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Application of ethnic food composition data for understanding the diet and health of South Asians in the UK

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Outline;

- ***H*armonised approaches for generating new and reliable food composition data on ethnic foods**
- **Food Portion sizes for British South Asians**
- **Dietary patterns and nutrient intakes (FFQ and 24h Recall)**
- **An example of biodiversity and sustainability**

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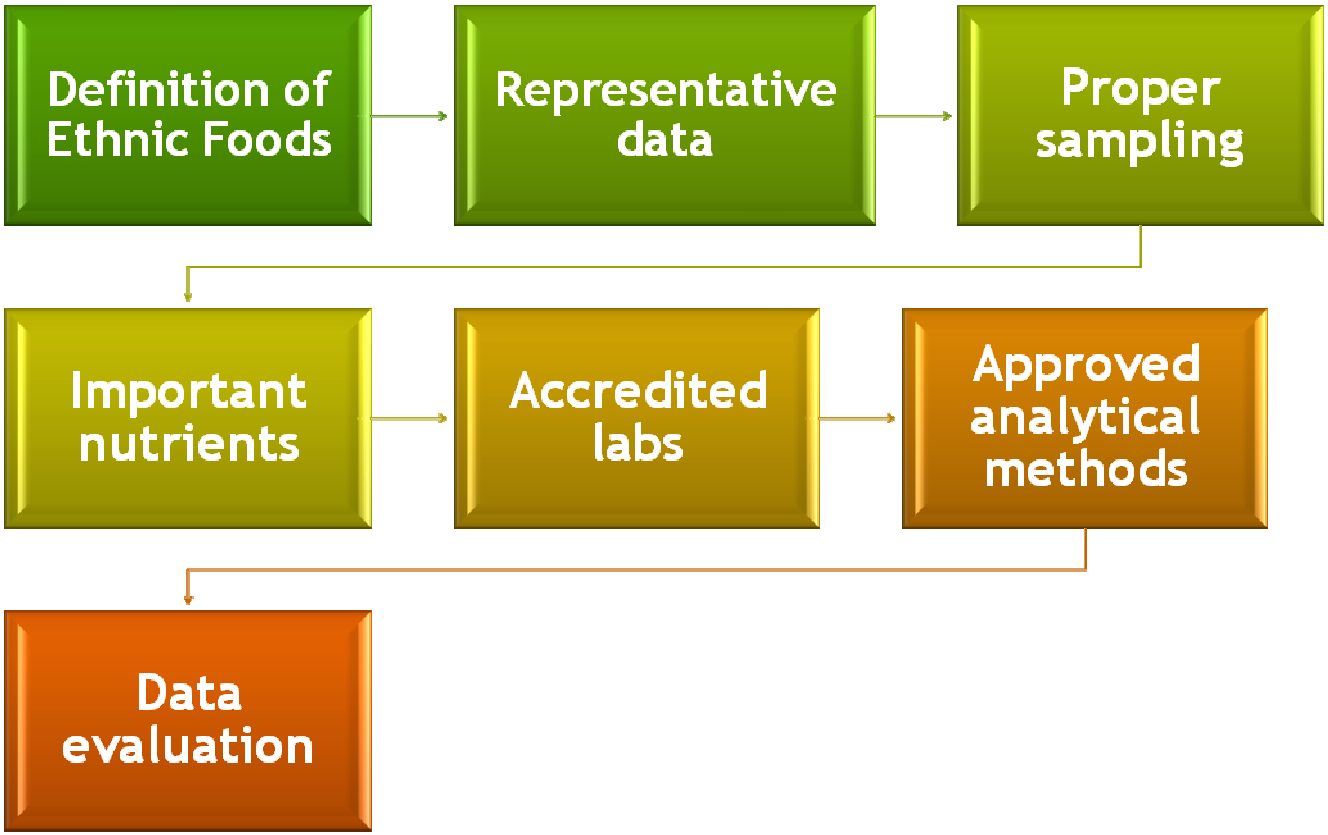
Why ethnic foods ?

- Increased consumption - important impact on dietary intake
- Greater significance in global food supply for meeting the needs of populations at home and abroad
- Important for preserving biodiversity and sustainable agriculture practices
- Higher risk of nutrient deficiencies among ethnic minority groups
- For reliability of intake data and provision of dietary advice

Overview of Harmonisation



EuroFir Definition of Ethnic Foods

Authentic ethnic food is "a food from countries other than the home market contributing to a different food culture than the traditional cuisine of the host country. Food may be adapted by combining local and imported ingredients and is prepared at home".

Modified ethnic food is "a commercially-modified version of food as prepared in an immigrant's country to suit the taste and preference of the host country".

Ref. Khokhar et al 2009. Food Chemistry113, 816-24

131 ethnic foods consumed in 8 European countries

Spring Rolls (Spain)

Biteku – teku (Belgium)

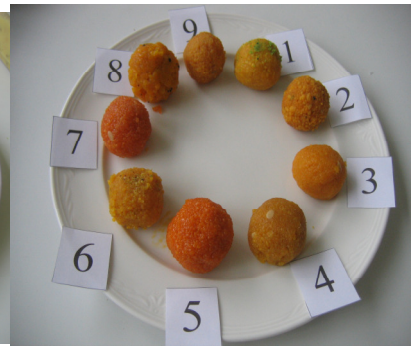
Chicken curry (UK)

Bhindi, salad and paratha (UK)

Steamed ravioli (Italy)

Brik (France)

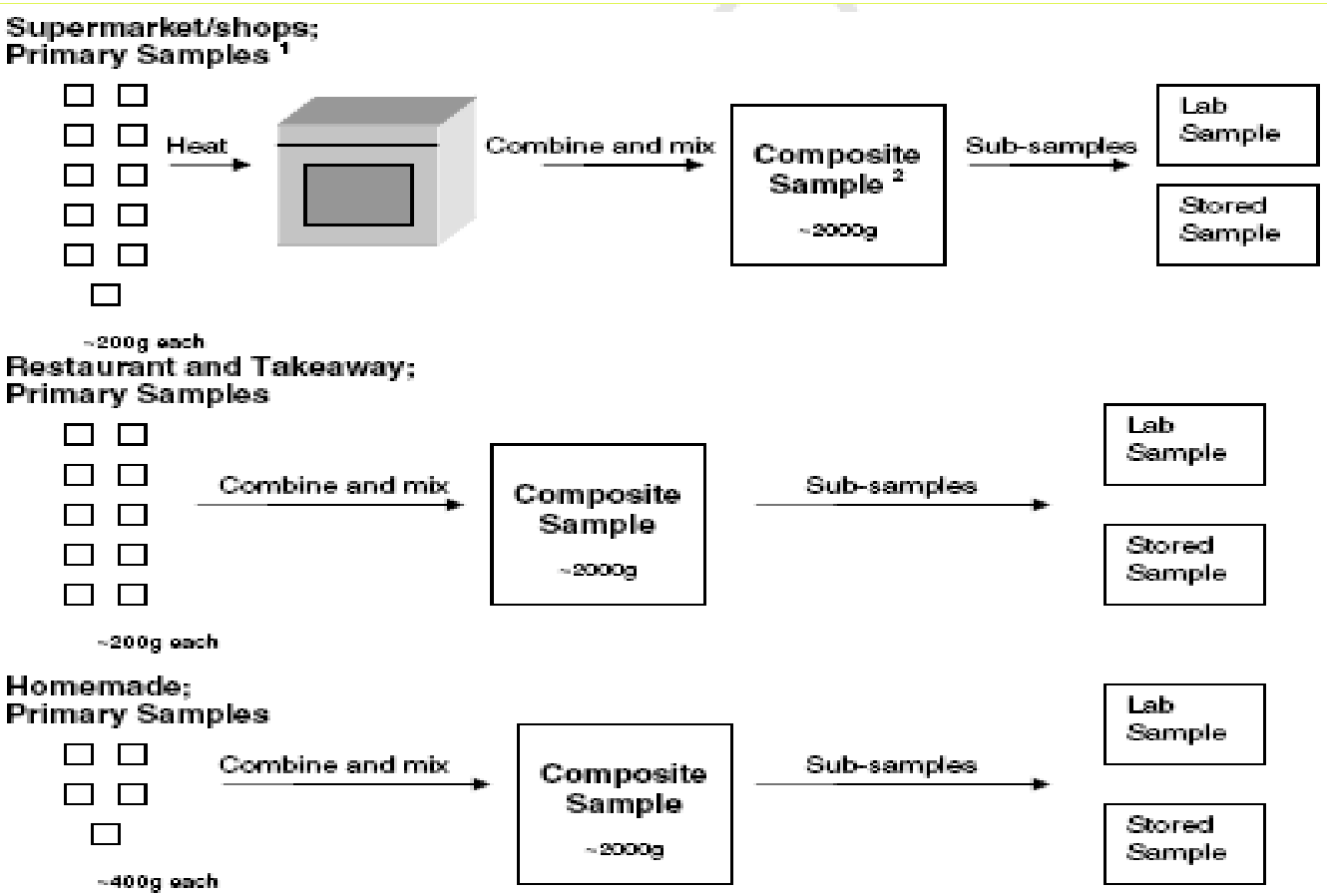
Mixed dhal (UK)



Ladoos (UK)

Sampling methods

Composite sample



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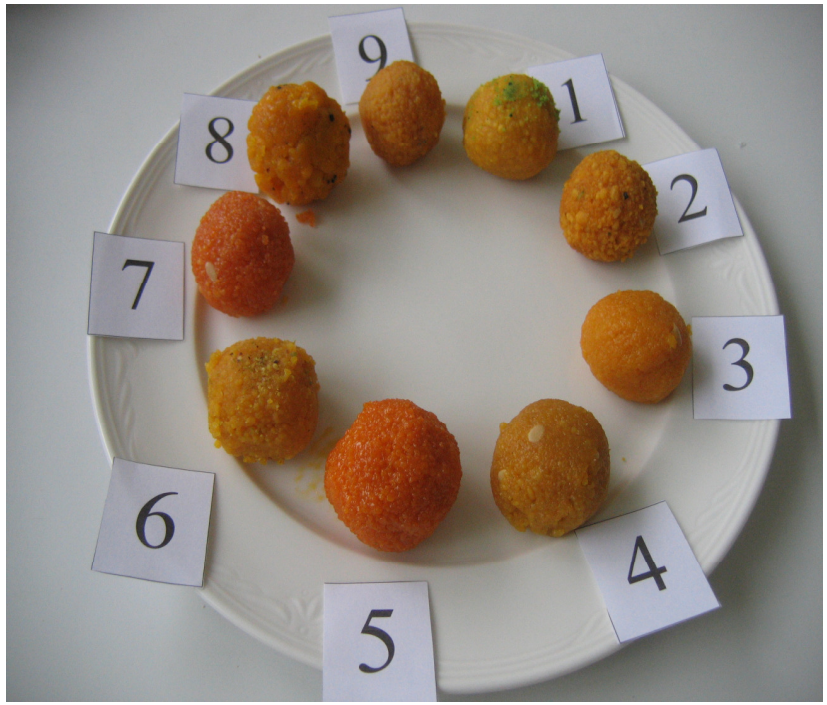
Primary sample mixed for composite sample analyses-challenge for biodiversity

***Mixed dhal*, UK**

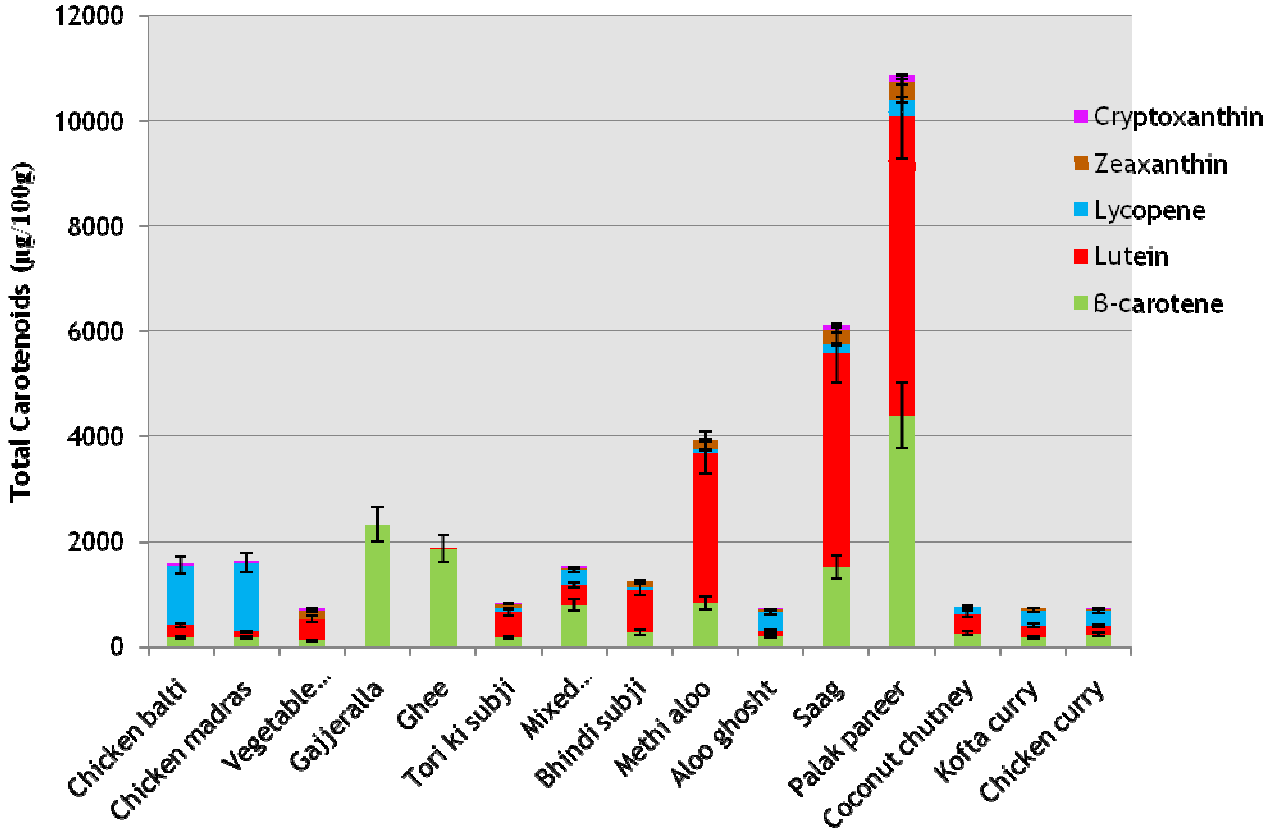


***Ladoo*, UK**

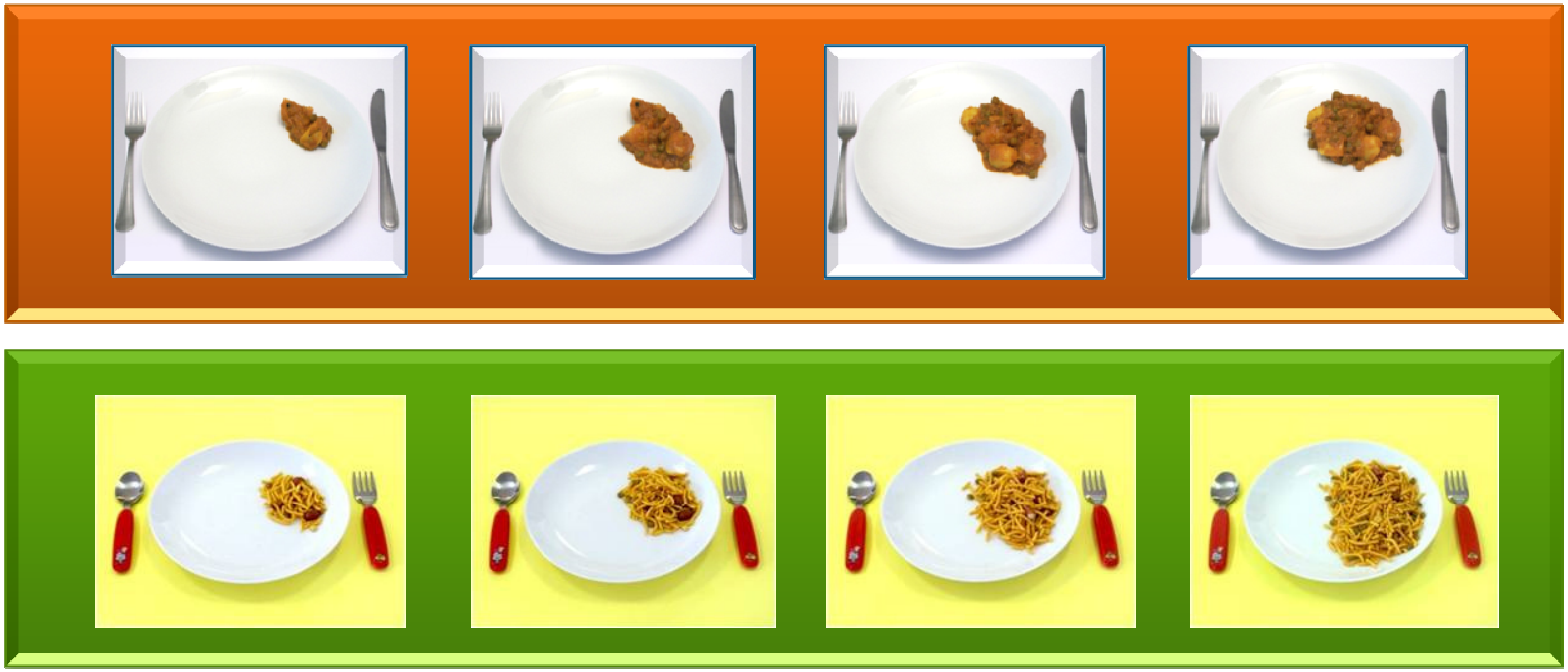
Application of food composition data produced through EuroFIR and FSA

- ✓Important food sources of nutrients identified
- ✓Food portion sizes developed
- ✓Dietary assessment and nutritional adequacy
- ✓Monitoring compliance with dietary advice

Carotenoids in South Asian foods consumed in the UK

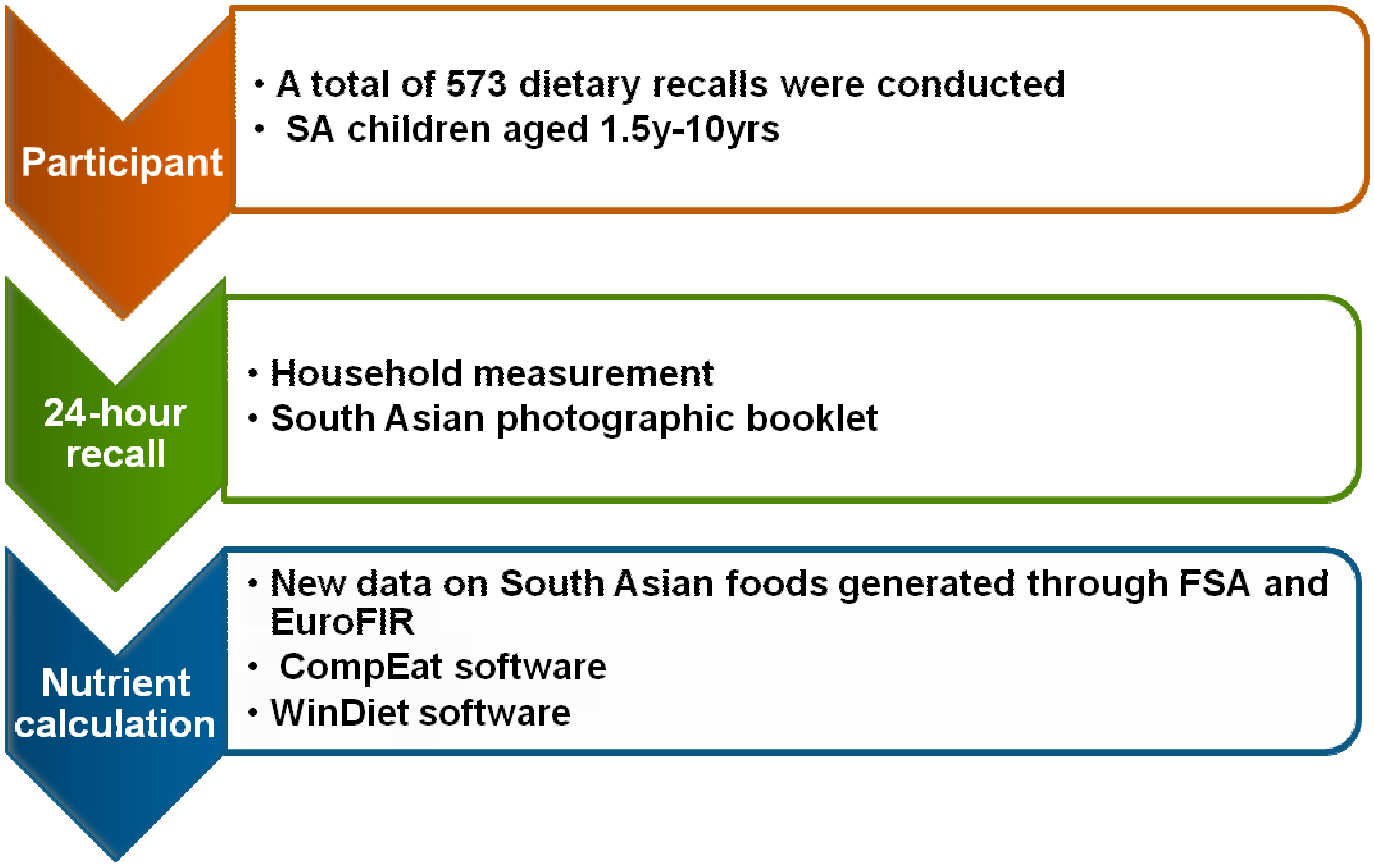


Development of photographic food booklet



•A list of representative foods commonly consumed by South Asians prepared
•Portion sizes were selected from the pilot studies, FSA Portion Sizes and Food Portion Sizes (Wrieden et al.,2008)
•Food portion photographs were validated by South Asians mothers.

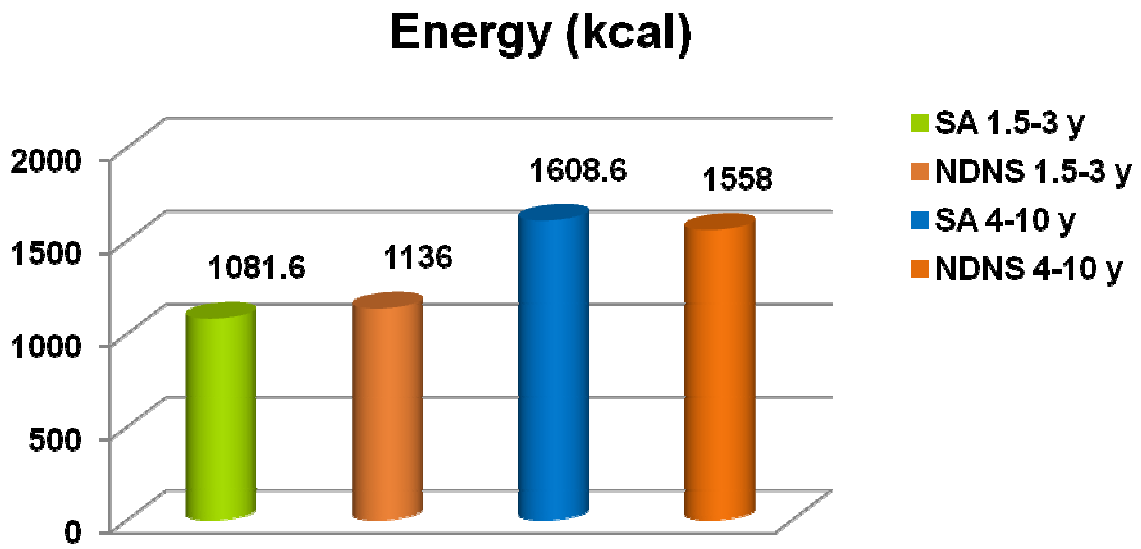
Calculation of average nutrients intake



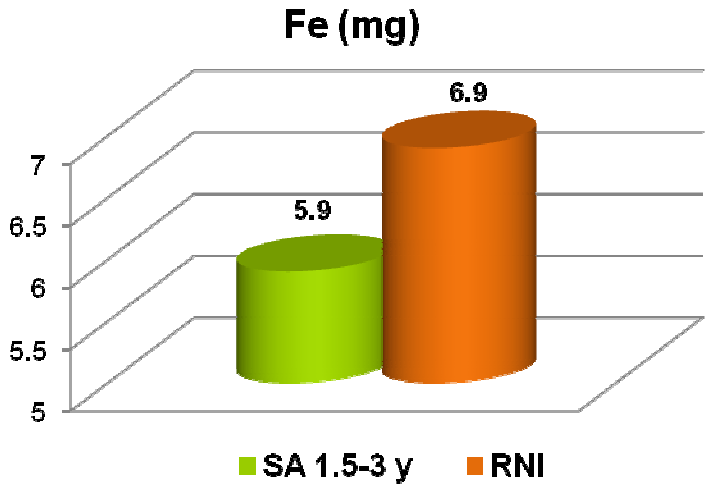
Dietary habits of South Asian children compared with Caucasian children

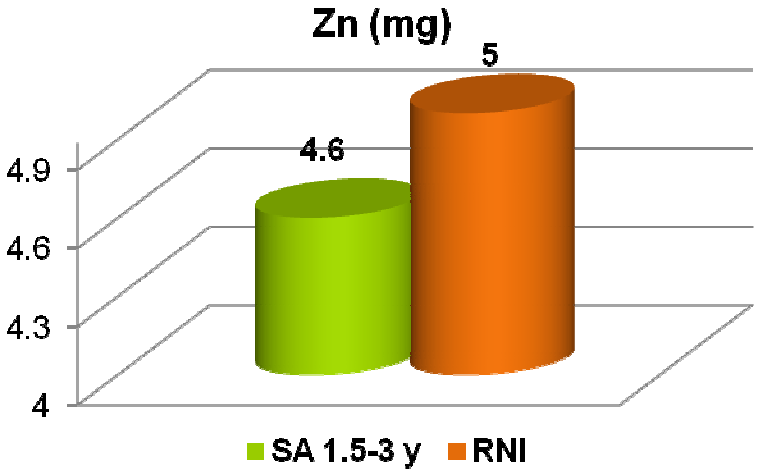
- South Asian children consumed greater amounts of full fat milk.
- Higher consumption of fruit juice.
- Lower amounts of sugar confectionary, chocolate confectionary and soft drinks.
- Delayed weaning and less fruit and vegetables
- Consumption of fruit and vegetables in older children however increased.

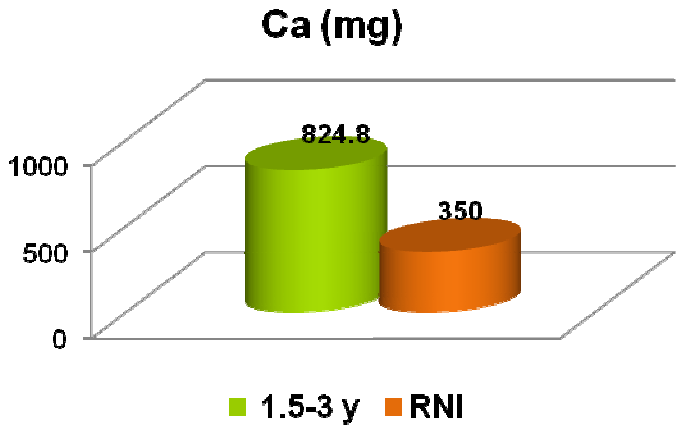
Nutrient intake of South Asian children in the UK as compared to NDNS (2008/2009)



Micronutrients (1.5-3 yrs)

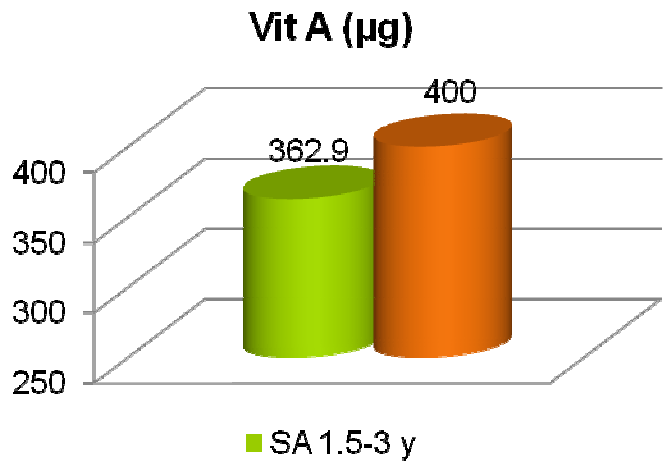


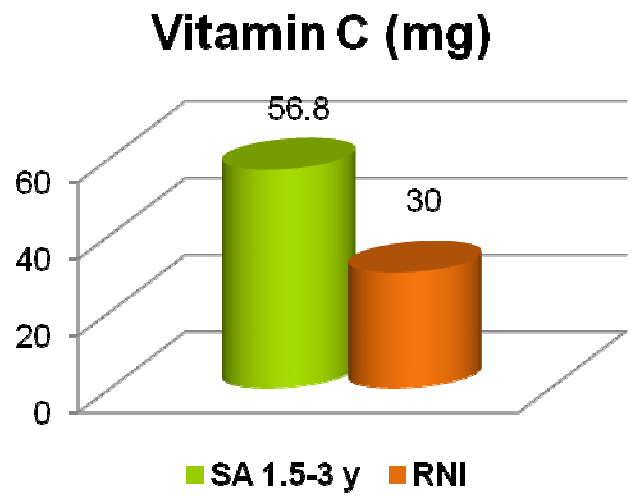


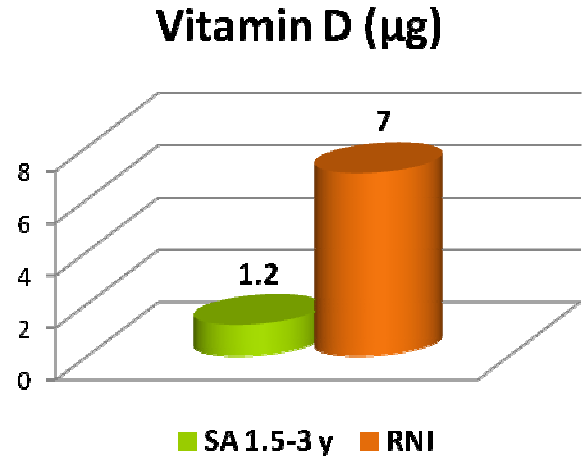


No significant differences in mean intake were found between boys and girls

Micronutrients (1.5- 3 yrs)

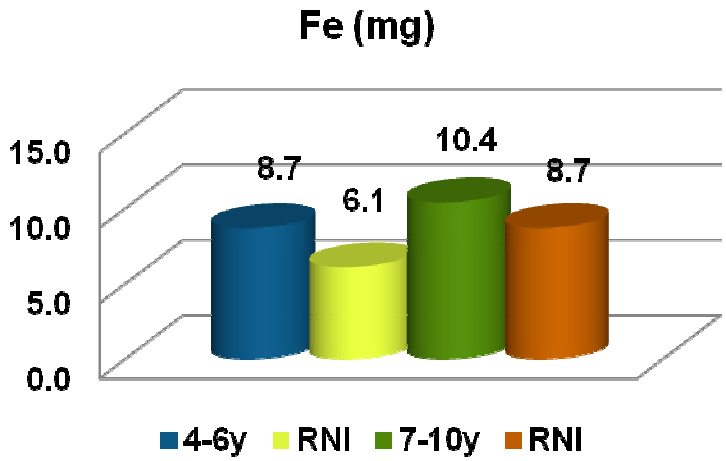


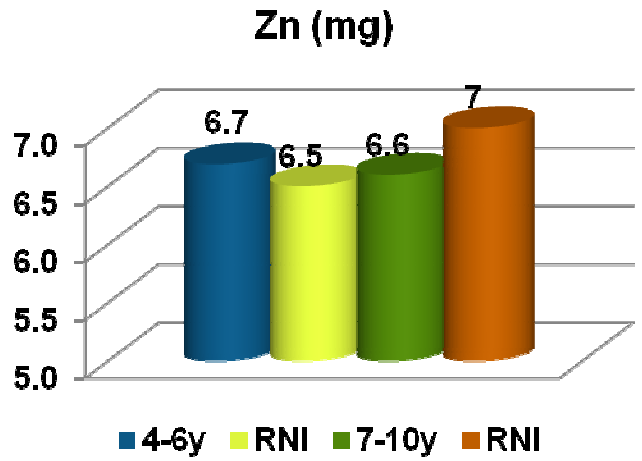


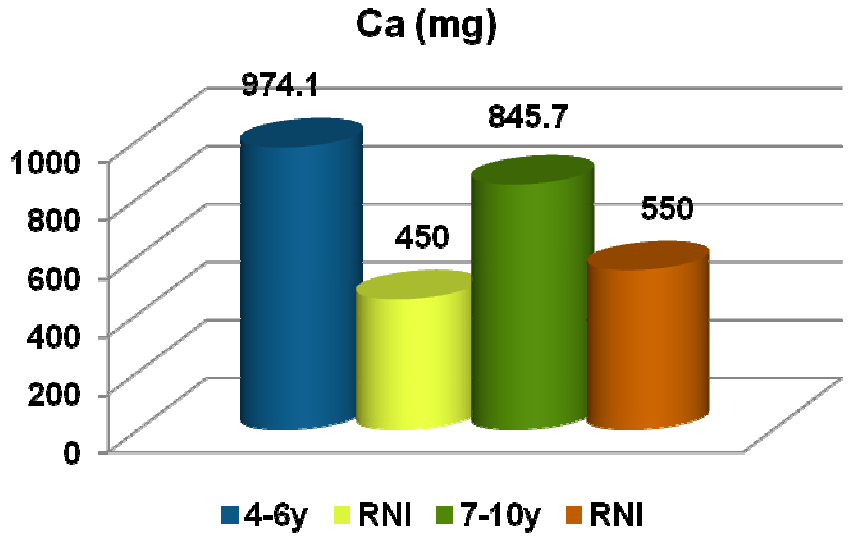


No significant differences in mean intake were found between boys and girls

Micronutrients (4-10 yrs)

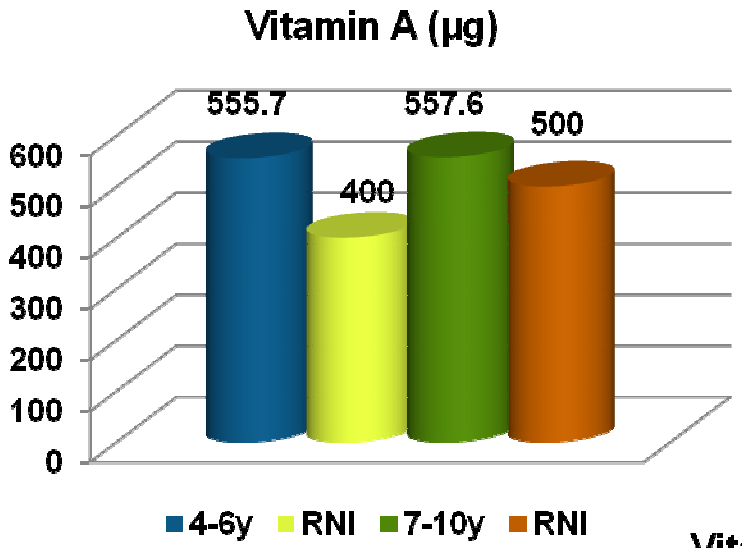


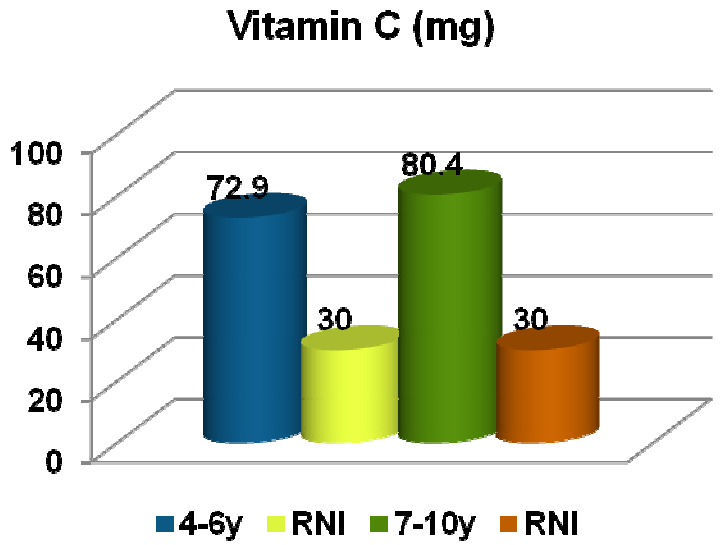


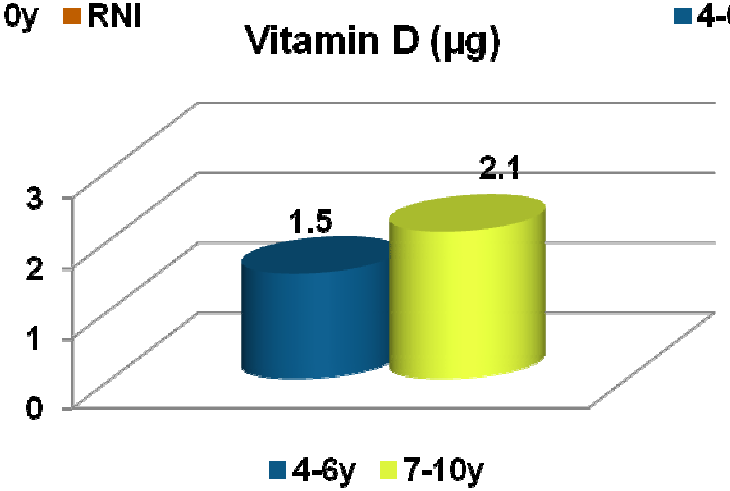


* No significant differences found between boys and girls.

Micronutrients (4-10 yrs)







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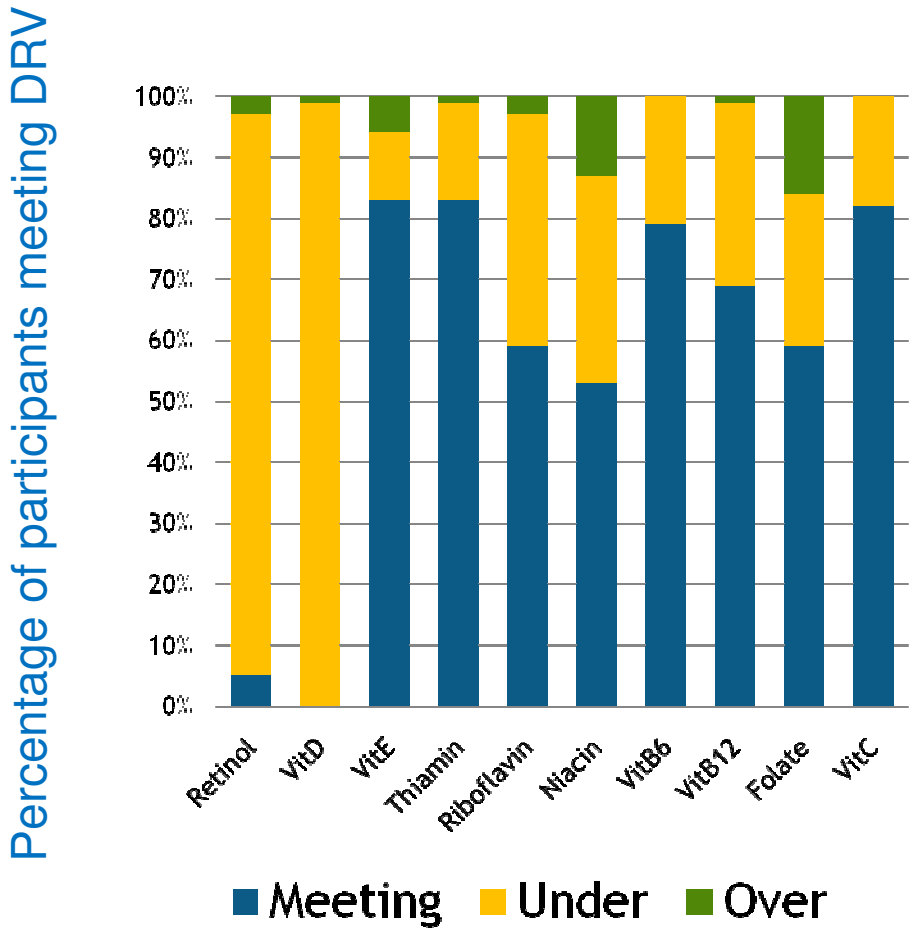
Vitamin intakes-adults



- Nearly 90% below DRV for retinol and vitamin D
- 20-40% lower than DRV for folate, B12, B2 and B3

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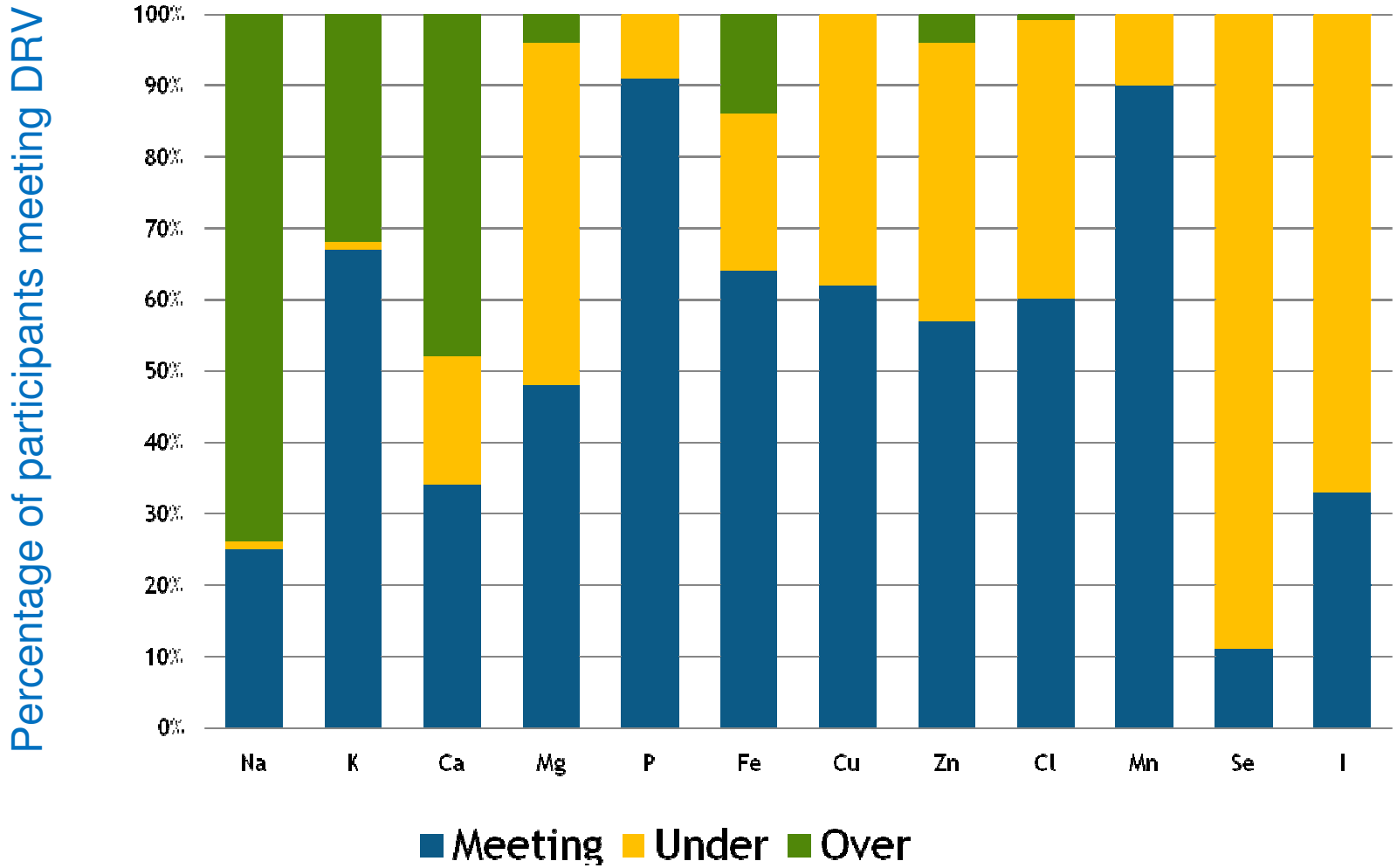
Mineral intakes- adults



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Conclusions;

- Low intakes of selected micronutrients among British Asian children present concerns - similar to the situation in India as reported by WHO.
- Lower intakes may be due to a limited choice of foods which might be due to loss of biodiversity.
- Dietary patterns for the risk of metabolic syndrome in South Asian clearer but nutrients intakes similar in both groups (at -risk and not-at risk).
- There were large variations in recipes reported as well as different cultivars/varieties are exported from different countries in the UK.
- To understand diet and nutrient biodiversity there is a need for more data .

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Current and future research:

- Ethnic food data will be used for EU funded project, CHANCE which is focused on risk -of -poverty (ROP) groups;
  - To identify nutritional criticalities in ROP groups in Europe
  - To understand dietary patterns using metabonomics
  - To produce low cost healthy food prototypes
- BBSRC Funded IPA -Food related health inequalities in Indians living in India and the UK
  - NIN/ ICMR's food composition data on Indian foods including cultivar variations.

Acknowledgements;

EuroFIR partners;

- **AFSSA, France**
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- **RIVM, The Netherlands**
- **RUG, Belgium**

PhD students:

- **Sara Diana Garduño-Diaz**
- **Fatemah Ashkanani**
- **Wafaa Husain**

Sustainable ecosystems and biodiversity- a story of vision and success

The Art of Living