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Prevalence of Iron Deficiency in Division III Female Athletes

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Prevalence of Iron Deficiency in Division III Female Athletes

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Role of Iron in the Body

- **Hemoglobin**
 - Gas exchange
- **Myoglobin**
 - Oxygen storage in muscle



Dietary Iron

- **Heme Iron:**
 - Animal sources
- **Non-Heme Iron:**
 - Both plant and animal sources
- **Calcium** is known to inhibit dietary iron absorption

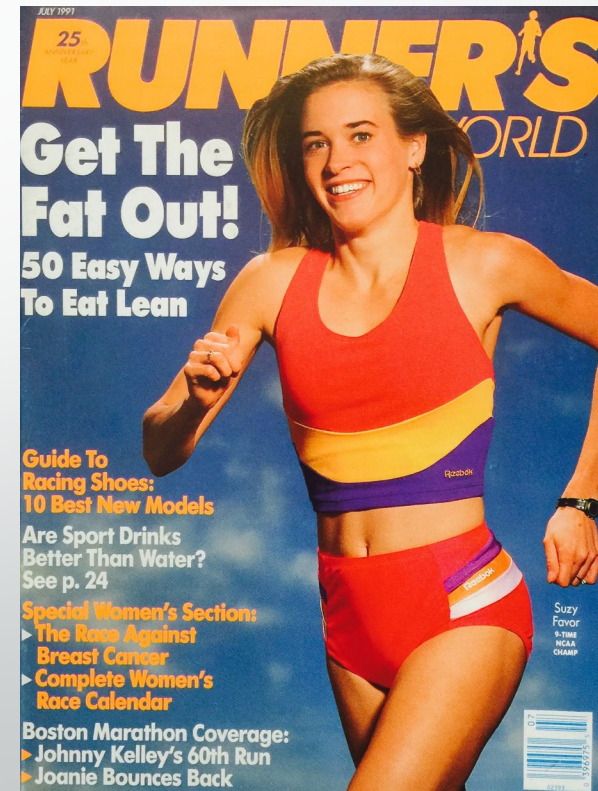


Iron Deficiency

- **High risk group:** women of reproductive age
- **Nutritional iron deficiency:**
 - When dietary iron absorption is inadequate for the body's physiological requirement
 - Leading cause of anemia
- **Symptoms:**
 - Fatigue
 - Dizziness
 - Increased heart rate
 - Palpitations
 - Shortness of breath

Iron Deficiency in Female Athletes

- **Common** (with or without anemia)
- Routine iron screening is atypical
- Distorted body image



ESPN: *Body Image Confidential*

- Anonymous survey of 201 Division I female athletes:
 - **68%** reported a “pressure to be pretty”
 - **35%** reported that they knew of a teammate with an eating disorder
 - **44%** said no, while **21% were unsure**

Implications

- Lack of caloric intake may lead to low iron levels
- Leading to subsequent fatigue
 - Poor performance
 - Injury

Purpose

- To determine the difference between the dietary iron intakes of SUNY Cortland cheerleaders versus peers that do not compete in high-intensive competition

Methods

- Participants: females, 18-22 years old
 - 9 SUNY Cortland cheerleaders
 - 9 students that are not high-intensity athletes (Control Group)
- 7-day food recall
- MyDietAnalysis to examine nutrient intake



Statistical Analysis

- Microsoft Excel T-Test comparison between cheerleaders and controls
- Significance established at $p < 0.05$

Figure 1. Iron Levels of Cheerleaders v. Control Group

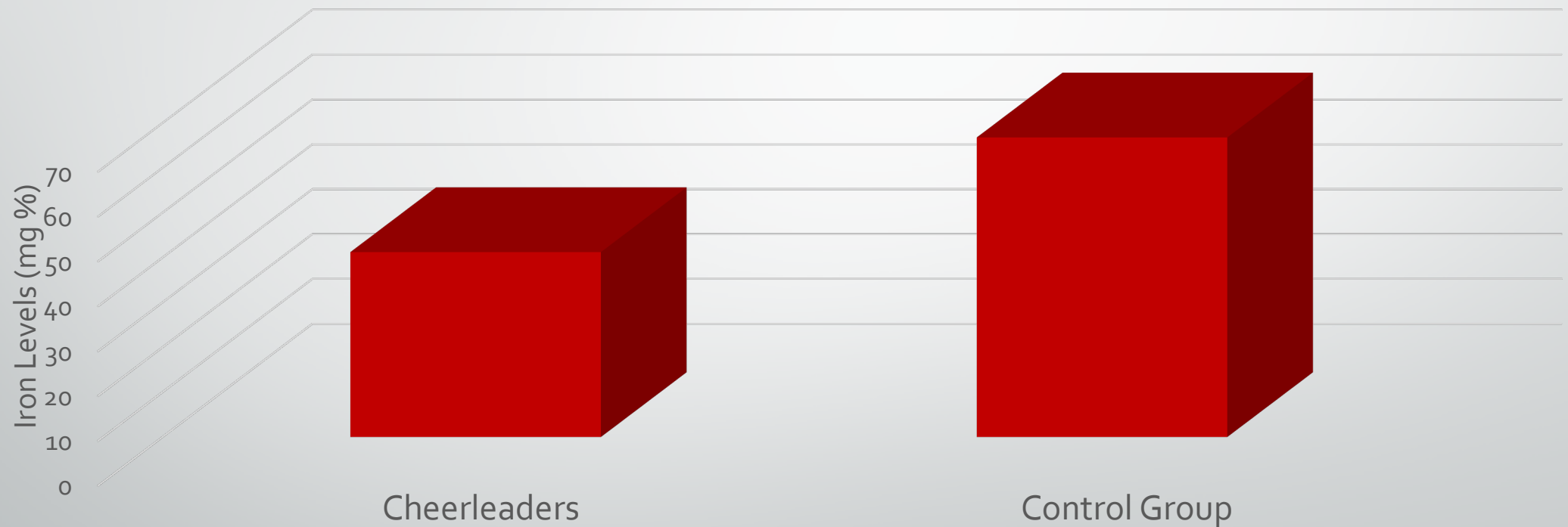


Figure 2: Calcium Levels of Cheerleaders v. Control Group

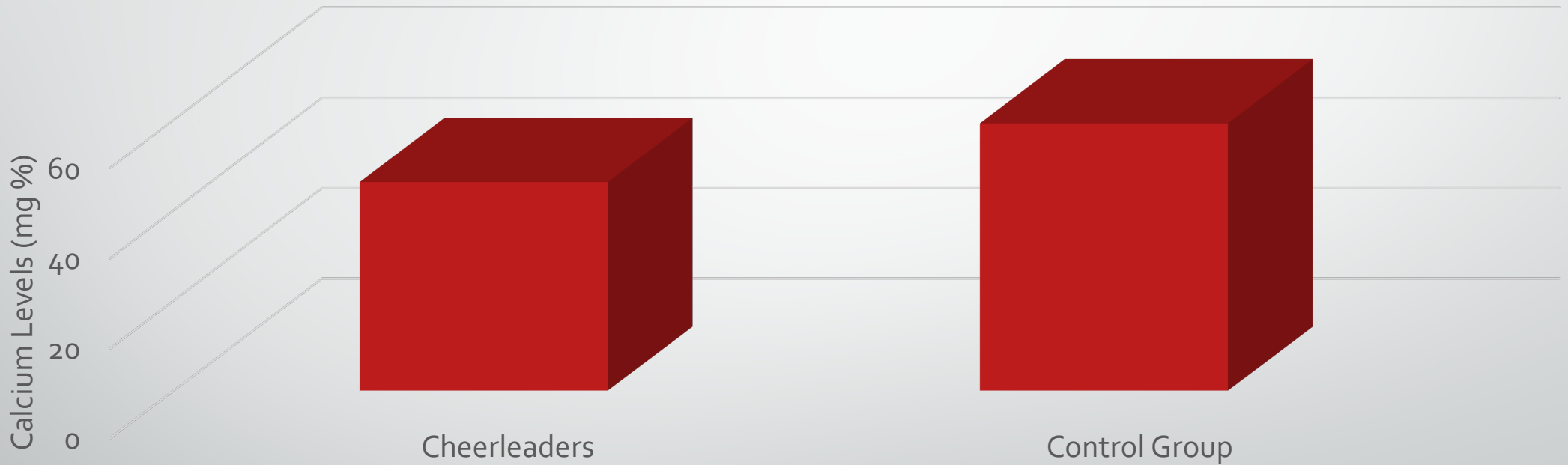
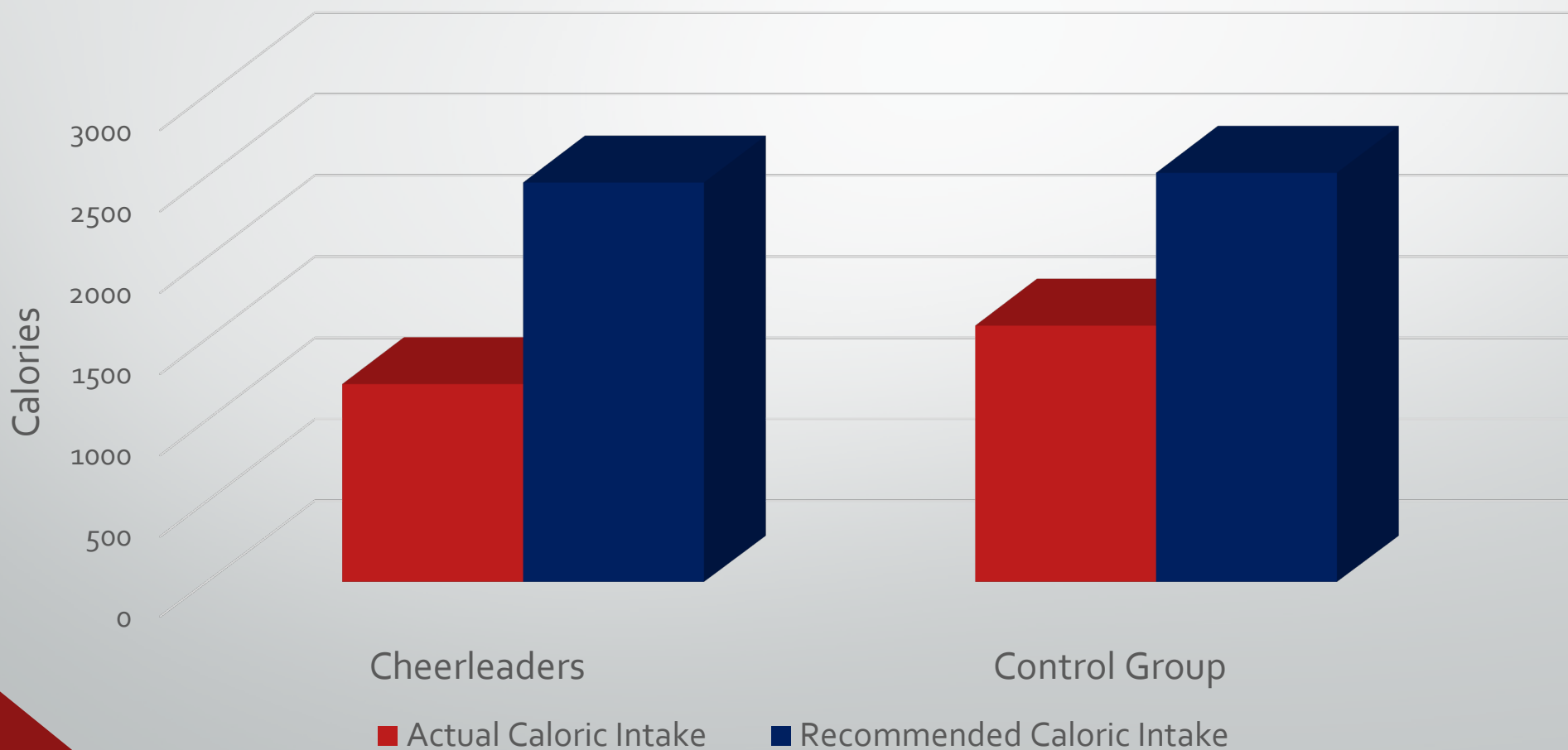


Figure 3. Caloric Intake of Cheerleaders v. Control Group



Conclusion

- Based upon the 7-day dietary survey, SUNY Cortland (DIII) cheerleaders were observed to have significantly lower iron and caloric intakes than peers who did not compete in high-intensive competition.

Recommendations

- Education to increase self-efficacy and nutritional awareness
 - Based upon **Social Cognitive Theory**:
 - To achieve changes in behavior, there must be a personal sense of control

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