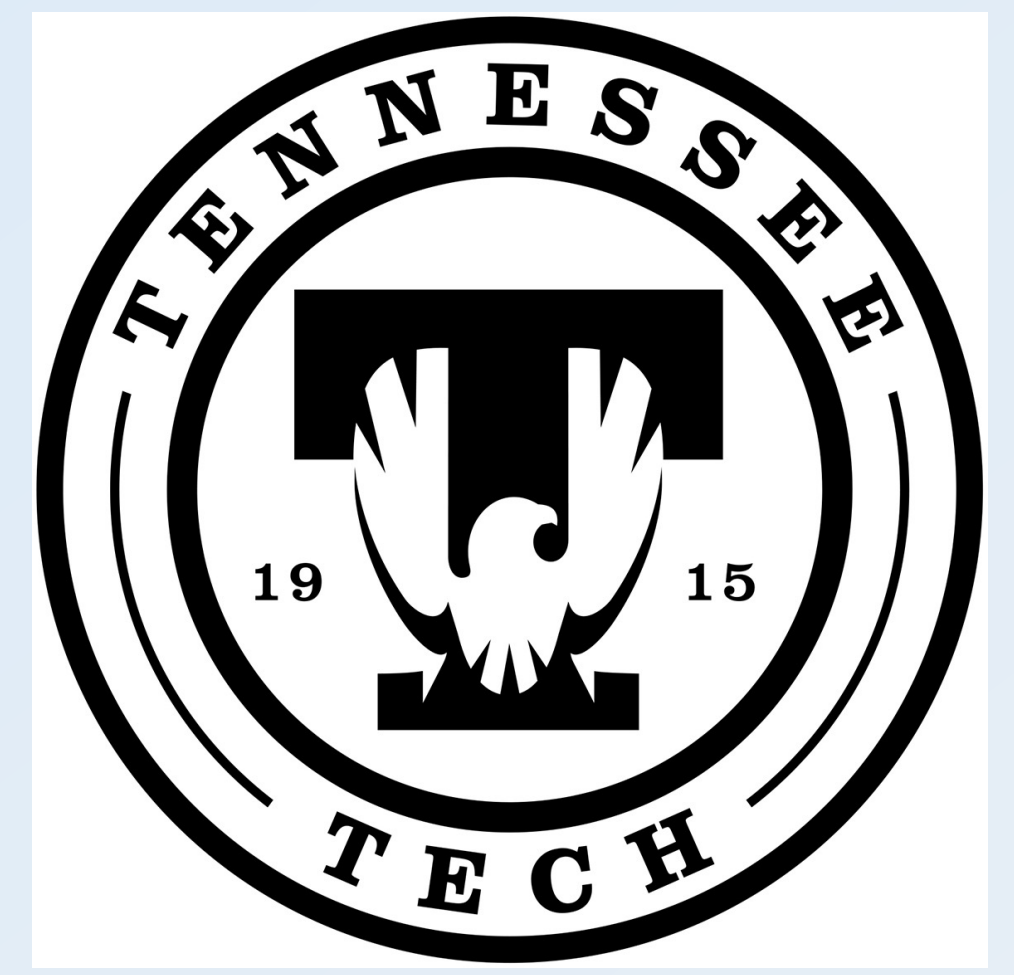


# The Relationship Between the Anabolic Window and Strength and Body Composition

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## Background

- The study of nutrient timing was first conceptualized in the 1970s and 1980s.<sup>1</sup>
- The initial work only examined the effects of increased carbohydrate feedings on glycogen status and exercise performance.<sup>1</sup>
- The "anabolic window" can be described as the time frame that people believe the best in which to consume nutrients around an exercise bout.

## Methods

- The Tennessee Technological University's Library database, Google Scholar, and The Journal of the Academy of Nutrition and Dietetics was used to search for the literature.
- Search was narrowed down to peer-reviewed articles that were published within the last 10 years.
- Keywords: whey protein, supplementation, carbohydrate, body composition, body mass index, anabolic window, meal timing, protein timing, bodybuilding, and nutrient intake

## Discussion

- Cribb and Hayes<sup>2</sup>: single-blind, randomized design to examine the effects of supplementation throughout an entire day, as well as the "typical" pre- and post- anabolic window. Results showed there were statistically significant changes in body composition and increases in strength
- Schoenfeld et al<sup>3</sup>: an experimental design study that assessed muscle strength, hypertrophy, and body composition in relation to protein timing. Overall results showed no significant changes between the two groups
- Kume et al<sup>4</sup>: studied the effects of protein timing on muscle protein breakdown and muscle anabolism. This study concluded that nutrient dense meals after RE produces better muscle anabolic effects
- Pihoker et al<sup>5</sup>: a study that examined the effects of pre- and post- nutrition on strength and body composition in already resistance-trained females. Overall, upper body strength seemed to be more responsive than lower body strength. No significant differences in body composition between the groups
- Nabuco et al<sup>6</sup>: a study conducted to examine the effects of whey protein supplementation pre- and post-workout in pre-conditioned older women. Results showed an increase in strength, muscle mass, and upper and lower limb soft tissue with pre- and post-supplementation
- Esmark et al<sup>7</sup>: investigated the importance of protein timing post-workout in elderly men. Results showed no significant differences in strength, but slight changes in lean body mass.

## Limitations

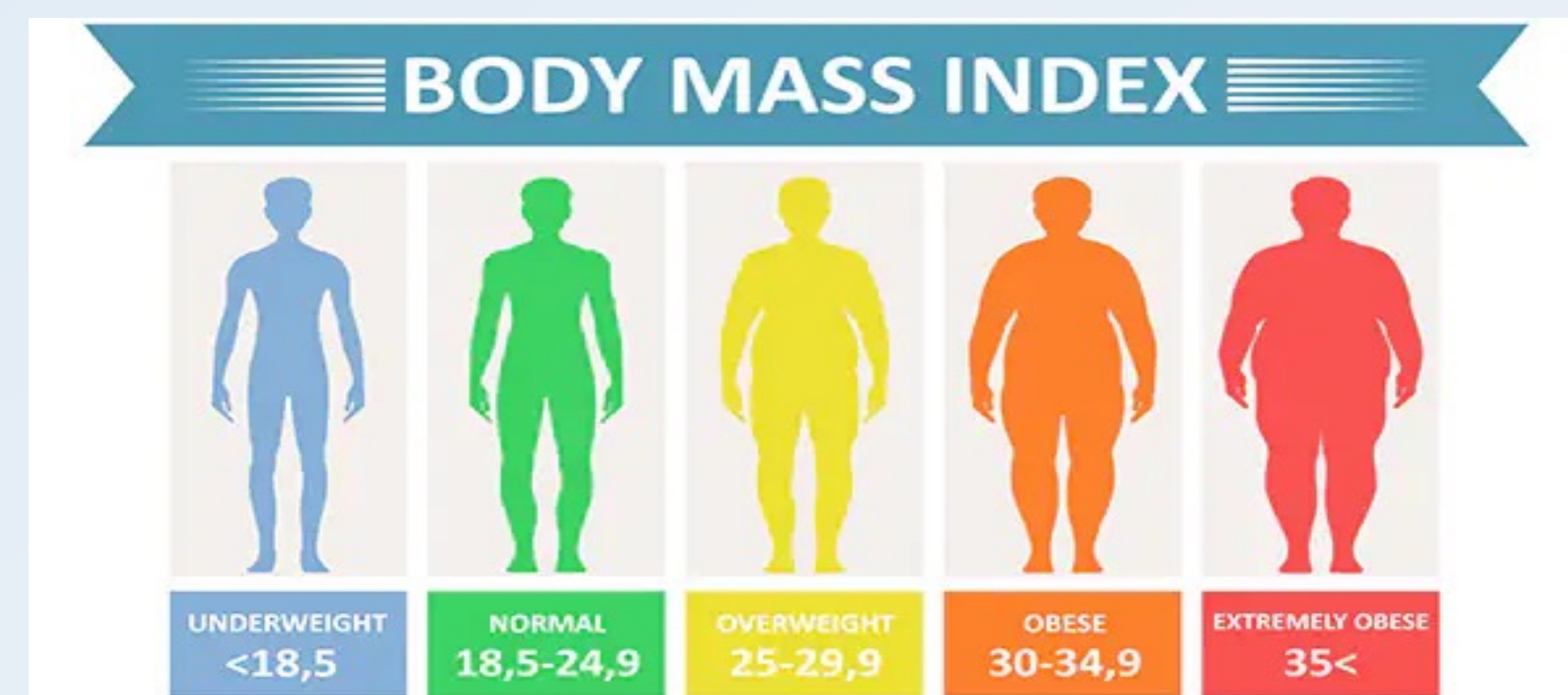
- Small sample sizes
- Only examined healthy individuals
- None of the studies assessed sleep habits
- The studies that used females did not take birth control usage into account
- A few of the studies did not track the participants' activities outside of the study protocol

## Implications

- Protein is essential for building muscle and changing body composition, such as losing fat mass while gaining lean mass.
- RDNs need this information when providing services to the population who participates in these activities.

## Conclusion

- The results of the reviewed studies showed mixed results.
- There are gaps in the literature that could be bridged by research including factors such as sleep, more control, larger sample sizes, and different training styles



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