Adopt An Athlete Project

Emma C. Becker

ND 606

King's College

Part I. Nutrition Assessment

1. Select An Athlete

The athlete I adopted is an 11-year-old female who competes with the 12U

Youth Travel Hockey Team. Written parental consent was received from both parents

before the initial nutrition assessment appointment was scheduled. Appendix 1 contains a list of

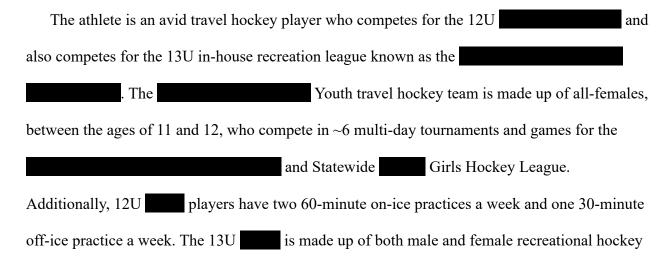
interview questions that will be asked during the initial nutrition assessment. All interview

questions were designed while considering the five NCP assessment domains. A written ADIME

Nutritional Assessment model will be used for this report.

2. Conduct the Nutrition Assessment

A nutrition assessment was conducted with the athlete. The athlete is in good health, has a medical diagnosis of severe clinical obsessive-compulsive disorder (OCD) and anxiety disorder secondary to OCD diagnosis. Additionally, the athlete reports trouble falling asleep on most nights, stating it "takes 2-3 hours to fall asleep." Medication the athlete takes include one sertraline (Zoloft) 25 mg tablet once daily. Supplement use include one *Culturelle Kids Purely Probiotics Chewable* tablet when athlete remembers (≤4 times a week).¹



players, between the ages of 11 and 13, who practice for 60-minutes once a week and play a 3-period hockey game once a week (~60 minutes). In total, on average, the player has three 60-minute on-ice practices weekly, one 30-minute off-ice practice weekly, and one 60-minute 3-period game once a week. During tournament weekends, the athlete competes in ~3-5 games for two days in a row.

The athlete's personal athletic goals are to improve stickhandling and puck-shooting skills. The athlete is outperforming teammates and opponents in speed and endurance during practices and games. Lastly, the athlete participated in Mixed Martial Arts (MMA) for 2 years and Brazilian Jiu Jitsu (BJJ) for 1.5 years. However, due to the athlete's current hockey schedule, the athlete no longer participates in these activities.

The athlete reports a "good" appetite, with 4-6 eating occasions (EOs) daily. The athlete does not have any chewing or swallowing concerns. The athlete's parents purchase all food; however, the athlete has input and can choose foods while grocery shopping. The athlete's mother prepares breakfast, the athlete self-prepares lunch, and her father prepares/cooks dinners. The athlete self-packs snacks under the guidance of her mother for "before and after hockey" on days the athlete has hockey practices. The mother packs snacks on game/tournament days. The athlete reports eating candy or Welch's fruit snacks 30-45 minutes before practice. The athlete eats fruit, chocolate covered almonds, yogurt, and chocolate milk after practice. Additionally, the athlete eats most meals at home, with the occasional meals at Chik-fil-A, McDonalds, and Starbucks.

A recent 3-day food record was provided by the athlete's mother and was used to conduct a comprehensive analysis of dietary pattern and intake.

Anthropometrics

Age: 11 years

Sex: Female

Weight: 34 kg (74.8 lb) (Percentile: 31.5, Z-Score: -0.48)²

Height: 4'9" (144.78 cm) (Percentile: 53.3, Z-Score: 0.08)²

BMI: 16.2 kg/m^2 (29th percentile, Z-score: -0.55)²

Note: Percentiles, BMI and Z-scores were calculated Baylor College of Medicine Body Composition Laboratory (Ages 2-20 years)²

Biochemical Data

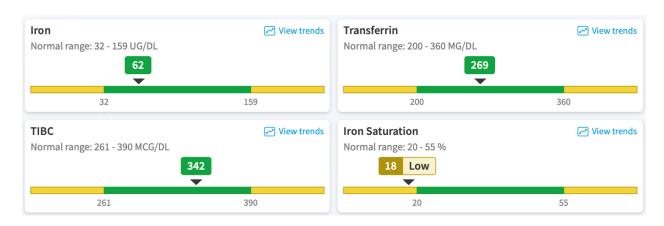
Hemoglobin:



Ferritin:



Iron TIBC %SAT:



All lab tests were collected on April 25, 2025. Evaluating hemoglobin, ferritin, and Iron TIBC % saturation is important to rule out iron-deficiency with or without anemia. Athlete frequently chews on ice, which may have suggested Pica. However, athlete does not have iron deficiency and athlete's pediatrician stated that all of labs are "within normal range" despite low iron saturation (18%). All other serum levels collected during Complete Blood Count (CBC) automated differential count were within normal range. Athlete has not yet started menstruating. Mother's age of menarche was 11 years old.

Dietary Intake Analysis

The athlete's 3-day food record was provided by the athlete's mother and used to conduct the comprehensive analysis of dietary pattern and intake. Dietary intake was analyzed via Cronometer.³ Appendix II contains the 3-day food record dietary intake analysis.

<u>Day 1</u>

Total Energy Consumed: 1,625 kcal

Macronutrients

• Protein: 39 g

• Carbohydrates: 252 g

• Fat: 54.6 g

Micronutrients:

| • | Sodium: 2,662 mg | (222% DRI) |
|---|----------------------|------------|
| • | Vitamin B12: 0.6 μg | (33% DRI) |
| • | Vitamin A: 161.9 μg | (27% DRI) |
| • | Vitamin C: 91.2 mg | (203% DRI) |
| • | Vitamin D: 40.5 IU | (7% DRI) |
| • | Vitamin E: 8.0 mg | (73% DRI) |
| • | Calcium: 316.4 mg | (24% DRI) |
| • | Magnesium: 100.9 mg | (42% DRI) |
| • | Phosphorus: 315.4 mg | (25% DRI) |
| • | Potassium: 1264.2 mg | (55% DRI) |
| • | Zinc: 2.4 mg | (30% DRI) |
| | | |

Fiber: 38.4 g (148%)

n-3 Fatty Acid: 0.5 g (51%)

Saturated Fat: 16.6 g

Day 2

Total Energy: 1,535 kcal

Macronutrients:

• Protein: 54.5 g

• Carbohydrates: 283 g

• Fat: 47.3 g

Micronutrients:

• Sodium: 883.6 mg (74% DRI)

• Vitamin B12: 0.3 μg (18% DRI)

Vitamin A: 40.2 μg (7% DRI)
 Vitamin C: 54.1 mg (120% DRI)

• Vitamin D: 4.9 IU (1% DRI)

• Vitamin E: 7.7 mg (70% DRI)

• Calcium: 92 mg (7% DRI)

Magnesium: 146 mg
 Phosphorus: 547 mg
 (61% DRI)
 (44% DRI)

Phosphorus: 547 mg
 Potassium: 1513.6 mg
 (66% DRI)

• Potassium: 1513.6 mg (66% DRI)
• Zinc: 4.1 mg (51% DRI)

Fiber: 21.7 g (83%)

n-3 Fatty Acids: 1.1 g (112%)

Saturated Fat: 8.9 g

<u>Day 3:</u>

Total Energy: 1,882 kcal

Macronutrients:

• Protein: 66.4 g

• Carbohydrates: 238 g

• Fat: 78.3 g

Micronutrients:

• Sodium: 1160.4 mg (97% DRI)

• Vitamin B12: 1.1 μg (60% DRI)

• Vitamin A: 251.9 μg (42% DRI)

• Vitamin C: 37 mg (82% DRI) • Vitamin D: 26.6 IU (1% DRI) • Vitamin E: 7.9 mg (72% DRI) • Calcium: 738.3 mg (57% DRI) • Magnesium: 166.7 mg (69% DRI) • Phosphorus: 639.5 mg (51% DRI) • Potassium: 1697.7 mg (74% DRI) • Zinc: 4.2 mg (52% DRI)

Fiber: 24.1 g (93%)

n-3 Fatty Acids: 1.6 g (158%)

Saturate Fat: 30.6 g

Nutrients of Concern

Nutrients of concern for the pediatric population include calcium, vitamin D, iron, potassium, and dietary fiber.⁴ After a 3-day dietary intake analysis, there were several micronutrients and one macronutrient the athlete was consistently deficient in consuming.

Micronutrients consistently deficient in:

- Vitamin B12
- Vitamin A
- Vitamin D
- Vitamin E
- Calcium
- Magnesium
- Phosphorus
- Potassium
- Zinc

Food Group Analysis

The athlete is not meeting food group recommendations for protein, dairy, whole grains, and vegetables. This may be contributing to deficiency in micronutrient intake.

3. Written Component

Calculations

Equations were calculated using both *active* and *very active* PAL categories. However, after the nutrition assessment, the energy requirements for PAL category "very active" will be used for this athlete's energy recommendations.

EER

EER = TEE + ECG

Age: 11 years
Weight: 34 kg
Height: 144.78 cm

PAL Category: Active

$$EER = -189.55 - (22.25 \times age) + (11.74 \times height) + (18.34 \times weight) + 30$$

$$EER = -189.55 - (22.25 \times 11 \text{ years}) + (11.74 \times 144.78 \text{ cm}) + (18.34 \times 34 \text{ kg}) + 30$$

$$EER = -189.55 - (244.75) + (1699.7172) + (623.56) + 30$$

EER = 1919 kcal/day

ECG for girls 9 to 13 y: 30 kcal/d

PAL Category: Very Active

$$EER = -709.59 - (22.25 \times 11 \text{ years}) + (18.22 \times 144.78 \text{ cm}) + (18.34 \times 34 \text{ kg}) + 30$$

EER = 2337 kcal/day

Dietary CHO

Moderate to high intensity endurance exercise 1-3 h/d: 6-10 g/kg/d

$$\frac{6 g CHO}{kg} \times 34 kg = 204 g CHO$$

$$\frac{10 g CHO}{kg} \times 34 kg = 340 g CHO$$

CHO Requirements: 204 g - 340 g CHO/day

Protein

1.35 - 1.6 g/kg/d of BW

$$\frac{1.35 g}{kg} \times 34 kg = 45.9 g$$

$$\frac{1.6 \, g}{kg} \times 34 \, kg = 54.4 \, g$$

Protein requirements: 46 g - 54.4 g protein/day

Fat

AMDR: 20 - 35% total energy intake

$$.20 \times (2337 \, kcal) = 467.4 \, kcal = 465 \, kcal \times \frac{1 \, g}{9 \, kcal} = 51.7 \, g$$

$$.35 \times (2337 \, kcal) = 817.95 = 818 \, kcal \times \frac{1 \, g}{9 \, kcal} = 90.8 \, g$$

Fat requirements: 52 g - 91 g

Fluids

Adequate intake for girls ages 9-13 is 2.1 L/d, (7 cups/day).5

Fluid Replacement

Fluid replacement guidelines for children:4 13 mL/kg/h

$$34 kg \times \frac{13 mL}{kg} = 442 mL/hr$$

Post Exercise

$$\frac{4 \, mL}{kg} \times 34 \, kg = 136 \, mL \, for \, each \, hour \, post \, exercise$$

Assessment of Athlete's Current Dietary Pattern

When comparing the nutritional analysis to athlete recommendations, I did not focus on comparing/contrasting the athletes 3-day food record to the AMDRs for protein or carbohydrate as this report is for a very active athlete. For carbohydrate, moderate to high intensity endurance exercise for 1-3 h/d guidelines were used, which is 6-10 g/kg/d.⁴ For protein, 1.35 – 1.6 g/kg/d of BW was used.⁴ The AMDR for fat was used (20-35% of total energy intake).⁴

After analyzing the athlete's dietary intake, the athlete is meeting the lower end of her carbohydrate range (204 g - 340 g). The athlete consumed 252 g, 238.3 g, and 238 g CHO on days 1-3, respectively. The athlete was within fat AMDR recommendations on days 1, and 2 (consumed 30% and 28% of total calories, respectively). However, the athlete went over AMDR recommendations on day 3, as 37% of total calories consumed were from fat sources.

The athlete met protein needs on 2 out of 3 days. The recommended protein range for the athlete is 45.9 g - 54.4 g. The athlete consumed 39 g, 54.5 g, and 66.4 g of protein on days 1-3, respectively. However, a 3-day average comes out to 53.3 g of protein. Lastly, the athlete is meeting fiber recommendations.

Analysis of Assessment Tool Used

Cronometer was used as the nutrient analysis software. The proper height, weight, and activity level was used for the athlete. However, Cronometer did not properly estimate the athlete's energy needs. Cronometer suggested the athlete should consume 1,565 kcal/day. However, the athlete's calculated EER is 2,337 kcal/day. Cronometer kept indicating that the athlete was in a caloric surplus, when, in fact, the athlete was in a severe caloric deficit. This could be problematic if the athlete (or the athlete's parents) based their athlete's energy needs off of this nutrient analysis software. Additionally, Cronometer over-estimated the athlete's protein needs at 97.8 g. The athlete requires 45.9 g – 54.5 g of protein, so this is a large over-estimation by Cronometer. Cronometer also calculated the lower-end of the athlete's carbohydrate range and suggested the athlete consume 176.1 g CHO. However, the athlete should consume 204 g – 340 g CHO. Cronometer kept indicating the athlete was +37.8 g over recommended CHO, when the athlete was way below the upper range of CHO. The upper range of CHO intake is preferred as the athlete is a very active ice hockey player.

However, Cronometer was accurate when estimating micronutrient needs and deficiencies. Overall, I would never advise an athlete (or their parents) to rely on Cronometer or "track calories" as this software underestimated energy needs, CHO needs, and overestimated protein needs.

Assessment of Athlete's Current Dietary Pattern

The athlete's current dietary pattern meets fruit requirements, but does not meet food group recommendations for protein, dairy, whole grains, and vegetables. Additionally, the athlete is not receiving enough micronutrients in her dietary pattern, especially micronutrients important for both athletes and adolescent growth and development. The athlete is not meeting several

micronutrient needs as the athlete is not consuming enough vitamin B12, vitamin A, vitamin D, vitamin E, calcium, magnesium, phosphorus, potassium and zinc. The athlete is meeting the DRI of 8 mg/d for iron. Lastly, the athlete meets fiber requirements of 26 g/day.

Athlete's Diet Order/Regimen & Assessment of Athlete's Diet Order/Regimen

The athlete does not follow a particular diet, but the majority of the athlete's snacks consist of ultra-processed foods such as high-salt chips, crackers, cookies, candy and cakes. As previously mentioned, the athlete is not consuming enough vegetables, whole grains, or dairy products. The athlete does not consume dark-green vegetables, red and orange vegetables, legumes, etc. Therefore, the diet order is to increase the consumption of dairy foods, vegetables, legumes, and whole grains.⁴ Additionally, the athlete consumes mainly three types of fruit – pomegranate arils, strawberries, and raspberries. Therefore, increase consumption of a *variety* of fruits, such as apples, grapes, carrots, oranges, tangerines, raisins, banana, dates, etc. The main goal is to ensure the athlete is meeting daily energy and micronutrient requirements.

Athlete's Nutrition Risk Category

Based on a 3-day food record, the athlete is at significant risk for micronutrient deficiency. However, the Mini Nutrition Assessment Short-Form indicated that athlete is at normal nutritional status. The athlete continues to gain weight (5.8 lbs in 4 months) but has not grown in height. On 1/14/2024 athlete was 69 lbs (21st percentile) and 4'9.09 (62nd percentile) with a BMI of 14.89 (11th percentile). Since then, athlete has gained 5.8 lbs but has not grown in height. However, due to nutritional analysis of 3-day food record, athlete is not meeting energy needs as the athlete is in a 656-kcal deficit (+/- 10% error). Additionally, the athlete is not meeting several micronutrient needs, such as vitamins B12, A, D, E and calcium, magnesium, phosphorus, potassium and zinc.

Assessment of Your Assessment Appointment Preparation

I spoke with the athlete's parents a week in advance and requested they keep a 3-day food record, as best as they could, with any food or beverages ingested by the athlete. I also asked the parent to look at recent pediatric appointment chart notes for height and weight, or to take height and weight as best as they could from their athlete. I also requested they write down names and dosages of any supplements or medications the athlete takes and bring them to the appointment. I obtained all information needed to conduct the nutrition assessment and remembered all assessment tools (because I had notes written down for myself). If I did not have reminder notes, I assess I would have forgotten some information as this was my first time conducting a full nutrition assessment.

Part II: Nutrition Diagnoses / PES Statements

Dx #1 (NI-1.2): Inadequate energy intake related to increased nutrient needs of high intensity intermittent activity as evidenced by 3-day diet record indicating athlete is under EER kcal requirements by 656 kcal.

Dx #2 (NI-5.9.1): Inadequate vitamin intake related to food and nutrition related knowledge deficit concerning food and supplemental sources of vitamins as evidenced by 3-day diet record indicating insufficient consumption of vitamin B12, vitamin A, vitamin D, and vitamin E.

Dx #3 (NI-5.10.1) – Inadequate mineral intake related to food and nutrition related knowledge deficit concerning food and supplemental sources of minerals as evidenced by 3-day diet record indicating insufficient intake of calcium, magnesium, phosphorus, potassium and zinc.

Part III: Nutrition Intervention & Monitoring

Nutrition Prescription

Energy Intake: 2337 kcal/day

CHO (6-10 g/kg/day): 204 g - 340 g/day

Protein (1.35 - 1.6 g/kg/day): 46 g - 54.4 g/day

Fat (20-35% total kcal): 52 g - 91 g

Fluids: 2.1 L/d (7-9 cups/day)

Fluid Replacement (13 mL/kg/h): 442 mL/hr

Fluid Post Exercise: 136 mL for each hour post exercise

Meet all Micronutrient DRIs: Especially micronutrients athlete may have estimated inadequate intake of – vitamin B12, vitamin A, vitamin D, vitamin E, calcium, magnesium, phosphorus, potassium and zinc.

Healthy U.S. Style Dietary Pattern for Children & Adolescents 9-13; CHO, Fluid, & Protein for

Athletes^{4,6}

Vegetables

• 3 cup eq/day⁶

Beans, Peas, Lentils

• 2 cup eq/week⁶

Fruit

• 2 cups eq/day⁶

Grains

- 3.5-ounce eq/day of Whole Grains⁶
- 3.5-ounce eq/day of Refined Grains⁶

Dairy

• 3 cup eq/day⁶

Protein

• Eat a variety of lean protein sources such as chicken, lean pork, seafood (9-ounce eq/week), nuts, seeds, and soy products (5-ounce eq/week).

Fat

- n-3 fatty acids: 1.0 g/day⁴
- <10% saturated fat a day (234 kcal/day)

Limit calories for other uses (13%): 304 kcal/day

3-Day Meal Plan

Day 1 (Practice Day)

Breakfast

1 Cup Cheerios

1 cup raw strawberries

1 cup 2% Milk with DHA

Snack

1 Container Kirkland Organic Hummus

5-6 Baby Carrots

2 oz Kale Chips, Kool Ranch (Rhythm brand)

½ cup water

Lunch

1 hard hard-boiled egg (medium)

1 Cheddar Cheese Stick

1 Cup Grapes

1 medium slice white whole grain bread

1 cup water

Snack

1 pack Organic Roasted Seaweed Packets

½ cup water

Pre-practice Fueling Snack (2 hours before on-ice practice)

1 packet Instant oatmeal

1 cup raspberries

1 banana

1 cup 2% Milk with DHA

Pre-practice Fueling Snack (30 minutes before on-ice practice)

1 packet Welch's fruit snack

1 cup water

After practice Replenishment Snack (30-45 minutes after on-ice practice)

12 oz 1% chocolate milk, with DHA 2 Mini Bars Perfect Bar, Chocolate Covered Peanut Butter

Dinner

2 oz Chicken Breast, Skinless 1 cup mixed vegetables, Broccoli, cauliflower, carrots ½ cup brown rice, steamed 1 cup water

Day 1 is estimated at 2604 kcal, 116.4 g protein, 317 g CHO, and 102 g fat. Meets all fiber and micronutrient requirements except vitamin E (64% of DRI) and vitamin D (95% of DRI).

Day 2 (No Practice Day)

Breakfast

1 cup 1% Milk with DHA

1 packet oatmeal

½ cup blueberries

½ cup raspberries

1/4 cup strawberries

4 oz pomegranate arils (sprinkled on top)

Snack

1 Good Foods, Avocado Mash

5-6 Baby carrots

8 (28g) peanut butter pretzels

1 cup water

Lunch

2 oz chicken breast

½ cup brown rice

½ cup mixed vegetables (peas and carrots)

½ cup water

Snack

1 cup Fairlife Chocolate Milk

1/4 cup Greek vanilla yogurt

1 medium banana

2 tbsp peanut butter, unsalted

1.5 tbsp chocolate sauce

1 date, pitted

Dinner

1 serving (100g) Edamame soybeans

1 cup whole wheat pasta

1 cup vegetable stir fry (carrots and/or dark green vegetables)

1 cup 1% Milk with DHA

Snack

1 cup chocolate ice cream

Day 2 is estimated at 2386 kcal, 342 g CHO, 109 g protein, 78 g fat. Meets all fiber and micronutrient requirements, except vitamin E (62% DRI) and vitamin D (70% DRI).

Day 3 (Practice Day)

Breakfast

2 scrambled eggs

1 small sourdough bread

2 mandarins

1 cup 1% Milk with DHA

Snack

1 container Chobani Flip, Vanilla Low Fat Greek Yogurt, Cookie Dough 1 cup strawberries ½ cup water

Lunch

1 serving (100g) Edamame soybeans ½ cup brown rice ½ cup Broccoli 1 cup 1% Milk with DHA

Snack

1 cup of Jif To Go Creamy Peanut Butter 5-6 Baby Carrots ½ cup water

After off-ice training session & prior to on-ice training session 20 oz Gatorade (also can be drank during practice) 1 pouch Welch's Fruit Snacks

On-ice training session (Continue to drink Gatorade and/or water)

After on-ice practice (NLT 30-45 minutes after practice) 12 oz chocolate milk, 1% fat, with DHA 2 Mini Bars Perfect Bar, Chocolate Covered Peanut Butter

Dinner

4 oz Sockey Salmon 1 cup lentil pasta ½ cup mixed vegetables (broccoli, cauliflower, carrots)

Snack

1 cup chocolate ice cream

½ cup strawberries

Day 3 is estimated at 2413 kcal, 314 g CHO, 80.1 g fat, 128 g protein and meets all fiber and

micronutrient requirements, except vitamin E (80% DRI).

Aim to drink fluid requirements of 2.1 L/day (7-9 cups/day). On practice days, fluid replacement is 442 mL/hr. After exercise, ensure drinking 136 mL for each hour post exercise until fluid

replacement is met.

Note: The 3-day diet analysis for this 3-day meal plan is attached as Appendix III.

3-Day Diet Analysis

By following the 3-day meal plan, the athlete will reach all energy, macronutrient, fiber,

and micronutrient requirements, except for vitamin E and vitamin D. I recommend the athlete go

outside without sunscreen with arms and legs exposed for 20-minutes daily, between the hours of

10am-2pm, to generate vitamin D. The 3-day diet analysis is attached as Appendix III.

2. Design & Implement Interventions

Dx #1 (NI-1.2): Inadequate energy intake related to increased nutrient needs of high intensity

intermittent activity as evidenced by 3-day diet record indicating athlete is under EER kcal

requirements by 656 kcal

<u>Intervention for Dx #1</u>: Increased energy diet (ND-1.2.2.1); Total energy intake in 24 hours.

Increase EOs from 4 meals and snacks to 8 EOs on practice/game days and 6 EOs on non-

practice/game days.

Nutrition Monitoring and Evaluation

Parameter: Increased energy diet (ND-1.2.2.1)

Indicator for Success: Adherence to increasing from 4 EOs to 8 EOs on practice/game days and 6

EOs on non-practice/game days at least 80% of the time.

Time frame and measurement: Starting tomorrow. Will reassess in 2-weeks at next session.

Dx #2 (NI-5.9.1): Inadequate vitamin intake related to food and nutrition related knowledge deficit concerning food and supplemental sources of vitamins as evidenced by 3-day diet record indicating insufficient consumption of vitamin B12, vitamin A, vitamin D, and vitamin E.

Intervention for Dx #2: Content related nutrition education (E-1.1)

Describe MyPlate to client and parents and explain how following this dietary pattern will help reach micronutrient requirements due to consuming fruits, vegetables, dairy products, and whole grains – many which the athlete is deficient in. Create meals and snacks using MyPlate as a visual and handouts from USDA MyPlate for kids.⁷

Nutrition Monitoring and Evaluation

Parameter: Parental and athlete knowledge of why incorporating MyPlate and DGA recommendations like fruits, vegetables, dairy products, whole grains and protein will help the athlete meet micronutrient needs.

Indicator for Success: Basic understanding by identifying athlete's favorite foods that can be incorporated into each food group to start building meals and sustainable dietary pattern the athlete will enjoy.

Time frame and measurement: Starting tomorrow. Will reassess in 2-weeks at next session.

Dx #3 (NI-5.10.1) – Inadequate mineral intake related to food and nutrition related knowledge deficit concerning food and supplemental sources of minerals as evidenced by 3-day diet record indicating insufficient intake of calcium, magnesium, phosphorus, potassium and zinc.

Interventions for Dx #3: Nutrition Counseling Based on Social Support Strategy (C-2.5)

Work with parent and athlete to encourage family involvement in implementing MyPlate/USDGA dietary pattern, with an emphasis in incorporating foods the athlete currently is not consuming enough of – a variety of fruits, vegetables, whole grains, and dairy products.

Nutrition Monitoring and Evaluation

Parameter: Increased consumption of vegetables, dairy products, whole grains and a variety of different fruits.

Indicator for Success: Adherence to adding vegetables, dairy products, whole grains and a variety of different fruits to daily meals at least 85% of the time.

Time frame and measurement: Starting tomorrow. Will reassess in 2-weeks at next session.

Part IV – Project Evaluation

I encountered two big challenges while working on this project. My first challenge was formulating the interview questions for an adolescent athlete, as the athlete I adopted is an 11-years-old female with severe clinical OCD who tends to obsess on the smallest details. I had to be extremely careful in my voice inflection and mannerisms when interviewing the athlete to ensure the athlete would not later obsess over what was said (due to her OCD diagnosis). I also had to decide what questions I would ask the parents ahead of time.

Prior to the interview, I requested the parents keep a detailed 3-day food record as I explained this would be extremely helpful for me. I feel that I am not yet experienced enough for a 24-hour recall as I fear I may miss something important during a recall (especially when working with young athletes and their parents). I also wasn't sure if the parent, or athlete, would tell me what they think I want to hear as I'm a dietetics student. I used to think that a 3-day food record handed over to me would provide a more accurate assessment of daily intake and may be a "safer" option as many parents fear judgement based on dietary habits. However, after

speaking with Dr. D, I now know that this may not be the case and that many times a 24-hour recall is the most effective approach because it is occurring "in the moment" and that many individuals may log what they think a (future) dietitian would want to see/hear.

Additionally, I was originally unsure how to handle parent comments during a 24-hour recall such as, "I know we shouldn't be eating this" or "I know this a bad food." After speaking with Dr. D, I now know that if a parent makes these types of comments, to keep focus on the youth athlete being interviewed and to also emphasize that there are "no good foods or bad foods – just food."

What was most shocking to me was realizing the athlete was in a *severe* caloric deficit by 656 kcal (though there is the possibility of +/- 10% error). Additionally, the athlete is not meeting several micronutrient needs, such as vitamin B12, vitamin A, vitamin D, vitamin E and calcium, magnesium, phosphorus, potassium and zinc. This is when my second challenge presented itself. *How* do I build a sample 3-day meal plan that will help the athlete meet energy and micronutrient needs without overloading the athlete.

I overcame this challenge by referring back to the foods the athlete stated she enjoys consuming during the nutrition assessment interview and built a 3-day sample menu based on that. I was able to satisfy all energy requirements, but still fell short on vitamin E and vitamin D. The athlete can go outside for 20-minutes daily, with arms and legs exposed, between the hours of 10am-2pm to synthesize vitamin D. However, I realized that I failed to account for and ask about cooking oils the athlete's meals are cooked in. If I would have collected this information, it is possible the athlete may satisfy the DRI for vitamin E (11 mg/d).

I also realized that I must get creative in the future to further add in foods that contain vitamin E that the athlete enjoys. I know the athlete enjoys almonds, and 1 ounce of almonds

contains 6.8 mg vitamin E, which is 62% of the recommended DRI for a female aged 9-13 years.⁸ However, I would have to wait for the follow-up interview to see if the athlete enjoys sunflower seeds, as 1 ounce of dry roasted sunflower seeds contains 7.4 mg of vitamin E, which is 67% of the DRI for females aged 9-13 years.⁸

Overall, I have learned a great deal while completing this Adopt an Athlete Project.

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Appendix I – Nutrition Assessment Interview Questions

Food/Nutrition Related Hx:

- 1. How many times do you eat in a day?
- 2. Do you eat before practice? If so, what do you eat?
- 3. Do you eat after practice? If so, what do you eat?
- 4. Do you have any problems chewing your food?
- 5. Do you take supplements? If yes, when and how do you take these supplements? With food? On an empty stomach?
- 6. Do you take any medications? If yes, when and how do you take these supplements? With food? On an empty stomach?
- 7. Do you have enough food to eat at home?
- 8. Do you help cook your meals?
- 9. Do you ever skip meals?
- 10. How many times do you exercise per week?
- 11. How long are these sessions?
- 12. Do you drink while exercising?

Anthropometrics

- 1. How tall are you?
- 2. How much do you weigh?
- 3. How long have you been at your current weight?
- 4. Have you had any weight fluctuations within the past 6 months?
- 5. What was your weight and height at your last pediatrician appointment?

Client Hx:

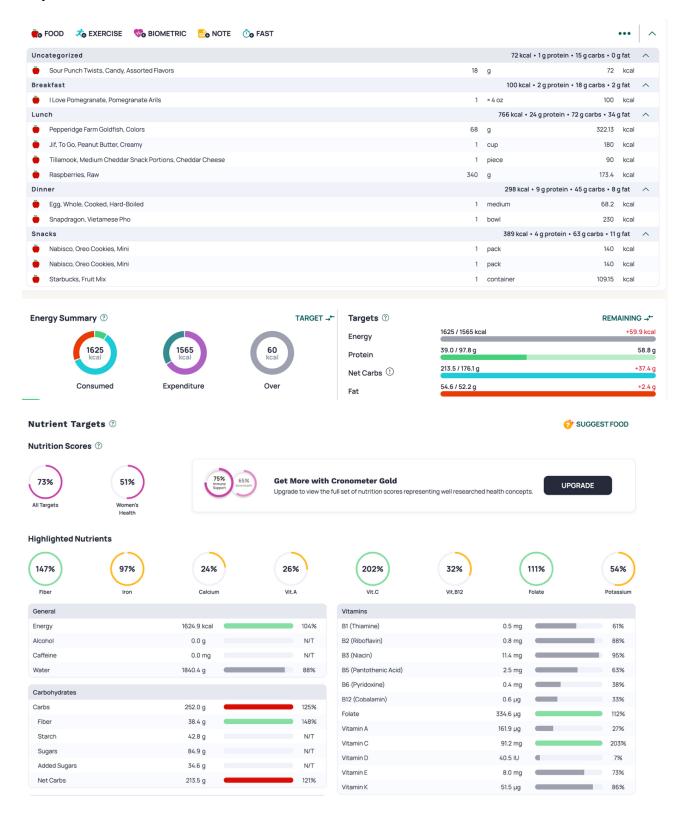
- 1. When was your last pediatrician appointment?
- 2. Do you have any diagnosed medical conditions?
- 3. Other than hockey, what other sports do you play or have played in the past?

Biochemical data, Medical Tests, Procedures:

- 1. Have you received a blood draw due to your diagnosed medical condition?
- 2. What were the results of your blood draw?

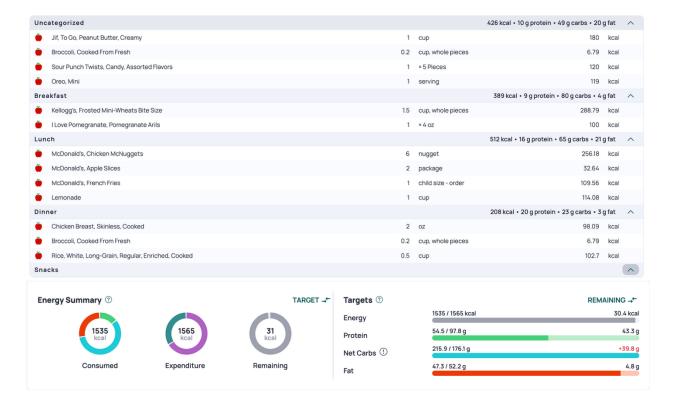
Appendix II - Dietary Analysis of 3-Day Food Record

Day 1:





Day 2:



Nutrient Targets ③

Nutrition Scores ①









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UPGRADE

Highlighted Nutrients

















| General | | |
|---------------|-------------|-----|
| Energy | 1534.6 kcal | 98% |
| Alcohol | 0.0 g | N/T |
| Caffeine | 0.0 mg | N/T |
| Water | 1980.3 g | 94% |
| | | |
| Carbohydrates | | |

| Carbohydrates | | |
|---------------|---------|------|
| Carbs | 238.3 g | 118% |
| Fiber | 21.7 g | 83% |
| Starch | 88.2 g | N/T |
| Sugars | 97.1 g | N/T |
| Added Sugars | 59.7 g | N/T |
| Net Carbs | 215.9 g | 123% |
| | | |

| Lipids | | |
|-----------------|---------|------|
| Fat | 47.3 g | 91% |
| Monounsaturated | 8.8 g | N/T |
| Polyunsaturated | 10.5 g | N/T |
| Omega-3 | 1.1 g | 112% |
| Omega-6 | 8.8 g | 88% |
| Saturated | 8.9 g | n/a |
| Trans-Fats | 0.2 g | n/a |
| Cholesterol | 82.6 mg | N/T |
| | | |

| Protein | | |
|---------------|--------|------|
| Protein | 54.5 g | 56% |
| Cystine | 0.7 g | 205% |
| Histidine | 1.2 g | 259% |
| Isoleucine | 2.1 g | 309% |
| Leucine | 3.2 g | 213% |
| Lysine | 3.0 g | 204% |
| Methionine | 1.1 g | 315% |
| Phenylalanine | 1.8 g | 300% |
| Threonine | 1.7 g | 241% |
| Tryptophan | 0.5 g | 268% |
| Tyrosine | 1.4 g | 233% |
| Valine | 2.2 g | 248% |

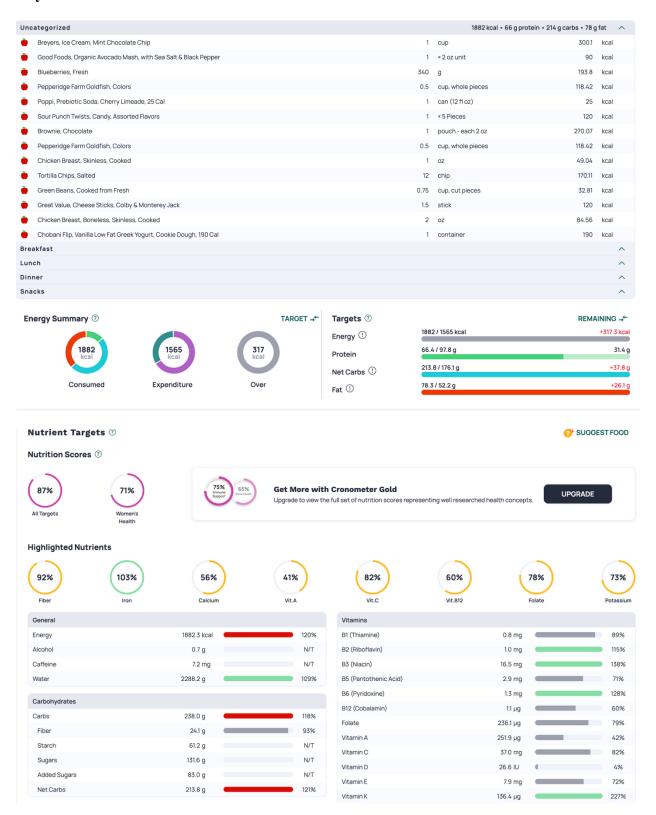
| Vitamins | | | |
|-----------------------|----------|---|------|
| B1 (Thiamine) | 0.7 mg | | 75% |
| B2 (Riboflavin) | 0.4 mg | | 44% |
| B3 (Niacin) | 22.5 mg | | 187% |
| B5 (Pantothenic Acid) | 3.0 mg | | 75% |
| B6 (Pyridoxine) | 1.3 mg | | 127% |
| B12 (Cobalamin) | 0.3 µg | | 18% |
| Folate | 708.1 µg | | 236% |
| Vitamin A | 40.2 µg | 4 | 7% |
| Vitamin C | 54.1 mg | | 120% |
| Vitamin D | 4.9 IU | | 1% |
| Vitamin E | 7.7 mg | | 70% |
| Vitamin K | 92.4 µg | | 154% |

| Vitamin K | 92.4 µg | | 154% |
|------------|-----------|---|------|
| Minerals | | | |
| Calcium | 92.0 mg | 4 | 7% |
| Copper | 0.8 mg | | 117% |
| Iron | 28.9 mg | | 361% |
| Magnesium | 146.0 mg | | 61% |
| Manganese | 3.8 mg | | 235% |
| Phosphorus | 547.0 mg | | 44% |
| Potassium | 1513.6 mg | | 66% |
| Selenium | 78.7 µg | | 197% |
| Sodium | 883.6 mg | | 74% |
| Zinc | 4.1 mg | | 51% |

N/T = No Target



Day 3:



| Lipids | | |
|-----------------|----------|------|
| Fat | 78.3 g | 151% |
| Monounsaturated | 17.0 g | N/T |
| Polyunsaturated | 12.9 g | N/T |
| Omega-3 | 1.6 g | 158% |
| Omega-6 | 10.9 g | 109% |
| Saturated | 30.6 g | n/a |
| Trans-Fats | 0.8 g | n/a |
| Cholesterol | 243.8 mg | N/T |
| Protein | | |
| Protein | 66.4 g | 68% |
| Cystine | 0.6 g | 175% |
| Histidine | 1.4 g | 291% |

| Protein | | |
|---------------|--------|------|
| Protein | 66.4 g | 68% |
| Cystine | 0.6 g | 175% |
| Histidine | 1.4 g | 291% |
| Isoleucine | 2.2 g | 322% |
| Leucine | 3.8 g | 251% |
| Lysine | 3.3 g | 225% |
| Methionine | 1.1 g | 329% |
| Phenylalanine | 2.0 g | 329% |
| Threonine | 1.9 g | 271% |
| Tryptophan | 0.6 g | 292% |
| Tyrosine | 1.7 g | 270% |
| Valine | 2.4 g | 277% |

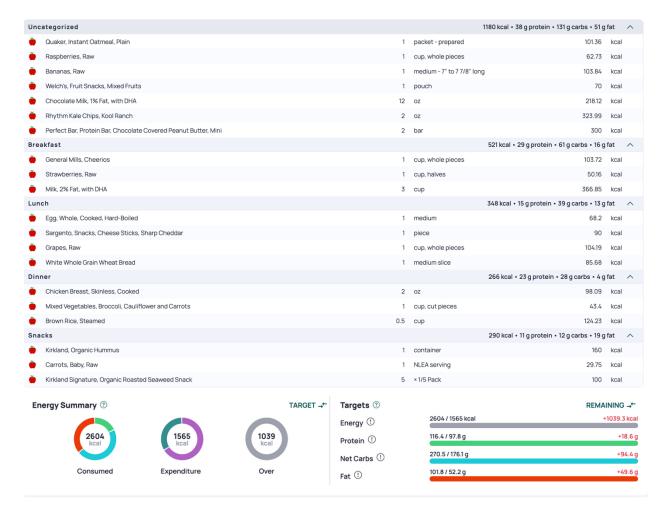
| Minerals | | |
|------------|-----------|------|
| Calcium | 738.3 mg | 57% |
| Copper | 0.7 mg | 99% |
| Iron | 8.2 mg | 103% |
| Magnesium | 166.7 mg | 69% |
| Manganese | 2.6 mg | 165% |
| Phosphorus | 639.5 mg | 51% |
| Potassium | 1697.7 mg | 74% |
| Selenium | 51.3 µg | 128% |
| Sodium | 1160.4 mg | 97% |
| Zinc | 4.2 mg | 52% |

N/T = No Target



Appendix III - Diet Analysis of 3-day Sample Menu

Day 1 (Practice Day):



215%

Potassium

194%

158%

374%

198% 319%

146%

215%

186% 196%

128%

Nutrition Scores ③







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418%

Vit.C

UPGRADE

168%

Folate



| | Vitamins | | | |
|----|-----------------------|-----------|----|-----|
| | B1 (Thiamine) | 1.6 mg | 17 | 76% |
| | B2 (Riboflavin) | 2.7 mg | 2 | 95% |
| | B3 (Niacin) | 23.0 mg | 1 | 91% |
| | B5 (Pantothenic Acid) | 8.3 mg | 2 | 08% |
| | B6 (Pyridoxine) | 2.2 mg | 2 | 16% |
| | B12 (Cobalamin) | 5.8 µg | 3 | 23% |
| | Folate | 505.4 µg | 16 | 68% |
| | Vitamin A | 2594.3 µg | 4 | 32% |
| | Vitamin C | 188.5 mg | 4 | 19% |
| | Vitamin D | 571.6 IU | | 95% |
| | Vitamin E | 7.0 mg | | 64% |
| | Vitamin K | 527.9 µg | 8 | 80% |
| Mi | nerals | | | |
| | | | | |

2520.6 mg

1.1 mg

475.8 mg

1823.4 mg

74.4 µg

2352.7 mg 10.3 mg

5.1 mg

322%

Vit.B12

| Lipids | | |
|-----------------|----------|------|
| Fat | 101.8 g | 196% |
| Monounsaturated | 20.5 g | N/T |
| Polyunsaturated | 5.8 g | N/T |
| Omega-3 | 0.7 g | 68% |
| Omega-6 | 3.8 g | 38% |
| Saturated | 28.9 g | n/a |
| Trans-Fats | 0.7 g | n/a |
| Cholesterol | 317.9 mg | N/T |
| | | |
| Protein | | |

| % | |
|----|-----------------|
| | Magnesium |
| % | Manganese |
| а | Phosphorus |
| а | Potassium |
| Т | Selenium |
| | Sodium |
| % | Zinc |
| % | N/T = No Target |
| % | |
| % | |
| % | |
| 1% | |
| | |

Calcium

Copper

116.4 g 1199 1.0 g 3089 Cystine Histidine 2.2 g 4569 Isoleucine 3.8 g 555 6.6 g 5.8 g Lysine 3929 1.9 g Methionine 559% Phenylalanine 3.6 g 587% 3.4 g Tryptophan 1.0 g 3.1 g 500% Tyrosine 4.4 g 510% Valine



Day 2 (Non-Practice Day):

| Jncategorized | | | 120 kcal | ıl • 2 g protein • 6 g carbs • 8 g fat | ^ |
|--|-------------|-------------|----------------------------|--|------|
| Good Foods, Avocado Mash | | 1 | Serving size | 90 kcal | |
| Carrots, Baby, Raw | | 1 | NLEA serving | 29.75 kcal | |
| Breakfast | | | 410 kcal • | • 21 g protein • 59 g carbs • 7 g fat | ^ |
| Milk, 1% Fat, with DHA | | 2 | cup | 210.41 kcal | |
| Blueberries, Fresh | | 0.5 | cup, whole pieces | 42.18 kcal | |
| Strawberries, Raw | | 0.5 | cup, halves | 25.08 kcal | |
| Raspberries, Raw | | 0.5 | cup, whole pieces | 31.36 kcal | |
| Quaker, Instant Oatmeal, Plain | | 1 | packet - prepared | 101.36 kcal | |
| unch | | | 1022 kcal • 50 | 0 g protein • 116 g carbs • 39 g fat | ^ |
| Chicken Breast, Skinless, Cooked | | 2 | oz | 98.09 kcal | |
| Brown Rice, Steamed | | 0.5 | cup | 124.23 kcal | |
| Mixed Vegetables, Peas and Carrots, Cooked from Frozen | | 0.5 | cup, cut pieces | 38.4 kcal | |
| Fairlife, Ultra-Filtered Milk, Reduced Fat Chocolate | | 1 | cup (240ml) | 140 kcal | |
| Peanut Butter, Natural, Unsalted | | 2 | tbsp | 187.84 kcal | |
| Dates, Medjool | | 1 | date, pitted | 66.48 kcal | |
| Chocolate Sauce, Syrup | | 1.5 | tbsp | 81.61 kcal | |
| Breyers, Ice Cream, Chocolate | | 1 | cup | 284.97 kcal | |
| inner | | | 462 kcal • 2 | 24 g protein • 56 g carbs • 15 g fat | 1 |
| Edamame, Soybeans | | 1 | serving | 121 kcal | |
| Pasta, Whole Wheat, Cooked | | 1 | cup | 208.6 kcal | |
| Vegetable Stir Fry, Carrots or Dark Green Vegetables | | 1 | cup, cut pieces | 132.67 kcal | |
| nacks | | | 372 kcal • | 12 g protein • 58 g carbs • 9 g fat | ^ |
| I Love Pomegranate, Pomegranate Arils | | 1 | × 4 oz | 100 kcal | |
| Greek Yogurt, Vanilla, Lowfat | | 0.25 | cup | 48.37 kcal | |
| Bananas, Raw | | 0.86 | medium - 7" to 7 7/8" long | 88.88 kcal | |
| Kirkland Signature, Peanut Butter Pretzels | | 28 | g | 134.4 kcal | |
| Energy Summary ③ | TARGET → | Targets ? | | REMAINING | G - |
| | | Energy ① | 2386 / 1565 kcal | +820. | .7 k |
| 2386 1565 kcal | 820 kcal | Protein ① | 108.6 / 97.8 g | +1 | ·10. |
| | | Net Carbs ① | 295.4 / 176.1 g | +11 | 119. |
| Consumed Expenditure | Over | Fat ① | 78.4 / 52.2 g | +2 | 26. |



Nutrition Scores ③



All Targets





Get More with Cronometer Gold

N/T

168%

 $Upgrade\ to\ view\ the\ full\ set\ of\ nutrition\ scores\ representing\ well\ researched\ health\ concepts.$

UPGRADE

*SUGGEST FOOD

Highlighted Nutrients

Added Sugars

Net Carbs



44.2 g

295.4 g

| 294% | 277% | 143% | 195% |
|-----------------------|---------|-----------|-----------|
| Vit.C | Vit.B12 | Folate | Potassium |
| Vitamins | | | |
| B1 (Thiamine) | | 1.6 mg | 175% |
| B2 (Riboflavin) | | 2.0 mg | 226% |
| B3 (Niacin) | | 25.1 mg | 210% |
| B5 (Pantothenic Acid) | | 8.3 mg | 206% |
| B6 (Pyridoxine) | | 2.1 mg | 207% |
| B12 (Cobalamin) | | 5.0 µg | 277% |
| Folate | | 429.9 µg | 143% |
| Vitamin A | | 2046.9 µg | 341% |
| Vitamin C | | 132.4 mg | 294% |
| Vitamin D | | 420.9 IU | 70% |
| Vitamin E | | 6.8 mg | 62% |
| Vitamin K | | 180.0 µg | 300% |

| Lipids | | |
|-----------------|----------|------|
| Fat | 78.4 g | 151% |
| Monounsaturated | 22.0 g | N/T |
| Polyunsaturated | 13.5 g | N/T |
| Omega-3 | 1.2 g | 122% |
| Omega-6 | 9.8 g | 98% |
| Saturated | 24.1 g | n/a |
| Trans-Fats | 0.7 g | n/a |
| Cholesterol | 142.8 mg | N/T |

| Minerals | | |
|------------|-----------|------|
| Calcium | 1531.8 mg | 1189 |
| Copper | 1.9 mg | 2729 |
| Iron | 19.0 mg | 2379 |
| Magnesium | 507.9 mg | 2129 |
| Manganese | 6.9 mg | 4309 |
| Phosphorus | 1922.4 mg | 1549 |
| Potassium | 4503.3 mg | 1969 |
| Selenium | 113.6 µg | 2849 |
| Sodium | 1788.0 mg | 1499 |
| Zinc | 11.7 mg | 1469 |

| Protein | | |
|---------------|---------|------|
| Protein | 108.6 g | 111% |
| Cystine | 1.0 g | 296% |
| Histidine | 2.3 g | 468% |
| Isoleucine | 3.9 g | 572% |
| Leucine | 6.7 g | 445% |
| Lysine | 5.6 g | 377% |
| Methionine | 1.8 g | 544% |
| Phenylalanine | 3.8 g | 628% |
| Threonine | 3.3 g | 469% |
| Tryptophan | 1.0 g | 519% |
| Tyrosine | 3.2 g | 523% |
| Valine | 4.5 g | 515% |
| • | | |

N/T = No Target

Plan Ahead for the Best Rates

Day 3 (Practice Day):

| Chobani Flip, Vanilla Low Fat Greek Yo | | | | | otein • 197 g carbs • 46 g t | | |
|--|-----------------------------|--|------|------------------------|-------------------------------|------|---|
| | jurt, Cookie Dough, 190 Cal | | 1 | | 190 | kcal | |
| Strawberries, Raw | | | 1 | • | 50.16 | kcal | |
| Broccoli, Cooked From Fresh | | | 0.5 | cup, whole pieces | 16.98 | kcal | |
| Gatorade, All Flavors | | | 1 | bottle - each 20 fl oz | 140.3 | kcal | |
| Welch's, Fruit Snacks, Mixed Fruits | | | 1 | pouch | 70 | kcal | |
| Chocolate Milk, 1% Fat, with DHA | | | 12 | OZ | 218.12 | kcal | |
| Perfect Snacks, Peanut Butter Cups, D | ark Chocolate Sea Salt | | 1 | × 2 cups | 210 | kcal | |
| Salmon, Sockeye, Red, Cooked | | | 4 | oz | 176.9 | kcal | |
| Gluten Free Pasta, Lentil, Cooked in U | nsalted Water | | 1 | cup | 169.1 | kcal | |
| Mixed Vegetables, Broccoli, Cauliflow | er and Carrots | | 0.5 | cup, cut pieces | 21.7 | kcal | |
| Breyers, Ice Cream, Chocolate | | | 1 | cup | 284.97 | kcal | |
| Strawberries, Raw | | | 0.25 | cup, halves | 12.54 | kcal | |
| eakfast | | | | 397 kcal • 23 g p | orotein • 45 g carbs • 13 g t | at | ^ |
| Eggs, Cooked | | | 2 | medium | 136.4 | kcal | |
| Cuties, California Mandarins | | | 1 | × 2 clementines | 90 | kcal | |
| Milk, 1% Fat, with DHA | | | 1 | cup | 105.21 | kcal | |
| Sourdough Bread | | | 1 | small slice | 65.28 | kcal | |
| inch | | | | 245 kcal • 15 g | protein • 33 g carbs • 6 g f | at | ^ |
| Brown Rice, Steamed | | | 0.5 | cup | 124.23 | kcal | |
| Edamame, Soybeans | | | 1 | serving | 121 | kcal | |
| nner | | | | | | | ^ |
| nacks | | | | 210 kcal • 8 g | protein • 11 g carbs • 15 g t | at | ^ |
| Carrots, Baby, Raw | | | 1 | NLEA serving | 29.75 | kcal | |
| Jif, To Go, Peanut Butter, Creamy | | | 1 | cup | 180 | kcal | |

Nutrition Scores ②







Get More with Cronometer Gold

Upgrade to view the full set of nutrition scores representing well researched health concepts.

UPGRADE

Highlighted Nutrients



5.1 g

| 479% | |
|-------|--|
| Vit.C | |







| Vitamins | | |
|-----------------------|-----------|------|
| B1 (Thiamine) | 1.4 mg | 157% |
| B2 (Riboflavin) | 2.7 mg | 300% |
| B3 (Niacin) | 31.5 mg | 263% |
| B5 (Pantothenic Acid) | 8.9 mg | 224% |
| B6 (Pyridoxine) | 2.4 mg | 245% |
| B12 (Cobalamin) | 8.7 µg | 483% |
| Folate | 546.1 µg | 182% |
| Vitamin A | 1901.1 µg | 317% |
| Vitamin C | 215.8 mg | 480% |
| Vitamin D | 1096.6 IU | 183% |
| Vitamin E | 8.8 mg | 80% |
| Vitamin K | 156.7 µg | 261% |

| Minerals | | |
|------------|-----------|------|
| Calcium | 1352.4 mg | 104% |
| Copper | 1.3 mg | 182% |
| Iron | 12.8 mg | 161% |
| Magnesium | 361.8 mg | 151% |
| Manganese | 3.4 mg | 210% |
| Phosphorus | 1800.5 mg | 144% |
| Potassium | 4157.7 mg | 181% |
| Selenium | 102.0 µg | 255% |
| Sodium | 1389.3 mg | 116% |
| Zinc | 9.4 mg | 118% |

N/T = No Target

582%

