

Estimating animal and plant protein intake among adolescents What We Eat in America, NHANES 2015-2018



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INTRODUCTION

Dietary guidance recommends consuming a variety of protein foods.

Protein intake from plant sources as well as animal sources is encouraged.

It is of interest to know proportions of protein intake from animal and plant sources to investigate relationships between protein intake and health.

OBJECTIVES

To estimate proportions of protein intake from animal and plant sources among adolescents

To describe USDA Food Patterns components contributing to animal and plant protein intake by adolescents

METHODS

Estimates of protein intake were based on one day of dietary intake data from adolescents 12-19 years of age (N=2241) in What We Eat in America, NHANES 2015-2018.

Table 1 shows the procedures used to estimate proportions of protein from animal and plant sources from the ingredients in FNDDS 2015-2016 and FNDDS 2017-2018 for each food reported.

The USDA Food Patterns components were used to describe foods contributing to animal and plant protein intake.

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METHODS

Table 1. Procedure for classifying protein in FNDDS foods as animal or plant

FNDDS Foods	Procedure	% of foods reported
Foods with a single ingredient	Foods such as chicken or rice were directly classified as animal or plant, respectively.	~80% ^a
Foods composed of more than one ingredient	<p>Proportions were directly calculated from ingredients. Standard proportions were calculated for similar foods from ingredients in FNDDS and used for</p> <ul style="list-style-type: none"> • breaded and battered meats, poultry and fish^c • similar foods with minor variations not contributing to protein intake (e.g. mustard on frankfurter) • each ingredient in different types of pizza^d • all cakes and cookies (0.05 animal and 0.95 plant) • most coffee beverages with milk (0.95 animal and 0.05 plant) <p>Protein in chocolate and alcoholic beverages were classified as plant protein.</p>	~18% ^b
Foods composed of one or more ingredients, but ingredients not detailed	<p>Use commercial website.</p> <ul style="list-style-type: none"> • Use standard protein amounts for each ingredient based on sandwich size and determine proportion. • Use similar proportions for sandwiches of similar size and protein content. <p>Use a similar code or locate a recipe online.</p> <ul style="list-style-type: none"> • Identify a code with similar ingredients or locate a recipe online to estimate proportions using protein values for FNDDS ingredients for each ingredient in recipe. 	~2%

^aAbout one-quarter were foods with negligible or no protein (e.g. coffee, water).

^bAbout one-third used standard proportions.

^cProportions were different depending on type of protein.

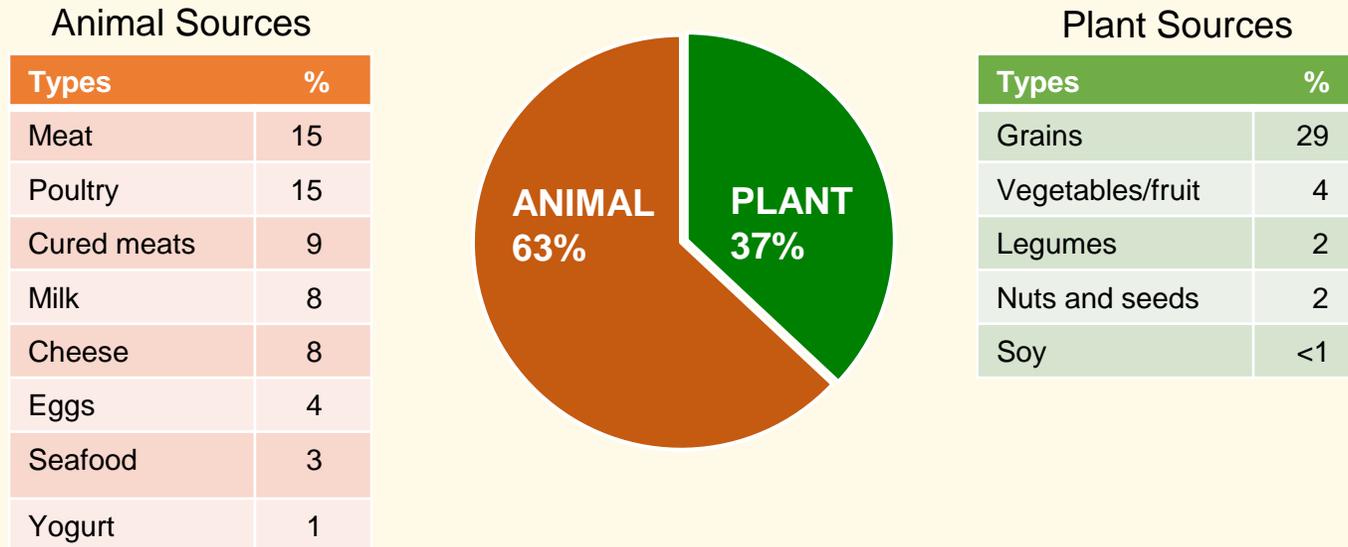
^dRecipe constructed from ingredients in FNDDS to develop standard proportions.

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RESULTS



- Almost two-thirds of protein intake by adolescents was from animal sources of which almost half (30%) was from meat and poultry, and about one-quarter (16%) was from Dairy foods.
- One-third of adolescents' protein intake was from plant sources, primarily grains.

CONCLUSIONS

Estimating contribution of animal and plant foods to total protein intake from the ingredients in foods provides a more comprehensive description of protein foods consumed by adolescents. This information is important for nutrition assessment and can inform nutrition education for adolescents.