Healthy carbohydrates: Challenges in dietary guidance

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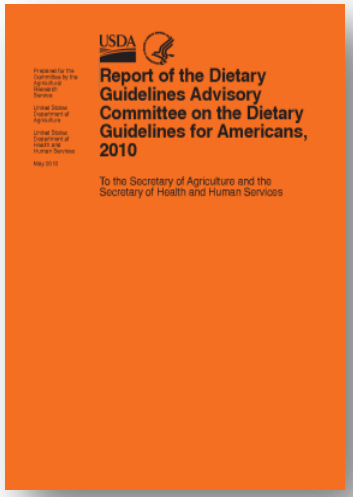
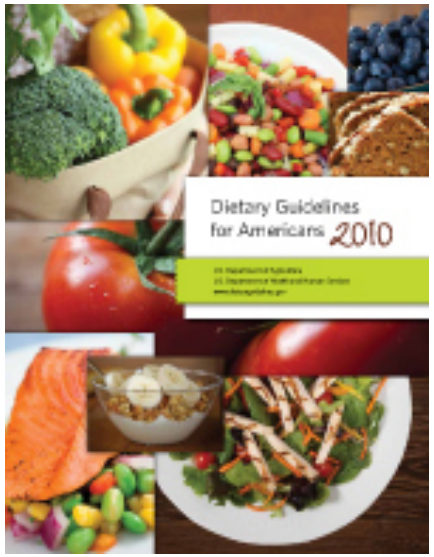
October 26, 2015

From the Science to Me





The Science **Policy** **Me**

There is no perfect diet!

- Humans are omnivores and are adaptable to a wide range of foods
- Humans have survived and prospered on all kinds of diets, mostly reflecting access to food supply
  - Traditional Arctic diet: 80% of kcals from fat
  - Traditional African diet: 80% of kcals from carbohydrate
- Because of concerns with fat and cardiovascular disease, U.S. diet moved from higher fat (42% of kcal in 1972) to lower fat (32% of kcal in 2000) –current movement toward lower carbohydrate

Nutrient Adequacy

- Meet nutrient needs without exceeding calorie needs
- Dietary Reference Intakes (DRIs)
  - Acceptable Macronutrient Distribution Ranges (AMDR)
    - Protein: 10 - 35% of kcal
    - Carbohydrates: 45 - 65% of kcal
    - Fat: 20 - 35% of kcal
  - Recommended Dietary Allowance (RDA)
  - Adequate Intake (AI)
  - Tolerable Upper Level Intake (UL)

Senate Select Committee on Nutrition and Human Needs – Dietary Goals the United States (1977)

- Increase carbohydrates to 55%–60% of energy
- Reduce fat to 30% of energy
- SF, MF, PUFAs – 10%/10%/10%
- Reduce cholesterol to 300 mg/day
- Reduce sugar consumption by 40%
- Reduce salt consumption to 3 g/day – 1200 mg sodium

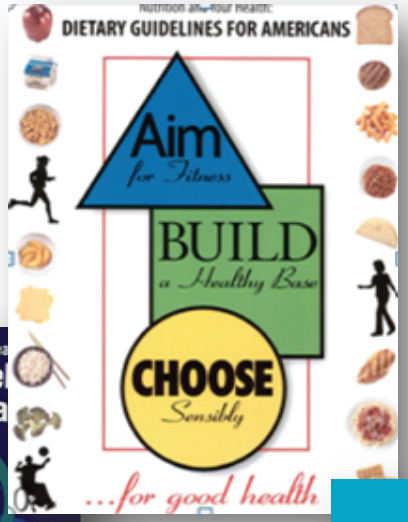
Dietary Guidelines for Americans 1980 - 2010

1980

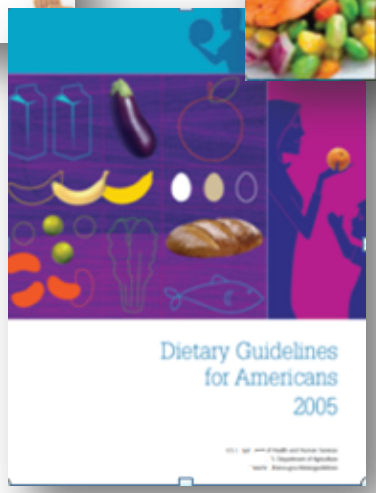
1985

1990

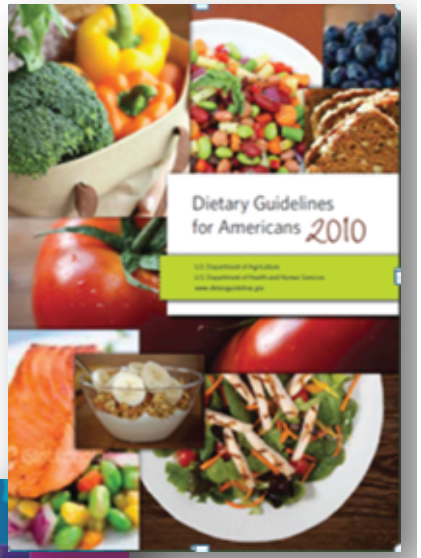
1995



2000



2005



2010

Development of Dietary Guidelines Policy

DGAC Charter

DGAC is chartered

DGAC Public Meetings: Review of the Science

Report of the Dietary Guidelines Advisory Committee on the Dietary Guidelines for Americans, 2010

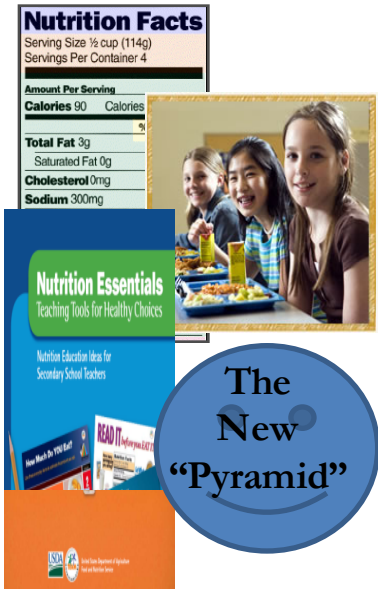
DGAC Advisory Report submitted to the Secretaries of USDA & HHS

Dietary Guidelines for Americans, 2010

(TBD)

U.S. Department of Agriculture
U.S. Department of Health and Human Services
www.dietaryguidelines.gov

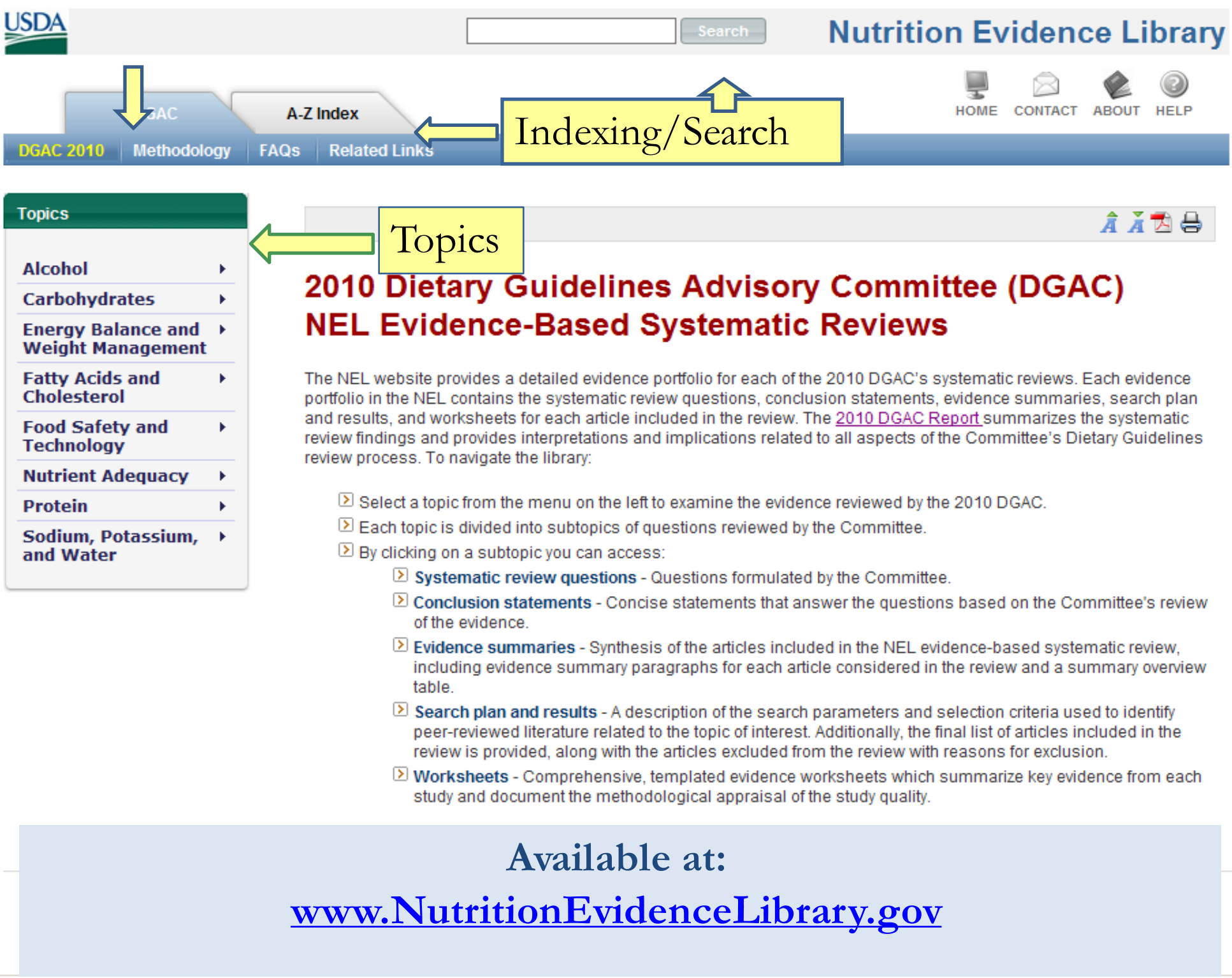
USDA & HHS write the Policy Document



DG's implemented through Federal programs

Public comments encouraged/collected

Evidence-based Methodology Used to Review the Science



Available at:

www.NutritionEvidenceLibrary.gov

NEL Process

Formulate Systematic Review Questions
- Exploratory searches
- Public comment
- Dialogue with experts
- Analytical Framework
- PICO

Literature Search and Sort
- Identify study eligibility criteria
- Determine search strategy
- Search for relevant studies
- List included studies
- List excluded studies and rationale

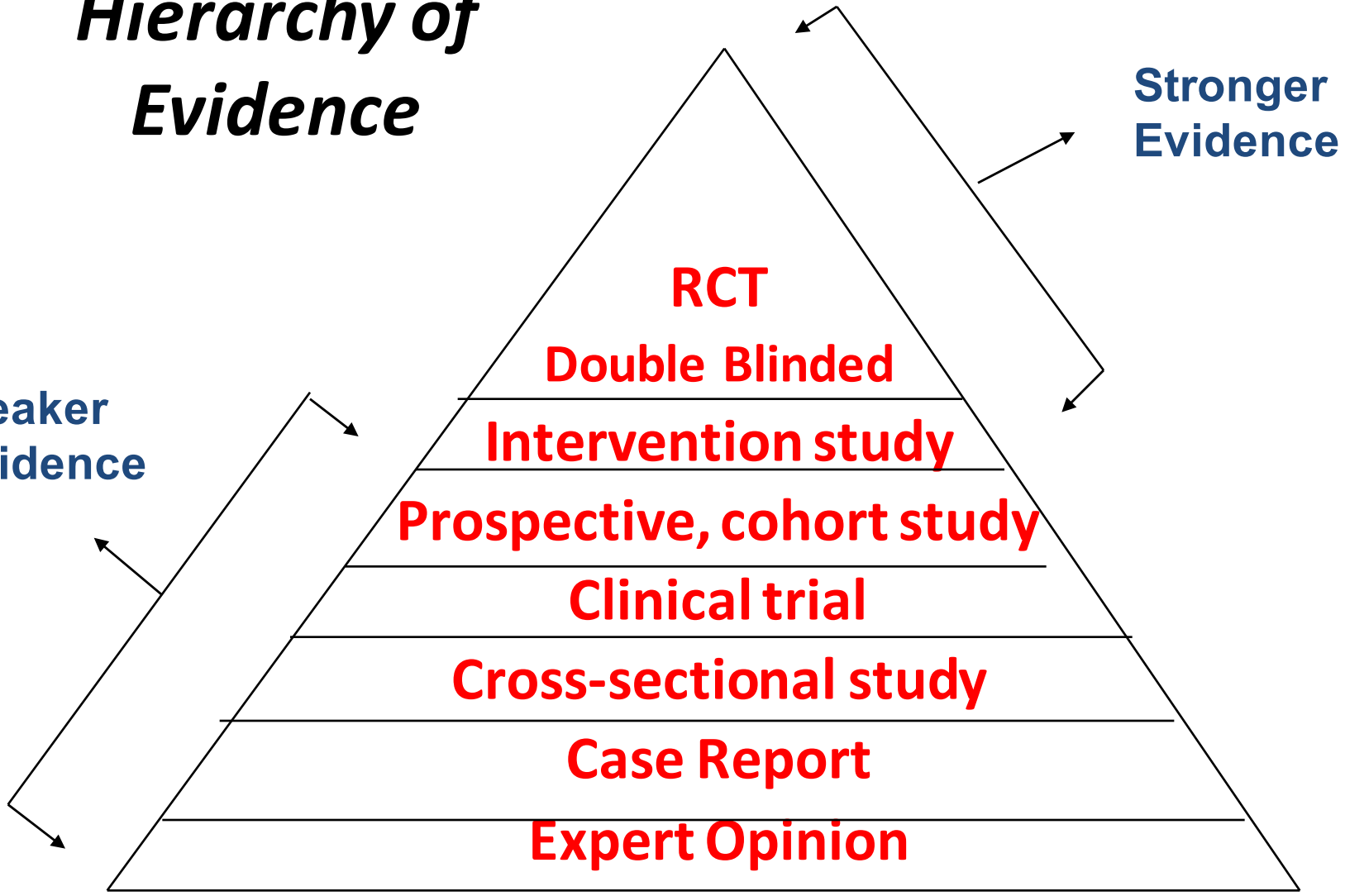
Extract Evidence From Studies
Create evidence worksheets

Summarize and Synthesize the Evidence
- Assess quality of individual studies
- Assess applicability
- Summarize and synthesize evidence

Develop and Grade Conclusion Statements

Define Research Recommendations

Hierarchy of Evidence



Grade Strength of Evidence

- Quality
  - Scientific rigor and validity
  - Consider study design and execution
- Quantity
  - Number of studies
  - Number of subjects in studies
- Consistency of findings across studies
- Impact
  - Importance of studied outcomes
  - Magnitude of effect
- Generalizability

Evidence Analysis Methodology

Rigorous

Minimizes bias

Transparent

Accessible to stakeholders and consumers

Defines state of the science

Foundation for updates

Answers precise questions • Illuminates research gaps

Chapter 3
Foods and Food Components to Reduce

Key Recommendations

Reduce daily sodium intake to less than 2,300 milligrams (mg) and further reduce intake to 1,500 mg among persons who are 51 and older and those of any age who are African American or have hypertension, diabetes, or chronic kidney disease. The 1,500 mg recommendation applies to about half of the U.S. population, including children, and the majority of adults.

Consume less than 10 percent of calories from saturated fatty acids by replacing them with monounsaturated and polyunsaturated fatty acids.

Consume less than 300 mg per day of dietary cholesterol.

Keep *trans* fatty acid consumption as low as possible, especially by limiting foods that contain synthetic sources of *trans* fats, such as partially hydrogenated oils, and by limiting other solid fats.

Reduce the intake of calories from solid fats and added sugars.

Limit the consumption of foods that contain refined grains, especially refined grain foods that contain solid fats, added sugars, and sodium.

If alcohol is consumed, it should be consumed in moderation—up to one drink per day for women and two drinks per day for men—and only by adults of legal drinking age.

Chapter 4
Foods and Nutrients to Increase

Key Recommendations

Individuals should meet the following recommendations as part of a healthy eating pattern and while staying within their calorie needs.

Increase vegetable and fruit intake.

Eat a variety of vegetables, especially dark-green and red and orange vegetables and beans and peas.

Consume at least half of all grains as whole grains. Increase whole-grain intake by replacing refined grains with whole grains.

Increase intake of fat-free or low-fat milk and milk products, such as milk, yogurt, cheese, or fortified soy beverages.[58]

Choose a variety of protein foods, which include seafood, lean meat and poultry, eggs, beans and peas, soy products, and unsalted nuts and seeds.

Increase the amount and variety of seafood consumed by choosing seafood in place of some meat and poultry.

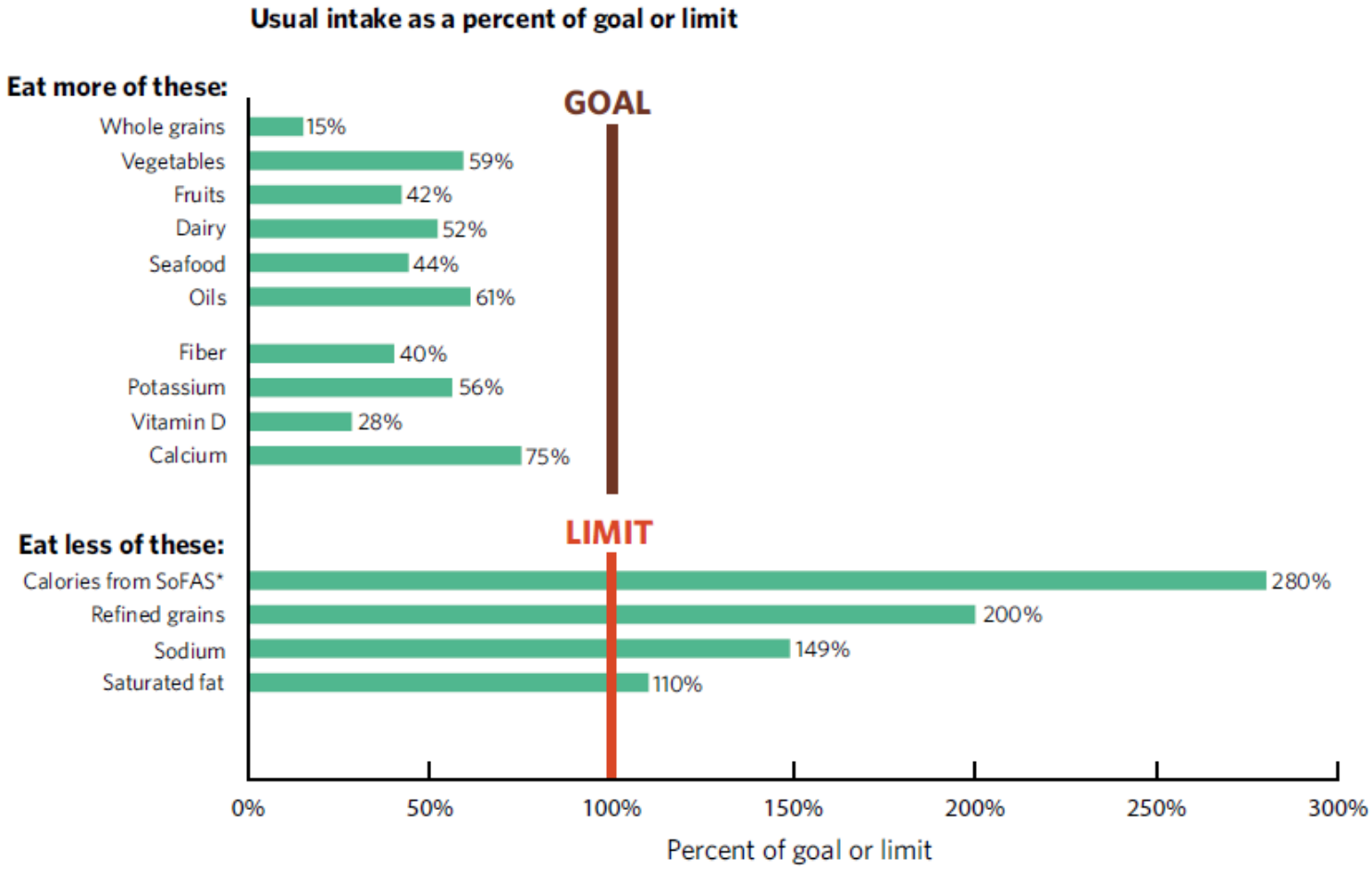
Replace protein foods that are higher in solid fats with choices that are lower in solid fats and calories and/or are sources of oils.

Use oils to replace solid fats where possible.

Choose foods that provide more potassium, dietary fiber, calcium, and vitamin D, which are nutrients of concern in American diets. These foods include vegetables, fruits, whole grains, and milk and milk products.

Comparison of Consumption to Recommendations

FIGURE 5-1. How Do Typical American Diets Compare to Recommended Intake Levels or Limits?



DGAC 2015

- “Settled science” – may not see much change on nutrient levels
- Movement to whole foods and away from nutrients
- Topics such as sustainability, gluten, vegan diets, and food processing have been discussed and may be included in 2015 DGA

2015 DGAC – Dietary patterns, foods and nutrition, and health outcomes

- The US population should consume dietary patterns that are:
  - Rich in vegetables, fruits, **whole grains**, fish/seafood, legumes, and nuts
  - Moderate in dairy products (e.g. low and non-fat dairy) and alcohol and
  - Lower in red and processed meat and
  - Low in sugar-sweetened foods and beverages and **refined grains**

1943: Basic Seven

Margaret Mead:

"People don't eat nutrition – they eat food"

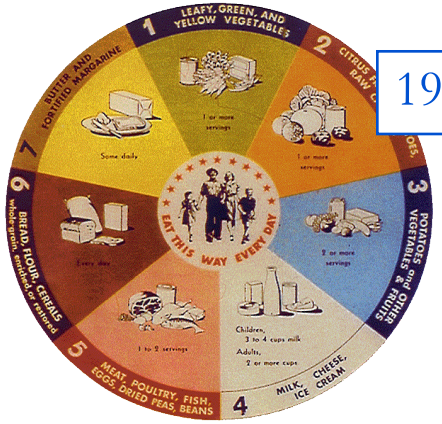
Basic 7 did not specify the number of servings of each food group needed daily

Food advice: Evolution of USDA's Food Guidance – Moderation and Variety

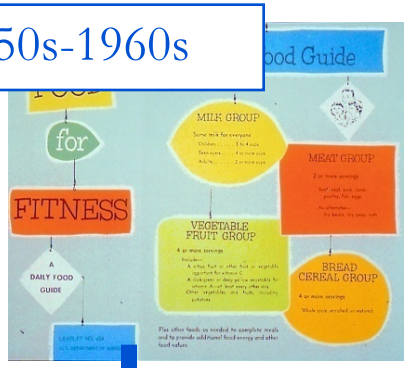
1916

Food for Young Children

1940s

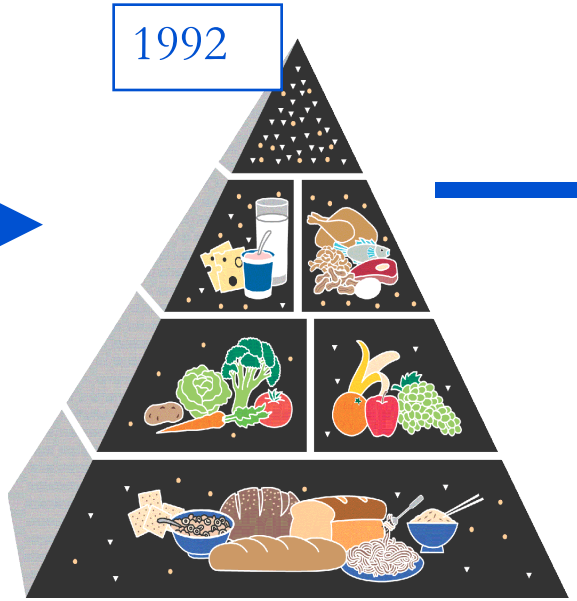


1950s-1960s



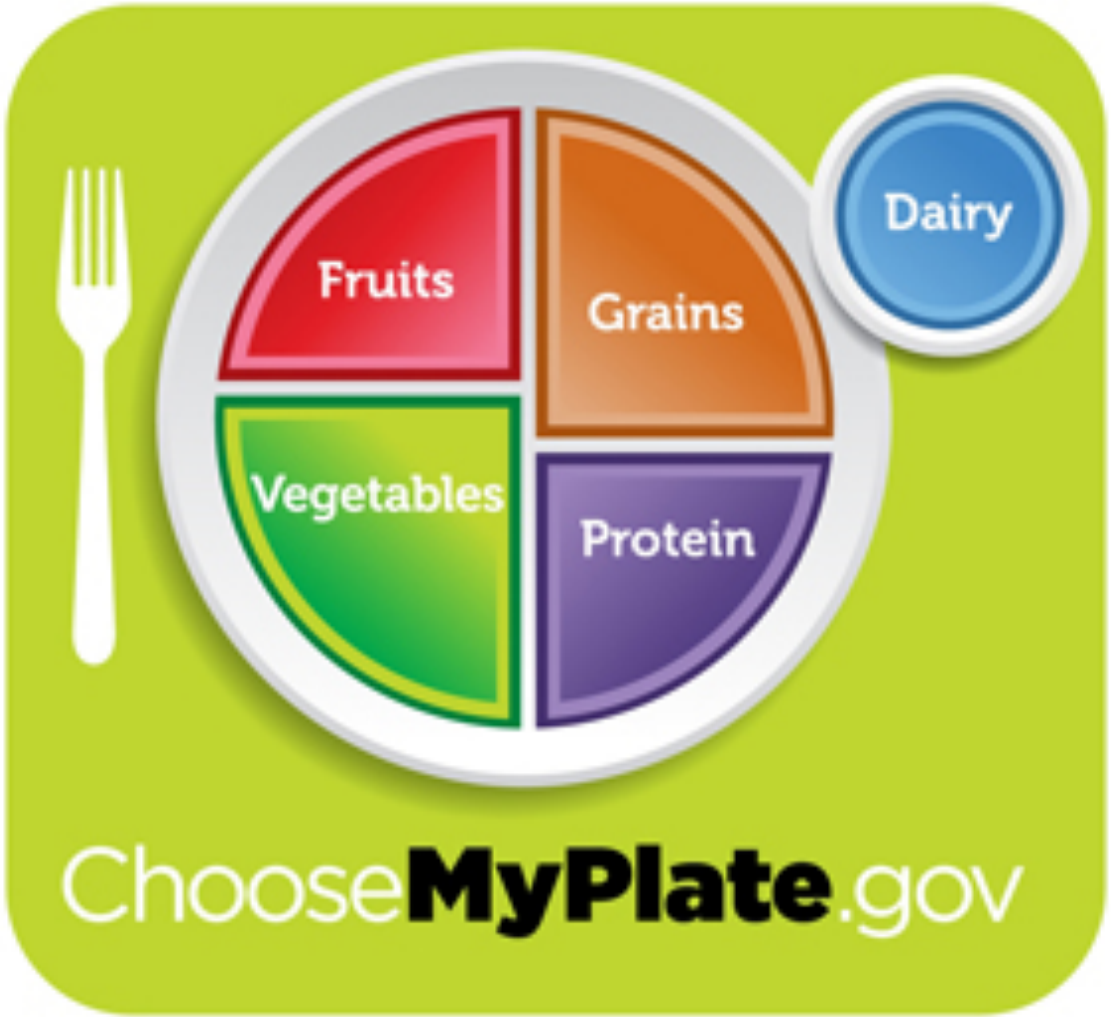
1970s

1992



2005

MyPlate.gov (6/2/11)



Conclusions

- We have moved from nutrient-based recommendations (fiber) to food recommendations (whole grains)
- Whole grains are recommended because they are linked to less cardiovascular disease in observational studies; in contrast, refined grains are not recommended
- Whole grain consumption is low in all population groups
- Current dietary guidance that promotes whole grains, but not refined grains, present challenges for pasta