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# Energy, Nutrition, and Exercise: An Effort to Prevent Childhood Obesity in Vermont

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# Energy, Nutrition, and Exercise:

An Effort to Prevent Childhood Obesity In  
Colchester, Vermont

A Community Project for the Family Medicine Rotation

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Rotation 7

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Mentor: Dr. John Chisholm

## 2: Problem Identification and Description of Need

- ▶ In the United States 17% of children are obese.
- ▶ 1 out of every 8 children in Vermont are obese and 1 out of every 12 children in Chittenden County are obese. Though this is lower than the national average, there is still need for further education on making healthy choices and increases in activity.
- ▶ Advertising directed at children persuades them to make poor food choices.
- ▶ Food that is high in fat, sugar, and salt are more readily available than foods with high nutrition.
- ▶ A local school nurse and an elementary wellness coordinator both agreed that children in Vermont do not get enough exercise and that there is need for improvement with regards to choosing fruits and vegetables over chips or candy. They see the obese children in their school and are constantly trying to think of ways to help them.

# 3: Public Health Cost and Local Consideration

- ▶ Obesity in children puts them at greater risk for developing cardiovascular disease risk factors that will stay through adulthood and increases risk for neurological, pulmonary, psychiatric, gastroenterological, and musculoskeletal conditions.
  - ▶ The estimated increased cost of medical care over a lifetime per obese child is \$19000
  - ▶ \$12,900 for normal weight child who becomes obese as an adult
- ▶ Local teachers have been spending money out of their own pockets to provide more nutritious snacks for children.
- ▶ Many resources are being used to help children who are already obese at local schools. If we could prevent these children from becoming obese it would be even better.

# 4: Community Perspective

- ▶ [Name withheld] Union Memorial Elementary School Nurse
  - ▶ Our school has been doing many different projects to improve health and wellness focusing on: teaching children how much sugar is in certain foods, drinking more water, not allowing candy as snacks in school, and providing fruits and vegetables as options for children who do not bring snacks. We still have children who are significantly obese. Often times children who have less access to healthy food are the ones who are obese. We should do our best to help educate the children here so they can make wise choices.
- ▶ [Name withheld] Union Memorial Elementary School Wellness Coordinator
  - ▶ Right now education directly addressing making healthy food choices is a place we have not focused on as much. All efforts to help children make healthy life choices are appreciated.
- ▶ There was widespread support of the project to educate on quality energy intake and exercise from the principal, school nurse, wellness counselor and a kindergarten teacher.



# 5: Intervention and Methodology

- ▶ Intervention: teach children about quality energy snacks to help them desire to choose healthy snacks and help them understand the role of exercise in utilizing the energy in consumed food.
- ▶ Methodology:
  - ▶ I spent 1 hour in a kindergarten class actively engaged with the children. There were multiple fruits and vegetables on different tables as well as a table with candy on it. The children were instructed to sit at the table with the food they most wanted to eat. Then they were instructed to go to the table with the food that they felt was best for their bodies. Each child was given opportunity to describe why they felt the food they chose was good. Following this there was a simple interactive discussion about the vitamins and minerals in the fruits and vegetables in the room. Following this 2 videos were shown—one was a Rube Goldberg machine that represented a body with many different parts working correctly because it had all the nutrition it needed. The other video was of fainting goats representing the body not having the energy or correct nutrients if the only thing consumed was candy.
  - ▶ Myplate.gov was used to encourage the children to fill their plates half-full of fruits and vegetables.
  - ▶ Energy was presented as part of the food we eat and something that gets stored in bodies as fat if we do not use it. The children were taught that all bodies need fat, but if we get too much it can make it harder for bodies to work correctly and cause problems as we grow older.
  - ▶ Each child took a turn on one of two bike-powered smoothie makers (donated from BCBSVT and City Market) to solidify the concept that bodies use the energy from the food we eat. The time of bike riding to burn the calories contained in one serving of the blended smoothie was estimated to be 10 minutes. The children in the class worked together to ride the bicycles for a combined 10 minutes and then enjoyed their smoothies.
  - ▶ At the end, the information was recapped and the children were asked if they wanted to be more active and what they were going to choose for snacks at home.

# 6: Results

- ▶ The response from the school nurse, children, and kindergarten teacher were overwhelmingly positive.
- ▶ The children were able to show what knowledge they already had about nutrition, share that with their classmates, and also learn something new.
- ▶ After school there was much chatter throughout the halls about the educational activity.
- ▶ Many children stated that because of this activity they would chose fruits and vegetables more often as snacks when they were given the choice.
- ▶ The children also stated that they wanted to exercise more than before.

# 7: Evaluation of Effectiveness and Limitations

- ▶ Effectiveness: This project helped shape young minds to desire to make healthy snack choices and want to exercise more. This assessment is based off of the reaction that the children had during and after the activity. They were very engaged and continued to talk about it well after the activity was over.
- ▶ Some limitations include not knowing how much of the immediate change of mind will be taken home and shared with family and not being able to assess any long-term outcomes based on this intervention.



# 8: Recommendations for the Future

- ▶ A challenge that this intervention did not address was access to healthy food and poor food purchases by parents. An education session on nutrition and exercise for children involving the children's parents could prove to be very beneficial.
- ▶ Having the children each create a mini-project whether it be a story, drawing, or craft about one way their family could eat more healthy food or be more active that would be brought could be most useful.
- ▶ Creating an informational sheet for the children to take home what they learned to their families would likely help motivate change by ensuring what was learned at least entered the home.

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