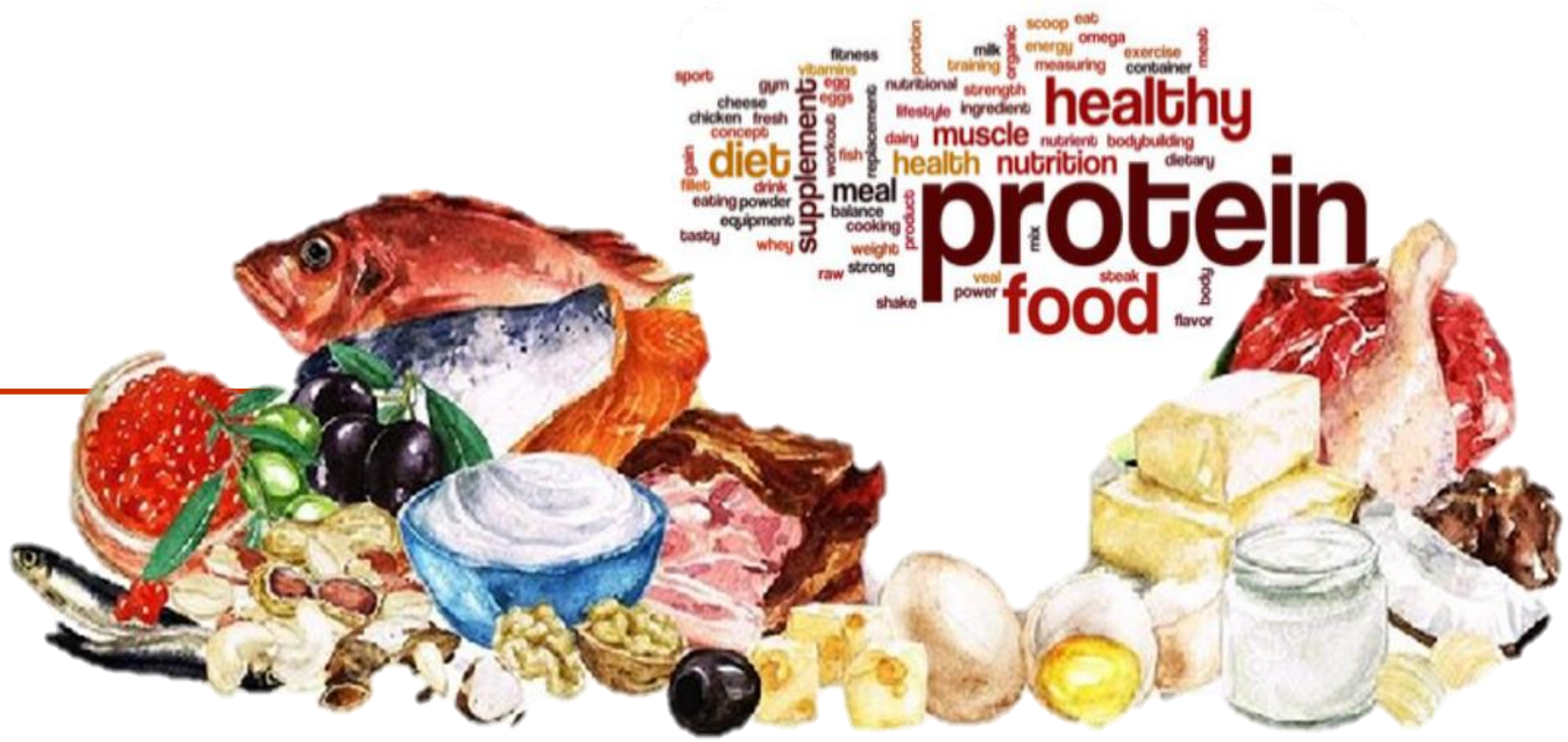
Elaine Chong

Dietitian



Is there more to Protein . . .

- Articulate, well read, intelligent men.
- Successful career.
- Health conscious.
- Good work and family balance.
- High achievers.
- A ‘dash of perfectionist’.
- All wanted to lose a bit of weight ± increase muscle mass.
- High Protein intake – they **love** their lean meat and high protein smoothies/drink.
- Limit Carbohydrate – no or very low carbs at dinner.

健康和营养素Nutrients and Health

Fibre
纤维

Plant Sources
植物

Carbohydrate
碳水化合物（淀粉）

Plant Sources
植物

Animal Sources
动物

Plant Sources
植物

Protein
蛋白质

Animal Sources
动物

Plant Sources
植物

Fat
脂肪

Saturated Fat
饱和脂肪

Trans Fat
反武脂肪

Unsaturated Fat
不饱和脂肪

Polyunsaturated Fat
多不饱和脂肪

Monosaturated Fat
单多不饱和脂肪

Share my findings and thought process

- How much protein are New Zealanders having each day?
- Current nutrition trend on high protein diet.
- Protein as nutrition/medical intervention tool.
- Same message, different reason.

How much Protein are New Zealanders having each day?

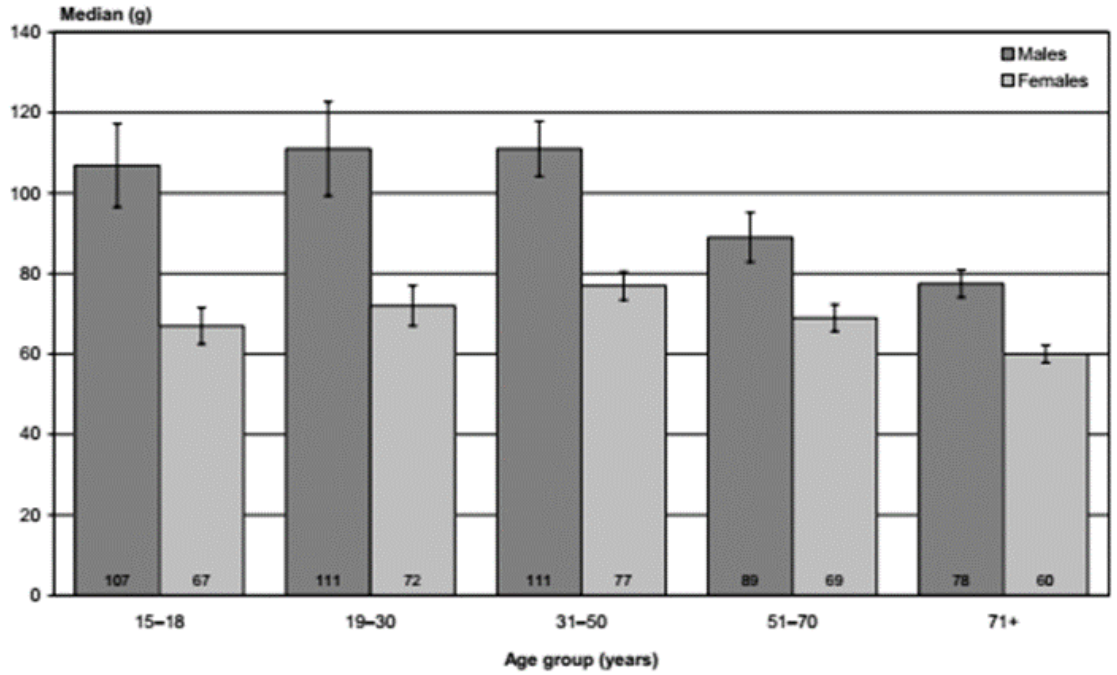
A Focus on Nutrition: Key findings from the **2008/09 NZ Adult Nutrition Survey**

https://www.health.govt.nz/system/files/documents/publications/a-focus-on-nutrition-ch3_0.pdf

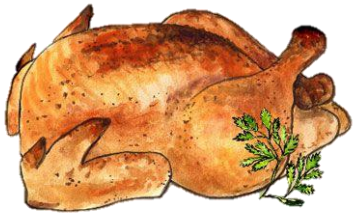
Protein intake

The median usual daily protein intake was 102 g for males and 71 g for females (Table 3.3). Males aged 51+ years and females aged 71+ years had lower intakes than younger males and females (Figure 3.3).

Figure 3.3: Median protein intake (g), by age group and sex

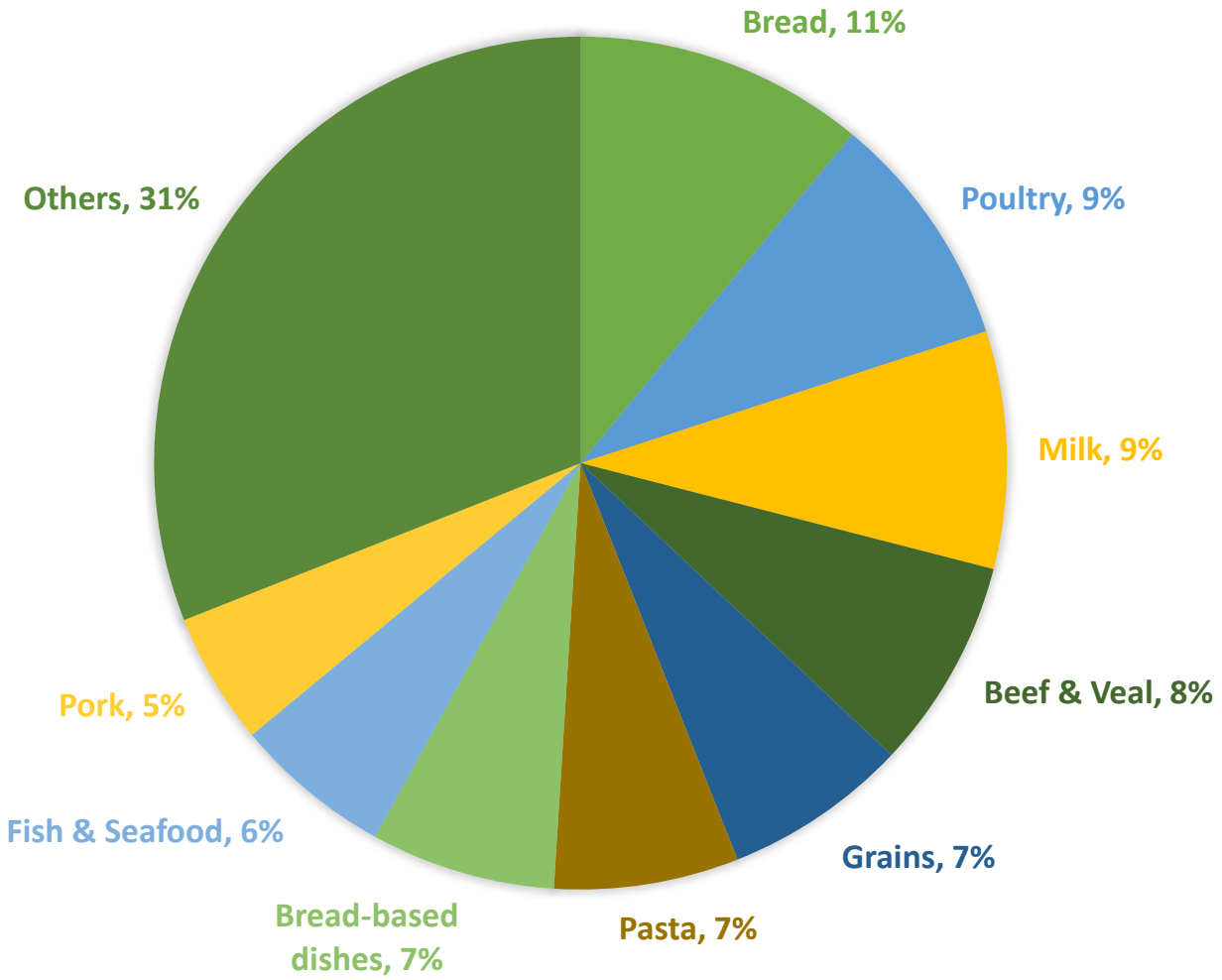


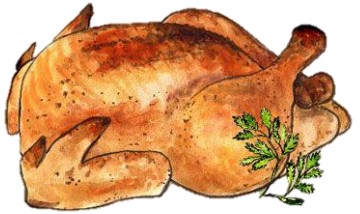
The mean contribution of protein to energy intake was 16.4% for males and 16.5% for females and varied little across age groups (Table 3.3, Figure 3.4).



Reference: A Focus on Nutrition: Key findings from the **2008/09 NZ Adult Nutrition Survey**
https://www.health.govt.nz/system/files/documents/publications/a-focus-on-nutrition-ch3_0.pdf

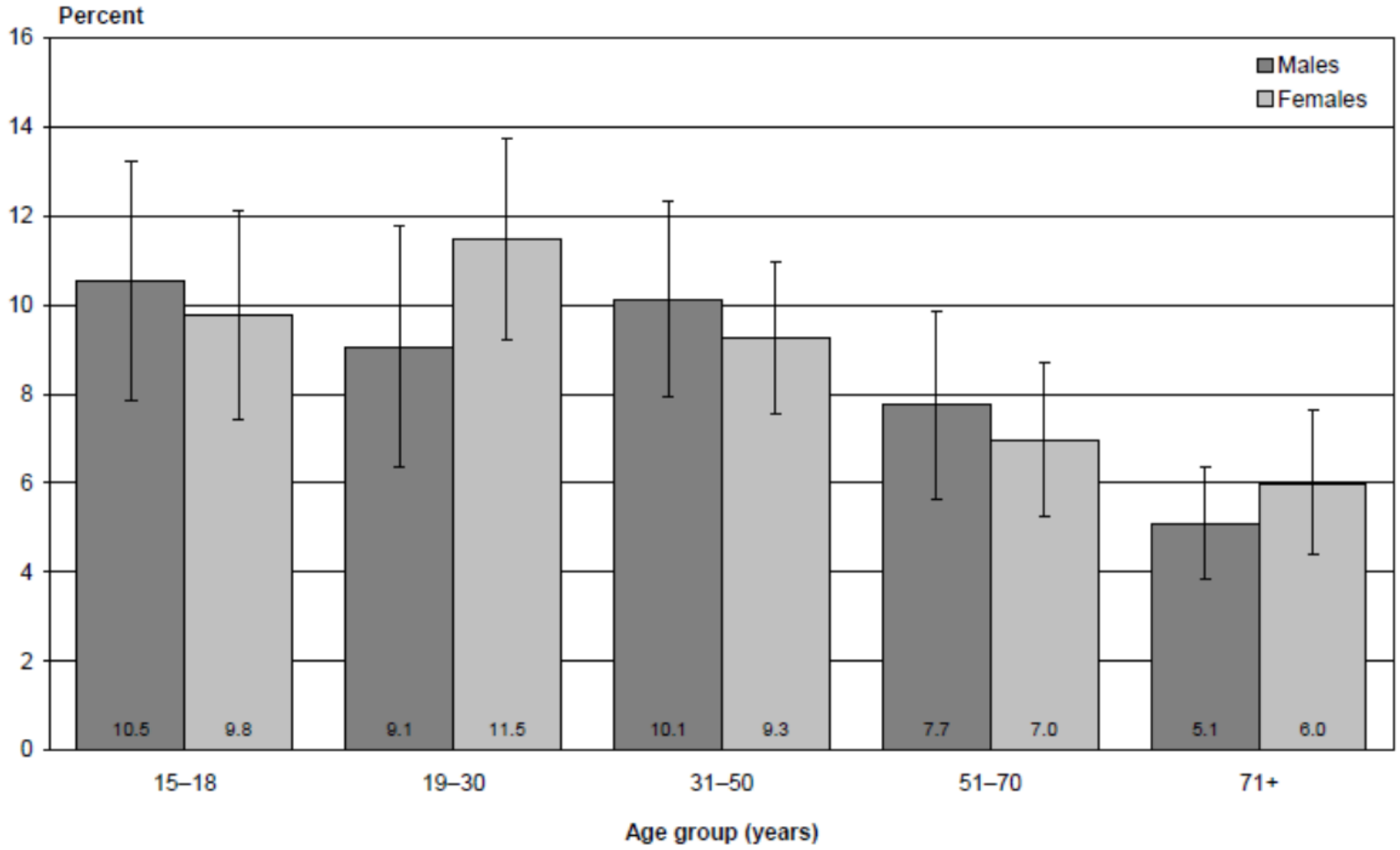
PROTEIN SOURCES

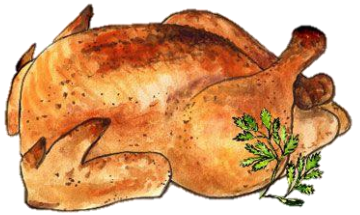




Reference: A Focus on Nutrition: Key findings from the **2008/09 NZ Adult Nutrition Survey**
https://www.health.govt.nz/system/files/documents/publications/a-focus-on-nutrition-ch3_0.pdf

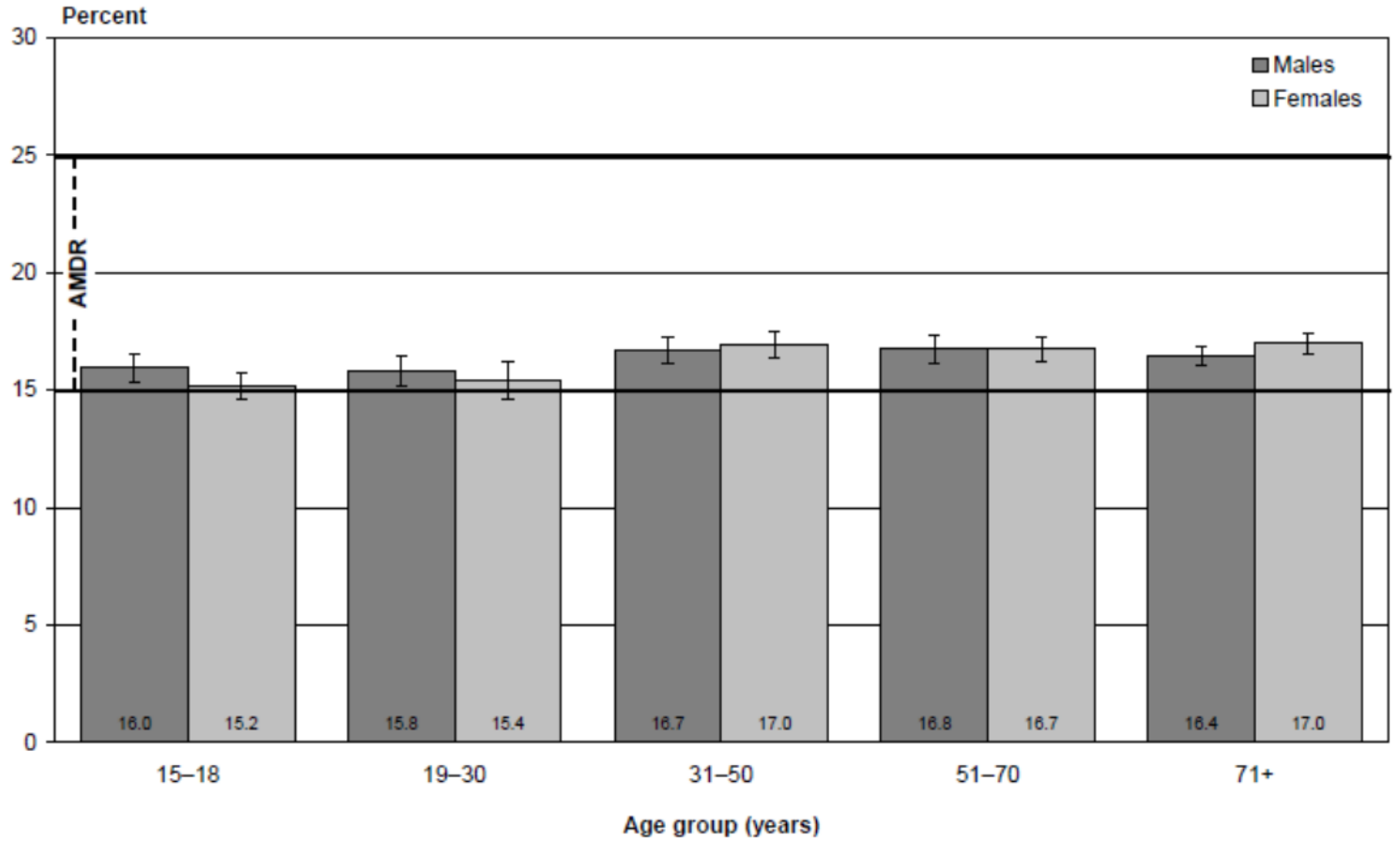
Figure 3.5: Percent protein from poultry, by age group and sex





Reference: A Focus on Nutrition: Key findings from the **2008/09 NZ Adult Nutrition Survey**
https://www.health.govt.nz/system/files/documents/publications/a-focus-on-nutrition-ch3_0.pdf

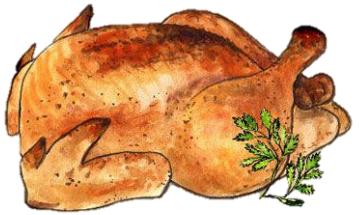
Figure 3.4: Mean percent energy from protein,[1] by age group and sex



1 Acceptable macronutrient distribution range for protein is 15–25% of energy (NHMRC 2006).

The mean contribution of protein to energy intake:

- 16.4% for males
- 16.5% for females



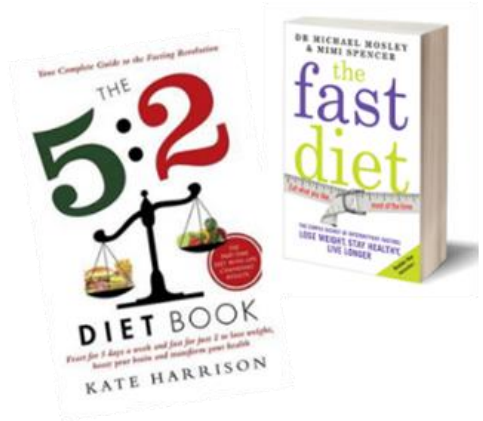
Reference: A Focus on Nutrition: Key findings from the **2008/09 NZ Adult Nutrition Survey**
https://www.health.govt.nz/system/files/documents/publications/a-focus-on-nutrition-ch3_0.pdf

Current Nutrition Trend on High Protein Diet

High Protein Diet (low carbs diet)

- Weight management
  - Aitken's diet, South Beach diet
  - Paleo diet, Ketogenic diet*
  - Low carbohydrate diet: ketotic vs non-ketotic

- Body building

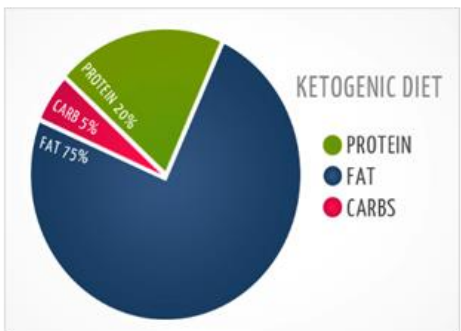


CHO/day

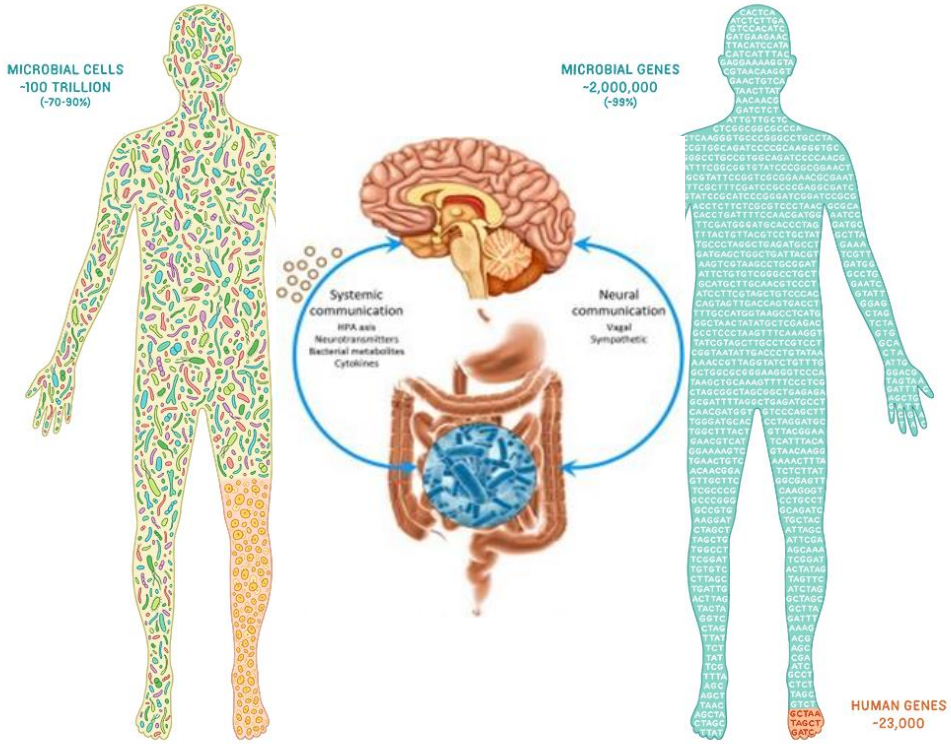
Less than 50g - ketosis

130-150g

175g



Minimum CHO /day



An estimated 30 trillion cells in your body—less than a third—are human. The other 70-90% are bacterial and fungal.
by Gaby D'Allesandro / © AMNH

Ninety-nine percent of the unique genes in your body are bacterial. Only about one percent is human.
by Gaby D'Allesandro / © AMNH

Protein as a Nutrition/Medical Intervention Tool

https://www.amnh.org/explore/science-topics/health-and-our-microbiome/meet-your-microbiome

Protein as nutrition/medical intervention tool

- Weight management
- Blood glucose control
- Bariatic surgery
- Protein-energy Malnutrition
  - Stage 1-3 renal disease
  - Sarcopenia

Protein Requirements in non-acute setting:

0.75g-1.5g/kg of body weight

Healthy weight adults: 0.8-1g/kg body weight

Overweight or Obese: 0.8-1g/kg ideal body weight

Pregnant: 1-1.2g/kg body weight

Dialysis and Elderly with Sarcopenia: 1.2-1.4g/kg

Weight: 60kg,
Height: 1.6m
BMI: 23kg/m2

Daily protein requirement = 48-60g
50% HBV=24-30g

Weight: 70kg,
Height: 1.75m
BMI: 23kg/m2

Daily protein requirement = 56-70g
50% HBV=28-35g

Basic Protein Reckoner




Protein(g)	7	1.3	12	27.8	27.9	4.7	6

1 cup cereals nuts & seeds

2 slices wholegrain breads

1/2 cup Mixed nuts

1 small pack protein snack

1 cup Quinoa

1 cup Kidney Beans

100g Tofu

Protein(g)	7	9	16	9.5	6.4	14.2	18

Reference: The Concise New Zealand Food Composition Table, 12th Edition 2016
https://www.foodcomposition.co.nz/downloads/concise-12-edition.pdf

Basic Protein Reckoner

Breakfast
13g

				100g 	145g 	1 slice 	125ml 
Protein(g)	7	1.3	12	27.8	27.9	4.7	6

1 cup cereals nuts & seeds 	2 slices wholegrain breads 	1/2 cup Mixed nuts 	1 small pack protein snack 	1 cup Quinoa 	1 cup Kidney Beans 	100g Tofu 
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Basic Protein Reckoner

Breakfast 13g

Lunch 20.7g

				100g 	145g 	1 slice 	125ml 
Protein(g)	7	1.3	12	27.8	27.9	4.7	6

1 cup cereals nuts & seeds 	2 slices wholegrain breads 	1/2 cup Mixed nuts 	1 small pack protein snack 	1 cup Quinoa 	1 cup Kidney Beans 	100g Tofu 	
Protein(g)	7	9	16	9.5	6.4	14.2	18

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Basic Protein Reckoner

Breakfast 13g

Lunch 20.7g

Snack 16g

				100g 	145g 	1 slice 	125ml 
Protein(g)	7	1.3	12	27.8	27.9	4.7	6

	1 cup cereals nuts & seeds 	2 slices wholegrain breads 	1/2 cup Mixed nuts 	1 small pack protein snack 	1 cup Quinoa 	1 cup Kidney Beans 	100g Tofu 
Protein(g)	7	9	16	9.5	6.4	14.2	18

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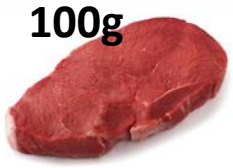
https://www.foodcomposition.co.nz/downloads/concise-12-edition.pdf

Basic Protein Reckoner

Breakfast 13g | Lunch 20.7g | Snack 16g | Dinner 18.4g

				100g 	145g 	1 slice 	125ml 
Protein(g)	7	1.3	12	27.8	27.9	4.7	6

	1 cup cereals nuts & seeds	2 slices wholegrain breads	1/2 cup Mixed nuts	1 small pack protein snack	1 cup Quinoa	1 cup Kidney Beans	100g Tofu
							
Protein(g)	7	9	16	9.5	6.4	14.2	18

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Weight: 60kg,
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Protein(g) 7	9	16	9.5	6.4	14.2	18

Breakfast
13g

Lunch
20.7g

Dinner
18.4g

Snack
16g

Total Protein: 68.1g

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https://www.foodcomposition.co.nz/downloads/concise-12-edition.pdf

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1.5kcal/ml Nutrition Drink
12g protein

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https://www.foodcomposition.co.nz/downloads/concise-12-edition.pdf

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- Health conscious.
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- A ‘dash of perfectionist’.
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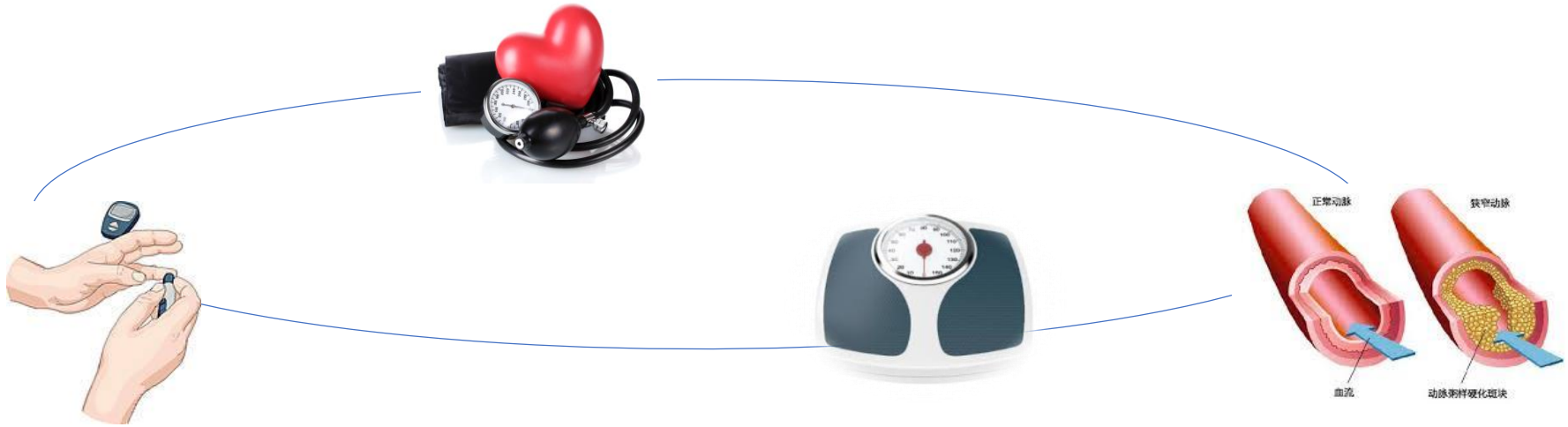
健康和营养素Nutrients and Health



Fibre
纤维

Plant Sources
植物

Carbohydrate
碳水化合物（淀粉）

Plant Sources
植物

Animal Sources
动物

Plant Sources
植物

Protein
蛋白质

Animal Sources
动物

Plant Sources
植物

Fat
脂肪

Saturated Fat
饱 和脂肪

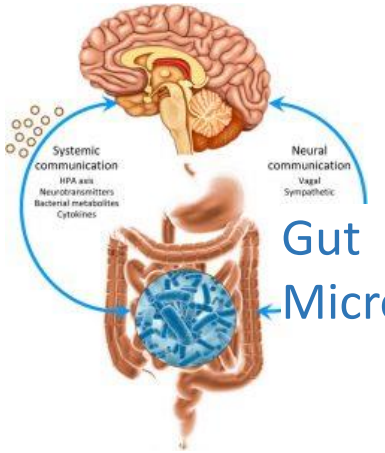
Trans Fat
反武脂肪

Polyunsaturated Fat
多不饱和脂肪

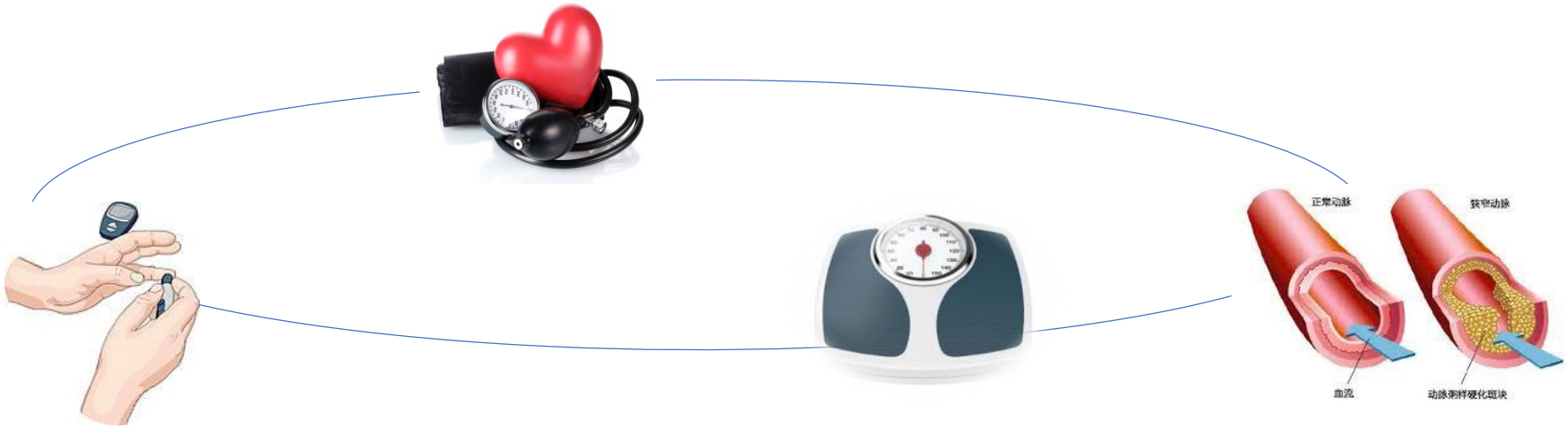
Unsaturated Fat
不饱和脂肪

Monosaturated Fat
单多不饱和脂肪

健康和营养素Nutrients and Health



Gut Microbiota



Fibre
纤维

Plant Sources
植物

Carbohydrate
碳水化合物（淀粉）

Animal Sources
动物

Plant Sources
植物

Plant Sources
植物

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蛋白质

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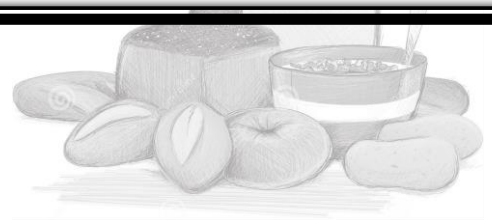
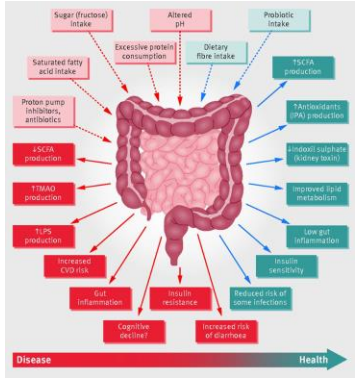
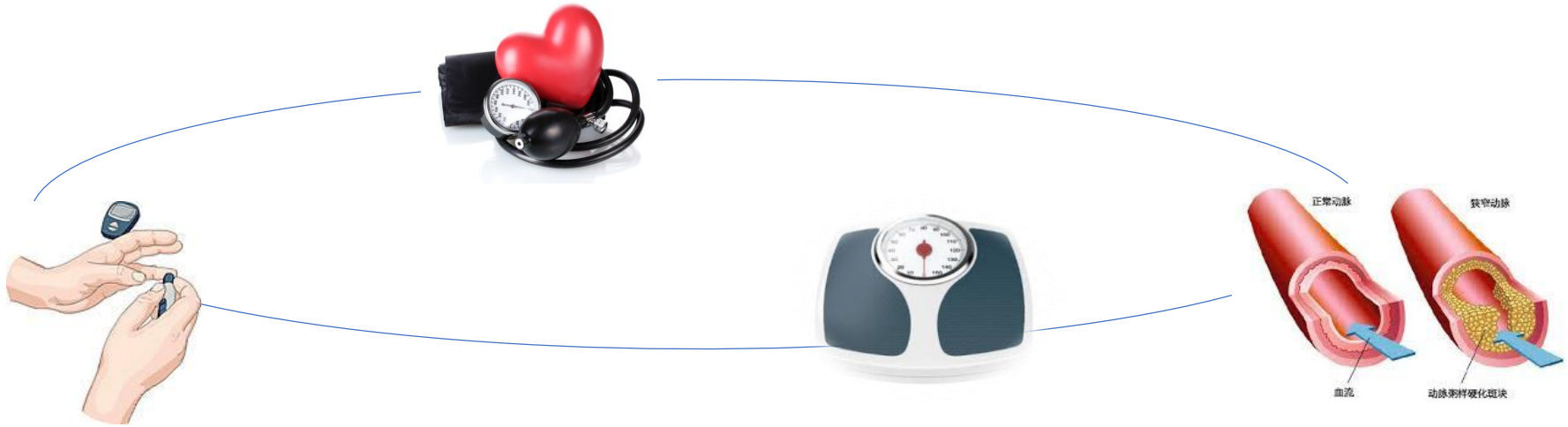


健康和营养素Nutrients and Health

Gut Microbiota





Fibre 纤维

Plant Sources
植物

Carbohydrate 碳水化合物（淀粉）

Animal Sources
动物

Plant Sources
植物

Plant Sources
植物

Protein 蛋白质

Animal Sources
动物

Plant Sources
植物

Fat 脂肪

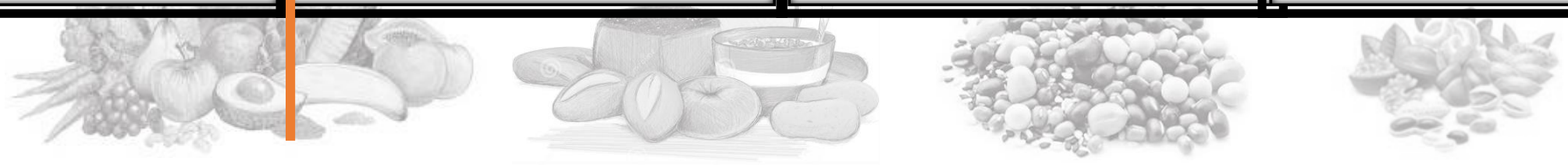
Saturated Fat
饱和脂肪

Trans Fat
反式脂肪

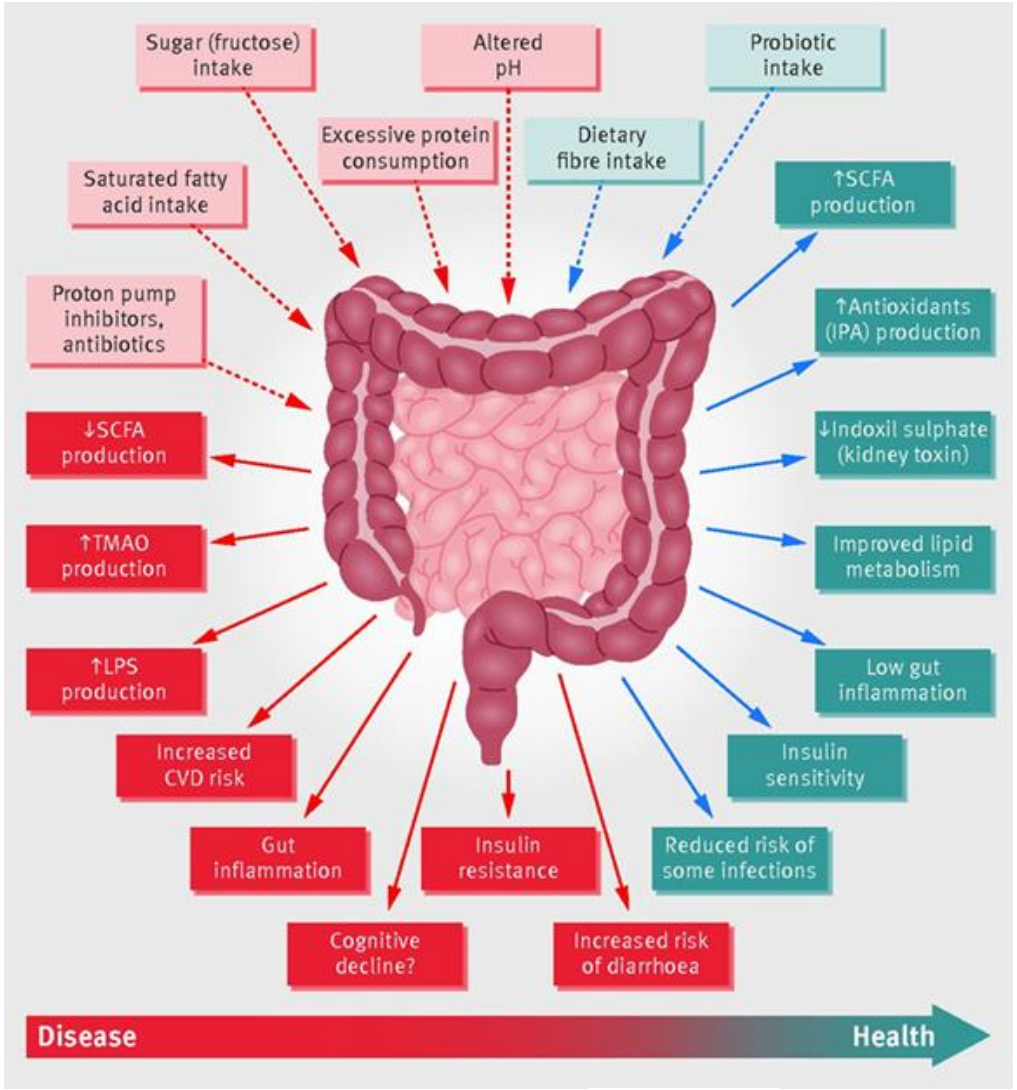
Polyunsaturated Fat
多不饱和脂肪

Unsaturated Fat
不饱和脂肪

Monosaturated Fat
单多不饱和脂肪



Proteolytic Bacteria
- Undigested protein



Saccharolytic Bacteria
- Pre-biotics

Role of the gut microbiota in nutrition and health BMJ 2018;361:k2179
https://www.bmj.com/content/361/bmj.k2179

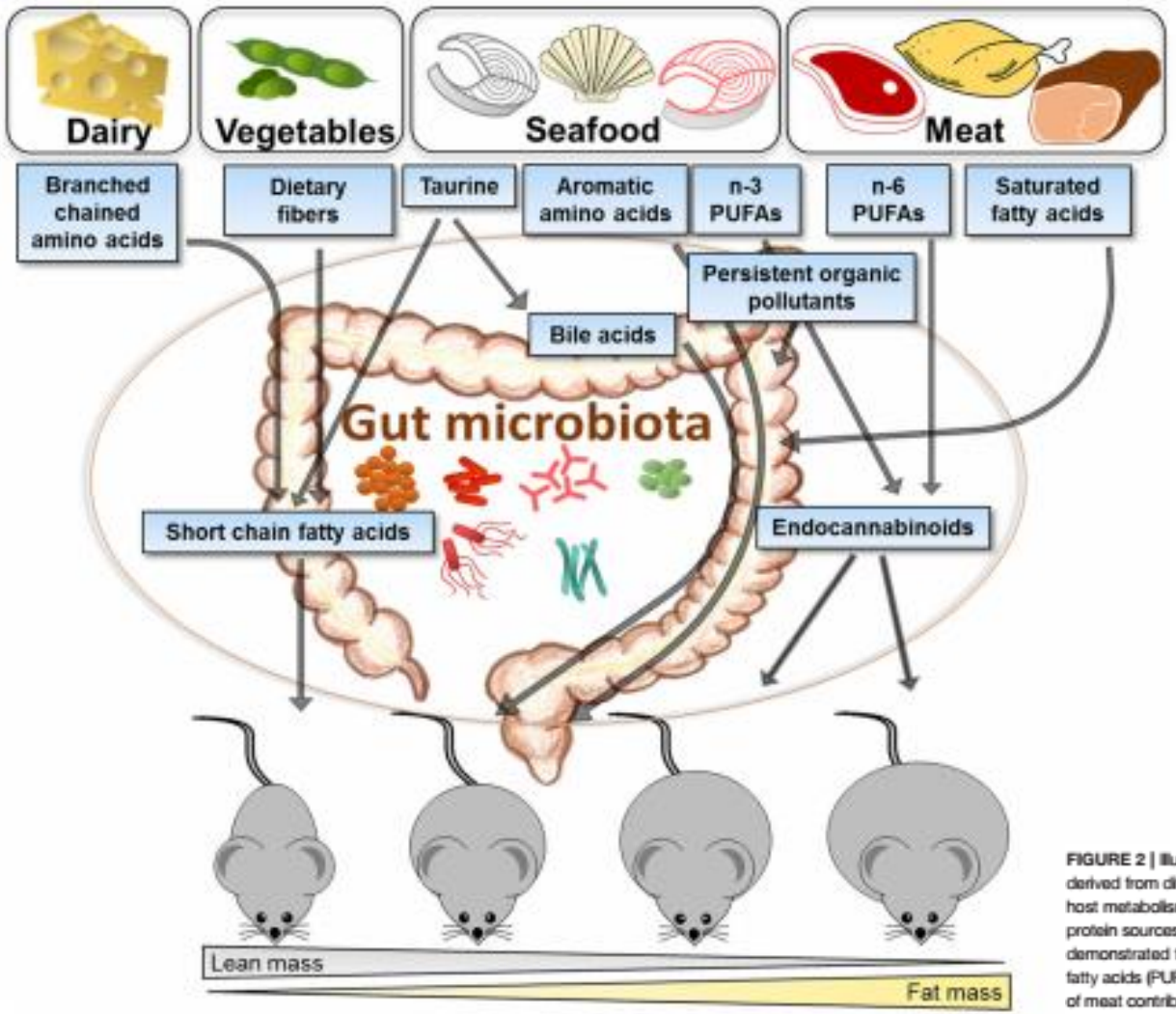
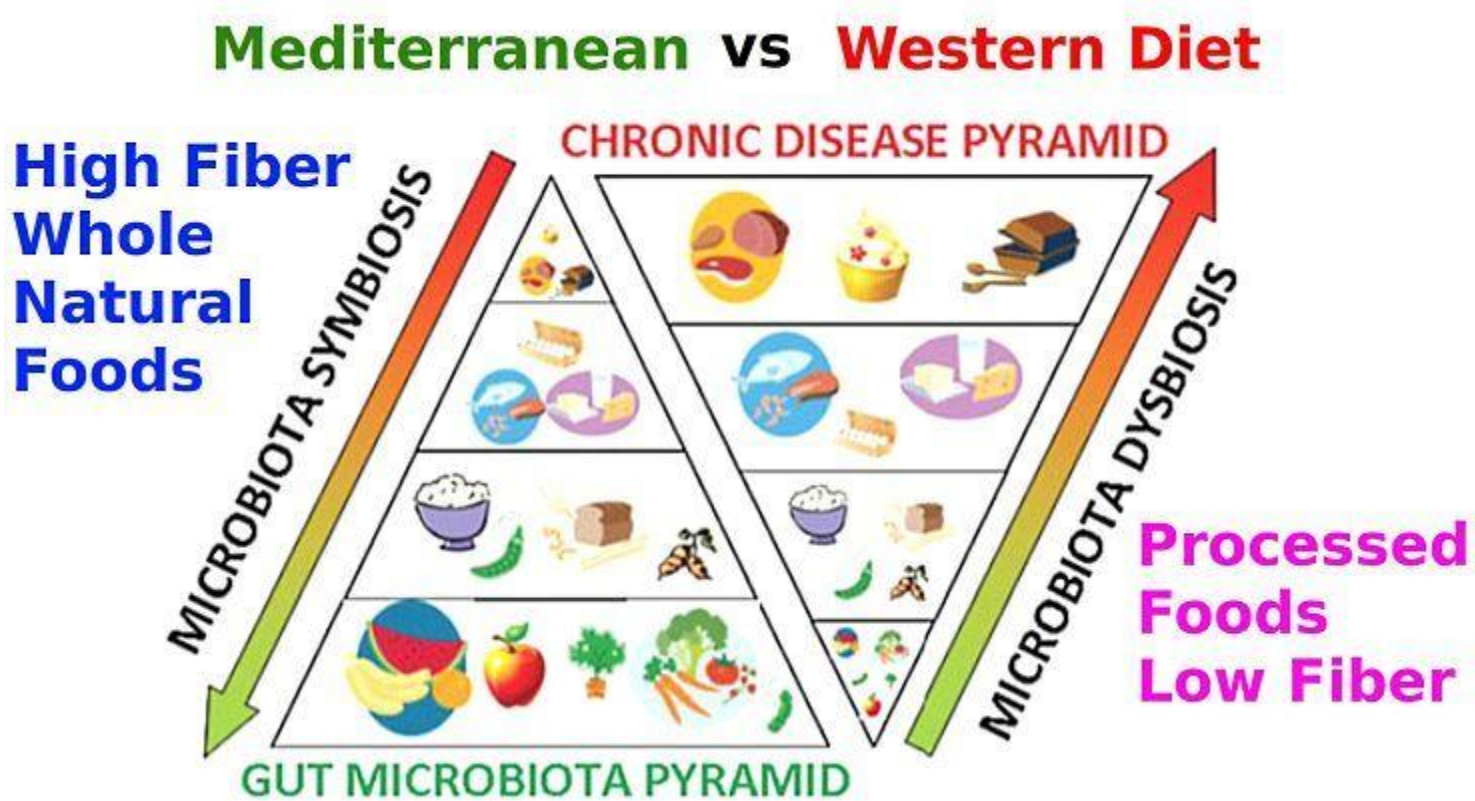
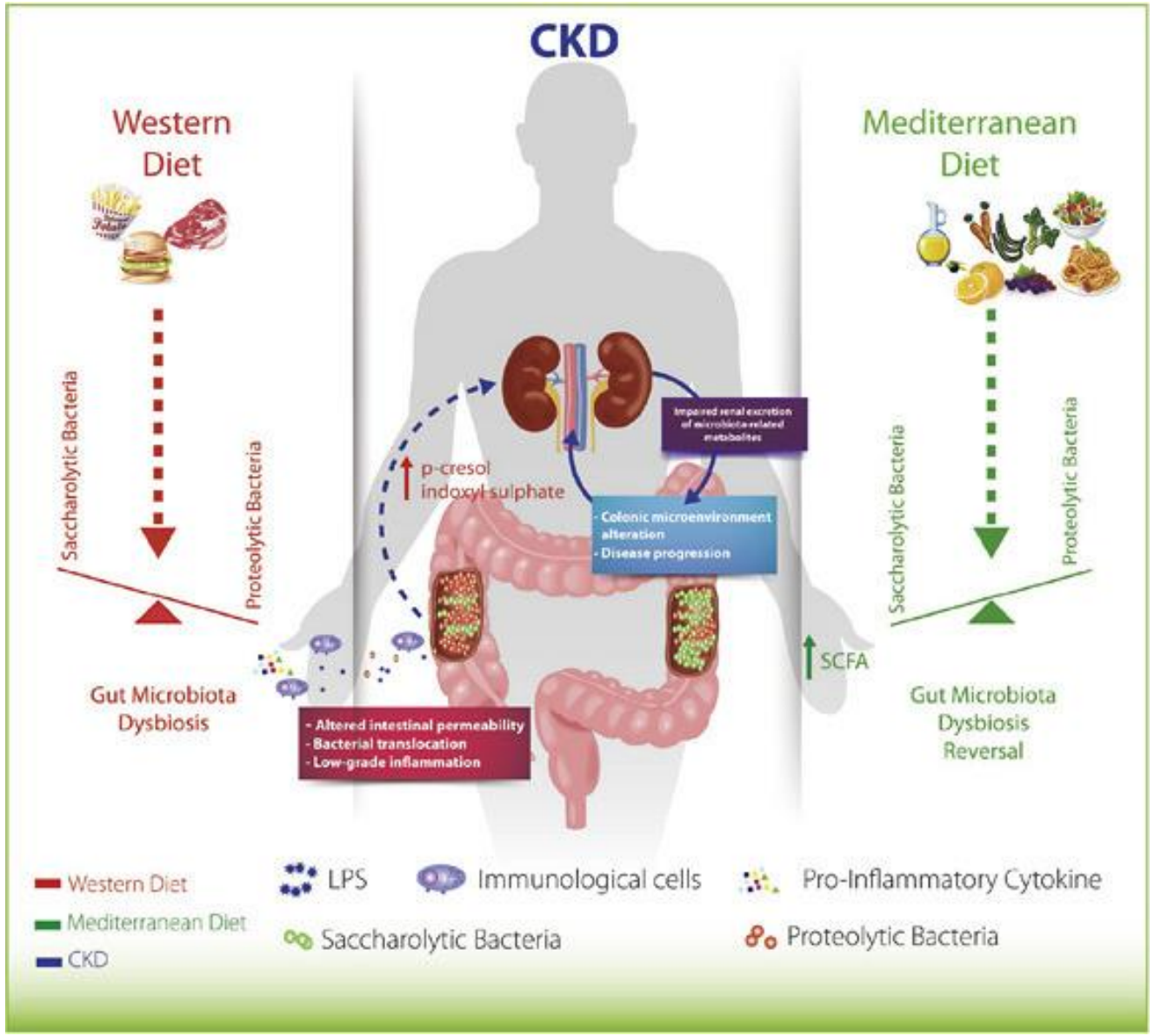


FIGURE 2 | Illustration of how different protein sources vary in their efficiency to attenuate obesity development and suggested links with the gut microbiota. Proteins derived from different food sources contain varying amounts of amino acids, fatty acids, and pollutants, which may interact with the gut microbiota and change the host metabolism, and further impact on obesity development. Casein and other dairy products have a high content of branched chain amino acids and are efficient protein sources for attenuating obesity development in rodents. Proteins from vegetarian sources contribute to high fiber content in the diet and have been demonstrated to protect against obesity. Compared to animal protein sources, seafoods contain high amounts of taurine, aromatic amino acids, *n*-3 polyunsaturated fatty acids (PUFAs) and persistent organic pollutants, which further may impact on the gut microbiota, production of bile acids or endocannabinoids. Different sources of meat contribute with saturated fatty acids, n-6 PUFAs and persistent organic pollutants. Generally, intake of proteins from meat has been demonstrated to be more obesogenic than intake of proteins from seafood or vegetables. It remains to be established to what extent such differences between proteins reflect direct metabolic effects in the host or to what extent the microbiota plays a causal role.

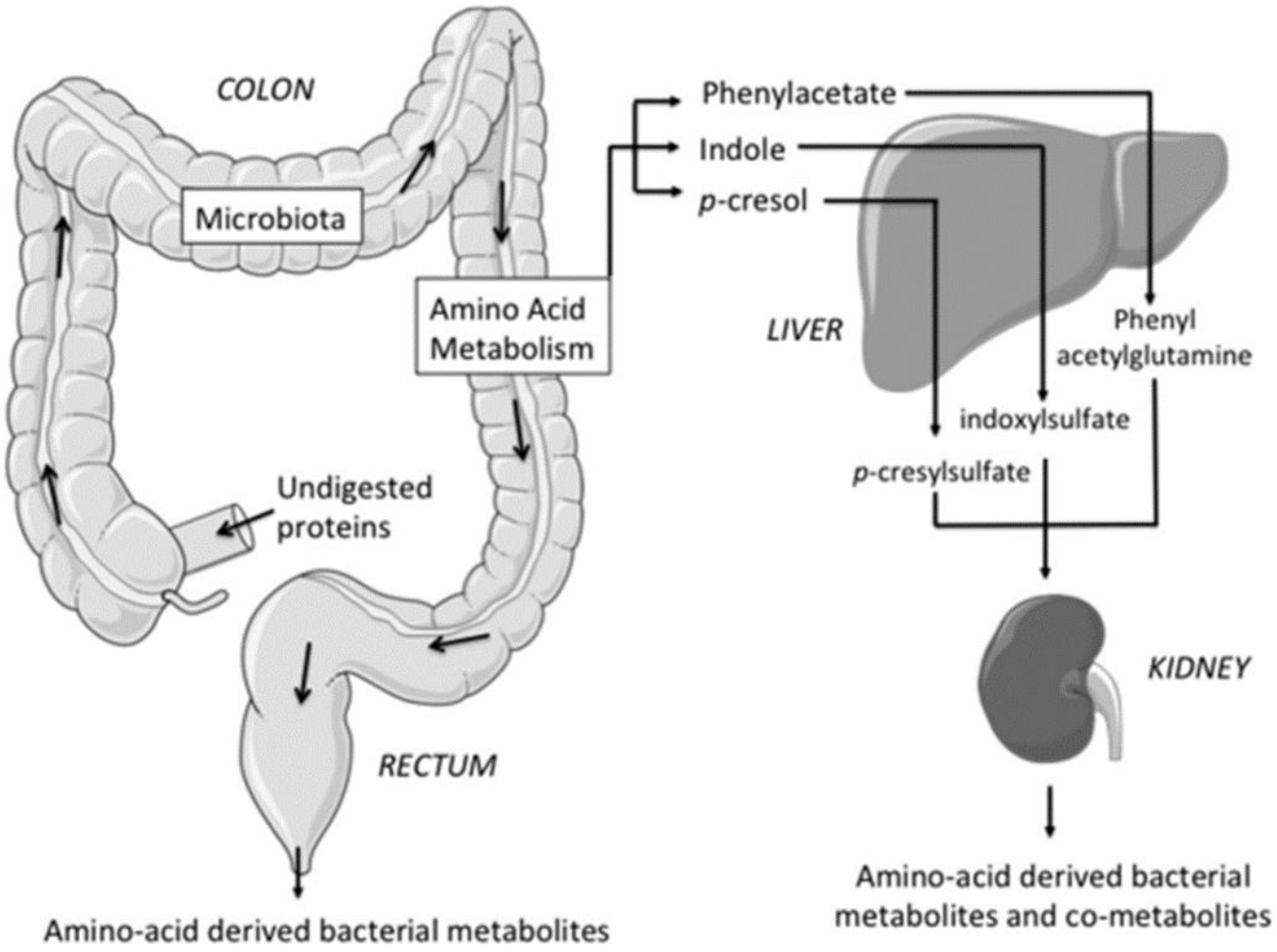
Review: Link between Dietary Protein sources, the Gut Microbiota, and Obesity. Frontiers in Physiology, Dec 2017, Vol 8, Article 1047



'The way to a man's heart is through his gut microbiota' – Dietary pro-and prebiotics for the management of cardiovascular risk. Proceedings of the Nutrition Society (2014), 73, 172-185
https://www.researchgate.net/publication/260093369_%27The_way_to_a_man%27s_heart_is_through_his_gut_microbiota%27_-_Dietary_pro-_and_prebiotics_for_the_management_of_cardiovascular_risk



What would you like to eat, Mr. CKD Microbiota? A Mediterranean Diet, please ! Kidney Blood Press Res 2014;39:114-123
https://www.researchgate.net/publication/264796458_What_would_you_like_to_eat_Mr_CKD_Microbiota_A_Mediterranean_Diet_please



High-protein diet for weight management: Interaction with the intestinal microbiota and consequences for gut health. A position paper by the my new gut study group.
Clinical Nutrition (2018) 1-11
https://doi.org/10.1016/j.clnu.2018.09.016

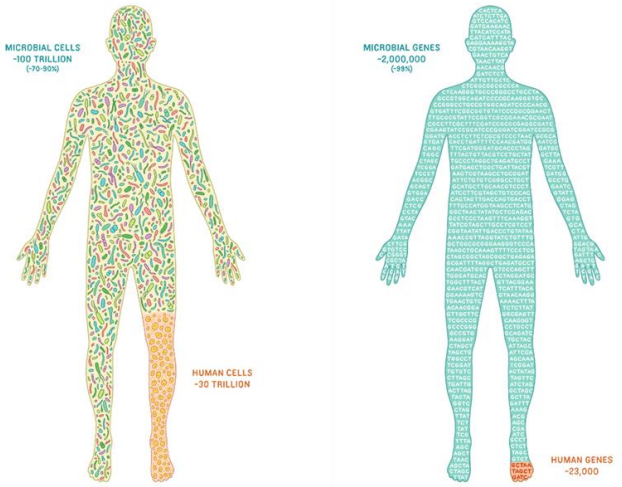
Microbiota Symbiosis: Same Messages, Different Reason

Nutrition

- Choose fresh produce over processed food.
- Less animal protein, more plant protein.

- Move the gut !
  - Be active.
  - Keep the fluids up.
  - Pump up the fibre.

- Health is about balance. Find the balance in life.



More references:

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- Red meat intake in chronic kidney disease patients: two sides of the coin. Nutrition 46 (2018)26-32. http://doi.org/10.1016/j.nut.2017.08.015
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