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Interventions to improve the quality of the grocery shopping

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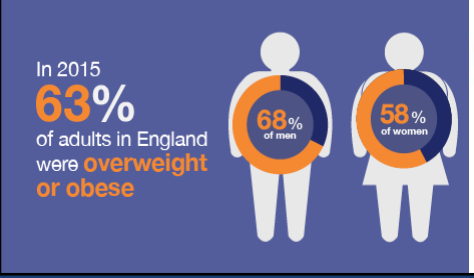
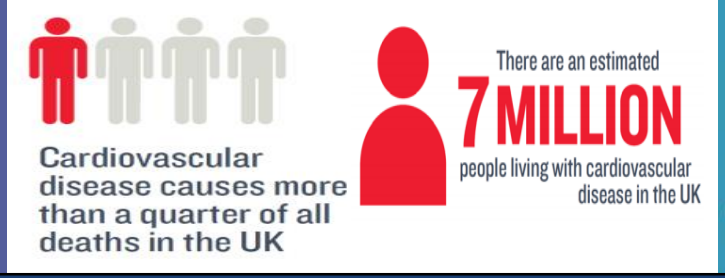
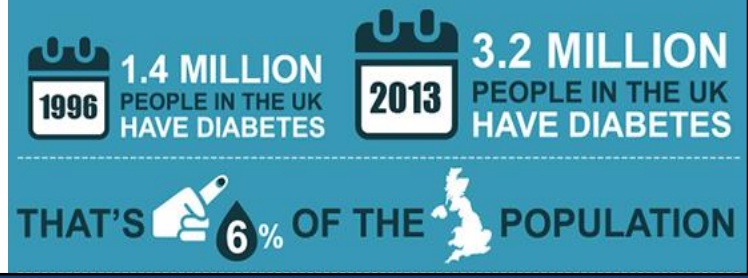






- Dietary habits, healthy or unhealthy, start in the grocery store. Once food is at home it's likely it will be eaten

- Governments around the world are encouraging the food industry to take action to support healthier choices

- Lack of current evidence on effective strategies for intervention within grocery stores, or at the individual level to encourage healthier choices

Experimental Online Shopping Studies

Building evidence base for testing in real scenarios

Experimental Online Supermarket

WOODS
Since 1926

Fresh Food Bakery Food Cupboard Frozen Food Drinks

Search

Food Cupboard › Biscuits › Sweet Biscuits

Sweet Biscuits (229 products)

1 2 3 4 5 ... 9 »

Jacobs Lemon Puff 200G

£1.53

1 Add

Border Biscuits Crumbles 150G

£1.00

1 Add

Fox's Whipped Cream Sinful Strawberry 200G

£1.49

1 Add

Oreo Vanilla Snack Pack 176G

Fox's Jam Sandwich Creams 150G

Tesco Digestive Biscuits 500G

Tesco Mint Chocolate Fingers 8Pk

My Trolley

Trolley Total £7.10

Checkout

Quantity	Product	Price
1 Remove	Tesco Value Beef Frying Steak 300G	£1.65
1 Remove	Tesco Baker's Soft 6 Tasty White Finger Rolls	£0.60
1 Remove	Mccain Hash Browns 700G	£1.40
1 Remove	Granny Smith Apple Pack Min Count 6	£1.80
1 Remove	Hoads Farm Free Range Eggs Large Box Of 6	£1.65

Environmental vs. Individual Interventions

Aim

To test the effectiveness of:

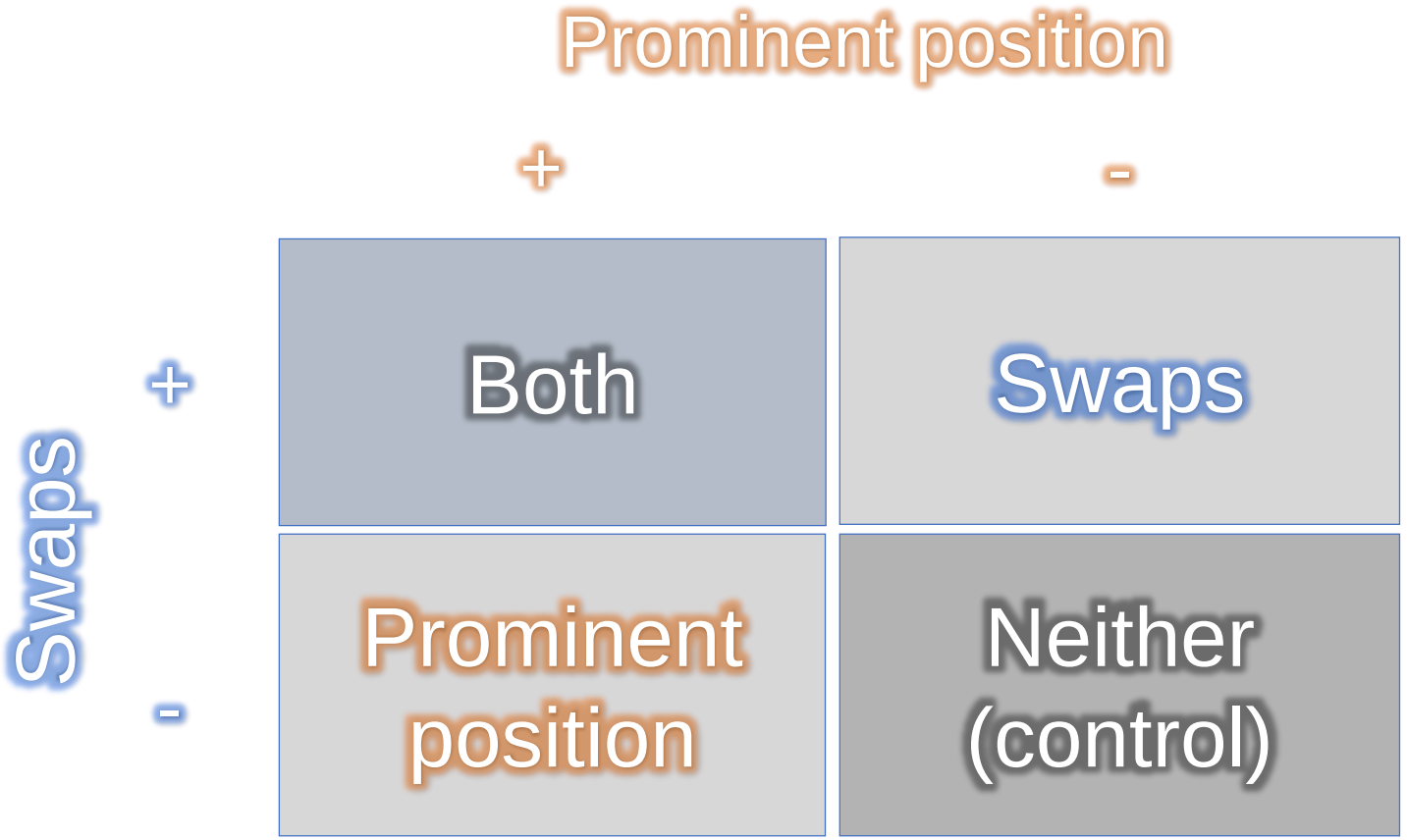
a) food swaps with less saturated fat

b) prominent positioning of lower saturated fat foods in the list

Outcome: saturated fat content of the shopping basket

Prominent positioning and food swaps are effective interventions to reduce the saturated fat content of the shopping basket in an experimental online supermarket: a randomized controlled trial. Koutoukidis D; Jebb SA; Ordóñez-Mena JM; Noreik M; Tsiountsioura M; Kennedy S; Payne-Riches S; Aveyard P; **Piernas C.** International Journal of Behavioral Nutrition and Physical Activity (online June 27, 2019).Trial registration: ISRCTN13729526

Factorial 2x2 randomised controlled trial



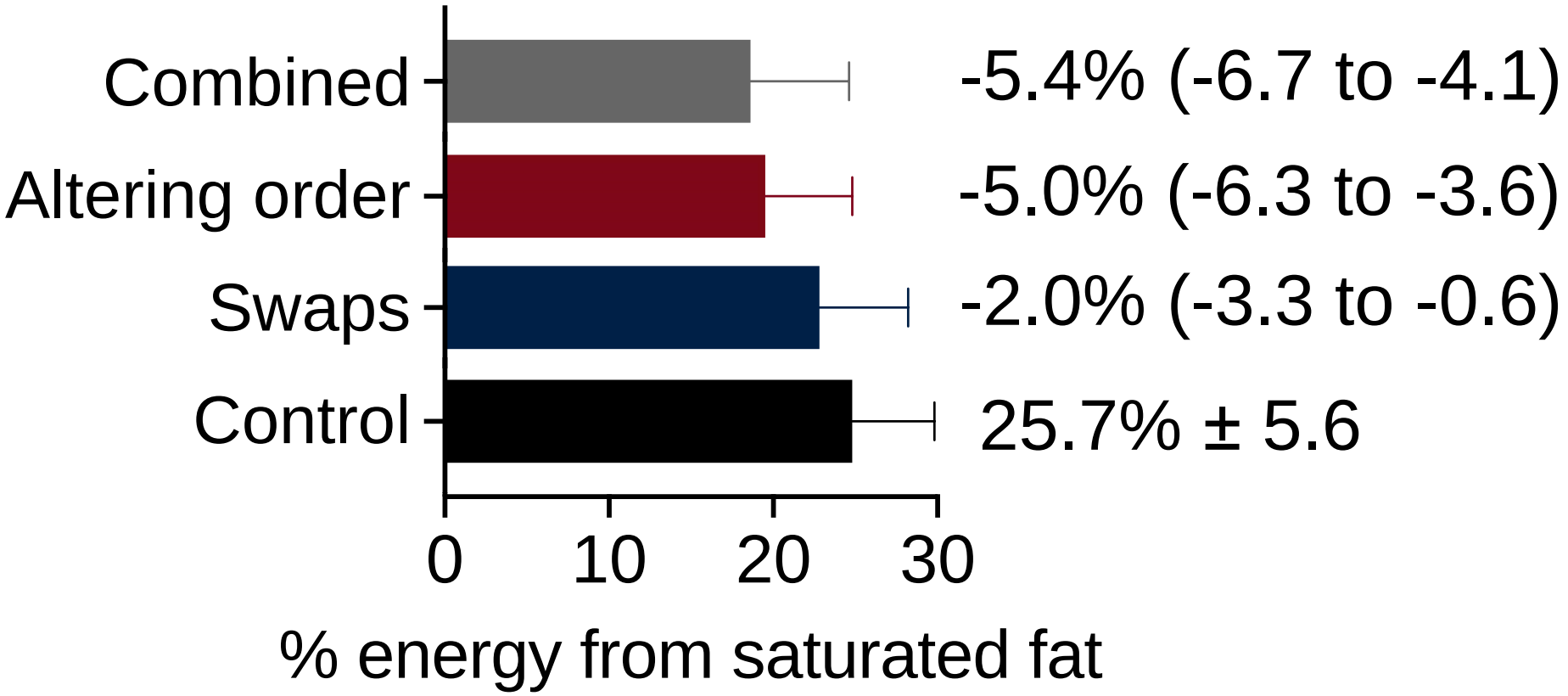
Shopping list

- ❑ Milk for everyday use
- ❑ Butter or margarine for everyday use
- ❑ Cheese for use in a sandwich or light meal
- ❑ Ready-to-eat savoury entree item
- ❑ Ready-to-eat individual chilled desserts
- ❑ Meat/fish/vegetarian alternative to cook for 4 people
- ❑ Dessert for a meal for 4 people
- ❑ Something to eat with a hot drink
- ❑ A sweet snack item to eat now
- ❑ A savoury snack item to eat now

Baseline characteristics

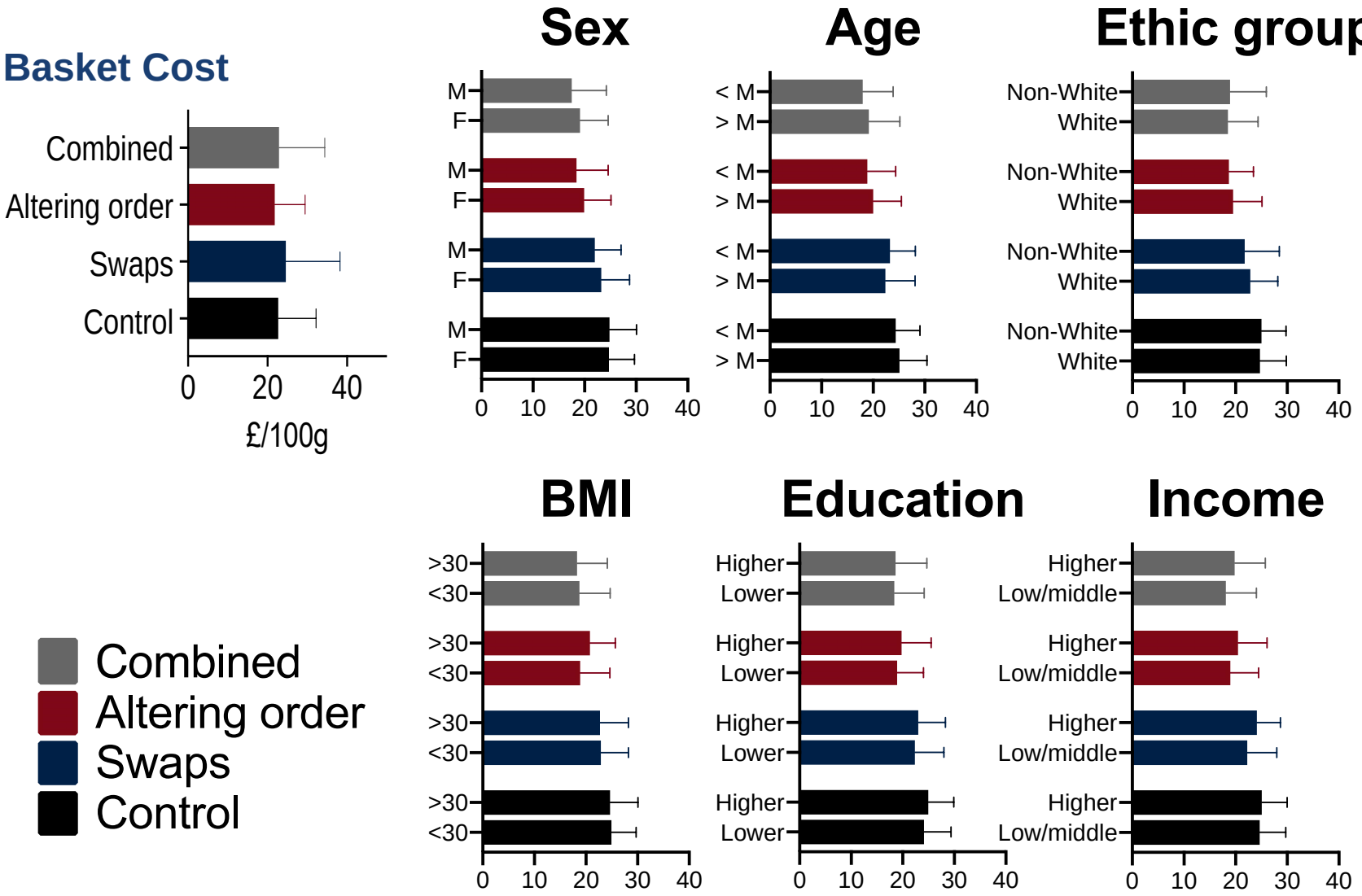
- Age mean (SD): 38 (12) years old
- % Male 
- % BMI ≥ 30 kg/m^2 
- % White background 
- % Shopped online for groceries 

Primary outcome



Two-way analysis of variance for participants that bought ≧ 5 items

% energy from saturated fat – Subgroup analysis



Conclusions

- Interventions to change food purchasing are promising to reduce saturated fat
- An intervention to alter the environment (e.g. prominent position) was more effective than an individual-level intervention (e.g. swaps) requiring conscious decision-making
- Next step: test these strategies in real supermarkets and investigate longer-term effects on food purchasing

Testing Different vs. Similar Swaps

Aim

To test the effectiveness of:

a) Offering out of category but substantially reduced salt alternatives
b) Offering within-category alternatives with minimally less salt

Outcome: salt content (g/100g) of the shopping basket

Optimising swaps to reduce the salt content of food purchases in a virtual online supermarket: A randomised controlled trial. Payne Riches S, Aveyard P, **Piernas C**, Rayner M, Jebb SA. Appetite. 2019 Feb 1;133:378-386.

HYPOTHESIS: *Offering alternatives with a larger reduction in salt will result in a larger reduction in total salt content of the shopping basket*

BUT…

- *Are alternatives with a large reduction in salt, possibly out-of-category, acceptable? Reduced utility?*

- *If these products are out-of-category, do people disengage due to 'brain drain'?*

INTERVENTION

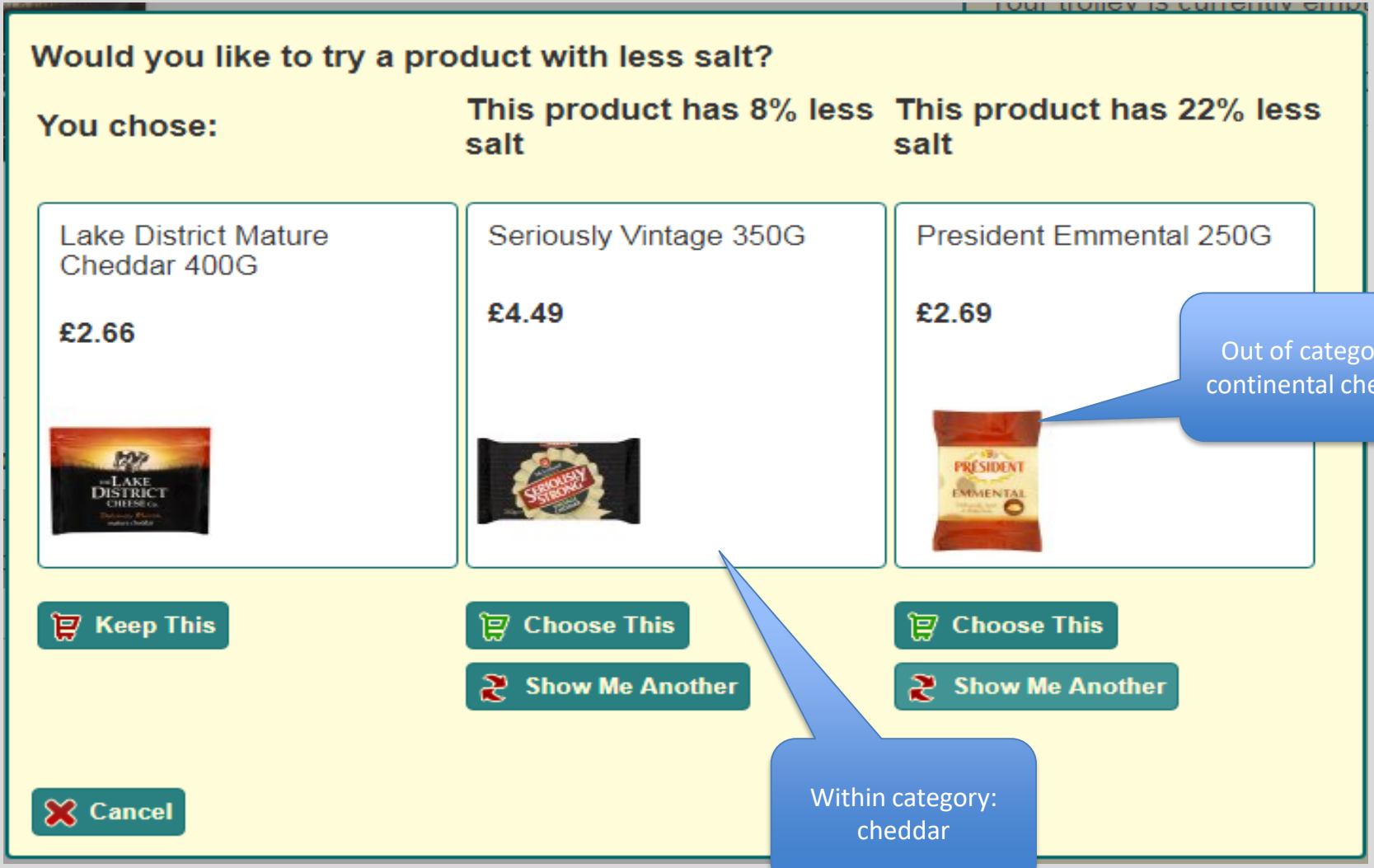
Randomised to either LS or MLS intervention

Swaps offered at point of choice – when items added to basket

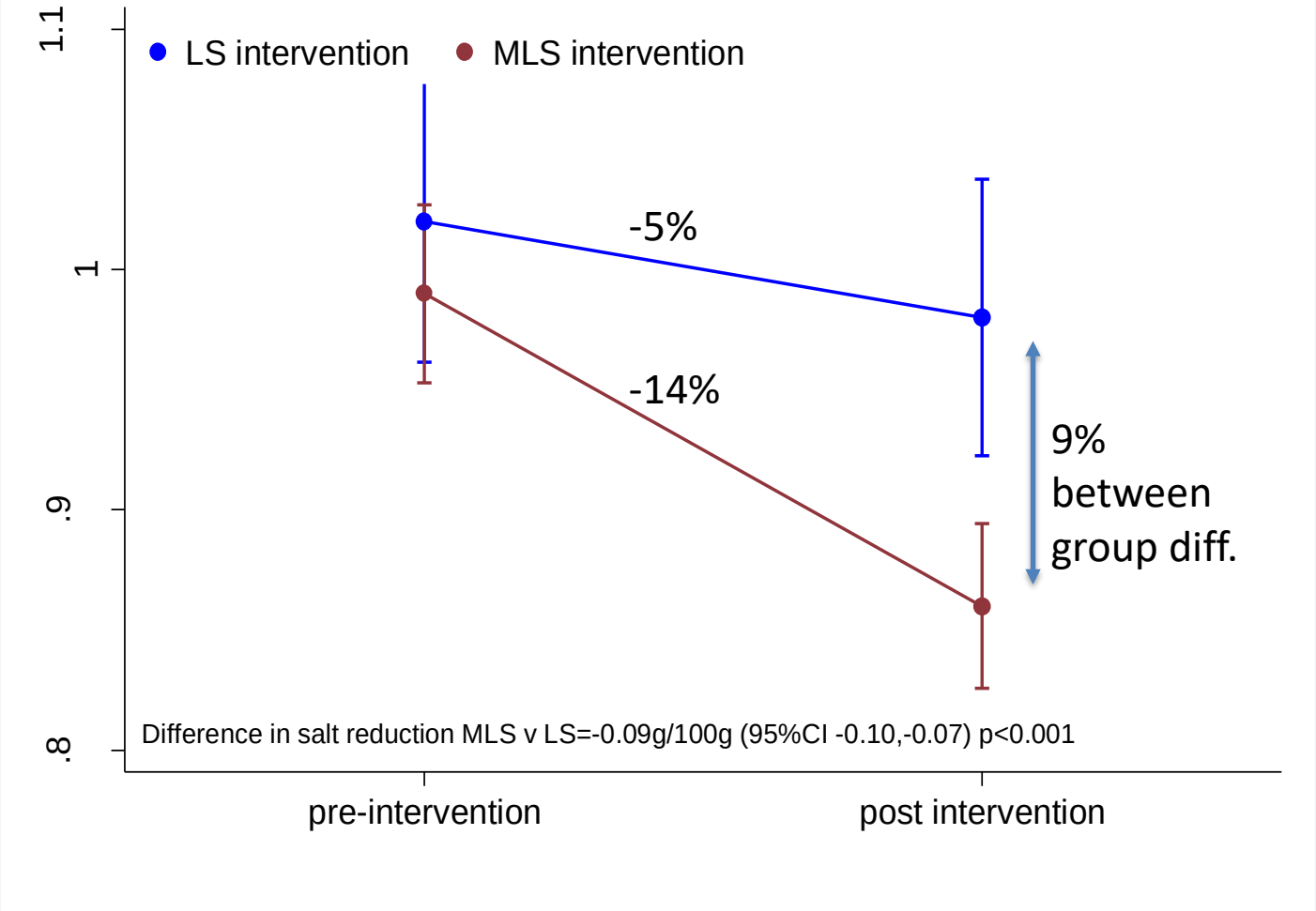
Swaps chosen at random within the OLS from all available alternatives

LOWER SALT (LS)	MUCH LOWER SALT (MLS)
swaps offered which were **5-20%** less salt	swaps offered which were **more than 20%** less salt
Same category	**Same AND different category**

SWAP EXAMPLE IN MLS GROUP



Change in total basket salt content



Absolute salt (g) reduction:

LS **-2.9g** (CI -3.4, -2.4)

MLS **- 8.0g** (CI -8.8, -7.2) → Between group difference **-5g** (-6, -4) P<0.001

Swap acceptance was the same in both groups but swaps in the MLS group were 'larger'

	LS Mean (SD) (N=476)	MLS Mean (SD) (n=471)	Difference MLS compared to LS (adj*) (95% C.I)	p-value
Number of swaps offered	8.4 (3.46)	15.74(11.08)	7.20 (6.15, 8.27)	<0.001
Number of swaps accepted	2.69 (2.36)	4.39 (3.50)	1.72 (1.34, 2.10)	<0.001
Proportion of swaps accepted	0.34 (0.28)	0.33 (0.26)	-0.00 (-0.04, 0.03)	0.785
Salt difference per swap (g/100g)	-0.21 (0.10)	-0.46 (0.35)	-0.25 (-0.29, -0.21)	<0.001

In the MLS group 68% of accepted swaps were for MLS products

EXPLORATORY ANALYSIS

- Participants who **rated health as an important** consideration accepted **13% more swaps** ($p<0.001$); reduced salt by an extra -0.03g/100g (95% C.I. -0.05,-0.02 $p<0.001$)

- Participants who **had previously been advised to reduce salt** accepted **6% more swaps** (95% C.I. 10%, 17% $p<0.001$);

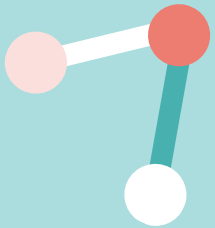
- **70%** of all participants found the **intervention acceptable** - only 7% didn't.

- Acceptability of the intervention was associated with greater reduction in salt; -0.04 g/100g with each increasing category of acceptance (95% C.I. -0.05, -0.03 $p<0.001$).

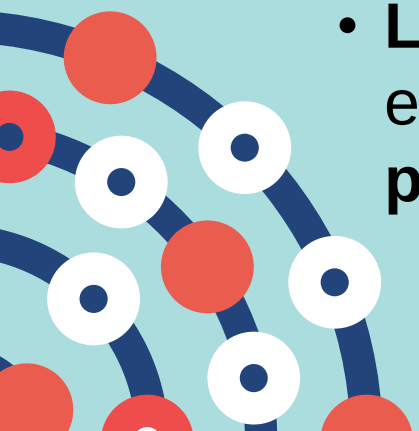
Conclusions

- Swaps offering a large reduction in salt (e.g. out of category) were acceptable AND achieved a greater reduction in total salt content
- People health awareness and previous advice to reduce salt influenced acceptance of swaps
- External validity unknown but engagement was high –people engage in a realistic way but does this cross over to real life purchasing… Intentions versus behaviour?

Summary



- Supermarkets can be more **proactive** encouraging healthier options
- Preliminary **evidence base** that can be tested in real supermarkets
  - Most effective strategies will be hard to be adopted
- **Low cost & scalability** of interventions, cost-effective and likely **beneficial** for the entire **population**



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Thanks

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