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Abstract

Athletes have unique nutrition needs (1), and may see performance benefits (1-7) and reduced potential for injury (8) with proper meal timing and composition. However, it is apparent that many athletes do not consume a diet adequate to support their needs (2,3,5,7). Furthermore, most athletes rely on potentially unqualified sources, i.e. parents, teammates, coaches and athletic trainers for nutrition advice rather than dietitians (6,7,9-11). In recent years, some collegiate programs have employed dietitians to educate and improve the nutrition habits of their athletes hoping to boost performance, reduce injury rates and expedite recovery (12). While anecdotal evidence abounds, there is a paucity of data reflecting the effectiveness of dietitians and nutrition education on improving student athlete nutritional self-efficacy or dietary intake. The proposed study aims to implement a dietitian-focused intervention for a Division I football program that currently serves mandatory team meals but does not utilize a dietitian. The intervention will include the presence of a dietitian at team dinners over a 16-week period to provide nutritional information and implement a “point of decision” nutrition education system. A nutritional self-efficacy questionnaire and a food frequency questionnaire (FFQ) will be given to the experimental group before and after the intervention period. A control group of student athletes from another sport that also participates in mandatory team dinners will only complete the questionnaires. The results of this study will determine the effectiveness of a dietitian and nutrition education program with regards to improving the dietary intake and nutrition self-efficacy of student athletes.

Timeline

Projected Timeline April 2016 – February 2017

Preparation

April 2016

University will publish job application for contract sports dietitian.

Researcher will initiate and complete university IRB approval process

June 2016

Researcher will order food frequency questionnaires, develop and print nutrition self-efficacy questionnaire.

July 2016

University will hire sports dietitian.

Researcher will develop point of decision nutrition education system, print and prepare educational posters and signs.

August 2016

Researcher will randomly determine participants and administer baseline nutrition self-efficacy and food frequency questionnaire.

Intervention

September - November 2016

Sports dietitian will utilize nutrition education system, provide information and answer nutrition-related questions during team dinners.

Analysis

December 2016

Researcher will administer post-intervention questionnaires to study participants.

Researcher will analyze self-efficacy questionnaire results.

Researcher will code dietary questionnaires and submit for analysis.

January - February 2017

Researcher will interpret data, and begin writing scientific journal article for publication.

Proposal

Purpose

Numerous studies have found that collegiate athletes' diets may not be adequate, especially given the unique needs based on their sport (1-3,5,7). Student athlete diets may be deficient in total energy, carbohydrate, protein and fruits and vegetables (2,3,5,7); adequate consumption of which may improve athletic performance (1-7, 13) and reduce the possibility of injury (8, 14). In collegiate football athletes, this may be explained by a combination of a nutritional knowledge deficit, low nutrition self-efficacy and the built environment in which they operate (2,6). In August of 2014, the National Collegiate Athletic Association (NCAA) lifted restrictions on the provision of meals and snacks for athletes, which had previously limited feeding to one meal per day, leading to the expansion of many student athlete food and nutrition programs (15). One area of focus is improving the educational aspect of their "training tables" or designated locations where food is provided for the athletes by the university. Some schools have implemented nutrition education programs led by sports dietitians to better educate athletes on how to meet their unique nutritional requirements. These programs often employ "point of decision" (POD) education, or symbols and signs intending to influence food choice that are located where food items are chosen. While anecdotal reports suggest that this practice improves the diets of student athletes, there is currently no scientific evidence to support it.

Research Question: This study will test the hypothesis that a semester-long mealtime nutrition education program led by a dietitian will improve nutrition self-efficacy and dietary intake in collegiate football athletes.

Literature Review

Proper nutrition can significantly impact the health and performance of athletes (1). Energy, carbohydrate, protein, and fruits and vegetables are of particular importance (1-7, 13). Football is an energetically demanding activity that increases the calorie requirements of those who participate (13, 16). Additionally, adequate energy provision is necessary to maintain lean body tissue, which is tied to optimal performance (1,17,18). Energy requirements should be met during periods of intense physical activity to replenish glycogen, maintain weight and build and repair tissue (1). Athletes in an energy deficient state are also at an increased risk for injury (14).

Additionally, athletes require substantially more carbohydrates compared to non-active individuals for exercise recovery (7), with carbohydrate restriction shown to be detrimental to performance (1,13). Football in particular is a high intensity activity that utilizes carbohydrate driven energy systems requiring additional carbohydrate provision (13,16). Sufficient carbohydrate before and after exercise stabilizes blood glucose and supports optimal activity (1). Adequate carbohydrate consumption can spare and replenish muscle glycogen, with glycogen depletion being a principle driver of exercise fatigue (13). Carbohydrate availability is also necessary for muscle protein synthesis and whole body protein balance, which are needed for recovery and lean mass growth and retention (19).

Protein intake for strength athletes should be higher than the recommended dietary allowance for average adults, to support lean body mass growth and maintenance (1). Sufficient protein intake accompanied with endurance and resistance exercise may support favorable body composition (20). Further, adequate dietary protein, timing and distribution have been shown to produce favorable increases in muscle growth (21). Higher intakes of protein and carbohydrate are also necessary for optimal healing and lean body mass maintenance following injury (18).

Research also supports the benefits of fruits and vegetables on the health and performance of athletes. Athletes are at-risk for antioxidant and micronutrient deficiencies, especially if restricting calories or under-consuming fruits and vegetables, which are important due to the oxidative damage brought about by intense exercise (1). Several antioxidant and polyphenol-rich fruits and vegetables also boast performance and recovery benefits including a reduction of muscle soreness and strength attenuation following heavy training (22).

Additionally, potassium-rich foods such as legumes, fruits and vegetables may help prevent muscle cramps in those who are prone to cramping (13). Increased intake of leafy greens and other nitrate-rich vegetables has been shown to reduce the oxygen cost of exercise and improve athletic endurance (23). The American College of Sports Medicine recommends athletes consume at least 5 servings of fruits and vegetables daily to help meet micronutrient and fiber needs (1). However, some athletes fall short on their consumption, as one study found that they consume an average of just 2.2 servings of fruits and vegetables per day (7). Athletes should include adequate energy, carbohydrate, fruits and vegetables and a favorable distribution of protein into their diet in order to maximize body composition and exercise performance.

Self-efficacy, or one's belief that they can overcome the difficulties of performing a task, has been shown to predict health behavior (24). According to Social Cognitive Theory, knowledge and ability to perform health behaviors are important, but a sense of personal control must be present to achieve changes (2). Improving student athlete's self confidence in their ability to choose and consume foods beneficial to their health and performance has been associated with favorable dietary choices (2,24). To measure self-efficacy, participants must be provided with examples of specific tasks, and asked to rate the strength of their confidence in their ability to perform those tasks (24).

With the potentially positive effects of nutrition knowledge on dietary behaviors, the methods used for delivery must be effective. Direct education provided to athletes should be given in a positive context rather than a negative approach, and performance-based benefits are better received than general health benefits (11). Further, describing a food simply as “healthy” may invoke perceptions of bad taste, decreasing desirability and consumption (9,25). Educational tools should depict sports nutrition in a positive manner and directly relate to performance enhancement benefits in order to have the strongest effect.

The training table presents a unique and effective environment for the education of student athletes as it teaches them about food at the actual location of consumption (26). According to Experiential Learning Theory, people may learn with a stronger overall understanding of meaning and relevance when they experience curriculum “first hand” (27). Experiential learning techniques have been shown specifically to enhance learning knowledge of food and food preparation in college students (27). Finally, athletes may actually be superior visual learners compared to non-athletes (28). These factors support the experiential, visual and “hands on” learning opportunity provided by mealtime education.

The captive audience and deliberate food options at a training table allow for effective environmental intervention (29). One method for marketing food items at the training table is the use of point of decision (POD) nutrition education, a targeted method involving the placement of messages in the form of signs where a sale is made or a food is chosen (30). This type of environmental intervention has the strongest effect when options are limited, such as at a mandatory team meal (29). Signs on food items that increase awareness of benefits potentially impact choice, (31) for example, short, written POD messages may increase fruit selection in college students (32). In addition, college students may choose more of a product with a healthy

slogan on it than those without despite equal availability (30). Furthermore, labels on foods tailored to real world applications of their nutritional content may lead college students to consider how their food choices affect them, (33) which has shown to positively influence dietary choices in athletes when tailored to their sport (9). An effective POD education system for student athletes utilizes a positive, performance-based theme to provide nutrition knowledge and improve nutrition self-efficacy.

Research Methods

A pre-test/post-test design will examine a 16-week intervention lasting through the season. Subjects will be provided with questionnaires to determine their estimated dietary intake and nutrition self-efficacy at the beginning and end of the study.

Sample/Subject selection: The sampling method will be a nonprobability convenience sample of 30 players currently on the football team, based on the sample size of a similar study (2). The control group will consist of a nonprobability convenience sample of 15 male athletes from the same school, on another team that currently has mandatory team dinners but does not utilize a dietitian. This sample size will be adequate to provide statistical power greater than 80% (2,34).

Intervention: A contract dietitian certified in sports nutrition will be present for two hours at four team dinners weekly (Monday through Thursday) throughout the 16-week season. The dietitian will implement a POD nutrition education program designed by the researcher prior to the starting date. The POD signs and window clings will focus on increasing knowledge and understanding of food groups, and how much of each is needed for optimal performance. The dietitian will explain and educate based off of this system in addition to answering any questions related to nutrition and providing advice tailored to increasing nutrition self-efficacy.

Assessment: The athletes will be given two questionnaires: a food frequency questionnaire

(FFQ) and a nutrition self-efficacy questionnaire. The FFQ used will be the Youth/Adolescent Questionnaire (YAQ) (35,36) which has been validated (37) and used in multiple studies on collegiate athletes due to the similarity between their dietary habits and those of adolescents compared to adults (38,39). The YAQ will analyze daily total energy, percent carbohydrate and protein consumed and number of daily fruit and vegetable servings.

The second questionnaire will gather information on the athlete's self-efficacy with regards to choosing nutritious and performance supporting food options. It will consist of 8 original questions adapted from Baranowski et al. that will measure the athlete's ability to choose, prepare and consume the nutrients of interest (40). Perceived confidence in abilities related to 8 nutritional aspects is determined through a 6 point Likert scale ranging from "not at all confident" to "completely confident" (24). This pair of questionnaires will be administered before and after the 16-week intervention period.

Data Analysis

A paired t-test will determine pre-test/post-test within group differences for mean self-efficacy scores, mean daily energy, mean daily carbohydrate and protein percentages and mean number of daily fruit and vegetable servings for the experimental group. A Mann-Whitney U Test will be used as in Abood et al. (2) to analyze between-group differences for mean self-efficacy scores, mean daily energy, mean daily carbohydrate and protein percentages and mean number of daily fruit and vegetable servings. A p value of 0.05 will determine significance.

Significance and Practical Application

It is hypothesized that improvement will be seen in nutrition self-efficacy and dietary intake with regards to energy, carbohydrate, fruit and vegetable intake after the 16 week intervention period. Improvement will be deemed as increased mean self-efficacy scores,

increased daily carbohydrate intake percentage and increased daily fruit and vegetable servings. The data from this study could support more widespread use of dietitians and nutrition education programs in collegiate settings, potentially improving performance and decreasing injuries for a portion of the approximate 460,000 NCAA athletes (41). A link between the presence of a dietitian and POD education at team meals and improved dietary habits will incentivize schools to include these into their program. A survey of twenty-three top collegiate programs found a 145 percent increase in yearly food budget over the past year, averaging \$1.3 million (15), making the addition of nutrition experts and education systems a logical step in maximizing the effect of this spending. Beyond increasing performance on the playing field, the benefits of developing sound nutritional habits in a critical time in life such as late adolescence may translate into healthier habits later in life (42). A study of the body composition of Division I football players found that the average body fat percentage for lineman was bordering obese, with a high incidence of abdominal obesity known to be related to metabolic disorders (17). In professional football, the prevalence of obesity and metabolic syndrome in former linemen is 3 times that of the normal population (43). The eating habits learned at the training table may help mitigate some of these negative health outcomes.

Limitations

This study is not without limitations. First, FFQs are not as accurate for determining dietary intake as 24 hour recalls or diet logs, however, an FFQ was chosen to reduce cost, time constraints and adherence difficulties (44). Additionally, the FFQ determines typical eating habits, which captures episodically consumed foods and prevents the potential confounder of an unusual day recorded in a food log or 24-hour recall. An FFQ will determine dietary intake including days without team meals, which is necessary to generalize the effects of the

intervention beyond the training table. A second limitation may be in differentiating the effects of the dietitian's presence and the POD education. A dietitian was deemed necessary to teach the system and provide individualized and informal dietary instruction in supplement to formal nutrition education, which may augment nutrition knowledge and self-efficacy (2). It is also possible that the training table itself is contributing to increased nutrition knowledge, self-efficacy and dietary intake as opposed to the intervention, however, the inclusion of a control group may eliminate this potential confounder. Finally, as in most pre-test/post-test studies, it must be acknowledged that the pre-test questionnaires, and/or intermingling between control and experimental subjects may influence post-test scores.

Conclusion

The present study looks to fill a gap in the research base regarding the optimal methods for educating and influencing athletes to properly fuel their bodies for sport. Future studies should attempt to confirm if improved nutrition self-efficacy and dietary intake in athletes translates into better performance, more favorable body composition, or a reduced risk for injury.

Budget

Direct Costs

Dietitian

Contracted hourly - 160hrs @ \$37/hr.....\$5,920

Supplies and Materials

Point of Decision Materials

Acrylic sign holders (10).....\$65

Window clings (100).....\$120

Color printing (200 Sheets).....\$200

Office supplies.....\$75

Questionnaire Materials

Printing (200 Sheets).....\$20

Other Costs

Youth Adolescent Questionnaire

Self coded, analyzed by Harvard School of Public Health

90 questionnaires, (45 pre/post).....\$350

Indirect Costs

Indirect unbudgeted (10%).....\$750

Total Budget: \$7,500

Budget Justification

Direct Costs

a. Personnel

- Dietitian: This will be a part-time contract position offered to an experienced dietitian holding a Certified Specialist in Sports Dietetics (CSSD) certification. Preferred qualifications include a background in collegiate nutrition education and a master's degree in nutrition.

Estimated time: The dietitian will be present for two hours at all team dinners Monday through Thursday, and will be provided with two additional hours per week of planning time. They will be offered a rate of \$37 per hour, above the 75th percentile for contract dietitians to draw an experienced and skilled professional.

- 160 hours x \$37 per hour = \$5,920

b. Supplies

Point of decision materials

- Color printing: Educational signs will be printed and placed in various locations around the dining area. Some new signs will be placed each week.
 - 200 sheets x \$1 per sheet = \$200
- Acrylic sign holders: Sign holders will be used to strategically place educational signs throughout the training table area, on the dinner tables and at the line beginning.
 - 10 holders = \$65
- Window clings: Nutrition education messages will be printed on window clings to be placed on the glass food case in front of the buffet line and salad bar.
 - 100 clings = \$120
- Office supplies:
 - Such as: pens, paper, scissors, stapler, tape = \$75

Questionnaire

- Printing: The self-efficacy questionnaire will be printed black and white on a single sheet of paper. The budget provides for a second copy if necessary.
 - 45 questionnaires x 2 data collections x 2 copies (180 sheets) = \$20

c. Other expenses

- Youth Adolescent Questionnaire: The materials will be purchased from the Harvard T.H. Chan School of Public Health. The researcher will code the results and submit them for analysis. The price includes the questionnaires and nutrient analysis.
 - 45 questionnaires x 2 data collections x \$3.75 = \$350

Indirect costs

- Indirect, unbudgeted
 - 10% of total budget of \$7,500 = \$750

Total Budget: \$7,500

Works Cited

1. American College of Sports Medicine. (2009). Position of the American Dietetic Association, Dietitians of Canada, and the American College of Sports Medicine: nutrition and athletic performance. *Journal of the American Dietetic Association*, 109:509-527.
2. Abood, D., Black, D., & Birnbaum, R. (2004). Nutrition education intervention for college female athletes. *Journal of Nutrition Education and Behavior*, 36:135-139.
3. Alaunye, I., Perry, J., & Aubrey, T. (2015). Nutritional knowledge and eating habits of professional rugby league players: Does knowledge translate into practice? *Journal of the International Society of Sports Nutrition*, 12(18):1-7.
4. Birkenhead, K. & Slater, G. (2015). A review of factors influencing athlete's food choices. *Sports Med.* ePub, ahead of print.
5. Heaney, S., O'Connor, H., Michael, S., Gifford, J., & Naughton, G. (2011). Nutrition knowledge in athletes: A systematic review. *International Journal of Sport Nutrition and Exercise Metabolism*, 21:248-261.
6. Long, D., Perry, C., Unruh, S., Lewis, N., & Stanek-Krogstrand, K. (2011). Personal food systems of male collegiate football players: A grounded theory investigation. *Journal of Athletic Training*, 46(6):688-695.
7. Ono, M., Kennedy, E., Reeves, S., & Cronin, L. (2012). Nutrition and culture in professional football. A mixed method approach. *Appetite*, 58:98-104.
8. Medina, D., Lizarraga, A., & Drobic, F. (2014). Injury prevention and nutrition in football. *Sports Science Exchange*. 27(132):1-5.
9. Smart, R. & Bisogni, C. (2001). Personal food systems of male college hockey players. *Appetite*. 37:57-70.
10. Shoaf, L., McClellan, P., & Birskevich, K. (1986). Nutrition knowledge, interests, and information sources of male athletes. *Journal of Nutrition Education*, 18(6):243-245.
11. Hackman, R., Katre, J., & Geertsens, A. (1992). The athletic trainer's role in modifying nutritional behaviors of adolescent athletes: Putting theory into practice. *Journal of Athletic Training*, 27(3):262-267.
12. Markey, S. (2014). Mission and Strategic Goals. Collegiate and Professional Sports Dietetics Association. http://www.sportsrd.org/?page_id=1311.
13. Antonio, J., D. Kalman, J.R. Stout, et al. (2008). Essentials of sports nutrition and supplements, (1st Ed.). New Jersey: Human Press.

14. Mountjoy, M. et al. (2014). The IOC relative energy deficiency in sport clinical assessment tool (RED-S CAT). *British Journal of Sports Medicine*. 0:1-3.
15. Schonbrun, Z. (2015). Next arms race in major sports is at the food table. *The New York Times*. Retrieved from: http://mobile.nytimes.com/2015/10/07/sports/ncaafootball/next-arms-race-in-major-sports-is-at-the-food-table.html?_r=2
16. Pincivero, D. & Bompa, T. (1997). A physiological review of American football. *Sports Medicine*, 4:247-260.
17. Noel, M.B., Vanheest, J., Zaneteas, P., & Rodgers, C. (2003). Body composition in Division I football players. *Journal of Strength and Conditioning Research*, 17(2):228-237.
18. Holm, L., Esmarck, B., Mizuno, M., Hansen, H., Suetta, C., Holmich, P., Krogsgaard, M., & Kjaer, M. (2006) . The effect of protein and carbohydrate supplementation on strength training outcome of rehabilitation in ACL patients. *Journal of Orthopaedic Research*, 24:2114-2123.
19. Howarth, K., Phillips, S., MacDonald, M., Richards, D., Moreau, N., & Gibala, M. (2010). Effect of glycogen availability on human skeletal muscle protein turnover during exercise and recovery. *Journal of Applied Physiology*, 109:431-438.
20. Morton, R., McGlory, C., & Phillips, S. (2015). Nutritional interventions to augment resistance training-induced skeletal muscle hypertrophy. *Frontiers in Physiology*, 6(245):1-9.
21. Moore, D., Robinson, M., Fry, J., Tang, J., Glover, E., Wilkinson, S., Prior, T., Tarnopolsky, M., & Phillips, S. (2009). Ingested protein dose response of muscle and albumin protein synthesis after resistance exercise in young men. *American Journal of Clinical Nutrition*, 89: 161–168.
22. Levers et al. (2015). Effects of powdered Montmorency tart cherry supplementation on an acute bout of intense lower body strength exercise in resistance trained males. *Journal of the International Society of Sports Nutrition*. 12(41):1-23.
23. Jones, A. (2014). Dietary nitrate supplementation and exercise. *Sports Medicine*, 44(Suppl 1):S35-S45.
24. Abusabha, R. & Achterberg, C. (1997). Review of self-efficacy and locus of control for nutrition and health related behavior. *Journal of the American Dietetic Association*. 97(10):1122-1132.
25. Cohen, D. & Babey, S. (2012). Contextual influences on eating behaviors: heuristic processing and dietary choices. *Obesity Reviews*. 13(9):766-779.
26. Thomas, L.M., (2014). The student-athlete training table. *NCAA Sports Science Institute*. Retrieved from: <http://www.ncaa.org/health-and-safety/sport-science-institute/student-athlete-training-table>

27. Leveritt, M., Ball, L., & Desbrow, J. (2013). Students' perceptions of an experiential learning activity designed to develop knowledge of food and food preparation methods. *Journal of Food Science Education*. 12:56-60.
28. Faubert, J. (2013). Professional athletes have extraordinary skills for rapidly learning complex and neutral dynamic visual scenes. *Scientific Reports*. 3(1154):1-3.
29. Seymour, J., Lazarus-Yaroch, A., Serdula, M., Blanck, H., & Khan, L. (2004). Impact of nutrition environmental interventions on point-of-purchase behavior in adults: a review. *Preventative Medicine*. 39:S108-S136.
30. Freedman, M. & Connors, R. (2011). Point-of-purchase nutrition information influences food-purchasing behaviors of college students: a pilot study. *Journal of the American Dietetic Association Supplement*. 111(5):S42-S46.
31. Sonnenberg, L., Gelsomin, E., Levy, D., Riis, J., Barraclough, S., & Thorndike, A. (2013). A traffic light food labeling intervention increases consumer awareness of healthy choices at the point-of-purchase. *Preventive Medicine*. 57(4):253-257.
32. Reed, J., Powers, A., Greenwood, M., Smith, W., & Underwood, R. (2009). Using "point of decision" messages to intervene on college students' eating behaviors. *American Journal of Health Promotion*. 25(5):298-301.
33. Swartz, J., Dowray, S., Braxton, D., Mihas, P., & Viera, A. (2013). Simplifying healthful choices: a qualitative study of physical activity based nutrition label format. *Nutrition Journal*. 12(72):1-9.
34. Calculating Sample Size. (2015). Hylown Consulting LLC. Retrieved from <http://powerandsamplesize.com/Calculators/Compare-2-Means/2-Sample-Equality>
35. Youth Adolescent Food Frequency Questionnaire. (2012). Retrieved from <https://regepi.bwh.harvard.edu/health/KIDS/files>.
36. Rockett, H., Wolf, A., & Colditz, G. (1995). Development and reproducibility of a food frequency questionnaire to assess diets of older children and adolescents. *Journal of the American Dietetic Association*. 95:336-340.
37. Rockett, H., Breitenbach, M., Frazier, A., Witschi, J., Wolf, A., Field, A., & Colditz, G. (1997). Validation of a youth/adolescent food frequency questionnaire. *Preventative Medicine*. 26(6):808-816.
38. Hinton, P., Sanford, T., Davidson, M., Yakushko, O., & Beck, N. (2004). Nutrient intakes and dietary behaviors of male and female collegiate athletes. *International Journal of Sport Nutrition and Exercise Metabolism*. 14:389-405.

39. Rash, C., Malinauskas, B., Duffrin, M., Barber-Heidal, K., & Overton, R. (2008). Nutrition-related knowledge, attitude, and dietary intake of college track athletes. *The Sport Journal*. 11(1):48-54.
40. Baranowski, T., Watson, K., Bachman, C., Baranowski, J., Cullen, K., Thompson, D., & Siega Riz, AM. (2010). Self efficacy for fruit, vegetable and water intakes: Expanded and abbreviated scales from item response modeling analyses. *International Journal of Behavioral Nutrition and Physical Activity*. 7(25):1-10.
41. NCAA. (2014). NCAA Recruiting facts. Retrieved from:
<https://www.ncaa.org/sites/default/files/Recruiting%20Fact%20Sheet%20WEB.pdf>
42. Nelson, M., Story, M., Larson, N., Neumark-Sztainer, D., & Lytle, L. (2008). Emerging adulthood and college-aged youth: An overlooked age for weight-related behavior change. *Obesity*. 16:2205-2211.
43. Miller, M., Croft, L., Belanger, A., Romero-Corral, A., Somers, V., Roberts, A., & Goldman, M. (2008). Prevalence of metabolic syndrome in retired national football league players. *The American Journal of Cardiology*. 101(9):1281-4.
44. Shim, J., Oh, K., & Kim, H. (2014). Dietary assessment methods in epidemiological studies. *Epidemiology and Health*. 36:1-8.

Appendix

Self-efficacy questionnaire

Please answer the following questions based on how you currently feel.

(Circle one per question)

1. How confident are you in your ability to choose balanced meals and snacks at most meals?

(Not at all confident) 1 2 3 4 5 6 (Completely confident)

2. How confident are you in your ability to eat enough food for your needs and activity level on a daily basis?

(Not at all confident) 1 2 3 4 5 6 (Completely confident)

3. How confident are you in your ability to eat 3 or more servings of fruit on a daily basis?

(Not at all confident) 1 2 3 4 5 6 (Completely confident)

4. How confident are you in your ability to eat 3 or more servings of vegetables on a daily basis?

(Not at all confident) 1 2 3 4 5 6 (Completely confident)

5. How confident are you in your ability to include a carbohydrate-based serving of food at every meal and snack?

(Not at all confident) 1 2 3 4 5 6 (Completely confident)

6. How confident are you in your ability to include a protein-based serving of food at every meal and snack?

(Not at all confident) 1 2 3 4 5 6 (Completely confident)

7. How confident are you in your ability to bring balanced snacks with you on a daily basis to eat when hungry?





(Not at all confident) 1 2 3 4 5 6 (Completely confident)

8. How confident are you in your ability to eat a beneficial post-workout snack after training, practice and games?

(Not at all confident) 1 2 3 4 5 6 (Completely confident)

3/8" spine
perf

- Use a **NO. 2 PENCIL** only.
- Do not use ink or ballpoint pen.
- Darken in the circle completely.
- Erase cleanly any marks you wish to change.
- Do not make any stray marks on this form.

The **WRONG** way to mark your answers!    



- ☐ Never/less than 1 per month
- ☐ 1–3 bottles per month
- ☐ 1 bottle per week
- ☐ 2–4 bottles per week
- ☐ 5–6 bottles per week
- ☐ 1 bottle per day
- ☐ 2 bottles per day
- ☐ 3 or more bottles per day



SERIAL #

5. Sport drinks (e.g., Powerade or Gatorade) or sugar-sweetened vitamin water (individual bottle)

- ☐ Never/less than 1 per month
- ☐ 1–3 bottles per month
- ☐ 1 bottle per week
- ☐ 2–4 bottles per week
- ☐ 5–6 bottles per week
- ☐ 1 bottle per day
- ☐ 2 bottles per day
- ☐ 3 or more bottles per day

6. Sugar-free or low calorie energy drinks—Red Bull Sugarfree, Lo-carb Monster Energy (individual can/bottle)

- ☐ Never/less than 1 per month
- ☐ 1–3 bottles per month
- ☐ 1 bottle per week
- ☐ 2–4 bottles per week
- ☐ 5–6 bottles per week
- ☐ 1 bottle per day
- ☐ 2 bottles per day
- ☐ 3 or more bottles per day

7. Regular energy drinks—Red Bull, Rock Star (individual can/bottle)

- ☐ Never/less than 1 per month
- ☐ 1–3 bottles per month
- ☐ 1 bottle per week
- ☐ 2–4 bottles per week
- ☐ 5–6 bottles per week
- ☐ 1 bottle per day
- ☐ 2 bottles per day
- ☐ 3 or more bottles per day

8. Smoothies (e.g., medium Jamba Juice or Orange Julius)

- ☐ Never/less than 1 per month
- ☐ 1–3 glasses per month
- ☐ 1 glass per week
- ☐ 2–4 glasses per week
- ☐ 5–6 glasses per week
- ☐ 1 glass per day
- ☐ 2 glasses per day
- ☐ 3 or more glasses per day

9. Milkshake (1)

- ☐ Never/less than 1 per month
- ☐ 1–3 per month
- ☐ 1 per week
- ☐ More than 1 per week

10. Hot tea with caffeine (not herbal) (1 cup)

- ☐ Never/less than 1 per month
- ☐ 1–3 cups per month
- ☐ 1–2 cups per week
- ☐ 3–6 cups per week
- ☐ 1 cup per day
- ☐ 2 or more cups per day

11. Decaffeinated coffee (1 cup)

- ☐ Never/less than 1 per month
- ☐ 1–3 cups per month
- ☐ 1–2 cups per week
- ☐ 3–6 cups per week
- ☐ 1 cup per day
- ☐ 2 or more cups per day

12. Coffee—not decaf. (1 cup)

- ☐ Never/less than 1 per month
- ☐ 1–3 cups per month
- ☐ 1–2 cups per week
- ☐ 3–6 cups per week
- ☐ 1 cup per day
- ☐ 2 or more cups per day

13. Coffee drinks with nonfat milk, e.g., Cappuccino, Mocha, Latte

- ☐ Never/less than 1 per month
- ☐ 1–3 cups per month
- ☐ 1–2 cups per week
- ☐ 3–6 cups per week
- ☐ 1 cup per day
- ☐ 2 or more cups per day

14. Coffee drinks with low-fat or whole milk, e.g., Cappuccino, Mocha, Latte

- ☐ Never/less than 1 per month
- ☐ 1–3 cups per month
- ☐ 1–2 cups per week
- ☐ 3–6 cups per week
- ☐ 1 cup per day
- ☐ 2 or more cups per day

15. Iced coffee with nonfat milk, e.g., Coffee Coolatta, Frappuccino

- ☐ Never/less than 1 per month
- ☐ 1–3 cups per month
- ☐ 1–2 cups per week
- ☐ 3–6 cups per week
- ☐ 1 cup per day
- ☐ 2 or more cups per day

16. Iced coffee with low-fat or whole milk, e.g., Coffee Coolatta, Frappuccino

- ☐ Never/less than 1 per month
- ☐ 1–3 cups per month
- ☐ 1–2 cups per week
- ☐ 3–6 cups per week
- ☐ 1 cup per day
- ☐ 2 or more cups per day

17. Water—tap and bottled (1 glass or bottle)

- ☐ Never/less than 1 per month
- ☐ 1–3 glasses per month
- ☐ 1 glass per week
- ☐ 2–4 glasses per week
- ☐ 5–6 glasses per week
- ☐ 1 glass per day
- ☐ 2 glasses per day
- ☐ 3 or more glasses per day

18. Beer (1 glass, bottle or can)

- ☐ Never/less than 1 per month
- ☐ 1–3 cans per month
- ☐ 1 can per week
- ☐ 2–4 cans per week
- ☐ 5–6 cans per week
- ☐ 1 can per day
- ☐ 2 cans per day
- ☐ 3 or more cans per day

19. Wine or wine coolers (1 glass)

- ☐ Never/less than 1 per month
- ☐ 1–3 glasses per month
- ☐ 1 glass per week
- ☐ 2–4 glasses per week
- ☐ 5–6 glasses per week
- ☐ 1 glass per day
- ☐ 2 glasses per day
- ☐ 3 or more glasses per day

20. Liquor, like vodka or rum (1 drink, 1 shot, 1 bottle) Include ready to drink alcoholic beverages like Hard Lemonade

- ☐ Never/less than 1 per month
- ☐ 1–3 drinks per month
- ☐ 1 drink per week
- ☐ 2–4 drinks per week
- ☐ 5–6 drinks per week
- ☐ 1 drink per day
- ☐ 2 drinks per day
- ☐ 3 or more drinks per day

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15. What **form** of margarine does your family usually use?

- ☐ None
- ☐ Stick
- ☐ Tub
- ☐ Squeeze (liquid)
- ☐ Spray
- ☐ Don't know

What specific brand and type of margarine (like "Promise Light Spread")?

Leave blank if you don't know.

16. What **type** of oil does your family use at home? (Fill in all that apply)

- ☐ Canola oil
- ☐ Corn oil
- ☐ Olive oil
- ☐ Vegetable oil
- ☐ Safflower oil
- ☐ Don't know

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MAIN DISHES

1. Cheeseburger (1)

- ☐ Never/less than 1 per month
- ☐ 1-3 per month
- ☐ One per week
- ☐ 2-4 per week
- ☐ More than 4 per week

2. Hamburger or Sloppy Joe (1)

- ☐ Never/less than 1 per month
- ☐ 1-3 per month
- ☐ One per week
- ☐ 2-4 per week
- ☐ More than 4 per week

3. Tofu, Soyburger, miso, edamame, or other soy dish (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1-3 per month
- ☐ One per week
- ☐ 2-4 per week
- ☐ More than 4 per week

4. Veggieburger (1)

- ☐ Never/less than 1 per month
- ☐ 1-3 per month
- ☐ One per week
- ☐ 2-4 per week
- ☐ More than 4 per week

5. Pizza (2 slices)

- ☐ Never/less than 1 per month
- ☐ 1-3 times per month
- ☐ Once per week
- ☐ 2-4 times per week
- ☐ More than 4 times per week

6. Tacos (1)

- ☐ Never/less than 1 per month
- ☐ 1-3 per month
- ☐ One per week
- ☐ 2-4 per week
- ☐ More than 4 per week

7. Burritos (1)

- ☐ Never/less than 1 per month
- ☐ 1-3 per month
- ☐ One per week
- ☐ 2-4 per week
- ☐ More than 4 per week

8. Which filling do you usually have for tacos/burritos? (Fill in all that apply)

- ☐ Beef & beans
- ☐ Beef
- ☐ Chicken
- ☐ Beans

9. Chicken nuggets (6)

- ☐ Never/less than 1 per month
- ☐ 1-3 times per month
- ☐ Once per week
- ☐ 2-4 times per week
- ☐ More than 4 times per week

10. Beef or Pork hot dogs (1) (include corndogs)

- ☐ Never/less than 1 per month
- ☐ 1-3 per month
- ☐ One per week
- ☐ 2-4 per week
- ☐ More than 4 per week

11. Chicken or Turkey hot dogs or sausage (1)

- ☐ Never/less than 1 per month
- ☐ 1-3 per month
- ☐ One per week
- ☐ 2-4 per week
- ☐ More than 4 per week

12. Chicken or turkey as a mixed dish (e.g., stir fry or soup)

- ☐ Never/less than 1 per month
- ☐ 1-3 times per month
- ☐ Once per week
- ☐ 2-4 times per week
- ☐ More than 4 times per week

13. Chicken or turkey as main dish (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1-3 times per month
- ☐ Once per week
- ☐ 2-4 times per week
- ☐ More than 4 times per week

14. When you have chicken or turkey, do you eat the skin?

- ☐ Yes
- ☐ No
- ☐ Sometimes
- ☐ Don't eat chicken or turkey

15. Fish sticks, fish cakes or fish sandwich (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1-3 times per month
- ☐ Once per week
- ☐ More than once per week

16. Dark meat fish as main dish, e.g., tuna steak, salmon, sardines, swordfish (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1-3 per month
- ☐ Once per week
- ☐ 2-4 per week
- ☐ More than 4 per week

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- 17. Other fish as main dish, e.g., cod, haddock, halibut (1 serving)**
- ☐ Never/less than 1 per month
 - ☐ 1–3 per month
 - ☐ Once per week
 - ☐ 2–4 per week
 - ☐ More than 4 per week
- 18. Shrimp, lobster, scallops (1 serving)**
- ☐ Never/less than 1 per month
 - ☐ 1–3 times per month
 - ☐ Once per week
 - ☐ More than once per week
- 19. Beef, pork or lamb as a mixed dish (e.g., stir fry or stew)**
- ☐ Never/less than 1 per month
 - ☐ 1–3 times per month
 - ☐ Once per week
 - ☐ 2–4 times per week
 - ☐ More than 4 times per week
- 20. Beef (steak, roast) or lamb as main dish (1 serving)**
- ☐ Never/less than 1 per month
 - ☐ 1–3 times per month
 - ☐ Once per week
 - ☐ 2–4 times per week
 - ☐ More than 4 times per week

- 21. Pork, ribs, or ham as main dish (1 serving)**
- ☐ Never/less than 1 per month
 - ☐ 1–3 times per month
 - ☐ Once per week
 - ☐ 2–4 times per week
 - ☐ More than 4 times per week
- 22. Meatballs or meatloaf (1 serving)**
- ☐ Never/less than 1 per month
 - ☐ 1–3 times per month
 - ☐ Once per week
 - ☐ 2–4 times per week
 - ☐ More than 4 times per week
- 23. Noodles/pasta, plain—no sauce (1 serving)**
- ☐ Never/less than 1 per month
 - ☐ 1–3 times per month
 - ☐ Once per week
 - ☐ 2–4 times per week
 - ☐ More than 4 times per week
- 24. Lasagna/baked ziti/ravioli (1 serving)**
- ☐ Never/less than 1 per month
 - ☐ 1–3 times per month
 - ☐ Once per week
 - ☐ More than once per week

- 25. Macaroni and cheese or other pasta with cream sauce (1 serving)**
- ☐ Never/less than 1 per month
 - ☐ 1–3 times per month
 - ☐ Once per week
 - ☐ More than once per week
- 26. Spaghetti or other pasta with tomato sauce (1 serving)**
- ☐ Never/less than 1 per month
 - ☐ 1–3 times per month
 - ☐ Once per week
 - ☐ 2–4 times per week
 - ☐ More than 4 times per week
- 27. Eggs—e.g., scrambled, fried, in breakfast sandwich (1)**
- ☐ Never/less than 1 per month
 - ☐ 1–3 eggs per month
 - ☐ One egg per week
 - ☐ 2–4 eggs per week
 - ☐ More than 4 eggs per week
- 28. Sausage (beef/pork) (2 oz. or 2 small links)**
- ☐ Never/less than once per month
 - ☐ 1–3 times per month
 - ☐ Once per week
 - ☐ 2–4 times per week
 - ☐ More than 4 times per week

- 29. Bacon (2)**
- ☐ Never/less than once per month
 - ☐ 1–3 times per month
 - ☐ Once per week
 - ☐ 2–4 times per week
 - ☐ More than 4 times per week
- 30. Liver (1 serving)**
- ☐ Never/less than 1 per month
 - ☐ Once per month
 - ☐ 2–3 per month
 - ☐ Once per week or more

SANDWICHES

- 1. Peanut butter sandwich (1) or crackers with peanut butter (1 pack)**
- ☐ Never/less than 1 per month
 - ☐ 1–3 per month
 - ☐ One per week
 - ☐ 2–4 per week
 - ☐ More than 4 per week
- 2. Chicken or turkey sandwich (1)**
- ☐ Never/less than 1 per month
 - ☐ 1–3 per month
 - ☐ One per week
 - ☐ 2–4 per week
 - ☐ More than 4 per week
- 3. Roast beef sandwich (1)**
- ☐ Never/less than 1 per month
 - ☐ 1–3 per month
 - ☐ One per week
 - ☐ 2–4 per week
 - ☐ More than 4 per week
- 4. Salami, bologna, ham or other deli meat sandwich (1)**
- ☐ Never/less than 1 per month
 - ☐ 1–3 per month
 - ☐ One per week
 - ☐ 2–4 per week
 - ☐ More than 4 per week
- 5. Tuna sandwich (1)**
- ☐ Never/less than 1 per month
 - ☐ 1–3 per month
 - ☐ One per week
 - ☐ 2–4 per week
 - ☐ More than 4 per week
- 6. Grilled cheese sandwich (1)**
- ☐ Never/less than 1 per month
 - ☐ 1–3 per month
 - ☐ One per week
 - ☐ 2–4 per week
 - ☐ More than 4 per week



SERIAL #

OTHER FOODS

1. Ketchup

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

2. Cream (milk) soups or chowder (1 bowl)

- ☐ Never/less than 1 per month
- ☐ 1–3 bowls per month
- ☐ 1 bowl per week
- ☐ 2–6 bowls per week
- ☐ 1 or more bowls per day

3. Clear soup or broth (with noodles, rice, vegetables) 1 bowl

- ☐ Never/less than 1 per month
- ☐ 1–3 bowls per month
- ☐ 1 bowl per week
- ☐ 2–6 bowls per week
- ☐ 1 or more bowls per day

4. Mayonnaise (1 Tbs.)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–6 times per week
- ☐ 1 or more times per day

5. Low calorie or low fat salad dressing (1–2 Tbs.)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–6 times per week
- ☐ 1 or more times per day

6. Salad dressing (not low calorie) (1–2 Tbs.)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–6 times per week
- ☐ 1 or more times per day

7. Salsa (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–6 times per week
- ☐ 1 or more times per day

8. How many teaspoons of sugar do you ADD to your beverages or food each day?

- ☐ None/less than 1 teaspoon per day
- ☐ 1–2 teaspoons per day
- ☐ 3–4 teaspoons per day
- ☐ 5 or more teaspoons per day

BREADS CEREALS & GRAINS

1. Cold breakfast cereal (1 bowl)

- ☐ Never/less than 1 per month
- ☐ 1–3 bowls per month
- ☐ 1 bowl per week
- ☐ 2–4 bowls per week
- ☐ 5–7 bowls per week
- ☐ More than 1 bowl per day

2. Which cold breakfast cereal do you eat most often (like Cheerios or Special K)?

- ☐ Cheerios
- ☐ Honey Nut Cheerios
- ☐ Frosted Mini-Wheats
- ☐ Frosted Flakes
- ☐ Cinnamon Toast Crunch

Other:

- ☐ Never eat cold breakfast cereal

RK	0	0	0	0
HB	1	1	1	1
LC	2	2	2	2
FL	3	3	3	3
L	4	4	4	4
PB	5	5	5	5
SK	6	6	6	6
CC	7	7	7	7
	8	8	8	8
	9	9	9	9

3. Oatmeal, include instant (1 bowl)

- ☐ Never/less than 1 per month
- ☐ 1–3 bowls per month
- ☐ 1 bowl per week
- ☐ 2–4 bowls per week
- ☐ 5–7 bowls per week
- ☐ More than 1 bowl per day

4. Other cooked breakfast cereal—e.g., cream of wheat, grits (1 bowl)

- ☐ Never/less than 1 per month
- ☐ 1–3 bowls per month
- ☐ 1 bowl per week
- ☐ 2–4 bowls per week
- ☐ 5–7 bowls per week
- ☐ More than 1 bowl per day

5. White bread, pita bread, include toast—**not** in sandwiches (1 slice)

- ☐ Never/less than 1 per month
- ☐ 1 slice per week or less
- ☐ 2–4 slices per week
- ☐ 5–7 slices per week
- ☐ 2–3 slices per day
- ☐ More than 3 slices per day

6. Whole wheat or whole grain bread, include toast—**not** in sandwiches (1 slice)

- ☐ Never/less than 1 per month
- ☐ 1 slice per week or less
- ☐ 2–4 slices per week
- ☐ 5–7 slices per week
- ☐ 2–3 slices per day
- ☐ More than 3 slices per day

7. English muffins, bagels, or rolls (1)—include breakfast sandwich

- ☐ Never/less than 1 per month
- ☐ 1–3 per month
- ☐ 1 per week
- ☐ 2–4 per week
- ☐ More than 4 per week

8. Muffin (1) or cornbread (1 square)

- ☐ Never/less than 1 per month
- ☐ 1–3 per month
- ☐ 1 per week
- ☐ 2–4 per week
- ☐ More than 4 per week

9. Croissant (1)

- ☐ Never/less than 1 per month
- ☐ 1–3 per month
- ☐ 1 per week
- ☐ 2–4 per week
- ☐ More than 4 per week

10. Biscuit (1)

- ☐ Never/less than 1 per month
- ☐ 1–3 per month
- ☐ 1 per week
- ☐ 2–4 per week
- ☐ More than 4 per week

11. White rice (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

12. Brown rice (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

13. Corn or flour tortilla—no filling e.g., quesadilla *not* tacos or burritos (2)

- ☐ Never/less than 1 per month
- ☐ 1–3 per month
- ☐ 1 per week
- ☐ 2–4 per week
- ☐ More than 4 per week

14. Pancakes or waffles (2)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

15. French toast (2 slices)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

16. French fries, tater tots, hash browns (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 servings per month
- ☐ 1 serving per week
- ☐ 2–4 servings per week
- ☐ More than 4 servings per week

17. Potatoes—baked or boiled (1), mashed (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

FRUITS AND VEGETABLES *There are no right or wrong answers.***1. Raisins (small pack)**

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ 1 per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

2. Grapes (bunch)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ 1 per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

3. Bananas (1)

- ☐ Never/less than 1 per month
- ☐ 1–3 per month
- ☐ 1 per week
- ☐ 2–4 per week
- ☐ More than 4 per week

4. Apples (1)

- ☐ Never/less than 1 per month
- ☐ 1–3 per month
- ☐ 1 per week
- ☐ 2–6 per week
- ☐ 1 or more per day

5. Applesauce (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 per month
- ☐ 1 per week
- ☐ 2–6 per week
- ☐ 1 or more per day

6. Pears (1)

- ☐ Never/less than 1 per month
- ☐ 1–3 per month
- ☐ 1 per week
- ☐ 2–6 per week
- ☐ 1 or more per day

7. Cantaloupe, melon (1 wedge)

- ☐ Never/less than once per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ More than once per week

8. Watermelon (1 wedge)

- ☐ Never/less than once per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ More than once per week

9. Oranges (1)

- ☐ Never/less than 1 per month
- ☐ 1–3 per month
- ☐ 1 per week
- ☐ 2–6 per week
- ☐ 1 or more per day

10. Grapefruit (1/2)

- ☐ Never/less than 1 per month
- ☐ 1–3 per month
- ☐ 1 per week
- ☐ 2–6 per week
- ☐ 1 or more per day

11. Strawberries (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

12. Blueberries (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

13. Peaches, plums, apricots (1)

- ☐ Never/less than 1 per month
- ☐ 1–3 per month
- ☐ 1 per week
- ☐ 2–4 per week
- ☐ More than 4 per week

14. Pineapple (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ More than once per week

15. Orange juice (1 glass)

- ☐ Never/less than 1 per month
- ☐ 1–3 glasses per month
- ☐ 1 glass per week
- ☐ 2–6 glasses per week
- ☐ 1 glass per day
- ☐ More than 1 glass per day

16. Apple juice and other 100% fruit juices (1 glass)

- ☐ Never/less than 1 per month
- ☐ 1–3 glasses per month
- ☐ 1 glass per week
- ☐ 2–6 glasses per week
- ☐ 1 glass per day
- ☐ More than 1 glass per day

17. Tomatoes (2 slices)

- ☐ Never/less than 1 per month
- ☐ 1–3 per month
- ☐ 1 per week
- ☐ 2–6 per week
- ☐ 1 or more per day

18. Tomato juice (1 small glass)

- ☐ Never/less than 1 per month
- ☐ 1–3 per month
- ☐ 1 per week
- ☐ 2–6 per week
- ☐ 1 or more per day

19. V8 Fusion (1 small glass)

- ☐ Never/less than 1 per month
- ☐ 1–3 per month
- ☐ 1 per week
- ☐ 2–6 per week
- ☐ 1 or more per day

20. Green beans (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

21. Beans or lentils—include baked beans (1 serving)

- ☐ Never/less than 1 per month
- ☐ Once per week or less
- ☐ 2–6 times per week
- ☐ Once per day

22. Broccoli (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

23. Cauliflower (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

24. Corn (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

25. Peas (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

26. Mixed vegetables (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

27. Spinach, raw as in salad (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

28. Collard greens/kale/cooked spinach (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

29. Green/red/yellow peppers (3 slices)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

30. Yams/sweet potatoes (medium or 1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

31. Zucchini, summer squash, eggplant (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

32. Carrots, cooked (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

33. Carrots, raw (1/2 carrot or 2–4 baby carrots)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

34. Celery (2 or 3 sticks)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

35. Lettuce/tossed salad (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–6 times per week
- ☐ 1 or more per day

36. Coleslaw (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ More than once per week

37. Cabbage (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ More than once per week

38. Potato salad (small serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ More than once per week

39. Pasta salad (small serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ More than once per week

40. Okra (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ More than once per week

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41. Onion rings, cooked onions, or onion soup (small serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ More than once per week

SNACK FOODS/DESSERTS

1. Potato chips (1 small bag)

- ☐ Never/less than 1 per month
- ☐ 1–3 small bags per month
- ☐ One small bag per week
- ☐ 2–6 small bags per week
- ☐ 1 or more small bags per day

2. Corn chips/Doritos (1 small bag)

- ☐ Never/less than 1 per month
- ☐ 1–3 small bags per month
- ☐ One small bag per week
- ☐ 2–6 small bags per week
- ☐ 1 or more small bags per day

3. Popcorn (1 small bag)

- ☐ Never/less than 1 per month
- ☐ 1–3 small bags per month
- ☐ 1–4 small bags per week
- ☐ More than 4 small bags per week

4. Pretzels (1 small bag)

- ☐ Never/less than 1 per month
- ☐ 1–3 small bags per month
- ☐ 1 small bag per week
- ☐ More than 1 small bag per week

5. Mixed dried fruit/trail mix (small bag)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ 1 per week
- ☐ 2–6 per week
- ☐ 1 or more per day

6. Peanuts (1 small bag)

- ☐ Never/less than 1 per month
- ☐ 1–3 small bags per month
- ☐ 1–4 small bags per week
- ☐ More than 4 small bags per week

7. Other nuts (1 small bag)

- ☐ Never/less than 1 per month
- ☐ 1–3 small bags per month
- ☐ 1–4 small bags per week
- ☐ More than 4 small bags per week

8. Fruit snacks or fruit rollups (1 pack)

- ☐ Never/less than 1 per month
- ☐ 1–3 packs per month
- ☐ 1–4 packs per week
- ☐ More than 4 packs per week

9. Graham crackers (2 squares)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ 1–4 times per week
- ☐ More than 4 times per week

10. Crackers, e.g., Wheat Thins or Ritz, Cheez-Its, soda crackers, Saltines (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ 1–4 times per week
- ☐ More than 4 times per week

11. Poptarts (1)

- ☐ Never/less than 1 per month
- ☐ 1–3 poptarts per month
- ☐ 1–6 poptarts per week
- ☐ 1 or more poptarts per day

12. Cake (1 slice) or cupcake with frosting (1)

- ☐ Never/less than 1 per month
- ☐ 1–3 slices per month
- ☐ 1 slice per week
- ☐ More than 1 slice per week

13. Snack cakes, like Ring Dings/Swiss Rolls/Twinkies (1 package)

- ☐ Never/less than 1 per month
- ☐ 1–3 per month
- ☐ Once per week
- ☐ 2–6 per week
- ☐ 1 or more per day

14. Danish, cinnamon rolls, pastry (1)

- ☐ Never/less than 1 per month
- ☐ 1–3 per month
- ☐ 1 per week
- ☐ 2–4 per week
- ☐ More than 4 per week

15. Donuts (1) or churros (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 per month
- ☐ 1 per week
- ☐ 2–6 per week
- ☐ More than 1 per day

16. Cookies (1)

- ☐ Never/less than 1 per month
- ☐ 1–3 cookies per month
- ☐ 1 cookie per week
- ☐ 2–6 cookies per week
- ☐ 1–3 cookies per day
- ☐ More than 3 cookies per day

17. Brownies (1)

- ☐ Never/less than 1 per month
- ☐ 1–3 per month
- ☐ 1 per week
- ☐ 2–4 per week
- ☐ More than 4 per week

18. Pie or fruit crisp (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 slices per month
- ☐ 1 slice per week
- ☐ More than 1 slice per week

19. Chocolate like Hershey's or M & M's (1 bar or packet)

- ☐ Never/less than 1 per month
- ☐ 1–3 per month
- ☐ 1 per week
- ☐ 2–6 per week
- ☐ 1 or more per day

20. Other candy bars like Milky Way, Snickers (1 bar)

- ☐ Never/less than 1 per month
- ☐ 1–3 candy bars per month
- ☐ 1 candy bar per week
- ☐ 2–6 candy bars per week
- ☐ 1 or more candy bars per day

21. Other candy without chocolate like Skittles (1 pack)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–6 times per week
- ☐ 1 or more times per day

22. Jello (1 serving)—not sugar free

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

23. Pudding or pudding pops, not sugar free (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

24. Frozen yogurt or low-fat ice cream (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

25. Ice cream (1 serving)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ Once per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

26. Popsicles, ice pops, fudgesicle (1)

- ☐ Never/less than 1 per month
- ☐ 1–3 per month
- ☐ 1 per week
- ☐ 2–4 per week
- ☐ More than 4 per week

27. Seeds like Sunflower or Pumpkin (small bag)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ 1 time per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

28. Snack bars (e.g., Nutrigrain, granola, Kashi, Planters) (1)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ 1 time per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

29. Energy bars (e.g., Clif, Luna, Glucerna, Powerbar) (1)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ 1 time per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

30. High protein bars (e.g., Atkins, Zone, South Beach) (1)

- ☐ Never/less than 1 per month
- ☐ 1–3 times per month
- ☐ 1 time per week
- ☐ 2–4 times per week
- ☐ More than 4 times per week

31. Jams, jellies, fluff, syrup or honey (Tbs.)

- ☐ Never/less than 1 per month
- ☐ 1–3 per month
- ☐ 1 per week
- ☐ 2–4 times per week
- ☐ More than 1 per day

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