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Concentration: Health
Project Focus: Adolescent Obesity in Rural Appalachia

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INTRODUCTION

C-dOc is an acronym that stands for Community DOCtors (with emphasis on Diabetes, Obesity, and Cardiovascular diseases). This innovative name was founded by two researchers from Ohio University who were granted the opportunity to work on a rural community health project in Southern Perry County, Ohio. During the planning stages of the community health project many critical health needs were identified which motivated the researchers to pilot this specific study. The overarching challenge was the lack of healthcare services which led to the inception of C-dOc to help community members take accountability of their own health.

According to the Health Resources and Service Administration (HRSA) (2011) Perry County is classified as low income, and a Health Professional Shortage Area. There are no hospitals within the county limits and only 13 physicians, and an absence of medical specialists (2011). Perry County, Ohio has a population of approximately 36,000 people. Many residents are in areas with inaccessible health services and are often screened and/or diagnosed at a later stage of illness. With that being said, research solutions are imperative in improving the quality of life in Perry County.

One major health concern in need of critical attention in Perry County is Obesity. The National Institutes of Health (NIH) (2012) report that obesity puts persons at an increased risk of many diseases including diabetes, cardiovascular diseases, hypertension, stroke and much more. Furthermore, a study by Patterson, Moore, Probst & Shinogle (2004) found that rural areas are more likely to report unhealthy habits and higher rates of obesity.

According to the 2012 Community Health Assessment, 35 percent of Perry County residents are classified as “obese” in comparison to the the state average of 30 percent (CHA, 2012). This health assessment also found that diabetes affects 12 percent of the population, whereas one in ten residents reported heart attacks in the year of 2012. Furthermore, of the high prevalence of Obesity, 33% of adolescents aged 12-17 are considered obese. This further exacerbates the need to tackle obesity in order to improve the quality of life in Southern Perry County. Since adolescents spend majority of their time in school it is imperative to work with the school system to implement this intervention program. A study examining childhood obesity found that health education interventions are one of the most effective approaches to healthier living (Karnik & Kanekar, 2014). Research found that classroom-based health education can highly motivate older children and teens to eat more nutritious diets and engage in physical activity inside and outside of the school setting (2014). Therefore, we strongly believe that the way forward to improving the quality of life is through targeting our youth and placing emphasis on health education by way of nutritional and lifestyle medicine programming and research.

Our C-dOc youth-led interprofessional intervention program seeks to bring together a multi-institutional, and multi-disciplinary team to integrate knowledge about nutrition, and physical activity to prevent adolescent obesity in Southern Perry County, Ohio. This intervention program will equip the students with the proper knowledge, attitude, and skills necessary to make smart choices when it comes to eating and taking care of their physical health. The consolidated
school system caters to the following counties in Southern Perry County: New Straitesville, Shawnee, and Corning County.

**Map of Southern Perry County - New Straitesville, Corning & Shawnee, OH**

*Source: Google Maps (2016)*

Obesity is such a multifaceted problem, and we aim to utilize trained and experienced professionals from multiple disciplines, in collaboration with Miller High School. Other key partners include the Perry County Rural Health Network (PCRHN), Ohio University’s School of Nursing, Department of Exercise Physiology, and the Department of Nutrition. Our key partners will guide us in the strengthening of our youth-led interprofessional intervention.
NEEDS ASSESSMENT

Target Population

Overall obesity rates have increased drastically in the United States over the past decade. Specifically, the Center for Disease Control (2015) found that in 2012 the rates of obesity amongst adolescents has quadrupled in the past 30 years. The drastic increase could be attributed to various genetic, biological and environmental factors. Karnik & Kanekar (2014) found that accessibility, affordability, heredity, media advertisements and over consumption of energy dense foods contribute to the high rates of obesity in rural areas. In other words, the obesity epidemic is attributable to dietary and behavioral trends acting on a person's genetic makeup to determine body mass and susceptibility to obesity-related diseases (Lyon & Hirschhorn, 2005).

Specifically, in Perry County, Ohio the Community Health Assessment (2012), reports that 33% of adolescents in Perry County are obese. This obesity prevalence is close to double that of the state average of 19% (2012). With this relatively high prevalence, it is important to put in place health behavior strategies that will address this phenomenon and thus C-dOc. For our project, we are targeting Miller High School students who participate in Health and Physical Education class in Corning, OH. These students are between the ages of 12 and 18. Since we are doing a pilot study, with assistance from our key partner MHS, we shall recruit twenty students to pilot the intervention project and then expand the program on a roll-out basis, after a one-year monitoring and evaluation scope. If it proves successful, we shall increase the enrollment number in the following school year.

Fig. 1

![Youth Obesity Graph]

Approximately 33% of the children in Perry County between the ages of 12 and 17 years are considered obese, compared to 19% of children in Ohio.

Source: (Community Health Assessment, 2012)
AIMS AND OBJECTIVES

Our overarching aim by the end of the academic year is to reduce the rate of adolescent obesity in Southern Perry County, Ohio. Along with with key stakeholders we plan to execute specific objectives that are essential to the success of this intervention. In order to achieve our overarching aim, we have formulated a series of objectives that will help to guide our transition of activities, and also work towards a successful and sustainable project. By the end of the academic year the project will have completed the following objectives 1) To increase the levels of physical activity amongst C-dOc participants 2) Reported improved healthier dietary habits and 3) Increased knowledge of obesity and obesity related health issues. The objectives will be carried out through the school year (September 2016 - May 2017) with the assistance of our valuable key partners. Our objectives aim to incorporate innovative activities that will aid in changing the behavior and attitudes towards healthier living practices with a long term goal of obesity reduction. Our specific objectives are as follows:

<table>
<thead>
<tr>
<th>Objective #1</th>
<th>To increase levels of physical activity amongst C-dOc Participants</th>
</tr>
</thead>
</table>
| **Activities** | Engage 20 Miller High School Students to participate in 1st Annual C-dOc 5K Marathon by September 2016.  
  ● Informational Session about C-dOc Intervention Program in May 2016  
  ● Recruit Student Leaders for Marathon planning in September 2016 |
| **Metric** | Administer Pre-Test PAQ-A Questionnaire to participating students during 5K Marathon which will be held in September of 2016. |

<table>
<thead>
<tr>
<th>Objective #2</th>
<th>Improved healthier dietary habits amongst C-dOc participants</th>
</tr>
</thead>
</table>
| **Activity** | All Students will enroll in SPC C-dOc Twitter and Facebook feed. To be accomplished by Start of the school Year September 2016  
  ● Ohio University Nutrition will update social media handles with nutritional information |
| **Activity** | Engage students and parents in monthly C-dOc recipes for healthy living by October 2016  
  ● Recruit Participants and parents for C-dOc recipes for healthy living by September 2016 |
| **Metrics** | Administer SPAN Pre and Post Test to participating students ( September 2016 & May 2017) |
Initially we worked towards identifying key partners and resources to incorporate our stakeholder’s perspectives, we have identified the community needs to ensure active participation, last but not least we will continue to work with community partners to ensure sustainability of this intervention plan. In order to achieve our overarching aim, we have formulated a series of objectives that will help to guide our transition of activities, and also work towards a successful and sustainable project.

**METHODOLOGY**

This C-dOc program aims to reduce the rate of obesity amongst adolescents in Southern Perry County. We will evaluate the impact of this pilot program by addressing our primary research question:

**Research Question:** Will participation in the youth-led intervention program (C-DOC) reduce the obesity of adolescents in rural Appalachia?

- Sub-questions:
  - Will participation in the C-dOc reduce levels of obesity?
  - Will those who participate in C-dOc have greater reduction in lipid profiles?
  - Will those who participate in C-dOc report greater increases in activity levels?
  - Will those who participate in C-dOc have higher post score on knowledge test.

In seeking answers to the above questions, C-dOc aims to 1) increase the levels of physical activity 2) report improved healthier dietary habits and 3) increase knowledge of obesity and obesity related health issues. The C-dOc program will include various activities including in-class nutritional and physical activity education, healthy meal cooking contests, team based competitions, and community events such as 5k community marathons that will encompass an all inclusive interactive event to bring awareness of healthy living initiatives to the community.

The breakdown of program activities will be as follows:

1. The Ohio University Exercise Physiology students will work with MHS students during the first week of every month to educate students on specific fitness modules, keep track of the
fitbits metrics and be responsible for analyzing monthly data charts, while organizing and evaluating activities such as the 5k marathon. This will be done in collaboration with Mr. Vanmether, the P.E teacher and they will offer assistance to him in that first week of the month.

Metric: PAQ-A Pre and Post Test (see appendix C)
Target: Students will have a 10% increase in weekly steps taken

2. For nutrition, as part of their curricular activities, there will be a group of Ohio University Department of Nutrition students assigned to be teaching assistants at MHS during the second week of every month to educate C-dOc participants on healthy eating tips, as well as nutritional values of food items that may be present in the community. A highlight of this will be cooking competitions where C-dOc participants will collaborate with family members to cook healthy meals that have been recommended by Nutrition teaching assistants. Additionally, the Nutrition Students will be responsible for providing the nutritious recipes and ingredients to students at the end of each month. Students will then document by photo and upload the cooking process and final product to our C-dOc social media sites.

Metric: SPAN Pre and Post Test (see appendix B)
Target: Students will report making healthier food choices

3. With the medical component, Ohio University School of Nursing’s Dr. Eliza Harper, together with her students will go into the school every third week of the month to offer health classes with regards to Obesity and Obesity-related health issues. In addition, they will administer BMI tests to track progress of the C-dOc participants and use an interactive approach to teach students of various health risks associated with Obesity.

Metric: Tests/Quizzes
Target: All C-Doc participants will increase test scores by 10%

4. Once each semester, there will be a 5k marathon, one in September to kick off the C-dOc projects and the other at the end of the school year in May so as to evaluate the entire pilot C-dOc program. On these days, all the C-dOc teaching assistants from Ohio University will be present handling different activities. A free mobile clinic will be brought to the event to do some blood work like testing for cholesterol levels, triglycerides, diabetes, as well as counseling services for all. This will be community focused and will be in a bid to get the community engaged in seeking healthy behaviors that will eventually seek to reduce the rate of obesity in Southern Perry County.

Metric: Anthropometric Data and Blood Levels
Target: All C-dOc participants will report healthier blood levels
Approach

Based on prior involvement in this community, the researchers and stakeholders will take community-engaged approach that works very closely with Miller High School (MHS) and local key partners. According to the United States Department of Health and Human Services (2011) publication on the Principles of Community Engagement, it is crucial to work closely with community members to successfully address complex problems that arise. They also found that one of the most effective approaches require integration, collaboration and coordination from all all resources and beneficiaries (2011). Research places huge emphasis on the importance of community involvement, and how this approach is essential in identifying health concerns and is imperative in the planning of interventions.

Miller High School is a consolidated institution that caters to students living in Southern Perry County. We have had several preliminary meetings with community members, through the greater Community-Ohio University partnership that has been taking place. Our key partners are inclusive of community members and also external institutions; our current partners are as follows:

- **Miller High School**
  Nathan Van Meter- Health and Physical Education Instructor

- **Ohio University Office of Rural and Underserved Programs**
  Dr. Sharon Casapulla, Director of Research and Education - Rural and Urban Scholars Pathway Program (RUSP)

- **Ohio University School of Nursing**
  Eliza Harper, Assistant Professor, Ohio University, School of Nursing

- **Ohio University Diabetes Institute**
  Dr. Cheryl Howe, Associate Professor, Exercise Physiology
  Research focus on physical activity, obesity, cardiovascular disease risk factors, and type II diabetes mellitus in children.

Miller High School in Corning, OH where the Physical Education teacher, who couples as the Health teacher as well, Mr. Vanmeter, as our access point to the community adolescents. He is willing to incorporate the C-DOC program activities into his curriculum so as to achieve the intended aims and objectives of the project. Overtime, the C-DOC aims to implement a sustainable model for coordinated youth-led adolescent health program with the objective of reducing the adolescent obesity rates in rural Appalachia.

The program will engage community leaders, school officials, health, physical education and nutrition teachers and most importantly, the adolescents themselves to improve the quality of their healthy living lifestyle choices for the adolescents and eventual adult residents of rural Appalachia. It will also have an interprofessional approach, partnering with academia, county government, as well as professionals in health, nutrition, exercise physiology and other relevant professions to give it a holistic approach so that it becomes a success. By working together, it is our desire to decrease the levels of obesity, which is the underlying cause for diabetes, cardiovascular diseases and other lifestyle related diseases.'
Innovation

Our unique approach to tackling adolescent obesity in rural Appalachia, our youth-led Interprofessional Intervention project aims to implement innovative ideas to ensure active participation of our students, and caregivers in tackling obesity in SPC. Some of our innovative approaches include:

- **The use of Fitbits** - A wireless wearable technology tool that helps to motivate users while also tracking health and fitness progress. Students that are fully enrolled in the C-dOc intervention program will be given Fitbits free of charge, which will also track progress by team tracking capabilities.

- **5K Marathon/ Health Festival** - This activity will be a community supported experience. Community support is invaluable in implementing interventions and organizing social events so this Marathon will encourage not only our students but families and community members to adopt healthy lifestyles. Our students will have their Pre & Post physicals during the time. We will offer health screenings for community members and various health education/awareness activities sponsored by our various partners.

- **C-dOc Team Initiative** - This team approach will consist of four or five groups of enrolled C-dOc participants that will compete against one another with the aim of reducing obesity and improving specific health outcomes as a collaborative effort. This approach will place emphasis on collaboration, unity, and most importantly motivation in the classroom setting.

- **Use of C-dOc social media handles** like Twitter, Instagram and Facebook to track progress of participating teams and disseminate information on nutrition, and physical activity outside of the school setting.

- In collaboration with Ohio University’s Department of Nutrition we will invite parents of participating students to engage in our **C-dOc recipes to healthy living** monthly competitions. Participating households will be provided with the monthly recipes and proper ingredients for the cook-off. Thereafter, all participants will upload “selfies” (pictures) of the parent’s/student collaboration in their home kitchen as well as the final picture of the healthy dish. This monthly initiative will aim to motivate teams and aid in family support, while giving participants the chance to earn various incentives. Specific recipes will be provided on the last Friday of every month and delivered to students (in school) on a monthly basis by the Ohio University Nutrition students. This will provide parents with the information they need to understand that eating healthy doesn’t have to cost more.
Limitations

There are a few major limitations that we anticipate with our project.

1. **Workforce:** There are few professionals involved in lifestyle medicine in SPC (CHA, 2012). In order to address this limitation, we are partnering with Ohio University’s Departments on Exercise Physiology, Nutrition, and Nursing. These departments are willing to provide potential manpower like students who will take up this project as part of their academic pursuits and fieldwork.

2. **Socio-economic barriers:** Seeing that this project is located in a rural Appalachian Ohio, this area is marked as a food desert by the Appalachian Regional Commission (2013). It thus becomes a challenge addressing the nutritional aspect of the program with regards to what is readily available in the community. Fresh produce stores and restaurants are very scarce in Southeastern Ohio, and thus as infrastructure is being put in place, in the meantime, Ohio University Nutrition students that will double as teaching assistants at MHS will purchase food items for the Recipes for Healthy Living cooking contests and will also identify readily available local ingredients that could be used in the community for these healthy eating options.

EVALUATION

The main focus of evaluations will be on the progress of the adolescents change in behavior, nutritional and physical education. The evaluation approach will incorporate the following measures:

1. **Anthropometric data** - This includes name, age, data, weight, height, waist-to-hip ratio and the body mass index (BMI)
2. **Blood levels** – Lipid profile, blood pressure profile, and blood sugar levels
3. **SPAN (School Physical Activity and Nutrition)** project pre and post-test (University of Texas Health Center at Houston, 2004)
   This aims at providing current data and trends in food consumption and behaviors, physical activity, fitness levels, fundamental movement skill proficiency, sedentary behaviors, modes of travel to and from school and levels of overweight and obesity among MHS students. The overall goal of SPAN is to establish a surveillance system to monitor the prevalence of overweight/obesity in these students. This surveillance system allows researchers to identify and track trends in adolescent obesity.

4. **YMCA 3-Minute Step Test Program** (Young Men’s Christian Association, 2013)-
   This measures aerobic (cardiovascular) fitness level based on how quickly the heart rate returns to normal after exercise. The goal of this is to step on and off the bench for 3 minutes straight while keeping a consistent pace and then see how quickly the heart rate will come back down. The fitter one is, the quicker the heart rate will return to normal after exercise.
5. PAQ-A (Physical Activity Questionnaire for Adolescents) (Physical Activity Questionnaire for High Schools, 2012) -

The Physical Activity Questionnaire for Adolescents is a nine-item, seven day self-report recall questionnaire designed and extensively used for surveillance and monitoring. The PAQ-A is self-administered. It was developed to assess general levels of physical activity for high school students in grades 9 to 12 and approximately 14 to 19 years of age. The PAQ-A can be administered in a classroom setting and provides a summary physical activity score derived from eight items (the 9th item does not factor into the overall score), each scored on a 5-point scale. Estimated completion time is 20 minutes. A score of 1 indicates low physical activity, whereas a score of 5 indicates high physical activity.

6. NuVal Nutritional Scoring System (NuVal, 2016) -

The NuVal Scores summarize comprehensive nutritional information in one simple number between 1 and 100. Each NuVal Score takes into account more than just the nutrition fact panel. It considers 30-plus nutrients and nutrition factors – the good (protein, calcium, vitamins) and the not-so-good (sugar, sodium, cholesterol). And then it boils it down into a simple, easy-to-use number; a number you can trust to make better decisions about nutrition in just a few seconds.

**Evaluation Targets to be met by May 31, 2017**

**Objective #1** - To increase levels of physical activity amongst C-dOc participants  
**Target:** Students will have a 10% increase in steps taken weekly  

**Objective #2** - Improved healthier dietary habits amongst C-dOc participants  
**Target:** Students will report making healthier food choices  

**Objective #3** - Increase knowledge of obesity and obesity related health issues  
**Target:** All C-dOc participants will increase test scores by 10%  

**Sustainability Approach**

Financial and human resources are critical to the success of this community initiative. While many of the barriers will be identified in the information gathering phase, the following topics will be discussed with regards to the long-term sustainability of the Interprofessional Adolescent Obesity reduction project in rural Appalachia.

1. Community Engagement: This program is community centered and seeks to cater for their health needs. Their input is highly valued in the planning, implementation, and evaluation processes. This specific proposal couldn’t have been possible without the hard work and dedication of the Southern Perry County community members. In building a rapport with
the community members helped the planning team to acknowledge the key objectives of this project.

2. Leadership: During the planning phase, stakeholders will identify a permanent leader and will determine a plan for sustaining efforts in leading C-dOc in achieving its goals.

3. Engaging future C-dOc partners: As part of the planning phase, the C-dOc lead will identify partners such as physical education, nutrition and health teachers in the service area that are not currently on board and work towards engaging them as new partners.

4. Collaborative service delivery: We aim at developing a model of service delivery that utilizes already existing assets in the region (existing and new C-DOC partners).

5. Shared personnel: We can explore the possibility of sharing personnel (Faculty from Ohio University departments of nutrition, exercise physiology, osteopathic medicine and school of nursing).

6. Potential for replicability: This model we are creating will provide interprofessional care and this can be replicated across other rural communities with colleges of medicine and other health professions in Appalachia. In empowering community-oriented.

**Future Directions**

1. Expand the role of public and private employers in obesity prevention in Southern Perry County.

2. Utilize Department of Nutrition services at Ohio University to create community partnerships that promote and support healthy food and beverage choices in local businesses.

3. Increase the retail availability of affordable healthy foods that meet the needs of communities, especially those with limited access to nutritious foods.

**BUDGET**
Project Name: **Community DO Ctors: A Youth-Led Interprofessional Intervention on Obesity in rural Appalachian, Ohio**

Grant Period: September 2016- May 2017

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit Price</th>
<th>Quantity</th>
<th>Total</th>
</tr>
</thead>
<tbody>
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<tr>
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<td>Incentives</td>
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<td>- T-shirts</td>
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<td>- Gift cards</td>
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## PROJECT TIMELINE

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<tr>
<th>Activities/Milestones</th>
<th>Year 1</th>
<th>Responsible Personnel</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sept</td>
<td>Oct</td>
</tr>
<tr>
<td>Recruit/Register Participants</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Identify Student Leaders</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Fall/ Spring 5K Marathon</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Weekly OU Teaching Assistant led educational activities</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>C-dOc Recipe for healthy living (Monthly)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Create &amp; Monitor Social Media Handles (Bi-Weekly)</td>
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<td>X</td>
</tr>
<tr>
<td>Evaluations</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

*Activities and milestones are scheduled for Year 1 (September 2016 - May 2017).*
Community DOCTors: A Youth-Led Interprofessional Intervention on Obesity in rural Appalachian Ohio

References


## Appendix A
### Logic Model

**Community DOCTors: A Youth-Led Interprofessional Intervention on Obesity in rural Appalachian Ohio**

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Activities</th>
<th>Outcomes</th>
<th>Impact</th>
<th>Logic Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>5K Marathon</td>
<td>MHS students in PE and Health Class</td>
<td>Increased active participation in Health and PE classes at MHS</td>
<td><strong>Reduced Rate of Adolescent obesity in Southern Perry County</strong></td>
</tr>
<tr>
<td>Money</td>
<td>Weekly OU Teaching Assistant led educational activities</td>
<td>Parents and caregivers of MHS Students</td>
<td>Increased knowledge of Healthy eating options</td>
<td></td>
</tr>
<tr>
<td>Fitbit</td>
<td>Social Media C-DOC outreach</td>
<td>Physical Education + Health Teacher at MHS</td>
<td>Increased obesity prevention awareness</td>
<td></td>
</tr>
<tr>
<td>Classrooms</td>
<td>C-DOC recipes for healthy living competitions (Monthly)</td>
<td></td>
<td>Increased fitness exercise attitudes</td>
<td></td>
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<tr>
<td>Cooking Equipment’s</td>
<td>Food Items</td>
<td></td>
<td>Increased knowledge of self-testing abilities (i.e. BMI)</td>
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<tr>
<td>Technology</td>
<td>Ohio University Volunteers</td>
<td></td>
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<tr>
<td>Suit</td>
<td>-Dept. of Nutrition</td>
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<td>Food Items</td>
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<td>Technology</td>
<td>-Dept. of Exercise Physiology</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Assumptions**
- Students will attend all classes
- External Facilitators will be committed and available

**External Factors**
- School Regulations
- Internet Access Challenges
- Mobile Network Challenges

**Evaluation**
- Focus Group Discussions
- School Physical Activity Survey (Pre & Post Test)
- BMI
- Waist
- FMQ-A
- Surveys
- YMCA 5-minute Step Test
- Blood Tests (Lipid Profile, Blood pressure levels, Blood Sugar levels)
Appendix B

SPAN

School Physical Activity and Nutrition (SPAN) Project
Student Assent

YOUR NAME: ____________________________
SCHOOL: ______________________________
GRADE: ________________________________

• You will be asked to answer questions about your food choices and physical activity (exercise).

• An adult will weigh you, measure your height, and write the results on the last page of the questionnaire.

• No one at school or at home will see your answers, how tall you are, or what you weigh.

• Taking part in this project is up to you. Your choice about taking part will not affect your grades in school or your ability to take part in any school activities.

• If you do not want to answer a question, you can skip it.

• You may stop taking part in this project during the time you are getting your height and weight taken, while answering questions, or at any other time.

• After you complete the questionnaire and are measured for height and weight, the page with your name on it (Student Assent Form) will be removed. Your name will never be used after that.

• By signing below, you agree to take part in this project.

Signature of Student __________________ Date ____________

00001
47. From which food group should you eat the fewest servings each day? Choose only one group.
- Breads, cereals, rice, pasta
- Dairy products (milk, cheese)
- Fats, oils, sweets
- Fruits
- Meats, fish, poultry, beans, eggs, nuts
- I don’t know

48. How many total servings of fruits and vegetables should you eat each day?
- At least 2
- At least 3
- At least 4
- At least 5
- I don’t know

49. What you eat can make a difference in your chances of getting heart disease or cancer.
- Yes
- No
- I don’t know

50. People who weigh much more than they should have more health problems than other people.
- Yes
- No
- I don’t know

51. The foods that I eat and drink now are healthy.
- Yes, all of the time
- Yes, sometimes
- No

52. Skipping meals such as breakfast or lunch makes it hard for me to do well in my classes.
- Yes, all of the time
- Yes, sometimes
- No

53. I like to try new foods.
- Almost always or always
- Sometimes
- Almost never or never

54. Do you eat school lunches?
- Almost always or always
- Sometimes
- Almost never or never

55. I think the lunch served in my school cafeteria is healthy for my body.
- Almost always or always
- Sometimes
- Almost never or never

56. I like to eat the school lunch served in my cafeteria.
- Almost always or always
- Sometimes
- Almost never or never

Thank you very much for your help!
Appendix C

PAQ-A

### Physical Activity Questionnaire (High School)

<table>
<thead>
<tr>
<th>Name: ___________________________</th>
<th>Age: __________</th>
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<tbody>
<tr>
<td>Sex: M________ F_________</td>
<td>Grade: __________</td>
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<td>Teacher: _________________________</td>
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We are trying to find out about your level of physical activity from *the last 7 days* (in the last week). This includes sports or dance that make you sweat or make your legs feel tired, or games that make you breathe hard, like tag, skipping, running, climbing, and others.

**Remember:**
3. There are no right and wrong answers — this is not a test.
4. Please answer all the questions as honestly and accurately as you can — this is very important.

1. Physical activity in your spare time: Have you done any of the following activities in the past 7 days (last week)? If yes, how many times? (Mark only one circle per row.)

<table>
<thead>
<tr>
<th>Activity</th>
<th>No</th>
<th>1-2</th>
<th>3-4</th>
<th>5-6</th>
<th>7 times or more</th>
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<tbody>
<tr>
<td>Skipping</td>
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<td>Rowing/canoeing</td>
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<tr>
<td>In-line skating</td>
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<tr>
<td>Tag</td>
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<td>Walking for exercise</td>
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<td>Bicycling</td>
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<td>Jogging or running</td>
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<td>Aerobics</td>
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<td>Swimming</td>
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<td>Baseball, softball</td>
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<td>Dance</td>
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<td>Football</td>
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<td>Badminton</td>
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<tr>
<td>Skateboarding</td>
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<td>Soccer</td>
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<td>Street hockey</td>
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<td>Volleyball</td>
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<td>Floor hockey</td>
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<td>Basketball</td>
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<td>Ice skating</td>
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<td>Cross-country skiing</td>
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<td>Ice hockey/ringette</td>
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<td>Other:</td>
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