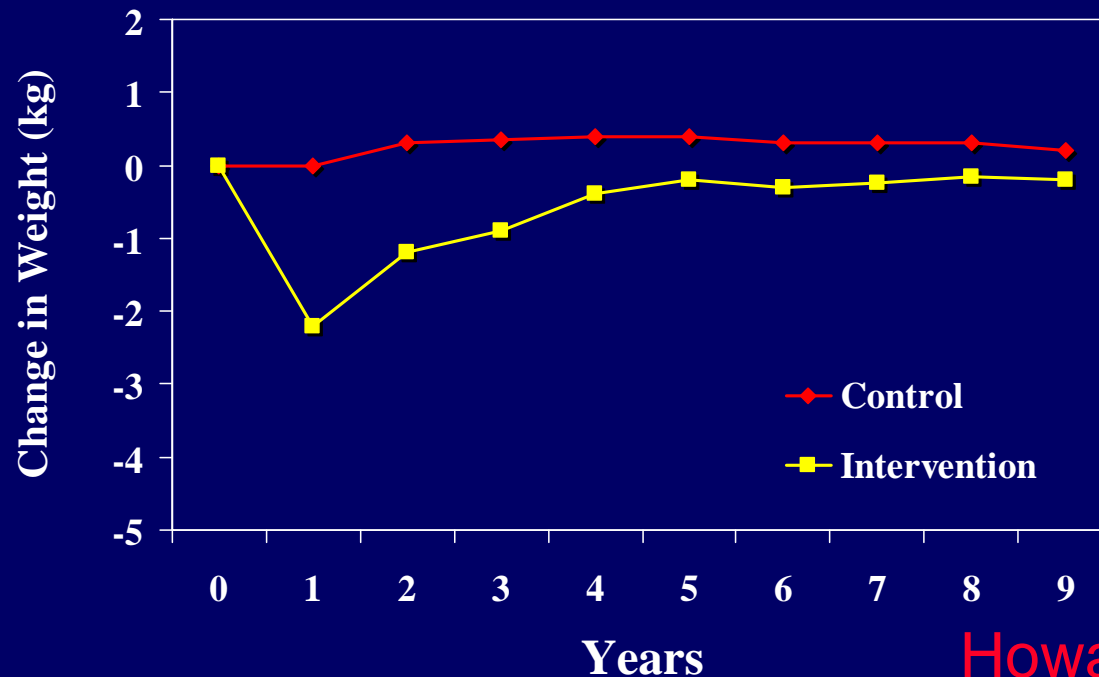
Nutrients

Carbohydrate

A 7-Year Clinical Trial of Diet & Weight

The Women's Health Initiative

- 48,835 women ages 50 to 79 years
- Intervention: counseling sessions to promote a low fat diet
- Control: written education materials
- Dietary fat decreased from 39% to < 30% in the intervention group



Sam
Mendes's
Brilliant
Career
By Lisa
Hirschberg

The New York Times Magazine

JULY 11, 1993 \$3.00



What if Fat Doesn't Make You Fat?

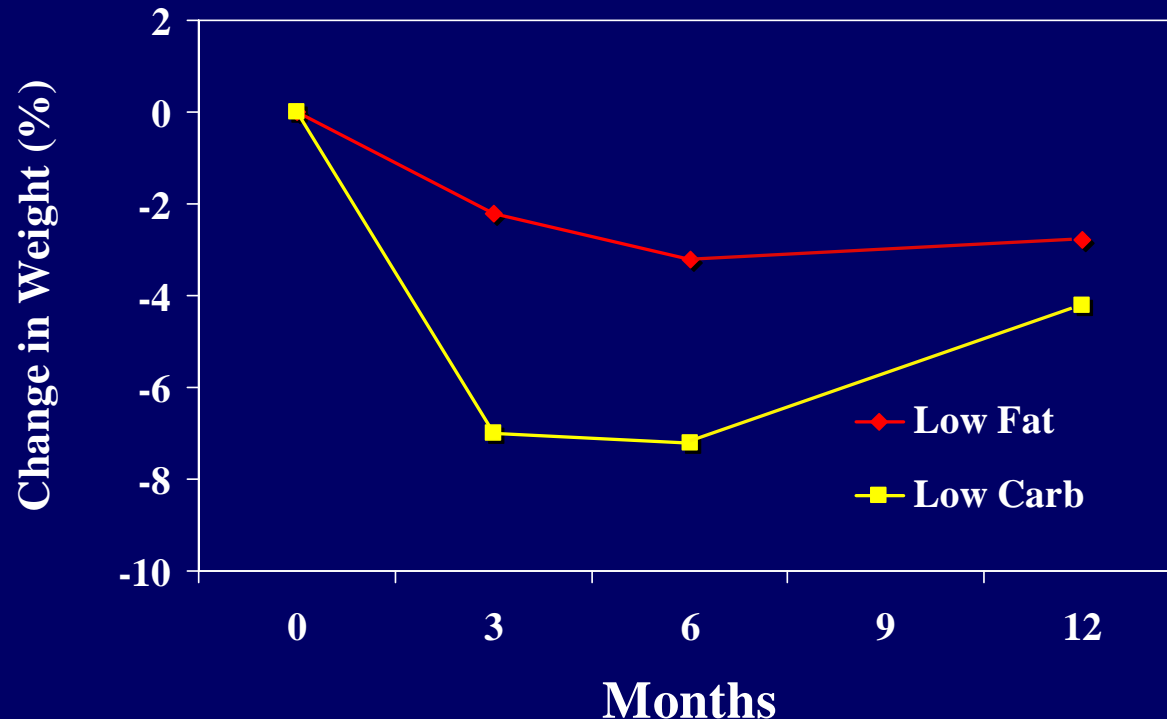
Influential researchers
are beginning to embrace
the medical heresy that
maybe Dr. Atkins was right.

By Gary Taubes

1-Year Clinical Trial of the Atkins' Diet

Foster et al. NEJM 2003, 348:2082-90

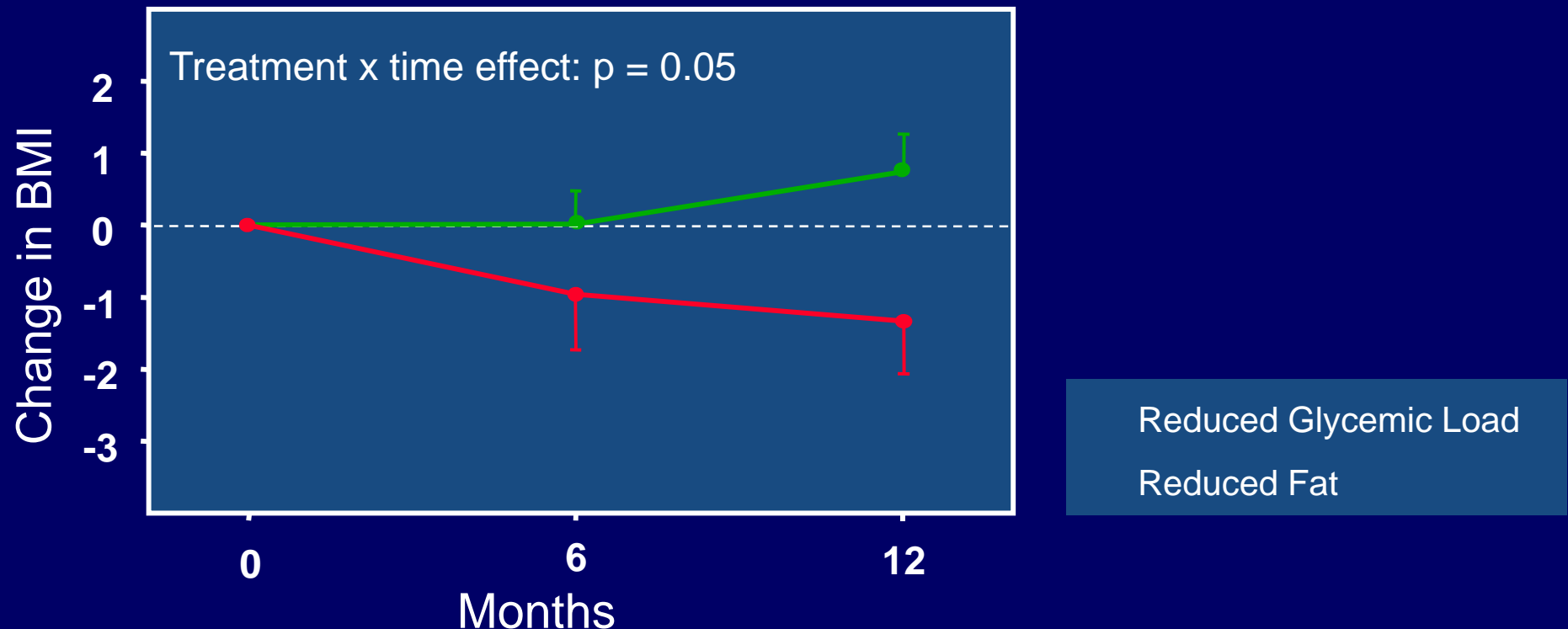
- 63 obese adults
- Intervention: subjects given a copy of Atkins' New Diet Revolution or The LEARN Program (low fat)



Effects of Glycemic Load on Body Weight

Ebbeling, Ludwig. Arch Ped Adol Med 2003, 157:773-9

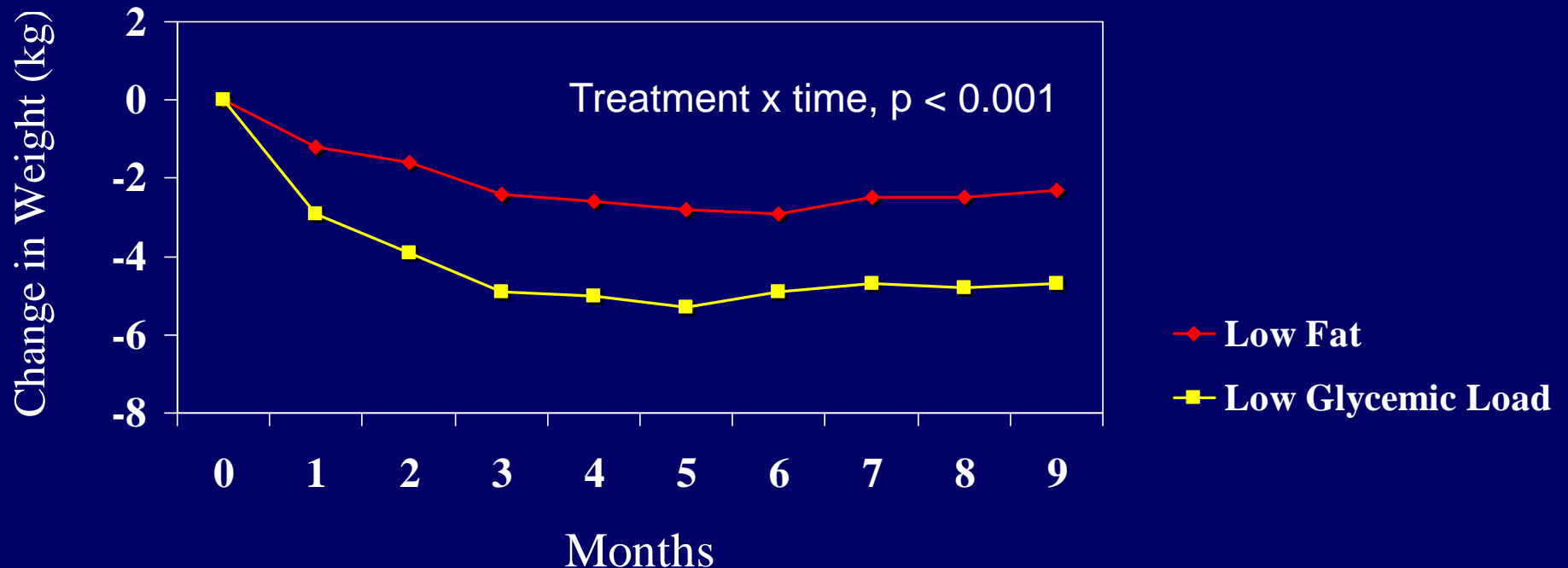
- 16 obese adolescents, age 13 - 21 years
- Diet: Low Glycemic vs Low Fat
- Intervention: Individual counseling sessions (14 total)



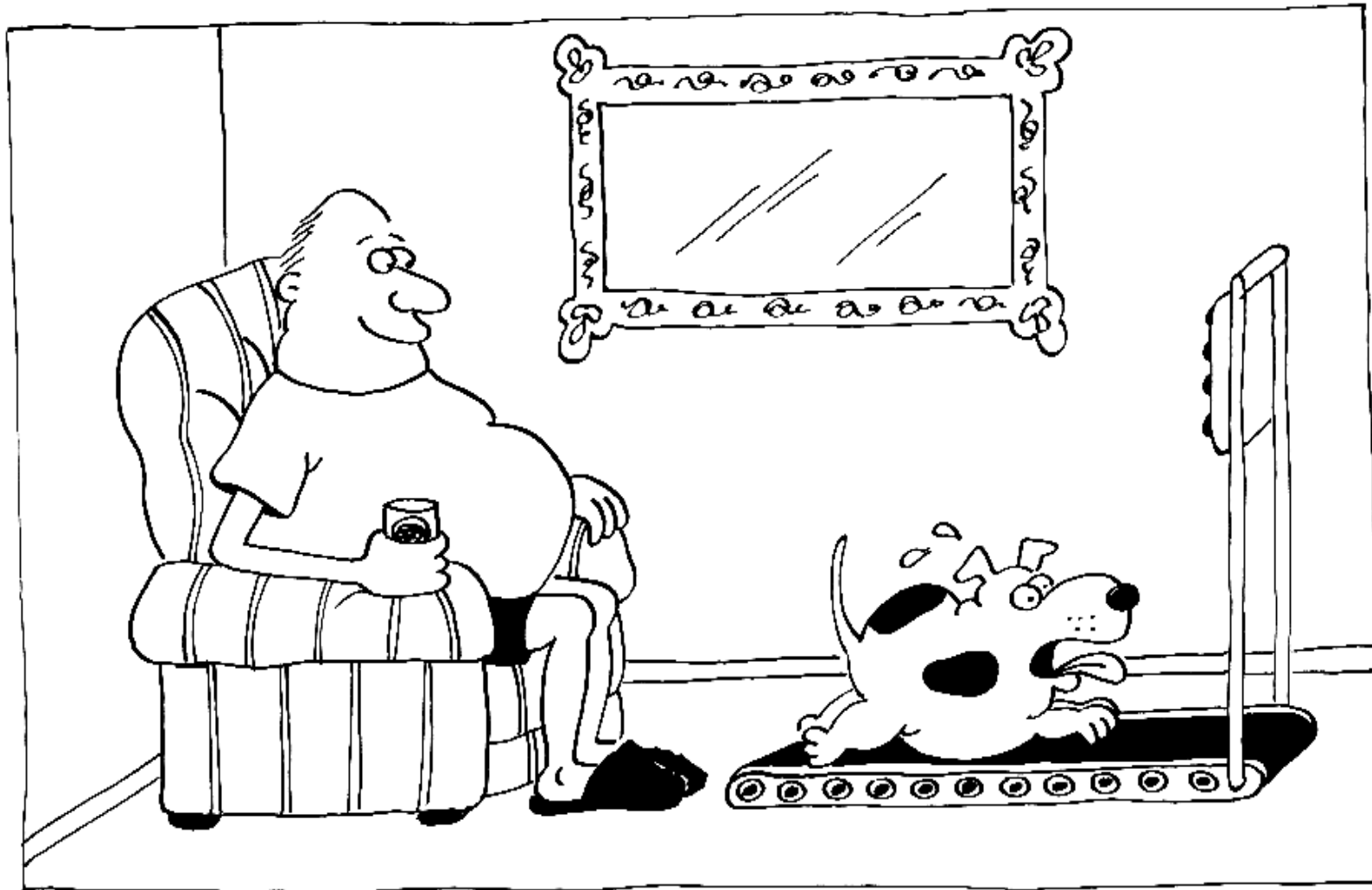
GI & Body Weight: Chronic Effects

Maki et al. AJCN 2007, 85:724-34

- 86 adults ages 18 to 65 years, from the Chicago metropolitan area
- Intervention: ad libitum low GL diet vs energy restricted low fat diet
- Process measures showed significant differences in GI and GL



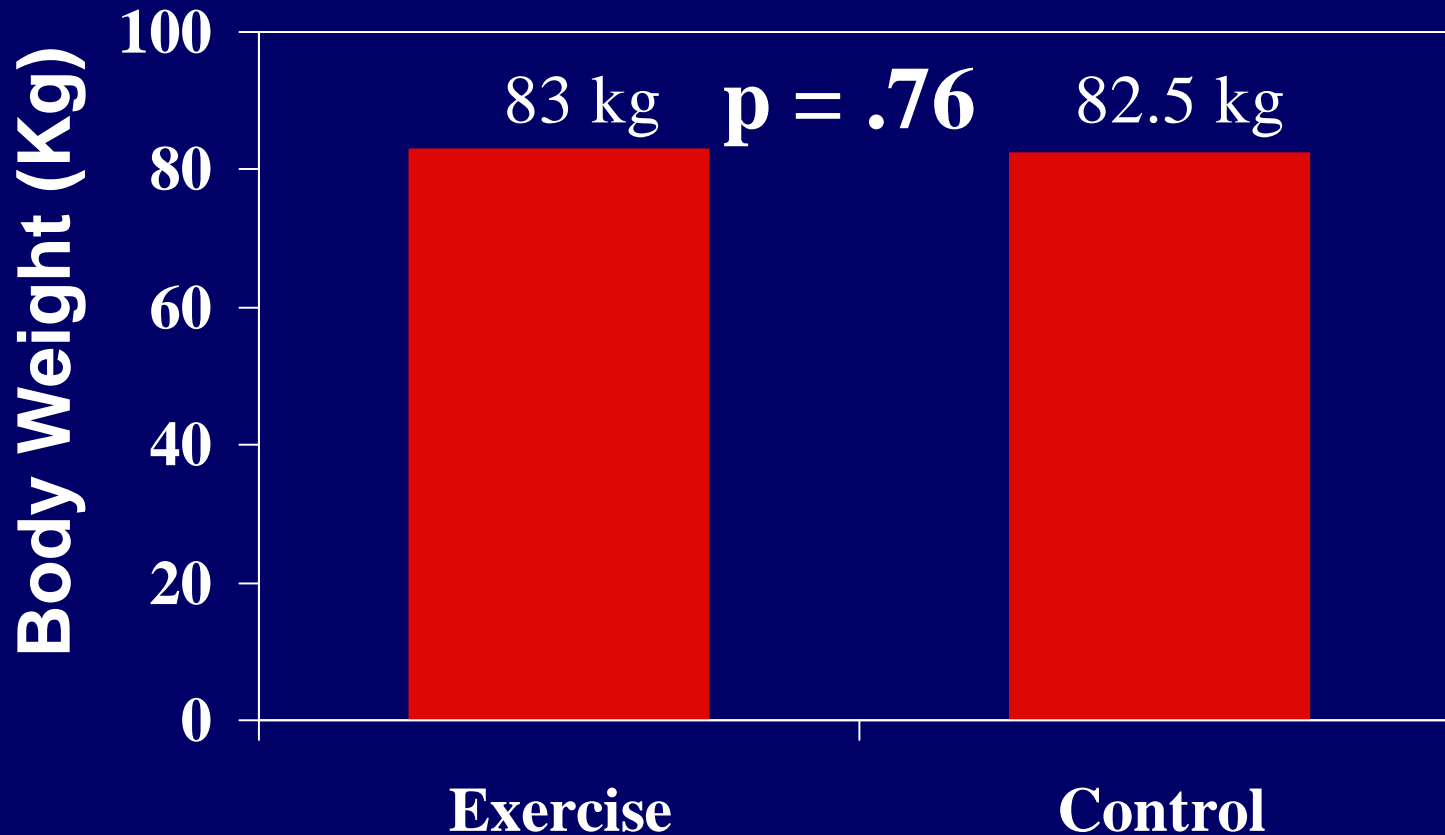
Physical Activity



Courtesy of Garry Egger MPH, PHD

Exercise in the Treatment of Obese Adults

Meta-analysis of 14 studies involving patients with type 2 diabetes



Boule et al. JAMA 2001, 286:1218-27

Exercise in the Treatment of Childhood Obesity

- Design

- 100 overweight boys and girls, ages 7 to 11 years
- Randomly assigned for 3 months to:
 - control
 - low dose exercise (20 min/day)
 - high dose exercise (40 min/day)

- Results

- No difference in BMI

Poor Results of Exercise in Obesity Treatment

A question of energy balance

70 kcal per mile



2,200 kcal



**One super-size fast food meal =
4 mile/day for 1 week**

A More Effective Approach to Developing an Active Lifestyle

Discourage sedentary activities

- No TV during meals
- Remove TV from the bedrooms and living room
- Limit total screen time to 2 hr per day maximum

A More Effective Approach to Developing an Active Lifestyle

Encourage all forms of physical activities

- **Play**
- Sports - traditional and non-competitive alternatives (yoga, biking, jump rope, Frisbee, etc)
- Routine activities
 - Walking rather than taking the car
 - Stairs rather than elevator
- Chores (gardening, mowing the lawn)
- Family outings (beach, hiking, swimming, picnic, etc)
- Being outdoors

Parenting

Child Development

Changing physical and psychological needs with age

- Young children
 - Born with an innate preferences for sweet, salt and fat
 - Programmed to learn about new foods by watching adults
 - Require clear boundaries and limits
- Older children
 - Less influenced by adults, and more so by peers
 - Require increasing independence and responsibility

Child Development

A common error in parenting practice

- Parents often raise young children without clear guidance
 - TV and the food industry fill the gap
 - Very poor diet and activity habits become ingrained
- When weight problems develop, parents often employ coercive behavior change methods (punishment, criticism, food restriction)
 - Teaches child what **not** to do, rather than what to do
 - Leaves child feeling upset (no one learns well when upset)
 - Prevents child from internalizing responsibility for behavior
 - Increases conflict at home

A More Effective Approach to Parenting

Age-appropriate practices

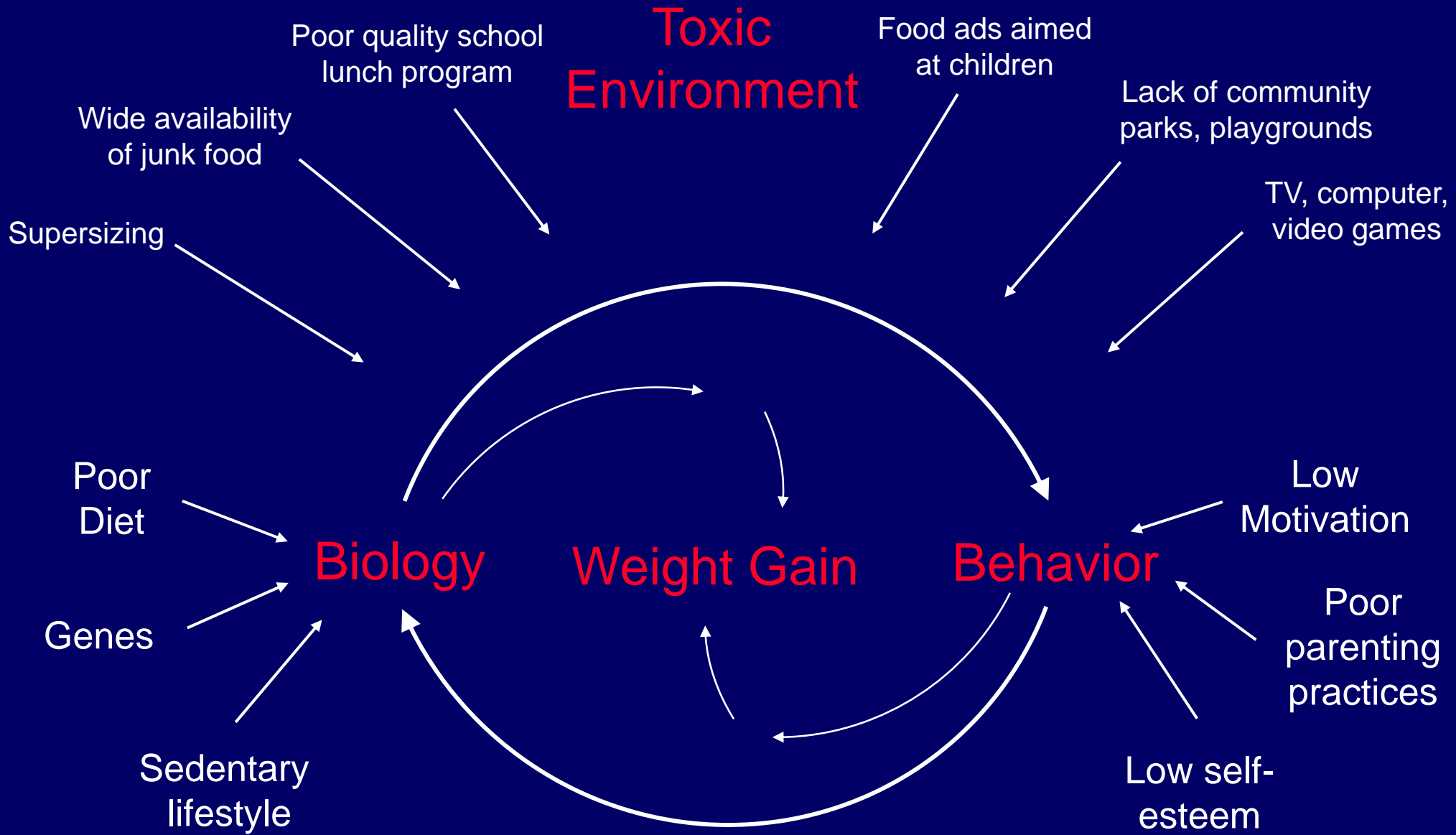
- Establish a parent-directed system, with clear limits, for young children that transitions to a child-directed system over time
- Benefits:
 - Works with, not against, child's psychological needs
 - Avoids/reduces conflict
 - Supports the parent-child relationship
 - Encourages child to develop into a responsible adult

An Innovative Approach to Parenting

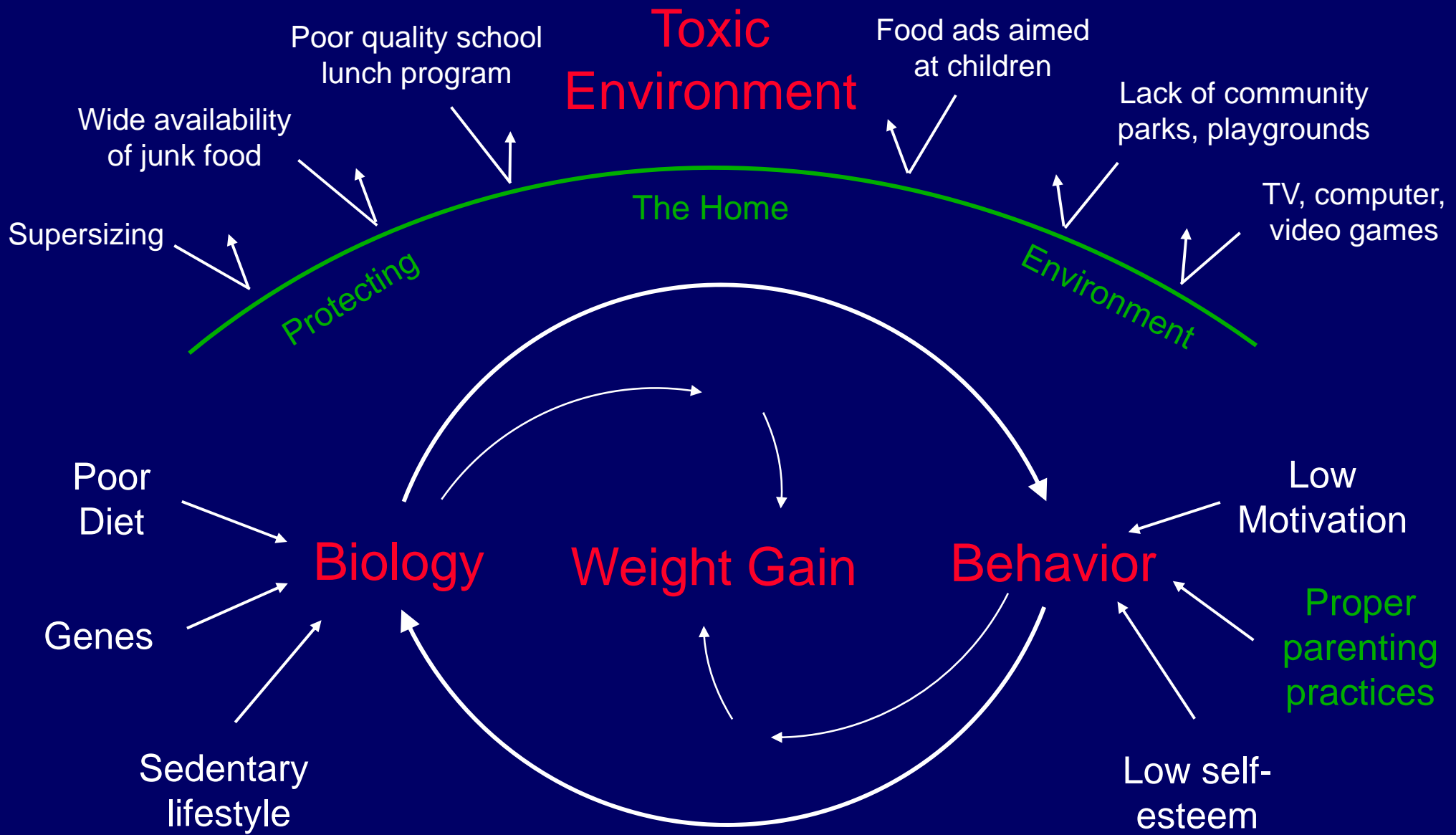
Constructive methods

- **Protecting the home environment**
- **Modeling**
- Praise
- Rewards
- Contingency management
- Setting goals
- Self-monitoring
- Anticipating obstacles
- Redirecting
- Empowerment

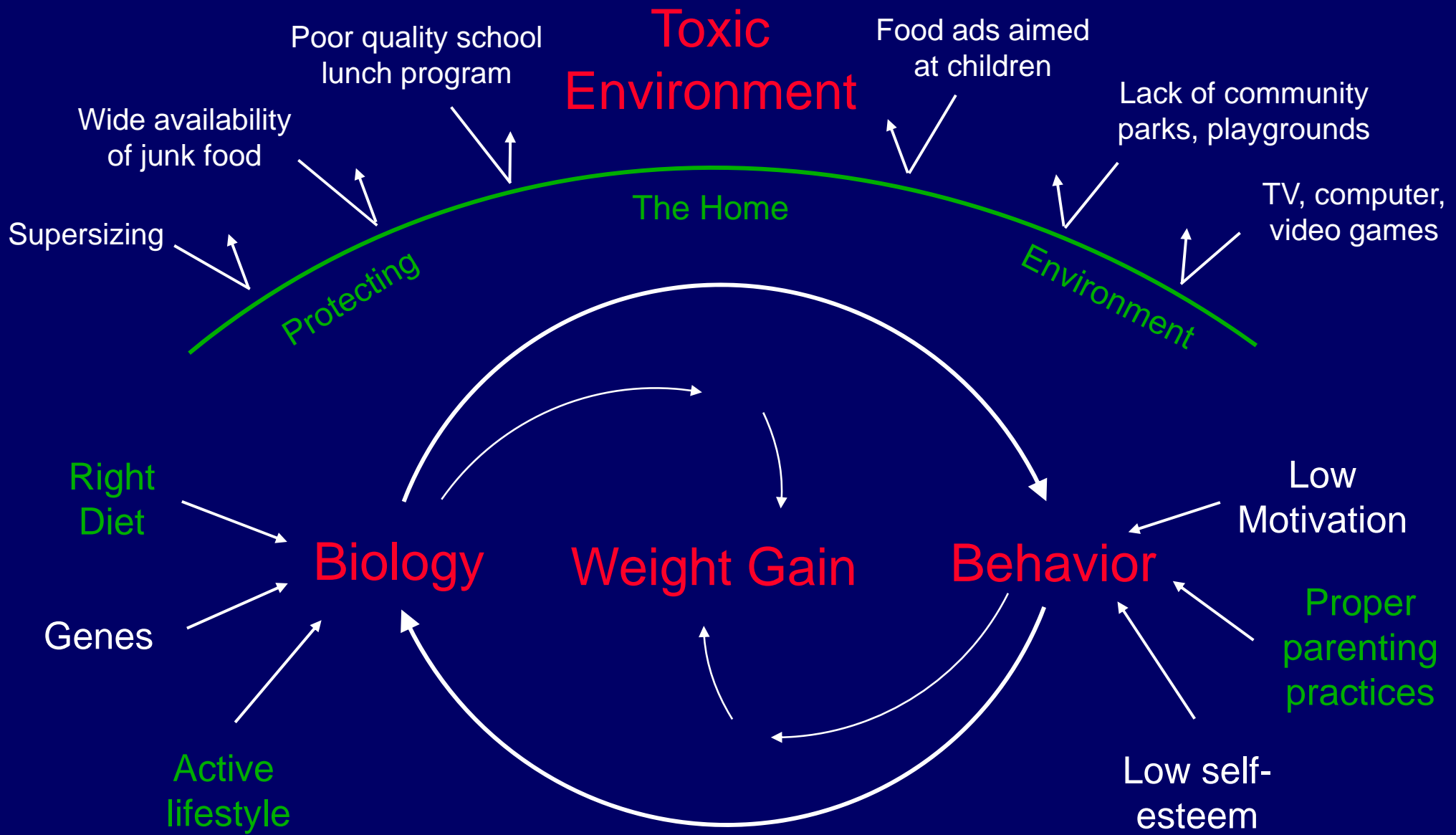
An Integrative Approach to Childhood Obesity



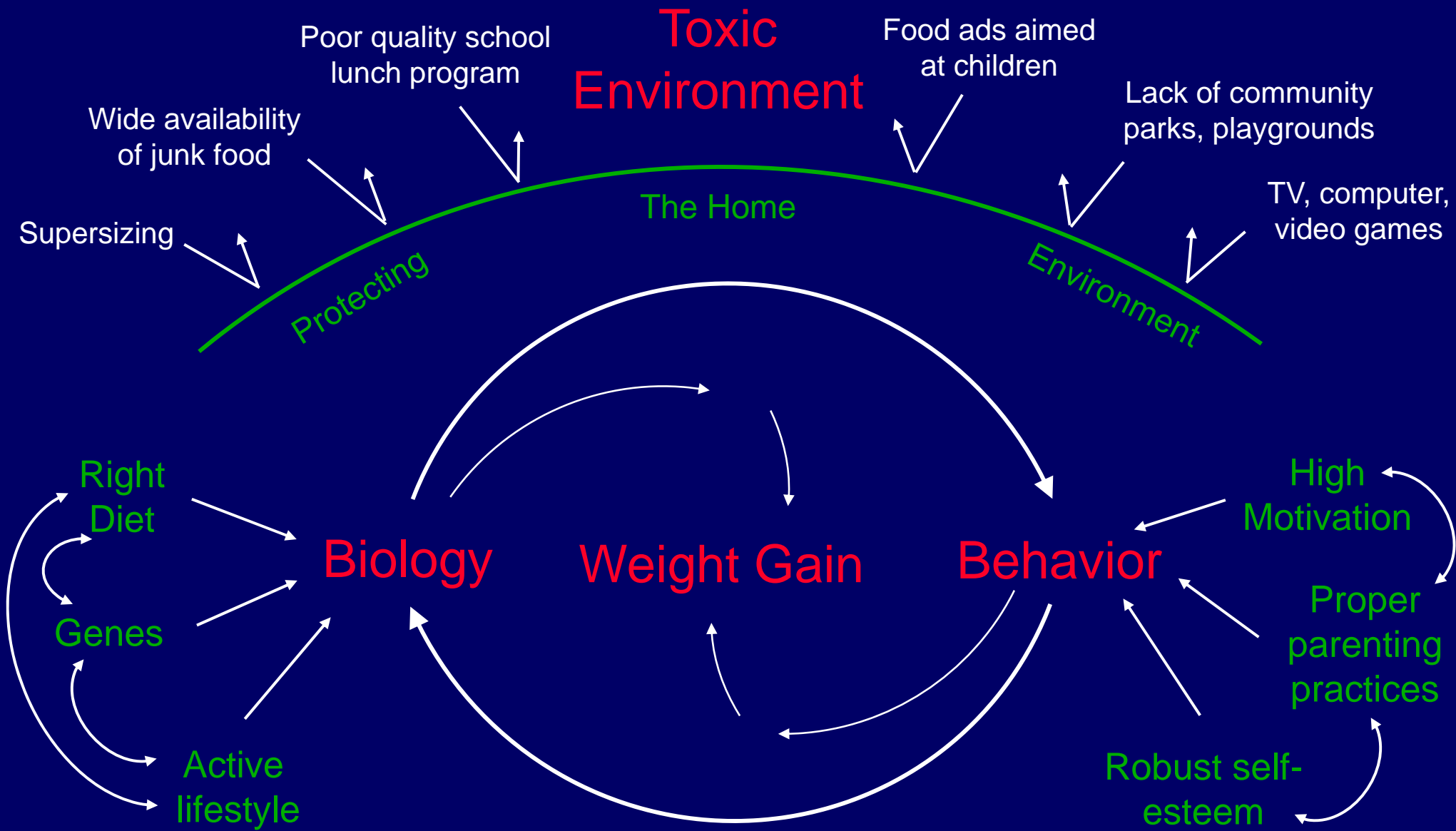
A Vicious Cycle



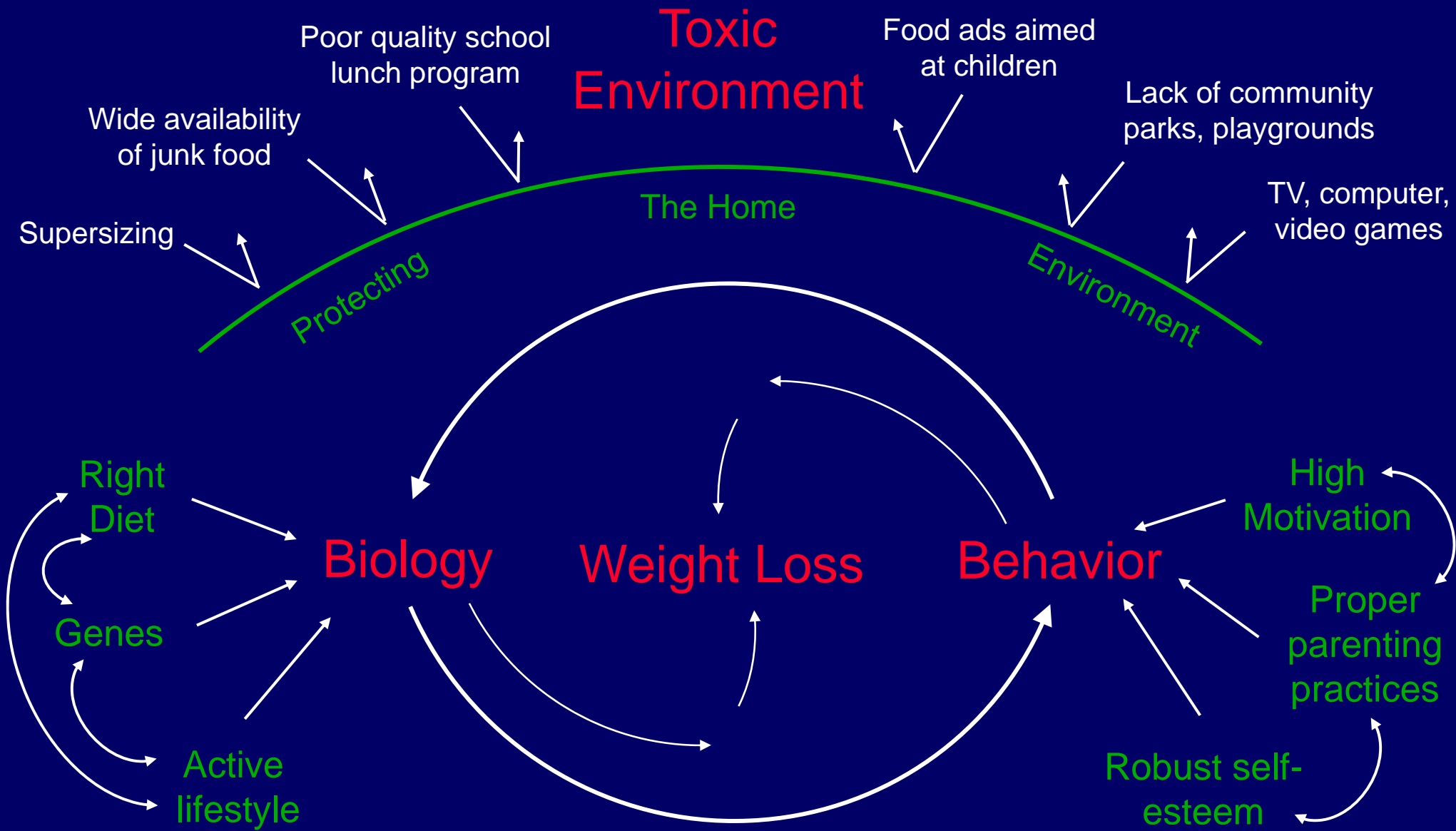
Breaking the Vicious Cycle



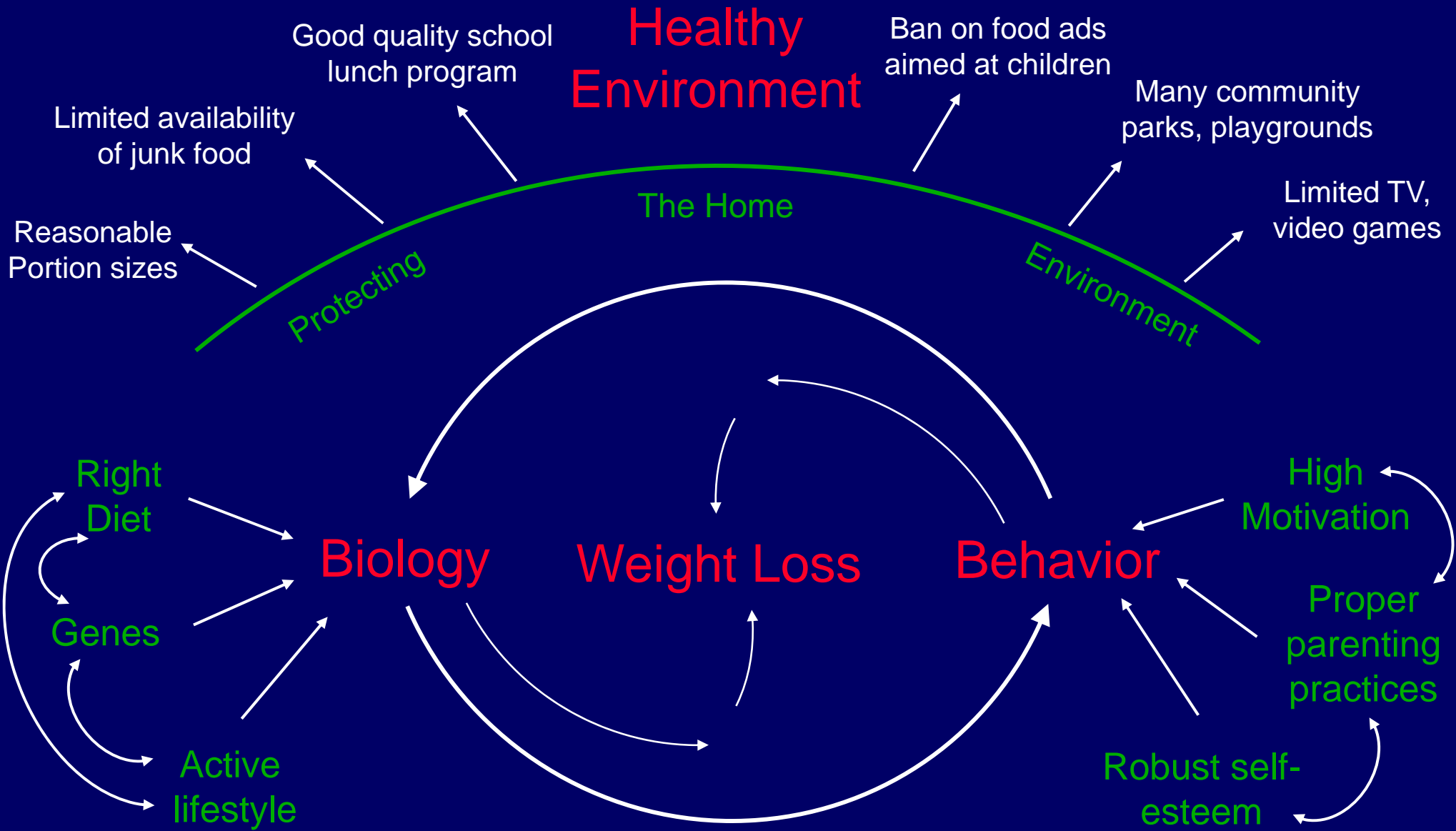
Breaking the Vicious Cycle



Breaking the Vicious Cycle



A Victorious Cycle



A Victorious Cycle

Issue: Food advertisement aimed at children

Recommendation: Pass federal legislation regulating food advertising to children

Rationale: The *American Academy of Pediatrics* and the *American Psychological Association* have declared that advertisement to young children is inherently manipulative and unethical. Most food advertisements today are for extraordinarily high calorie, poor quality products. When children see these advertisements, they eat more of the featured foods, and less of unadvertised foods (ie, vegetables, fruits and whole grains). A ban on such practices will support parents' efforts to improve the quality of their children's diets.

Issue: Bias in nutrition research funded by industry

Recommendation: Improve National Institutes of Health funding for nutrition research

Rationale: Recent studies have found that scientific articles funded by a food company are overwhelmingly more likely to be favorable to the financial interests of that company. This bias may have a corrupting influence upon the scientific basis for public health recommendations on diet. Efforts to require disclosure of “duality of interests” do not appear to protect against this bias. In view of the importance of diet on health in general, and body weight in particular, objective research is vital. Increased government funding will decrease the attractiveness of industry money to scientists, and dilute the effect of any remaining bias.