# The REACH method: Nutritional and Exercise Counseling for Pediatric Patients

Nutrition and exercise counseling for pediatric patients at the Matthew Walker Comprehensive Care Centers in Nashville and Clarksville Tennessee


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## Abstract

Obesity is one of the leading health problems facing the United States today. According to the CDC, more than 33% of children and adolescents are considered overweight or obese. The focus of this project was to counsel children about nutrition and weight management in hopes that these tools will be carried with them into adulthood. This was accomplished using the REACH method (Record Exchange Adjust portions Commit Hustle up!). Patients and their parents were assessed on their knowledge regarding nutrition; they were then counseled and assessed again on whether they found the consultation to be helpful.


### Introduction

Obesity is one of the leading health problems facing the United States today. It is estimated that over 67% of adults in the United States are considered overweight or obese (1) and according to the CDC, more than 33% of children and adolescents are considered overweight or obese, a percentage that has more than doubled in children and quadrupled in adolescents (2). It is an established trend that obese kids become obese adults, so the focus of this project was to educate pediatric patients aged 10 to 21 at the Matthew Walker Comprehensive Care Clinics about nutrition and weight management in hopes that these

educational tools will be carried with them into adulthood and will help to diminish this devastating epidemic.

One big determinant of childhood obesity is having obese parents and another is the child's home environment in regards to food (6). It is for these reasons that the focus of my counseling was on the pediatric patient however, I also chose to educate the parents as well.

**Background**

The reasons for the obesity epidemic are numerous and multi-faceted in nature. Individual obesity can be caused by a number of factors including genetics, metabolic determinants and personal eating habits as well as a lack of activity. Many of these issues have been factors leading to obesity for decades; however a couple of these factors have seemed to become more prevalent, thus increasing the rate of obesity among the US population. With the growing demand for convenience in our modern culture, many people have turned to convenient and cheap food options such as processed and fast food. While these options are the most readily available and cost- effective, they are also the most detrimental to one's health; being loaded with trans-fat, sugar, preservatives, and a high amount of calories. With the average American eating out 4-5 times a week, it is not hard to see how these types of eating habits have posed such a high threat to the overall health of the general population.

The frightening aspect of this epidemic is the potentially fatal diseases that arise as a result of obesity. The CDC reports that being obese greatly increases one's risk of coronary heart disease, stroke, hypertension, type 2 diabetes and some cancers as well as other equally severe chronic diseases (3). Chronic disease is not the only devastation that obesity causes; it is also a

very costly epidemic, with the average yearly cost of medical care related to obesity reaching over a billion dollars (3).

The second factor that has greatly attributed to the sharp rise in obesity is the lack of physical activity among Americans. This can also be attributed to the "convenience" culture, as well as the growing technological world that we live in. With 95% of American households owning a vehicle(4), it is likely that most Americans do not get as much physical activity as people got in the past, when owning a vehicle was not as common as it is today. In general, there is also much more of an emphasis on sedentary activities such as watching television and being consumed with technology that decreases the amount of physical activity that the average American will typically take part in.

The sedentary lifestyle is particularly prevalent among children who instead of playing tag or jumping rope, tend to spend hours in front of the television or on the computer. Research has shown a link between excessive television watching by kids and childhood obesity (7). With the average child watching about 35 hours of television weekly, it is apparent that most children are not getting an adequate amount of physical activity. While adults may have structured physical activity such as going to the gym or working out at home, kids do not typically have this option. The majority of their physical activity usually comes from their "play" and leisure time. With obesity in children quickly reaching new heights, it is imperative that children are educated on how to make healthy food choices as well as the importance of daily physical activity, so that they will become healthy adults and eventually raise healthy children.

One very important aspect of the counseling method that I chose to use was focusing on teaching the pediatric patients as well as their parents how to make healthy eating choices and

live an overall healthy lifestyle by watching how many times they eat, what they eat, and participating in some kind of physical activity. I purposely chose not to put any focus on losing weight or "dieting" because I wanted the pediatric patients to understand that this is a lifestyle change that I was trying to help them make, not just lose weight. In my opinion, it is better on a child mentally to teach them ways to make healthier choices and allow the weight to come off naturally, than to have them focus on just losing weight.

**Methodology**

Because the subjects of this research are children, the technique used to counsel them about nutrition and exercise was simplified and streamlined into a method known as REACH that would be easier for the patients to follow and hopefully commit to. REACH is an acronym that was used to outline the steps that the patients were to take to make their eating habits healthier as well as engage in some physical activity.

I spent the first week and a half of my research timeline developing the REACH method along with the pre and post-assessments that went along with the method. I spent the next 4 weeks collecting data by counseling patients and collecting their pre and post-assessments. I also used the last week to analyze the data and make further recommendations.

During the data collection, each patient was given nutrition and exercise pre-assessment prior to seeing myself or the physician (Appendix I). The pre-assessment was given to the patients to complete on their own but the parent, if present, was encouraged to complete it along with them. After completion of the pre-assessments, I met with each of the patients and their families to discuss and educate them on a healthy diet and the importance of exercise. It was at this point that the REACH method was introduced to them. At the start of the consultation, I

explained what the REACH method was and how I planned to use it during their visit. We began with the R which stands for record. I asked the patient and their parent what a typical day of eating was like for the patient, including breakfast, lunch, dinner and snacks. After discussing this with the patient, we then moved on to the E which stands for exchange. I brought with me to each visit, a list of healthy meal alternatives for kids (Appendix III). The list included alternatives for each meal as well as some healthy snack options. I then discussed the list with the patient and parent and talked about what healthy options they would be comfortable exchanging for some of the unhealthy items already in their diets. This discussion included tips on how to make the meals they already eat healthier such as using skim or 1% milk with their cereal instead of 2% or whole as well as using whole wheat whenever possible.

We then moved on to the 'A' in the REACH method which stands for adjust portion sizes. I took this time during the consultation to educate the patient and parent on the correct portion sizes that should be used with each of the 5 food groups. I related each portion size to an everyday item that would allow them to better visualize what that amount actually looked like. For example, when discussing the correct portion size of a serving of fruit, I compared it to the size of a tennis ball, and grains to the size of a computer mouse.

The next step in the method was the 'C' which stands for commit to a goal. This was when I asked the patient to commit to making one attainable, healthy change to their diets. This commitment could be as big or small as they wanted it to be; just something they felt they would actually stick to. Some of the commitments included eating chocolate only once a week, and switching to only whole wheat bread. The purpose of the commitment portion of this method was to aid the patient in making a realistic change that they could start right away and would not feel too overwhelming for them. This also gave the child some control over their health by

allowing them to make the decision themselves. It gave them the opportunity to think about what they usually eat and decide what they thought would be a healthy change for them. This was part of the objective of this method; allowing the children to make their own decisions about their health and giving them the tools to do so.

The final part of this method was the 'H' which stands for hustle up! It was during this portion that I discussed the importance of physical activity and whether or not the patient was engaging in enough of it. I discussed some fun options to get the patients moving including sports, normal play and even electronic games that require physical movement such as the Wii. It was during this part of the consultation that I really wanted to help the child to understand that engaging in physical activity did not have to be a daunting task for them, but could be something that they already find to be enjoyable such as dancing or playing basketball. Presenting options such as these, gave more realistic options to the kids that would be more likely to get them moving.

At the closing of the consultation, I asked if there were any questions and gave the patients the post-assessment to complete (Appendix II). The post-assessment was given to assess whether the patients and their families found the REACH method of nutritional and exercise counseling to be helpful and if they planned to put it into use. I also gave them a healthy meal alternatives list for them to keep to reference for future purposes and to remind them of the healthy options that we discussed (Appendix III). We also discussed some helpful websites that they could reference in regards to portion sizes and more healthy meal options such as www.myplate.com.

**Results**

*Pre-assessment results*

There were 19 pre and post-assessments that were completed and collected. The first question of the pre-assessment was asked in order to determine whether or not the patient believed that they were already following a healthy diet and if so, how often they followed this diet. 16% of patients reported that they always eat a healthy diet, 47% of the patients that completed the pre-assessments reported that they typically eat a healthy diet most of time, 21% reported eating a healthy diet some of the time, and 16% reported never eating a healthy diet. (Graph: Appendix IV *Figure A*)

When asked what the biggest barrier to eating healthy was, the most popular answer was "other" with 50% of the patients choosing this answer. 30% of the patients said that they just do not like to eat healthy food, 15% reported that it's too expensive to eat healthy, 10% reported that they were not quite sure how to eat healthy, and 5% said that it's too hard to find healthy foods. (Graph: Appendix IV: *Figure B*)

The next question asked "what is the recommended portion size for a bowl of cereal?" This was asked to gauge the patients' knowledge of accurate portion sizes. Most of the patients correctly answered this question, with 55% of them choosing 1 cup. 27% chose 1.5 cups, 11% chose 2 cups and 7% chose 2.5 cups. (Graph: Appendix IV: *Figure C*)

The next question was "What is the recommended portion size for vegetables?" This was also asked to gauge the patients' knowledge of accurate portion sizes. Most of the patients over-estimated the correct portion size, with 52% of them choosing 2 cups. 21% answered the question correctly, choosing 1 cup, another 21% chose 3 cups and 6% chose 4 cups. (Graph: Appendix IV: *Figure D*)

Next, they were asked "How many servings of fruits do you eat a day?" This was asked as a way to assess how healthy the patients' diet already was. The recommended amount of servings of fruits that a person should eat a day is 3 to 5. Most of the patients reported eating less than this, with 58% saying that they only consumed 1 to 2 servings of fruits a day. 31% reported eating the recommended number of servings with 26% eating 3 to 4 servings a day and 5% eating 5 or more servings. 11% said that they do not eat any servings of fruits. (Graph: Appendix IV *Figure E*)

The next question was also used to assess the patients' diet. They were asked "How many servings of vegetables do you eat a day?" The recommended servings of vegetables per day are also 3 to 5. Even less of the patients actually consume the recommended servings of vegetables per day with only 21% reporting eating 3 to 4 servings and none reporting eating 5 or more. The majority, at 63%, reported consuming 1 to 2 servings of vegetables a day and 16% do not eat any vegetables. (Graph: Appendix IV *Figure F*)

I asked each patient how many times a week they typically eat fast food and how many times a week they typically exercised. 63% reported eating fast food 1 to 2 times a week, 16% said they eat out 3 to 4 times a week, 5% reported eating out 5 or more times a week and another 16% said they do not eat fast food at all. (Graph: Appendix IV *Figure G*) 33% of patients stated that they typically exercise 3 to 4 times a week. 28% reported exercising 5 or more times a week, 11% said they exercise 1 to 2 times and week and 28% stated that they typically work out 0 days a week. (Graph: Appendix IV *Figure H*)

The last question that the patients were asked was to list three health risks of an unhealthy diet. This was asked in order to get an understanding of whether or not the pediatric patient

population at Matthew Walker was educated on the dangers of having an unhealthy diet. 68% of the patients completed this portion of the pre-assessment and correctly listed health issues that could arise from an unhealthy diet. The most popular answers that were written were high blood pressure, diabetes, overweight/obese, and heart problems.

*Post- assessment results*

After being counseled on nutrition and exercise, each patient was given a post-assessment to assess whether they found the counseling helpful and if they found the REACH method useful in their everyday lives. They were also asked if they planned to put the REACH method into use and whether they thought it would improve their health.

100% of the patients that completed the post-assessment said that they found the nutritional instruction to be helpful. 84% of the patients reported that their knowledge of the appropriate portion sizes improved after the nutritional counseling. 100% of the patients said that they planned to apply the REACH method to their daily lives and that they thought that the REACH method would improve their overall health. 89% of the patients reported that they would recommend the REACH method to someone else. When asked how likely they were to follow through with the REACH commitment, 53% of patients said that it was very likely that they would follow through, 47% said that it was somewhat likely that they would follow through and no patients said that it was not likely that they would follow through with the commitment.

**Discussion**

The REACH method of nutritional and exercise counseling was received well by the majority of the pediatric patients that I counseled. The purpose of the pre-assessments was to give me a general idea of habits in regards to nutrition and exercise that the patient already had

as well as the knowledge of healthy eating guidelines such as the correct portion sizes of vegetables and grains and how many servings of fruits and vegetables they should be eating.

One important assessment that I obtained from the pre-assessments was rather or not the patients were aware or knew of the potential health risks of having an unhealthy diet. On the pre-assessment, I asked the patients to list three of these health risks and about 68% of patients successfully completed this portion with accurate health risks. The answers to this question revealed an interesting pattern of thought from the majority of the patients. Even those patients that said that they do not typically eat a healthy diet and do not work out often knew of the potential health risks that this could pose to them. This showed me that it is not just about educating the patient on what could happen to them if they do not lead a healthy lifestyle that will get them to change their habits. Most of the patients were already educated on this subject matter. This shows that maybe, as a healthcare system, we should revise our methods of education in a manner that would be more likely to change behavior. This thought pattern could be due to the fact that the patients are all pediatric patients between the ages of 10 and 21 and so may feel that because they are young, they are not at as much of a risk of these health issues as the older population would be.

Another reason for this thinking may be that young people tend to believe that just because they are not overweight, they are healthy. They do not realize that there are other health parameters such as a high triglyceride levels and high blood pressure that can result from an unhealthy lifestyle regardless of obesity status. This is the reason I chose to counsel patients without particular regard to their BMIs, because I wanted to make sure that the patients learned how to lead a healthier lifestyle and maybe even prevent them from becoming overweight or obese later on in life.

One thing that stood out to me in the results of the pre-assessment was that although 47% of the patients reported eating healthy most of the time and another 16% reported always eating healthy, when asked about what they normally eat for breakfast, lunch, and dinner, the majority of the patients did not in fact have healthy diets. This could be because they were not really knowledgeable of what it meant to have a healthy diet or they chose the answer that they thought they were supposed to choose as opposed to the more truthful answer.

One thing I tried to cover in my counseling was providing the pediatric patients with healthy meal alternatives that they would like so that they would be more likely to make those changes in their diets. With 30% of the patients reporting that their biggest barrier to eating healthy is that they do not like healthy foods, I think that it is important, especially with kids, to give them some realistic options that they will still find enjoyable to eat.

From the results, it seems that the majority of the patients were knowledgeable about correct portion sizes, at least when it came to cereal. More than half of the patients that completed the pre-assessment chose the correct answer of 1 cup and another 28% were not far off from the correct answer, choosing 1.5 cups for the correct portion size of cereal. The trend was slightly different when it came to choosing the correct portion size for vegetables, as more than half of the patients chose 2 cups instead of 1 cup. This could be due to the fact that people tend to believe that they should be eating larger portions of vegetables since vegetables are considered healthy. What I gained overall from my nutritional counseling, was that the patients had at least somewhat of an idea of the correct portion sizes for the food groups they eat. I also noted, however, that this knowledge was often not reflected in the sizes of portions they actually consume.

The answers to the pre-assessments showed that the majority of patients did not consume the number of servings of fruits and vegetables that are recommended per day. It is recommended that one is to consume at least 3 servings of fruits as well as vegetables a day and only 32% of patients reported reaching this amount in regards to servings of fruit per day and 21% met these criteria for vegetables. This shows the importance of educating the pediatric patients and parents not only about eating fruits and vegetables everyday but also about how many servings of these things they should have per day. I tried to stress eating vegetables with every meal and some kind of fruit as snacks throughout the day with the patients that I counseled.

The majority of patients reported eating fast food only 1 to 2 times per week which was a different result than anticipated. However, based on this result it shows that we should focus more on teaching people how to cook in ways that are healthier such as avoiding fried foods and added sugars rather than focusing so much on the consumption of fast foods.

58% of the patients reported working out at least 3 times a week. Those who reported this were usually involved in some type of structured exercise which included most often being a part of some type of sports teams. Some of the children were also involved in some type of summer camp activities. This was a higher percentage than anticipated and very positive in regards to the amount of physical activity the average patient from this population is taking part in. However, there were another 26% of patients who reported that they typically did not exercise at all. For those patients, I tried to stress the importance of participating in some form of physical activity and listed options that the patients could take part in such as playing sports for fun that they already enjoy playing or even using some video games that required more physical activity.

## Limitations

There were several limitations to completing this research. One limitation was the age requirement for the nutritional and exercise counseling as well as language barriers. The pediatric clinic at Matthew Walker provides care to children ages newborn to 25 years of age, but the age bracket for my research was 10 to 21 which limited the number of patients that I was able to counsel. Matthew Walker also provides care to both English and Spanish speaking patients. Almost 50% of the patients seen at Matthew Walker are Spanish speaking and so I was unable to counsel them which also limited the number of patients that were able to participate in my research.

There was also another National Medical Fellow PCLP scholar in the pediatric clinic who was conducting similar nutritional and exercise research and so the pediatric patients that were eligible to participate in the research had to be split between the other scholar and myself which limited the amount of patients that I could personally counsel.

There was also a limitation regarding honesty in completing both the pre and post-assessments. When completing the pre-assessment, the patients might have tried to answer the questions by putting what they thought would be the "correct" answers as opposed to the truthful answers. For example, patients may have reported eating fast food less than what they actually do and working out more than what they actually do. Also, for the post-assessment, patients may have felt pressured to report positive responses in regards to the REACH method and the nutritional counseling.

## Recommendations

100% of the patients that were counseled reported that they found the nutritional and exercise counseling to be helpful and that they intended to apply it to their everyday lives. For this reason, I suggest that Matthew Walker continue to put the REACH method into practice with their pediatric patients. I believe that the REACH method is a simple, yet effective way to teach pediatric patients and their families about good nutritional habits and the importance of exercise.

I also recommend that the nutritional counseling have a focus on educating the patients about how an unhealthy diet can affect them right now, even if they believe that because they are young, they are healthy. The REACH method was created to focus on the prevention of some of the chronic diseases that arise as a result of unhealthy lifestyles, as opposed to just treating it after the fact.

I also recommend that the list of healthy meal alternatives be expanded to reach a wider range of patients. I think that the REACH method should be expanded to cater to different types of specific health conditions as well, such as diabetes, hypertension, and high cholesterol/triglycerides so that the method can be more tailored to the patients' specific needs.

**Conclusion**

Childhood obesity is a growing issue that persists in the country today. Because childhood obesity leads to adult obesity as well as to chronic illnesses later in life, it is imperative that the pediatric patients and their parents are counseled on how to make healthier lifestyle changes while the patients are still young. The REACH method of nutritional and exercise counseling is a tool that has been simplified and streamlined to better educate and counsel pediatric patients and their parents on how to lead a healthier lifestyle. The REACH method was very favorably received by the pediatric patients and parents at the Matthew Walker

Comprehensive Care Centers in Nashville and Clarksville Tennessee. By using the REACH method in the Matthew Walker clinics, the pediatric patients were taught how to make realistic and healthy changes to their diets as well as become more physically active in an attempt to fight the obesity epidemic and the consequences that come along with an unhealthy lifestyle.

**Appendix I: Nutrition and Exercise Pre- Assessment**

# Pre- Assessment

1) I typically eat a healthy diet (circle one)

   Always  Most of the time  Some of the time  Never

2) What is your biggest barrier to eating healthy? (place an X next to the comment(s) that you agree with)
   ___ It's too expensive

   ___ I am not quite sure of how to eat healthy

   ___ It is too hard to find healthy foods

   ___ I just do not like eating healthy foods

   ___ Other

3) What is the recommended portion size for a bowl of cereal? (circle one)

   1 cup  1.5 cups  2 cups  2.5 cups

4) What is the recommended portion size for vegetables?
   1 cup  2 cups  3 cups  4 cups

5) How many servings of fruits do you eat a day (circle one)

   0  1-2  3-4  5 or more

6) How many servings of vegetables do you eat a day (circle one)

   0  1-2  3-4  5 or more

7) I typically eat fast food ___ times a week (please mark with an X)

   0  1-2  3-4  5 or more

8) I typically exercise ___ times a week (please mark with an X)

   0  1-2  3-4  5 or more

9) What are 3 health risks of an unhealthy diet (circle one)
   1.

   2.

   3.

**Appendix II: REACH Method Post- Assessment**

# Post- assessment

1) Did you find the nutritional instruction to be helpful?

   Yes No

2) Has your knowledge of appropriate portion sizes improved?
   Yes No

3) Do you plan to apply the REACH method to your daily life?

   Yes No

4) Do you think applying the REACH method will improve your overall health?

   Yes No

5) Would you recommend the REACH method to someone else?
   Yes No

6) How likely are you to follow through with the REACH commitment?

   Not likely Somewhat likely Very likely

7) What recommendations would you make to improve the method?

## Appendix III: Healthy Alternative Meals Handout

### Healthy Meal Alternatives

**Breakfast**

- Oatmeal
- Whole grain/ Wheat bagel
- Cereals (w/skim or 1% milk)
    - Frosted mini wheats
    - Raisin bran
    - Honey nut cheerios
    - Rice Crispies
    - Kix
    - Wheaties

**Lunch**

- Turkey hot dogs
- Turkey sandwiches (whole wheat bread)
- Chicken wrap
- Whole wheat peanut butter and jelly sandwich
- Tuna sandwich (whole wheat bread)

**Dinner**

- Baked fish
- Turkey burgers
- Whole wheat spaghetti
- Fish/chicken tacos (whole wheat tortillas)

**Snacks/ Desserts**

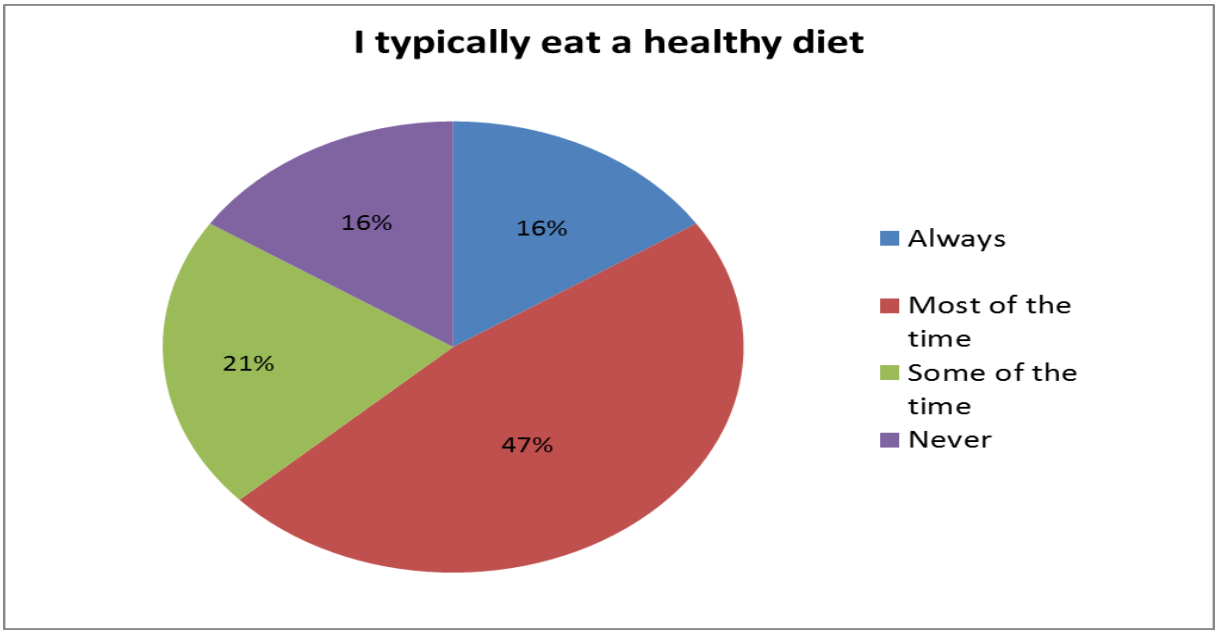
- Yogurt
- Apples & peanut butter
- Bananas
- Oranges
- String cheese
- Nuts
- Frozen fruit juice bars
- Baked chips/ pop chips

**Beverages**

- Water
- 100% fruit juice

**Appendix IV: Pre- Assessment Graphs**

*Figure A*

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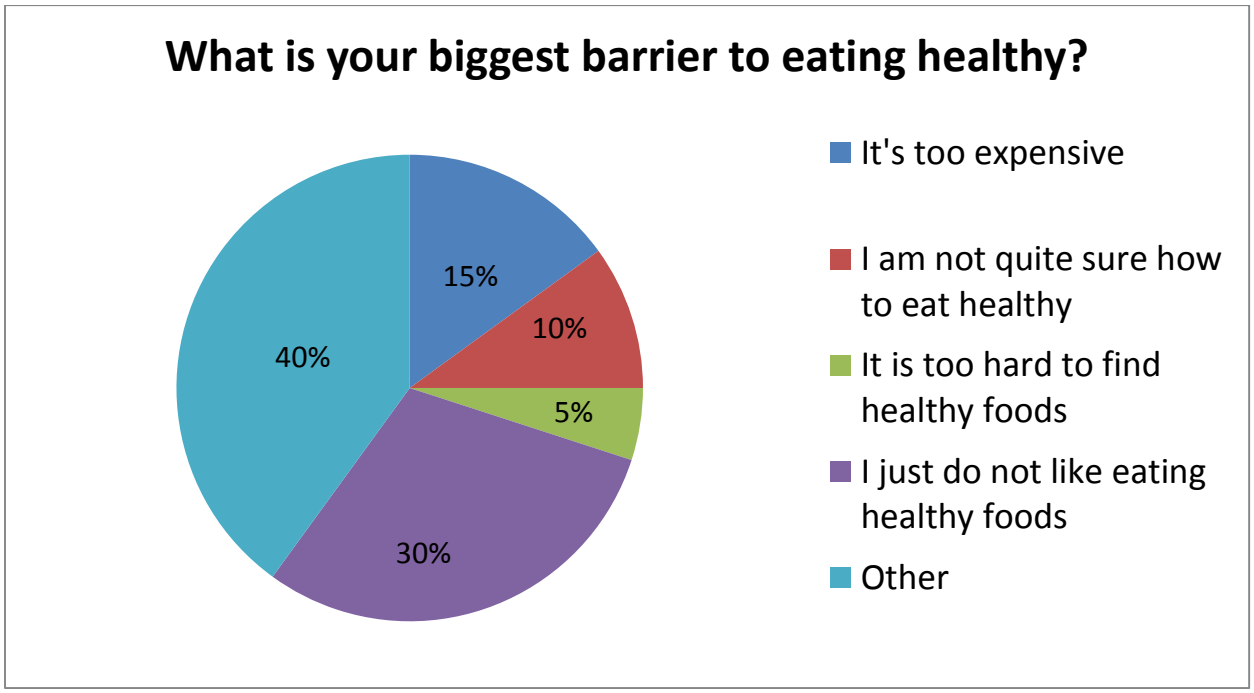

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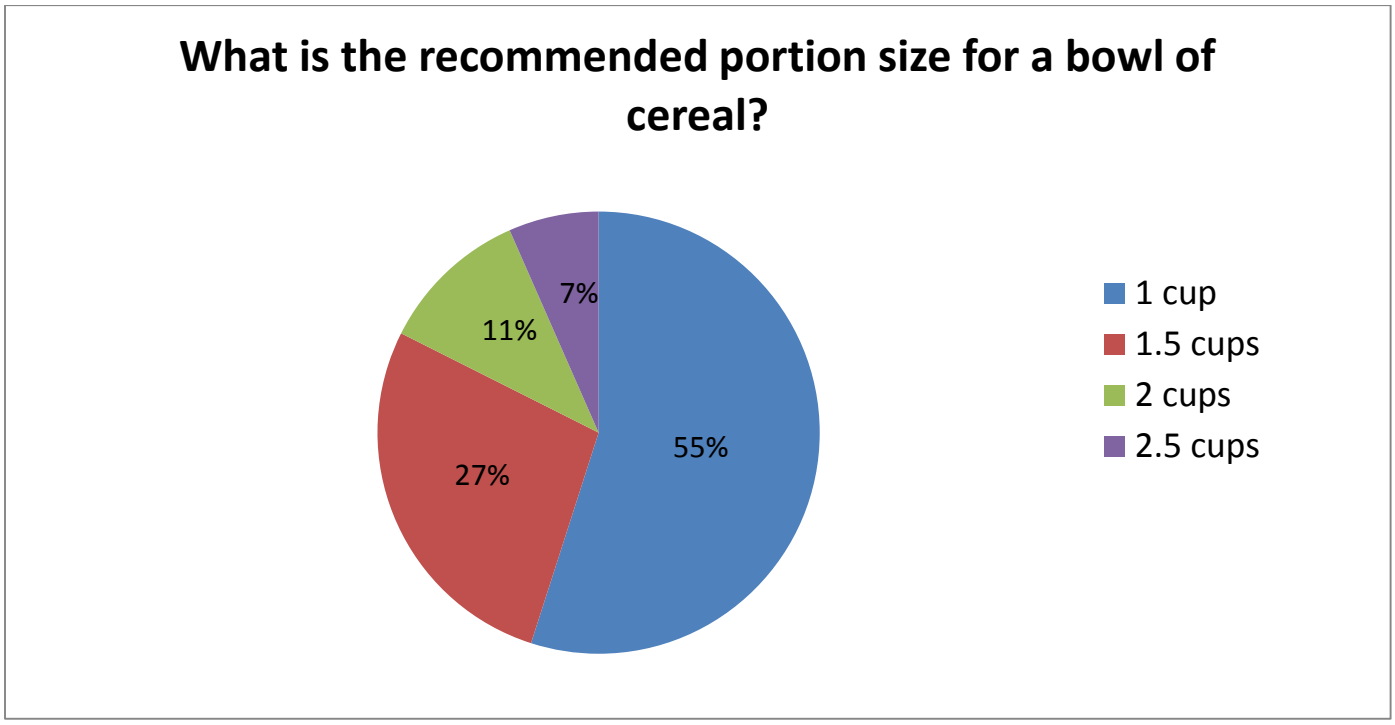


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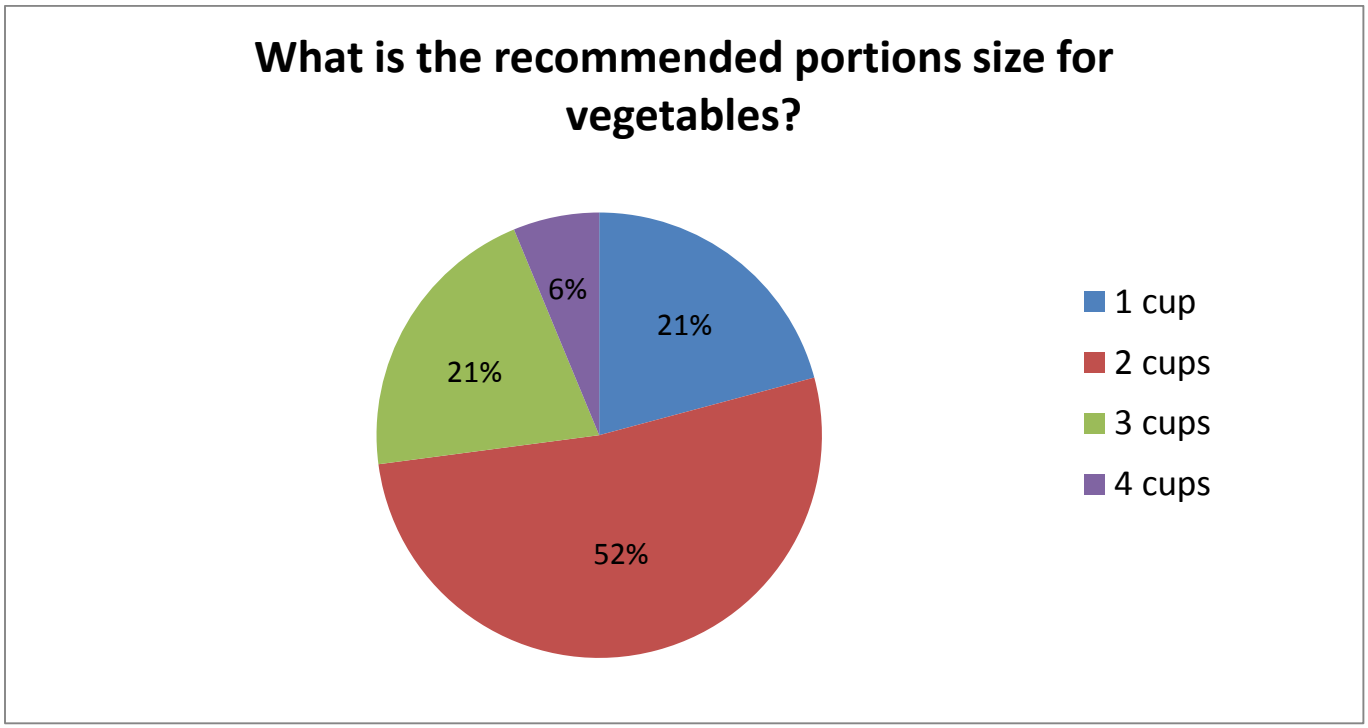

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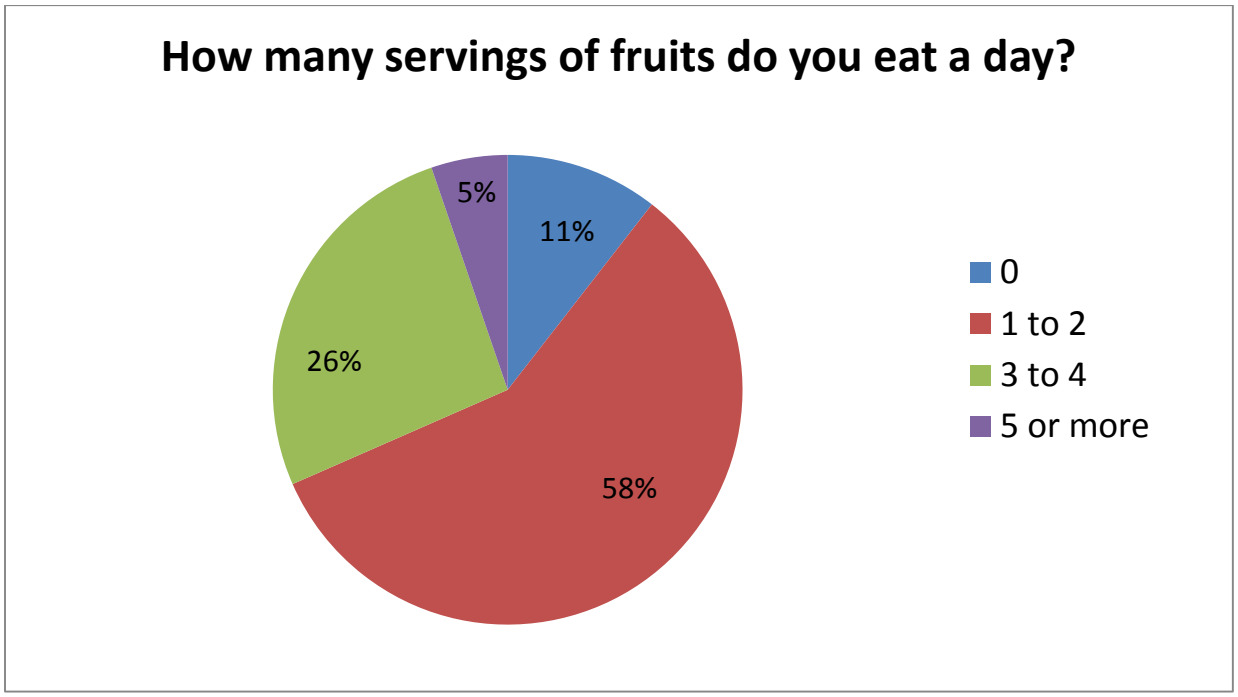


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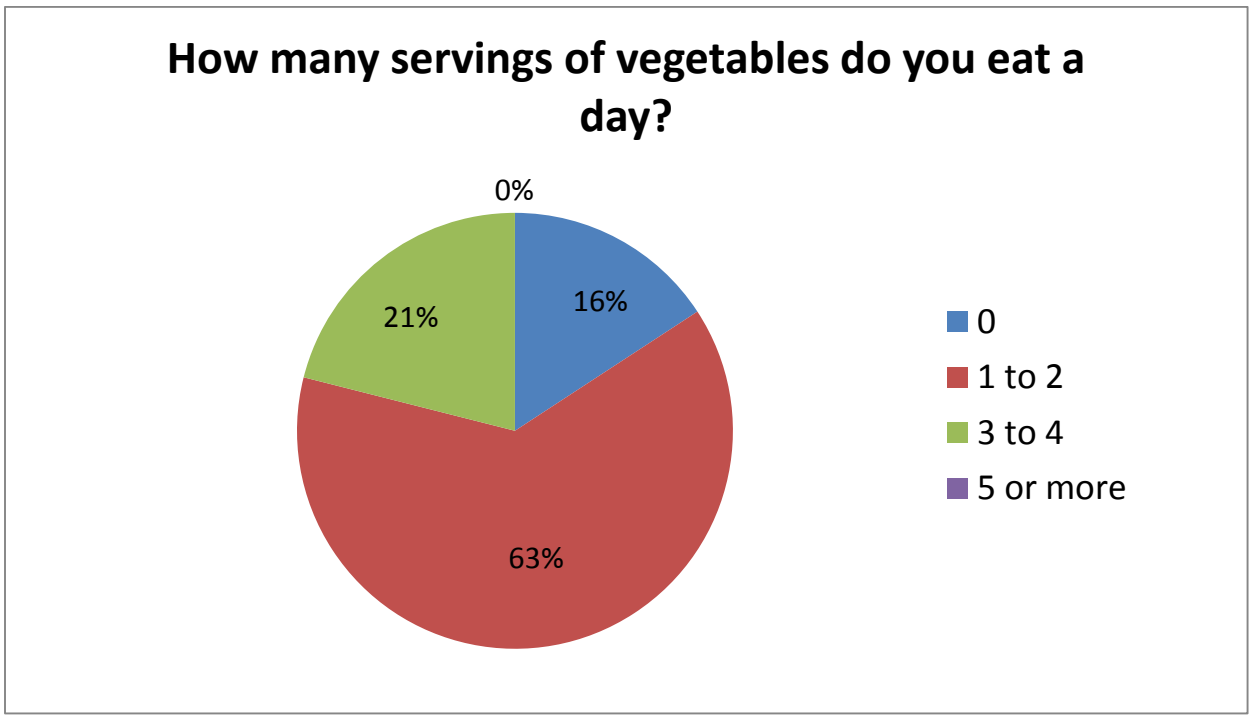

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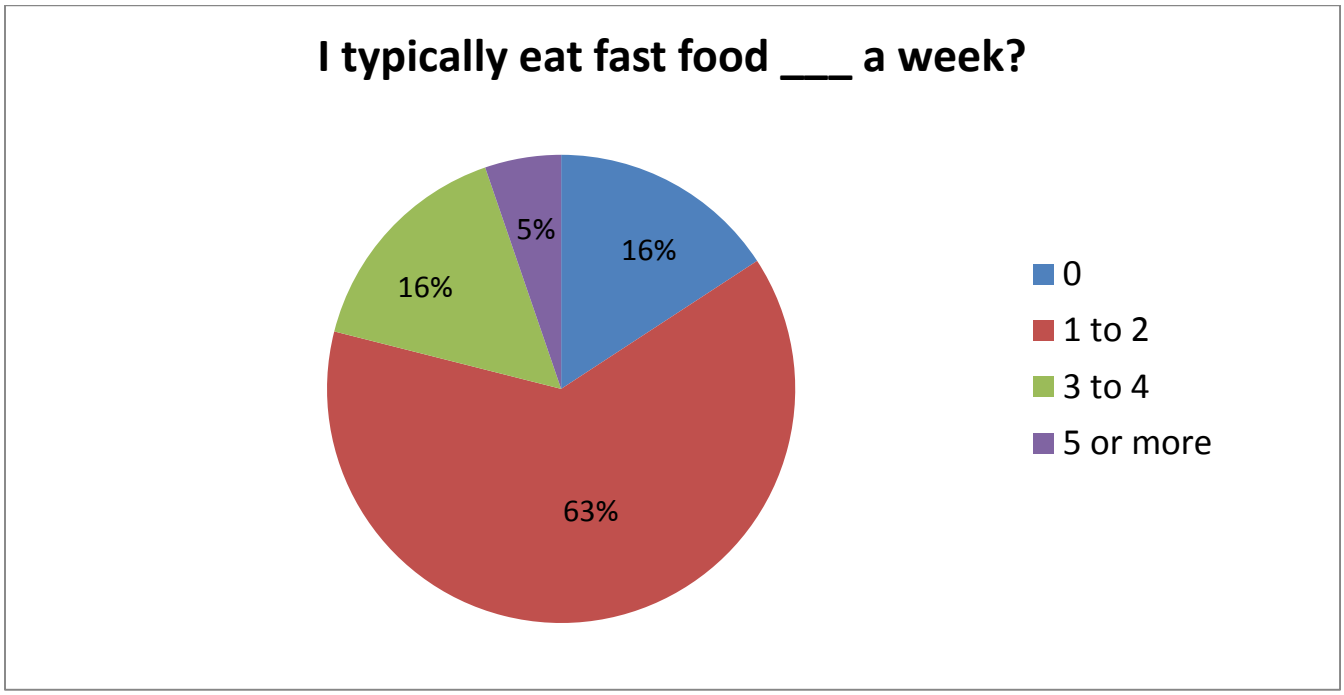
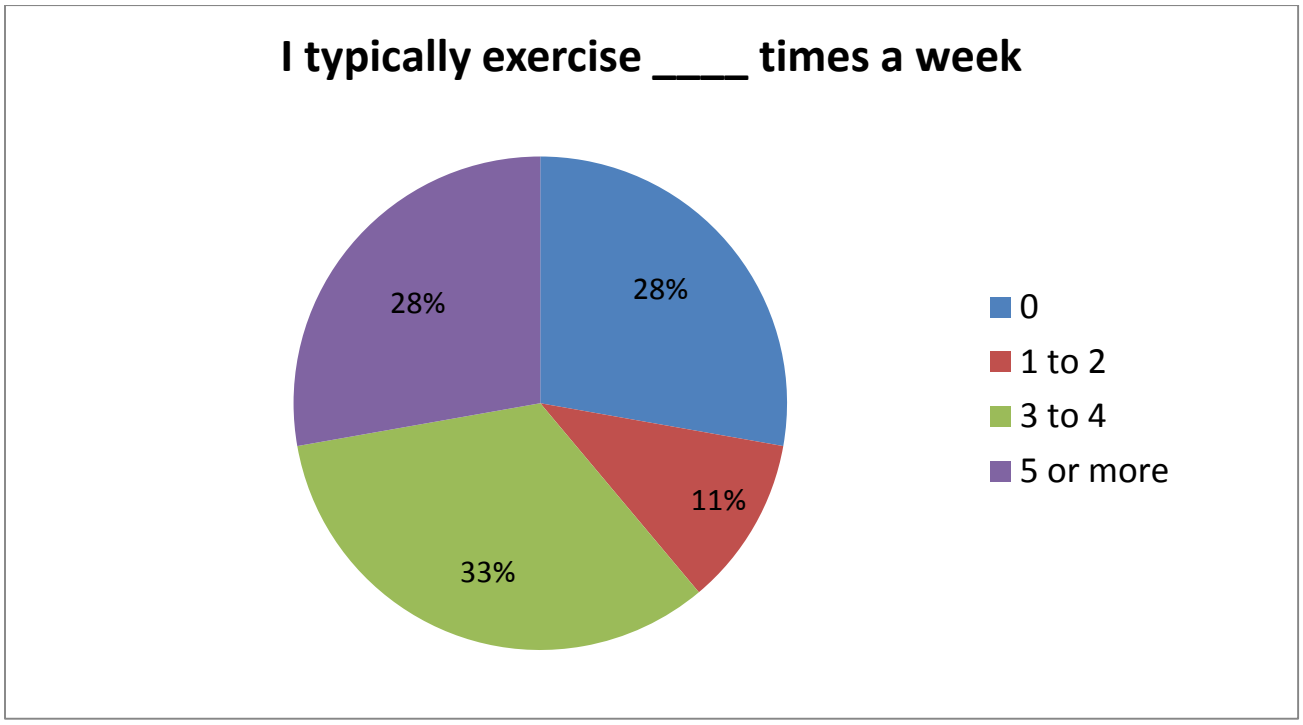



*Figure H*



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