Healthy Diet

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IUMS



HEALTHY EATING PYRAMID

BALANCED DIET

Water - minimum of 8 SERVINGS

Milk, Yogurt, & Cheese Group 2-3 SERVINGS

Vegetable Group 3-5 SERVINGS

Fruit Group 2-4 SERVINGS

Fats, Oils, & Sweets USE SPARINGLY

Meat, Poultry, Fish, Dry Beans, Eggs, & Nuts Group 2-3 SERVINGS

Bread, Cereal, Rice, & Pasta Group 6-11 SERVINGS

Alcohol in limited quantities

Weight control

Daily exercise

Sleep 7-9 hours

Balanced diet

Coffee Tea

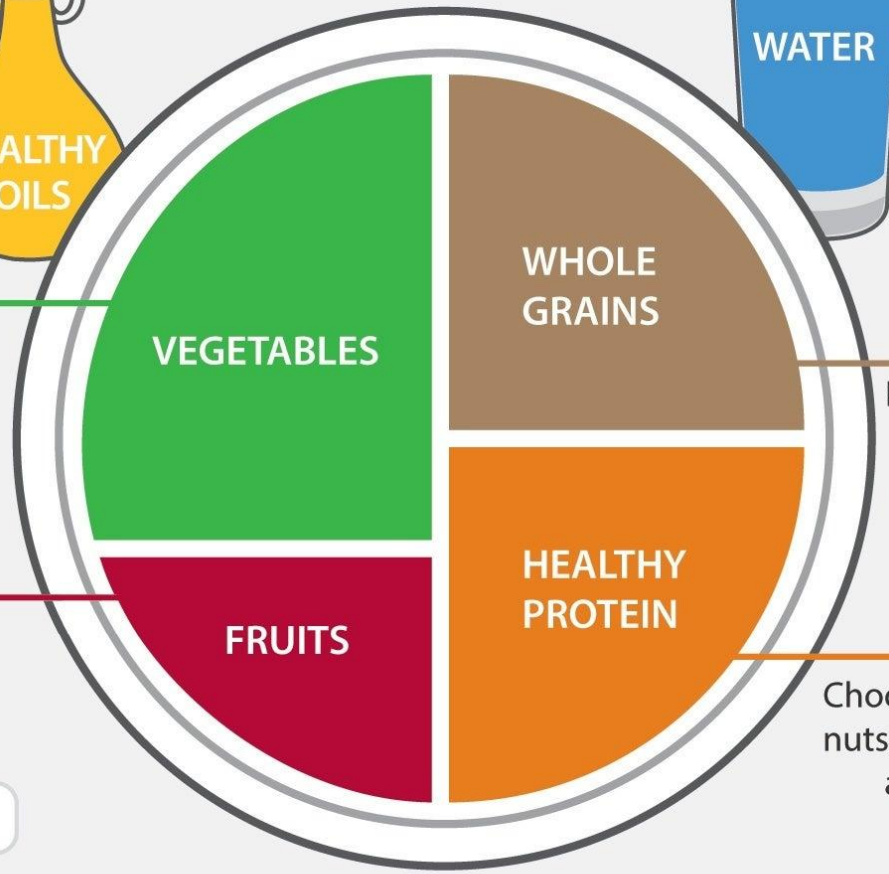
HEALTHY EATING PLATE



Use healthy oils (like olive and canola oil) for cooking, on salad, and at the table. Limit butter. Avoid trans fat.

The more veggies – and the greater the variety – the better. Potatoes and French fries don't count.

Eat plenty of fruits of all colors.



Drink water, tea, or coffee (with little or no sugar). Limit milk/dairy (1-2 servings/day) and juice (1 small glass/day). Avoid sugary drinks.

Eat a variety of whole grains (like whole-wheat bread, whole-grain pasta, and brown rice). Limit refined grains (like white rice and white bread).

Choose fish, poultry, beans, and nuts; limit red meat and cheese; avoid bacon, cold cuts, and other processed meats.



STAY ACTIVE!

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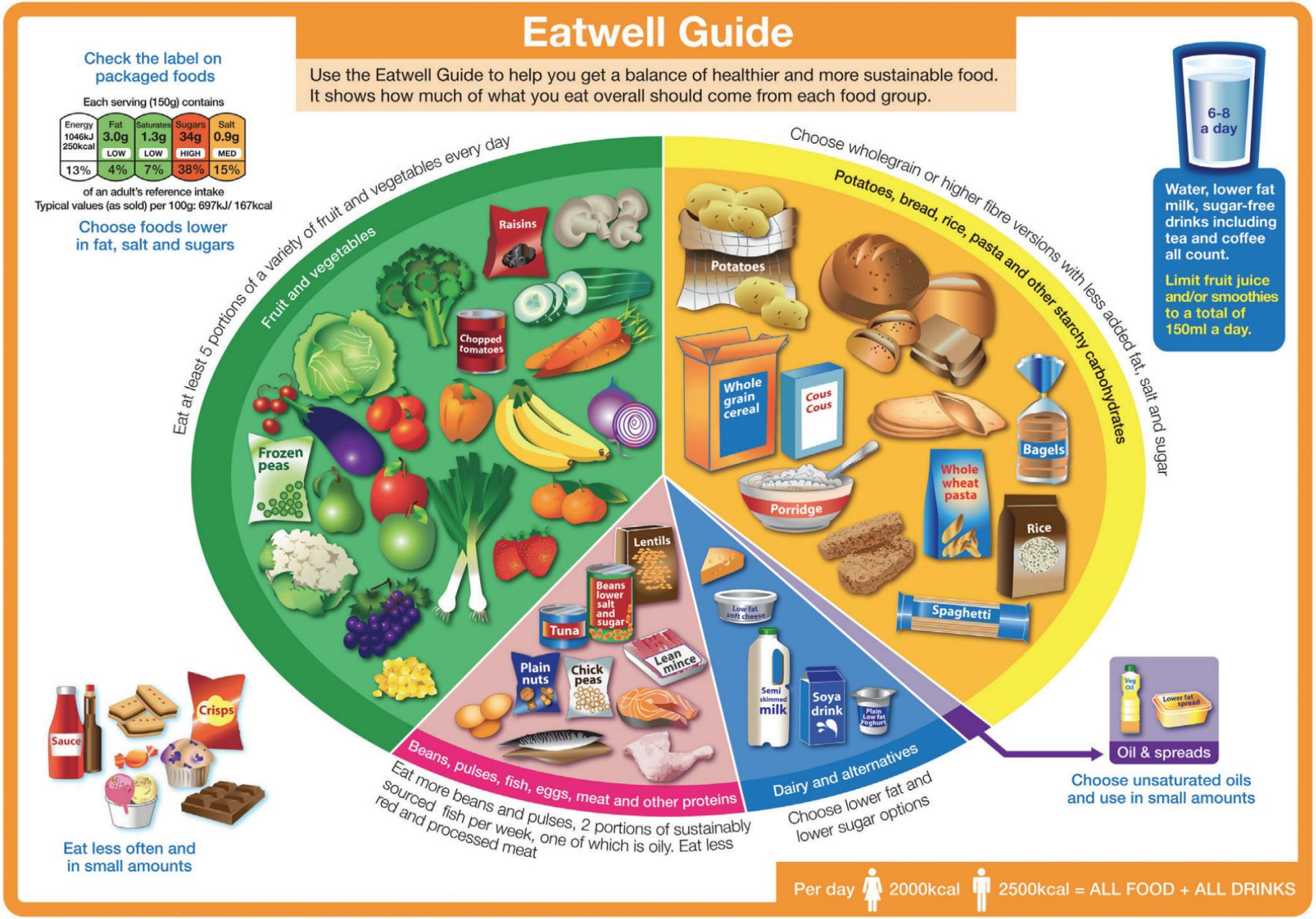


Fig. 10.17 The Eatwell Guide—United Kingdom. (Courtesy Crown copyright. Public Health England in association with the Welsh government, Food Standards Scotland, and the Food Standards Agency in Northern Ireland. Retrieved from https://www.nhs.uk/Livewell/Goodfood/Documents/The-Eatwell-Guide-2016.pdf.)



Fig. 10.5 Australian Guide to Healthy Eating. (Courtesy the Australian Government, National Health and Medical Research Council, Department of Health and Ageing, Retrieved from https://www.eatforhealth.gov.au/sites/default/files/content/The%20Guidelines/n55_agthe_large.pdf.)

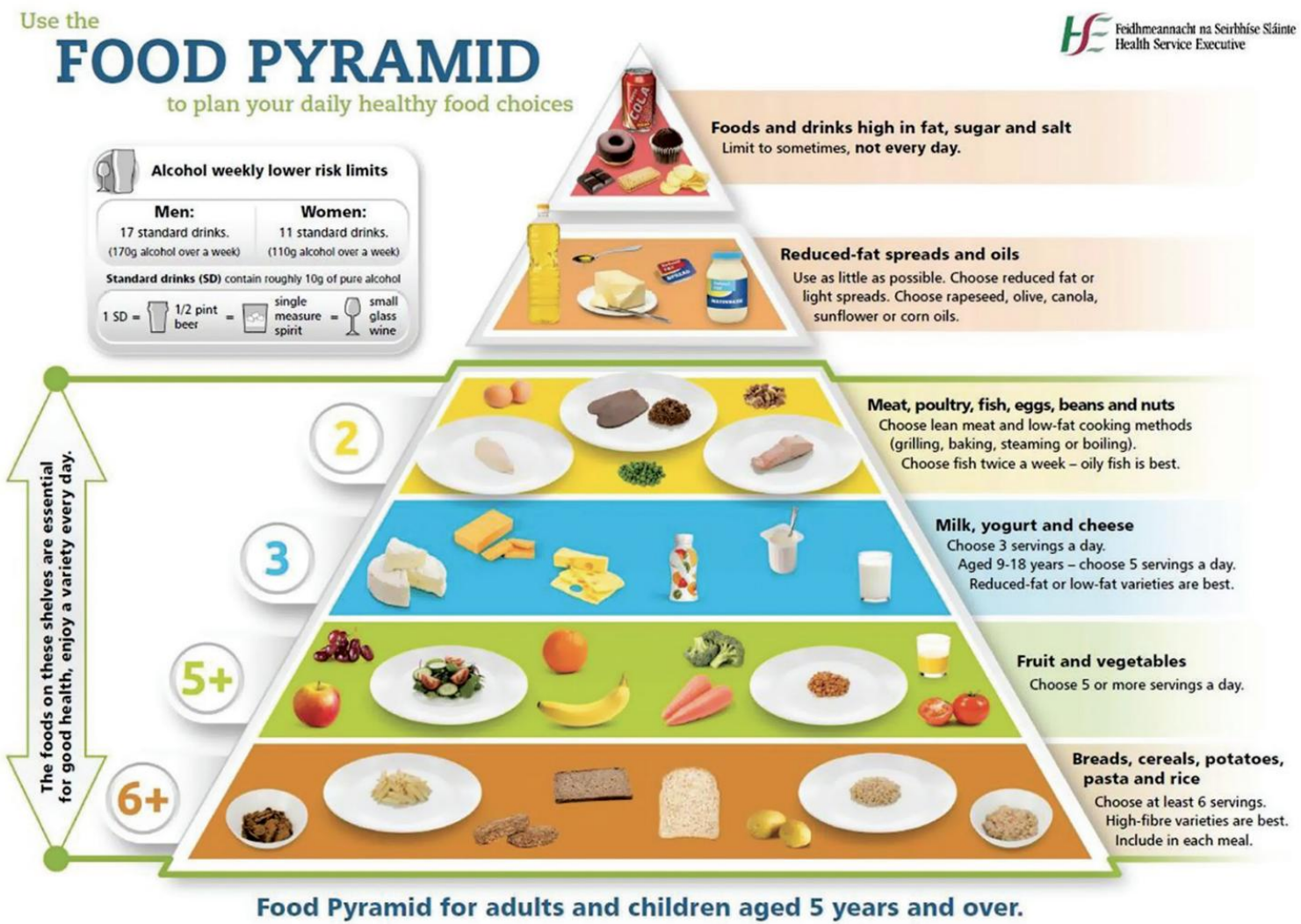


Fig. 10.13 Food Pyramid—Ireland (Courtesy Ireland Department of Health. Retrieved from https://www.healthpromotion.ie/hp-files/docs/HPM00833.pdf.)

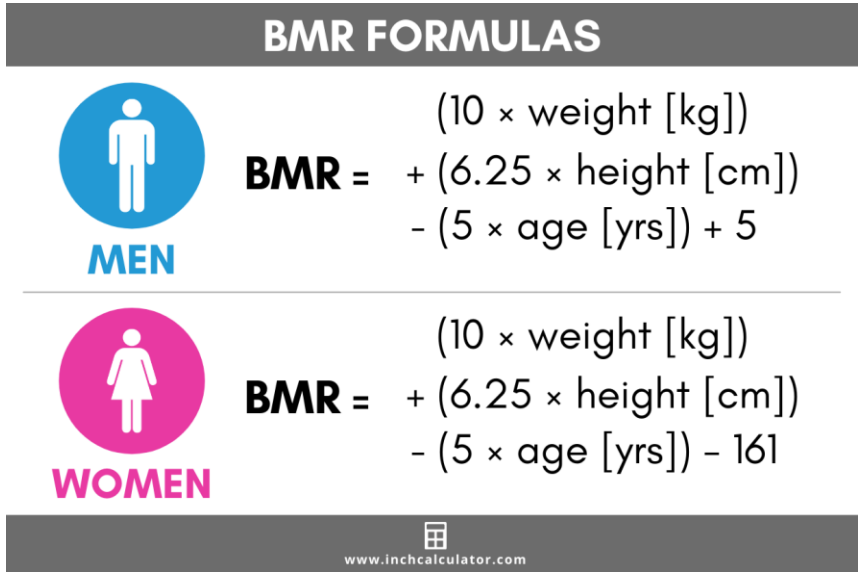
Be Balanced In Healthy Diet

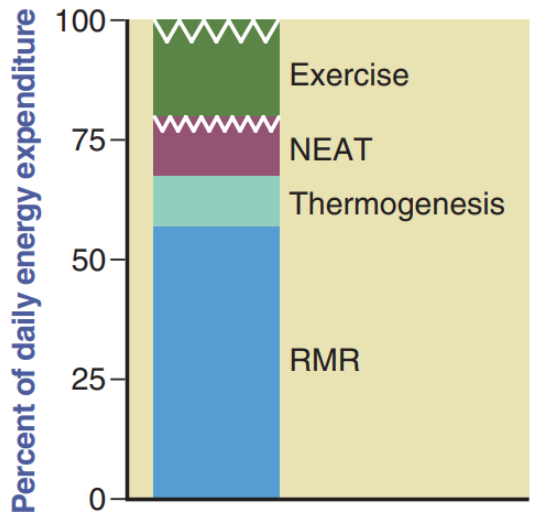
- Direct Calorimetry
- Indirect Calorimetry
- Formulas calculation
- Respiratory Quotient

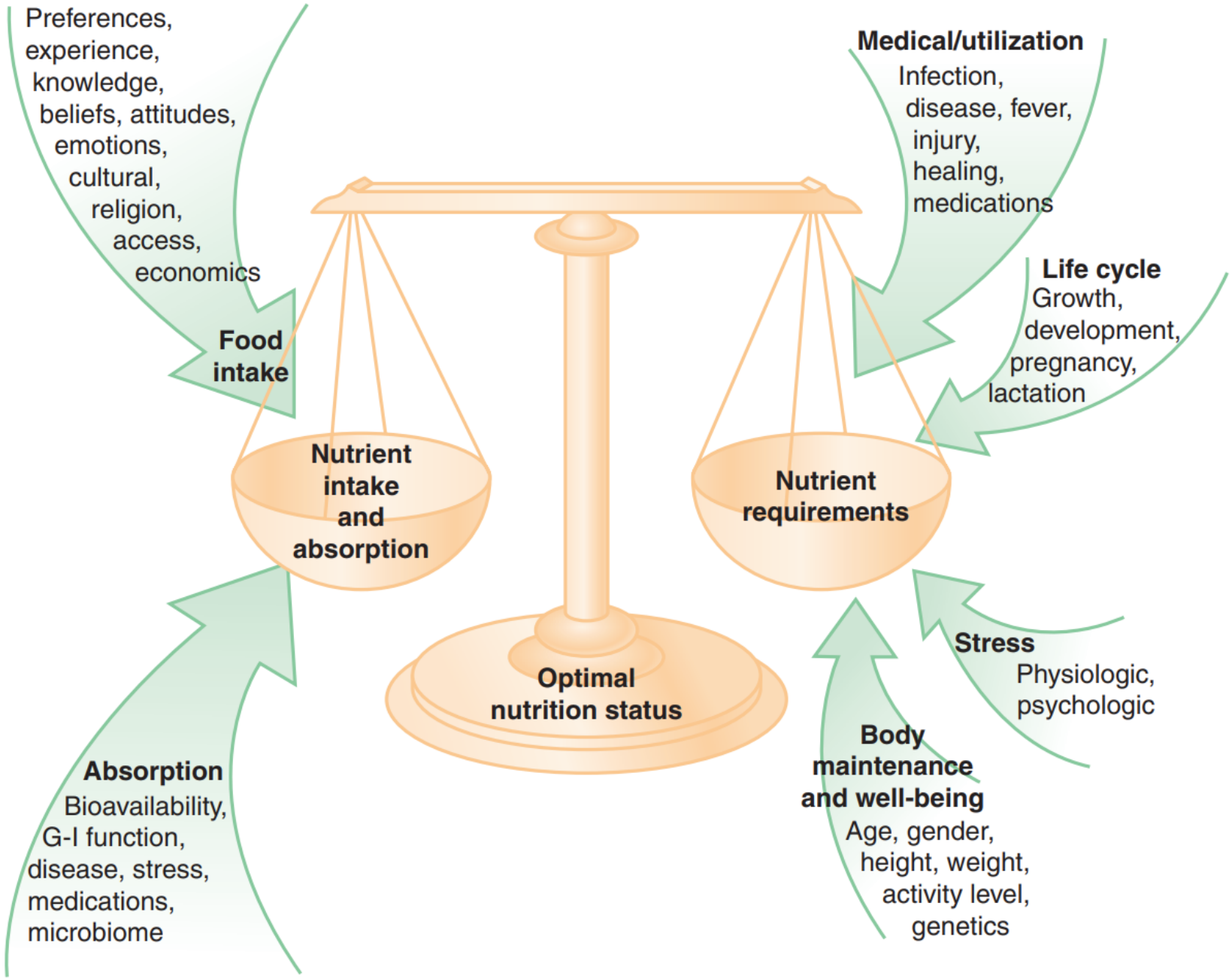
RQ = volume of CO_2 expired/volume of O_2 consumed (VCO_2 /VO_2)

0.85 = Healthy mixed diet

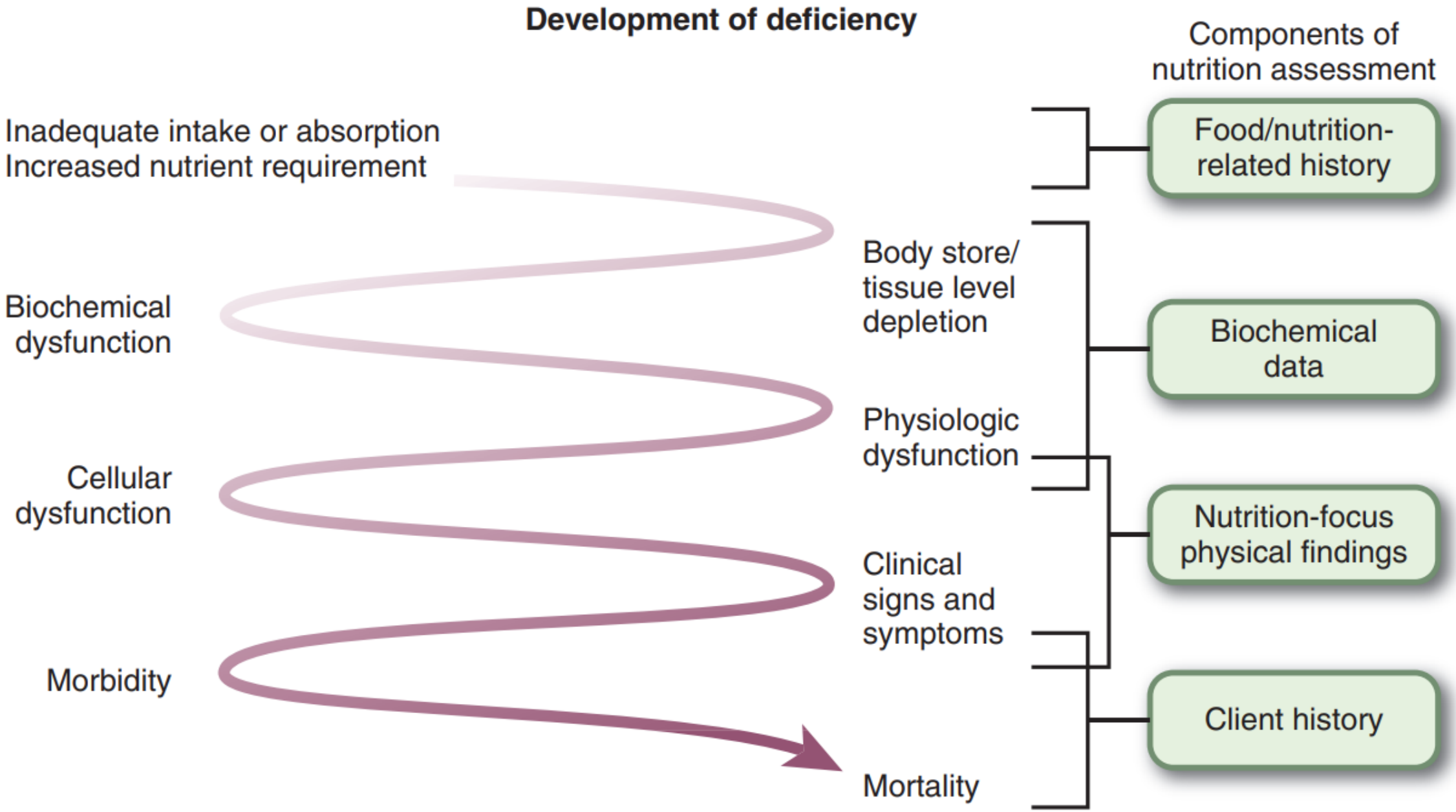
45-50% Carbohydrate
15-20% Protein
30-35% Fat



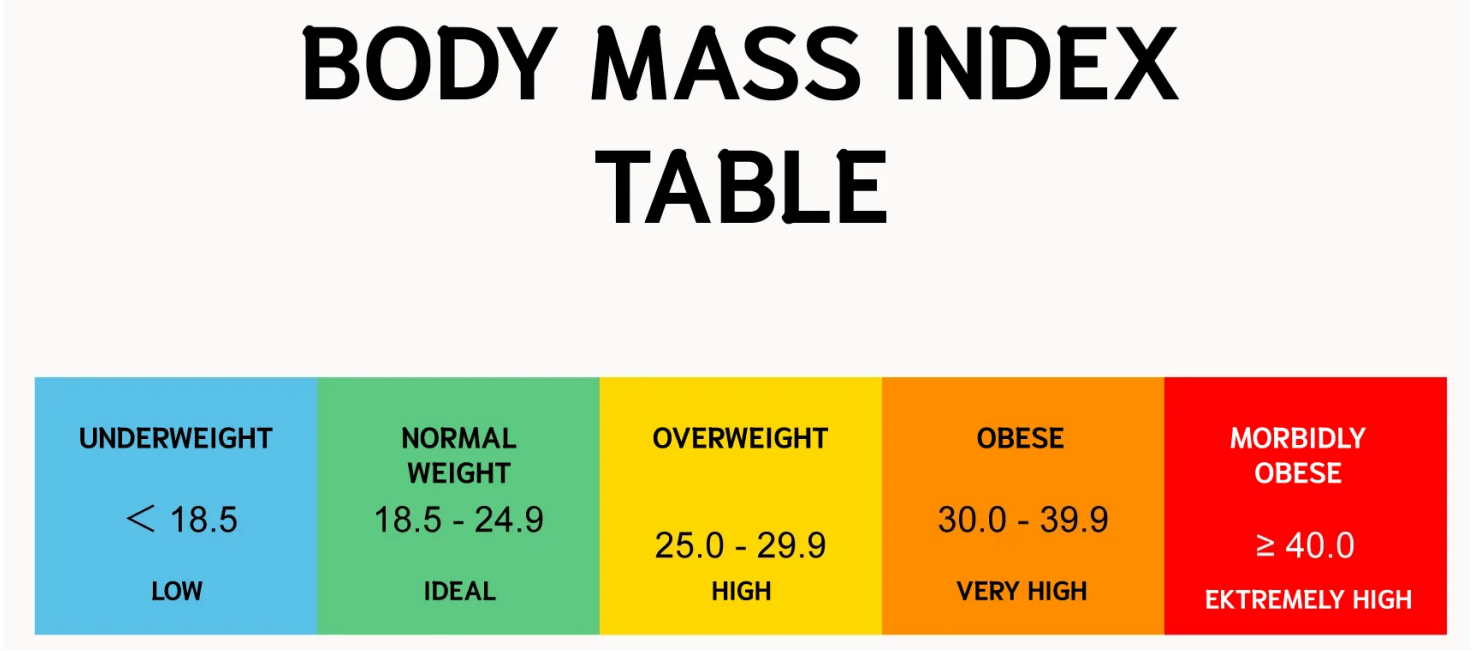




Optimal nutrition status: a balance between nutrient intake and nutrient requirements.



Development of clinical nutritional deficiency and detection by nutrition assessment data.



- **Severely underweight** - BMI less than 16.5kg/m^2
- **Underweight** - BMI under 18.5 kg/m^2
- **Normal weight** - BMI greater than or equal to 18.5 to 24.9 kg/m^2
- **Overweight** – BMI greater than or equal to 25 to 29.9 kg/m^2
- **Obesity** – BMI greater than or equal to 30 kg/m^2
- **Obesity class I** – BMI 30 to 34.9 kg/m^2
- **Obesity class II** – BMI 35 to 39.9 kg/m^2
- **Obesity class III** – BMI greater than or equal to 40 kg/m^2 (also referred to as severe, extreme, or massive obesity)
- **Asian and South Asian population**
  - overweight - BMI between 23 and 24.9 kg/m^2
  - obesity - BMI greater than 25 kg/m^2

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Definition and diagnostic criteria of clinical obesity

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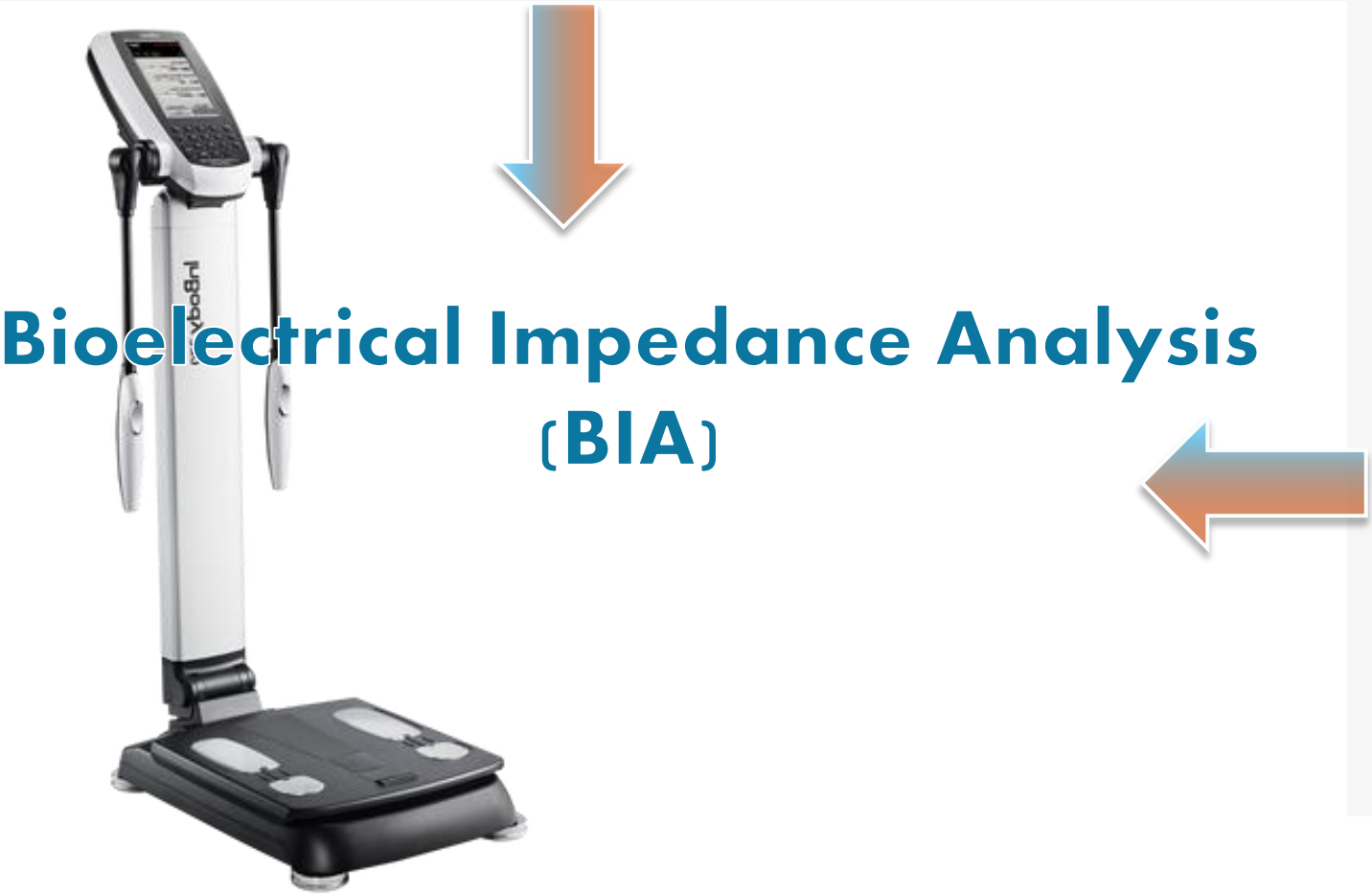


Diagnosing clinical obesity

Limitations of the current definition of obesity

Obesity is currently defined solely by an individual's body mass index (BMI)

The criteria for populations of European descent* are:

Diagnosis	Underweight	Normal	Overweight	Obesity
BMI (kg/m²)	Under 18.5	18.5 to 24.9	25 to 29.9	30 and over

*Criteria for other ethnic groups are different

- Although BMI is **useful** for identifying individuals at increased risk of health consequences...
- It **is not** a direct measure of fat
- It **does not** establish the distribution of fat around the body
- It **cannot** determine when excess body fat is a health problem

Relying on BMI alone to establish if someone has obesity is problematic as this can inaccurately classify a person as having or not having excess body fat, and also lead to under-diagnosis of many whose health is impaired and over-diagnosis of many who are healthy.

#	1	2	3	4
BMI (kg/m²)	28.2	30.1	36.2	36.2
Diagnosis	Overweight	Obesity	Obesity	Obesity
Excess body fat?	Yes	No	Yes	Yes
Signs and symptoms?†	No	No	No	Yes
Notes	Under-diagnosis of obesity	Over-diagnosis of obesity	Obesity with preserved health	Obesity with ongoing illness

Limitations of BMI-based diagnosis

People with excess body fat do not always have a BMI above 30, meaning that their health risk can go unnoticed.

Individuals with high muscle mass (eg, athletes) tend to have high BMIs despite normal fat mass. Diagnosing such people as having obesity or a disease is inappropriate.

Some people with excess body fat (and high BMI) can nevertheless maintain normal organ function and an unhindered ability to conduct daily activities (hence, they have no illness); others instead manifest objective evidence of ongoing illness. Current definition and measures of obesity do not reflect health/illness at individual level and are therefore inadequate for disease diagnosis.

†Signs and symptoms of organ dysfunction due to excess body fat

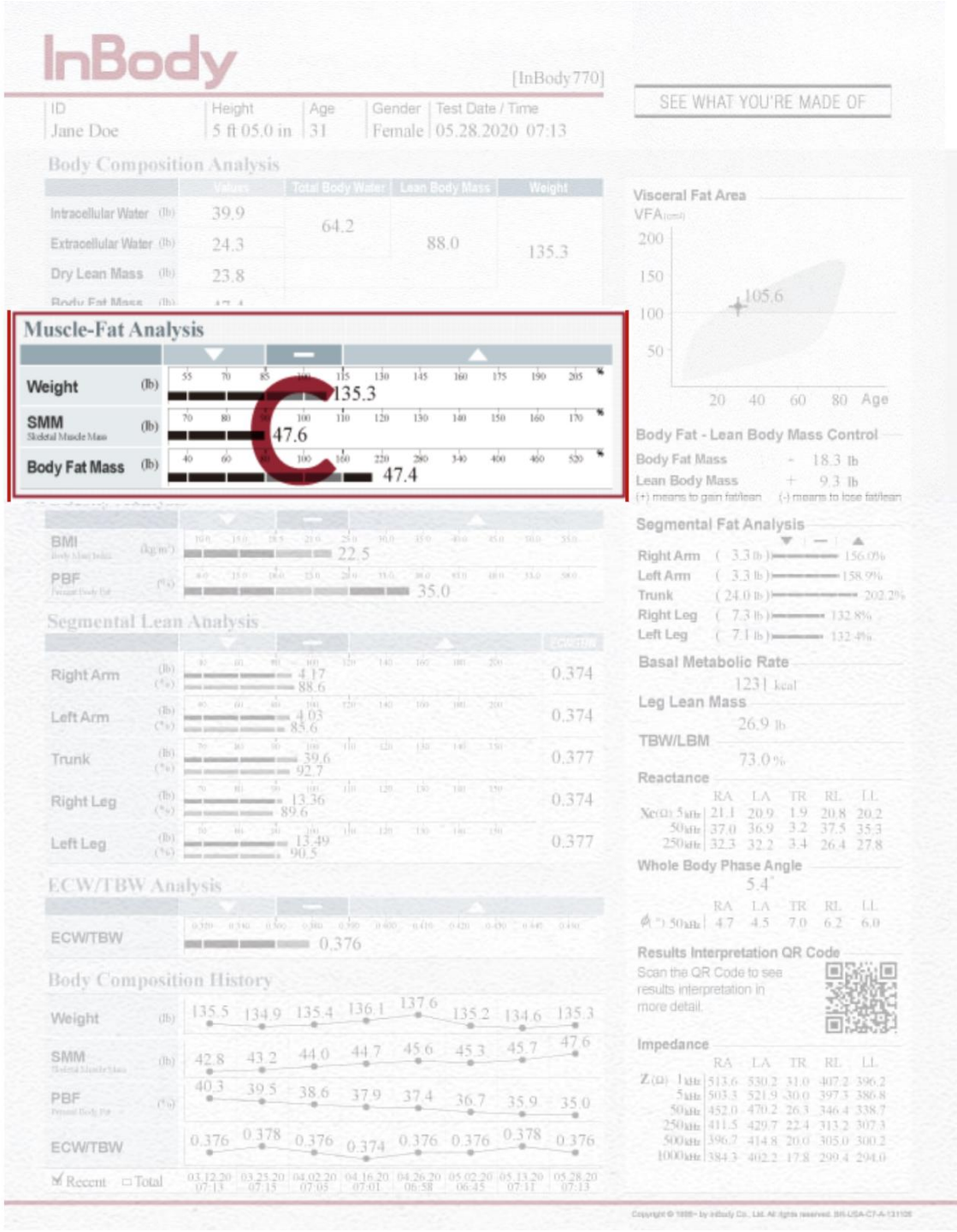
Muscle, Fat, & Obesity Risk

“C-Shape” Body Type

If the length of the bar for your SMM is shorter than your Weight and Body Fat Mass, you have a C-shaped body type. Depending on where the measures are on the graph, this body shape can be characteristic of a person who is overweight, obese, underweight, or within the healthy range.

WHY THIS MATTERS

If you have a Muscle-Fat Analysis that looks like this, reduce your Body Fat Mass (which would also lower your Weight) and increase your Skeletal Muscle Mass. Ultimately, try to get your Body Fat Mass as close to the recommended range as possible and SMM as close to or above the recommended range.



Muscle, Fat, & Obesity Risk

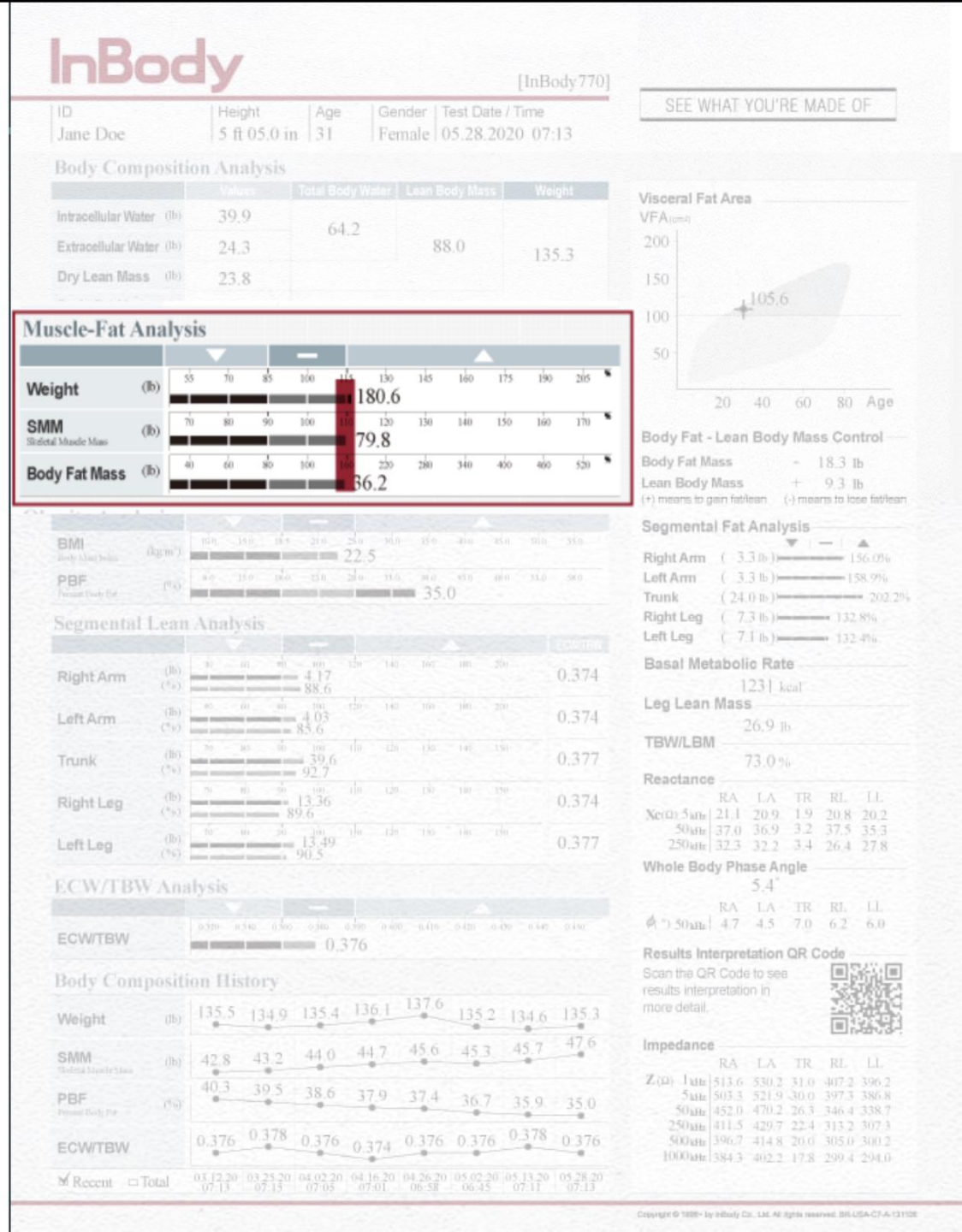
“I-Shape” Body Type

If the length of the bars for your Weight, Skeletal Muscle Mass, and Body Fat Mass roughly form a straight line, you have an I-shaped body type.

Although people with this body type are often at a healthy weight or body fat percentage, there are still areas they can focus on to maintain or improve overall health.

WHY THIS MATTERS

Typically, if you have an I-shaped body type, you have a proportional muscle-fat balance. You are in a great position to focus on gaining muscle mass or reducing body fat to improve your overall physique.



Muscle, Fat, & Obesity Risk

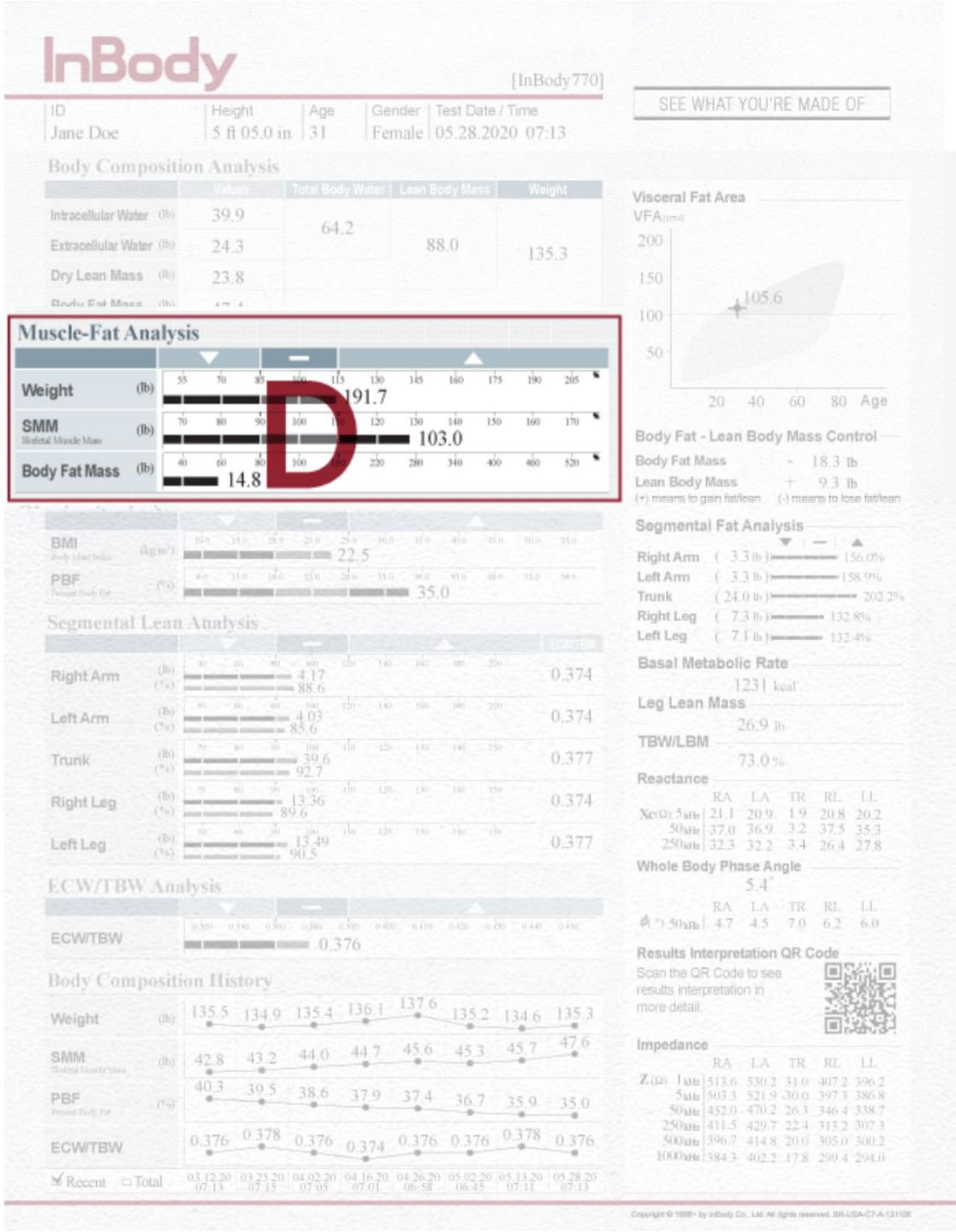
“D-Shape” Body Type

If your SMM bar is longer than your Weight and Body Fat Mass, you have a D-shape body type. Usually, this is an “athletic” body type that many consider the ideal body composition shape. However, if the Weight and Body Fat Mass bars are above the recommended ranges, you should reduce your fat mass to get into the ideal range.

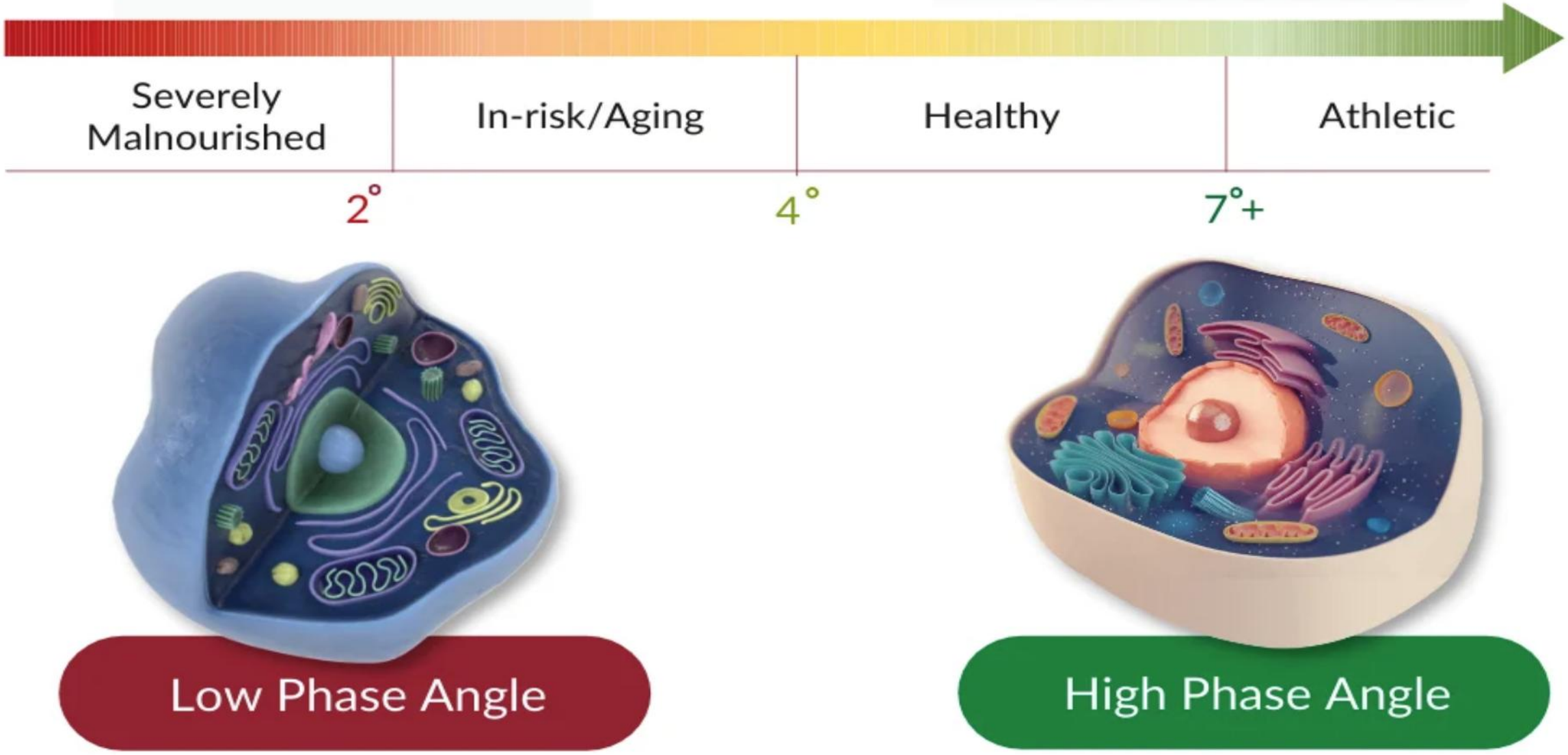
WHY THIS MATTERS

If you want to improve your strength and physique, you should monitor your SMM and Body Fat Mass bars to ensure that SMM increases without a significant increase in Body Fat Mass.

If you wish to lose body fat and become leaner, you should monitor your Body Fat Mass while making sure you do not lose too much SMM. If SMM losses become too significant, make the necessary adjustments to your strength-training routine.



Age, gender, and overall health status can influence Phase Angle values. Therefore, it's essential to take these factors into account when interpreting results. For instance, by rising age, Phase Angle tends to decrease due to the natural degeneration of cellular health. An increasing Phase Angle could signify improved health and fitness, while a decreasing Phase Angle may warrant adjustments to nutrition or exercise routine.





Healthy Diets



KETO



PALEO



VEGETARIAN



VEGAN



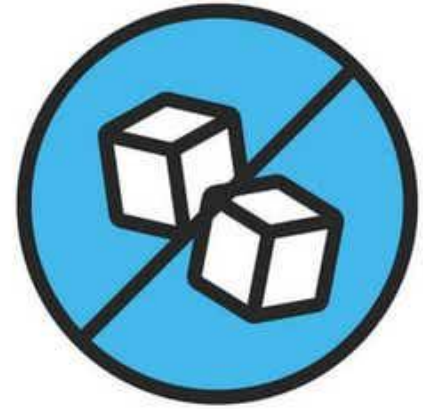
MEDITERRANEAN



RAW



LOW CARB



NO SUGAR

rediscover goodness
OLDWAYS
CULTURAL FOOD TRADITIONS

Mediterranean Diet Pyramid

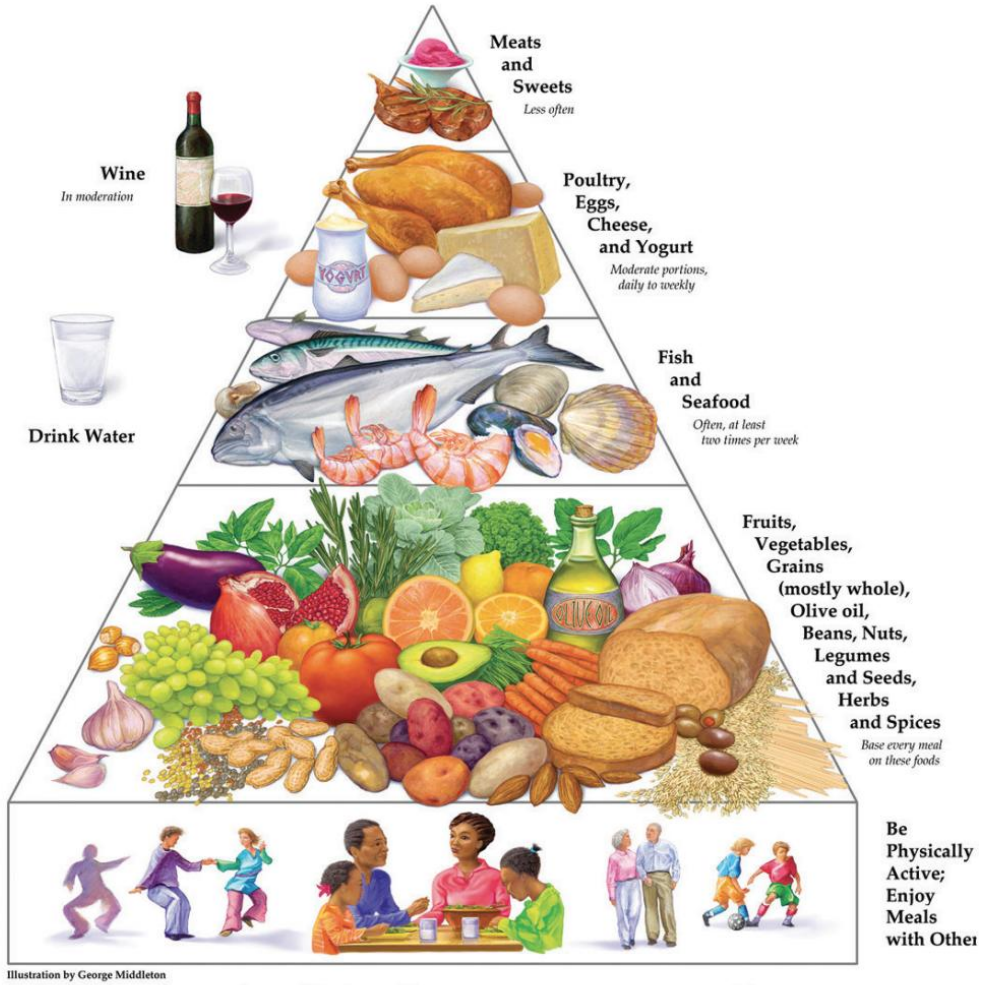


Illustration by George Middleton

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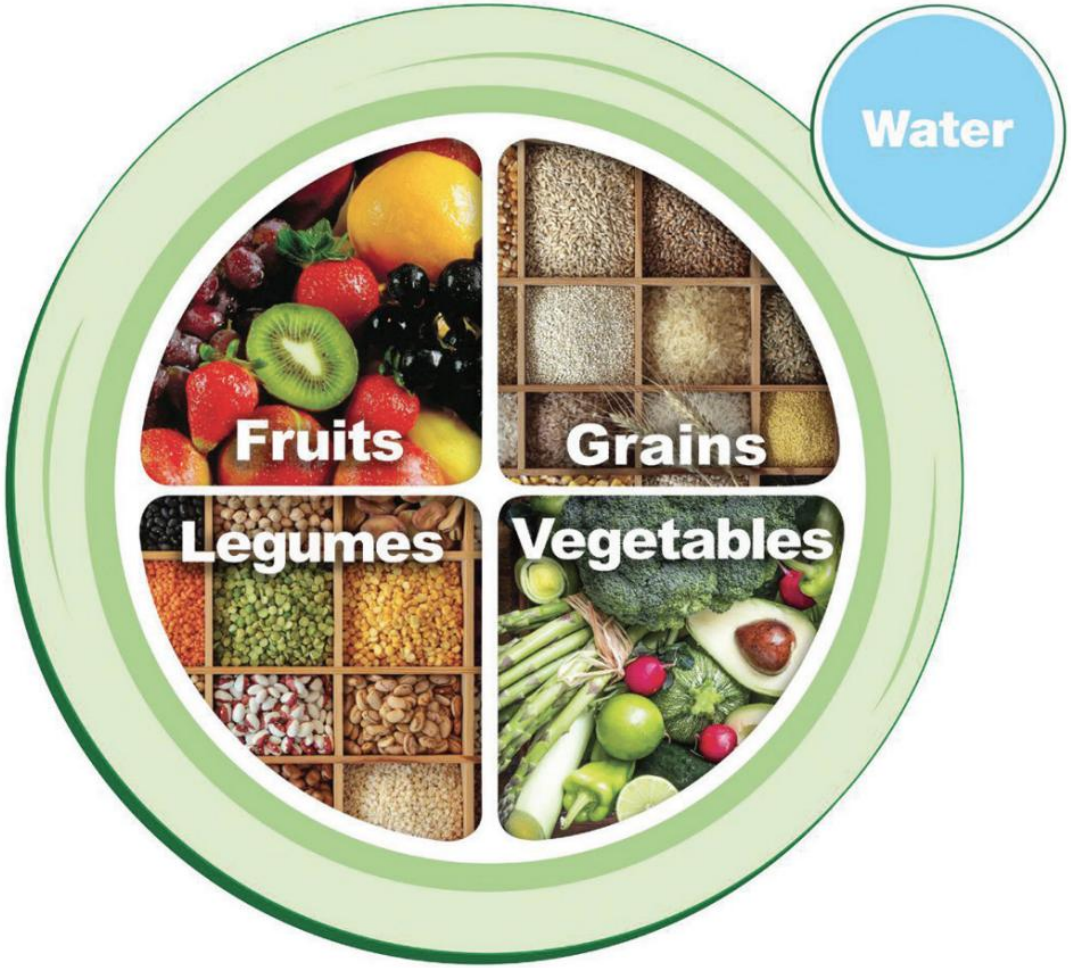
www.oldwayspt.org

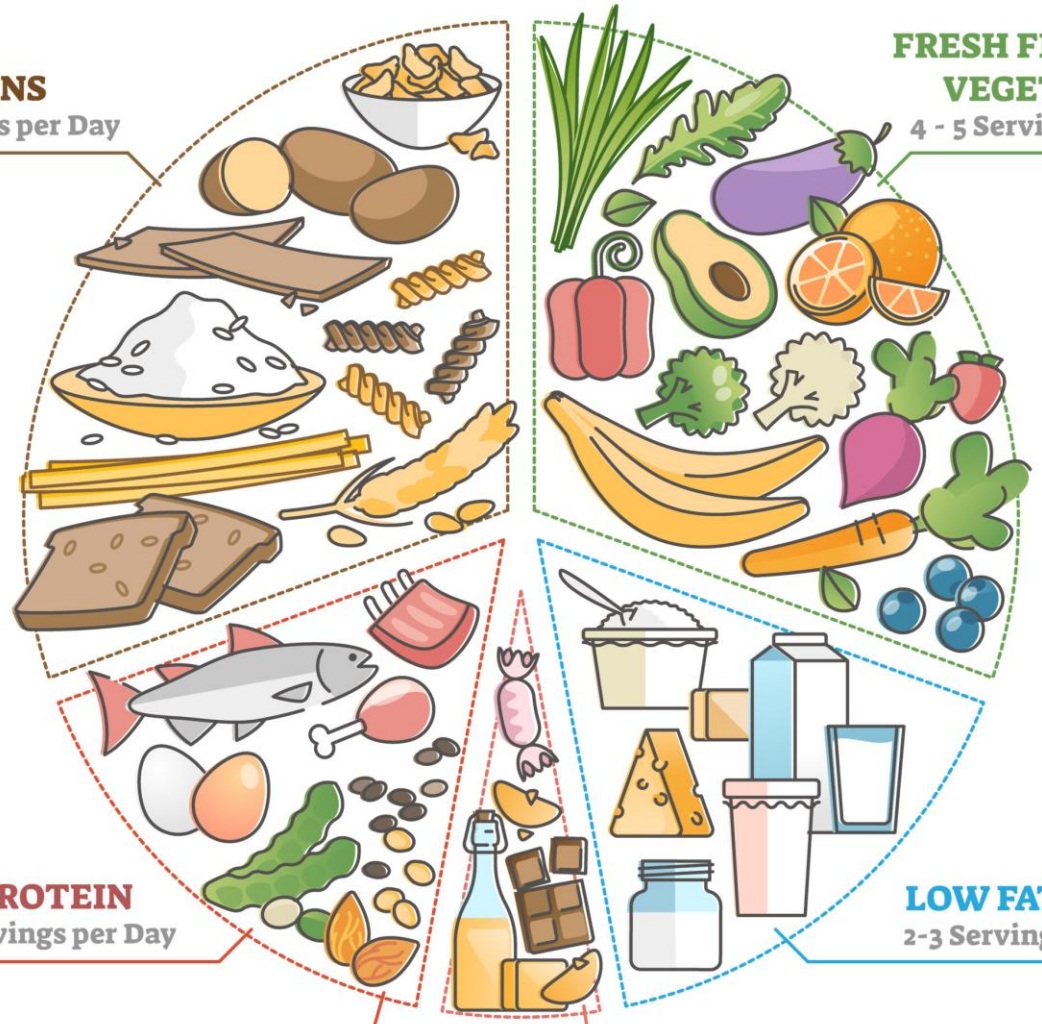
The Sustainable Power Plate



SustainablePowerPlate.org

The DASH Diet

DIETARY APPROACHES TO STOP HYPERTENSION



GRAINS
6-8 Servings per Day

FRESH FRUITS and VEGETABLES
4 - 5 Servings per Day

LEAN PROTEIN
6 or Less Servings per Day

LOW FAT DAIRY
2-3 Servings per Day

LEGUMES OR NUTS / SEEDS
4 - 5 Servings per Week

FATS AND SWEETS
Limited

DASH Eating Plan

The Benefits: Lowers blood pressure & LDL "bad" cholesterol.

Eat This	Limit This
Vegetables	Fatty meats
Fruits	
Whole grains	Full-fat dairy
Fat-free or low-fat dairy	
Fish	Sugar sweetened beverages
Poultry	
Beans	Sweets
Nuts & seeds	
Vegetable oils	Sodium intake

www.nhlbi.nih.gov/DASH

National Heart, Lung, and Blood Institute
The heart truth

Be Hydrated In Healthy Diet

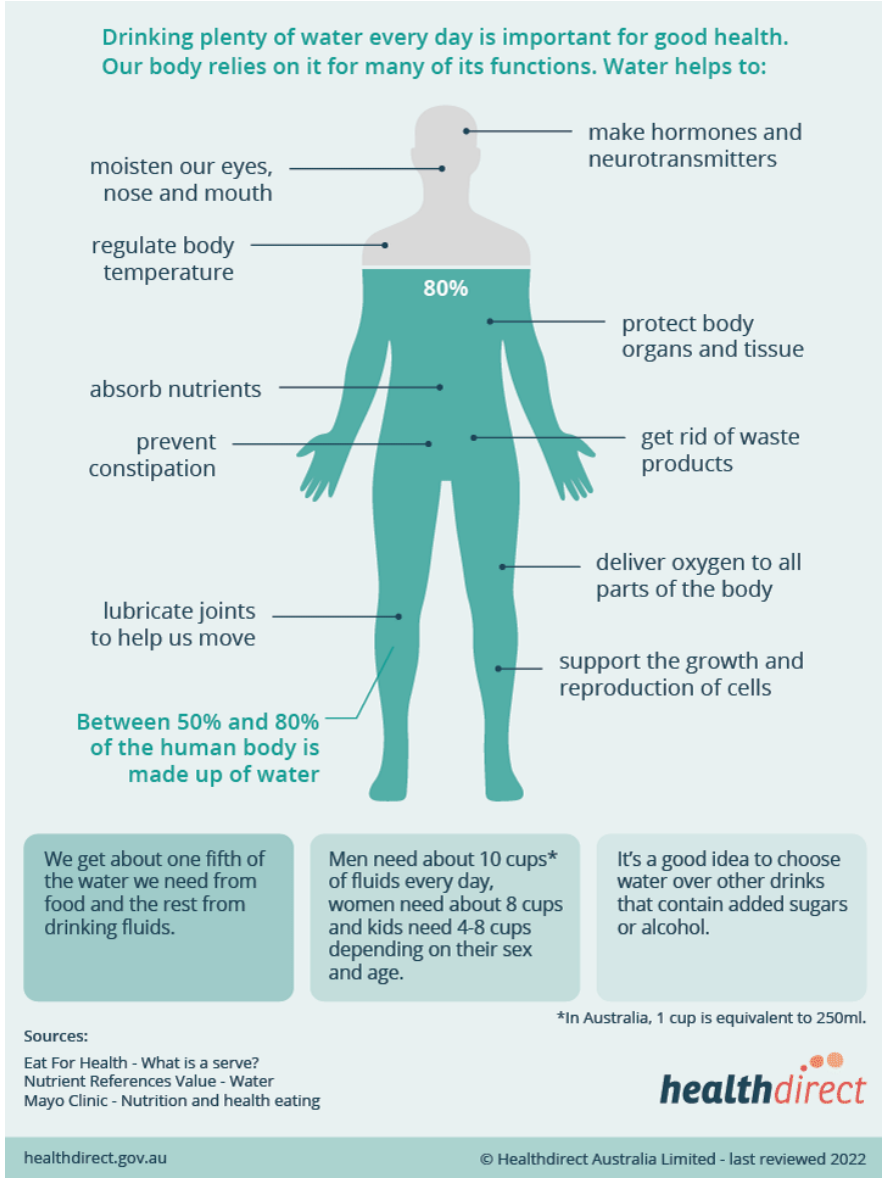
Estimating Daily Fluid Requirements for Healthy Individuals—cont'd

Children	Body Weight	Daily Fluid Requirement
Adults[a]		
Method 1	30–35 mL per weight in kilograms	
Method 2	1 mL fluid per calorie consumed	
Method 3	First 10 kg of body weight	100 mL/kg
	Second 10 kg of body weight	+50 mL/kg
	Remaining kg of body weight (age <50)	+20 mL/kg
	Remaining kg of body weight (age >50)	+15 mL/kg
Method 4	Age in years	
	16–30 (active)	40 mL/kg
	20–55	35 mL/kg
	55–75	30 mL/kg
	>75	25 mL/kg

[a]The 1 mL of fluid per calorie method should be used with caution because it will underestimate the fluid needs of those with low-calorie needs. Persons who are significantly obese may best be evaluated by Method 3 because it adjusts for high body weight.

Note: 3 oz is approximately ⅓ cup; 6 oz is approximately ⅔ cup.

from State of California Department of Developmental Services: *California diet manual*, 2003. Revised 2004, 2010.



SIDE-BY-SIDE COMPARISON

Original Label

Nutrition Facts

Serving Size 2/3 cup (55g)
Servings Per Container About 8

Amount Per Serving

Calories 230	Calories from Fat 72
	% Daily Value*
Total Fat 8g	**12%**
Saturated Fat 1g	**5%**
Trans Fat 0g	
Cholesterol 0mg	**0%**
Sodium 160mg	**7%**
Total Carbohydrate 37g	**12%**
Dietary Fiber 4g	**16%**
Sugars 1g	
Protein 3g	
Vitamin A	10%
Vitamin C	8%
Calcium	20%
Iron	45%

* Percent Daily Values are based on a 2,000 calorie diet. Your daily value may be higher or lower depending on your calorie needs.

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

New Label

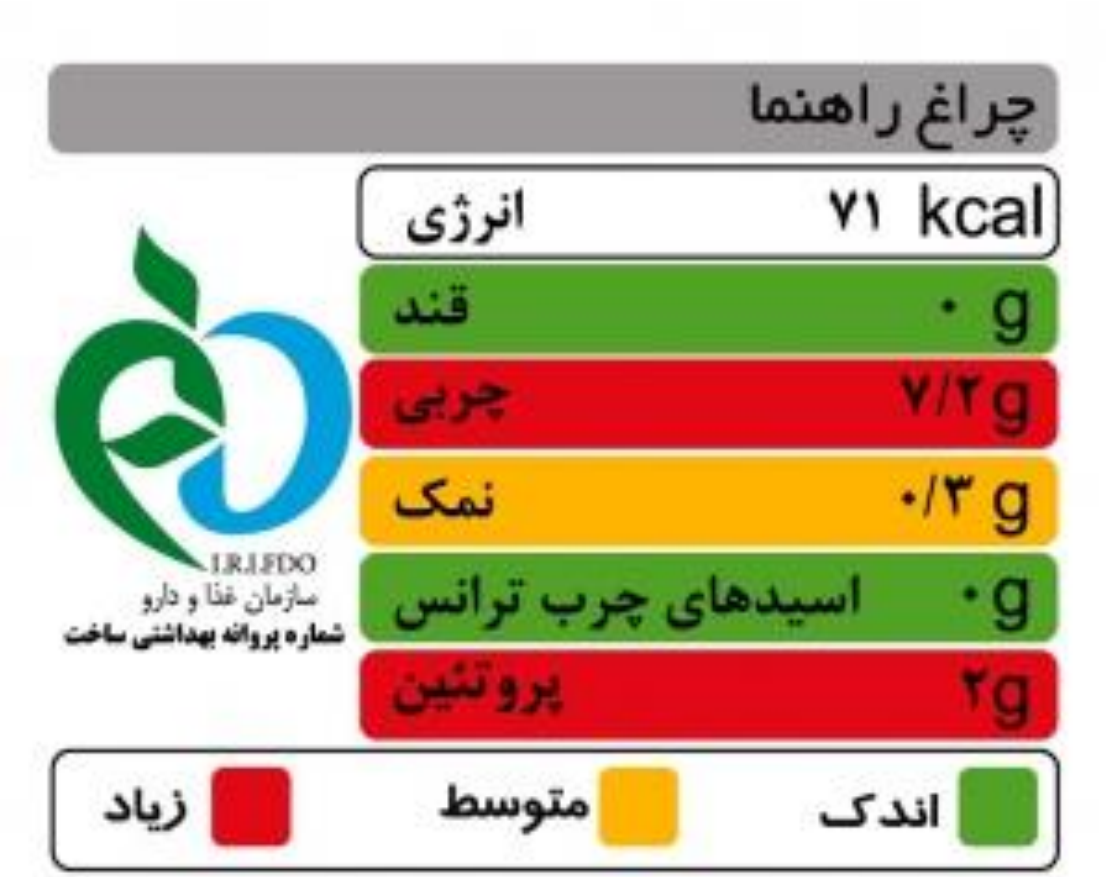
Nutrition Facts

8 servings per container
Serving size **2/3 cup (55g)**

Amount per serving
Calories **230**

	% Daily Value*
Total Fat 8g	**10%**
Saturated Fat 1g	**5%**
Trans Fat 0g	
Cholesterol 0mg	**0%**
Sodium 160mg	**7%**
Total Carbohydrate 37g	**13%**
Dietary Fiber 4g	**14%**
Total Sugars 12g	
Includes 10g Added Sugars	**20%**
Protein 3g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 235mg	6%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

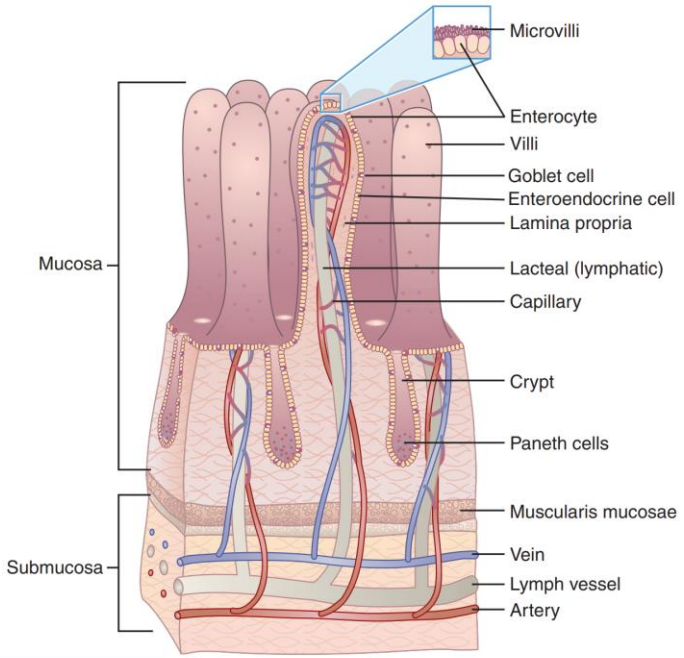


Nutrigenomics

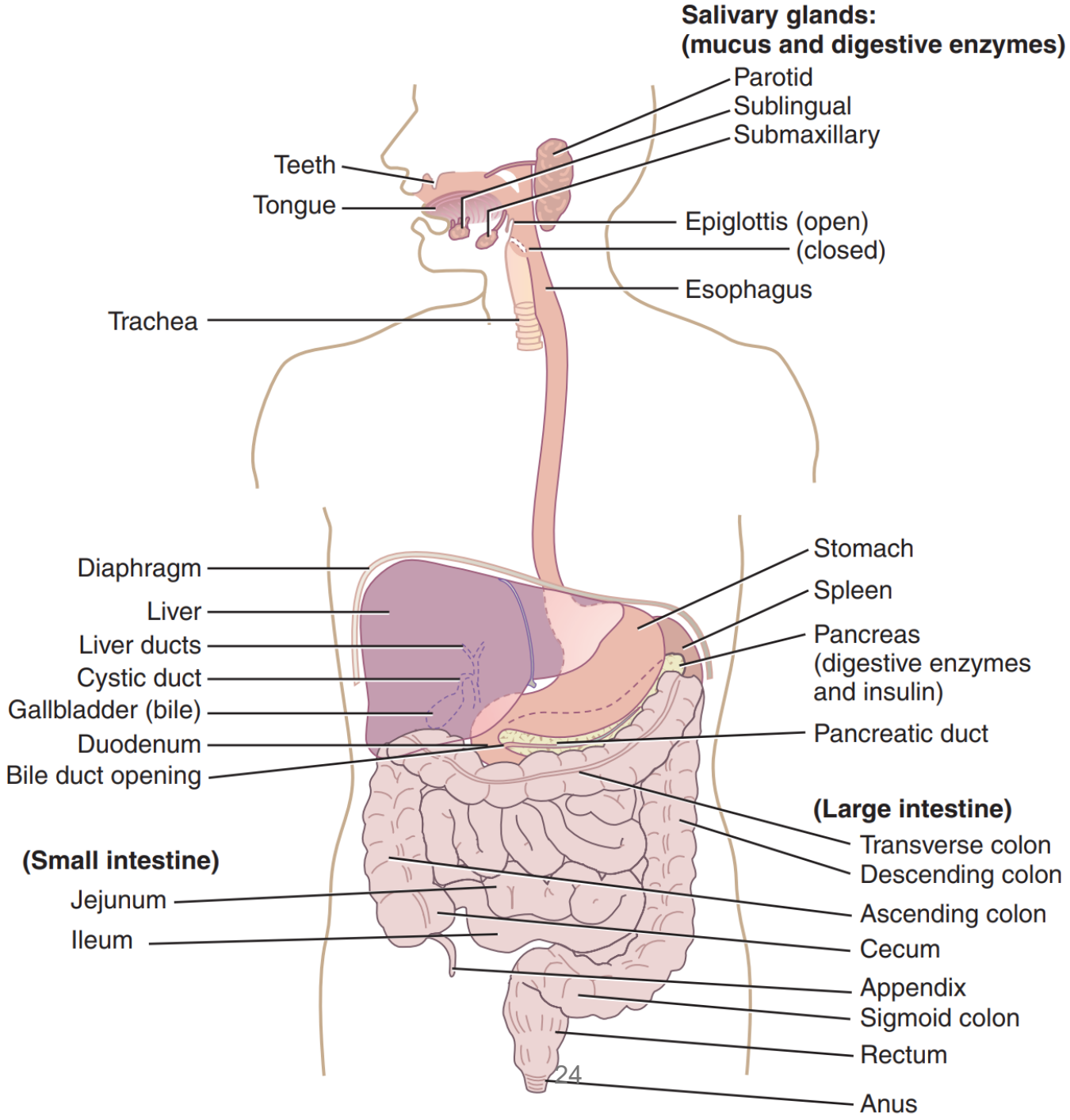
- nutrients can alter the activity of genes, influencing what proteins are produced.
- individual's genes interact with their diet
- dietary strategies that can help prevent or manage chronic diseases
- nutrients interact with the genome, proteome, and metabolome at the molecular level.

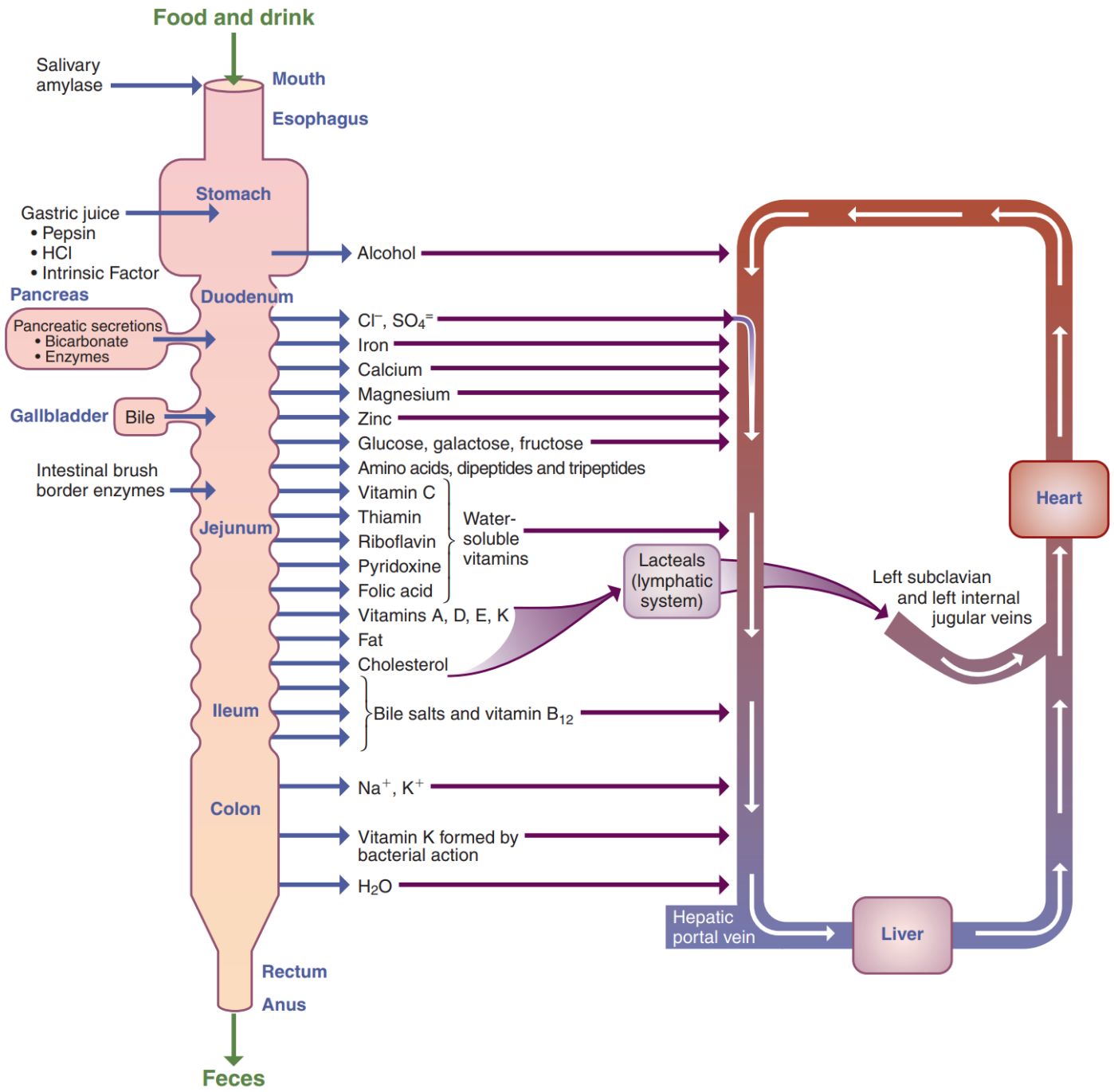


Healthy Gut System



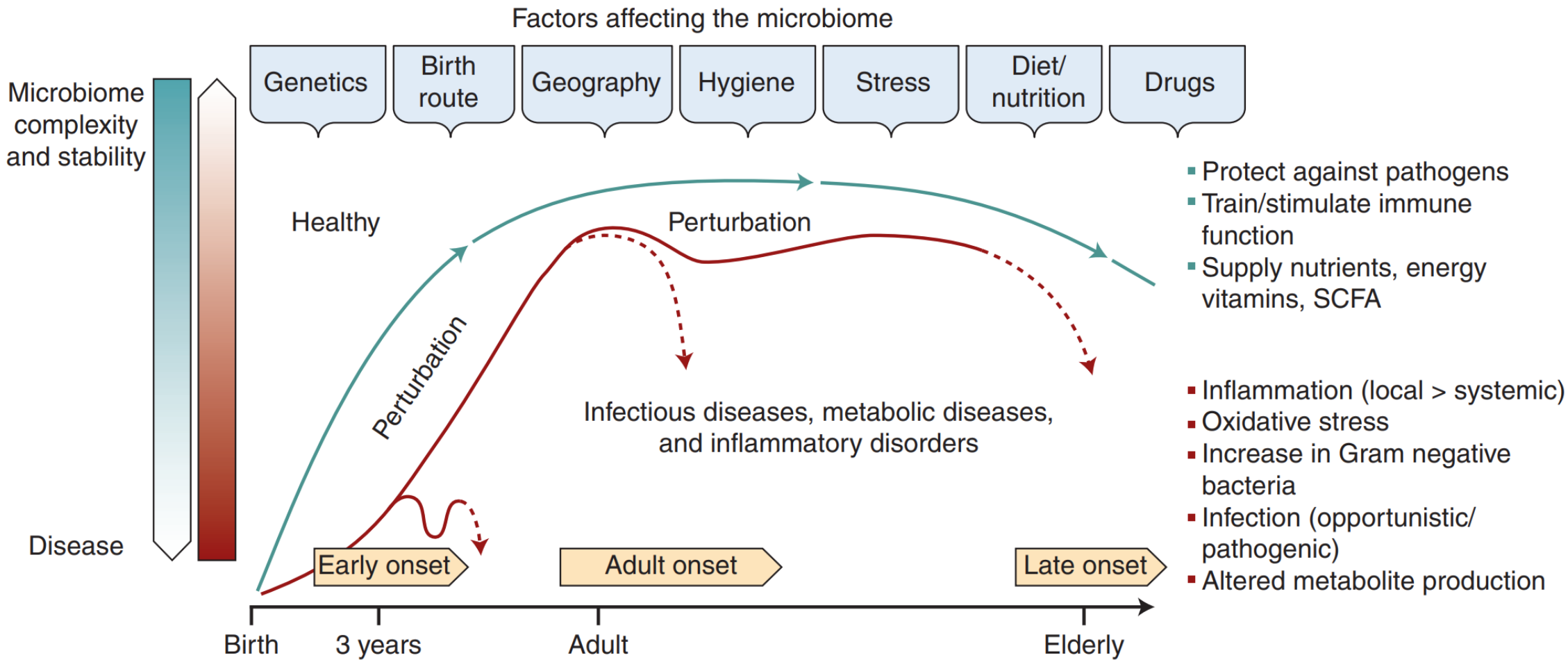
Sites of secretion, digestion, and absorption.





Sites of secretion and absorption in the gastrointestinal tract.

Healthy Gut System



Factors affecting stability and complexity of intestinal microbiota in health and disease. (Redrawn from Kostic AD, Xavier RJ, Gevers D: The microbiome in inflammatory bowel disease: current status and the future ahead, *Gastroenterology* 146:1489, 2014.)


THANK YOU
FOR YOUR
ATTENTION