

HSS2342B: Nutritional Determinants of Health

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Objectives of the Course

- Understand healthy eating and current nutritional recommendations through the life cycle;
- Describe the metabolism of nutrients and their role in the human body;
- Understand the biochemical basis of nutrient metabolism;
- Understand the concept of energy balance;
- Demonstrate familiarity with the relationship between nutrients and disease;
- Demonstrate knowledge of the heterogeneity of nutritional status across society;
- Demonstrate knowledge of the role of health promotion in affecting nutritional status.
- Describe the role of health professionals in the field of nutrition (e.g. dietitian, nutritionist etc).

Textbook

Understanding Nutrition, 13th Edition

Ellie Whitney and Sharon Rady Rolfes

Complementary Readings

Nutrition for Health and Health Care, 4th Edition

Whitney, E., L.K. DeBruyne, K. Pinna and S.R.

Rolfes

The Science of Nutrition, 2nd Edition

Thompson, J.L., M.M. Manore and L.A. Vaughan

Course Evaluation

Mid-term 1

Assignments

Final exam

Assignments:

1. Describe role of Calcium in normal growth and development of bones – Due Friday, February 16 at or before 5:30pm.
2. Describe role of dietary plant sterols in reducing risk of coronary heart disease – Due Friday, March 16 at or before 5:30pm.

Each assignment carries 5 marks.

No more than four pages, double spaced, 12-point font, one-inch margins.

Part 2: Topic Outline/Schedule

Date	Topics
Friday, January 12	Introduction, Nutrition, Food Choices, and Dietary Intake Tools (video)
Friday, January 12	Nutrients, DRIs, Digestive system and Digestion
Friday, January 19	Carbohydrates (video)
Friday, January 26	Lipids
Friday, February 2	Protein
Friday, February 2	Absorption and metabolism (video)
Friday, February 9	Energy balance (video)
Friday, February 9	Body fluids (Lecture 10) (video)
Friday, February 16	Minerals – 1
Friday, February 16	Minerals - 2
Friday, February 23	Reading week
Friday, March 2	MIDTERM
Friday, March 9	Vitamins (Fat sol.)
Friday, March 16	Vitamins (Water sol.)
Friday, March 16	Health and disease
Friday, March 23	Phytochemicals, Food allergies
Friday, March 23	Pregnancy (Canada's Food Guide)
Friday, March 30	Good Friday
Friday, April 6	Infancy, childhood and adolescence , Adulthood and ageing
Friday, April 6	Global nutrition

“Nutrition” is the science of foods and the nutrients and other substances they contain, and their actions within the body (including ingestion, digestion, absorption, transport, metabolism and excretion).

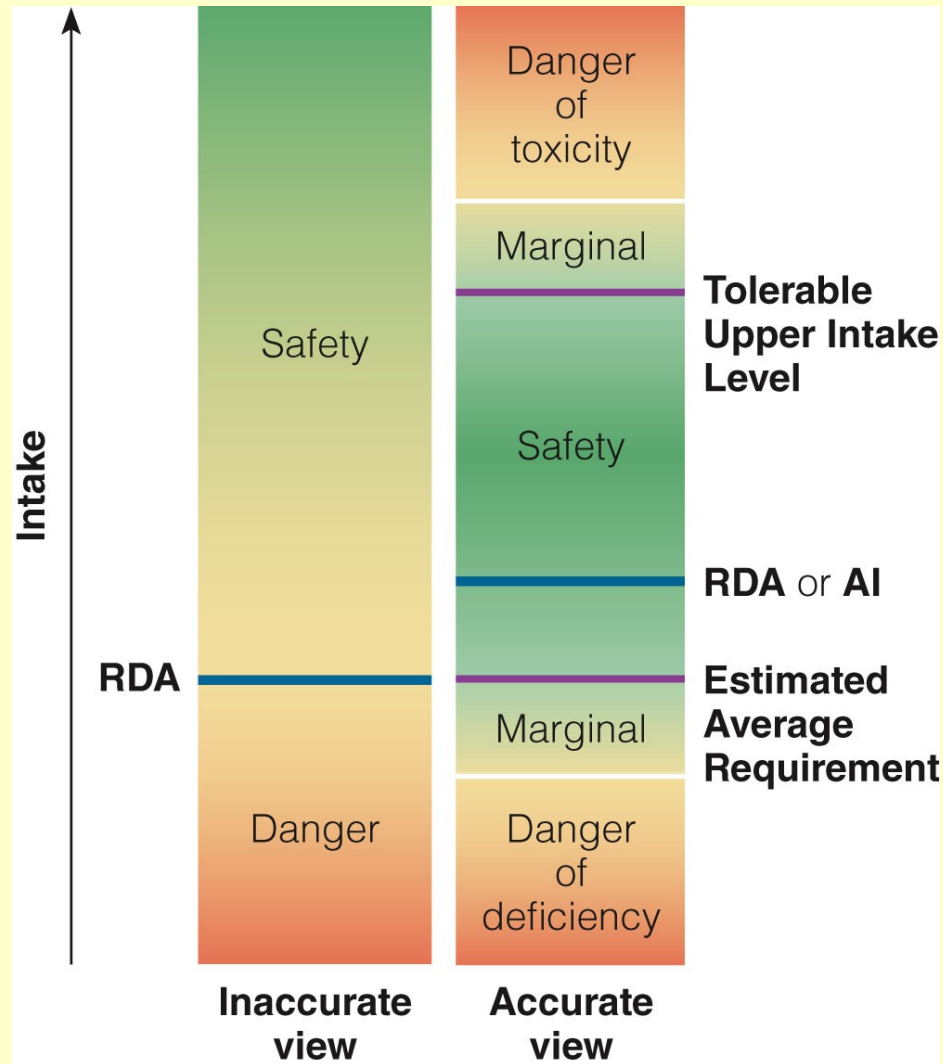
“Food” includes any article manufactured, sold or represented for use as food or drink for human beings, chewing gum, and any ingredient that may be mixed with food for any purpose whatever.

(Canadian Food and Drugs Act)

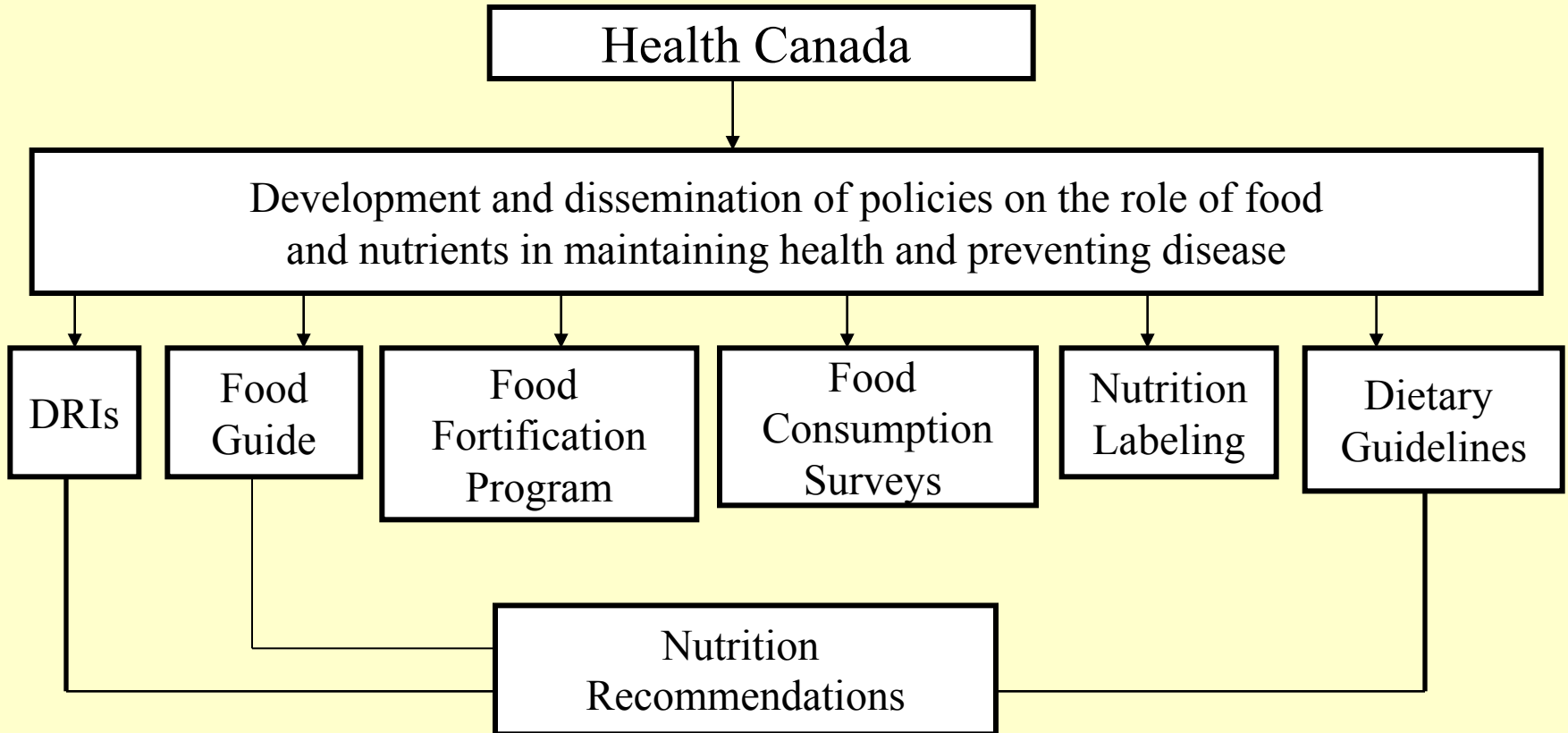
Dietary Reference Intakes

- Standards defined for:
 - Energy nutrients
 - Other dietary components
 - Physical activity
- Collaborative effort of U.S. and Canada
- Recommendations apply to healthy people
 - May be different for specific groups

Dietary Reference Intakes



Nutrition Policy in Canada



Health Canada

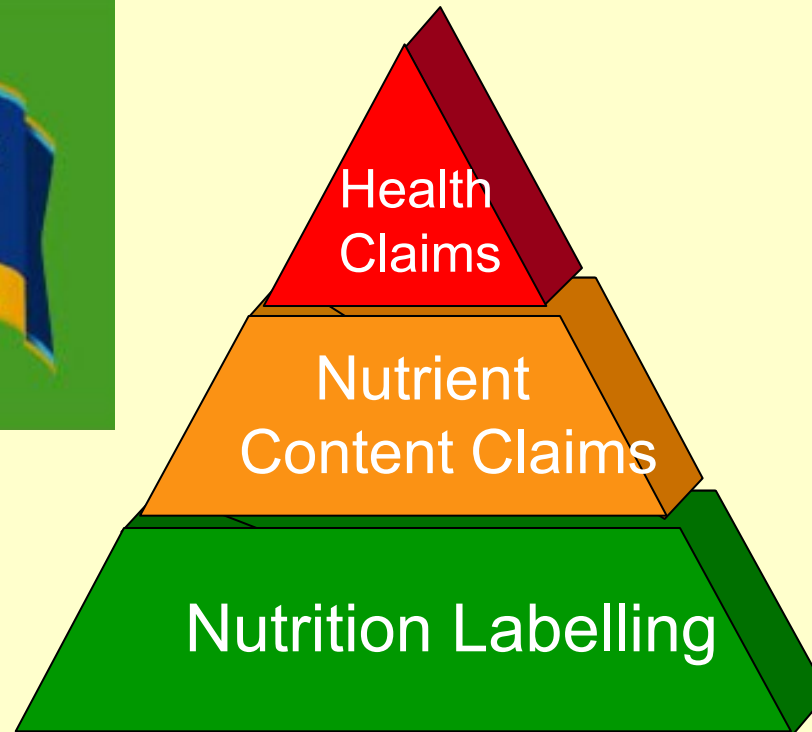
Health Canada's mandate is to help Canadians maintain and improve their health.

Food Fortification in Canada

- **Restoration of losses due to processing**
 - Vitamin A addition to low fat milks
 - B vitamins added to flour
- **Making a substitute food nutritionally adequate relative to the food it replaces**
 - Fortified soy beverages substitute for milk
- **Voluntary fortification** –permission with limits
 - Breakfast cereals, pastas, juices and juice drinks
- **Special purpose foods**
 - Infant formulas, nutritional supplements, meal replacements

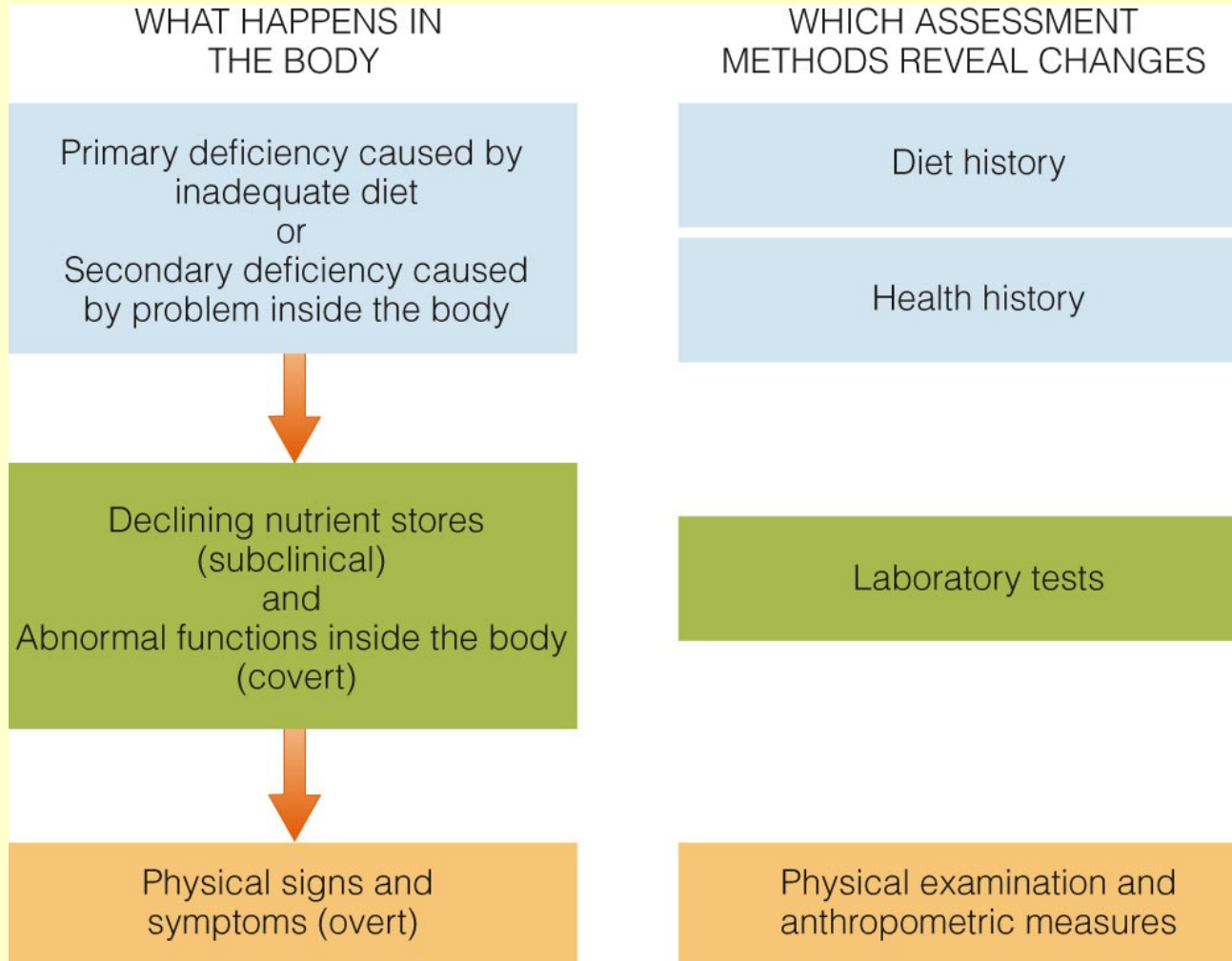
Health Claims in Context

- Health claims are one of several kinds of information provided on food labels alongside:



Nutrition Facts	
Valeur nutritive	
Per 1 bowl (300 g) / Pour 1 bol (300 g)	
Amount Teneur	% Daily Value % valeur quotidienne
Calories / Calories 440	
Fat / Lipides 19 g	29 %
Saturated / Saturés 4 g	21 %
+ Trans / Trans 0.2 g	
Cholesterol / Cholestérol 35 mg	
Sodium / Sodium 860 mg	36 %
Carbohydrate / Glucides 53 g	18 %
Fibre / Fibres 4 g	16 %
Sugars / Sucres 6 g	
Protein / Protéines 15 g	
Vitamin A / Vitamine A	45 %
Vitamin C / Vitamine C	4 %
Calcium / Calcium	20 %
Iron / Fer	20 %

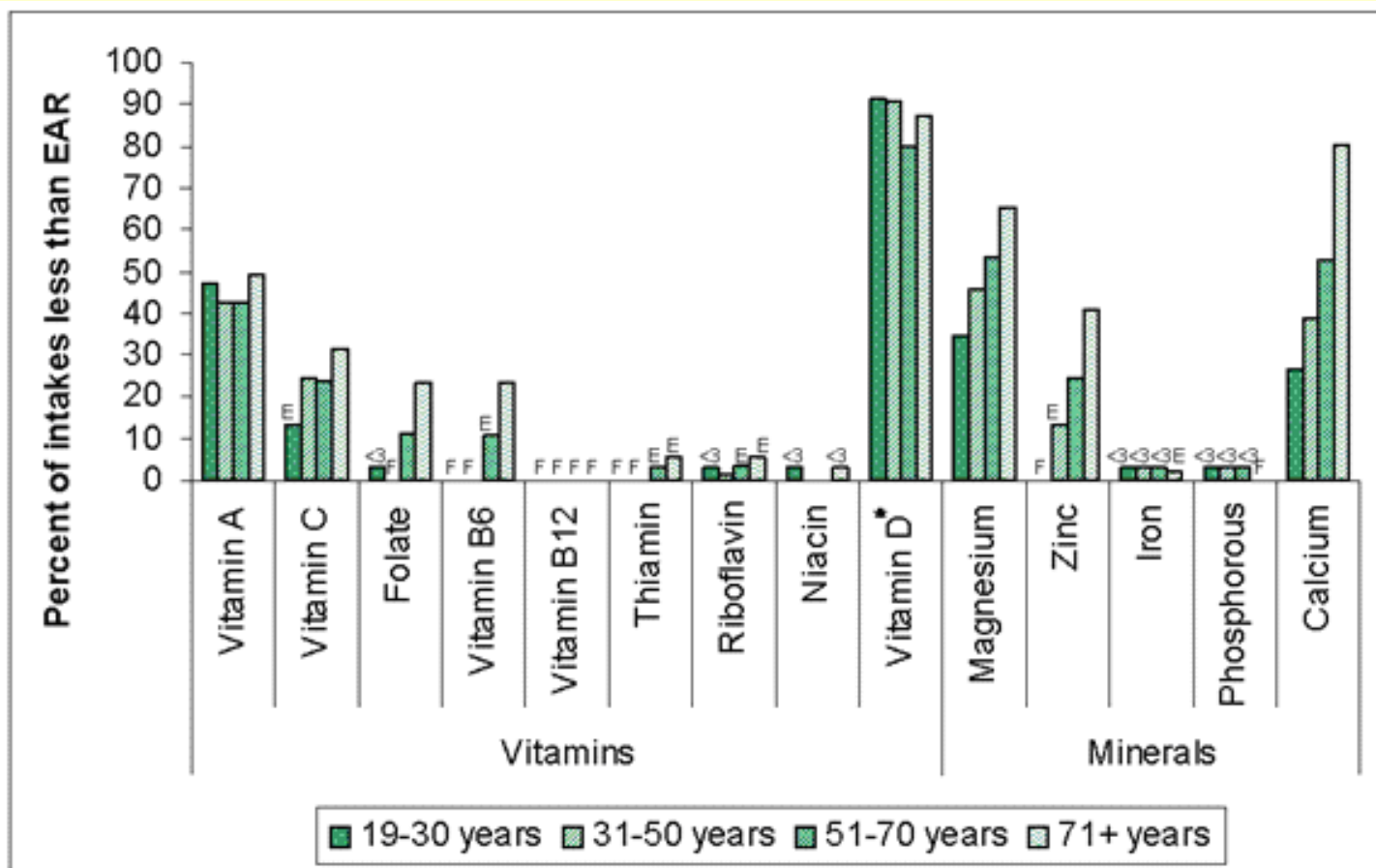
Nutrition Assessment – Individual Level



Nutrition Assessment – Population Level

- National nutrition surveys
 - National nutrition monitoring program
 - Coordinates two major national surveys
 - Oversample high-risk groups
- National health goals
 - Healthy People
- National trends

Nutrient inadequacy among men 19y+ (2004)



Nutrient inadequacy among women 19y+ (2004)

