



What's Fueling You? Pre-and-Post Workout Snacks For College Students



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Abstract

A nutrition education session was implemented at Eastern Illinois University Student Rec Center to inform students on the consumption of proper workout snacks before and after physical activity. The goal of the program is to increase the overall knowledge of healthier pre- and post-workout snacks for college-aged individuals. The goal of our program was to increase the overall knowledge of healthier pre- and post-workout snacks for college-aged individuals.

College students desire fast and easy snacks, and are more likely to skip meals either because of their schedule or finances. This population has a need for increased fruit, vegetable, low-fat dairy intake and the nutrition education program will target these food groups when teaching participants on healthy pre- and post-workout snacks (Brunt, Rhee, & Zhong, 2008).

An interactive food demonstration was provided that included nutrition facts for proper exercise nourishment. Information pamphlets with pre-and-post recipes were developed and distributed along with dorm-friendly grocery items and smoothie-building tips. Participants received a sample energy bite and given the opportunity to ask questions.

Out of 27 participants, 67% (n=18) completed the follow-up survey. From a 1 to 5 scale, 22% (n=4) were extremely satisfied (score of 5) with the demonstration and 61% (n=11) were highly satisfied (score of 4). Of the 18 post-survey responses, 78% (n=14) correctly identified at least one source each of protein and carbohydrate. 67% (n=12) reported somewhat to extremely likely to implement the information into their workout snacks. 39% (n=7) indicated little to moderate impact on their snacks since the presentation.

The results indicated that the information presented in the demonstration is applicable to college-aged athletes.

Objectives

1. Participants know the importance of carbohydrates and protein for physical performance
2. Participants recall sources of adequate carbohydrates and protein
3. Participants create healthy pre- and post-workout snacks for themselves at home.

Methods

The presentation was open to all students utilizing the Student Rec Center. The display lasted for one hour, and participants were free to come and go. The interactive food demonstration was presented every 15 minutes, and nutrition information was presented during this time. Educational pamphlets (Figure 1), dorm-friendly grocery lists, and smoothie-building tips were distributed as well. Participants were encouraged to provide their email for the post-survey. Questions and comments were encouraged throughout the session. All styles of learning were considered to provide optimal impact. Self-efficacy is a key promoter of the target audience, therefore the program was designed around the Social-Cognitive Theory (Poddar, 2010).

Three key messages drove the information in the session:

- protein and carbohydrates are key nutrients to include in workout routines
- workout snacks can be both simple and affordable, and you can combine things you already have in your refrigerator
- without carbohydrates and protein in your workout diet, energy levels and recovery time can be less than adequate.

Figure 1. Pamphlet given to program participants

Resources:
Estright.org
• "3 Easy Tips for Fueling Your Workout without 'Overdoing It'"
• "Timing Your Pre- and Post-Workout Nutrition"
• "Top Snacks for Runners"

References:
Mahan, L. K., & Raymond, J. L. (2017). *Krause's Food & the Nutrition Care Process* (13th ed.). St. Louis, MO: Elsevier.
"Position of the American Dietetic Association, Division of Canada, and the American College of Sports Medicine: Nutrition and Athletic Performance." *Journal of the American Dietetic Association*, vol. 109, no. 3, 2009, pp. 509-527. doi:10.1016/j.jada.2009.01.005.
Spark People. (2017). 10 Perfect Post-Workout Snacks [Infographic]. Retrieved from: http://www.sparkpeople.com/resources/nutrition_articles.asp?id=1082

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Post-Workout Snacks

- Banana with cream cheese
- Yogurt smoothie with toast
- Pancakes and eggs
- Cheerios with low-fat milk
- Low-fat chocolate milk
- Cottage cheese with fruit
- Eggs with toast

Pre-Workout Facts:

- Carbs before workouts maintain energy levels
- Choose low fiber, fat and dairy for easy digestion
- Caffeine enhances performance in small doses (1.5-3mg per pound of body weight)
- "Carb Loading" only efficient for intense performances

Post-Workout Facts:

- Combine carbs and protein for energy and muscle recovery
- Simple Carbs increase energy storage
- Excess proteins are not beneficial

Pre-Game Guidelines:

- 1 hour before event = 100-200 calories
- 2-3 hours before event = 300-400 calories
- 3-4 hours before event = 700 calories

Pre-Workout Pumpkin Latte "No-Bake" Energy Bites

Ingredients:

- 2 cups oats
- ¼ cup pumpkin puree
- ¼ cup honey
- 2 TBL instant coffee
- 1 tsp cinnamon
- 1 tsp vanilla

Stir together or blend ingredients and roll into balls. Great to freeze!

*chocolate chips, nuts, and seeds optional additions

Post-Workout PB&J Smoothie

Ingredients:

- 1 banana
- 1 cup purple/red grapes
- ½ cup plain yogurt
- ½ cup almond milk (or milk of choice)
- 2 TBL peanut butter (or any nut butter)

Blend and enjoy!

*consider adding a handful of greens to your smoothies for bonus nutrients!

...AND ALWAYS STAY HYDRATED!

Figure 2a.

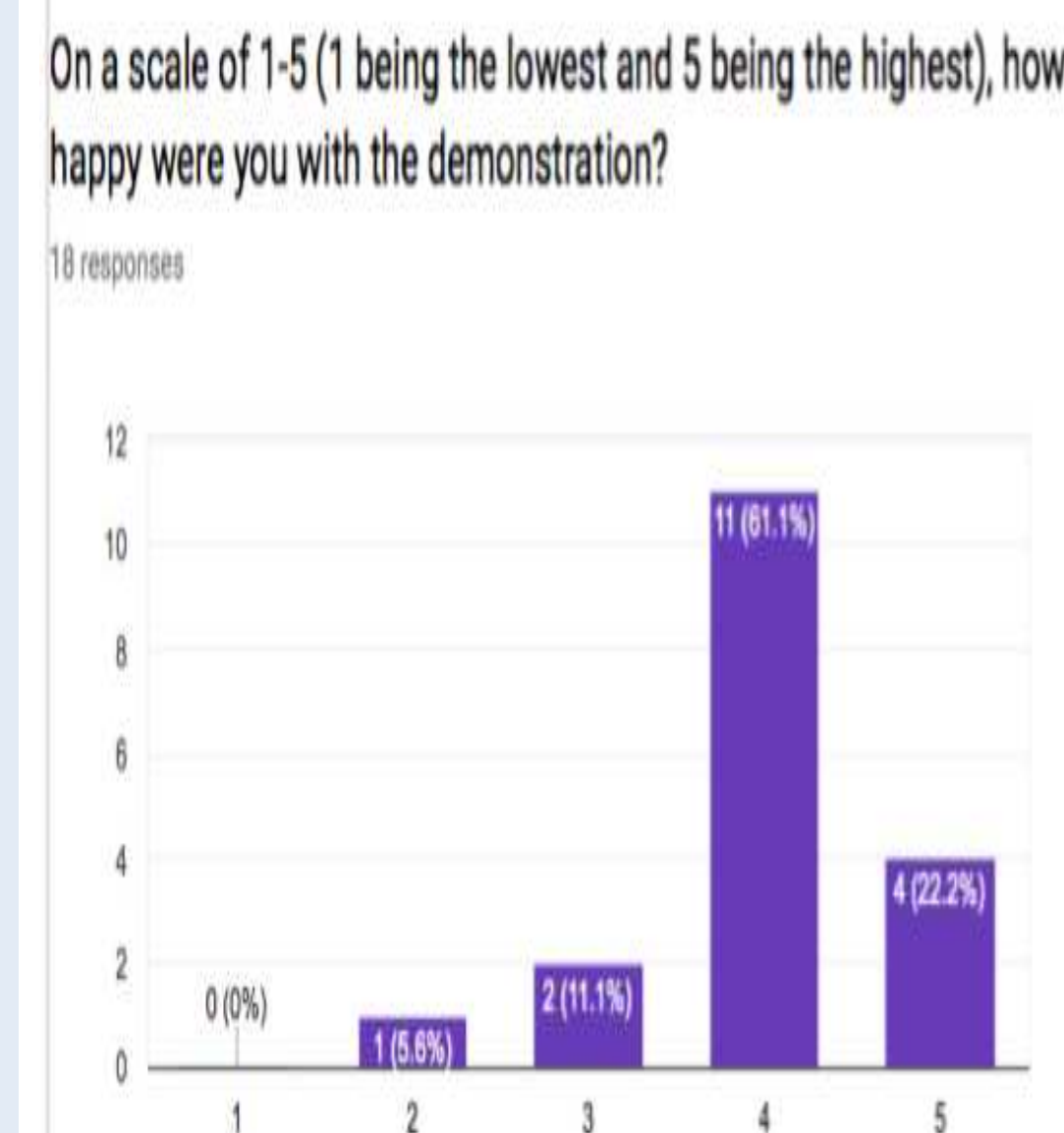
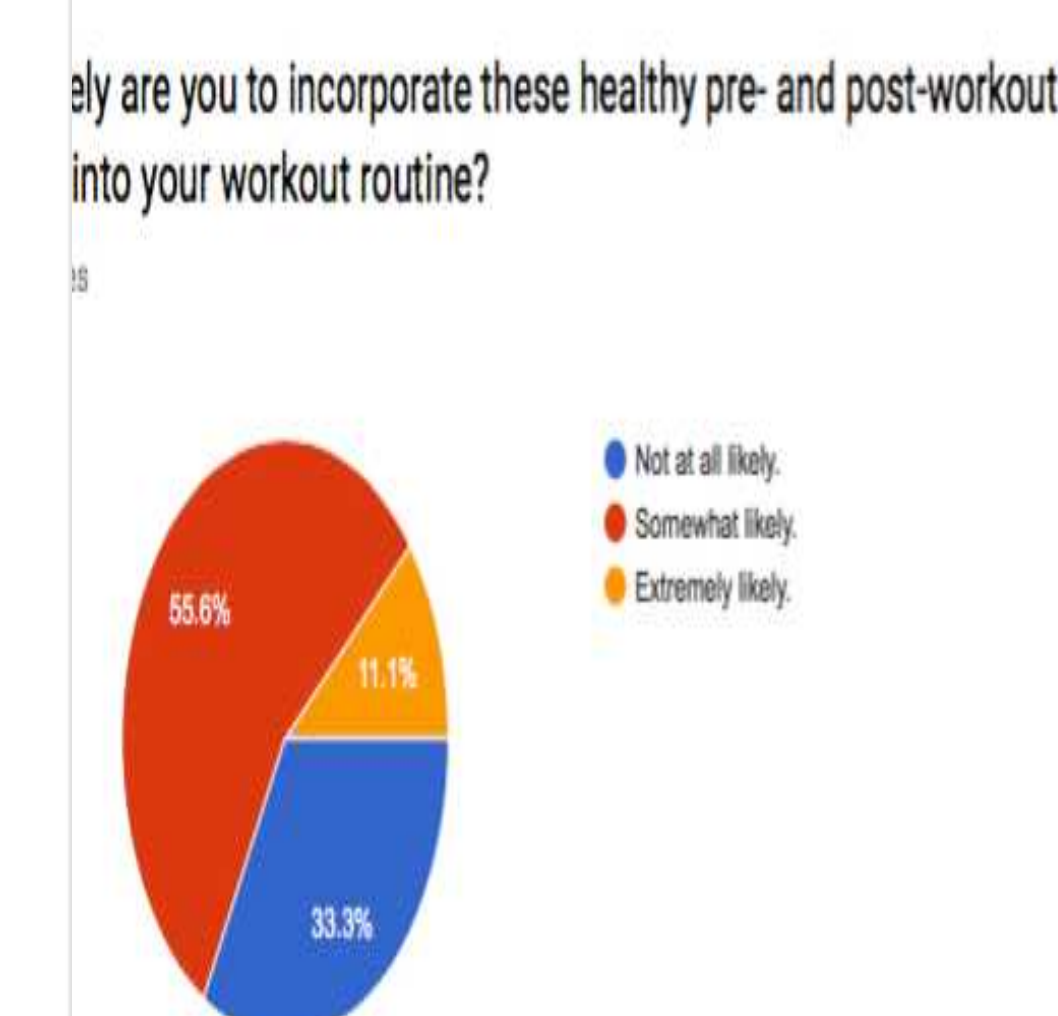


Figure 2b.



Results

The post-survey (Figure 3) was sent two weeks following the initial demonstration. 27 participants provided their email for the survey. Three days after the email was sent, the results were tallied. 18 participants responded to the survey. 73% (n=15) participants rated their happiness with the presentation as a 4 or 5 (Figure 2A). 14 participants answered question 2 and 4 left it blank. 57% of the 14 (n=8) correctly identified 3 sources of carbohydrates and 43% (n=6) correctly identified 1-2 sources of carbohydrates. 36% (n=5) correctly identified 3 protein sources and 64% (n=9) correctly identified 1-2 sources of protein. (Protein powder was not accepted as an answer). 33% of participants (n=6) reported that they are not likely to use the information, 56% (n=10) were somewhat likely, and 11% (n=2) were very likely (Figure 2b). 61% of participants (n=11) scored little-to-no impact on snacking so far and the remaining 39% (n=7) scored 2 or 3 (little to moderate impact)

Figure 3.

What's Fueling You? Follow-Up Survey

Please answer the following questions based on the educational presentation given at the Student Recreation Center on October 17th, 2017. Thank you for participating and providing your feedback!

Email address *
Valid email address
This form is collecting email addresses. [Change settings](#)

On a scale of 1-5 (1 being the lowest and 5 being the highest), how happy were you with the demonstration?

lowest ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ highest

Using knowledge gained from the presentation, please list 3 sources each of carbohydrates and protein.
Long answer text

How likely are you to incorporate these healthy pre- and post-workout snacks into your workout routine?

Not at all likely.
 Somewhat likely.
 Extremely likely.

On a scale of 1-5 (1 being the lowest and 5 being the highest), how much has our presentation impacted your workout snacks so far?

lowest ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ highest

References

- Brunt, A., Rhee, Y., Zhong, L. (2008). Difference in dietary patterns among college students according to body mass index. *Journal of American College Health*. 56(6), 629-634.
- Poddar, K. H., Hosig, K. W., Anderson, E. S., Nickols-Richardson, S. M., & Duncan, S. E. (2010). "Web-Based Nutrition Education Intervention Improves Self-Efficacy and Self-Regulation Related to Increased Dairy Intake in College Students". *Journal of the Academy of Nutrition and Dietetics*, 110 (11), 1723-1727. Doi: <http://dx.doi.org/10.1016/j.jada.2010.08.008>

Conclusion/Application

The demonstration concludes that college students attending gyms are interested in exercise nutrition. From the survey results, participants desire to implement workout snacks into their routine. The information collected is useful for future program development for college students. The handouts are easily adaptable for broader use in the community. The program is easily replicable for all gym members.