Obesity Prevention in the Classroom

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I. Introduction

In the last three decades, the prevalence of obesity—or being significantly overweight—has doubled in children and tripled in adolescents. This obesity during childhood almost always carries on to adulthood—indeed, obesity in adults has increased at rates similar to those in children. Four out of five children between the ages of 10-13 who are obese remain obese as adults, and this leads to a variety of health problems, such as heart disease, hypertension, sleeping/breathing problems, and diabetes.

While research on the possible genetic origins of the disease is ongoing, it is undeniable that certain factors and behaviors can predispose children to becoming obese. These factors include poor eating habits, inadequate physical activity, stress, low self-esteem, a negative social environment, and depression. Perhaps the most tangible and quantifiable of these behaviors are the first two: poor eating habits and inadequate physical activity. Both of these can be readily influenced in the classroom setting, and thus are the focus of AMSA’s new Project in a Box, “Obesity Prevention in the Classroom” (OPC).

OPC connects undergraduate/medical students to elementary/middle school students to discuss issues related to nutrition and physical activity. Going beyond simple didactic sessions, OPC provides interested medical/premedical students with a variety of games, activities, and other tools to make the discussion of obesity prevention engaging, informative, and useful for school-aged children of all levels.

According to a CDC analysis of 2006-2008, Hispanics and African-Americans had a significantly higher prevalence of obesity relative to white Americans (21% and 41%, respectively). For this reason, targeting these groups for obesity prevention programs is especially critical. OPC has compiled a series of resources in Spanish that medical/premedical students, if they are comfortable doing so, can use to better connect with students who communicate best in this language. OPC has also compiled a list of resources targeted at African-American children.

Sources:


II. Step-By-Step Guide to Completing This Project

1. Begin the process of getting in contact with your local elementary and middle schools as soon as possible, as this will probably take some time. Find the elementary and middle schools most accessible to you and obtain the contact information for the principals of those schools.

2. E-mail the principals the template letter (available in Appendix A), being sure to fill out the necessary additional information (bolded in the letter). Wait at least a week for a reply. If you do not receive one, you can try calling the school’s office.

3. Set up a meeting with the principal to finalize the details for your time there—how many classrooms you will be working with, what days/times you will be doing so, and addressing any other concerns that you, the principal, or teachers may have. This is also the time to see if there are students with particular needs, such as materials directed specifically to Hispanic or African-American students. Important: ask about technological capabilities of the classroom, and whether you will have access to a computer.

4. Spend some time looking over the materials before your first presentation. The structure of the program has already been designed for you, but you should still be familiar with the materials and what you are being asked to do to ensure a smoother experience for both yourself and the children. In particular, look over the mypyramid.gov website to make sure you are familiar navigating it. Ensure that any materials needing to be copied have done so, and/or that you have obtained an adequate number of materials from your AMSA chapter. You can consider asking the school you will be presenting at if they will allow some copies to be made of your materials.

5. Make sure you are early on the days you are presenting. Check in with the teacher(s) about fifteen minutes before you are planning to start.

6. Follow The Detailed Presentation Plan described below, and be sure not to forget to have the evaluations completed after the presentation.

7. Thank the teachers and principal for their time and participation.
III. The Detailed Presentation Plan:

This Plan has been designed so that it is level appropriate—that is, so that all students with different levels of education can get the most out of your presentation. The levels have been broken down as follows:

- Early Elementary School (Grades K-2)
- Late Elementary School (Grades 3-5)
- Middle School (Grades 6-8)
- Community (Including High School)

This level is not addressed in this plan because this program is primarily designed for elementary and middle school students. However, resources for Community have been included in Appendix D.

Notes: Do not feel that you must stick to working with only one level—working with multiple levels is encouraged. ALL page numbers in this Plan refer to that page’s placement in its respective packet. Ignore all printed page numbers in any packet, as these pages have been mixed around and sometimes placed out of order.

Early Elementary School (Grades K-2)

Note: Pay attention to your vocabulary. Try to speak in very elemental terms to avoid any confusion. In particular, the word “obesity” should be avoided.

1. AMSA has prepared three packets associated with this age group (with support from USDA MyPyramid materials): Early Elementary Teaching Guide, Early Elementary Duplication Packet, and GoFish Cards.

2. The Teaching Guide is for you. It contains all of the lesson plans, with instructions and materials, which you will need. You should make one copy of this guide to give to the teacher of the class you are working with.

3. The Duplication Packet is for the students. You should make as many copies of this as there are students (determine this number and complete this task beforehand). One set of GoFish Cards should work for a class of about 15 students, but make another copy of this entire set for classes bigger than that. The copies need not be in color.

4. Introduce yourself! Allow the children to become comfortable around you. After this, a video might get their energy and interest flowing. This video is a good introduction to the new food pyramid.

http://www.youtube.com/watch?v=JeFu9ndUOwY
5. Hand out a copy of the *Duplication Packet* to each student. Hang a copy of the *MyPyramid Poster* on the board so that every student can see it.

6. Follow the lesson plan for Lesson 1, as directed in the *Teaching Guide*. referring to the *MyPyramid Poster* on the board often and using Page 2 of *Teaching Guide* to guide your discussion of the elements of the pyramid. Have the students label the *MyPyramid for Kids handout*.

7. Play the *Moving More Game* described on Page 3. If you do not have access to 3X5 index cards, simply use pieces of paper.

8. As a fun break/segway into Lesson 2, show the following video: [http://www.youtube.com/watch?v=TWUg9PUYYLw](http://www.youtube.com/watch?v=TWUg9PUYYLw)

9. Begin lesson 2: have the students complete the *Eat Smart with MyPyramid for Kids* worksheet and then go over the answers (the students do not have the answers). Make sure to cover the points listed in Step 3 of Lesson 2.

10. Distribute the *GoFish Cards* and have the students cut them up. Follow the instructions in *Teaching Guide* on how to play the game. At

11. Discuss the *Grocery Store Treasure Hunt* and suggest to the students that they should go home and talk about these issues with their parents. Encourage them to show their parents the *Treasure Hunt* sheet.

12. Take a bathroom/stretch break, and then show this video: [http://www.youtube.com/watch?v=fUjz_eilX8k&feature=related](http://www.youtube.com/watch?v=fUjz_eilX8k&feature=related)

13. Follow Lesson 3 instructions from *Teaching Guide*. Assist the students in making their *Fruit and Veggie Diary*. If string is not available, use a stapler or tape.

14. Depending on the classroom capabilities, you can play the following computer game as one group, or if the school has an available computer lab, move over to the lab so that students can play individually or in small groups: [http://www.mypyramid.gov/kids/kids_game.html](http://www.mypyramid.gov/kids/kids_game.html)

15. Depending on how much time you have, and if the school has an adequate number of computers, there are a variety of games that students can play related to nutrition. The links to these games can be found in Appendix B.
Late Elementary (Grades 3-5)

Note: Terms like “nutrition” and “physical activity” are probably fair game, but you should assess the general quality of education at the particular school you are working at to determine how to frame your discussion.

1. AMSA has prepared three packets associated with this age group (with support from USDA MyPyramid materials): Early Elementary Teaching Guide, Early Elementary Duplication Packet, and GoFish Cards.
2. The Teaching Guide is for you. It contains all of the lesson plans, with instructions and materials, which you will need. You should make one copy of this guide to give to the teacher of the class you are working with.
3. The Duplication Packet is for the students. You should make as many copies of this as there are students (determine this number and complete this task beforehand). One set of GoFish Cards should work for a class of about 15 students, but make another copy of this entire set for classes bigger than that. The copies need not be in color.
4. Introduce yourself! Allow the children to become comfortable around you. After this, a video might get their energy and interest flowing. These two videos should be played in order—the first is just for fun, and the second is a good introduction to the new food pyramid.
   -http://www.youtube.com/watch?v=TWUq9PUYYLw
   -http://www.youtube.com/watch?v=IJnGFacO3Vs&feature=related
5. Begin Lesson 1 as described in Teaching Guide. Discussion of MyPyramid at this age level is a little more in-depth than for Early Elementary.
   -As you are discussing the pyramid, have the students fill out the MyPyramid for Kids Handout.
   -Emphasize that foods in the wider part of the stripes (near the bottom of the pyramid) should be eating more often than those near the top of the pyramid.
6. Ask student to find the MyPyramid Worksheet in their Duplication Packet and fill it out the information for their meals from the previous day.
7. Show this video: http://www.youtube.com/watch?v=fUjz_eiIX8k&feature=related
8. Begin Lesson 2, following the instructions directly from the Teaching Guide.
   -Ignore the Group Activity (“Hip-Hop Healthy”)
- Be sure that the students are completing the *Food Math worksheet* as you go through the lesson.
- After completing the *Food Math worksheet*, distribute the *GoFish* cards and have the students cut them up. Follow the *GoFish* instructions in the *Teaching Guide*.

9. Take a break after *GoFish*.
10. Begin Lesson 3, following the instructions directly from the *Teaching Guide*
    - Ignore the Group Activity (“*Vegetable Ad Campaign*”).
    - Walk around the class helping students as they fill out the *Steps to a Healthier You* form.

11. Play the My Pyramid Blast Off game with this class. Depending on the classroom capabilities, you can play it as one group, or if the school has an available computer lab, move over to the lab so that students can play individually or in small groups: [http://www.mypyramid.gov/kids/kids_game.html](http://www.mypyramid.gov/kids/kids_game.html)

12. Depending on how much time you have, and if the school has an adequate number of computers, there are a variety of games that students can play related to nutrition. The links to these games can be found in Appendix B.

**Middle School (Grades 6-8)**

1. The middle school program has been designed around the “*yourSELF Middle School Education Kit,*” developed by the USDA’s Team Nutrition Program and first released in 1998.
2. Introduce yourself! Start with this brief video on how foods in TV advertisements look different than they actually are in “real life”: [http://www.youtube.com/watch?v=fUjz_eiIX8k&feature=related](http://www.youtube.com/watch?v=fUjz_eiIX8k&feature=related)
   This next video is just for fun: [http://www.youtube.com/watch?v=TWUq9PUYYLw](http://www.youtube.com/watch?v=TWUq9PUYYLw)
3. Use this video as an introduction to the *yourSELF* program. The customized packet is a 17-page packet that filled with activities and discussion points that you will go through with the students. Make the necessary number of copies of the accompanying document “*yourSELF Packet.*” Make sure the pages do not get cut-off in the printing/copying process.
4. Direct the students to the “we’re talking about YOU” section on page 2.
   - Highlight the five tips (“Be realistic, be adventurous,” etc.) listed.
   - Discuss the activity graph in the bottom left corner of the page—emphasizing, of course, the importance of continued physical activity throughout adolescence and early adulthood.
5. Go to the next page (marked in the packet as page 4, but actually the third page in the packet).
-Ask the students to read the entire “Get the Picture” section by themselves.
-Direct their attention to the right hand side of the page and begin talking about BMI—what it stands for and its relation to obesity.
-Talk about the health problems associated with obesity—heart disease and diabetes, among other disorders.
-If possible, see if the teacher/school will allow the class to take a trip to the nurse’s office to have their height and weight measured. If not, have the students use their best judgment.
-Ask the students to go to page 13 (“What’s your BMI?”) and calculate their BMI. Do NOT ask any student what his/her BMI is.
-Have them compare their BMI to the chart on the right hand side of that page and determine if they are at risk.

6. Ask the students to refer to page 10 of the packet, “Snack Attack.”
-Use the recent discussion of BMI and relate this to both food intake and physical activity (“Ways to maintain your BMI, or reduce it if it's too high, are to have better eating and exercising habits…”).
-Do not worry too much about discussing nutrition per se (ie, consuming adequate amounts of nutrient-rich fruits and vegetables); instead, focus on limiting overall food intake in terms of calories.
-Discuss limiting snacking to “healthy” foods, intentionally keeping “healthy” vague until you can have a more complete discussion of MyPyramid.gov at the end of the session.
-Ask students to name other quick, easy, and “healthy” snack ideas, and name a few of your own ideas.
-Listen to the nutrition labels in the top right corner and analyze them with the students, asking students to point out differences in the three labels (be sure to hit vitamins, calories, calories from fat, DV% (daily value), fat, saturated fat, cholesterol, and sodium).

7. Turn the page to reach the “Move It!” section.
-Talk about the physical activity pyramid. Ask the students to list activities beyond those given in the pyramid that fit each group.
-Have students volunteer to read the “10 ways to get physical.”
-Go to the 13th and 14th page of the packet (these are NOT the pages labeled 13 and 14). Complete the activities related to food intake and physical activity. Have the
students fill out the food chart for yesterday and think about the physical activity chart for next week.

8. **Discussion:** Have the students find the page labeled “Just for you.” Go through the Q&A with students, and then review “Tips to Help You Grow.”

   - At any point in time, if you have your own ideas or experiences you would like to share, feel free to do so. This is supposed to be a discussion portion of the session, but the kids may not be keen on speaking, so you will have to initiate the discussion.

9. Have the students find the last page of the packet. Ask the students to spend a few minutes completing this worksheet, focusing on their food and physical activity goals.

10. At this point, it is time for another video break:
    
    [http://www.youtube.com/watch?v=IJnGFacO3Vs&feature=related](http://www.youtube.com/watch?v=IJnGFacO3Vs&feature=related)

    - This is an introduction to the new food pyramid, called MyPyramid. Explain that the students may have heard of the original food pyramid, which required 6-11 grains, 2-4 fruits, 3-5 vegetables, and so on, but that this is different.

11. Show the class the website [www.mypyramid.gov](http://www.mypyramid.gov).

    - This website is very expansive and you will not be able to get through all of the features as a class in one sitting.

    - Instead, simply orient them so that they understand all of the (extraordinary) capabilities of this website and so that they will be able to easily navigate it in the future if they want to.

    - **You will have to play with the website for a few minutes before your first presentation so you are also familiar with this website and can navigate it when you present it to the class.**

12. After demonstrating the website to the class, go back to home page and click the “Inside the Pyramid” link on the left-side toolbar. On the “related topics” box, go over three topics: grains, discretionary calories, and physical activity. Discuss each of these topics in turn:

    - **Grains:** Discuss the difference between whole grains and refined grains. Whole grains “contain the entire grain kernel.” Because they are less processed, they retain more nutrients like fiber, iron, and vitamin B. They also make you feel fuller for a longer period of time. Go over examples of whole grains, emphasizing that they must have the word “whole” in the nutrition label in them to be considered whole grains.

    - **Discretionary calories:** “Most discretionary calorie allowances are very small, between 100 and 300 calories, especially for those who are not physically active.” Compare discretionary calories to discretionary spending—the things you can buy after you have taken care of your bills (in this analogy, “bills” are the calories that you consume obtaining essential nutrients).
-Physical Activity: You discussed it during the yourSELF module, but discuss it one more time. Emphasize the 30-minute requirement for health benefits, and for weight loss, closer to 60 minutes of physical activity a day. Differentiate between moderate and vigorous physical activity.

13. Finally, show the students this website: [http://hp2010.nhlbihin.net/portion/](http://hp2010.nhlbihin.net/portion/)
-It discusses distortions in portion sizes over the last 20 years. As students in middle school begin to eat out with their friends more often, cognizance of distorted portion sizes will hopefully make them think twice about their food intake.
Appendix A: Letter to Principals (see next page).

Note: Submit this letter in e-mail format to the principals of your local elementary and middle schools. BE SURE to insert the necessary information where the letter is bolded!
To (name of principal) of (name of school):

My name is (insert), and I am writing on behalf of the American Medical Student Association (AMSA). AMSA is a national association of over 62,000 undergraduate and medical students that work together to push forward positive changes in diverse areas of health and healthcare. Our advocacy efforts include improving access to healthcare while also educating and thus empowering people to influence their own health. One area that is of growing concern to the healthcare community is the growing burden of childhood obesity. In the last two decades, the number of children who are considered overweight or obese has skyrocketed, and the latest estimates indicate that between 15% and 20% of children in the United States are obese.

AMSA recently developed a program called “Obesity Prevention in the Classroom” that connects (college/medical) students like me to students at the elementary and middle school levels to tackle issues related to nutrition and physical activity. Because children spend so much of their day in school, spending time inside the classroom educating kids about good eating habits and regular physical activity provides the best defense against the increasing severity of this problem. AMSA has assembled a toolkit of useful activities and programs related to promoting healthy behaviors that are appropriate for students at your school. I am interested in coming to (name of school) and working with some of your students to help them better understand these issues. Beyond engaging them in activities related to nutrition and physical activity, I hope that I can serve as role model your students can relate to and as a source of mentorship to these children. Particularly for older children, I would be happy to talk about college and careers in healthcare.

If you are interested, I would like to arrange an in-person meeting with you to discuss this project further. I will be happy to further explain the issues related to childhood obesity and why AMSA is so interested in working with schools like yours to help alleviate this problem. In addition, we could go over the materials I have assembled and decide which ones are most appropriate for the students at (name of school). The epidemic of childhood obesity in our country is as bad as it ever has been. Please help us fight one of the most daunting issues to our healthcare system and dangers to your student’s wellbeing.

Please let me know if you would be willing to meet some time over the next few weeks. You may reach me at the cell phone number or e-mail address listed below at any time. I look forward to hearing from you.

Sincerely,
Appendix B: School-Level Resources

MyPyramid
http://www.mypyramid.gov/
http://www.mypyramid.gov/kids/kids_game.html
http://www.mypyramid.gov/kids/index.html
http://www.mypyramid.gov/Challenge/index.html

Eat Smart. Play Hard Campaign
http://www.mypyramid.gov/tips_resources/printmaterials.html

Team Nutrition Campaign
http://teamnutrition.usda.gov/library.html
http://teamnutrition.usda.gov/resources/mypyramidclassroom.html

CDC’s Childhood Obesity Program
http://www.cdc.gov/obesity/childhood/index.html
http://www.cdc.gov/physicalactivity/professionals/index.html

Health and Human Services
http://www.health.gov/paguidelines/federalresources.aspx#Children

National Heart Lung and Blood Institute’s We Can! Program: (look under tools and resources on left)

Other (including games):
http://hp2010.nhlbihin.net/portion/
http://www.appsforhealthykids.com/application-gallery
http://www.nourishinteractive.com/kids/gameroom.html
http://smallstep.gov/kids/flash/games_and_activities.html
http://www.appsforhealthykids.com/application-gallery
http://www.brainpop.com/health/
Appendix C: Culturally-Sensitive Resources

Resources have been designed for various ethnic groups. If the school you are volunteering at has a particularly high concentration of students from any of these ethnic groups you may want to consider supplementing your program with these materials. In particular, if you are working with a heavily Hispanic student population, take note of whether most students normally communicate to each other in Spanish or English. These resources will require a little more preparation to use, and may be more appropriate for older audiences (middle school students or community members).

African-Americans:

Complete list of African-American resources for We Can—


Hispanics:

MyPyramid.gov website in Spanish—

http://www.mypyramid.gov/sp-index.html

Complete list of Hispanic resources for We Can—

http://www.nhlbi.nih.gov/health/healthdisp/lat.htm

American Indians/Alaska Natives:

Educator manual (American Indians)—


Educator manual (Alaska Natives)—


Appendix D: Community-Level Resources

These resources are appropriate for the general adult population, and will also work for high school classes. In particular, there are a lot of resources for parents which complement the topics you cover with their children in the classroom. You are encouraged to look over these materials and develop a community program of your own.

- HealthierUS.gov
  [http://www.healthierus.gov](http://www.healthierus.gov)
- The Fit for Life Veteran, U.S. Department of Veterans Affairs
  [http://www.healthierusveterans.va.gov](http://www.healthierusveterans.va.gov)
- Healthier Worksite Initiative, HHS
- The President’s Challenge Adult Fitness Test
  [http://www.adultfitnesstest.org](http://www.adultfitnesstest.org)
- SmallStep, HHS
  [http://smallstep.gov](http://smallstep.gov)
- NIH Senior Health, HHS
  [http://nihseniorhealth.gov](http://nihseniorhealth.gov)
- National Institute on Aging Exercise Guide, HHS
- We Can! Energize Our Families: Parent Program
- We Can! Energize Our Community: Toolkit for Action
Appendix E: Program/Student Evaluations
Principal/Teacher Program Evaluation

How was your overall experience with *Obesity Prevention In The Classroom*?

Do you feel your students will apply what they learned when making decisions about nutrition and physical activity? Please explain.

Do you feel that any particular part of the program should be cut? Did it take up too much time?

Is there any particular topic you felt that the presenter should have discussed that was not in the program?

What was the most effective part of the program?

Are there any other aspects of the program that could be improved?
Grade K-2 Student Evaluation

Which food is healthier and better for you? Draw a CIRCLE around the healthier food.

Which food is healthier and better for you? Draw a SQUARE around the healthier food.

Which food is healthier and better for you? Draw a TRIANGLE around the healthier food.

Which food is healthier and better for you? Draw a DIAMOND around the healthier food.

Which food is healthier and better for you? Draw a STAR around the healthier food.
Grade 3-5 Student Evaluation

1. How long should you exercise or play outside every day?
   a. 10 minutes
   b. 20 minutes
   c. 30 minutes
   d. 60 minutes

2. Which answer does not count as exercise?
   a. Swimming
   b. Playing football videos games
   c. Playing basketball
   d. Roller skating

3. Where is the most calcium found?
   a. Milk and yogurt
   b. Meat and beans
   c. Fruits and vegetables
   d. Bread, cereal, and cake

4. Wheat, oats, rye, and corn are all:
   a. Beans
   b. Pies
   c. Grains
   d. Dairy

5. How much of the grains you eat should be whole grains?
   a. 100% (all)
   b. 50% (half)
   c. 25% (quarter)
   d. 33% (third)

6. Foods at the top of the food pyramid:
   a. Have higher fat
   b. Have higher sugar
   c. Could lead to weight gain if you eat too much
   d. All of the above

7. Comparing peaches and peach pie in the food pyramid:
   a. Peaches are on the bottom of the pyramid, and peach pie is on the top of the pyramid
   b. Peach pie is on the bottom of the pyramid, and peaches are on top of the pyramid
   c. Both peaches and peach pie are on the bottom of the pyramid
   d. Both peaches and peach pie are on the top of the pyramid
Grade 6-8 Student Behavior Survey

The results of this survey are strictly confidential. Please circle one choice per question.

1. **How many days a week do you get the recommended 60 minutes of moderate-to-vigorous exercise?**
   - 0 Days
   - 1-2 Days
   - 3-4 Days
   - 5-6 Days
   - 7 Day

2. **How important do you think eating getting 60 minutes of exercise is to your health right now?**
   - Not important
   - A Little Important
   - Moderately Important
   - Very Important

   **How important do you think eating adequate fruits and vegetables is to your health as a working adult?**
   - Not important
   - A Little Important
   - Moderately Important
   - Very Important

   **How important do you think eating adequate fruits and vegetables is to your health in the long-term?**
   - Not important
   - A Little Important
   - Moderately Important
   - Very Important

3. **How many days a week do you eat the recommended number of fruits and vegetables?**
   - 0 Days
   - 1-2 Days
   - 3-4 Days
   - 5-6 Days
   - 7 Day

4. **How important do you think eating adequate fruits and vegetables is to your health right now?**
   - Not important
   - A Little Important
   - Moderately Important
   - Very Important

   **How important do you think eating adequate fruits and vegetables is to your health as a working adult?**
   - Not important
   - A Little Important
   - Moderately Important
   - Very Important

   **How important do you think eating adequate fruits and vegetables is to your health in the long-term?**
   - Not important
   - A Little Important
   - Moderately Important
   - Very Important

5. **How has this program changed your view on eating habits and physical activity?**
   - It has not changed
   - It has changed a little
   - It has changed moderately
   - It has changed a lot

6. **How many times a week do you eat “fast food” (Burger King, McDonalds, Taco Bell, etc)?**
   - Never
   - One or two times a week
   - Almost Every Day
   - Every Day
   - Almost Every Meal

7. **Compared to a more nutritious meal containing the same number of calories, how unhealthy do you feel a meal consisting of only fast food is? The fast food is:**
   - Equally healthy
   - A little unhealthier
   - Moderately unhealthier
   - Significantly unhealthier

8. **The method of weight loss (diet or exercise) is irrelevant if the same number of pounds is lost either way:**
   - A. True
   - B. False; dieting is the better/healthier method
   - C. False: exercising is the better/healthier method