

Lab 17 Nutrition

BIO202L

Student Name: Click here to enter text.

Access Code (located on the lid of your lab kit): [Click here to enter text.](#)

Pre-Lab Questions:

- How do the intake of nutrients and expenditure of energy relate to a metabolic level?

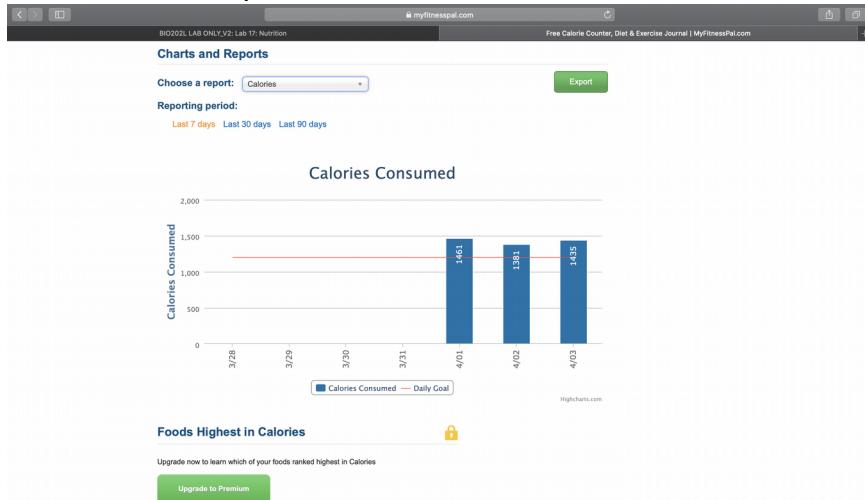
Different nutrients have different calorific content. During exercise, your body requires more energy so it is ideal to consume food with high calorific content such as carbohydrates and fats. In the more intense activities, your body's metabolism increases thus requires more calories for energy.

- Do you think you take in more calories than you burn in a day? Why or why not?

Yes, I do because I'm a stress eater and I can't always find the time to exercise.

Experiment 1: Tracking Your Nutrition

Macronutrient Graph Screenshot:



Analysis: According to the chart, I ate consumed more calories than needed everyday. I am not surprise by this result though because I know that I am a snacker and I tend to drink a lot of sugary drink throughout the day. To improve my nutrition, I would eliminate sugary drinks from my diet and drink more water. I would also exercise into my daily routine.

Experiment 2: Testing for Reducing Sugars

Table 1. Testing for Proteins Results

Sample	Initial Color	Hypothesis (Protein +/-)	Final Color	Protein Present?
Albumin (1)	Light yellow	+	Violet	Yes



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Sample	Initial Color	Hypothesis (Protein +/-)	Final Color	Protein Present?
Gelatin (2)	Dark yellow	+	Violet	Yes
Glucose (3)	Clear	-	Blue	No
Water (4)	Clear	-	Blue	No

Table 2. Testing for Reducing Sugars Results

Sample	Initial Color	Hypothesis (Reducing Sugar +/-)	Final Color	Reducing Sugar Present?
Potato (1)	Off white	+	Yellow	Yes
Onion (2)	Off white	+	Green	Yes
Glucose (3)	Clear	+	Red	Yes
Water (4)	Clear	-	Blue	No

Table 3. Testing for Starch Results

Sample	Initial Color	Hypothesis (Starch +/-)	Final Color	Starch Present?
Potato (1)	Off white	+	Dark purple	Yes
Onion (2)	Off white	-	Brown	No
Starch (3)	Murky white	+	Dark purple	Yes



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Sample	Initial Color	Hypothesis (Starch +/-)	Final Color	Starch Present?
Water (4)	Clear	-	Brown	No

Table 4. Testing an Unknown - Proteins

Sample	Initial Color	Hypothesis (Protein +/-)	Final Color	Protein Present?
Positive Control (1):	Light yellow	+	Violet	Yes
Negative Control (2):	Clear	-	Blue	No
Unknown (3)	Murky white	-	Blue	No

Table 5. Testing an Unknown – Reducing Sugars

Sample	Initial Color	Hypothesis (Reducing Sugar +/-)	Final Color	Reducing Sugar Present?
Positive Control (1):	Off white	+	Green	Yes
Negative Control (2):	Clear	-	Blue	No
Unknown (3)	Murky white	+	Orange	Yes

Table 6. Testing an Unknown – Starch

NOTE: Before filling in this table, take a screenshot of your test tubes to include at the end of this document.

Sample	Initial Color	Hypothesis (Starch +/-)	Final Color	Starch Present?
Positive Control (1):				



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Sample	Initial Color	Hypothesis (Starch +/-)	Final Color	Starch Present?
	Off white	+	Orange	No
Negative Control (2):	Clear	-	Orange	No
Unknown	Murky white	+	Dark purple	Yes

Post-Lab Questions

1. Write a statement to explain the molecular composition of the unknown solution based on the results obtained during testing with each reagent.

The unknown substance contains both sugar and starch but does not contain protein.

2. What can you conclude about the molecular make-up of potatoes and onions based on the tests you performed? Why might these foods contain these substances?

Both potatoes and onions contain some sugar in it; however, only potatoes contain starch.

3. What results would you expect if you tested ribose, a monosaccharide, with Benedict's solution? What results would you expect if you tested it with IKI?

Ribose is a simple sugar. When added with Benedict's solution, it should turn orange which indicate that reducing sugar is present. It should turn dark blue with IKI which indicate that starch is present.

4. Diet and nutrition are closely linked to the study of biomolecules. How should you monitor your food intake to insure the cells in your body have the materials necessary to function?

I used to monitor my food intake very closely through MyFitnessPal app. I found that it helped me tremendously in tracking my food/water intake and exercises. Everyone is different

so food/water/vitamins intake and exercise level may varies but this app is tailored to match your lifestyle and goal. Overall, I'd recommend this method of tracking if one want to eat healthy and stay healthy.

Insert a screenshot of your test tubes after the starch test from "Testing An Unknown":



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Part 4: Testing an Unknown – Testing for Starch

Step 3: Record the final color and whether or not starch is present in Table 6.

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