

THE IMPORTANCE OF ANIMAL-SOURCE FOODS IN WESTERN DIETS



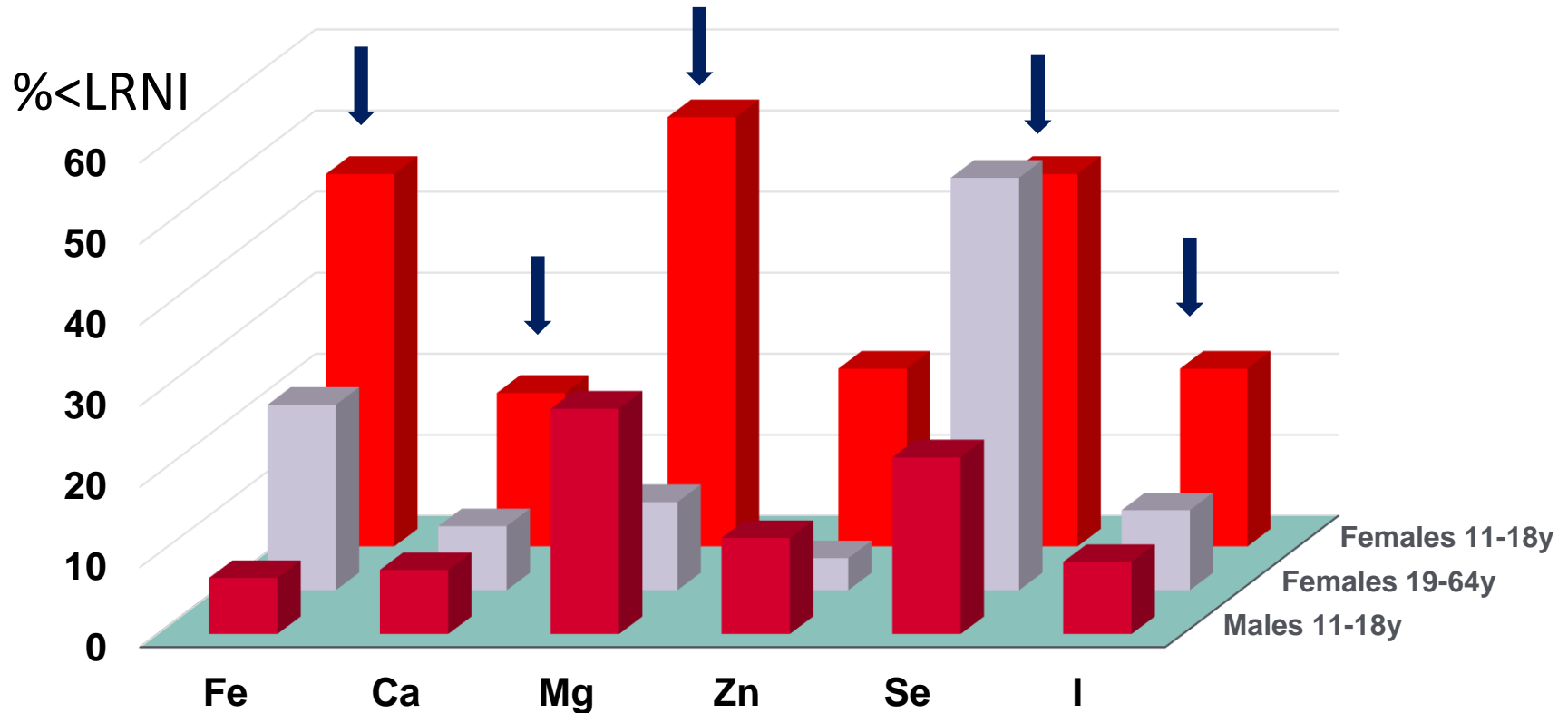
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University of Reading



PROBLEMS IN THE YOUNG

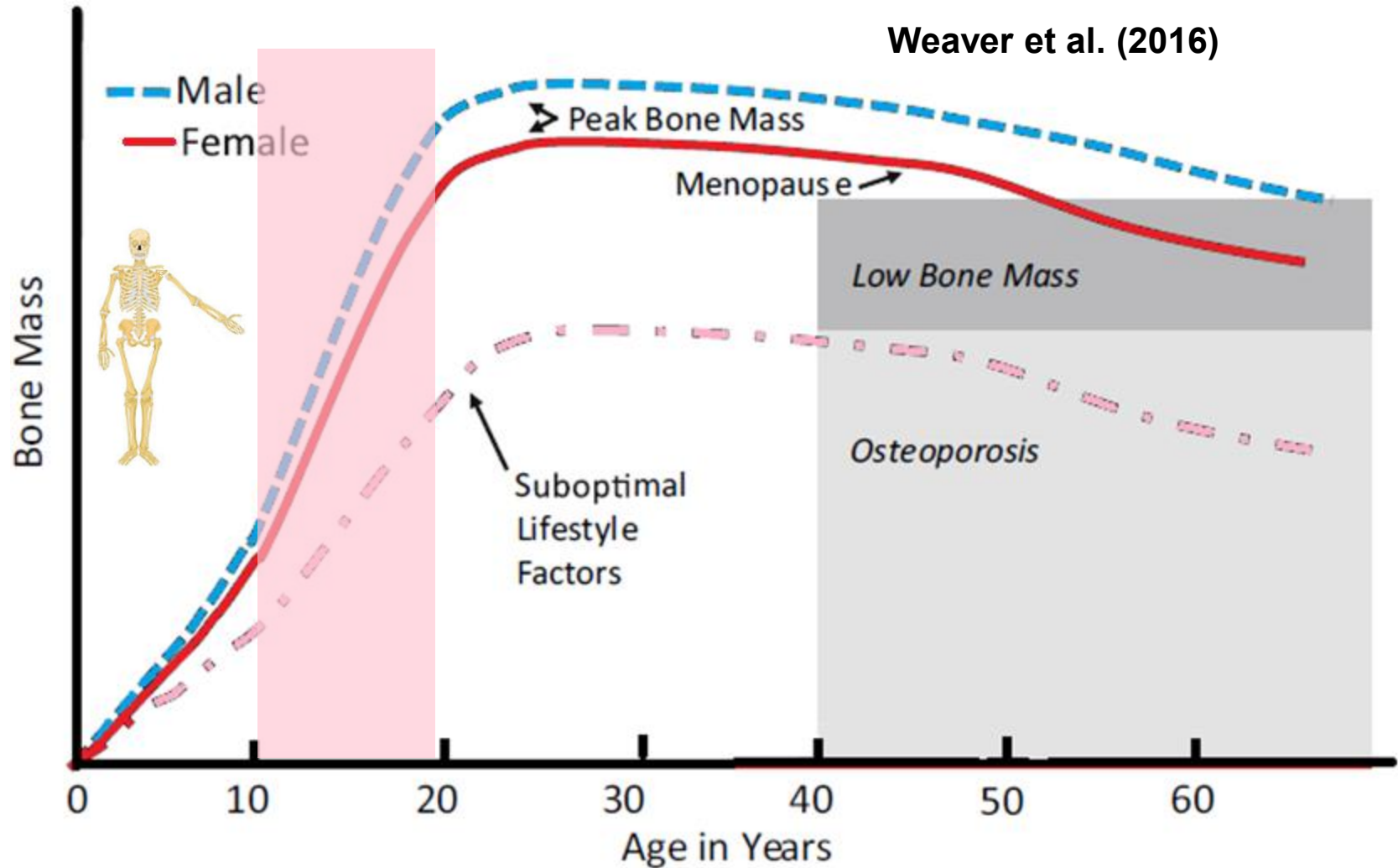


Micronutrient status of UK children and adult females



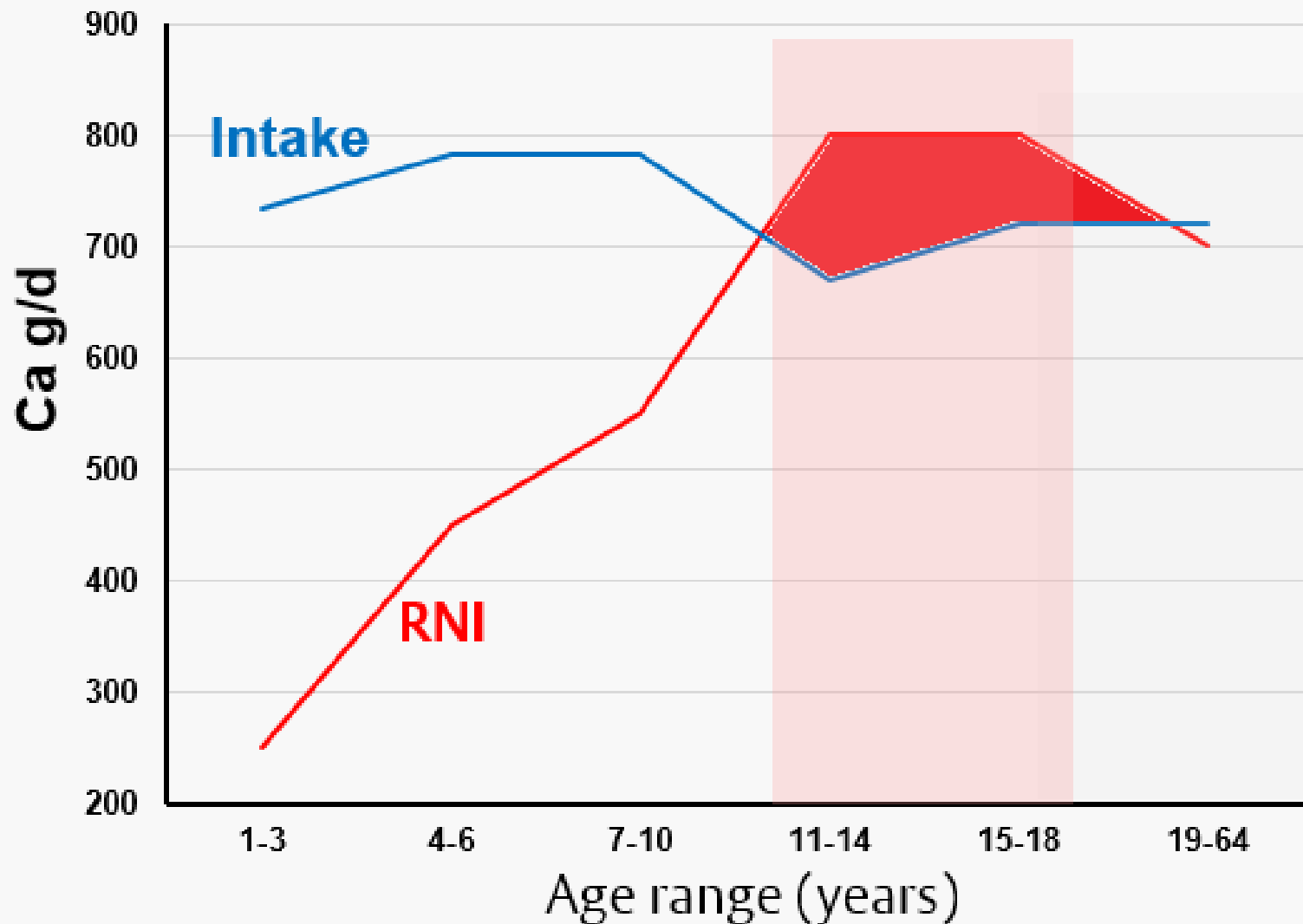
Bone mass changes with age

Weaver et al. (2016)

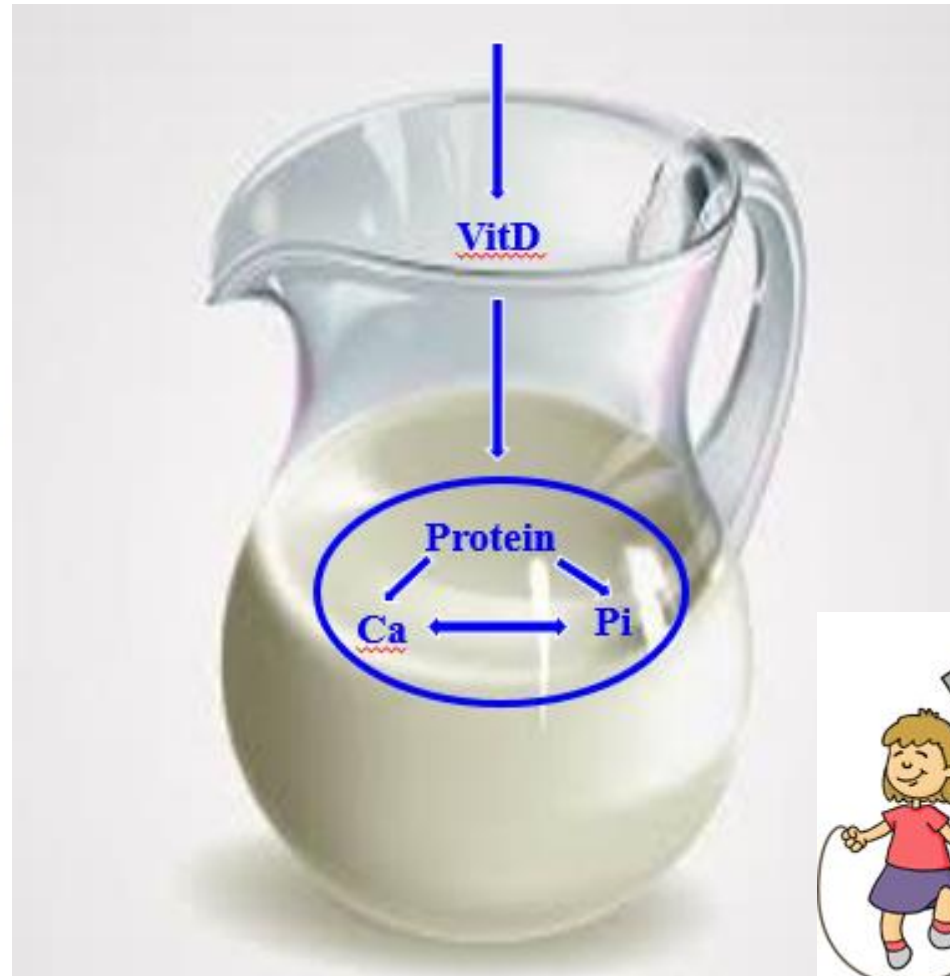


Calcium intake in UK females

NDNS 2014, Y1-4 combined



Bonetrophic nutrient interactions

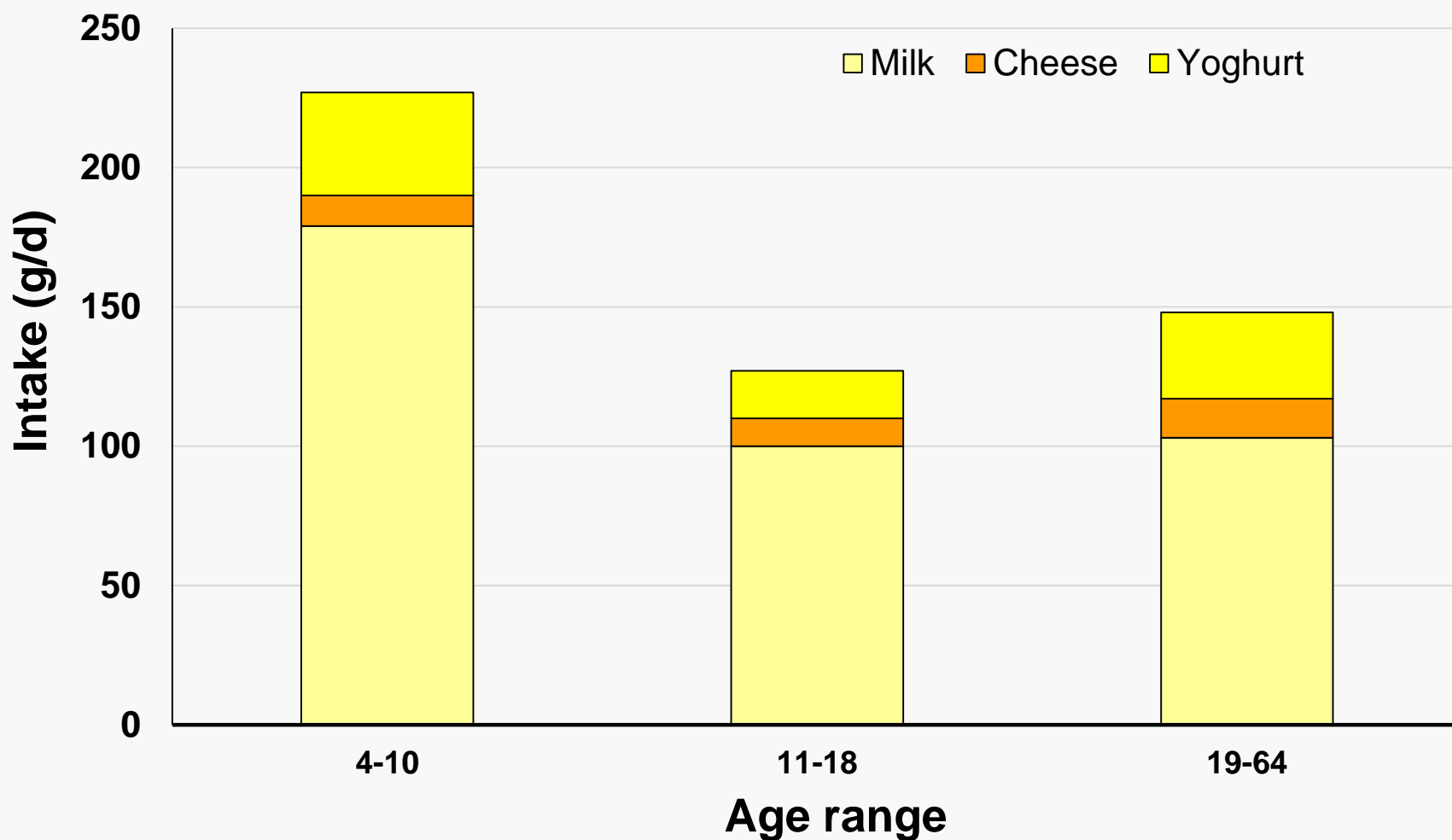


Protein for bones?

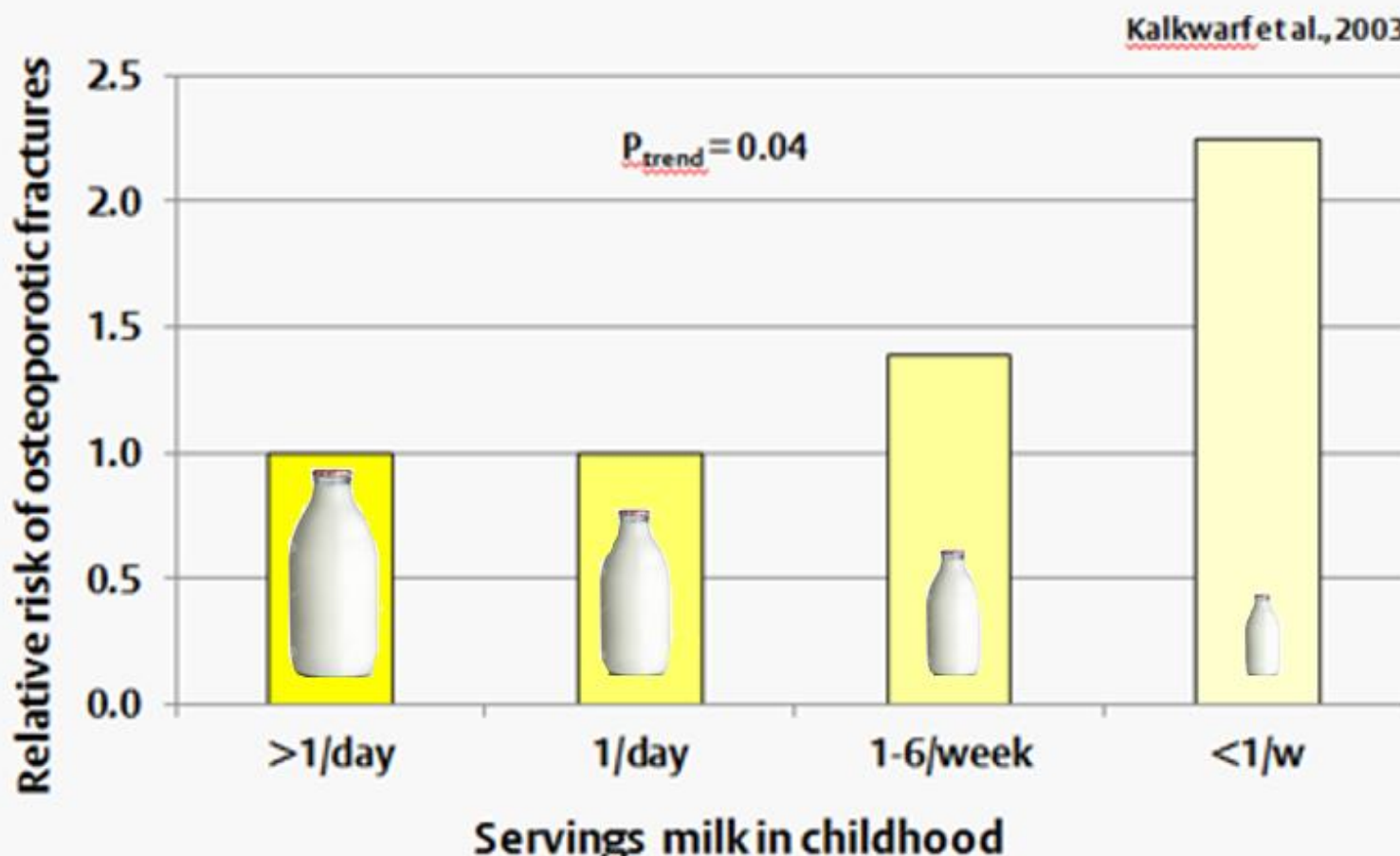


Dairy food intake in UK females

NDNS 2014, Y1-4 combined



Childhood milk intake and fracture risk in females ≥ 50 years



POSITION PAPER

The National Osteoporosis Foundation's position statement on peak bone mass development and lifestyle factors: a systematic review and implementation recommendations

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Received: 20 October 2015 / Accepted: 10 November 2015

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Abstract Lifestyle choices influence 20–40 % of adult peak bone mass. Therefore, optimization of lifestyle factors known to influence peak bone mass and strength is an important strategy aimed at reducing risk of osteoporosis or low bone mass later in life. The National Osteoporosis Foundation has issued this scientific statement to provide evidence-based guidance and a national implementation strategy for the purpose of helping individuals achieve maximal peak bone mass early in life. In this scientific statement, we (1) report the results of an evidence-based review of the literature since 2000 on factors that influence achieving the full genetic potential for skeletal mass; (2) recommend lifestyle choices that

promote maximal bone health throughout the lifespan; (3) outline a research agenda to address current gaps; and (4) identify implementation strategies. We conducted a systematic review of the role of individual nutrients, food patterns, special and tem on t may (Tab is gi rel

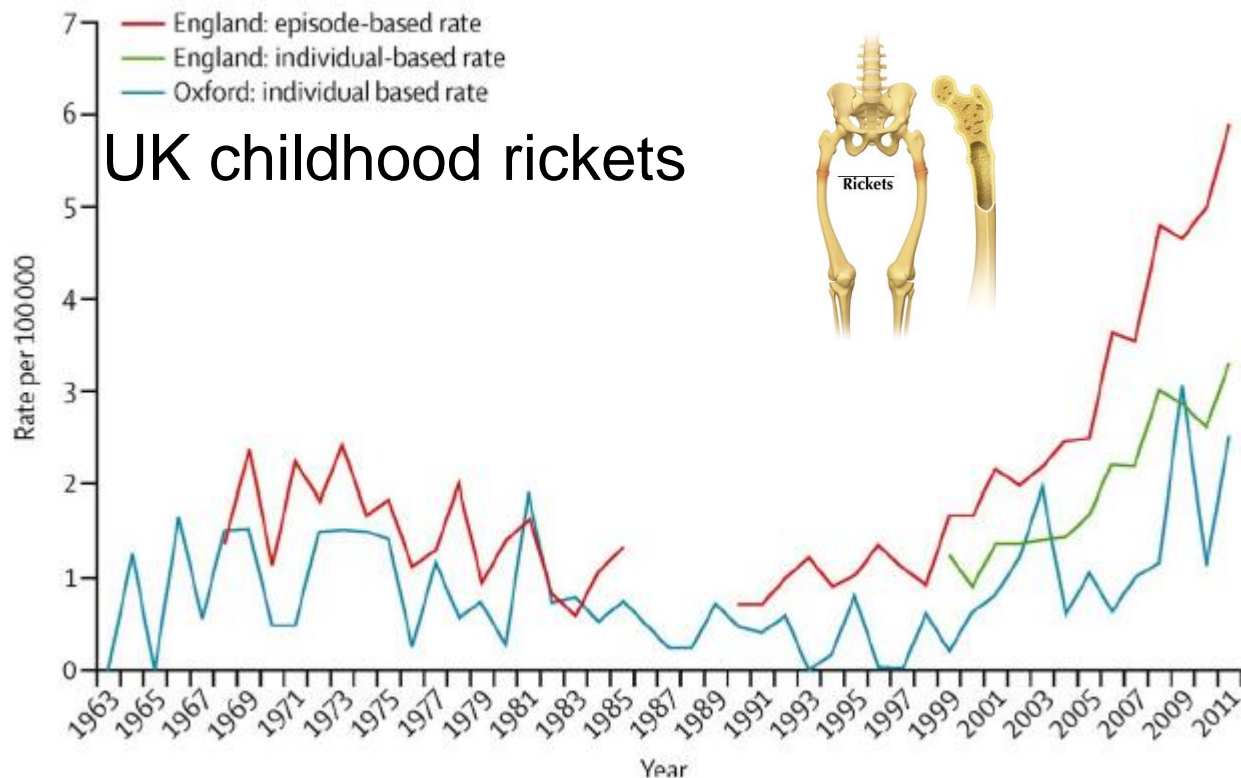
Considering the evidence-based literature review, we recommend lifestyle choices that promote maximal bone health from childhood through young to late adolescence and outline a research agenda to address current gaps in knowledge. The best evidence (grade A) is available for positive effects of calcium intake and physical activity, especially during the late childhood and peripubertal years—a critical period for bone accretion. Good evidence is also available for a role of vitamin D and dairy consumption and a detriment of DMPA injec-

Sub-optimal vitamin D status across Europe

Vitamin D deficiency in Europe: pandemic?^{1,2}

doi: 10.3945/ajcn.115.120873.

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Recent studies of UK iodine status

Recent UK studies have shown sub-optimal status in:

- Women of childbearing age¹⁻³
- Pregnant women⁴⁻⁷



THE LANCET 22nd May 2013

Articles

J Clin Endocrin Metab. First published ahead of print April 30, 2013 as doi:10.1210/jc.2012-4249

ORIGINAL ARTICLE

Endocrine Care

Mild Iodine Deficiency During Pregnancy Is Associated With Reduced Educational Outcomes in the Offspring: 9-Year Follow-up of the Gestational Iodine Cohort

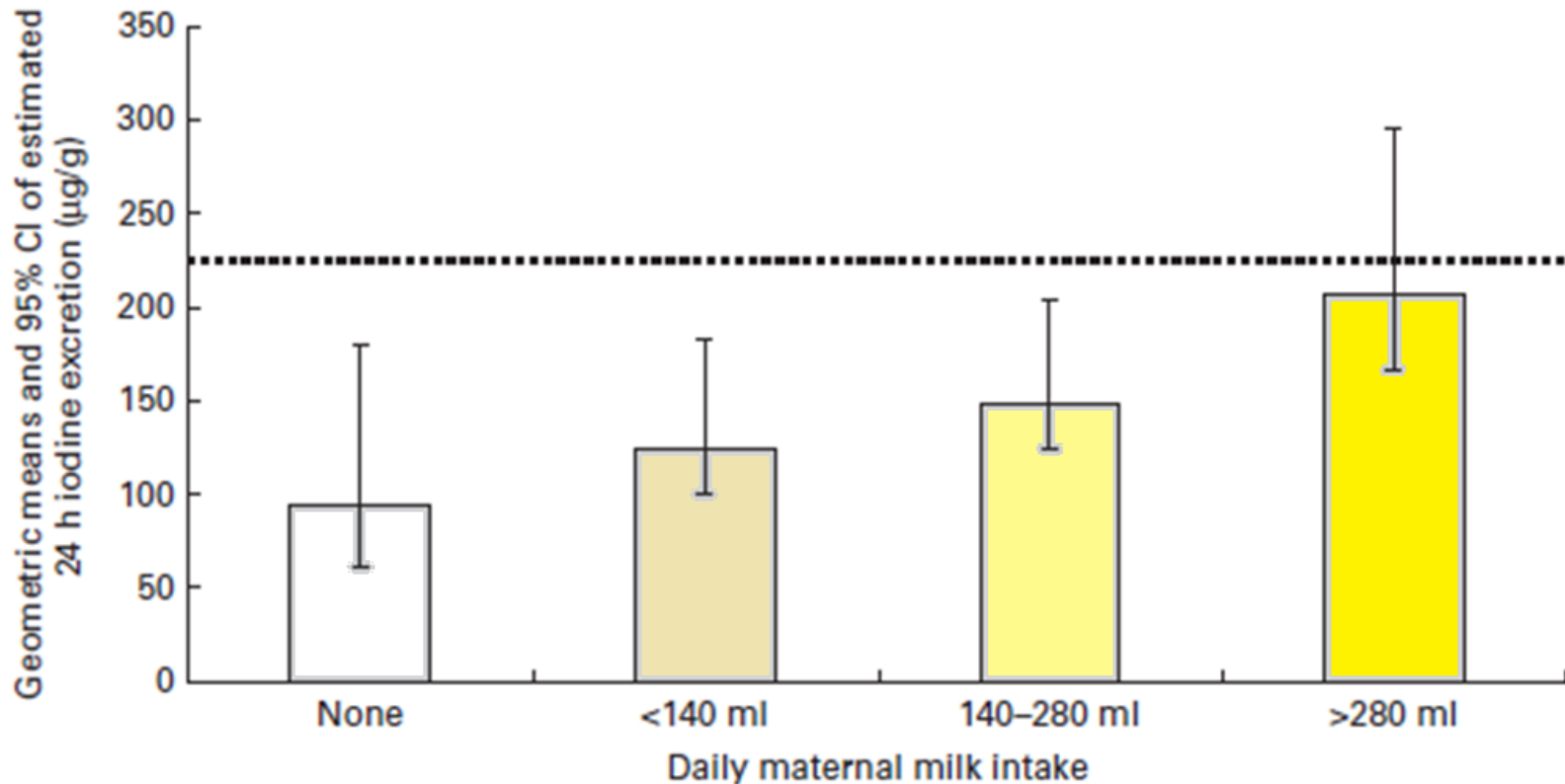
Kristen L. Hynes, Petr Otahal, Ian Hay, and John R. Burgess

Menzies Research Institute Tasmania (K.L.H., P.O.), Faculty of Education (I.H.), and School of Medicine (J.R.B.), University of Tasmania, Sandy Bay, Tasmania 7005, Australia; and Department of Endocrinology (J.R.B.), Royal Hobart Hospital, Hobart, Tasmania 7000, Australia

1. Bath et al. 2008; 2. Rayman et al. 2008; 3. Lampropoulou et al 2012 4. Kibinge et al. 2004, 5. Barnett et al. 2002; 6. Bath et al. 2010; 7. Pearce et al 2010

Milk intake and 24 h iodine excretion

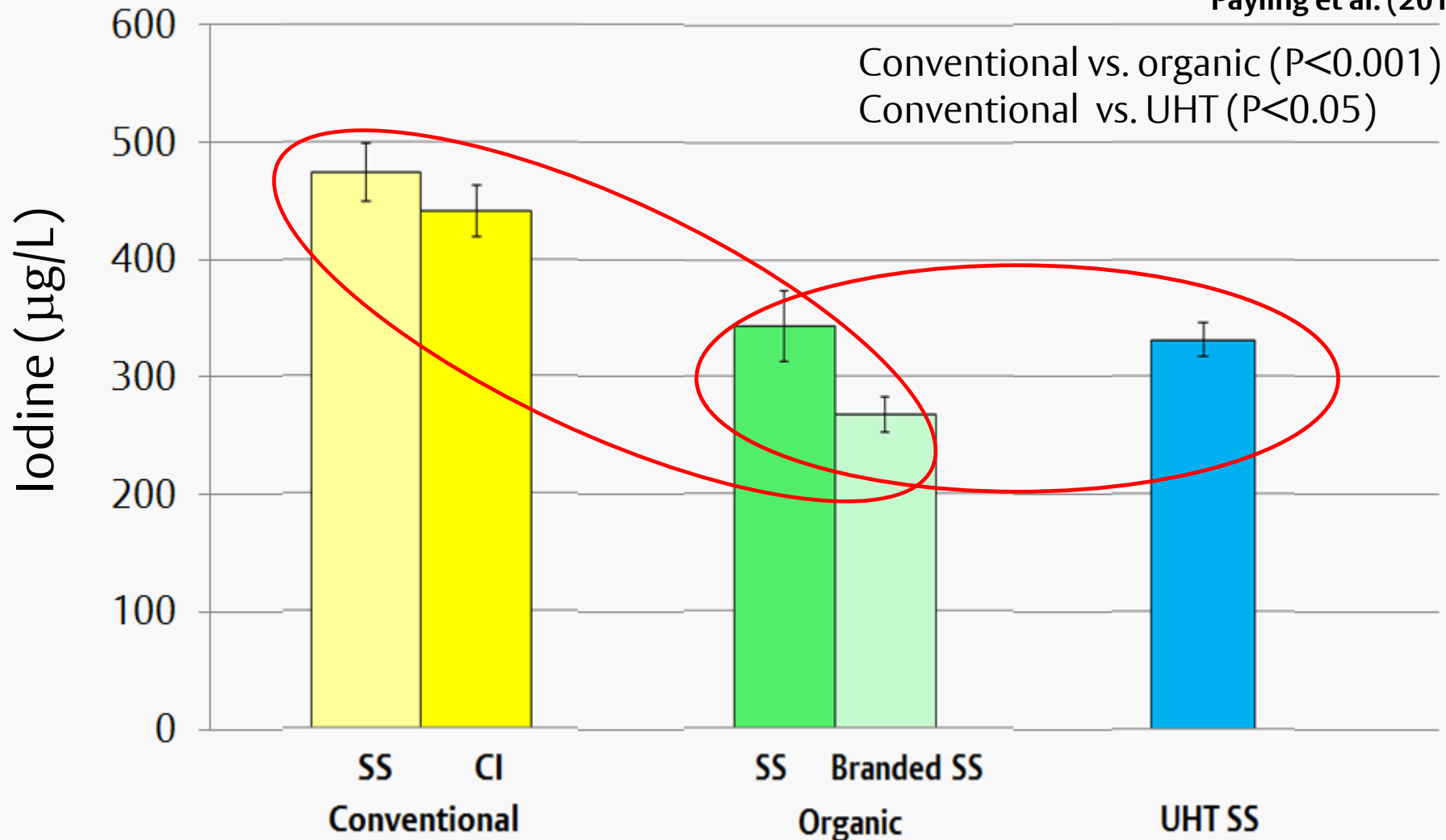
Bath et al. (2013)



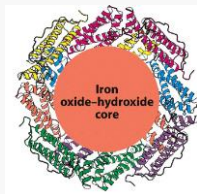
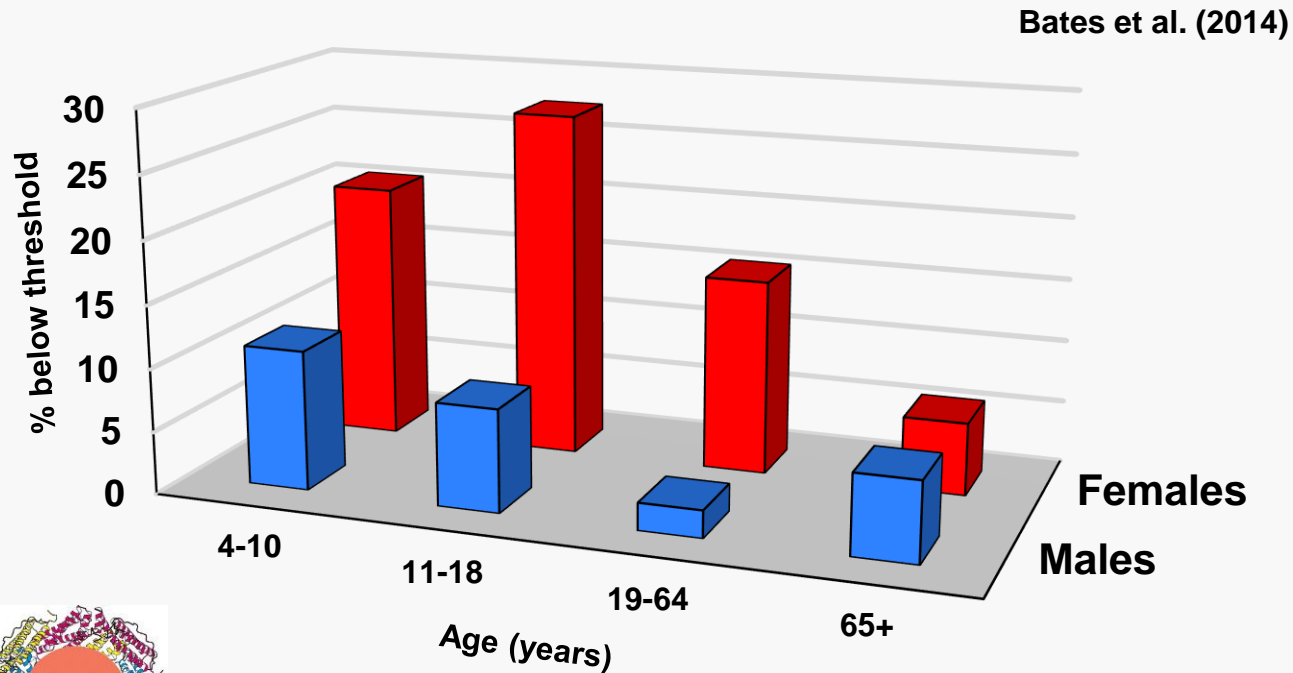
Type of UK retail winter milk and iodine content

2 Supermarkets, Jan 2014

Payling et al. (2015)

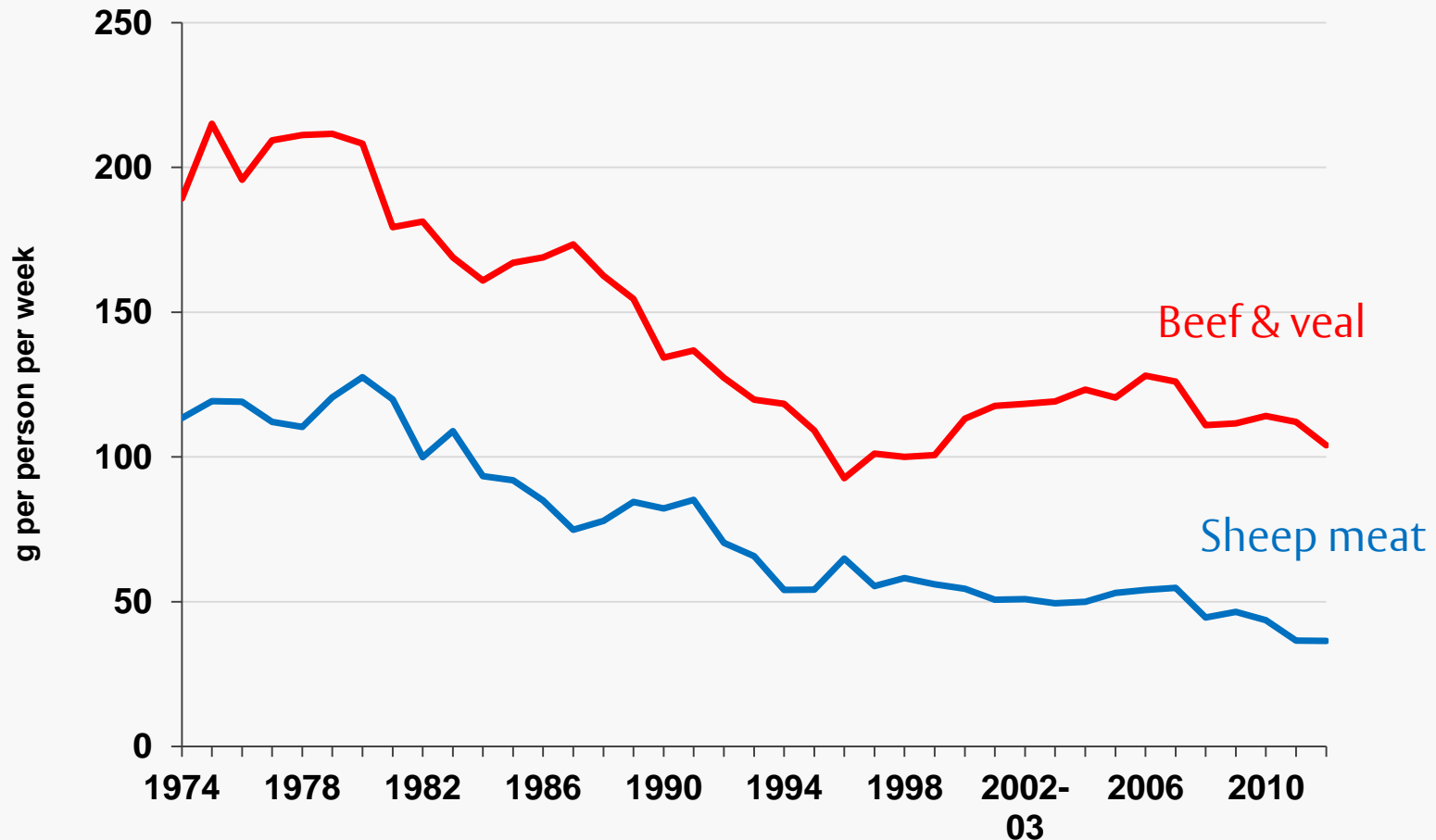


% UK population below serum ferritin threshold (12/15 μ g/L)



UK household red meat purchases 1974-2010

DEFRA, 2013



Sucrose-sweetened beverages increase fat storage in liver, muscle and visceral fat





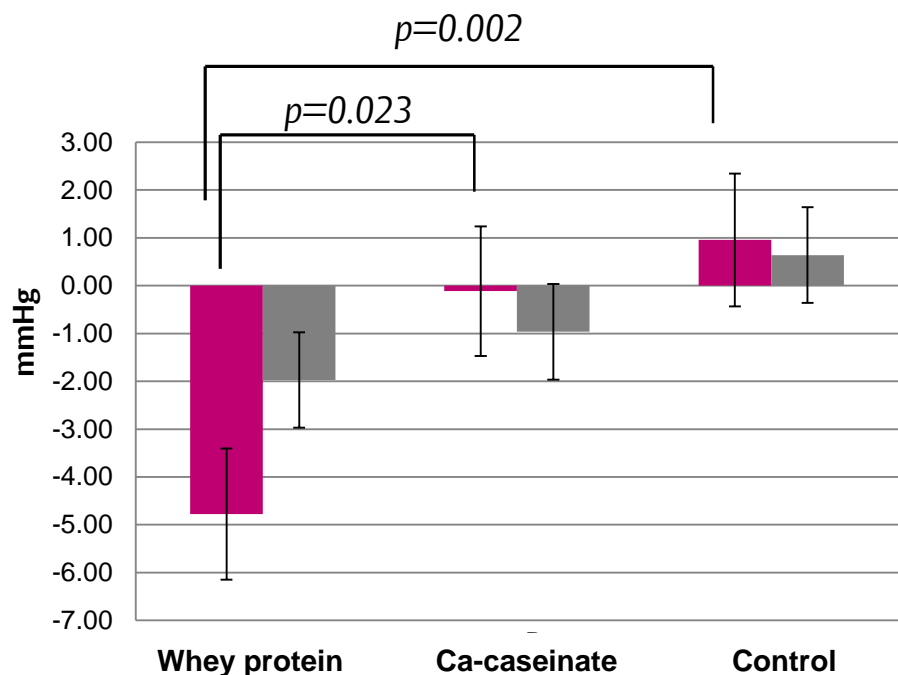
MIDDLE AND OLDER AGE



Recent meta-analyses of dairy and cardiometabolic diseases

Dairy	Outcome	RR (95% CI)	Ref
Milk	AC mortality	1.00 (0.93-1.07)	Guo et al. in press
Milk	CVD	1.01 (0.93-1.10)	Guo et al. in press
Cheese	CVD	0.98 (0.95-1.00)	Guo et al. in press
Milk	Stroke	0.93 (0.88-0.98)	De Goede et al., 2016
Cheese /40 g/d	Stroke	0.97 (0.94-1.01)	De Goede et al., 2016
Yoghurt/80g/d	Diabetes	0.86 (0.83-0.90)	Gijsbers et al., 2016

Peripheral SBP & DBP



Overall treatment effect for P_SBP $p=0.007$,
Overall treatment effect for P_DP $p=0.095$,
Overall treatment effect for P_MeanP $p=0.009$

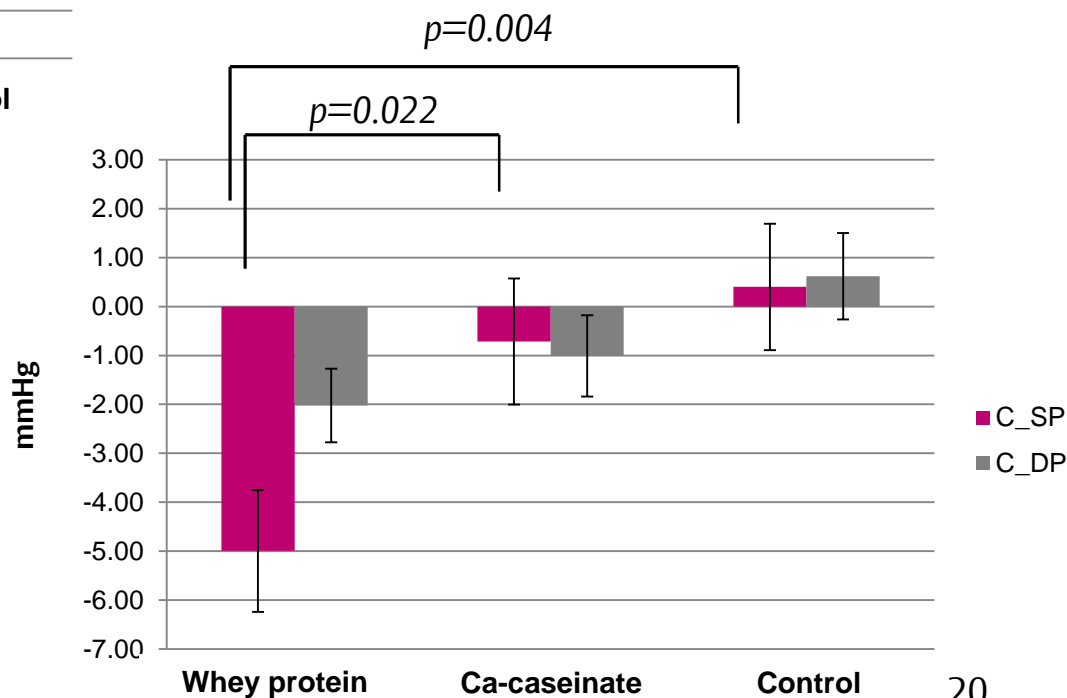
$n=38$, Means \pm SEM

Fekete et al., AJCN (2016)

Central SBP & DBP

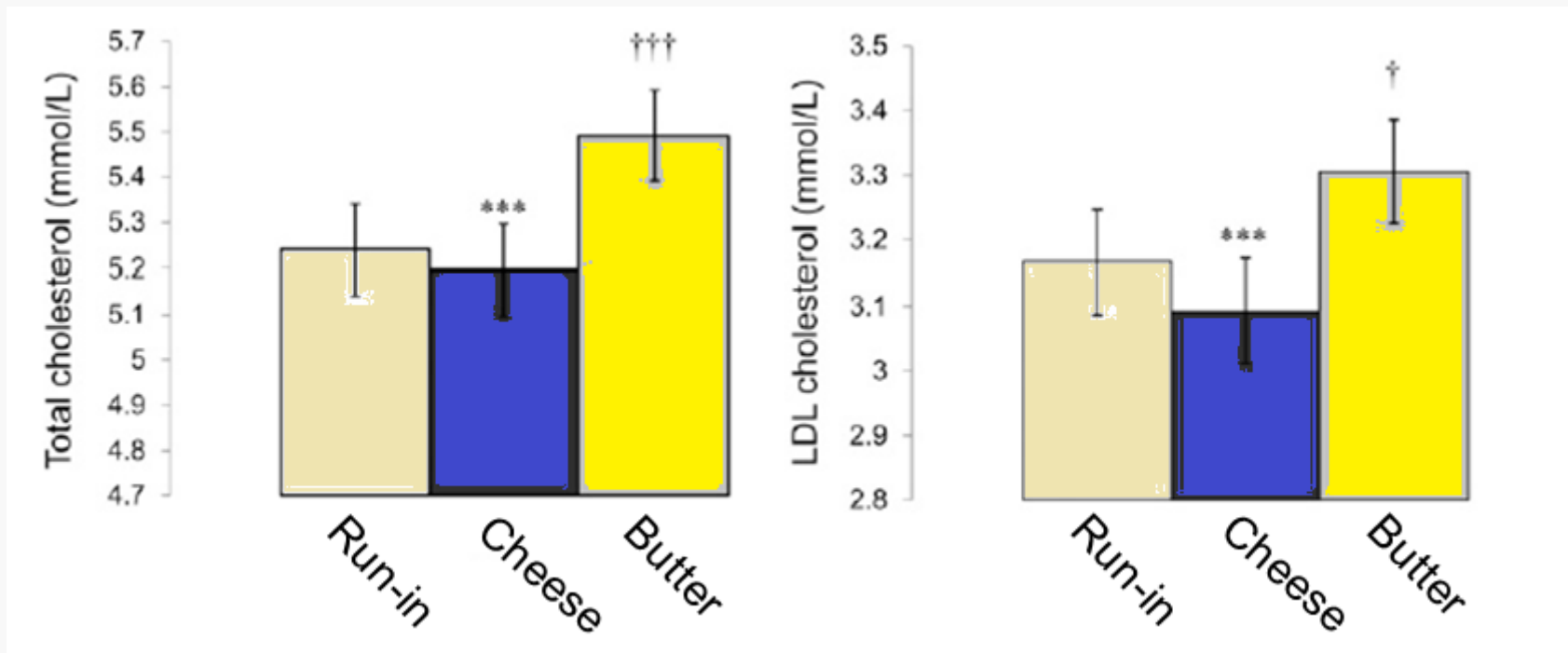
Overall treatment effect for C_SBP $p=0.010$,
Overall treatment effect for C_DP $p=0.094$,
Overall treatment effect for C_MeanP $p=0.024$

$n=38$, Means \pm SEM



Changes in total and LDL-chol after consumption of ~80 g/d fat (~36g/d SFA) as cheese or butter

Cheese vs butter *** $P < 0.0001$. $^{\dagger, \dagger \dagger}$ Significantly different from run-in period: $^{\dagger}P < 0.05$, $^{\dagger \dagger}P < 0.0005$.



Hjerpsted et al. Am J Clin Nutr 2011;94:1479–84.



Replacing saturated fat in milk fat

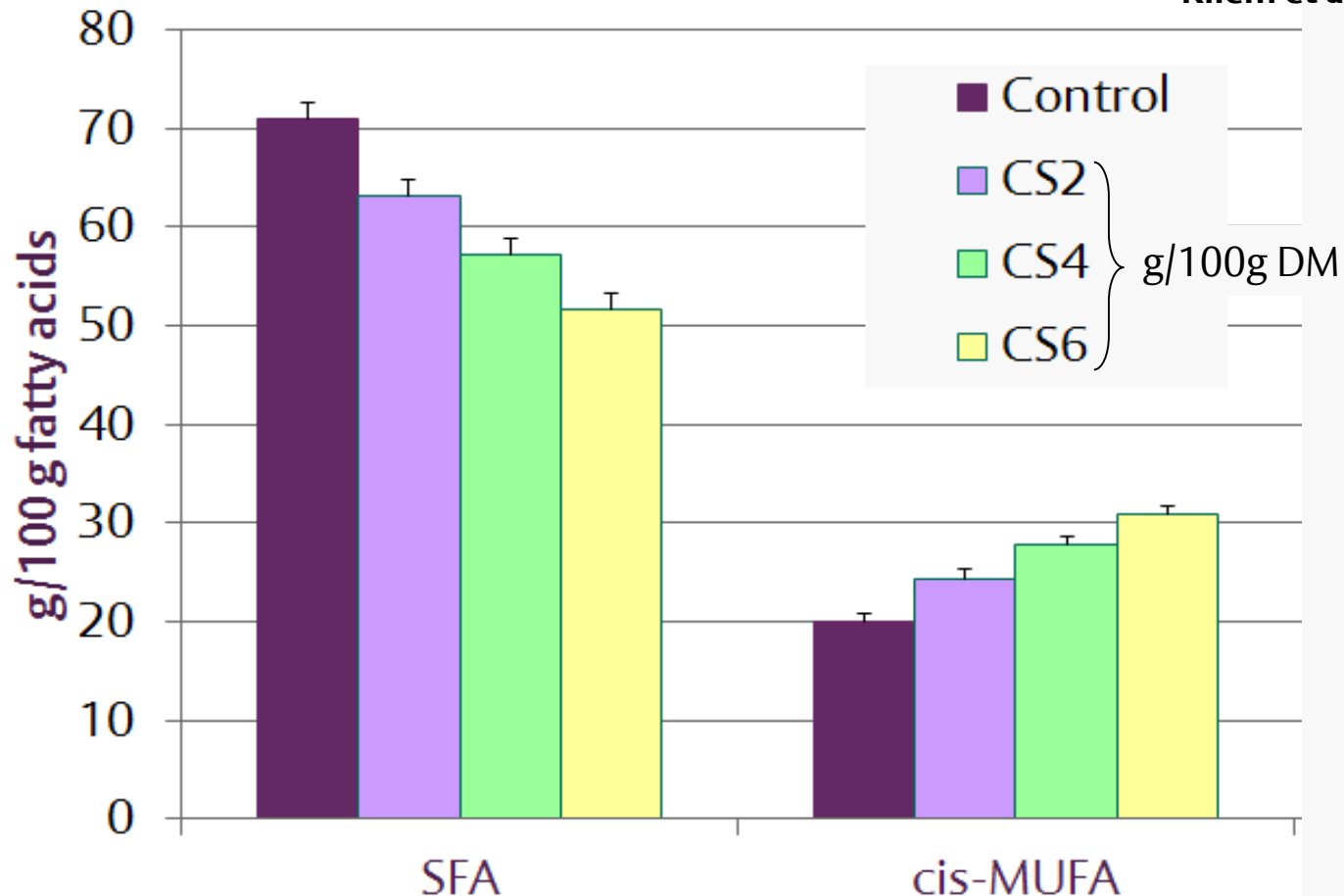


DRINC • DIET AND HEALTH RESEARCH INDUSTRY CLUB



Ca soap (CS) of oleic acid study

Kliem et al., JDS 2013



A few conclusions...

- **Milk/dairy foods are key sources of important nutrients**
- **Red meat is a good source of Fe and Zn.....**
- **Composition can be influenced by primary production**
- **Declines in consumption esp. young females have already had consequences.....**
- **Functionality of some dairy foods beyond nutrient supply**
- **Risk of poor bone development especially in girls is concerning and may become a major issue**
- **Negative association of milk proteins and milk/fermented dairy and BP and T2DM may become the most important findings. Needs development.**
- **If food sustainability is driven by replacing animal with plant derived foods be careful what you wish for so.....**
- **Dietary pattern, nutrition and health must be included in any debate about sustainable food production**



London Road Campus



Henley Business School



University of Reading Malaysia

An aerial photograph of a large university campus, showing a mix of green spaces, buildings, and surrounding residential areas. The word "THANK YOU" is overlaid in large white letters.

THANK YOU