

---

---

# Cancer Lab

Madison Gebhart & Grace Cucco

---

---

# Our Client, Kayla!



- Based off of a friend who has ovarian cancer.
  - 20 y/o female
  - Stage 2 ovarian cancer
  - Currently undergoing chemotherapy and radiation.
  - Specific symptoms include: fatigue, weight loss, appetite change, nausea, vomiting, bloating.
-

## SUBJECTIVE GLOBAL ASSESSMENT FORM

### MEDICAL HISTORY

Patient name:	Date:
Kayla	

### NUTRIENT INTAKE

1. No change; adequate
2. Inadequate; duration of inadequate intake \_\_\_\_\_

- ☒ Suboptimal solid diet
- ☐ Full fluids or only oral nutrition supplements
- ☐ Minimal intake, clear fluids or starvation

#### 3. Nutrient Intake in past 2 weeks\*

- ☐ Adequate \_\_\_\_\_
- ☒ Improved but not adequate \_\_\_\_\_
- ☐ No improvement or inadequate \_\_\_\_\_

### WEIGHT

Usual weight 115 lbs

Current weight 94 lbs

1. Non-fluid weight change during the past 6 months 21 lbs  
Weight loss (kg) \_\_\_\_\_

- ☐ <5% loss or weight stability
- ☐ 5–10% loss without stabilization or increase
- ☒ >10% loss and ongoing

If above not known, has there been a subjective loss of weight during the past 6 months?

- ☐ None or mild
- ☐ Moderate
- ☐ Severe

2. Weight change in the past 2 weeks\*  
Amount (if known) \_\_\_\_\_

- ☐ Increased
- ☒ No change
- ☐ Decreased

### SYMPTOMS (Experiencing symptoms affecting oral intake)

1. ☐ Pain on eating ☐ Diarrhea
- ☒ Anorexia ☐ Dental problems
- ☒ Vomiting ☒ Feels full quickly
- ☒ Nausea ☒ Constipation
- ☐ Dysphagia

2. ☐ None  
☒ Intermittent/mild/few  
☐ Constant/severe/multiple
3. Symptoms in the past 2 weeks\*  
☐ Resolution of symptoms  
☐ Improving  
☒ No change or worsened

### FUNCTIONAL CAPACITY

(Fatigue and progressive loss of function)

1. No dysfunction
2. Reduced capacity; duration of change  
Ambulatory, but extremely reduced amt of activity.

☒ Difficulty with ambulation/normal activities

☐ Bed/chair-ridden

3. Functional Capacity in the past 2 weeks\*

- ☐ Improved
- ☒ No change
- ☐ Decrease

### METABOLIC REQUIREMENT

High metabolic requirement ☒ No ☐ Yes

\* See SGA Rating for more description.

\* See SGA Rating for more description.

---

# Special Considerations for our Pt

Based on SGA, Pt is clearly malnourished & has lost a significant amount of weight.

Pt states that milk products cause excessive bloating and gas.

Pt is undergoing chemo/radiation and has a lack of appetite: therefore, diet should be high calorie, high protein, & nutrient dense.

Avoid drinking with meals so that Pt doesn't become full quickly.

---

# Client Calculations

$94 \text{ lbs} / 2.2 \text{ lb/kg} = 42.7 \text{ kg}$

$42.7 \text{ kg} \times 30 \text{ Kcal/kg} = 1281 \text{ Kcal/day}$  to maintain weight

CHO: 50%  $1281 \times .5 = 640.5 \text{ Kcal}$

$640.5 / 4 \text{ Kcal/g} = 160.125 \text{ g CHO/day}$

$160.125 / 15 \text{ g CHO/serving} = 11 \text{ servings per day to maintain 94 lb weight}$

Pro: 25%

$1281 \times .25 = 320.25 \text{ Kcal}$

$320.25 / 4 \text{ Kcal/g} = 76.06 \text{ g pro/day}$

$76.06 / 7 \text{ g pro/serving} = 11 \text{ servings per day to maintain 94 lb weight}$

Fat: 25%

$1281 \times .25 = 320.25 \text{ kcal}$

$320.25 / 9 \text{ Kcal/g} = 35.58 \text{ g fat/day}$

$35.58 / 5 \text{ g fat/serving} = 7 \text{ servings per day to maintain 94 lb weight}$

# Overview of our Meal Plan

We chose our recipes based on these characteristics. We also have lots of smaller meals throughout the day, instead of 3 square meals. These are listed under 'snacks' on the next slide.

Diet consisting of:

Abundance of fruits & veggies

Lots of antioxidants

Anti-inflammatory foods

Ginger!

---

# Menu

## Breakfast

	Calories kcal	Carbs g	Fat g	Protein g	Sodium mg	Sugar g
Fruit Tart, 2 serving(s)	174	37	4	3	53	30
<a href="#">Add Food</a>   <a href="#">Quick Tools</a>	174	37	4	3	53	30

## Lunch

Quinoa Power Bowls with Maple Chipotle Brussels and Smoky Butternut Squash, 1 serving(s)	558	93	17	19	294	13
Ginger Lemon Mint tea, 1 serving(s)	45	14	0	1	13	9
<a href="#">Add Food</a>   <a href="#">Quick Tools</a>	603	107	17	20	307	22

## Dinner

Green Beans With Ginger and Garlic, 1 serving(s)	85	8	6	2	47	3
Greek Lemon Chicken Soup Recipe (VIDEO) - A Spicy Perspective, 1 serving(s)	538	49	15	43	220	10
<a href="#">Add Food</a>   <a href="#">Quick Tools</a>	623	57	21	45	267	13

## Snacks

Vegan Coconut Cauliflower Bites » Spec Of Gold, 1 serving(s)	245	31	10	3	206	15
Carrot Cake Zucchini Bread - Mostly Homemade Mom, 1 serving(s)	236	27	14	2	245	22
Pineapple Sweet Chili Sauce, 1 serving(s)	19	5	0	0	9	4
Toasted Gnocchi with Mushrooms, Basil and Parmesan, 1 serving(s)	318	31	16	6	537	4
<a href="#">Add Food</a>   <a href="#">Quick Tools</a>	818	94	40	11	997	45

**Appetizer:** *Coconut Cauliflower Bites with Pineapple Sweet Chili Sauce (8-10 pieces, 1 tbsp sauce)*

**Beverage:** *Ginger, Mint, & Lemon Tea (1 cup)*

**Meat Entree/Soup:** *Greek Lemon Chicken Soup (1 cup)*

**Vegetarian Entree:** *Quinoa Power Bowls with Maple Chipotle Brussel Sprouts (1 bowl)*

**Vegetable:** *Ginger Garlic Green Beans (1/3 cup)*

**Starch:** *Mushroom, Basil & Parmesan Gnocchi (1 cup)*

**Bread:** *Carrot Cake Zucchini Bread (1 cupcake or 2 mini cupcakes)*

**Fruit:** *Raw Berry Date Tarts (2 tarts)*

---

---

# Nutritional Analysis of the Menu

			Poly unsat fat	Mono unsat fat	Trans Fat	Choleste rol	Sodium (mg)	Potassi um	Carbs (g)	Fiber	Sugar	Protein (g)	Vitamin A	Vitamin C	Calcium	Iron	
Breakfast	174.2	3.7	0.3	0	0	0	52.9	268.9	37.3	4.6	30.3	2.6	2	8	6.5	5.1	
Lunch	603	16.7	5	2.3	6	0	2.5	307.1	1707.5	107.3	13.7	21.7	19.3	358.9	243.2	24.5	52.9
Dinner	622.8	21.2	4.7	5.9	8.6	0	86.2	267.5	1499	57.4	11.4	13.4	44.6	293.7	349	41.5	37.7
Snacks	817.7	40.6	12.2	2.7	14.7	0	76.6	997.5	663.9	94.3	8.4	46.4	11	36.7	10.1	17.1	14.8
Total	2217.7	82.2	22.2	10.9	29.3	0	165.3	1625	4139	296.3	38.1	111.8	77.5	691.3	610.3	89.6	110.5



---

# Nutrient Guidelines

The American Institute of Cancer Research recommends:

- ★ Lots of fruit and vegetables
- ★ Moderate whole grains
- ★ Plant protein sources
- ★ Small amount of lean meats
- ★ Small amount of nonfat dairy



There is a lot to manage when enduring cancer treatment, patients commonly experience loss of appetite, nausea, diarrhea, constipation and fatigue.

To combat this:

- ★ Eat 5-6 small meals a day
  - ★ Avoid overly sweet or fatty foods
  - ★ Increase or decrease fiber depending on needs
  - ★ Eat foods with sauce or gravy
  - ★ Eat mostly anti-inflammatory plant-based foods
-

---

## Role of Nutrients in a Cancer Diet

- Many cancer patients lose their appetite while undergoing treatment. It is essentially anorexia with the added stress of cancer.
  - Proper nutrition is critical so the patient has energy and is able to withstand the procedures.
  - Specific nutrients that are especially important include fats, and antioxidants like Vitamin A and C.
  - Plant-based, colorful meals are great because of the benefits of phytochemicals.
  - Increase consumption of fats and protein to increase number of calories consumed.
-

---

**\*\*We tried to create a menu that was full of flavorful comfort foods, with healthy twists (such as adding kale to our chicken soup, or zucchini to our carrot cake muffins). We tried to create a menu that most people would enjoy. If the client was wary, we'd use these methods.**

---

## **How would you instruct a client to try some of the menu items & increase hunger?**

- ★ Try to be active to increase appetite
  - ★ Experiment with temperature
  - ★ Eat high protein foods first, followed by fats and carbohydrates
  - ★ Eat as much as possible when hungry
  - ★ Drink liquid between meals, not during
  - ★ Eat small meals throughout the day instead of three large meals.
-

---

## Education Lesson for Our Client

A goal of our is to provide a way to manage nausea. Constant vomiting really affects quality of life, so we would educate our client on the benefits of ginger.

Ginger has been shown to reduce nausea in chemo patients. It can be consumed in a variety of ways, such as ginger candy, ginger tea, raw ginger, and many other methods such as adding ginger extract to food, ginger lozenges, or a ginger supplement.

Here's a video on how to make ginger root tea.



---

# Ginger

## And its effect on cancer patients:



- ★ Nutritional Benefits:
  - Good for nausea
  - Anti-inflammatory
  - Aid in treating chronic digestion issues
  - Lowers blood sugar and cholesterol
  - Helps fight infections
  - Can help treat coughs

- ★ Current research of Ginger and Cancer:
    - “ Experimental studies showed that ginger and its active components including 6-gingerol and 6-shogaol exert anticancer activities against GI cancer. The anticancer activity of ginger is attributed to its ability to modulate several signaling molecules and other cell growth regulatory proteins.”
  - ★ The expression level of p53 was increased sharply in response to ginger treatment, this increased cell apoptosis. This inhibits cancer growth
-

# Pamphlet:

## CANCER AND DIET

*Preventing cancer and maintaining health while managing treatment*

Grace Cucco  
and Madison  
Gebhart

### PREVENTION

Diet: Lifestyle:

- Eat antioxidant rich foods, like berries
- Do not cook oils on high heat
- avoid charring or burning food
- Limit red meat
- Limit trans fat and saturated fats
- Increase unsaturated fats
- Eat enough fiber
- Eat a mix of raw and cooked foods
- Eat an abundance of vegetables
- Cut soda and sugary drinks
- Cut alcohol and tobacco use
- Limit sun exposure
- Be active
- Avoid exposure to radiation
- Avoid environmental pollution
- Get adequate sleep

[https://www.health.harvard.edu/newsletter\\_article/The-10-commandments-of-cancer-prevention](https://www.health.harvard.edu/newsletter_article/The-10-commandments-of-cancer-prevention)

### TREATMENT

Symptoms experienced include gastrointestinal distress, vomiting, fatigue, undernourishment, and loss of appetite,

#### *Recommendations:*

- Adjust fiber intake according to needs
- Stay active
- Take anti-nausea medication
- Use sauces, gravies, and dips
- Prepare food ahead
- Save left overs
- Eat protein first
- Eat whenever hungry
- Eat lots of small meals
- Drink calorific beverages
- Experiment with temperature
- Eat an abundance of fruit and vegetables

---

# Blog

Cancer and cancer treatment can take a toll on the body and it is important to adjust your diet accordingly. It can be difficult to be motivated to eat when you don't feel well but it is vital that an abundance of calories and nutrients are consumed to encourage a strong recovery. Often, people enduring cancer treatment experience loss of appetite and weight loss.

As a result many patients develop cachexia. The symptoms of cachexia include weakness, weight loss, and fat and muscle loss. It's common in patients with tumors that affect eating and digestion. It can occur in cancer patients who are eating well, but are not storing fat and muscle because of tumor growth. Over 50% of all cancer patients suffer from cachexia. This condition ties in with anorexia because the great loss of appetite and nausea that can come with tumors and radiation. Once cancer cachexia reaches the late stages it is incurable, even by eating more or taking nutritional supplements.

To combat cachexia patients should stay as physically active as possible and consult a nutritionist. Modern Medicine Network recommends getting adequate omega 3, essential amino acids, and supplementing with glutamine.

---

---

## Culinary Skills: How to Cut Cauliflower





---

**Explain the role of each team member in the menu planning and management process.**

- ★ Menu split 50/50
  - ★ Madison did half, Grace did half for finding and writing recipes and compiling the market order. We wrote our powerpoint together.
  - ★ The project was split pretty evenly and we stayed on task well.
-

---

## Discuss the management responsibilities

- ★ **Delegation and Instruction:** We divided the tasks pretty evenly, but were both willing to help each other out. As for instruction, we just rolled with it.
  - ★ **Strengths:** We had similar ideas for the project. Neither of us slacked on our responsibilities.
  - ★ **Weaknesses:** We had trouble finding time to meet together and work on things due to scheduling conflicts.
  - ★ **Next time:** We would plan ahead to find time to meet together and work in person instead of just on a google doc.
-