



# Developing Food Based Dietary Guidelines for Armenia

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# Outline



- Dietary Sufficiency Can Be Met Many Ways
- How Were US Guidelines Developed
  - Nutrient Based Guidance
  - Food Based Guides
- Lessons from the United States
  - Supplementation
  - Fortification
- Food Based Approach for Armenia
- Possible Pitfalls Due to Globalization



Poland: The Sobczynscy family of Konstancin-Jeziorna  
Food expenditure for one week: 582.48 Zlotys or \$151.27



# United States: The Revis family of North Carolina

Food expenditure for one week \$341.98



# Chad: The Aboubakar family of Breidjing Camp

Food expenditure for one week: 685 CFA Francs or \$1.23



# How About an Typical Armenian Meal?



# US Based **Nutrient** Guidance

Developed in 1941 for Military  
To Avoid Nutrient Deficiencies  
(> 30 micronutrients)

**DR**I: Dietary **Reference** Intakes

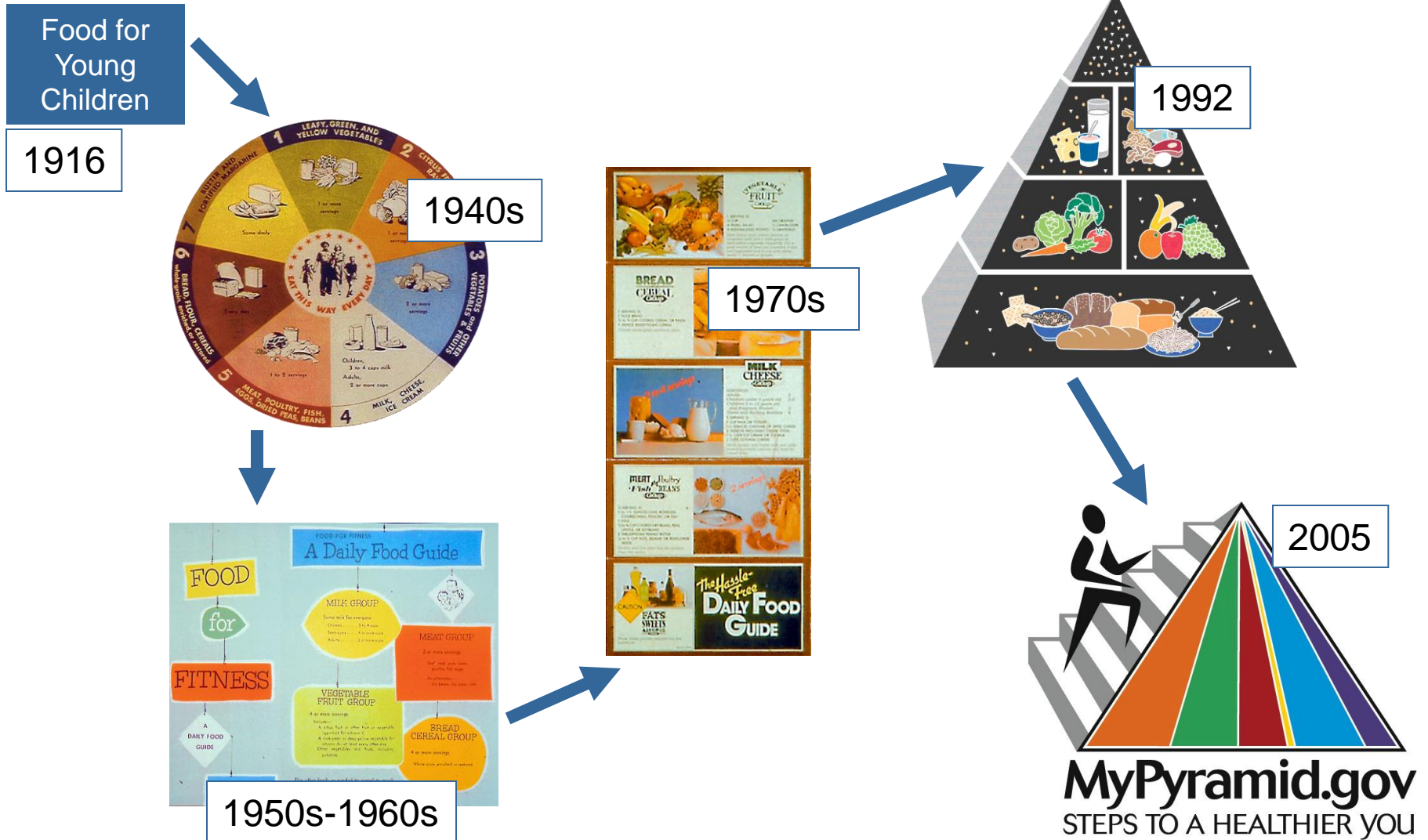
**RD**A: **Recommended** Dietary **Allowance**

**EA**R: Estimated **Average Requirement**

**AI**: **Adequate** Intake

**UL**: Tolerable Upper Intake Level

# History of USDA's Food Guidance





# Current USDA Food Guide



# My Plate Planner

## A Healthy Meal Tastes Great



The Plate Method is a simple way to plan meals for you and your family. You don't have to count anything or read long lists of foods. All you need is a 9-inch plate.



1/4 starch

1/4 protein

1/2 vegetable

1/4 protein. 1/4 starch. 1/2 vegetable.

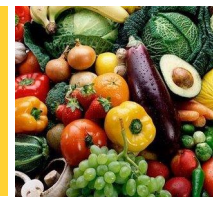
9-inch plate



# Approaches to Optimize Diets

- Supplementation
- Fortification
- Food Based Approach

# Mismatch in Supplement Use



- About ½ of U.S. adults take dietary supplements
- Less than ¼ of supplement intake is recommended by a physician or health care provider

Characteristic	% (SE)
<b>Poverty Income %</b>	
<130	36.6 (0.9)
130-350	46.9 (1.9)
>350	58.9 (1.5)
<b>Smoking</b>	
Never	51.2 (1.2)
Former	59.2 (1.6)
Occasional	36.0 (3.4)
Daily	30.6 (2.0)

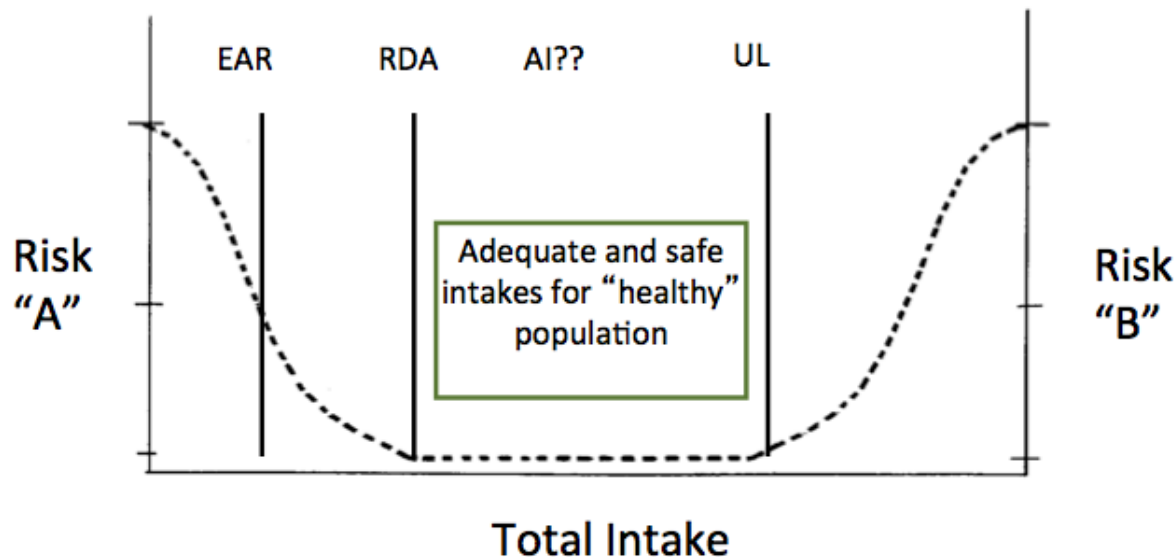
Characteristic	% (SE)
<b>Health insurance</b>	
Yes	53.4 (1.1)
No	30.5 (1.8)
<b>Alcohol Use</b>	
0 drink/day	50.6 (1.3)
1 drink/day	60.1 (1.7)
2 drinks/day	51.0 (1.5)
≥ 3 drinks/day	32.2 (1.7)

Characteristic	% (SE)
<b>Exercise</b>	
Low	42.5 (1.0)
Moderate	53.7 (1.7)
High	56.3 (1.6)
<b>Health Status</b>	
Excellent or very good	54.8 (1.2)
Good	47.1 (1.6)
Fair or poor	43.7 (1.4)

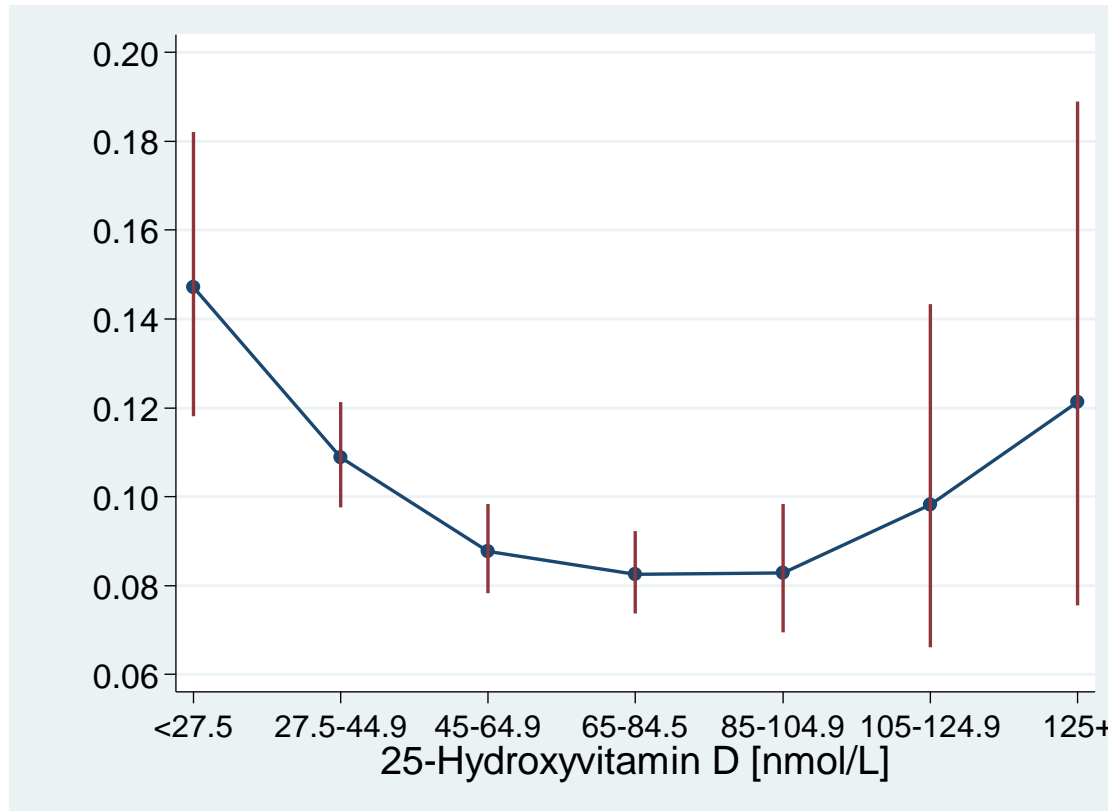
# U Shape Curve & Supplementation Trials



- Lack of standardized approaches to trials
- Trials fail to characterize baseline intake and/or status
- Fundamental flaw - no need to top off a full tank
- More is not better

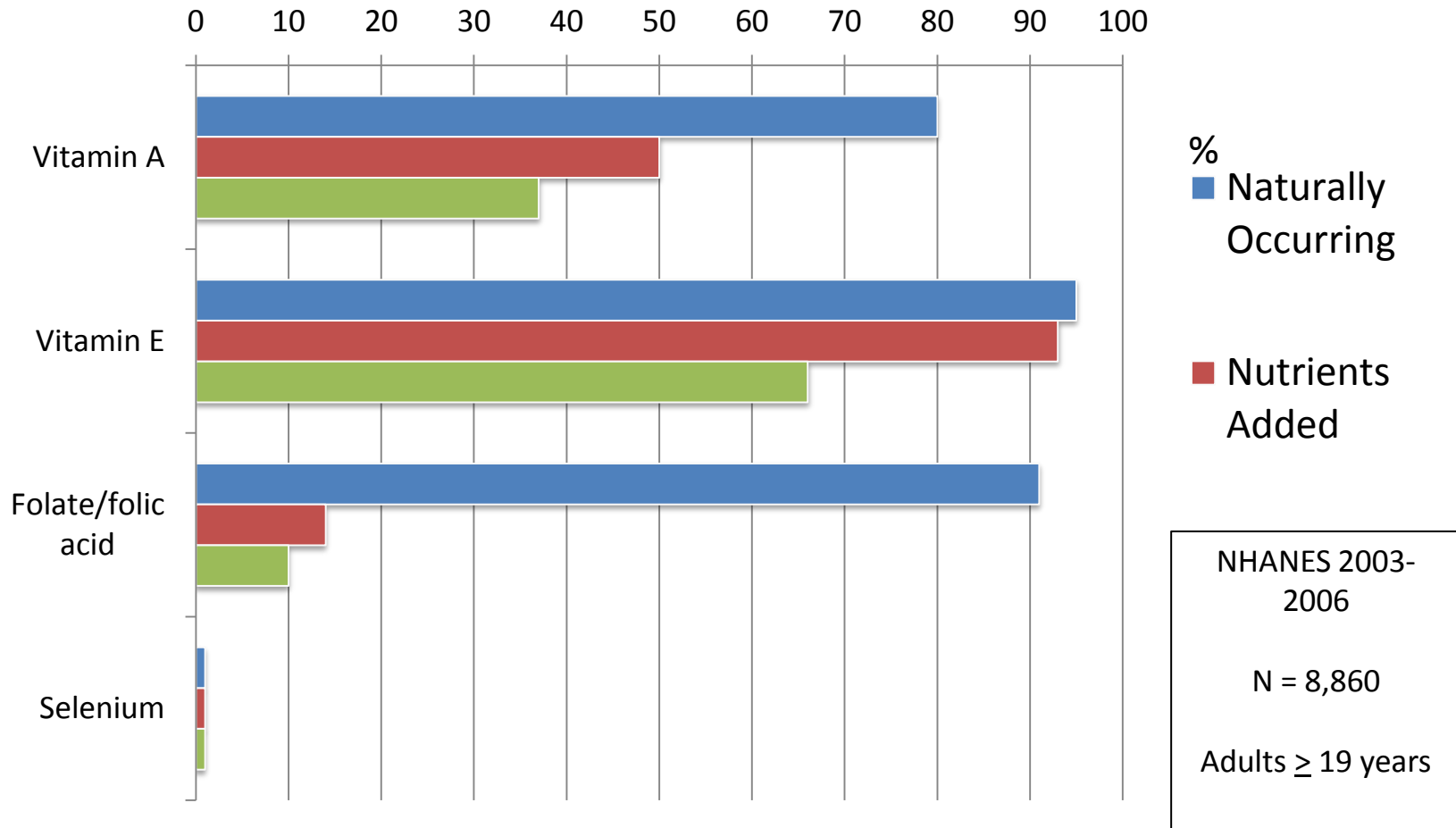


# Vitamin D and All-Cause Mortality

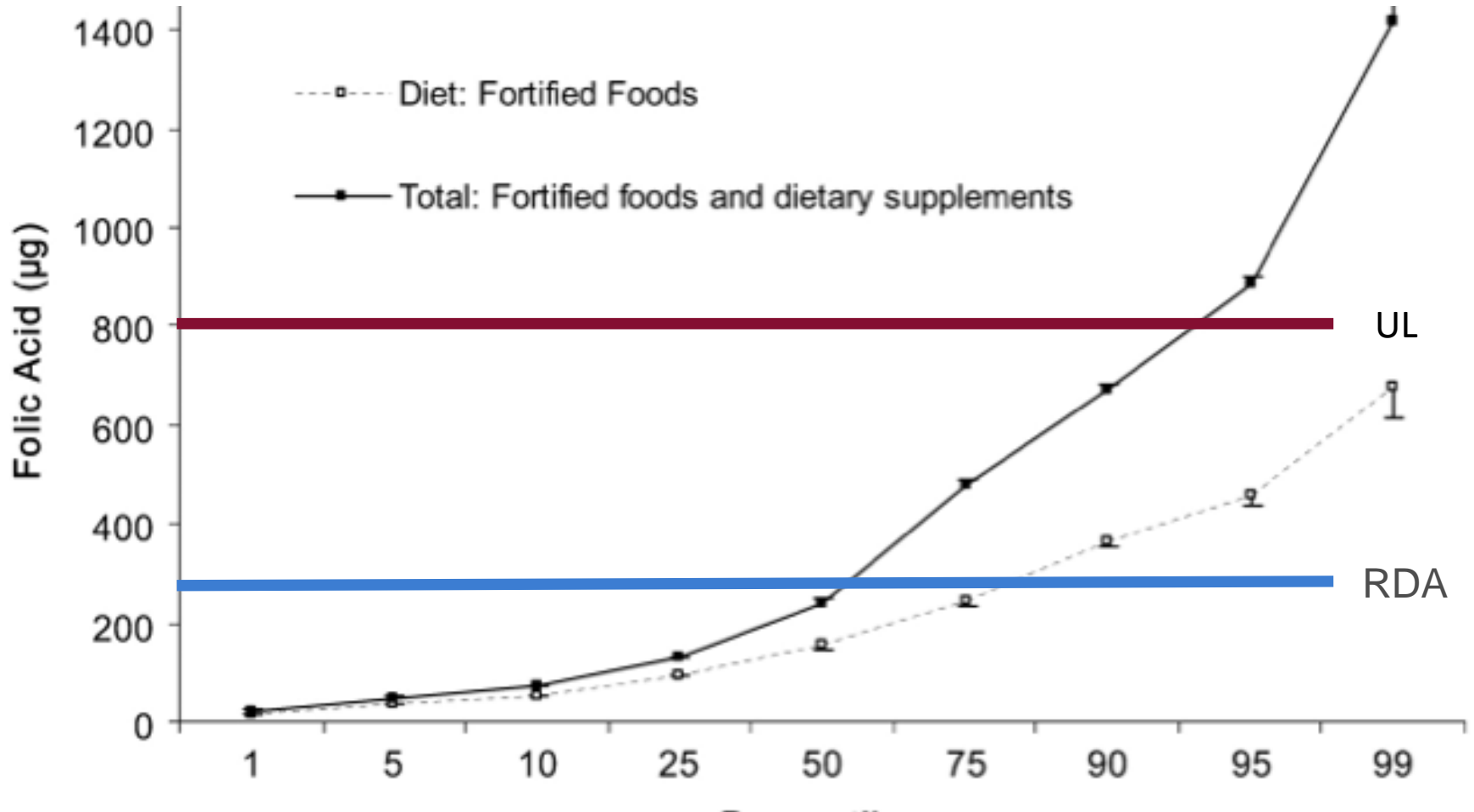


IOM Committee re-analysis of NHANES data:  
Confirmed published U-Shaped Relationship  
(Melamed, Arch Int Med 2008)

# Percentage of Population with Intakes Below EAR



# Folic Acid: >14 years





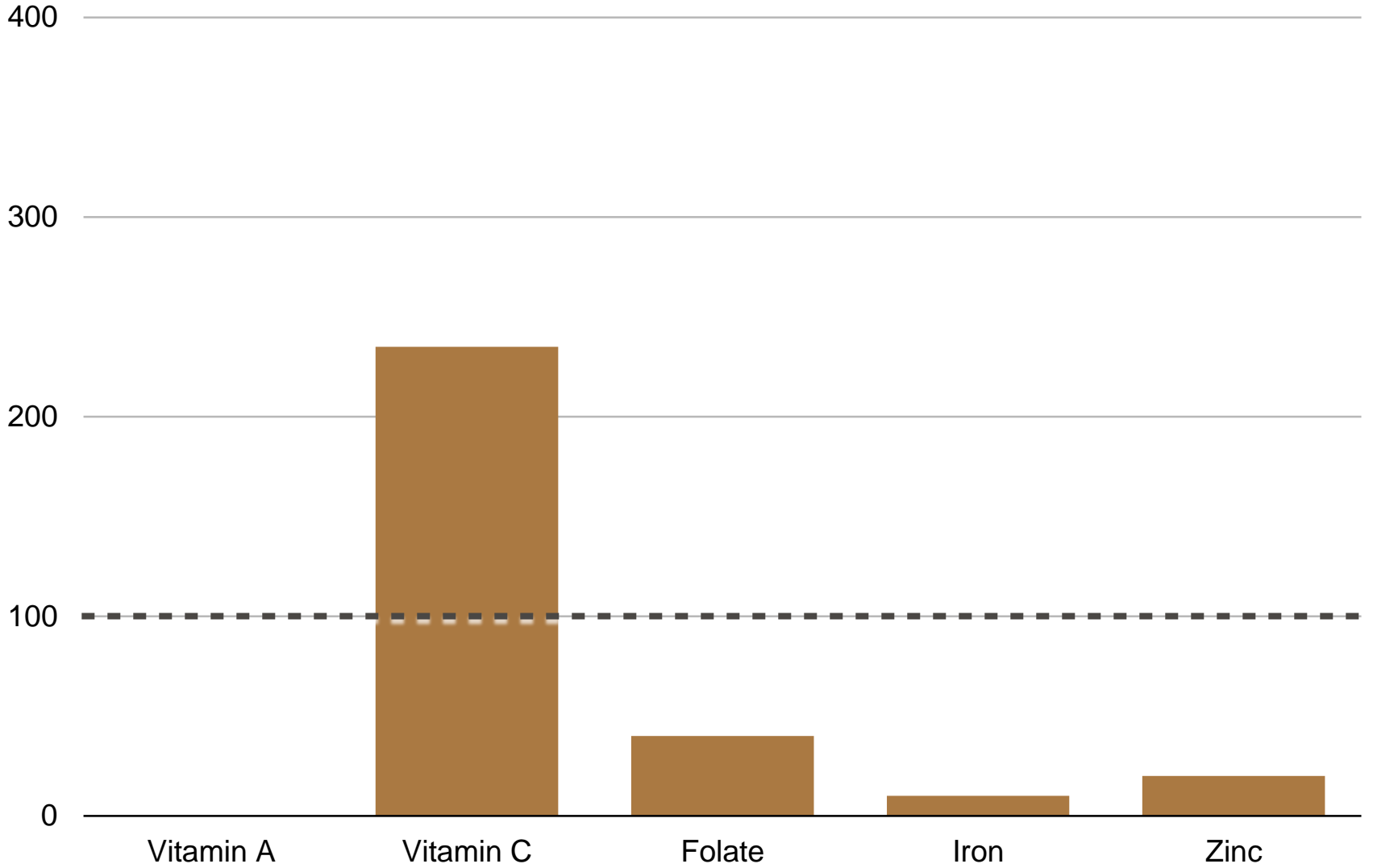
# How to Optimize a Potato Based Diet?



- What are the essential micronutrients that might be missing in a typical Armenian diet?
- Likely to include vit A, vit C, folate, iron, zinc
- What is missing in potato based diets?

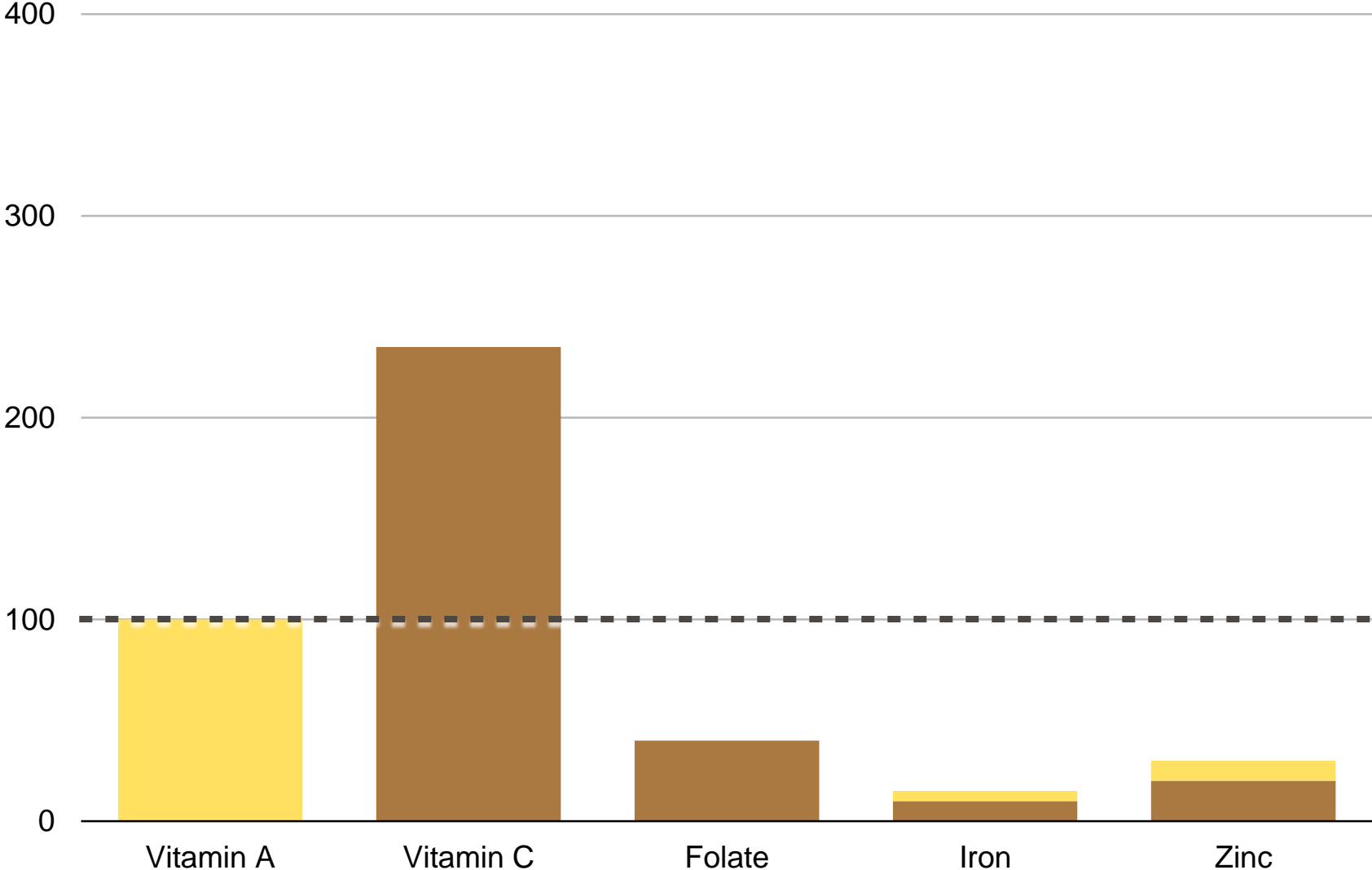
# Potato-Based Diet

■ Potato



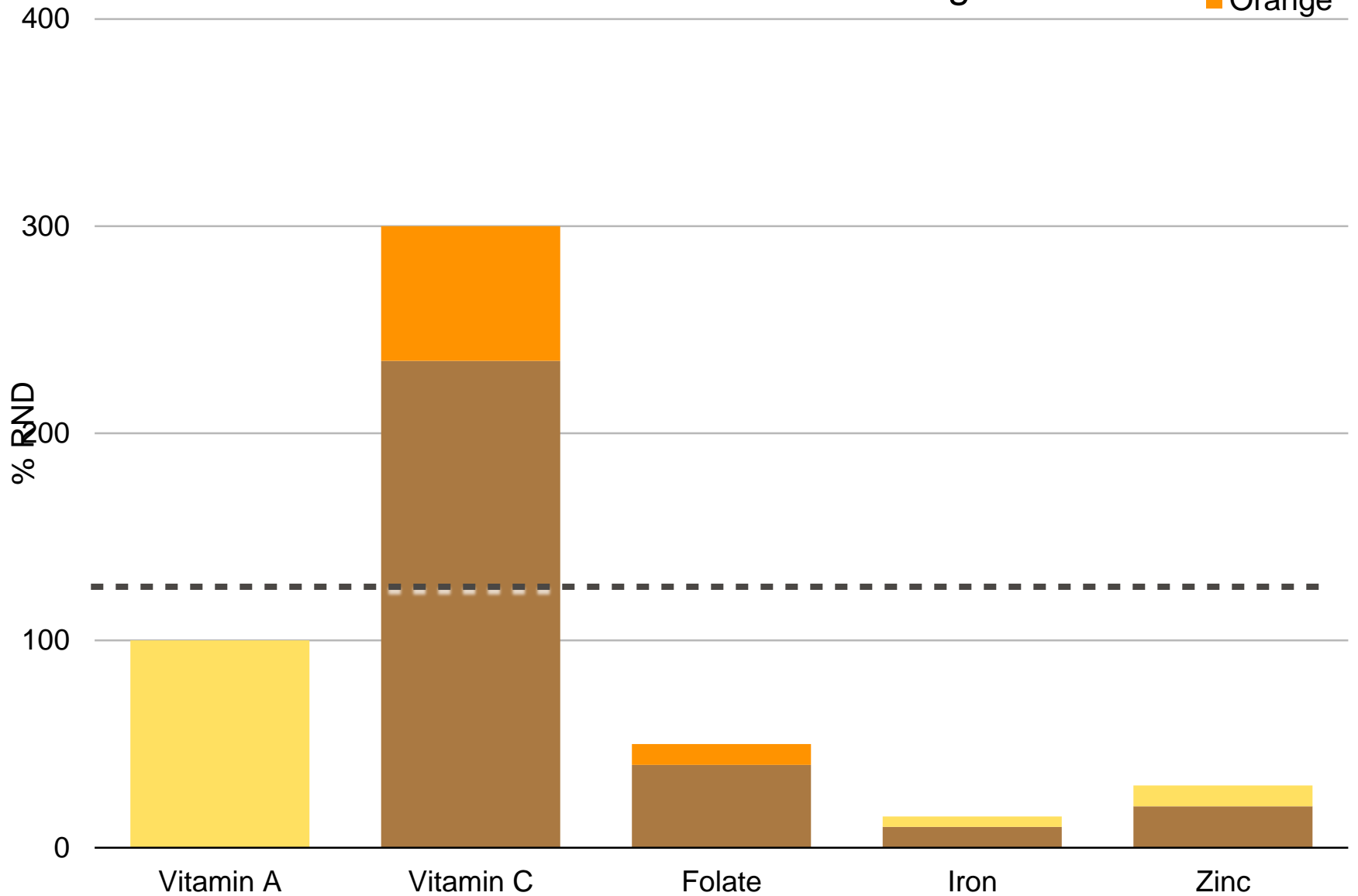
# Potato + Carrots

Potato  
Carrots



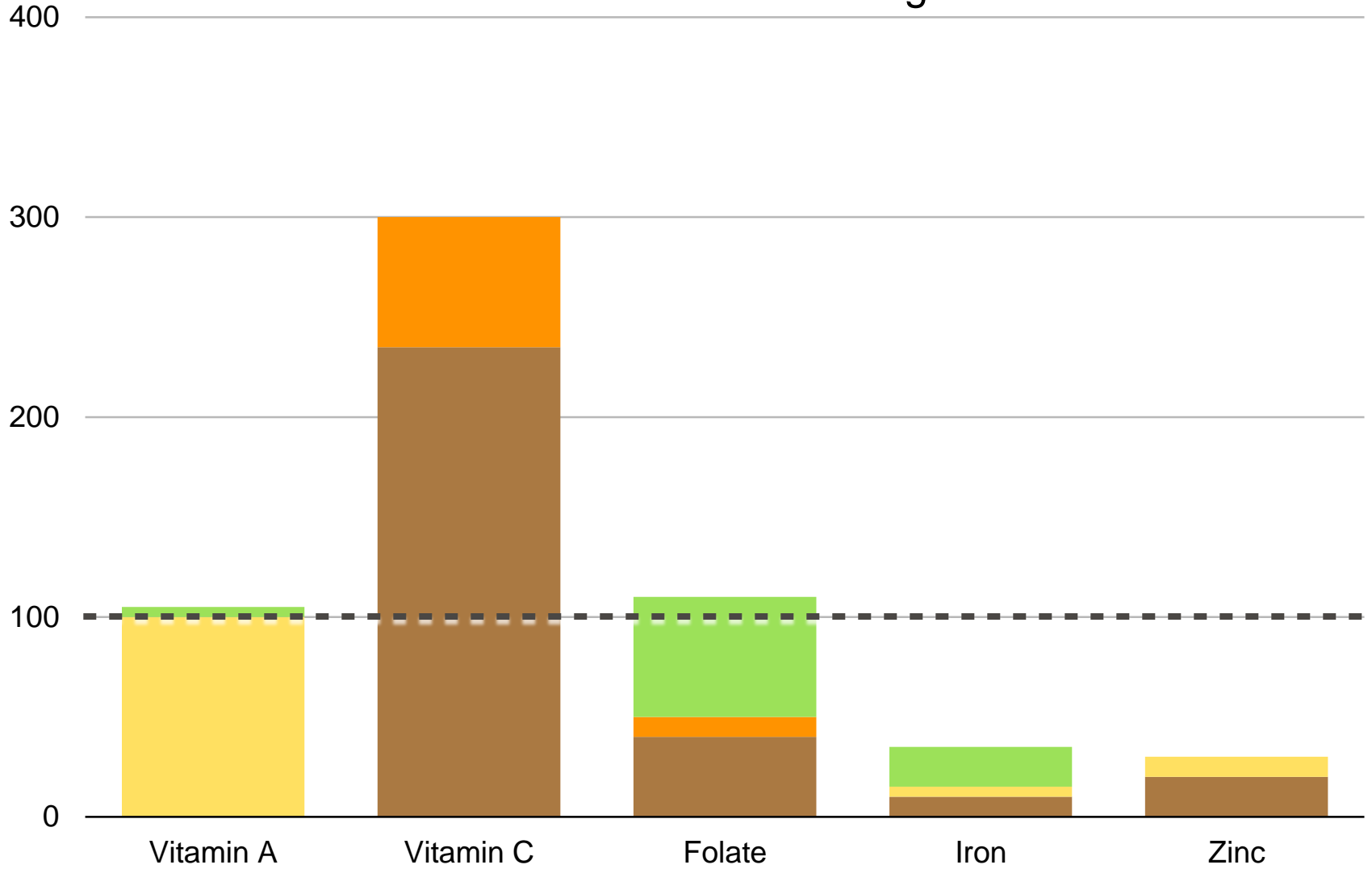
# Potato + Carrots + Orange

- Potato
- Carrots
- Orange



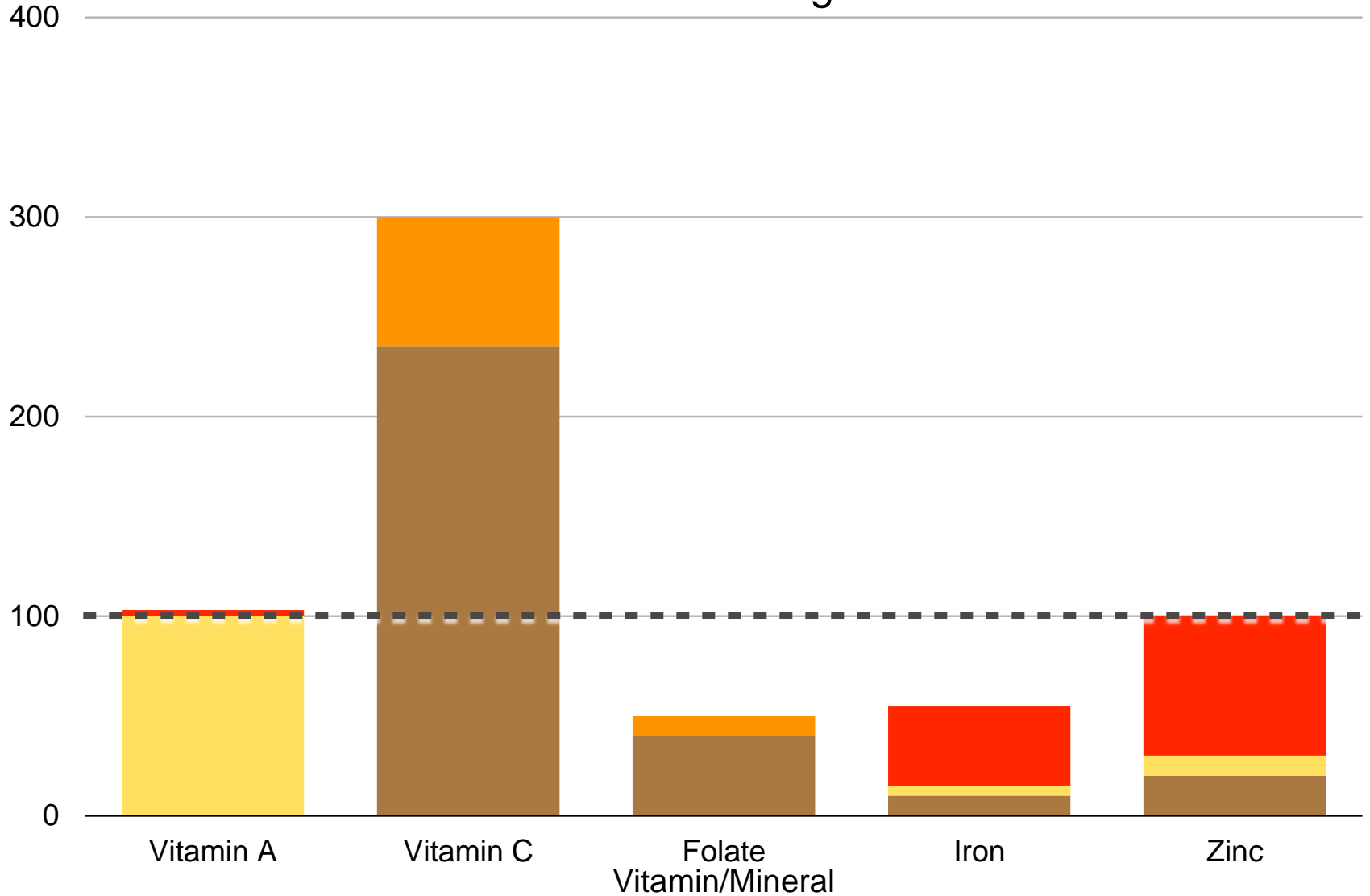
# Potato + Carrots + Orange + Lentils

- Potato
- Carrots



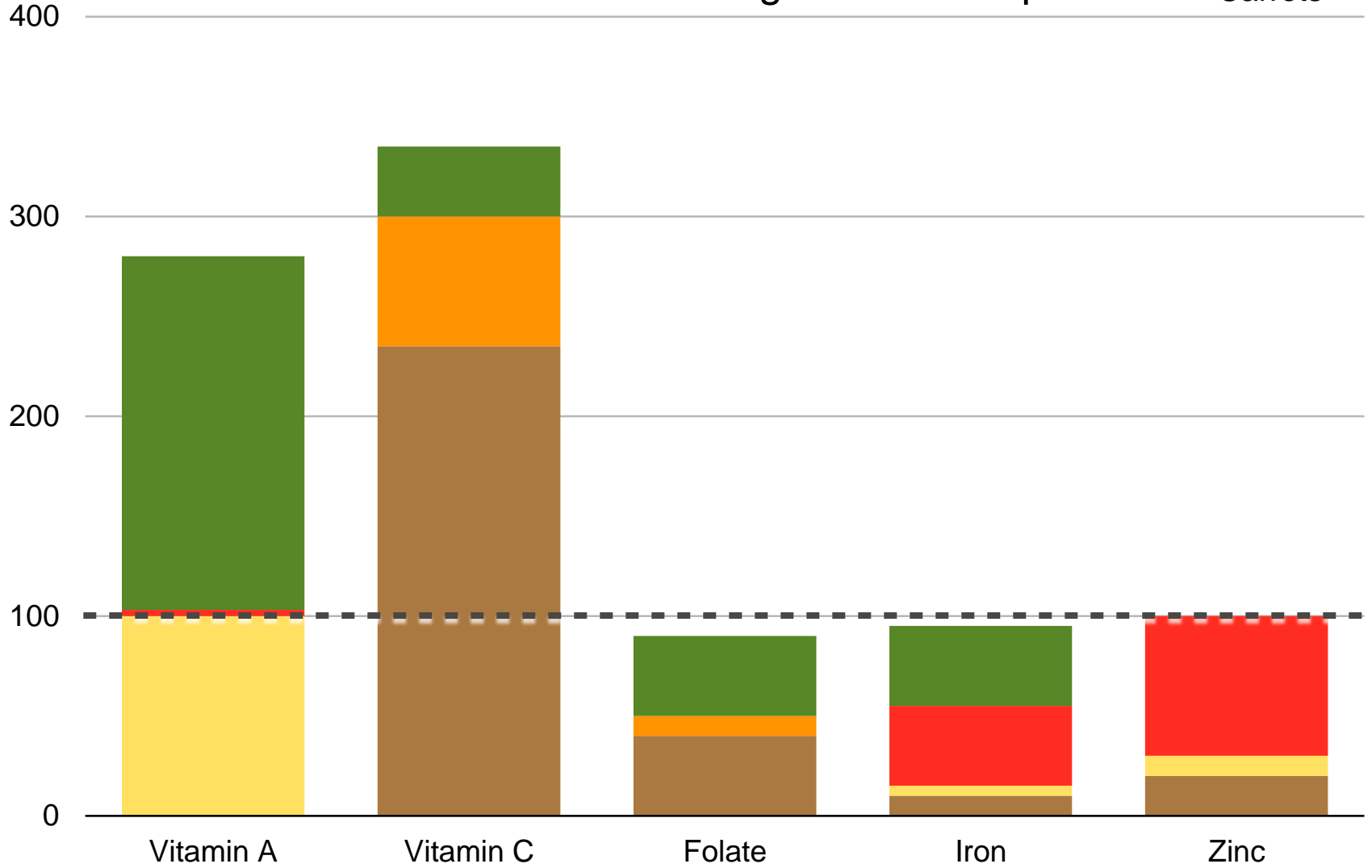
# Potato + Carrots + Orange + Beef

- Potato
- Carrots



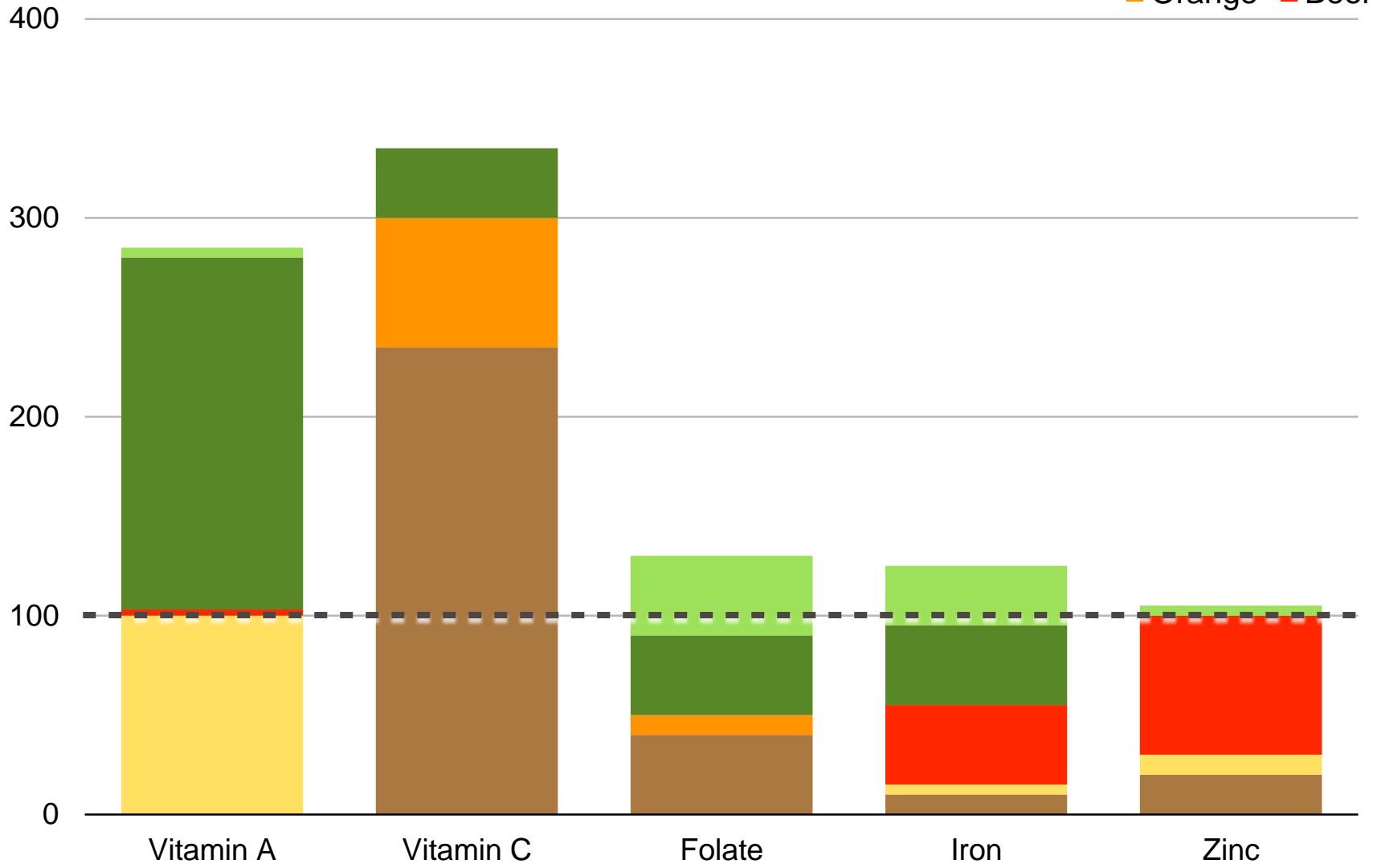
# Potato + Carrots + Orange + Beef + Spinach

- Potato
- Carrots



# Potato + Carrots + Orange + Beef + Spinach + Lentils

- Potato
- Carrots
- Orange
- Beef







[www.youtube.com/watch?v=SEFmSk08LIE](http://www.youtube.com/watch?v=SEFmSk08LIE)

# Mediterranean Diet Pyramid

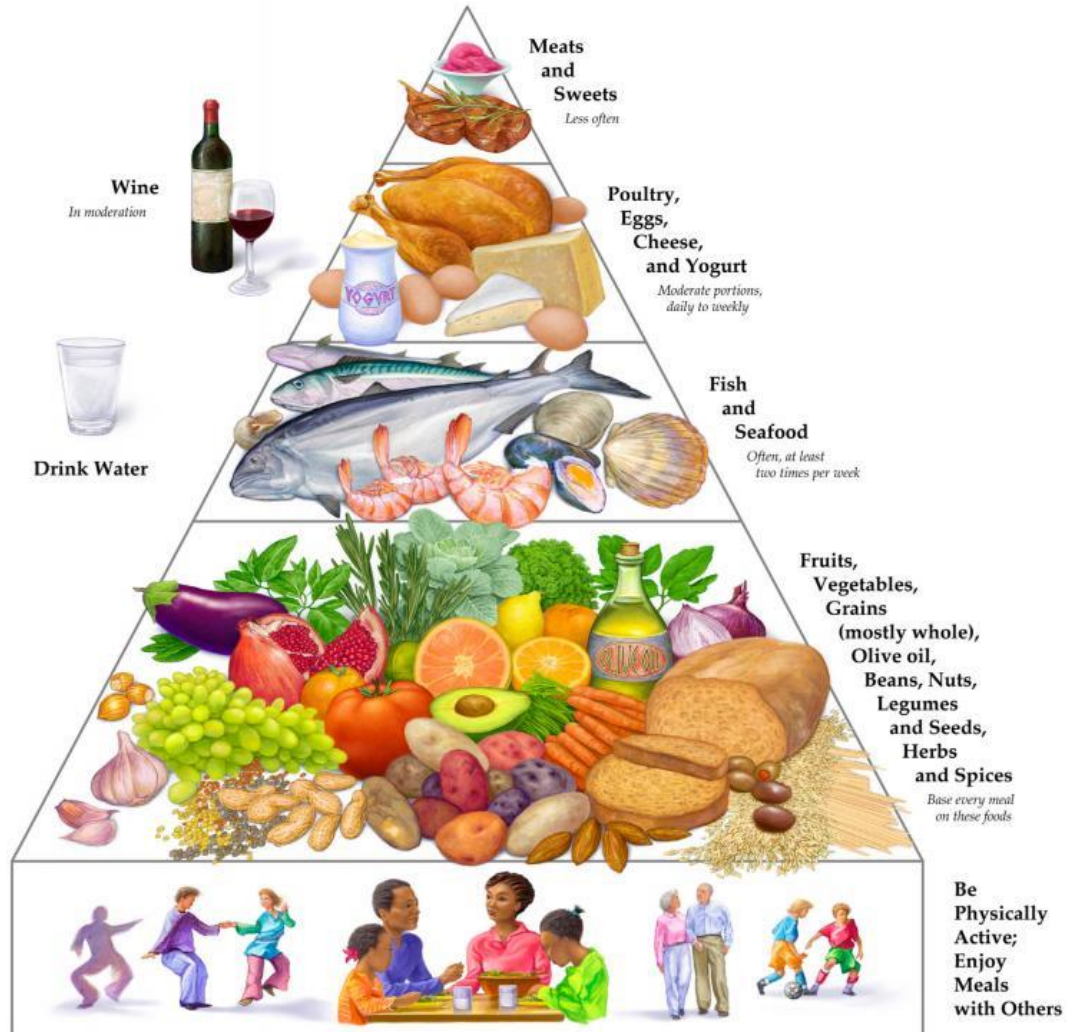


Illustration by George Middleton

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[www.oldwayspt.org](http://www.oldwayspt.org)

Primary messages are consistent across age, gender, ethnicity, culture ... some exceptions but overall the patterns that need to be changed in food and activity are similar ...

General Recommendation	ACS	AHA	ADA	AdA	AAP	USDA/ FDA	
Consume a adequate calories to achieve/maintain desirable weight.	+	+	+	+	+	+	
Maintain intakes of total fat a $\leq$ 30% of total energy, saturated fat at $\leq$ 10% of total energy, and cholesterol at $\leq$ 300 mg per day.	+	+	+	+	+	+	
Eat a variety of foods and emphasize foods from plant sources	+	+	+	+	+	+	
Choose a diet moderate in sugars and salt.	+	+	+	+	+	+	
Maintain adequate levels of physical activity.	+	+	+	+	+	+	
Do not smoke.	+	+	+	+	+	+	
If you drink alcohol, do so in moderation (1-2 drinks per day).	+	+	+	+	NA	+	

**Summary of a Scientific Conference on Preventive Nutrition: Pediatrics to Geriatrics.**  
 Deckelbaum, RJ; et al. Circulation. 100:450-456;1999. (see paper for minor differences)

# What Armenia Can Learn From Our Mistakes

- Centralize Guidance Process in One Agency
- Consider target groups that may differ (seasonally, urban and rural, SES, etc)

# How Can We Keep Armenian Diets Looking Like This, Rather Than....



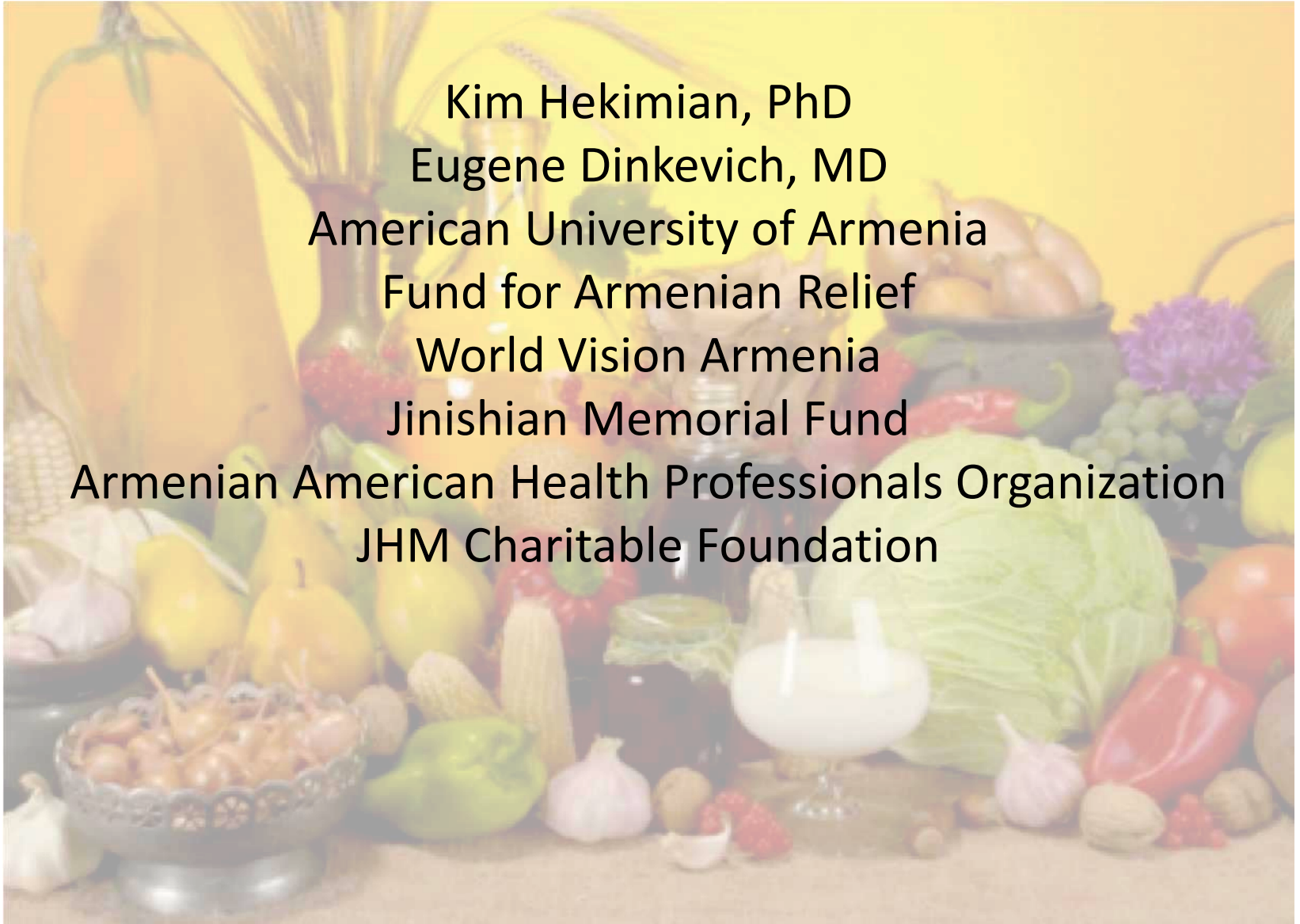
# United States: The Revis family of North Carolina

Food expenditure for one week \$341.98



# Thank you to

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Armenian American Health Professionals Organization  
JHM Charitable Foundation





Everyone can have  
a place at the table



And on the slopes...

