

## **Nutrition Education Project**

Importance of Adequate Protein

Grades 9-12

Created by Samantha Smith and Olivia Shah

**Time to complete: 30-45 minutes**

### **I. Goals/Objectives for Nutrition Education:**

- Students will understand what protein is in the body and how much they need to properly fuel themselves.
- Students will explain the functions of protein and why it is essential.
- Students will identify sources of food that are high and low in protein.
- Students will recognize vegetarian and vegan sources of protein, related to the growing number of students who identify as such.

### **II. Materials/Resources for Lesson:**

- Laptop/projector for PowerPoint presentation
- Computer/phone access for Kahoot
- Crossword and Word Search Handout
- Optional Resources:
  - <https://www.eatright.org/food/nutrition/dietary-guidelines-and-myplate/how-much-protein-should-i-eat>
  - [https://www.eatrightpro.org/-/media/eatright-files/nationalnutritionmonth/handoutsandtipsheets/nutritiontipsheets/healthyeatingtipsforvegetarians\\_nnm2017\\_final.pdf?la=en&hash=0C44BB7E98E22438B1BB89EFEB2A6BA7A80AEDDF](https://www.eatrightpro.org/-/media/eatright-files/nationalnutritionmonth/handoutsandtipsheets/nutritiontipsheets/healthyeatingtipsforvegetarians_nnm2017_final.pdf?la=en&hash=0C44BB7E98E22438B1BB89EFEB2A6BA7A80AEDDF)

### **III. Procedure for Teaching Lesson:**

- Presentation -25 minutes to teach
  1. Slide 1 – Introduce presentation for Importance of Adequate Protein
  2. Slide 2- Introduction to Dietetic Interns
    - a. Read slide
    - b. Ask class if they have a favorite high protein food!
  3. Slide 3- Table of Contents/Discuss student objectives
    - a. Read slide/objectives in 'notes'
  4. Slide 4-Protein Definition and general makeup
    - a. Read slide
  5. Slide 5-Video (What is Protein?)
    - a. Show 1 minute video
  6. Slide 6- Types of Protein
    - a. Differentiate between types of protein
    - b. Emphasize how both types are great additions to our diet and that no source is "better" than the other
  7. Slide 7- How much protein do we need?

- a. Ask class “How much protein do you think you need in a day”
  - b. Click to reveal answer
  - c. Read slide
  - d. Emphasize how amount of protein recommended changes based on activity level of individual and their stage of development
8. Slide 8-Introduce Functions of Protein
  - a. Read slide
  - b. Can anyone think of any other functions that you know of protein?
  - c. We will go further in depth on 3 functions next
9. Slide 9- Acts as a messenger
  - a. Read slide
  - b. Identify picture of cell and how it communicates messages through its many components
10. Slide 10-Provides structure/stability
  - a. Read Slide
  - b. Identify picture of connective tissue on right side
  - c. Ask students if they have heard of a collagen supplement (newest wellness trend) and if they take it?
11. Slide 11- Improves immune health
  - a. Read slide
  - b. Identify picture of antibodies (blue) attacking a live pathogen (pink) in the body
  - c. Next, we’ll go more into the types of each protein.
12. Slide 12-Animal/Plant Based
  - a. Differentiate between animal and plant based sources of protein.
  - b. Ask class if anyone is vegetarian or doesn’t eat a certain type of protein?
13. Slide 13- Introduce sources of animal protein
14. Slide 14- Lean meats/poultry
  - a. Explain the benefits of lean meats/poultry and provide examples.
15. Slide 15- Fish and shellfish
  - a. Explain the benefits of fish and provide examples.
16. Slide 16- Eggs and dairy products
  - a. Explain the benefits of dairy and eggs and provide examples.
17. Slide 17- Introduce Vegetarian/Vegan Proteins
18. Slide 18- Soy Based Proteins
  - a. Differentiate between the soy-based proteins of tofu, tempeh, and edamame. Explain how all are adequate protein sources for vegans since they are complete proteins.
19. Slide 19- Grain Protein Sources
  - a. Ask the class if they know what amaranth is? Have they ever tried it?
  - b. Explain the options for proteins in grains and how both amaranth and quinoa are complete proteins with all essential amino acids.
20. Slide 20- Know you Legumes
  - a. Ask the class to shout out any legumes they know
  - b. Explain the various legumes and their protein content

21. Slide 21- Nuts and Seeds

- a. Explain the different seeds and nuts with the highest quality and amount of protein.

22. Slide 22- Test the student's knowledge with Kahoot!

- a. <https://create.kahoot.it/share/importance-of-protein/85aed43d-eae-e-4329-8bd3-99b1deb0749e>

23. Slide 23- References

- **Post-test activities**

- Protein Sources -Word Search
- Protein Types and Functions – Crossword Puzzle

# Protein Sources

S	P	T	E	C	C	H	I	C	K	P	E	A	S
H	T	T	P	M	I	R	H	S	T	E	E	S	I
E	E	T	O	A	T	M	E	A	L	L	A	T	T
L	Q	B	N	O	M	L	A	S	S	E	G	U	I
L	U	M	K	Y	K	S	E	N	P	N	R	T	L
F	I	A	G	R	E	M	A	N	E	K	R	M	A
I	N	L	O	E	A	E	E	K	E	U	U	A	S
S	O	P	D	M	B	E	C	R	G	T	T	E	N
H	A	S	A	K	R	I	Y	O	G	F	M	I	U
I	K	D	C	G	H	I	Y	P	S	U	T	A	T
T	E	A	I	C	C	F	B	E	G	T	P	T	S
A	L	T	E	M	P	E	H	E	U	F	O	T	U
B	N	R	T	A	E	E	L	E	N	T	I	L	S
B	T	U	N	A	L	B	T	I	L	A	P	I	A

- LEGUMES
- PORK
- BEEF
- BLACK BEANS
- GREEN PEAS
- OATMEAL
- EGGS
- SHRIMP
- SEEDS
- SHELLFISH
- CHICKEN
- LAMB
- TILAPIA
- TOFU
- CHICKPEAS
- TUNA
- TEMPEH
- QUINOA
- EDAMAME
- YOGURT
- SALMON
- NUTS
- LENTILS
- TURKERY

Play this puzzle online at : <https://thewordsearch.com/puzzle/2162936/>

# Protein Sources

S	P	T	E	C	C	H	I	C	K	P	E	A	S
H	T	T	P	M	I	R	H	S	T	E	E	S	I
E	E	T	O	A	T	M	E	A	L	L	A	T	T
L	Q	B	N	O	M	L	A	S	S	E	G	U	I
L	U	M	K	Y	K	S	E	N	P	N	R	T	L
F	I	A	G	R	E	M	A	N	E	K	R	M	A
I	N	L	O	E	A	E	E	K	E	U	U	A	S
S	O	P	D	M	B	E	C	R	G	T	T	E	N
H	A	S	A	K	R	I	Y	O	G	F	M	I	U
I	K	D	C	G	H	I	Y	P	S	U	T	A	T
T	E	A	I	C	C	F	B	E	G	T	P	T	S
A	L	T	E	M	P	E	H	E	U	F	O	T	U
B	N	R	T	A	E	E	L	E	N	T	I	L	S
B	T	U	N	A	L	B	T	I	L	A	P	I	A

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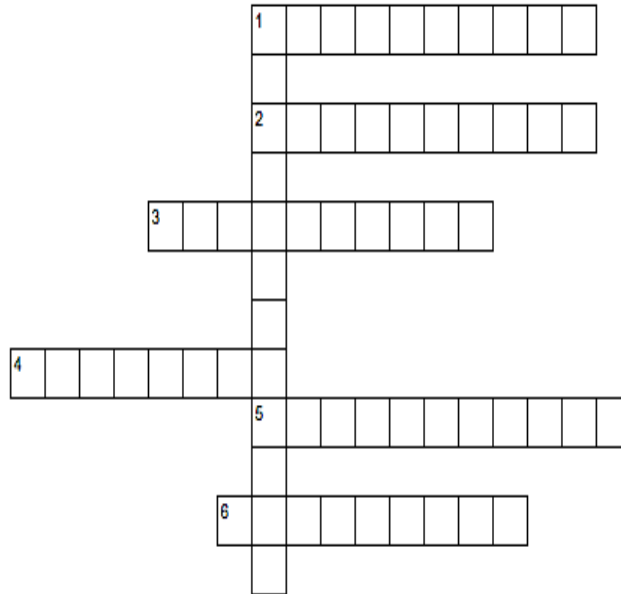
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S	P	T	E	C	C	H	I	C	K	P	E	A	S
H	T	T	P	M	I	R	H	S	T	E	E	S	I
E	E	T	O	A	T	M	E	A	L	L	A	T	T
L	Q	B	N	O	M	L	A	S	S	E	G	U	I
L	U	M	K	Y	K	S	E	N	P	N	R	T	L
F	I	A	G	R	E	M	A	N	E	K	R	M	A
I	N	L	O	E	A	E	E	K	E	U	U	A	S
S	O	P	D	M	B	E	C	R	G	T	T	E	N
H	A	S	A	K	R	I	Y	O	G	F	M	I	U
I	K	D	C	G	H	I	Y	P	S	U	T	A	T
T	E	A	I	C	C	F	B	E	G	T	P	T	S
A	L	T	E	M	P	E	H	E	U	F	O	T	U
B	N	R	T	A	E	E	L	E	N	T	I	L	S
B	T	U	N	A	L	B	T	I	L	A	P	I	A

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Protein Types & Functions



#### Across

- 1 Does not contain all essential amino acids
- 2 Proteins are responsible for taking messages from tissues and traveling through the bloodstream to deposit the information to a specific organ.
- 3 Protein that comes from plants
- 4 Contains all 9 essential amino acids
- 5 Protein that comes from livestock and sea creatures
- 6 Proteins can be fibrous and provide cells with stiffness/rigidity

#### Down

- 1 Proteins are also antibodies necessary for your body to fight infection