



Culinary Institute
of America

Plant-Forward Culinary Training

Day 3: Protein Sources



Learning Objectives:

- Understand the types and role of protein.
- Employ healthier cooking methods for meat-based protein.
- Consider common sources of plant-based protein.
- Choose cooking methods that limit the addition of fats and oils.
- Transform popular comfort foods into healthy alternatives.

PROTEIN

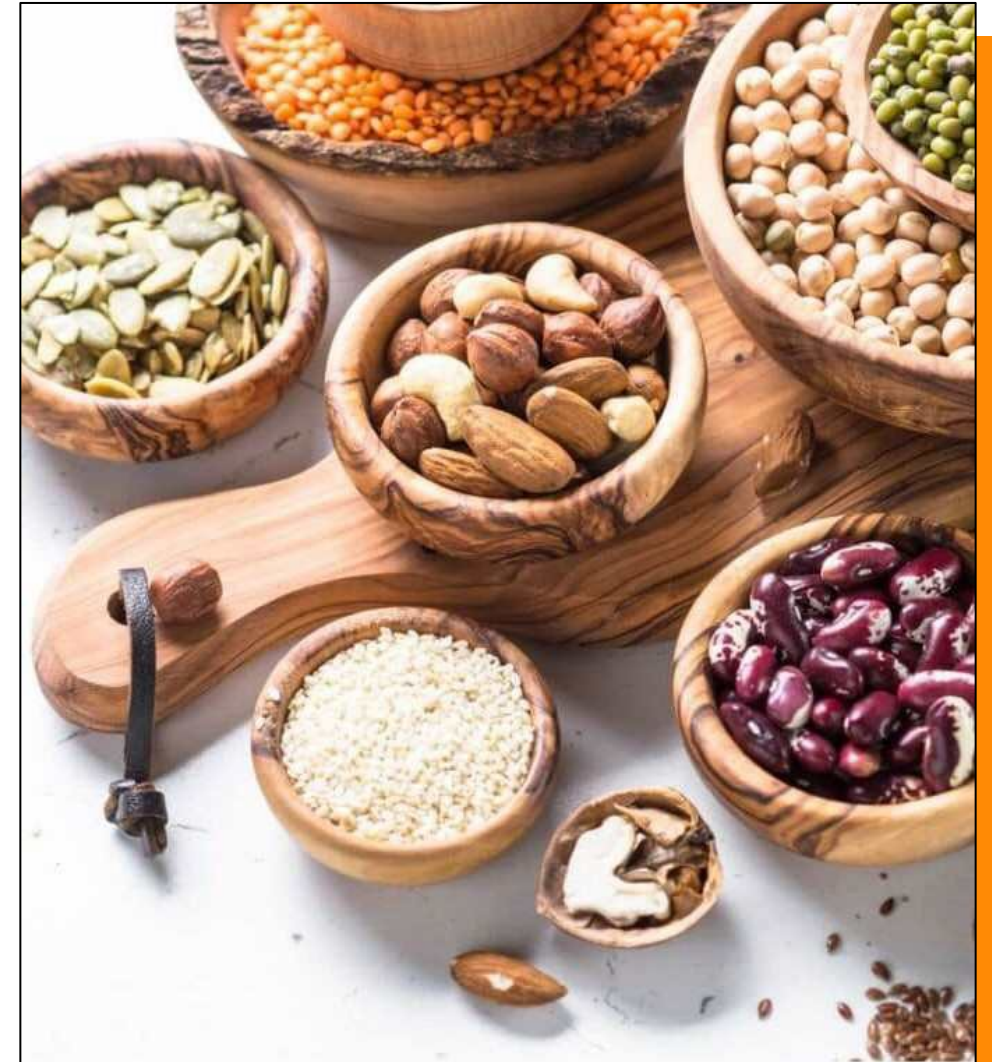
- Plays a critical role in our biological functions
- Provides at least 9 essential amino acids necessary for optimum health
- Provides vitamins and minerals such as iron, zinc, calcium, and B-12 essential for proper nutrition
- Recommended Daily Allowance is 0.8 grams per kg of body weight
- Average adult male consumes 75% more protein than recommended (female: 50% more)

Types of Protein

- **Complete Protein:** contain at minimum 9 essential amino acids, in the amounts needed by the body
 - All animal proteins
 - Some plant proteins (quinoa, soy, amaranth)
- **Incomplete Protein:** lack one or more essential amino acids
 - Higher protein plants and fungi
 - includes broccoli, spinach, asparagus, artichokes, potatoes, peas, brussels sprouts, mushrooms

Complementary Protein

- Some foods, when combined, provide all 9 (or more) essential amino acids:
 - Legumes and grains (preferably whole grains)
 - Legumes and seeds
 - Legumes and nuts
- Should be eaten within a 24-hour period but not necessarily at the same meal.



ANIMAL PROTEIN

- While plant-forward cooking strives to move nuts and legumes to the center of the plate, there is a place for animal-protein.
- Red meat (beef, pork, and lamb) should be enjoyed occasionally and in small amounts.
- A maximum of two 3-ounce servings of red meat per week are recommended.



ANIMAL PROTEIN



- Chicken and other poultry in moderation is a good choice for healthier protein with a far lower environmental footprint than red meat.
- Eggs in moderation (an average of one per day) can be part of a healthy diet for most people.

SEAFOOD

- Seafood is a nutritious and environmentally efficient protein.
- Includes high levels of long-chain omega-3 fatty acids, nutrients which promote heart and brain health
- There are many nutritious, sustainable plants (seaweeds and algae) and filter feeders (oysters, mussels, and clams)
- Two 4-ounce servings of seafood per week is recommended



Let's explore ... Cooking Animal-Based Proteins

When possible, choose cooking methods that introduce a minimal addition of fats and oils:

- ✓ Grilling
- ✓ Roasting
- ✓ Steaming
- ✓ Stewing and Braising
- ✓ Poaching

Marinades or dry rubs can enhance flavor. Add seasonings like pepper, spice blends, garlic, chiles, or other aromatics.

PLANT PROTEIN

Instead of using the word **protein** as a synonym for *meat*, consider alternate sources of protein, like:

Beans – Peas – Legumes – Whole Grains – Vegetables -- Fruits

WE LARGELY MISS OUT ON A WHOLE WORLD OF PLANT PROTEINS



Let's explore ...

Soy-Based Foods

- Soy is a standby substitute for milk and meat products.
- It is naturally cholesterol-free, low in saturated fat, and a good source of fiber.
- Foods containing soy include:

- ✓ Edamame
- ✓ Soybeans
- ✓ Soy Meat Alternatives

- ✓ Miso
- ✓ Soymilk
- ✓ Soy Nuts
- ✓ Tempeh

- ✓ Textured Soy Protein
- ✓ Tofu (Bean Curd)
- ✓ Whole Soybeans

Let's explore ...

Tofu (Bean Curd)

- Tofu is made by coagulating soy milk and pressing the curds into a block.
- Its many different varieties and readiness to absorb flavor make it one of the most versatile proteins.
- Different types (and brands) of tofu vary slightly in flavor and texture.
- Tofu (especially the silken variety) can be blended and used as base for creamy soups, dips, or sauces.



Let's explore ...

Tempeh

- Soy product made by a natural culturing and fermentation process that binds soybeans into a cake form
- Rich source of vitamin B12; same high protein content as beef; low in saturated fat; no cholesterol; contains fiber, iron, essential amino acids
- Generally firmer than tofu
- Can be deep-fried, pan-fried, battered, stir-fried, grilled, steamed, baked, boiled, simmered, or crumbled



Let's explore ...

Seitan (Vital Wheat Gluten)

- Gluten flour that has been made into a dough and then simmered
- Has a chewy or stringy texture; resembles meat more than other substitutes
- Very high in protein
- Has a savory taste, like bland chicken or a portobello mushroom
- Easily flavored using marinades and sauces
- Suitable for pan-frying, simmering, grilling, roasting, and sautéing



Let's explore ...

Fats and Oils

- Fat in the diet, despite its high calorie content, does not uniquely lead to weight gain.
- Fat does increase satiety– the feeling of fullness and satisfaction after eating.
- Most oils are loaded with healthy fats, including mono and poly unsaturated fats and omega-3 fatty acids.
- Use plant oils that contain unsaturated fats, such as canola, soy, peanut, and olive oils.
- Use high-flavor fats and oils with more saturated fat (butter, cream, lard, coconut oil) only occasionally in strategic applications.
- Avoid trans fats from partially hydrogenated vegetable oils.

TRANSFORMING COMFORT FOODS

Any recipe can be transformed to meet the tenets of plant-forward cooking!



Review your recipe for potential health concerns, including:

- ✓ Excessive use of saturated fats, sodium, or sugar
- ✓ Excessive inclusion of simple carbohydrates
- ✓ Large portions of protein, especially red meat
- ✓ Use of cured meats

Identify the role an ingredient or technique serves in a recipe to find a suitable replacement.

- Replace creamy ingredients with rich plant-based ingredients, like blended nuts or beans.
- Replace smoky bacon with smoky meat substitutes or smoky spices, like smoked paprika or chipotle chiles.
- Reduce the portion size of red meats, or replace with poultry, fish, or plant-based proteins.
- When possible, replace portions of ground animal protein with minced vegetables (like in meat loaf, or hamburgers).

TRANSFORMING COMFORT FOODS

- For sautéed aromatics, consider sautéing ingredients in vegetable broth instead of oil.
- Substitute plant oils for saturated fats or animal-fats.
- Reduce quantities of filler starches, and replace with other vegetables, when appropriate.
- Replace prepared ingredients, like broths or canned beans, with homemade.
- Add high-flavor ingredients to make up for the loss of richness, like tomato paste, vinegar, and fresh herbs.

REMEMBER:

- Substitutions will not replicate the original ingredient, so **temper your expectations.**
- Olive oil is not butter. Cauliflower is not cream.
- Use the eye to trick the palate. For example, add puréed carrots to a dish that doesn't contain cheese to suggest Cheddar cheese.

NEW ENGLAND CLAM CHOWDER

THE CULINARY INSTITUTE of America's version of the American classic—a silky, rich chowder based upon simple, wholesome ingredients.

MAKES 8 SERVINGS

1. Scrub the clams well under running water. Shuck the clams, reserving the juices. Cut the larger clams in half. Mix the reserved juices with enough bottled clam juice to equal 3 cups.
2. Cook the bacon slowly in a soup pot over medium heat until lightly crisp, about 7 minutes. Add the onion and cook, stirring occasionally, until the onion is translucent, about 4 to 6 minutes. Add the flour and cook over low heat, stirring with a wooden spoon, for 2 to 3 minutes.
3. Whisk in the clam juice, bring to a simmer, and cook for 5 minutes, stirring occasionally. The liquid should be the consistency of heavy cream. If it is too thick, add more clam juice to adjust the consistency. Add the potatoes and simmer until tender, about 20 minutes.

{ PICTURED AT LEFT }

3 dozen chowder clams

2½ cups bottled clam juice, or as needed

2 slices bacon, minced

1¼ cups diced onion

2 tbsp all-purpose flour

4 cups diced yellow or white potatoes (peeled)

3 cups heavy cream or half and half

6 tbsp dry sherry, or as needed

Salt as needed

Freshly ground black pepper as needed

Tabasco sauce as needed

Worcestershire sauce as needed

Oyster or saltine crackers as needed

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Prepare vegetable broth with kombu

Omit bacon; replace with finely chopped smoked tempeh or even smoked paprika. Replace rendered fat with extra-virgin olive oil

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Oyster or saltine crackers as needed

Omit flour. This will be unnecessary with other thickening ingredients. Or use a starch slurry

Omit potatoes, reduce quantity, or replace with a reduced quantity of lower-glycemic turnips

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Oyster or saltine crackers as needed

Replace dairy with 1 cup soaked and puréed cashews and 2 cups puréed cooked cauliflower

Omit crackers or substitute small portion of whole grain crackers



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Any Questions?