

The nutritional science about red meat & fat

Hybu Cig Cymru / Meat Promotion Wales

November 2019

Dr. Zoë Harcombe, Ph.D

Refs: www.zoeharcombe.com/MPW19

Facts about food

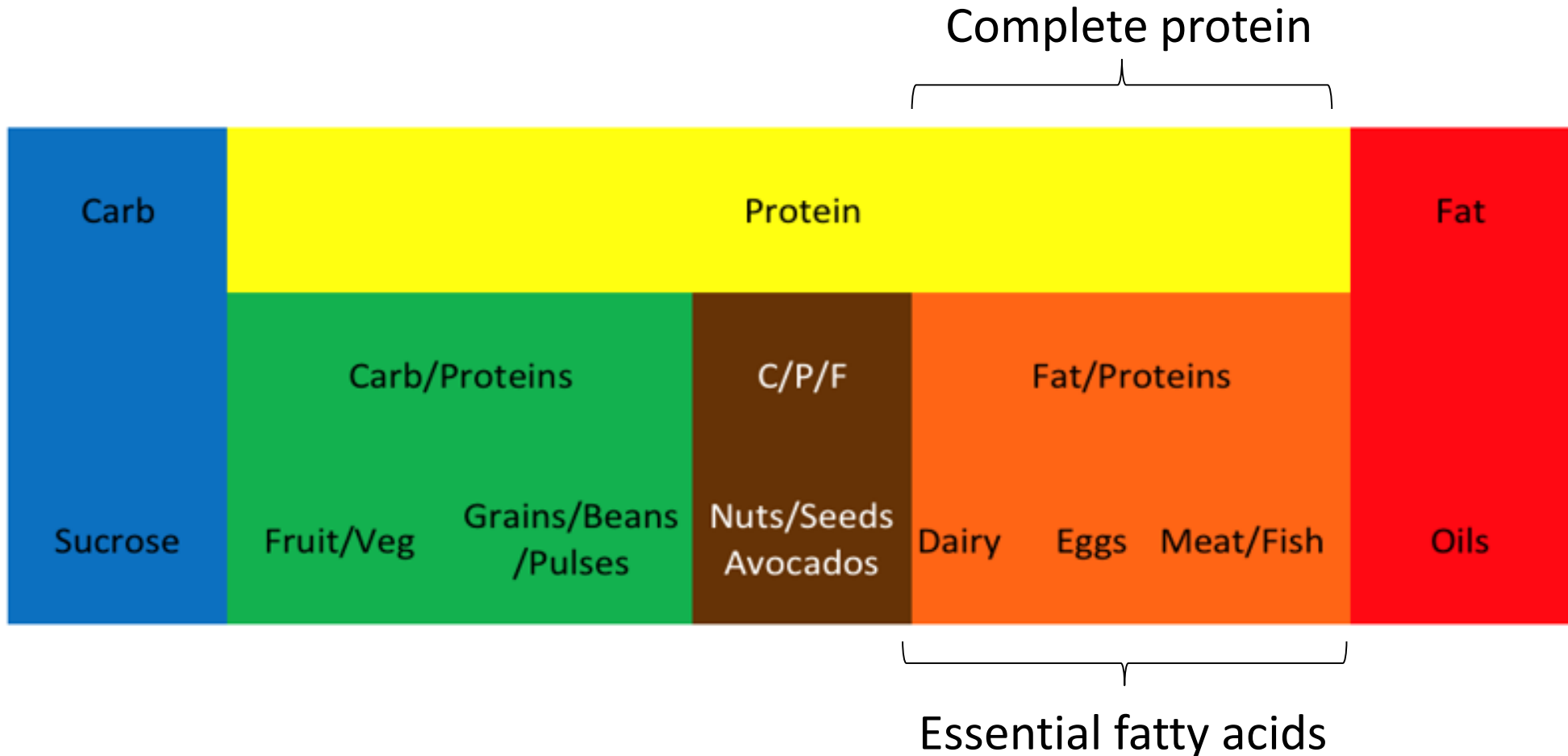
What is food?

- Mostly water
- Macronutrients
 - Protein (essential amino acids)
 - Fat (essential fatty acids)
 - Carbohydrate
- Micronutrients
 - 13 vitamins
 - c.15 minerals

"The lower limit of dietary carbohydrate compatible with life apparently is zero, provided that adequate amounts of protein and fat are consumed."

Facts about food

Macronutrients

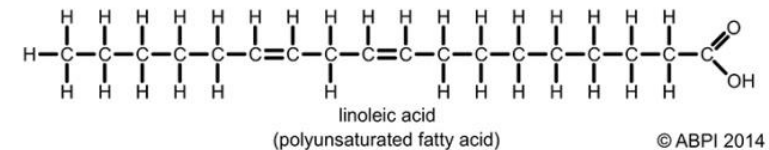
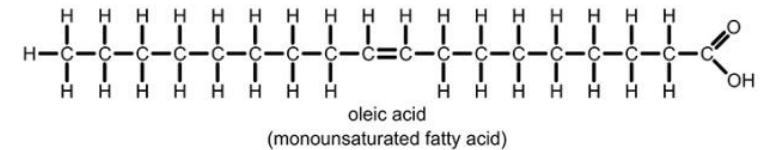
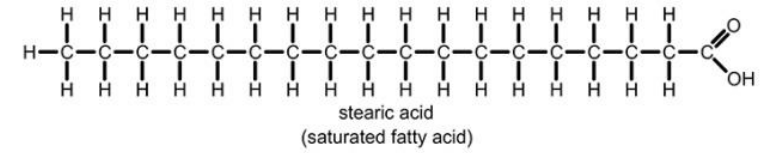


Facts about food

What is fat?

There are 3 real fats:

- Saturated (stable);
- Monounsaturated (monounstable);
- Polyunsaturated (polyunstable).



© ABPI 2014

- 1) All foods that contain fat contain all 3 fats. There are no exceptions.
- 2) Only dairy products have more saturated than unsaturated fat. Not that any real fat is better or worse...

Facts about food

Total fat (g) / Saturated fat (g) per 100g food



Steak 7/2.1



Eggs 10/3.1



Mackerel 14/3.3



Lard 100/39



Almonds 51/3.9



Olive oil 100/14



1/0.6

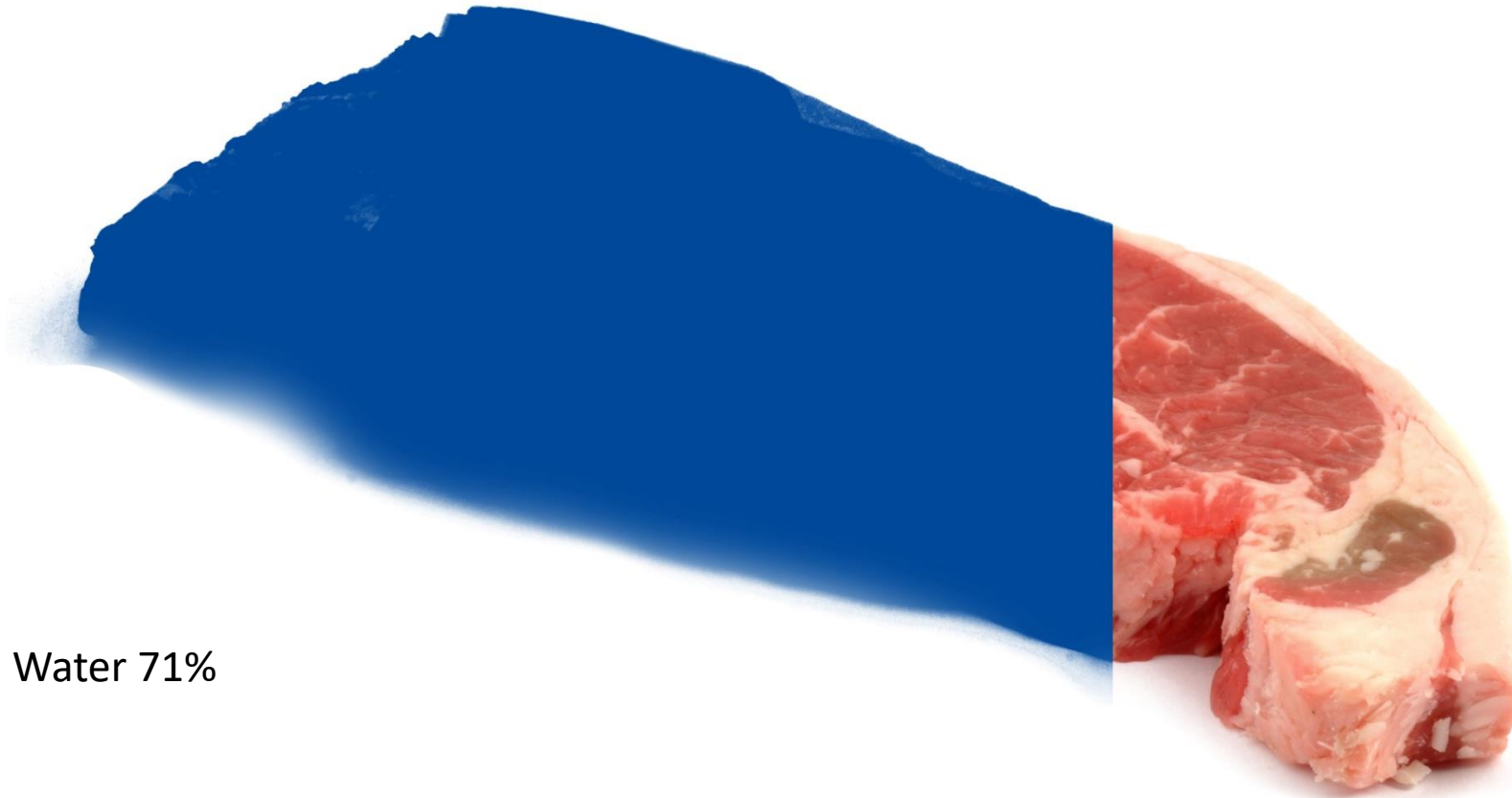
Facts about food

What steak is really full of



Facts about food

What steak is really full of



Facts about food

What steak is really full of



Water 71%
Protein 21%

Facts about food

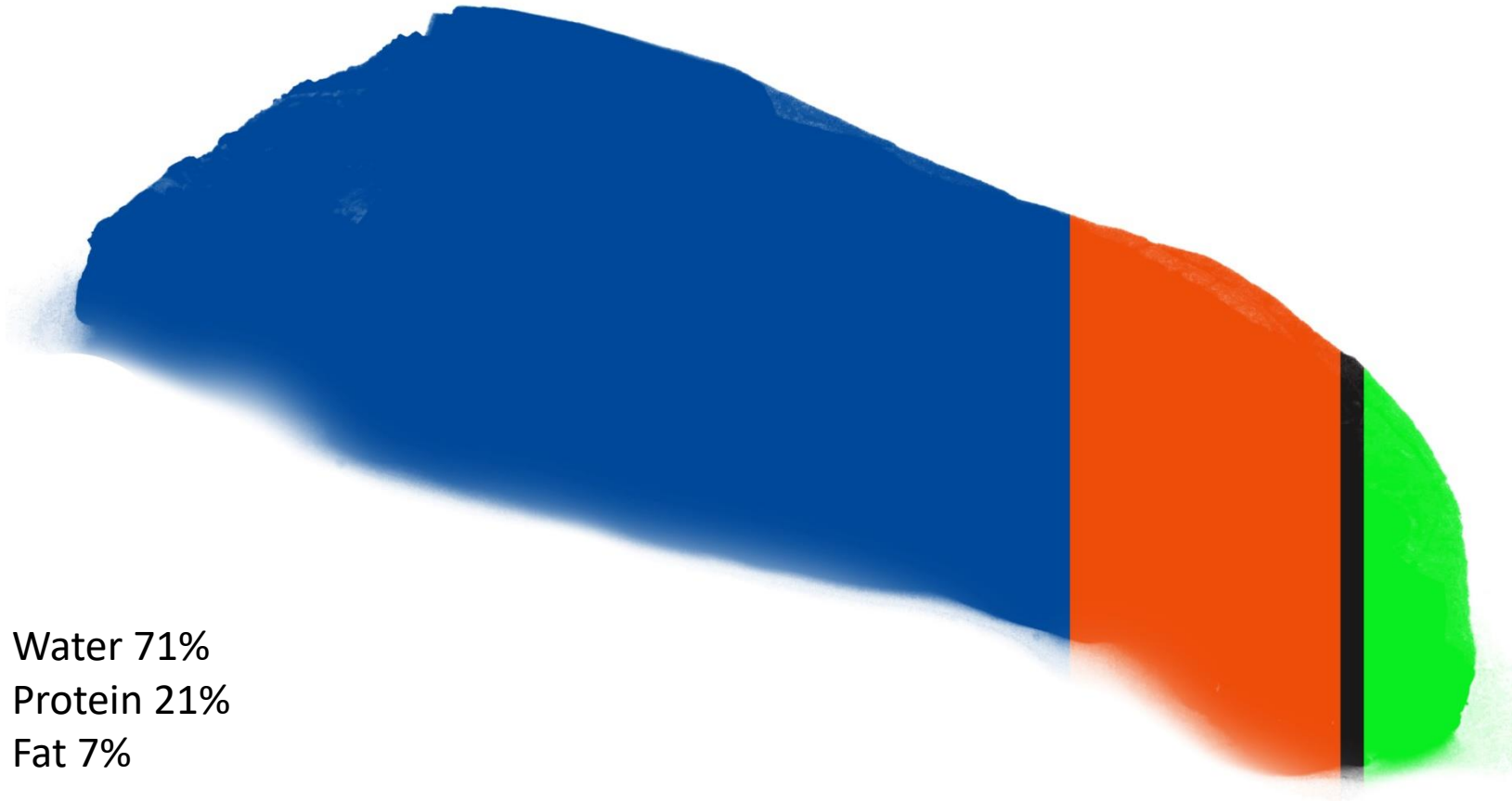
What steak is really full of



Water 71%
Protein 21%
Ash/Minerals 1%

Facts about food

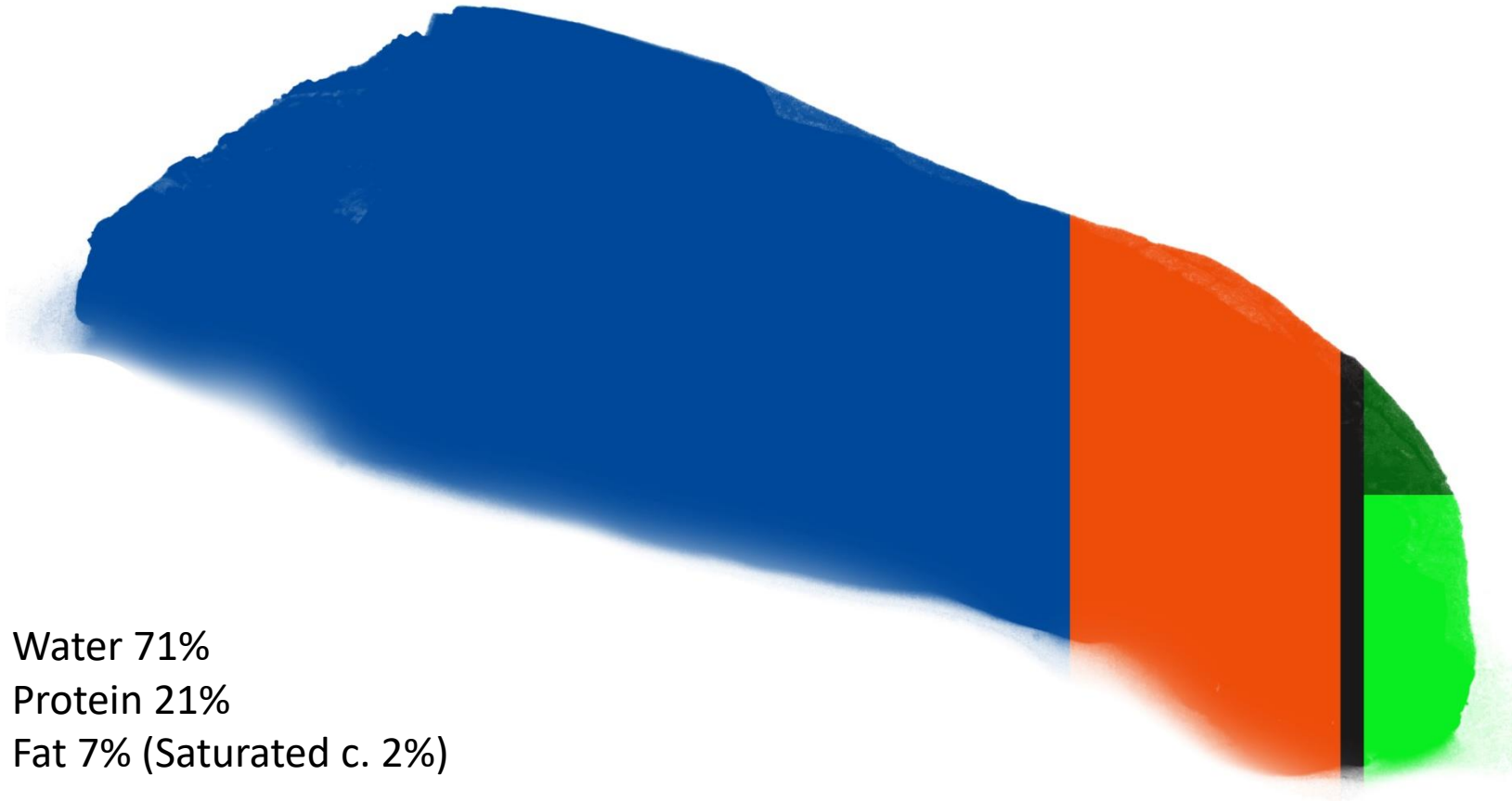
What steak is really full of



Water 71%
Protein 21%
Fat 7%

Facts about food

What steak is really full of



Water 71%
Protein 21%
Fat 7% (Saturated c. 2%)

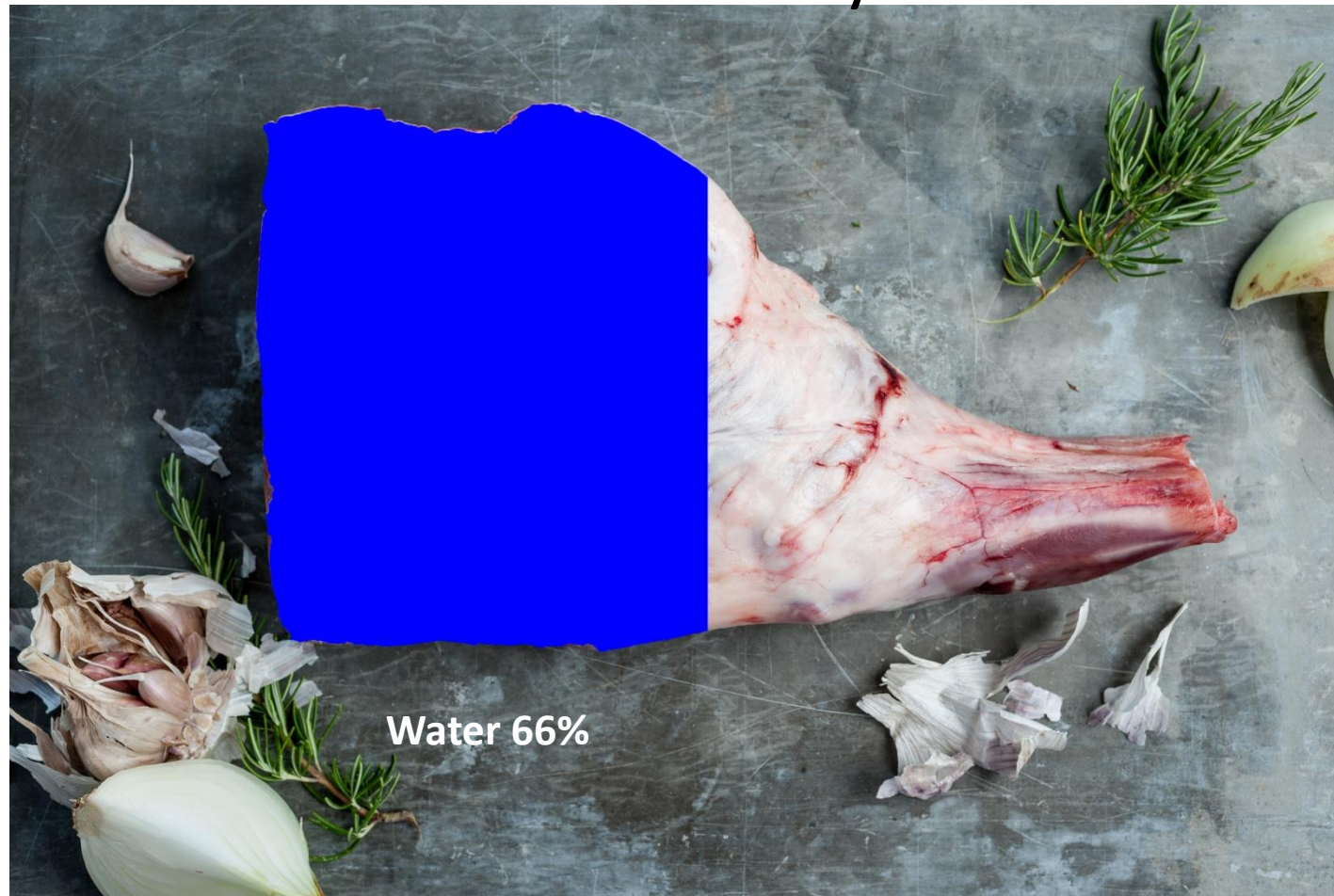
Facts about food

What lamb is really full of



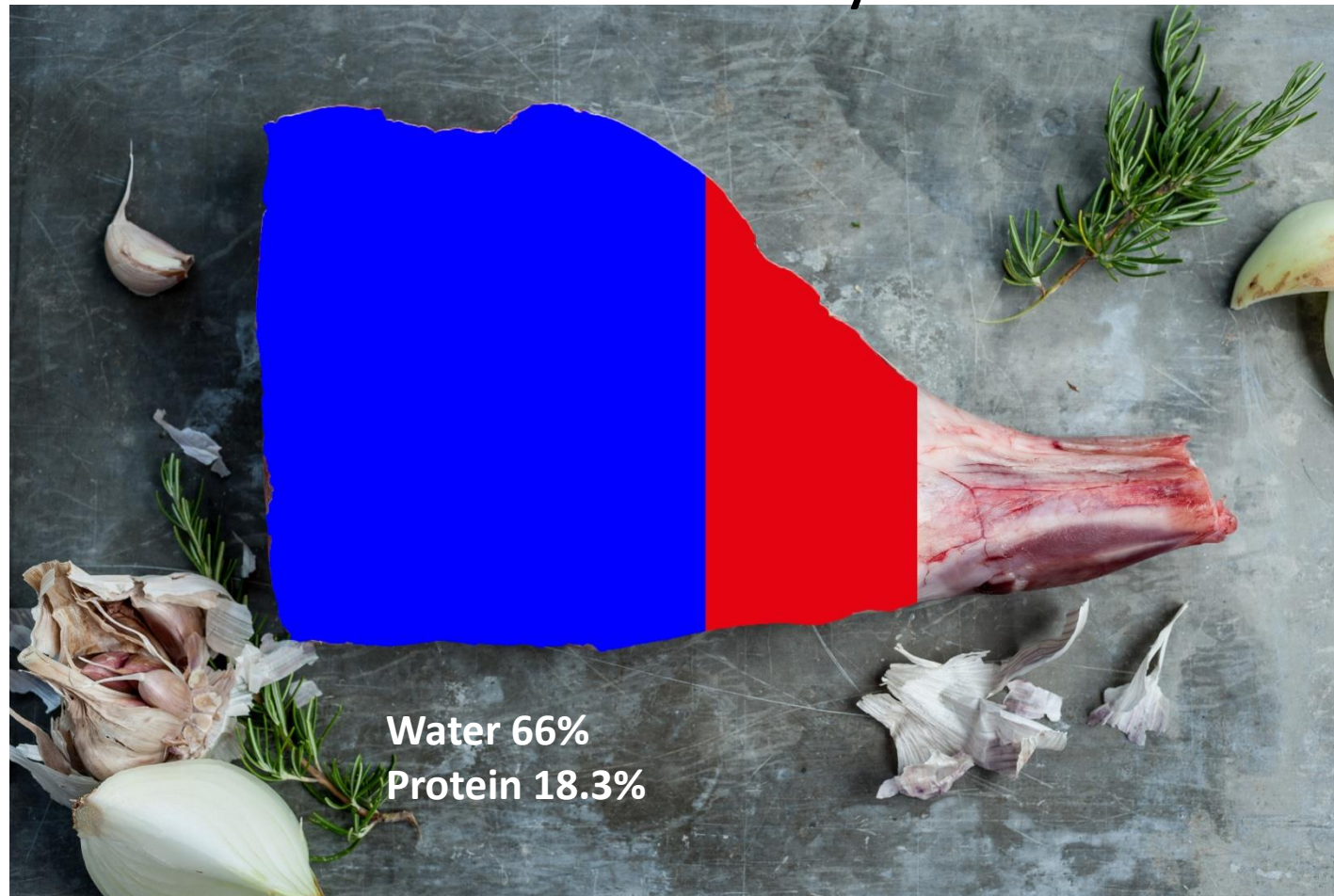
Facts about food

What lamb is really full of



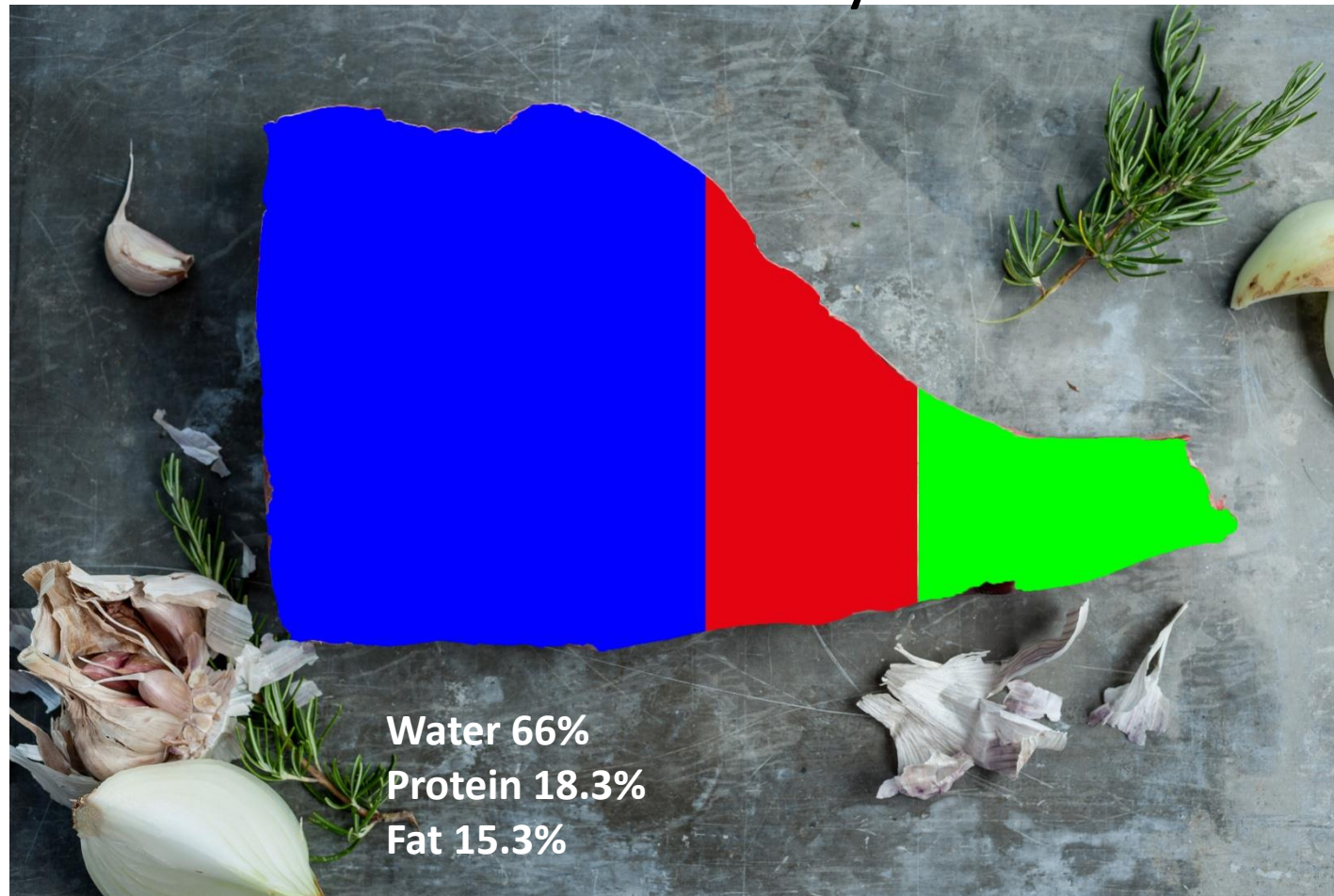
Facts about food

What lamb is really full of



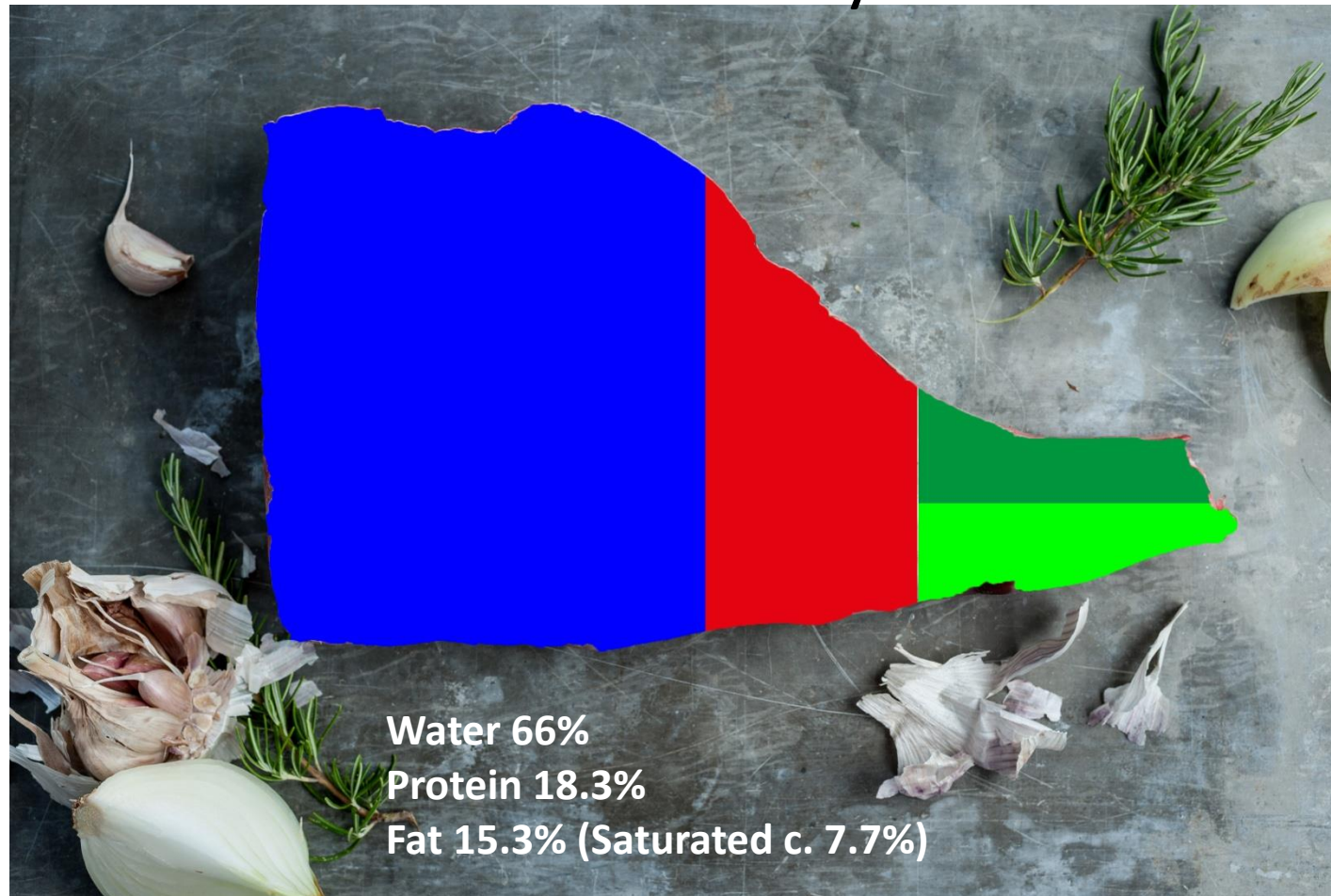
Facts about food

What lamb is really full of



Facts about food

What lamb is really full of



What are we told to eat?

The 'Eatwell' Guide



Public Health
England

Eatwell Guide example menus

The following separate daily menus are just a few examples of ways in which an adult could meet their nutritional requirements by following a healthy, balanced diet, as depicted in the new Eatwell Guide. The food portions used within these examples are not intended as portion size recommendations. These particular menus contain approximately 2,250kcal. Daily energy requirements for men and women are 2,500kcal and 2,000kcal respectively based on average population diets, which provide a useful benchmark for individual consumption.

Eatwell Guide Menu 1

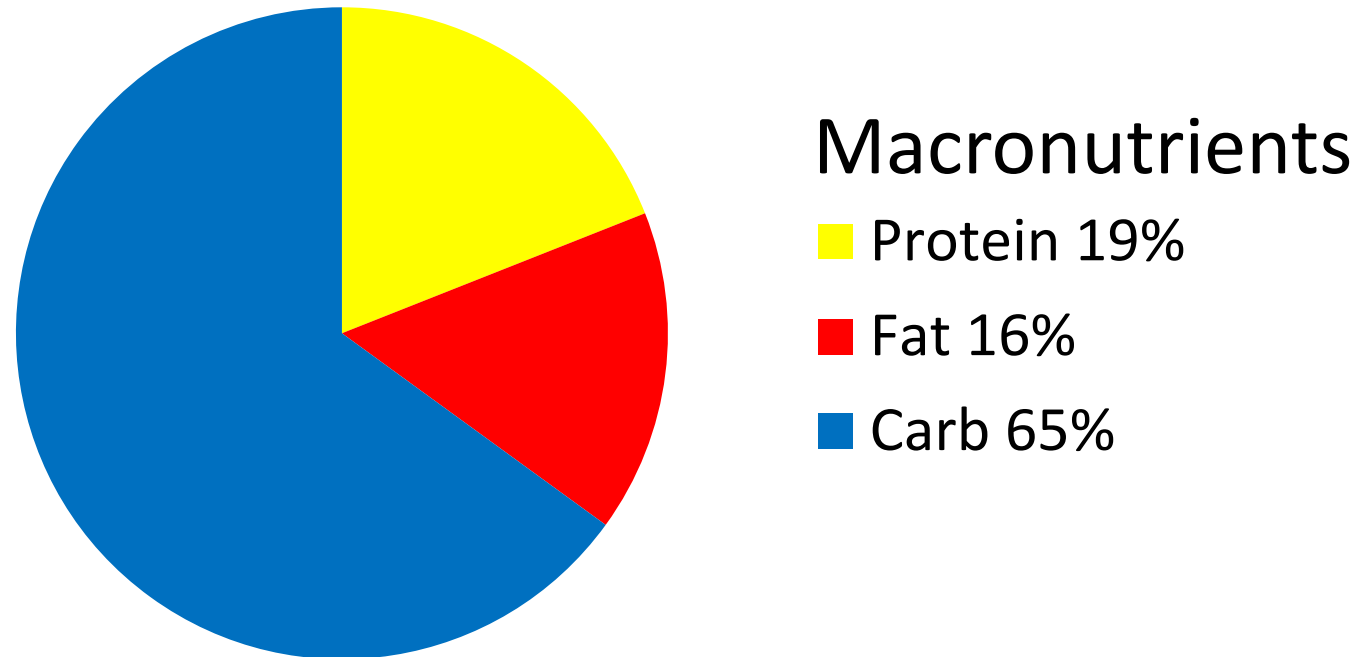
Breakfast

- Shredded whole-wheat cereal biscuits (44g) with semi-skimmed milk (150ml)
- Wholemeal toast (35g) with low fat spread (5g) and marmalade (5g)
- Orange (160)
- Tea (160ml) with semi-skimmed milk (30ml)

What are we told to eat?

The 'Eatwell' Guide Deficiencies

Micronutrients
Retinol <1/4
Vit D 1/4
Vit E <1/2
Calcium



What are we told to eat?

The EAT Lancet Deficiencies

	Macronutrient intake (possible range), g/day	Caloric intake, kcal/day	Protein sources‡		
Whole grains*			Beef and lamb	7 (0-14)	15
Rice, wheat, corn			Pork	7 (0-14)	15
Tubers or starch				58)	62
Potatoes and cass				25)	19
Vegetables				100)	40
All vegetables				100)	172
Dark green veget				50)	112
Red and orange v				75)	142
Other vegetables					149
Fruits				6-8)	60
All fruit				80)	354
Dairy foods					0
Whole milk or derivative equivalents (eg, cheese)	250 (0-500)	153	Lard or tallow	5 (0-5)	36
			Added sugars		
			All sweeteners	31 (0-31)	120

Retinol 17%
Vit D 5%
Calcium 55-65%
Iron – barely half (female)
EFA – 28g fish can't provide EPA & DHA
Vit K, Potassium, Sodium, B12...

The evidence

What constitutes evidence?



The evidence

Dietary Fat – my thesis

British Journal of
Sports Medicine

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Article Text

Article info

Review

Dietary fat guidelines have no evidence base: where next for public health nutritional advice? **FREE**

Zoë Harcombe

Meta-analysis

Original research article

Evidence from randomised controlled trials does not support current dietary fat guidelines: a systematic review and meta-analysis

Zoë Harcombe¹, Julien S Baker¹, James J DiNicolantonio², Fergal Grace¹ and Bruce Davies³

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Br J Sports Med doi:10.1136/bjsports-2016-096550

Review

Evidence from prospective cohort studies does not support current dietary fat guidelines: a systematic review and meta-analysis

Zoë Harcombe¹, Julien S Baker¹, Bruce Davies²

The evidence

Dietary Fat – other reviews

Researchers	Year	Findings (significant)
Skeaff & Miller	2009	0/2
Siri-Tarimo		
Hooper et al.		ents
Chowdhury		ats)
Schwingshackl		
Hooper et al.		ents
Harcombe		
TOTAL		3/40

Nothing against total fat whatsoever.

Nothing sig. for all-cause mortality; Or CVD mortality; Or CHD mortality; Or MIs; Or non-fatal MIs; Or stroke; Or CHD events.

The evidence

All meta-analysis evidence against red meat

The evidence

All RCT evidence against red meat

The evidence

Most recent epidemiological 'evidence'

NON significant findings:

Bowel cancer & poultry

Bowel cancer & fish

Bowel cancer & dairy milk

Bowel cancer & cheese

Bowel cancer & red meat!

Bowel cancer & fruit or vegetables or tea or
coffee or total fibre...

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Results

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The evidence

The three flaws in epidemiology

1) Association not causation:

Claim: “19% association with 25g processed meat/day vs none”

2) Relative, not absolute, risk:

Claim: *“For every 10,000 people in the study who ate 21g a day of red and processed meat, 40 were diagnosed with bowel cancer. The comparable figure for those who ate 76g a day, was 48.”* i.e. 8 cases per 10,000 people in c. 6 years. 1 in 10,000/year!

3) The healthy/unhealthy person confounder:

Meat eaters were more likely to be: older; smokers; drinkers... with a higher BMI; higher body fat; higher NSAID users; lower veg. eaters...

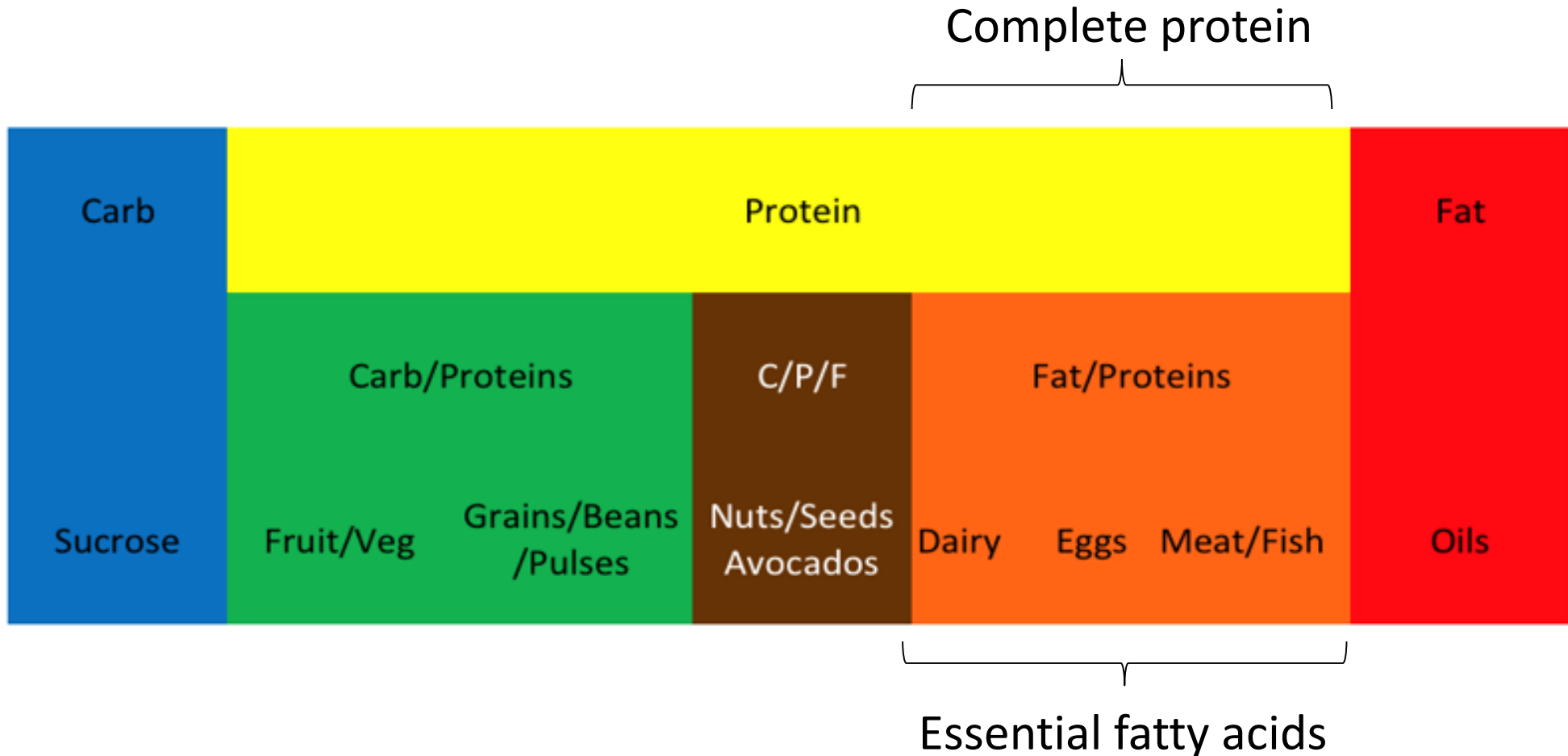
What should we eat?

Follow the evidence

- 1) Eat real food
- 2) Choose that real food for the nutrients it provides
- 3) Eat a maximum of three times a day

What should we eat?

1) Eat real food 2) Choose that real food...



What should we eat?

2) Choose that food...

(All per 100g)	Liver	Steak	Sardines	Broccoli	Apple	Brown rice	Lentils
Calories	116	154	208	34	52	370	353
A Retinol (900mcg)	3,323	0	32	0	0	0	0
B1 (1.2mg)	0.3	0.1	0.1	0.1	0	0.4	0.9
B2 (1.3mg)	1.8	0.1	0.2	0.1	0	0.1	0.2
B3 (16mg)	9.7	7.2	5.2	0.6	0.1	5.1	2.6
B5 (5mg)	6.2	0.6	0.6	0.6	0.1	1.5	2.1
B6 (1.7mg)	0.9	0.6	0.2	0.2	0	0.5	0.5
Folate 400mcg	588	13	12	63	3	20	479
B12 (2.4mcg)	16.6	1.2	8.9	0	0	0	0
C (90mg)	17.9	0	0	89.2	4.6	0	4.4
D (15mcg)	0	0	6.8	0	0	0	0
E (15mg)	0.7	0.3	2	0.8	0.2	1.2	0.5

What should we eat?

2) Choose that food...

(All per 100g)	Liver	Steak	Sardines	Broccoli	Apple	Brown rice	Lentils
Calcium (1000mg)	8	27	382	47	6	23	56
Magnesium (420mg)	19	22	39	21	5	143	122
Phosphorus (700mg)	297	193	490	66	11	333	451
Copper (0.9mg)	0.5	0.1	0.2	0.0	0	0.3	0.5
Iron (18mg)	9.0	1.5	2.9	0.7	0.1	1.5	7.5
Manganese (2.3mg)	0.3	0.0	0.1	0.2	0	3.7	1.3
Zinc (11mg)	2.7	3.9	1.3	0.4	0	2	4.8

What should we eat?

2) Choose that food...

(All per 100g)	Cocoa	Liver	Steak	Sardines	Broccoli	Apple	Brown rice	Lentils
Calcium (1000mg)	128	8	27	382	47	6	23	56
Magnesium (420mg)	499	19	22	39	21	5	143	122
Phosphorus (700mg)	734	297	193	490	66	11	333	451
Copper (0.9mg)	3.8	0.5	0.1	0.2	0.0	0	0.3	0.5
Iron (18mg)	13.9	9.0	1.5	2.9	0.7	0.1	1.5	7.5
Manganese (2.3mg)	3.8	0.3	0.0	0.1	0.2	0	3.7	1.3
Zinc (11mg)	6.8	2.7	3.9	1.3	0.4	0	2	4.8

What should we eat?

1) Real food!

2) Choose that food...

Michael Pollen

Eat food; mostly plants;
not too much!

Whole grains; pulses;
fruit

Zoë Harcombe

Eat food; mostly animals;
quite a lot!

Pasture fed meat/eggs/
dairy; fish; berries

Agree on vegetables & salads

What should we eat?

Guidelines vs. evidence

In the right form	EFA's	Protein	Vits A/D/E/K	Other vits	Minerals
EAT – Veg	X	X	E/K1	Not B12	✓
EAT – Fruit	X	X	E/K1	Not B12	✓
EAT – Grains	X	X	E/K1	Not B12	✓
EAT – Legumes	X	X	E/K1	Not B12	✓
EAT – Oils	X	X	E/K1	X	X
Eggs	✓	✓	✓	Not C	✓
Dairy	✓	✓	✓	Not C	✓
Meat	✓	✓	✓	✓	✓
Fish	✓	✓	✓	Not C	✓

When conflicts trump evidence

Who designed the 'Eatwell' Guide?



When conflicts trump evidence

Who designed the 'Eatwell' Guide?

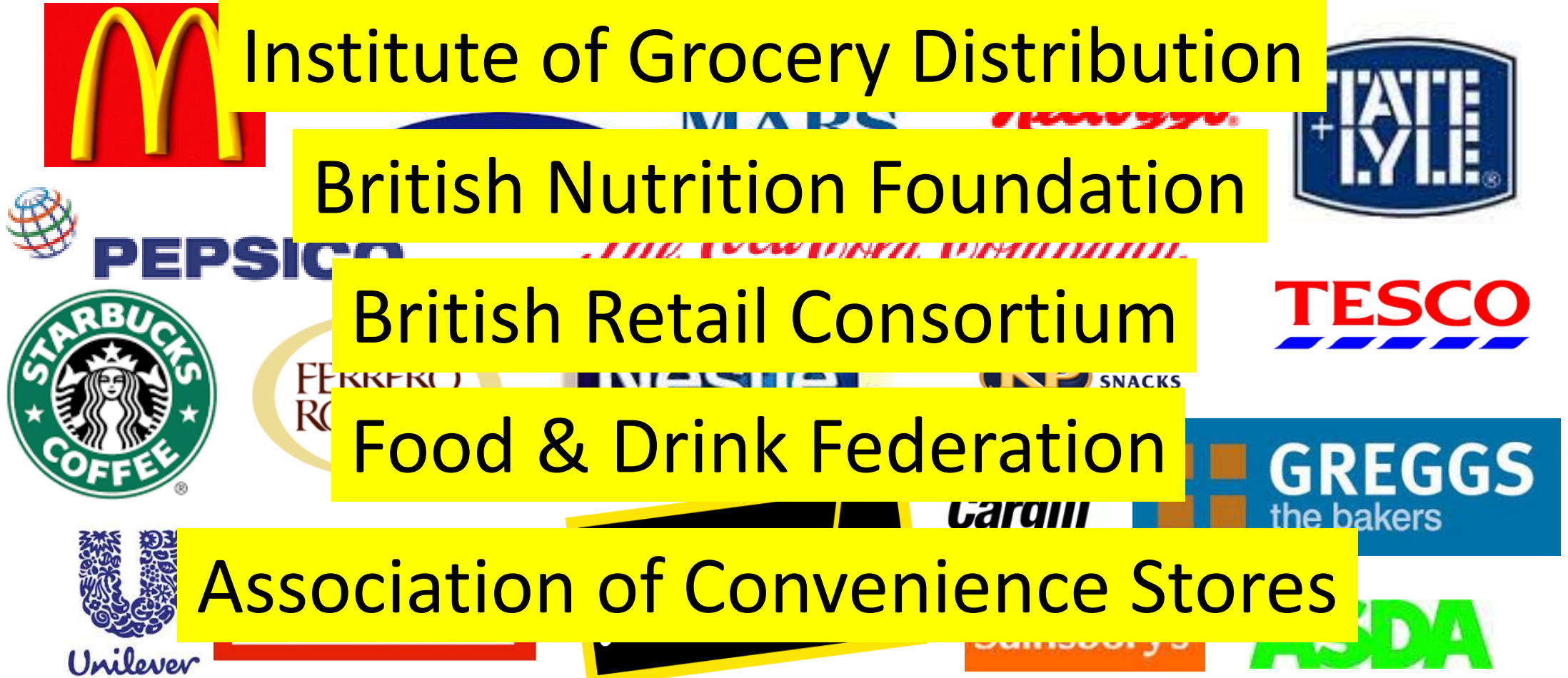
Institute of Grocery Distribution

British Nutrition Foundation

British Retail Consortium

Food & Drink Federation

Association of Convenience Stores



When conflicts trump evidence

Who designed The EAT Lancet diet?

FReSH was jointly launched in January 2017 by the EAT Foundation (EAT) and the World Business Council for Sustainable Development (WBCSD), and 25 founding member companies. The total membership has since grown to almost 40 companies.



Agri / Food/ Biotech

Food

The final slide

- 'Civilised' man is the only chronically sick animal on the planet (Barry Groves).
- Man is the only species clever enough to make his own food...
- ... & stupid enough to eat it.

The End!

Thank you for listening

Hybu Cig Cymru / Meat Promotion Wales

November 2019

Dr. Zoë Harcombe, Ph.D

Refs: www.zoeharcombe.com/MPW19