The DGAC Report: Background and Integration of Key Findings

Barbara Millen
2015 DGAC Chair

Speaker Disclosures

• Currently (bmillen@bu.edu):
  • Founder and President, Millennium Prevention, Inc.
    www.HealthMain.com
    www.myhealthmain.com
  • Chairman, Boston Nutrition Foundation, Inc.

• Formerly:
  • Chairman, 2015 U.S. Dietary Guidelines Advisory Committee
  • Professor, Boston University School of Medicine (BUSM), Dept. Family Medicine & Div. Graduate Medical Sciences
  • Founding Chairman, Multidisciplinary Graduate Programs in Medical Nutrition Sciences (Boston Medical Center)
  • Director of Nutrition Research, The Framingham Study
### 2015 Dietary Guidelines Advisory Committee

- Provides science-based recommendations to the Federal government on
  - How food, nutrition, and physical activity
    - Can promote the health of the U.S. population
    - Help reduce the burden from major chronic diseases and other lifestyle-related health problems
  - How best to accomplish these goals at individual and population levels
- Scientific report informs the Dietary Guidelines for Americans, 2015 policy document

**Introduction to DGAC report**

---

### Areas of Potential Public Policy Impact

<table>
<thead>
<tr>
<th>U.S. Department of Health and Human Services</th>
<th>U.S. Department of Agriculture</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Healthcare Systems</strong></td>
<td><strong>Food, Agriculture and Farm Policies, Resources, and Products</strong></td>
</tr>
<tr>
<td>- Affordable Care Act</td>
<td>- Federal Food Assistance Programs:</td>
</tr>
<tr>
<td>- Medicaid and Medicare</td>
<td>- National School Lunch Program</td>
</tr>
<tr>
<td><strong>National Prevention Strategy</strong></td>
<td>- Child and Adult Care Food Program Nutrition</td>
</tr>
<tr>
<td><strong>Grant Funding</strong></td>
<td>- Supplemental Nutrition Assistance Program (SNAP)</td>
</tr>
<tr>
<td>for public health research and infrastructure</td>
<td>- Commodity Supplemental Food Program</td>
</tr>
<tr>
<td><strong>Food and Nutrition Labeling</strong></td>
<td>- Special Supplemental Nutrition Program for Women, Infants and Children (WIC)</td>
</tr>
<tr>
<td>- Nutrition Facts Label</td>
<td></td>
</tr>
<tr>
<td>- Restaurant and vending labeling</td>
<td></td>
</tr>
</tbody>
</table>

DGAC Report: Integration and Recommendations
2015 DGAC Themes

Core to the DGAC
- Food, nutrient, and health-related recommendations

Themes
- Prevalent Nutrient and related Health Problems of Americans
  - Nutrition and Health Disparities
- Overall Dietary Patterns and Health Outcomes
- Strategies to improve dietary quality and health outcomes, especially overweight and obesity and chronic diseases
  - Individual and population levels
- Food Safety, Security and Sustainability now and for future generations
- Systems and Research-Driven Approach
2015 DGAC Subcommittees

SC 1: Food and Nutrient Intakes, and Health: Current Status and Trends
- Nutrients of concern
- Food group intakes
- Food sources
- Eating behaviors
- Dietary patterns
- Health concerns
- Food pattern modeling

SC 2: Dietary Patterns, Foods and Nutrients, and Health Outcomes
- Dietary patterns and health outcomes
- Foods and nutrients and health outcomes

SC 3: Diet and Physical Activity Behavior Change
- Self-monitoring
- Eating out
- Household food insecurity
- Food/meal plan use
- Mobile health
- Acculturation
- Screen time/sedentary behavior
- Sleep patterns

SC 4: Food and Physical Activity Environments
- Settings:
  - Schools/after-school
  - Childcare
  - Post-secondary
  - Worksite
- Other Topics:
  - Food access

SC 5: Food Sustainability and Safety
- Food safety:
  - Preventing foodborne illness
  - Caffeine
  - Aspartame
- Other Topics:
  - Dietary patterns and sustainability

Cross-cutting Topics of Public Health Importance: Work Groups (WG)
- Added Sugars
- Sodium
- Saturated Fat
- Physical Activity

Introduction to DGAC report
Examining the Evidence

- NEL systematic reviews
- Existing reports
  - Existing high-quality evidence-based reports
  - Existing systematic reviews
  - Existing meta-analyses
- Data analyses
- Food pattern modeling analyses
- Public comments

Introduction to DGAC report

2015 U.S. Dietary Guidelines Advisory Committee

- Rhonda Miller, MS, RDN, MPH, RDN, FADA
  Wheat Montana Prevention, Inc.
- Alice Lichtenstein, DSc, HS
  Tufts University
- Steven Mauer, MS
  George Washington University
- Laura Adams-Campbell, PhD
  George Washington University
- Cheryl Anderson, PhD, MPH
  University of California, San Diego
- J. Shannon Brown, PhD
  Cornell University
- Wayne Campbell, PhD
  Purdue University
- Steven Clinton, MD, PhD
  University of Colorado
- Frank Hu, MD, PhD, MPH
  Harvard School of Public Health
- Mariela M. V. Nieves, MD
  Tulane University
- Margot Neilson, MD, PhD
  Public Health Research Institute
- Rafael Neira-Casasola, PhD
  University of California, Los Angeles
- Anna Maria Riggs, PhD
  The University of North Carolina at Chapel Hill
- Mary Swamy, PhD, RD
  Public Health Research Institute
- Timothy J. Smith, PhD, RDN
  Michael W. Harmon, PhD (BS) (MS) (PhD) (PhD)

2015 Co-Executive Secretaries

- Richard Olson, MD, MPH
  Division of Prevention Science
  Office of Disease Prevention and Health Promotion
  HHS

- Colette Rikiane, MS, RD
  Office of Nutrition Guidance and Analysis
  Center for Nutrition Policy and Promotion
  USD

- Kellie Casavale, PhD, RD
  Division of Prevention Science
  Office of Disease Prevention and Health Promotion
  HHS

- Sushant Bownan, PhD
  Co-Executive Secretary
  Food Surveys Research Group
  Agricultural Research Service
  USDA
2015 DGAC OVERALL FINDINGS
What the Report's Evidence Base tells us

1. The most prevalent, preventable diet- and lifestyle-related chronic diseases and other important health outcomes
2. What foods and nutrients are over- and under-consumed and of public health concern
3. Where population disparities exist in dietary quality, food security, and health profile characteristics
4. How dietary patterns (overall habitual food and nutrient intake) relate to major chronic disease risks and other important health outcomes
5. How specific nutrients and food constituents impose particular population health risks and can be modified to reduce these risks
6. The common characteristics of healthy dietary patterns across diverse health outcomes

DGAC Report: Introduction, Evidence Base and Overall Findings

2015 DGAC OVERALL FINDINGS
What the Evidence Base tells us (cont.):

7. Multiple, alternative and appealing dietary pattern options for consumer, health care professional and others' use in prevention and disease risk reduction programming
8. What intervention strategies work in the near and long-term to improve diet and physical activity and prevent and reduce disease risk at individual and population levels
9. Settings and collaborative, multi-component approaches shown effective in achieving dietary behavior change and disease risk reduction
10. The convergence of research on dietary patterns shown to result in beneficial health outcomes and to be associated with food security and environmental sustainability now and for future generations.

DGAC Report: Introduction, Evidence Base and Overall Findings
Key Themes SC1

- **The problem:** high rates of diet-related chronic diseases and overweight/obesity
  - Focus in the United States has generally been on disease treatment rather than prevention

- **The gap:** suboptimal dietary patterns
  - Low in vegetables, fruit, whole grains
  - High in sodium, saturated fat, refined grains, added sugars, and calories

Health Conditions: Evidence Base SC1

- **The overall problem:**
  - *preventable* chronic diseases, include high blood pressure, CVD, diabetes, and various forms of cancer affect 117M U.S. adults
  - two-thirds of adults and one in three children are overweight or obese
  - 50-75 percent of adults have one or more cardiometabolic risk factors; risks are rising in children and youth as overweight and obesity increase
  - other less common but important nutrition-related health outcomes are growing concerns
Trends in Overweight and Obesity: Adult Males and Females ages 20+

NHANES 1988-94, 1999-02 through 2011-12

*BMI = 25 to <30  **BMI = 30 to <40  ***BMI = 40 and over

Prevalence of Number of CVD Risk Factors by Weight Category, among Adults 18 Years and Older

Risk factors included: total diabetes; total hypertension; total dyslipidemia; and self-reported smoking

Saydah et al., Obesity, 2014 (NHANES 2007-2010)

Food and Nutrient Intakes, and Health: Current Status and Trends Q1-3
**Health Conditions: Overall SC1 conclusions**

- At all ages, rates of chronic disease are linked to overweight and obesity.
- Adults have high rates of high blood pressure, CVD, diabetes, and various forms of cancer.
- Children and adolescents also have nutrition-related chronic diseases, including borderline high blood pressure and type 2 diabetes.
- Prevalence of osteoporosis and of low bone mass increases with age, particularly in post-menopausal women.
- Nutrition-related neurological and psychological conditions are a growing concern.
- Congenital anomalies are a relatively rare, but important pregnancy outcome.

---

**Key Themes**

- **The problem**: high rates of chronic disease and overweight/obesity
  - Focus in the United States has generally been on disease treatment rather than prevention

- **The gap**: suboptimal dietary intake
  - Low in vegetables, fruit, whole grains
  - High in sodium, saturated fat, refined grains, added sugars, and calories
Conclusions SC 1
Nutrient Intakes and Nutrients of Concern

- Based on intake data, together with nutritional biomarker and health outcomes data, identified nutrients that may pose a public health concern:
  - Vitamin D, calcium, potassium, and fiber are underconsumed across the entire US population.
  - Iron is underconsumed for adolescent and premenopausal females.
  - Sodium is overconsumed across the entire US population
  - Saturated fat is overconsumed and may pose the greatest risk to those > 50 years old.

- Based upon current population intake levels, cholesterol is not considered a nutrient of concern for overconsumption.

Average HEI-2010 scores for Americans by age group

What We Eat in America, NHANES 2009-10
Dietary Patterns—U.S. population Intakes vs. Expert Standards

- Average HEI score in the U.S. population is 57 points out of a total of 100 points.
- The best component scores were for: total protein foods, seafood and plant proteins, dairy.
- The poorest component scores were for: whole grains, sodium, fatty acid ratio, greens and beans, and empty calories.

Food and Nutrient Intakes, and Health: Current Status and Trends Q1-3

Food sources of energy:
Percent from major food categories

What We Eat in America, NHANES 2009-10

Food and Nutrient Intakes, and Health: Current Status and Trends Q1-3
Food sources of added sugars:
Percent from major food categories

Conclusions Food Categories—sources of sodium, saturated fat, and added sugars

- Mixed dishes are the largest contributor to intake of sodium and saturated fat (SF) and calories.
  - Within mixed dishes, the sub-category of burgers and sandwiches is the largest contributor for Na+ and SF
- Sodium is ubiquitous in the food supply and many food categories contribute to intake.
- Snacks and sweets are a major contributor to added sugars and saturated fat intake.
- Beverages supply almost half of added sugars intake.
Overall Dietary Quality: Evidence Base SC1

- **Solutions and Recommendations:**
  - Apply best evidence-based methods to improve dietary quality using sound interventions and services and product innovations
  - Increase under-consumed food groups and nutrients using nutrient-dense foods while maintaining energy balance, and decreasing saturated fat, sodium and added sugars

DGAC Report: Integration and Recommendations Overall Findings Q1-3

Overall Dietary Quality: Evidence Base SC1

- Develop and implement sound strategies at individual and population level to improve intakes, particularly of 'nutrients of public health concern' (vitamin D, calcium, potassium, iron (in women of child-bearing age), sodium, and saturated fat
- Act across all sectors of food production, distribution and consumption and in public and private community settings to achieve healthy dietary patterns at individual and population levels

DGAC Report: Integration and Recommendations Overall Findings Q1-3
**Dietary Pattern Methodologies**

- **Selective Diets**: People who meet/don't meet criteria
- **Indexes/Scores**: Individuals' scores on quality and its components
- **Cluster Analysis**: Groups of individuals and their diet patterns
- **Factor Analysis**: Factors explaining variation in individuals' scores

**Hypothesis Testing**

- How do dietary patterns relate to health outcome?

*Slide presented by Susan Krebs-Smith at the Second DGAC Public Meeting*

---

**Major Conclusions SC 2 Dietary Patterns & Health Outcome Links**

- **Strong** evidence:
  - CVD; weight loss among overweight and obese adults
- **Moderate** evidence:
  - T2D; colorectal cancer; postmenopausal breast cancer; and body weight – weight gain or incidence of overweight and obesity (adults)
- **Limited** evidence:
  - Premenopausal breast cancer; lung cancer; neural tube defects; depression (adults); age-related cognitive impairment; bone health (adults); and body weight (children)
- **Grade not assignable**:
  - Prostate cancer; depression (post-partum women; children); congenital heart defects; cleft lip/palate; and bone health (children)
**WG Major Conclusions: Sodium**

- **Strong** evidence: Higher sodium intake and increased blood pressure
- **Moderate** evidence: Higher sodium intake and increased risk of CVD
  - Inconsistent and insufficient evidence for lowering sodium intakes below 2,300 mg/day
- **Insufficient** evidence: Potassium and blood pressure

*Sodium Working Group*

---

**WG Major Conclusions: Saturated Fat**

- **Strong** evidence: Replacing saturated fat with unsaturated fats, especially PUFAs, reduces LDL-cholesterol and CVD risk
- **Strong** evidence: Replacing saturated fat with overall carbohydrates does not lower CVD risk
- **Limited** evidence: Replacing saturated fat with MUFAs

*Cross-Cutting Topics of Public Health Importance*
WG Major Conclusions: Added Sugars

- **Added sugars, especially sugar-sweetened beverages:**
  - **Strong** evidence for an increased risk of
    - Excess body weight and obesity
    - Type 2 diabetes
  - **Moderate** evidence for an increased risk of:
    - Hypertension, stroke, and CHD; higher blood pressure and serum triglycerides
    - Dental caries

---

Healthy Dietary Pattern Recommendations:

SC2

- 2015 DGAC identified common beneficial dietary pattern features across diverse health outcomes and recommends **healthy dietary pattern options** that:
  - Emphasize vegetables, fruits, whole grains, legumes and nuts and include low-fat dairy products and seafood
  - Limit saturated fat and sodium, refined grains and sugar-sweetened foods and beverages
  - Are lower in red and processed meals
  - Alcohol, if consumed, should be consumed in moderation (by adults only) and should not be consumed by identified subgroups

DGAC Report: Integration and Recommendations Overall Findings Q4-6
### Healthy Dietary Pattern Recommendations: SC2 and WGs

- In addition to recommending *healthy* dietary pattern options that:
  - Emphasize vegetables, fruits, whole grains, legumes and nuts and include low-fat dairy products and seafood
  - Limit saturated fat and sodium, refined grains and sugar-sweetened foods and beverages
  - Are lower in red and processed meals
  - Alcohol, if consumed, should be consumed in moderation (by adults only) and should not be consumed by identified subgroups

DGAC Report: Integration and Recommendations Overall Findings Q4-6

---

### Healthy Dietary Pattern Recommendations: SC2 and WGs

- The 2015 DGAC also recommends that, as part of a healthy dietary pattern,
  - saturated fat intake is less than 10% of total calories (emphasizing replacement of saturated fat with unsaturated fat, particularly polyunsaturated fats)
  - sodium intake is limited to less than 2300 mg per day
  - Added sugars are limited to 10% or less of total calories
  - Total calories meet energy needs in order to achieve and maintain ideal body weight
  - Previous cholesterol recommendation not be carried forward

DGAC Report: Integration and Recommendations Overall Findings Q4-6
**WG Summary: Physical Activity**

- **Strong** evidence supports the importance of regular physical activity for health promotion and disease prevention in the U.S. population.

- Given the low physical activity participation rates in this country, it is critically important to identify proven strategies and approaches to increase population-level physical activity across the lifespan.

**Physical Activity**

**Dietary Patterns and Health Outcomes: Evidence Base SC1, SC2 & WGs**

- **The solutions and recommendations:**
  - Develop prevention policies and programs that target all age groups across the life span
  - Shift the paradigm and focus in healthcare and public health towards a greater emphasis on disease prevention and risk reduction through sound diet and lifestyle strategies
  - Incentivize the provision of personalized lifestyle and nutrition interventions to combat obesity, overweight, chronic diseases and metabolic risks
  - Expand and integrate nutrition and lifestyle services for weight management in health care and other settings

DGAC Report: Integration and Recommendations Overall Findings Q1-6
Health Conditions: Evidence Base SC1-3

- Use qualified professionals to deliver multidisciplinary interventions and medical nutrition therapy, as needed, to reduce chronic disease risks
- Complement health care and public health approaches with environmental strategies in retail, educational, social service, agricultural and other settings and sectors
- Address nutrition and lifestyle issues with evidence-based interventions in multiple settings
- Encourage multi-sector collaborations to achieve population health

DGAC Report: Integration and Recommendations Overall Findings Q1-6

Composition of 3 USDA Patterns at the 2000 calorie level MODELING

<table>
<thead>
<tr>
<th>Food group</th>
<th>Healthy US-style</th>
<th>Healthy Vegetarian</th>
<th>Healthy Med-style</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Daily/weekly amounts</td>
<td>Daily/weekly amounts</td>
<td>Daily/weekly amounts</td>
</tr>
<tr>
<td>Fruit</td>
<td>2 c</td>
<td>2 c</td>
<td>2 ½ c</td>
</tr>
<tr>
<td>Vegetables</td>
<td>2 ½ c</td>
<td>2 ½ c</td>
<td>2 ½ c</td>
</tr>
<tr>
<td>-Legumes</td>
<td>1 ½ c per wk</td>
<td>3 c per wk</td>
<td>1 ½ c per wk</td>
</tr>
<tr>
<td>Whole Grains</td>
<td>3 oz eq</td>
<td>3 oz eq</td>
<td>3 oz eq</td>
</tr>
<tr>
<td>Dairy</td>
<td>3 c</td>
<td>3 c</td>
<td>2 c</td>
</tr>
<tr>
<td>Protein Foods</td>
<td>5 ½ oz eq</td>
<td>3 ½ oz eq</td>
<td>6 ½ oz eq</td>
</tr>
<tr>
<td>Meat</td>
<td>12 ½ oz eq/wk</td>
<td>--</td>
<td>12 ½ oz eq/wk</td>
</tr>
<tr>
<td>Poultry</td>
<td>10 ½ oz eq/wk</td>
<td>--</td>
<td>10 ½ oz eq/wk</td>
</tr>
<tr>
<td>Seafood</td>
<td>8 oz eq/wk</td>
<td>--</td>
<td>15 oz eq/wk</td>
</tr>
<tr>
<td>Eggs</td>
<td>3 oz eq/wk</td>
<td>3 oz eq/wk</td>
<td>3 oz eq/wk</td>
</tr>
<tr>
<td>Nuts/seeds</td>
<td>4 oz eq/wk</td>
<td>7 oz eq/wk</td>
<td>4 oz eq/wk</td>
</tr>
<tr>
<td>Processed soy</td>
<td>½ oz eq/wk</td>
<td>8 oz eq/wk</td>
<td>½ oz eq/wk</td>
</tr>
<tr>
<td>Oils</td>
<td>27 g</td>
<td>27 g</td>
<td>27 g</td>
</tr>
</tbody>
</table>

DGAC Report: Integration and Recommendations Overall Findings Q7
**Nutrients in Patterns at the 2000 calorie level**

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Healthy US-style</th>
<th>Healthy Vegetarian</th>
<th>Healthy Med-style</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein - %RDA</td>
<td>198%</td>
<td>155%</td>
<td>194%</td>
</tr>
<tr>
<td>Protein - %kcal</td>
<td>18%</td>
<td>14%</td>
<td>18%</td>
</tr>
<tr>
<td>Fat - %kcal</td>
<td>33%</td>
<td>34%</td>
<td>32%</td>
</tr>
<tr>
<td>Saturated fat - %kcal</td>
<td>8%</td>
<td>8%</td>
<td>8%</td>
</tr>
<tr>
<td>CHO - %RDA</td>
<td>197%</td>
<td>211%</td>
<td>199%</td>
</tr>
<tr>
<td>CHO - %kcal</td>
<td>51%</td>
<td>55%</td>
<td>52%</td>
</tr>
<tr>
<td>Fiber - % goal</td>
<td>109%</td>
<td>126%</td>
<td>112%</td>
</tr>
<tr>
<td>Calcium - %RDA</td>
<td>127%</td>
<td>133%</td>
<td>100%</td>
</tr>
<tr>
<td>Iron - %RDA</td>
<td>93%</td>
<td>96%</td>
<td>95%</td>
</tr>
<tr>
<td>Vitamin D - %RDA</td>
<td>46%</td>
<td>37%</td>
<td>42%</td>
</tr>
<tr>
<td>Potassium - %AI</td>
<td>71%</td>
<td>70%</td>
<td>71%</td>
</tr>
<tr>
<td>Sodium - %UL</td>
<td>76%/78%</td>
<td>61%</td>
<td>72%/73%</td>
</tr>
</tbody>
</table>

**Healthy Dietary Patterns % Added Sugars**

**2015 DGAC Food Pattern Modeling: Added sugars available in the USDA Food Patterns (Healthy U.S.-Style, Healthy Mediterranean-Style, and Vegetarian Patterns) in calories, teaspoons, and percent of total calories per day**

<table>
<thead>
<tr>
<th>CALORIE LEVEL</th>
<th>1000</th>
<th>1200</th>
<th>1400</th>
<th>1600</th>
<th>1800</th>
<th>2000</th>
<th>2200</th>
<th>2400</th>
<th>2600</th>
<th>2800</th>
<th>3000</th>
<th>3200</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Healthy U.S.-style</td>
<td>68</td>
<td>50</td>
<td>50</td>
<td>54</td>
<td>77</td>
<td>122</td>
<td>126</td>
<td>158</td>
<td>171</td>
<td>180</td>
<td>212</td>
<td>275</td>
</tr>
<tr>
<td>Healthy Med-style</td>
<td>63</td>
<td>50</td>
<td>50</td>
<td>81</td>
<td>72</td>
<td>117</td>
<td>126</td>
<td>135</td>
<td>149</td>
<td>158</td>
<td>194</td>
<td>257</td>
</tr>
<tr>
<td>Vegetarian</td>
<td>77</td>
<td>77</td>
<td>81</td>
<td>81</td>
<td>81</td>
<td>131</td>
<td>131</td>
<td>158</td>
<td>158</td>
<td>158</td>
<td>185</td>
<td>234</td>
</tr>
<tr>
<td>Average</td>
<td>69</td>
<td>59</td>
<td>60</td>
<td>72</td>
<td>77</td>
<td>123</td>
<td>128</td>
<td>150</td>
<td>159</td>
<td>165</td>
<td>197</td>
<td>255</td>
</tr>
<tr>
<td>Average (tsp)</td>
<td>4.3</td>
<td>3.7</td>
<td>3.8</td>
<td>4.5</td>
<td>4.8</td>
<td>7.7</td>
<td>8.0</td>
<td>9.4</td>
<td>9.9</td>
<td>10.3</td>
<td>12.3</td>
<td>15.9</td>
</tr>
</tbody>
</table>

**DGAC Report: Integration and Recommendations Overall Findings Q7**
Healthy Lifestyle Recommendations
SC2-5

- Policies and interventions to promote health at individual and population levels should:
  - be bold, creative and evidence-based
  - bring together new partnerships across sectors, settings, and disciplines
  - build upon the evidence base of sound diet, physical activity and behavioral approaches
  - Be tailored to individuals and communities
    - biological and health needs
    - dietary preferences
    - cultural traditions
- Encourage and facilitate healthy dietary patterns and regular physical activity

DGAC Report: Integration and Recommendations Overall Findings Q8-9

SC 5 Topics/Questions Addressed

Sustainable Diets
- Dietary Patterns
- Seafood
  - Modified NEL Systematic Review
  - Data Analysis
  - Existing Reports

Food Safety
- Coffee and caffeine
- Aspartame
- Consumer behaviors
  - Systematic Reviews/Meta-Analyses
  - Existing Reports
  - Topic update from 2010 DGAC

Food Sustainability and Safety Q10
**SC5 Major Conclusions & Recommendations**

**Sustainability**

**Dietary Patterns and Sustainability**

A dietary pattern higher in plant-based foods, such as vegetables, fruits, whole grains, legumes, nuts, and seeds, and lower in animal-based foods is more health promoting and is associated with lesser environmental impact than is the current average U.S. diet.

The U.S. population should be encouraged to move towards the dietary pattern noted above while decreasing overall total calories. This can be achieved through a variety of dietary patterns, including the Healthy U.S.-style Pattern, the Healthy Vegetarian Pattern, and the Healthy Mediterranean-style Pattern. Each of these patterns provides more plant-based foods and lower amounts of meat than are currently consumed by the U.S. population.

**Healthy Dietary Patterns: SC2 and SC5**

- Healthy dietary patterns are **causally linked** to diverse, favorable health outcomes
- Healthy dietary patterns are **associated** with better environmental outcomes (including land, water and resource use)
- Opportunities exist to align these data in developing innovative consumer awareness and educational strategies to promote healthy dietary patterns at individual and population levels

DGAC Report: Integration and Recommendations Overall Findings_ Q4_10
Creating a Culture of Health
DGAC Report:
Integration & Recommendations

Key Components for a Culture of Health

- Population health is a national priority
- Healthy 'lifestyle' resources are accessible, affordable & normative
- Health care and public health professionals take leadership roles in prevention; set new 'systems-wide' standards to promote health in patients, clients and staff; and offer/refer to sound nutrition and lifestyle behavior services and programs
- Health care and public health systems shift their paradigms towards a greater emphasis on prevention
- Initiatives and incentives are offered through public and private policies and settings (including health insurance, worksites and other settings) to emphasize personal health promotion, disease prevention and weight management
- Collaborations take place across societal sectors to promote population health
- Incentives are enacted to encourage initiatives, environmental and policy changes, improved food/beverage standards and products, and preventive services
**Actions for Individuals, Families, and Households**

- Take action to promote personal and household/family health
- Know and understand how to modify personal diet and physical activity to reduce individual and family/household health risks
- Achieve a healthy dietary pattern through healthy food and beverage choices rather than nutrient or dietary supplements
- Use available ‘Dietary Guidelines for Americans’ tools and other sound resources to initiate positive personal lifestyle changes to improve dietary and physical activity behaviors, including goal setting and self-monitoring

DGAC Report: Integration and Recommendations

---

**Actions for Communities and Populations**

- Aim to make healthy lifestyles and prevention a national and local priority and reality
- Seek paradigm shifts in health care and public health toward a greater focus on prevention
- Establish healthy food environments (schools, worksites, early child care settings, etc.)
- Integrate food and agricultural systems with community health systems and other settings

DGAC Report: Integration and Recommendations
Actions for Communities and Populations

- Support and expand access to healthy built environments and advocate wide community use
- Maintain strong support for Federal food and nutrition programs
- Recognize and place priority on moving toward a more sustainable diet consistent with the healthy dietary pattern options. Understand and promote that access to sufficient, nutritious, and safe foods are an essential element of food security for the U.S. population. A sustainable diet helps ensure this access for both the current population and future generations.

DGAC Report: Integration and Recommendations

Contextual factor considerations - SC3

1. Provide continuous support of Federal programs to help alleviate the consequences of household food insecurity

2. Food and nutrition assistance programs should take into account the risk that immigrants have of giving up their healthier dietary habits soon after arriving in the United States

3. Provide all individuals living in the United States with the environments, knowledge, and tools needed to implement effective individual- or family-level behavioral change strategies to improve the quality of their diets and reduce sedentary behaviors

Individual Diet and Physical Activity Behavior Change Q8-9
**Healthy Lifestyle Recommendations**

**SC2-5**

- *Use successful methods of Individual behavior change* – evidence-based tools and effective strategies such as self-monitoring of diet and physical activity, reduced sedentary behavior and screen time and reduced frequency of fast foods and referral to interventions implemented by nutrition professionals in individual or small group settings or comprehensive lifestyle interventions conducted by multidisciplinary teams of trained health professionals.

- *Use sound population level approaches* – targeted environmental and policy changes and standards, collaboration across systems and sectors, use sounds multi-pronged models as seen in day care, schools and corporate worksites, and engagement of parents and families, as appropriate.

---

**Model Intervention Strategies SC4**

Examples of strategies identified in key settings – early care and education, schools, and worksites

- For obesity prevention, effective multi-component interventions incorporated both nutrition and physical activity using a variety of strategies, including:
  - Environmental policies to improve the availability and provision of healthy foods;
  - Increasing opportunities for physical activity;
  - Increased parent engagement (in day care and schools) and
  - Educational approaches (e.g., school curriculum, worksite wellness).

- For multi-component dietary interventions effective strategies include:
  - Nutrition education;
  - Parent engagement (in day care and schools); and
  - Environmental policies (e.g., nutrition standards, food service changes, point-of-purchase information).

---

Food Environment and Settings Q8-9