

# Snack Attack at Chuva

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DIETARY AND ECOLOGICAL ASSESSMENT

# Introduction



<http://wbrearilylearning.com/parent-resources/>

- First 3 years of life
  - Require foods that will meet high energy and nutrient needs (Cowbrough, 2010)
  - Developing food preferences and eating habits (Cowbrough, 2010)
  - Introduced to a variety of new foods (Cowbrough, 2010)
  - Entering childcare system so important to provide foods that positively contribute to children's health and development of healthy eating habits (Sinha, 2015)

# Purpose

To investigate the snacks that are served to twelve children under the age of three at UBC's Chuva daycare to identify a potential nutritional concern regarding the snacks and to make potential recommendations that would provide support to the daycare staff and be beneficial to the health of these children.

## Critical Question to Consider

What would be appropriate indicators to monitor and evaluate the effectiveness of our intervention strategies?

# Nutrition Screening



Image source: [http://www.clipartpanda.com/clipart\\_images/stick-people-holding-hands-39397755](http://www.clipartpanda.com/clipart_images/stick-people-holding-hands-39397755)

To determine if a detailed nutritional assessment would be required, we:

1. Met with manager of children's programs at UBC
2. Found a potential risk of excessive carbohydrate and caloric intakes in the children at Chuva from the snacks
3. Determined that children and staff would benefit from NCP model

# Nutrition Assessment Methods

- Dietary- to consider the foods children are consuming
- Ecological- to consider accessibility and availability of healthy and appropriate foods for children under 3 years of age



Image source:  
<http://www.allergyasthmazone.com/wp-content/uploads/2015/01/food-allergies-in-babies-and-toddlers.jpg>

# Observations

- Observed morning snack
- Purpose: to determine children's attitudes towards food and their eating habits



# Observations

We found that:

- 6 out of 8 children ate a small bowl of oatmeal and many asked for seconds
- Some children only ate fruit, others had apples and oranges, and the rest of the children ate no fruit
- No child ate the orange slices





# Food Records

## 1. Grocery List

Shopping List

Fruit:

- Apples
- Oranges
- Bananas
- Grapes
- Kiwi
- Avocado

Vegetables:

- Cucumbers
- Carrots
- Green Peppers

Dairy:

- Milk
- Cheese
- Butter

Grains:

- Flour
- Bread
- Pasta
- Oatmeal

Cheerios

Crackers

Protein:

- Eggs

Misc.:

- Salt
- Kleenex
- Dishwasher Soap/Detergent
- Laundry Soap
- Oil
- Baking Soda

Other:

- Baking Powder

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- Cream of tartar

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# Food Records

## 2. Weekly Snack Menu

Snack menu	Monday	Tuesday	Wednesday	Thursday	Friday
AM	<p>Toast &amp; apple</p> 	<p>Cheerios &amp; milk &amp; banana apple</p> 	<p>Oatmeal &amp; banana Grapes</p> 	<p>Toast &amp; orange apple</p> 	<p>Pancake &amp; apple</p> 
PM	<p>Cheese &amp; crackers &amp; Avocado</p> 	<p>Pasta &amp; vegies</p> 	<p>Cucumber &amp; cheese &amp; crackers</p> 	<p>Kiwi &amp; orange Cascadia</p> 	<p>Cantaloupe &amp; carrot &amp; crackers</p> 

# Nutrition Survey & Staff Discussions

1. Survey
  - a. Purpose: To better understand the planning of the snacks
  - b. Findings: Chuva makes an effort to choose foods that are whole wheat, low in fat, and low in sugar
2. Staff Discussions
  - a. Purpose: To understand staff concerns about snacks
  - b. Findings: Children dislike eating fruits and vegetables



Image Source: <http://bananasbunch.org/kid-friendly-vegetable-recipes/>

# Observed Food Preference Trends



Affects  
variety of  
snacks  
consumed

# Nutritional Diagnosis

## **PES:**

Sub-optimal fruit and vegetable intake from snacks related to lack of appeal and disinterest derived from the taste and textures of certain fruits and vegetables as evidenced by observations of eating patterns and reported child pickiness.

# Nutritional Intervention - How?

## How to increase consumption of fruits and vegetables?

1. Increase the amount offered?
2. New snacks?
3. Other strategies?





If you were hungry, which would you eat first?



Image Source: <http://www.babystepsdaycare.net/wp-content/uploads/2014/02/cheesepizza.jpeg>



Image Source: <https://penchantforproduce.files.wordpress.com/2011/09/simple-green-salad.jpg>

Very difficult choice...



# Nutritional Intervention - Strategic Pairing

Popularity based on co-dish

→ “Like with like” (Jimenez et al., 2015)





# Nutritional Intervention - Repeat Exposure

Up to ten times to accept new food (Birch & Marlin, 1982)



Image Source: <http://feedingmykid.com/wp-content/uploads/2015/05/Getting-Kids-to-Eat-More-Vegetables-1024x683.jpg>



Image Source: <http://organics.org/wp-content/uploads/boy-with-fork.png>

# Nutritional Intervention - Personal Input



Image source:  
<https://pi.tedcdn.com/r/pf.tedcdn.com/images/playlists/choices.jpg?quality=89&w=500>

Increasing variety → Independence (Cathy & Gaylord, 2004)

Reducing portion sizes → Control  
(Cathy & Gaylord, 2004)

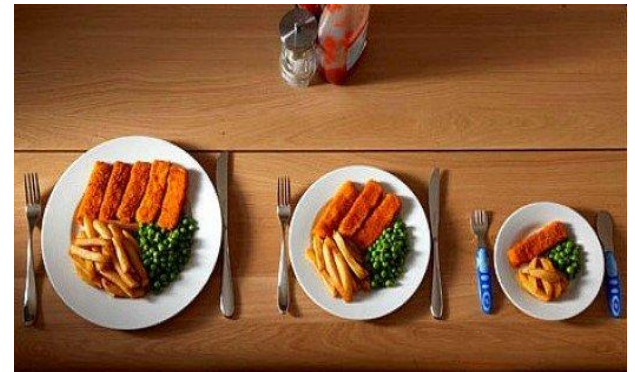


Image Source: [https://usercontent2.hubstatic.com/5370987\\_f520.jpg](https://usercontent2.hubstatic.com/5370987_f520.jpg)

# Summary

The initial concern raised: Snacks are too filling and too high in carbohydrates.

Observation: This is not the case.

New diagnosis: Aversion and disinterest in certain foods that are important for a healthy diet.

Recap of our intervention methods:

1. Strategic pairing
2. Repeat exposure
3. Encouragement of autonomy



End goal: To encourage the consumption of varied fruits and vegetables by increasing its appeal.

# What happens from here?

## Major Food Groups:

\*Strive to include one (1) food from each food group when planning snacks.

## Vegetables & Fruits:

- Spinach
- Carrots
- Apples
- Oranges
- Grapes
- Avocado
- Bananas

## Milk & Alternatives:

- 2% Milk
- Cheese
- 2% Milk pudding
- Fortified soy beverage
- Frozen Yogurt (as occasional desert)
- Drinkable Yogurt
- Yogurt

## Meat & Alternatives:

- Seafood
- Poultry
- Lean meat (e.g. pork, beef)
- Cooked legumes (e.g. canned beans)
- Tofu
- Eggs
- Sliced Chicken or Turkey

## Grain Products:

- Animal crackers
- Pasta
- Cereal
- Tortilla (preferably whole grain)
- Oatmeal
- Blueberry Bagel
- Bread (preferably whole grain)

\*The highlighted example foods are currently being served to the children at the daycare facility.

## How Much Should Our Toddlers Have?

Eating Well with Canada's Food Guide, encourages children aged 2-3 years old to consume four (4) servings of Vegetables and Fruits, two (2) servings of Milk and Alternatives, one (1) serving of Meat and Alternatives and three (3) servings of Grain Products per day.

Not sure how much is a serving? Check out Eating Well with Canada's Food Guide for more detailed descriptions at: [http://www.hc-sc.gc.ca/fn-an/alt\\_formats/hpf/b-dgpsa/pdf/food-guide-aliment/view\\_eatwell\\_vue\\_bienmang-eng.pdf](http://www.hc-sc.gc.ca/fn-an/alt_formats/hpf/b-dgpsa/pdf/food-guide-aliment/view_eatwell_vue_bienmang-eng.pdf)

## What Did We Find Out through

### Observation:

- Do not enjoy oranges
- Do not enjoy vegetables
- Snacks are not filling enough
- Not consistently offering an adequate amount of food from the Meat & Alternatives food group
- Enjoy grapes

## Some of Our Concerns:

Oranges provide good source of vitamin C to prevent development of deficiency disease like scurvy.

Vegetables offer good source of fibre. Lack of fibre from can cause health issues since it is important in maintaining healthy bowel habits.

## What Can We Do To Improve?

- Try integrating milk into breakfast cereals to promote intake of Calcium and Vitamin A
- Try using vegetable purees as a sauce base instead of fat-rich sauces that could contain unhealthy fats
- Try purchasing healthy cereals such as Fibre One or Cheerios, instead of sugary ones such as Frosted Flakes or Froot Loops to increase fibre intake
- Try pairing cheese with bread to make grilled cheese rather than simply putting butter or jam on toast to increase consumption of protein and Calcium
- For occasional desserts, try selecting more nutritious options such as frozen yogurt (e.g. vitamins from fruit-flavoured, iron from chocolate-flavoured, and protein and calcium from milk component) over candy (essentially pure sugar)
- Try to incorporate fruits such as berries into yogurt to increase vitamin and antioxidant intake
- Try to combine grains products such as bread and tortilla with foods from other food groups (e.g. lettuce, cheese and sliced turkey) to make a wrap or a sandwich to allow for consumption of nutrients from all food groups in a meal
- Try incorporating healthy foods with higher satiety index into children's diets so that they feel fuller for longer periods of time, decreasing likelihood of consuming unhealthy packaged snacks in between meals.

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## Nutritional Snack Guide for Chuva

Provided by: University of British Columbia Students in Food Nutrition and Health 370



# Critical Questions

1. Which intervention method would be the most effective strategy to address issues of inadequate fruit and vegetable intake?
2. What would be appropriate indicators to monitor and evaluate our goal of increasing the children's consumption of fruits and vegetables at Chuva?

# References

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