

Assignment 01: Nutritional Assessment

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Presented to: Professor Karine Duval

SPSC 1192-001 Topics In Human Nutrition

Due: Thursday March 5, 2015

Douglas College, New Westminster, Room 1717

Introduction: My name is Kiyoshi Perkins, and I am a 30-year old male full-time student; athlete and competitor in Brazilian Jiu-Jitsu (BJJ); and an assistant coach for wrestling. School takes approximately four hours per day, four days a week; there is an additional science lab each week taking on average an hour and 30 minutes. Alongside class time is homework and studying, estimated at 20 hours each week. I spend five days per week grappling, alternating between BJJ and wrestling; both are two hours per session; and I dance for 90 to 110 minutes twice a week.

Nutritional Needs: I calculate my nutritional needs to be just over 3,200 kilo-calories per day, coming from a balance of carbohydrates, fats, and protein. This is in part due to the complex nature of defining my physical activities; BJJ, wrestling, and dancing are not so easily classified into categories such cardiovascular endurance, muscular endurance, or fat burning.

Constraints: I am constrained by time: I drive from Maple Ridge to New Westminster and back four times a week, and from Maple Ridge to Abbotsford and back three times a week. The New West drive is an hour each way, and the Abbotsford drive is 30 minutes each way. A minimum of 11 hours of driving per week decreases the amount of time to prepare and eat a variety of healthy meals, which creates a temptation to order something in or buy pre-made and pre-packaged foods from the grocery store.

Nutritional Goals: My goal is to eat a healthy balanced diet that will give me energy for my activities and will also assist in recovery from my physical activities. I would like those meals to be fairly easy to prepare in terms of complexity and time required. Alongside the physical side, I want to make sure that I get enough fats and carbohydrates in my diet for my brain, in order to assist in my studies.

General Eating Patterns: Breakfasts tend to be fairly consistent with little to no variety; involving a coffee, and either a bagel with butter or sunny-side-up eggs and toast. Lunches are hit-and-miss, mostly miss, consisting either of a bagel or sliced veggies. Dinners are more consistent in size, balance, and with some variety; either homemade quesadillas, tortellini with sauce, or a hamburger. A glass of white wine – a Riesling – was consumed, but alcohol is a rarity. Water consumption was not measured, but was consistently consumed prior to sleep, after waking, and throughout all times of physical activity.

Energy Budget: As previously mentioned, my recommended daily allowance (RDA) is 3,200 kilo-calories that is supposed to be the combination of 60 percent carbohydrates (CHO), 28 percent lipids, and 12 percent proteins. The macronutrient kilo-calorie intake breakdown is CHO at 37.17 percent, lipids at 40.87 percent, protein at 19.72 percent, with the remaining 2.24 percent from alcohol. Each of my macronutrient intake falls below my RDA: 41.49 percent overall for kilo-calories, 22.45 percent of CHO, 52.95 percent of lipids, and 49.34 percent of proteins. Fibre intake is also below my RDA, sitting at 44.98 percent.

My micronutrient intake generally falls below my RDA. Only Vitamin D – coming in at 173.83 percent intake – and Vitamin B2 – coming in at 104.77 percent intake – come above my RDA. The lowest micronutrient intake is Vitamin E, coming in at 30.66 percent intake, and Calcium, at 42.97 percent.

Nutrient Toxicities: Vitamin D dietary intake in excess of 1250 µg per day for several months can cause non-specific symptoms such as weight loss, polyuria, heart arrhythmias, and can raise blood levels of calcium; this leads to vascular and tissue calcification with subsequent damage to the heart, blood vessels, and kidneys.

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Excessive sodium intake can lead to dehydration, dizziness, and muscle cramps; long-term effects may include risk of stroke or cardiovascular disease, high blood pressure, and left ventricular hypertrophy.

Nutrient Deficiencies: A lack of potassium in the diet, or deficiencies caused by dehydration, diarrhoea, and excessive sweating can lead to weakness, tiredness, cramping in the leg or arm muscles, nausea, constipation, heart palpitations, fainting, and abnormal psychological behaviour such as depression, psychosis, confusion, or hallucinations.

Recommendations: The Vitamin D intake can be lowered by reducing the intake of eggs, cheese and other dairy products. Sodium intake can be curbed by reducing the amount of canned and pre-packaged products such as tomato sauce, and fast food. Potassium deficiencies can be counteracted by increasing intake of fresh fruits and vegetables, such as bananas, sweet potatoes, or other foods such as yogurt, and fish.

Conclusion: The food recorded over four consecutive days measured the intake of 21 different micro- and macro-nutrients combined. Over 80 percent of those nutrients fell below my RDA, and some as low as 22 percent below what has been recommended. Fortunately my excessive intake did not rise above 175 percent of the recommended amounts.

Regardless of deficiencies or toxicities, my diet should be changed to bring more of the percentages in line with my RDA. Some of these changes will be easy to implement, such as reducing or eliminating fast foods; or increasing intake of yogurt, bananas, and other fresh fruit.

It would be beneficial to look at the meals and snacks consumed during a typical school day. I would be eating at a fairly regular intervals, usually consisting of leftovers and fruits or vegetables. Using the structure of class should bring some of the deficiencies closer to the RDA

values; hopefully my toxicities won't dramatically increase. Ideally I would have a meal-style shake – consisting of blended fruits and veggies with Greek yogurt and a few ounces of water – which should help with macro- and micro-nutrient intake during the day, but may not be feasible until I return home for the day. My water intake, while not measured for this assignment, is adequate during school days. I always hydrate prior to, during, and after BJJ, wrestling, and dance.

Barriers: My ratio of macronutrients – carbohydrates to fats to proteins – could be re-evaluated and tweaked; though I would have to observe my fat intake more closely. Said re-evaluation could make it easier to create and maintain a healthy balanced diet. It could also make it easier for meal preparation, though it would be offset from more time spent buying groceries.

Form 1: DAY 2, STUDY + SLEEP IN DAY

Title: SUNDAY

| Food Consumed | Approximate Measure | Energy kcal | CHO g | Fiber g | Fat g | Saturated Fat g | Unsaturated fat g | Cholesterol mg | Protein g | Vit A μ g | Vit C mg | Vit D μ g | Vit E mg | Vit B1 mg | Vit B2 mg | Vit B3 mg | Vit B9 μ g | Vit B12 μ g | Calcium mg | Iron mg | Sodium mg | Potassium mg | |
|---------------------------------|---------------------|-------------|-------|---------|-------|-----------------|-------------------|----------------|-----------|---------------|----------|---------------|----------|-----------|-----------|-----------|----------------|-----------------|------------|---------|-----------|--------------|-----|
| HAZ AND HALF CREAM | 30g | 39 | 1.3 | 0.0 | 3.4 | 2.1 | 1.1 | 11.1 | 0.9 | 106 | 0.3 | ~ | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 31.5 | 0.0 | 12.3 | 39. |
| ROUND SUGAR | 4g | 17.1 | 4.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | ~ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.7 | 0.0 | 1.3 | 6.0 |
| ENERGY BAKED BAGEL | 57g | 146 | 29 | 1.3 | 0.9 | 0.2 | 0.7 | 0.0 | 5.7 | 0.0 | 0.6 | ~ | 0.1 | 0.3 | 0.1 | 2.3 | 0.26 | 0.0 | 50.7 | 3.4 | 255 | 42.7 | |
| BUTTER | 14g | 100 | 0.0 | 11.4 | 7.2 | 2.9 | 0.4 | 30.1 | 0.1 | 350 | 0.0 | ~ | 0.3 | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 3.4 | 0.0 | 1.5 | 3.4 | |
| RISLING WHITE WINE | 148g | 119 | 5.5 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| AVOCADO, SLICED, RAW | 115g | 142 | 9.95 | 7.8 | 17.7 | 2.45 | 13.35 | 0.0 | 225 | 169 | 10.1 | ~ | 2.25 | 0.1 | 0.15 | 2.2 | 10.5 | 0.0 | 14.95 | 0.7 | 9.2 | 583 | |
| CHEDDAR CHEESE GRATED | 565g | 2275 | 0.7 | 0.0 | 8.75 | 11.9 | 5.85 | 59.5 | 11.05 | 566 | 0.0 | 6.8 | 0.15 | 0.0 | 0.2 | 0.0 | 10.15 | 0.45 | 407.5 | 0.4 | 351 | 555 | |
| CHICKEN BREAST OVEN-ROASTED | 126g | 498 | 2.7 | 0.0 | 0.3 | 0.15 | 0.15 | 22.55 | 10.65 | 0.0 | 0.0 | ~ | ~ | 0.0 | 0.0 | 2.1 | 0.6 | 0.0 | 3.75 | 0.15 | 684 | 42.15 | |
| FLOR TORTILLAS SOFT 8" DIAMETER | 51g | 146 | 25.3 | ~ | 3.1 | 0.4 | 1.9 | ~ | 4.4 | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | 9.74 | 1.0 | 249 | ~ | |
| WHITTE MUSHROOM STIR-FRIED | 54g | 14.05 | 2.2 | 0.95 | 0.2 | 0.0 | 0.1 | 0.0 | 1.95 | 0.0 | 0.0 | 11.35 | 0.0 | 0.05 | 0.25 | 2.15 | 10.8 | 0.0 | 2.15 | 0.15 | 6.5 | 214 | |
| ONION, SWEET, RAW | 165.5g | 53 | 12.5 | 1.5 | ~ | ~ | ~ | 0.0 | 1.3 | 1.65 | 7.95 | ~ | 0.05 | 0.05 | 0.05 | 0.2 | 0.2 | ~ | 33.1 | 0.45 | 13.25 | 197 | |
| BREWED COFFEE | 237g | 2.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | ~ | 0.0 | 0.0 | 0.2 | 0.5 | 4.7 | 0.0 | 4.7 | 0.0 | 4.7 | 116 | |

DAILY SUB-TOTAL

1503.05 | 93.55 | 2.95 | 151.55 | 20.1 | 23.55 | 123.35 | 41.7 | 1192.65 | 18.95 | 18.15 | 2.95 | 0.5 | 0.95 | 9.45 | 212.8 | 0.55 | 652.85 | 6.25 | 587.75 | 1799.25

QUESADILLA

Form 1: DAY 3, PACKING + MOVING

Title: MONDAY

| | Food Consumed | Approximate Measure | Energy kcal | CHO g | Fiber g | Fat g | Saturated Fat g | Unsaturated fat g | Cholesterol mg | Protein g | Vit A μ g | Vit C mg | Vit D μ g | Vit E mg | Vit B1 mg | Vit B2 mg | Vit B3 mg | Vit B9 μ g | Vit B12 μ g | Calcium mg | Iron mg | Sodium mg | Potassium g |
|-----------------|--------------------------------|---------------------|-------------|-------|---------|-------|-----------------|-------------------|----------------|-----------|---------------|----------|---------------|----------|-----------|-----------|-----------|----------------|-----------------|------------|---------|-----------|-------------|
| COFFEE | BREWED COFFEE | 237g | 2.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | ~ | 0.0 | 0.0 | 0.2 | 0.5 | 4.7 | 0.0 | 4.7 | 0.0 | 4.7 | 116 |
| | HALF AND HALF CREAM | 30g | 39 | 1.3 | 0.0 | 3.4 | 2.1 | 1.1 | 11.1 | 0.9 | 106 | 0.3 | ~ | 0.1 | 0.0 | 0.0 | 0.0 | 0.9 | 0.1 | 31.5 | 0.0 | 12.3 | 39 |
| | BROWN SUGAR | 4g | 17.1 | 4.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | ~ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.7 | 0.0 | 1.3 | 6 |
| BREAKFAST | EGGS, LARGE FRIED | 92g | 180.4 | 0.8 | 0.0 | 14.0 | 4.0 | 8.2 | 42.0 | 12.6 | 670 | 0.0 | 34 | 1.2 | 0.0 | 0.4 | 0.0 | 47 | 1.2 | 54.2 | 1.8 | 93.8 | 135.2 |
| | TOAST WHOLE WHEAT EVERYTHING | 50g | 153 | 25.6 | 4.6 | 2.0 | 0.4 | 1.4 | 0.0 | 8.2 | 2.0 | 0.0 | ~ | 0.4 | 0.2 | 0.2 | 2.8 | 26.0 | 0.0 | 65 | 1.4 | 292 | 163 |
| SNACK | BAGEL | 57g | 146 | 29 | 1.3 | 0.9 | 0.2 | 0.7 | 0.0 | 5.7 | 0.0 | 0.6 | ~ | 0.1 | 0.3 | 0.1 | 2.3 | 82.6 | 0.0 | 50.7 | 3.4 | 255 | 42.7 |
| | BUTTER | 14g | 100 | 0.0 | 11.4 | 7.2 | 2.9 | 0.4 | 30.1 | 0.1 | 350 | 0.0 | ~ | 0.3 | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 3.4 | 0.0 | 1.5 | 3.4 |
| DINNER | CHEESE TORTELLINI | 162g | 498 | 76.2 | 3 | 11.8 | 5.8 | 4.2 | 68 | 21.8 | 232 | 0.0 | ~ | 2.2 | 0.6 | 0.6 | 4.4 | 119.8 | 0.2 | 246 | 2.4 | 558 | 144.2 |
| | GROUND CRUMBED CHICKEN, COOKED | 170g | 322 | 0.0 | 0.0 | 18.6 | 5.2 | 11.8 | 181.8 | 39.6 | 0.0 | 0.0 | ~ | 0.6 | 0.2 | 0.6 | 12 | 3.4 | 0.8 | 13.6 | 1.6 | 127.4 | 115.0 |
| | TOMATO SAUCE, CANNED | 245g | 58.8 | 14.1 | 3.7 | 0.4 | 0.1 | 0.3 | 0.0 | 3.2 | 1061 | 17.2 | ~ | 3.5 | 0.1 | 0.2 | 2.4 | 27 | 0.0 | 31.9 | 2.5 | 128.4 | 811 |
| | CREAM HALF+HALF | 121g | 157.5 | 5.2 | 0.0 | 13.9 | 8.65 | 4.5 | 44.75 | 3.6 | 428.5 | 1.1 | ~ | 0.4 | 0.05 | 0.2 | 0.1 | 3.65 | 0.4 | 127 | 0.1 | 49.6 | 157.5 |
| DAILY SUB-TOTAL | | | 1674.2 | 166.6 | 24 | 72.2 | 29.35 | 32.6 | 755.75 | 96 | 1988 | 34 | ~ | 8.8 | 145 | 2.5 | 24.5 | 315.45 | 2.7 | 631.7 | 17.1 | 2679.6 | 2768 |

Form 1: DAY 4, PACKING + MOVING, CLEANING, PART 1/2

Title: TUESDAY

| Food Consumed | Approximate Measure | Energy kcal | CHO g | Fiber g | Fat g | Saturated Fat g | Unsaturated fat g | Cholesterol mg | Protein g | Vit A \bar{C} g | Vit C mg | Vit D \bar{C} ug | Vit E mg | Vit B1 mg | Vit B2 mg | Vit B3 mg | Vit B9 ug | Vit B12 ug | Calcium mg | Iron mg | Sodium mg | Potassium g |
|-----------------------------------|---------------------|-------------|-------|---------|-------|-----------------|-------------------|----------------|-----------|-------------------|----------|--------------------|----------|-----------|-----------|-----------|-----------|------------|------------|---------|-----------|-------------|
| BREWED COFFEE | 237g | 2.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | ~ | 0.0 | 0.0 | 0.2 | 0.5 | 4.7 | 0.0 | 4.7 | 0.0 | 4.7 | 116 |
| HALF AND HALF CREAM | 30g | 39 | 1.3 | 0.0 | 3.4 | 2.1 | 1.0 | 11.1 | 0.9 | 106 | 0.3 | ~ | 0.1 | 0.0 | 0.0 | 0.0 | 0.9 | 0.1 | 31.5 | 0.0 | 12.3 | 39 |
| BROWN SUGAR | 4g | 17.1 | 4.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | ~ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.7 | 0.0 | 1.3 | 6 |
| EGGS | 92g | 180.4 | 0.8 | 0.0 | 14 | 4 | 8.2 | 420 | 12.6 | 670 | 0.0 | 34 | 1.2 | 0.0 | 0.4 | 0.0 | 47 | 1.2 | 54.2 | 1.8 | 93.8 | 135.2 |
| TOAST | 50g | 153 | 25.6 | 4.6 | 2.0 | 0.4 | 1.4 | 0.0 | 8.2 | 2.0 | 0.0 | ~ | 0.4 | 0.2 | 0.2 | 2.8 | 26 | 0.0 | 65 | 1.4 | 292 | 163 |
| RED PEPPERS, RAW, SLICED | 80g | 24.8 | 4.8 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 2504 | 1024 | ~ | 1.6 | 0.0 | 0.0 | 0.8 | 368 | 0.0 | 5.6 | 0.0 | 3.2 | 168.8 |
| CARROTS, RAW SLICED, 3" LONG | 56g | 23.2 | 5.6 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 9352 | 3.2 | ~ | 0.0 | 0.0 | 0.0 | 0.8 | 10.4 | 0.0 | 18.4 | 0.0 | 38.4 | 179.2 |
| AVOCADO SLICED, RAW | 115g | 142 | 9.95 | 7.8 | 17.7 | 2.45 | 13.35 | 0.0 | 2.25 | 169 | 10.1 | ~ | 2.25 | 0.1 | 0.15 | 2.2 | 102.5 | 0.0 | 14.95 | 0.7 | 9.2 | 583 |
| CHEDDAR CHEESE GRATED | 56.5g | 227.5 | 0.7 | 0.0 | 18.75 | 11.95 | 5.85 | 59.5 | 14.05 | 566 | 0.0 | 6.8 | 0.15 | 0.0 | 0.2 | 0.05 | 10.15 | 0.45 | 407.5 | 0.4 | 351 | 55.5 |
| CHICKEN BREAST OVEN-ROASTED | 126g | 498 | 2.7 | 0.0 | 0.3 | 0.15 | 0.15 | 22.65 | 10.65 | 0.0 | 0.0 | ~ | ~ | 0.0 | 0.0 | 2.1 | 0.6 | 0.0 | 3.75 | 0.15 | 684 | 42.15 |
| FLOUR TORTILLAS SOFT, 8" DIAMETRE | 51g | 146 | 25.3 | ~ | 3.1 | 0.4 | 1.9 | ~ | 4.4 | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | ~ | 97.4 | 1.0 | 249 | ~ |

Form 2: Average Daily Energy Nutrient Intake

| Day | Energy kcal | CHO g | Fiber g | Fat g | Saturated Fat g | Unsaturated g | Cholesterol mg | Protein g | Vit A C ug | Vit C mg | Vit D ug | Vit E mg | Vit B1 mg | Vit B2 mg | Vit B3 mg | Vit B9 ug | Vit B12 ug | Calcium mg | Iron mg | Sodium mg | Potassium g |
|---|----------------|----------|------------|----------|--------------------|------------------|-------------------|--------------|---------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|---------------|---------------|------------|--------------|----------------|
| 1 (Form 1) | 862.5 | 79.2 | 16.4 | 42.1 | 15 | 21.5 | 122.7 | 35 | 906 | 3.1 | ~ | 0.9 | 0.8 | 0.8 | 10.6 | 246.6 | 3.1 | 208 | 10.8 | 119.8 | 671.1 |
| 2 (Form 1) | 1503.05 | 93.55 | 22.95 | 51.55 | 20.1 | 23.55 | 123.35 | 41.7 | 1192.65 | 18.95 | 18.15 | 2.95 | 0.5 | 0.95 | 9.45 | 212.85 | 0.55 | 652.88 | 6.25 | 1587.75 | 1798.25 |
| 3 (Form 1) | 1674.2 | 166.6 | 2.4 | 72.2 | 29.35 | 32.6 | 755.75 | 96 | 2849.5 | 19.8 | 34 | 8.8 | 1.45 | 2.5 | 24.5 | 315.45 | 2.7 | 631.7 | 17.1 | 2679.6 | 2768 |
| 4 (Form 1) | 1320.45 | 95.85 | 18.05 | 46.85 | 11.4 | 32.05 | 513.25 | 58.2 | 4160.25 | 123.95 | 52.15 | 5.75 | 0.4 | 1.2 | 11.6 | 250.85 | 1.75 | 741.85 | 12.1 | 1758.65 | 1808.85 |
| Total | 5360.2 | 435.2 | 81.4 | 212.7 | 75.85 | 109.7 | 1515.05 | 230.9 | 9408.4 | 165.8 | 104.3 | 18.4 | 3.15 | 5.45 | 56.25 | 1024.95 | 8.1 | 2234.5 | 46.25 | 7445.8 | 7136.3 |
| Average daily intake (divide total by 4) | 1340.05 | 108.8 | 20.35 | 53.175 | 18.963 | 27.425 | 378.763 | 57.725 | 2352.1 | 41.45 | 26.075 | 4.6 | 0.787 | 1.362 | 14.062 | 256.237 | 2.025 | 558.625 | 11.562 | 1786.45 | 1784.075 |

Form 3: Comparison with Standard Intakes

| | Energy kcal | CHO g | Fiber g | Fat g | Saturated Fat g | Unsaturated g | Cholesterol mg | Protein g | Vit A µg | Vit C mg | Vit D µg | Vit E mg | Vit B1 mg | Vit B2 mg | Vit B3 mg | Vit B9 µg | Vit B12 µg | Calcium mg | Iron mg | Sodium mg | Potassium g |
|--|----------------|----------|------------|----------|--------------------|------------------|-------------------|--------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|---------------|---------------|------------|--------------|----------------|
| Average daily intake (last row from Form 2) | 1340.5 | 108.8 | 20.35 | 53.175 | 18.963 | 27.425 | 378.763 | 57.725 | 2352.1 | 4145 | 26.075 | 4.6 | 0.787 | 1.362 | 14.062 | 25637 | 2.025 | 558.625 | 11.562 | 178645 | 1784075 |
| Standard (taken from your Cheat Sheet) | 3231.14 | 484.67 | 45.24 | 100.42 | 20.00 | 80.42 | 300* | 117.0 | 3000.0 | 90.0 | 15.0 | 15.0 | 1.2 | 1.3 | 16.0 | 400 | 2.4 | 1300.0 | 18.0 | 1500.0 | 4700.0 |
| Intake as percentage (row 1/row2)*100 | 41.49% | 22.45% | 44.98% | 52.95% | 94.81% | 34.10% | 126.25% | 49.34% | 78.40% | 46.05% | 173.83% | 30.66% | 65.58% | 104.77% | 87.89% | 64.06% | 84.38% | 42.97% | 64.23% | 119.10% | 37.96% |

*No actual RDA, 300 is the most commonly found value online

Form 4: Percentage of Calories from Protein, Fat, Carbohydrate and Alcohol

From Form 3:

Protein: $\frac{57.725}{\text{day}} \times 4 \text{ cal/g} = \text{(P) } 230.9 \text{ cal/day}$

Fat: $\frac{53.175}{\text{day}} \times 9 \text{ cal/g} = \text{(F) } 478.575 \text{ cal/day}$

Carbohydrate: $\frac{108.8}{\text{day}} \times 4 \text{ cal/g} = \text{(C) } 435.2 \text{ cal/day}$

Alcohol $\frac{19.24}{\text{day}} \times 7 \text{ cal/g} = \text{(A) } 26.24 \text{ cal/day}$

(Calculate your average intake over the four days)

Total calories per day (T) $\frac{1170.915}{\text{day}}$ (P+F+C+A)

Percentage of calories from protein

(P) $\frac{230.9}{1170.915} \times 100 = 19.72$ % of total calories

(T) 1170.915

Percentage of calories from fat

(F) $\frac{478.575}{1170.915} \times 100 = 40.87$ % of total calories

(T) 1170.915

Percentage of calories from CHO

(C) $\frac{435.2}{1170.915} \times 100 = 37.17$ % of total calories

(T) 1170.915

Percentage of calories from alcohol

(A) $\frac{26.24}{1170.915} \times 100 = 2.24$ % of total calories

(T) 1170.915