Tossed Treasures
America’s Wasted Food Problem, and How Dietetic Professionals Can Help

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Session objectives

1. Define food waste.

2. Describe at least two implications of wasted food.

3. Identify at least two ways that Academy members can lead efforts with consumers and communities to reduce wasted food.

Speakers

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Let’s get social!

Twitter
@alicehenneman
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@eatrightPRO
#foodwaste
Future of Food Initiative
Academy of Nutrition and Dietetics Foundation
Future of Food Resources for Members

• **Toolkits** [www.eatrightfoundation.org/toolkits-webinars](http://www.eatrightfoundation.org/toolkits-webinars)
  - Hunger in Our Community. What We Can Do.
  - Smart Choices. For a Healthy Planet. *(English/Spanish!)*
  - Tossed Treasures. How We All Can Waste Less Food. *(English/Spanish!)*

• **Supervised Practice Concentrations:**
  - Food Insecurity and Food Banking—*available now!*  
    [www.healthyfoodbankhub.org](http://www.healthyfoodbankhub.org)
  - Food Systems—*under development!*

• **Webinars and Infographics**  [www.eatrightfoundation.org](http://www.eatrightfoundation.org)

• **Affiliate Presentations:**
  - “Changing the Way We Look at Agriculture” 32 affiliates/DPGs *(2015)*
  - Food waste, food additives, and GMO presentations 10 affiliates *(2016)*
  - Foods of future, farming tools, and food preservation presentations 10 affiliates *(2017)*
Last year our donors’ generosity helped us award:

$446,900 in student scholarships to 194 students

$14,000 in student stipends to help 140 students attend FNCE.

$40,000 through Home Food Safety Challenge grants to dietetics students.

www.eatrightfoundation.org
Chris Vogliano MS, RDN

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Disclosures

Chris Vogliano MS, RDN

Arivale - Clinical Research Associate
The Academy of Nutrition and Dietetics Foundation – Agriculture Nutrition & Health Research Fellow
Council of Future Practice – Young Practitioner
Vegetarian Nutrition DPG – Second Century Liaison
Greater Seattle Dietetic Association - Legislative Chair
WHAT IS WASTED FOOD?

Photo credit: https://commons.wikimedia.org/wiki/File:Treasure_trove_of_wasted_food.JPG
Food waste: Defined\textsuperscript{1,2,3}

- Food waste is defined as \textbf{food that is lost, discarded, or uneaten}.

- Food Waste VS. Food Loss
  - Food waste = Mostly in developed countries.
  - Food loss = Mostly in developing countries.
Where does wasted food occur?³

Production, Harvest and Transportation
  • Pests, insects, birds, diseases, weather

Processing and Packaging
  • Blemishes, appearance, size, trimming

Retailers and Food Service
  • Consumer expectation, past best buy, overstocking

Consumers
  • Confusion over best buy dates, overbuying, uneaten leftovers

Photo credit: http://easterncce.blogspot.com/2011_11_01_archive.html
Photo credit: http://www.menorifiuti.org/tag/tmc/
Where the greatest loss occurs³

**DISTRIBUTION AND RETAIL LOSSES**

- GRAIN PRODUCTS: 2%
- SEAFOOD: 9.5%
- FRUITS & VEGETABLES: 12%
- MEAT: 4%
- MILK: .25%

**CONSUMER LOSSES**

- GRAIN PRODUCTS: 27%
- SEAFOOD: 33%
- FRUITS & VEGETABLES: 38%
- MEAT: 12%
- MILK: 17%

**Includes out-of-home consumption**
How much are we wasting?\textsuperscript{2,3}

- Globally, 1/3 of the food produced for human consumption is lost or wasted
  - \sim 1.3 \text{ billion tons per year}

- America wastes an estimated \sim 40\% of all food
  - Number has doubled since 1970’s

1 in 6 Americans are food insecure

48 Million people are food insecure in America

If we wasted just 15% less food, it would be enough to feed 25 million Americans

Source – Feeding America Summary 2015

Photo credit: USDA September 2015
Our “Tossed Treasures” add up!5,6,7

The $180 Billion Food Bill

$21.7B
$17.5B
$4.2B
$14.8B
$27.1B
$33.3B
$36.4B
$8.7B
$2.6B
$1.8B
$11.2B

Impact on environment 8,9,10,11

- Wasted natural resources
- Greenhouse gas
- Wasted water

Wasted food enters our landfills, creating methane

Photo credit: http://www.compostturner.cn/upload/image/food%20waste.jpg
What can we do about it?
EPA “Food Recovery Hierarchy”

Source Reduction
Reduce the volume of surplus food generated

Feed Hungry People
Donate extra food to food banks, soup kitchens and shelters

Feed Animals
Divert food scraps to animal feed

Industrial Uses
Provide waste oils for rendering and fuel conversion and food scraps for digestion to recover energy

Composting
Create a nutrient-rich soil amendment

Landfill/Incineration
Last resort to disposal

Photo credit: http://www.epa.gov/sustainable-management-food/food-recovery-hierarchy
Join the USDA Food Waste Challenge by:

1. Adding your organizational objectives to reduce food waste to the USDA website by using this form:

2. Utilizing the free resources and educational materials hosted on the USDA and EPA’s websites
Wasted food around the world

- **Chinese** diners are posting pictures of empty plates online, urging friends not to order more than they can eat.
- **South Korea** is charging for garbage removal by weight in hopes of persuading families to discard less food.
- **Massachusetts** is barring large businesses from sending kitchen waste to landfills.
- **British** supermarkets are improving labels and packaging so that customers throw out less of what they buy.

Photo credit http://growerdirect.co/img/11_Customer/customer_img1.jpg
“Ugly” fruit needs love too!

Photo credit: “Ugly Fruit and Veg” Instagram - https://www.instagram.com/uglyfruitandveg/ and Twitter - https://twitter.com/uglyfruitandveg
School food service

food waste

fruit/vegetable consumption

Key recommendations:
1. Choice
2. Time
3. Buying Local
4. Slice the Produce

Tips from phone interview with Donna Martin, Director of School Food Service in GA November 2015
Non-profit food recovery

Janell Walker, MPH, RD, LDN
Director of Nutrition & Community Outreach

For more than 25 years, DC Central Kitchen (DCCK) has been fighting food waste by **recovering leftover food** and converting it into **meals for hungry and at-risk families**.

Bill Emerson Act\textsuperscript{17} = \textbf{"The Good Samaritan Act"}

1. Protects businesses and consumers from liability when they donate to a non-profit organization
2. Protects businesses and consumers from civil and criminal liability should the product donated in good faith later cause harm to the recipient
Food banks & RDNS\textsuperscript{18,19}

- Help to recover food
- Repurpose food unfit for sale
- Educate clients and partner agencies on “best buy” dates and how to best utilize unfamiliar foods
- Educate businesses on the Bill Emerson Act
  - Find out more at www.feedingamerica.org

Photo credit: http://cagardenweb.ucanr.edu/files/78558display.jpg
Alice Henneman, MS, RDN

America’s Wasted Food Problem, and How Dietetic Professionals Can Help

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- Employed by University of Nebraska–Lincoln Extension
- I have no actual or potential conflict of interest in relation to this presentation
Consumers - Decoding the Label

Standardizing food label dates
• No mandated labeling system - confusing
• Over 90% of consumers throw out food too early, leading to massive food waste

Solutions
• Consumer education on what sell by, use by, best, by actually mean
• Some manufacturers have experimented with adding “freeze by” language onto packaging to encourage customers to take active steps to preserve food in the freezer instead of throwing it in the trash
• http://www.stilltasty.com/
Consumer Phone Apps

**IS MY FOOD SAFE?**
Safe Cooking Temperatures

**IS IT DONE YET?**
Food Storage Guide

**TIME TO TOSS?**
Quiz: Test Your Knowledge

**LOVE FOOD - hate waste**

More options available.
Creative ways to fight wasted food

Colorado turns food waste into energy

Credit NPR

Misfit Juicery

Olympic (Rio) chef uses wasted food to feed homeless - NYT
Reducing waste in food service

Photo credit: https://pixabay.com/en/kitchen-work-restaurant-cook-chef-731351
Saving food saves food service money

• Wasted food and packaging wastes money

• Tax benefits are possible through donating edible whole food (that would otherwise go to waste) to food banks or rescue organizations

• Saving food saves all the food service resources associated with the food (labor, equipment, etc.)

ChowBank helps connect people donating food with the people who need it.

From ingredients to cooked food, from a grocery shelf to a conference buffet, ChowBank lists your donations and notifies those who can take them.

LeanPath™ offers simple solutions to cut your kitchen’s food waste in half.

LeanPath helps commercial kitchens around the world prevent food waste with industry-leading food waste smart meters and data driven performance.
12 ways to decrease food service waste

Following are a dozen ways how food service can reduce food waste...

1. Practice “offer” vs. “serve” in school lunch food service\(^\text{21}\)
2. Avoid overbuying fresh produce\textsuperscript{22}
3. Rethink or initiate proper portion control to ensure employees serve the amount of food you specify.
4. Plan ahead if you anticipate a certain item won’t sell — can you sell it at a reduced price? (Or convert it into something else.)
5. Change your plates ... plates and glasses with smaller volume will automatically reduce portions\(^23\)
6. Discourage overloading plates through trayless dining\textsuperscript{24, 25}

Photo credit: https://flic.kr/p/nnvKXk
7. Cook in smaller batches and/or use smaller service pans – either less deep or a half-pan

8. Help people order foods they want and will eat through menu descriptions²⁶
The Slim by Design Diner

Almost any notation can catch one's eye and increase consideration and choice.

Place healthy high margin items in bold boxes or colored boxes to "call them out."

Section off House Favorites that are healthy. In any section such as this, make sure the healthier items are listed first.

Appetizers
- Crisp Summer Salad with Pineapple and Avocado
  Combine juicy pineapple and fresh, ripe avocado for our lightest and easiest summer salad.
- Chips and Salsa
  Crispy tortilla chips served with homemade salsa and guacamole.
- Soup of the Day
  Please ask your server.
- Vegetables and Hummus
  Broccoli, carrot, and cucumber platter served with two homemade hummus options.
- Cherry Tomatoes with Creamy Pesto Cheese
  Plum tomatoes filled with our famous creamy pesto spread made with reduced fat cream cheese.
- Light and Fresh Humboldt Fog and Roasted Beet Salad
  Watercress, roasted pistachios, raspberry vinaigrette.

House Favorites
- Grilled Chicken and Harvest Stew
  Tender boneless, skinless chicken breast served with corn, carrots, mushrooms, potatoes, cauliflower, and onions.
- London Broil in Mushroom Sauce
  Trim portion 7
  Full portion 10
- Pork Tenderloin, South Island Style with Mixed Cilantro salad
  Delicious and lean pork tenderloin served with chunks of cucumber are splashed with lime juice and sprinkled with cilantro and chili.
- Succulent Italian Seafood Fillet with whole grain rice
  Whole, flaky white fillets in a crispy batter served with cornmeal flatbread.
- Smoked Salmon with broccoli
  Hickory-smoked salmon, capers, and chipotle peppers served with a side of sautéed greens.
- Shrimp Scampi
  Trim portion 11
  Full portion 15
  Featuring zucchini, onions, bell pepper, and dices tomatoes served over brown rice.

For select items, offer 1/2 size portions for 70% the price of full. Don't call them half size.

Use a logo or icon to draw attention to targeted item - beware using "healthy" logos which can sign bad taste.

Sides
- Roasted Vegetables
  Includes carrots, broccoli, squash, and potatoes.
- Chef Salad
  Filled with crisp greens, vegetables, hard boiled eggs, meat, and cheese.
- Baked Sweet Potato
  Topped with cinnamon and light butter.

Happy Endings
- Fruit Plate
  Plate of grapes, strawberries, and blueberries.
- Italian Sorbet
  Ancient Italian frozen dessert.
- Chocolate Cake
  Chocolate cake with chocolate frosting paired with cool vanilla ice cream.

Happy Endings
- Place healthy items in the four corners and at the beginning of sections.

Descriptive words for healthy items sell 28% more than "seafood salad".

Offer salads as the default. Fries can be substituted.

Photo credit: Free for non-commercial use at http://foodpsychology.cornell.edu/discoveries/menu-secrets-can-make-you-slim-design

Copyright “Slim by Design” Wansink 2014
9. Get creative with scraps

- Use older bread in croutons and bread pudding
- Make one of the daily soups from leftovers
- Crumble leftover bacon for the salad bar
- Reuse cooked sausage as a pizza topping
- Freeze vegetable trimmings; make a vegetable broth from scratch when you have enough
- Use veggie scraps in a veggie burger or fried rice
- Freeze rinds of hard cheeses such as parmesan, and add to soups for extra flavor; remember to remove the rind when soup is done!
Chef Dan Barber’s “garbage” meal

• For 2 weeks, noted New York Chef Dan Barber turned his Blue Hill restaurant in Greenwich Village into a pop-up restaurant (open only a short time) called wastED

• Menus were devised from leftover items like stems, peelings, rinds and bones by an assortment of guest chefs

Photo credit: https://flic.kr/p/9JrV9b
10. Track and analyze waste in your facility\textsuperscript{29} – some possibilities:

- Good idea to do BEFORE you start an intervention to gauge success
- Check trash receptacles throughout day and number of trash bags
- Paper and pencil tracking – such as EPA’s Waste Logbook at \url{http://bit.ly/2fn8vVm}
- Spread sheet – such as EPA’s FREE Food Packaging and Prevention Tool at \url{http://bit.ly/2g6uu46}
- Check if there are auditing services available locally

Photo credit: \url{https://pixabay.com/en/garbage-bags-waste-plastic-413757}
Reference #30
11. Develop a relationship with a food donation program in your area\textsuperscript{31,32}

Photo credit: https://pixabay.com/en/refugee-foodbank-compassion-somali-886524
12. Make easy-to-understand bin labels in quick serve operations where the customer is disposing of waste; for example: “bottles,” “cans,” “plates and silverware” and “garbage only.”³³
Examples of downloadable signs

Harvard has created downloadable waste reduction signage in various sizes and styles for different locations and events University-wide. A few examples below and more information at: https://green.harvard.edu/topics/waste/signage

Photo credit: Screen shots from https://green.harvard.edu/topics/waste/signage
Find more suggestions from the US Environmental Protection Agency on reducing wasted food for food services and restaurants\textsuperscript{20} at: [http://bit.ly/2g6oOqP](http://bit.ly/2g6oOqP)
Spread the message to consumers
Toolkit from Academy Foundation

Tossed Treasures. How We All Can Waste Less Food.

Download handout and PowerPoint at http://eatrightfoundation.org/toolkits-webinars
**Tossed Treasures: How We All Can Waste Less Food**

**QUIZ**

1. What is the recommended temperature for your freezer?
   - A. 32°F
   - B. 10°F
   - C. 0°F

2. What temperature is recommended for your refrigerator?
   - A. 45°F
   - B. 40°F
   - C. 32°F

3. How hot should you heat leftovers to be food safe?
   - A. 140°F
   - B. 160°F
   - C. 155°F

4. Keep doggie bag leftovers safe by refrigerating them within:
   - A. 1 hour
   - B. 2 hours
   - C. 4 hours

5. Which vegetable(s) will maintain best quality if stored at room temperature?
   - A. Potatoes
   - B. Onions
   - C. Zucchini squash
   - D. All of the above
   - E. A, B

6. The "best if used by date" is:
   - A. Recommended date for best flavor or quality.
   - B. Last date recommended for use of the product at peak quality. If a food has this type of dating, follow that date.
   - C. The last date a store should sell that food.

7. How long will food stored constantly at 0°F remain safe?
   - A. 1 to 2 years
   - B. 5 years
   - C. Indefinitely

**Answer Key**

[Answer options]

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**America wastes 40% of food!**

When we waste food, we affect the following:

- Food security
- Our food budgets
- Natural resources
- Greenhouse gas
- Water waste

What we all can do to waste less food:

1. Shop "refrigerator first":
   - Eat food before it goes bad.
   - Cook or eat what you already have at home before buying more.
   - Refrigerate take-home food within 2 hours (1 hour when temperature is above 90°F). Use within 3-4 days. Reheat to 165°F using a food thermometer.

2. Keep perishable foods cold:
   - Refrigerator: 40°F
   - Freezer: 0°F

3. Keep fresh food longer:
   - Do not refrigerate potatoes, onions, winter squash or garlic.
   - Do not refrigerate tomatoes, avocados, bananas, peaches, watermelon, or nectarines.

4. Read the label:
   - Food stored constantly at 0°F will always be safe.

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**"BEST IF USED BY"**

- Not a purchase or sale date; food may be eaten after this date.
- Product has best flavor and quality if used by this date.
- A less specific date than "sell by".

**"SELL BY"**

- Buy before "sell by" date passes. Fairly set time period before food goes bad.
- Eat or freeze by the time on chart below unless the package gives a specific date.

**"USE BY"**

- Refrigertored/Prepared Food: Storage Chart at [http://www.eatright.org/RefrigeratedPrepared-Food-Storage-Chart](http://www.eatright.org/RefrigeratedPrepared-Food-Storage-Chart)

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[ NST-20398:12.1.10a] Not a purchase or sale date; food may be eaten after this date

[ NST-20398:12.1.10b] Product has best flavor and quality if used by this date

[ NST-20398:12.1.10c] A less specific date than "sell by"

[ NST-20398:12.1.10d] Buy before "sell by" date passes. Fairly set time period before food goes bad.

[ NST-20398:12.1.10e] Eat or freeze by the time on chart below unless the package gives a specific date.

Shop refrigerator first

Keep perishable foods cold

Keep food fresh longer

Read the label
Our “Tossed Treasures” add up!

The $180 Billion Food Bill

The cost of food is rising, but not just because of inflation. The cost of food has also increased because of changes in the way we eat. Here are some examples:

- Potatoes: $2.00
- Carrots: $1.00
- Onions: $1.50
- Low-fat mayonnaise: $2.50

Some leftover makeovers

In a “potato” salad!

- Example:
  - Potatoes
  - Radishes
  - Carrots
  - Frozen Peas
  - Onions
  - Low-fat mayonnaise

Doggie bag dining

- Refrigerate take home food within 2 hours (1 hour when temperature is above 90°F)
- Use within 3 to 4 days
- Reheat to 165°F using a food thermometer

Proper veggie storage of veggies

Don’t refrigerate these veggies!

- Potatoes
- Onions
- Garlic
- Winter Squash
- Sweet Potatoes

Read the label!

BEST IF USED BY

APR 2017
55 679 001 0011

USE BY

OCT 05

The “best if used by date” is the last date recommended for use of the product at peak quality. If a product has a “use by” date, follow that date.

Photo credit: Alice Herman

There’s a (FREE) app for that!

- Check how long to keep foods with this FREE app
- Phone App Store
- Android App on Google Play

Did you know this food will freeze?

- Pasteurized homogenized milk may be frozen, including low-fat and non-fat milk.
- There may be some quality change when thawed. Thaw frozen milk in the refrigerator.
- Stir or shake thawed milk to help restore smoothness.

Did you know this food will freeze?

- Hard or semi-hard cheese freeze best.
- Frozen cheese may be crumbly but will work well in cooked dishes.
- Freeze in small pieces—no more than 1/2 pound per chunk.
- Seal in foil, freezer wrap or freezer bag.

Quality vs. safety

Food stored constantly at 0°F will always be safe. Only the quality suffers with lengthy freezer storage.
Optional activities

Optional activity #1

Quiz!

Optional activity #2

Leftover Makeover

The "best if used by date" is the:

A. Recommended date for best flavor or quality
B. Last date recommended for use of the product at peak quality. If a food has this type of dating, follow that date
C. The last date a store should sell that food

Sample question

Makeover these leftovers!

- Cooked pasta
- Half a medium onion
- Tomato sauce, ¾ can transferred to storage container
- Cooked dried beans

Foods to include in makeover
Recommended Resources

Reports

Websites
3. Feeding America - [www.feedingamerica.org](http://www.feedingamerica.org)
4. Waste No Food - [www.wastenofood.org](http://www.wastenofood.org)
5. Sustainable America - [www.ivaluefood.com](http://www.ivaluefood.com)

Apps
1. Is My Food Safe? – answers food safety questions
2. Love Food Hate Waste - [www.lovefoodhatewaste.com](http://www.lovefoodhatewaste.com)
3. Green Egg Shopper - helps shoppers reduce food waste

Other
Questions?

Thank you!

Please complete this short online feedback survey: https://www.surveymonkey.com/r/fdwastewebinar
References


doi:10.1146/annurev-environ-011911-151727


doi:10.1016/j.jclepro.2009.11.010


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References, continued


