

Results from the Danish validation study in Nordic monitoring – what do adolescents answer when they participate in a survey with FFQ?

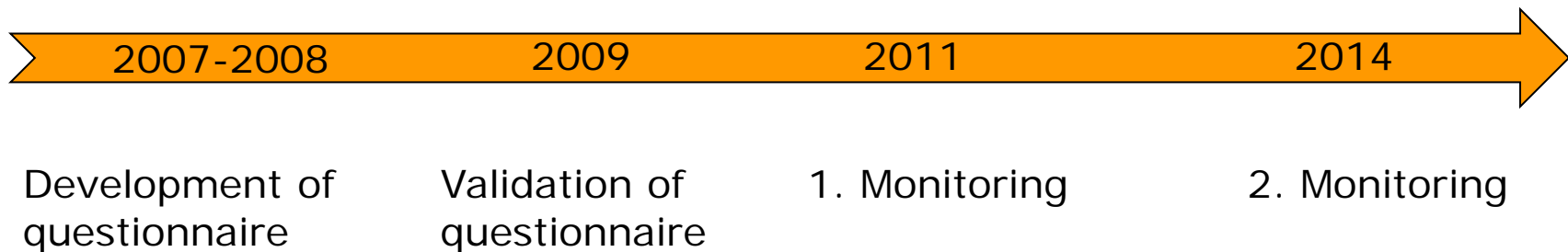


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Background

Development of a Nordic monitoring system of diet, physical activity and overweight is an important part of the Nordic Plan of Action of Better Health and Quality of Life through diet and physical activity (2006)

The monitoring system was developed on 2007-2009 and needed to be simple, low cost and based on indicator questions on diet and physical activity. Funded by Nordic Council of Ministers



Background variables

- Sex, Age, Education (4 groups), Family status (3 groups), Region/urbanisation, weight and height

Monitoring system design

- Simple random sample
- Telephone interview (7-65 y, parents interviewed on behalf of children)
- 20 minutes duration (15 questions on diet and 6 questions on physical activity as well as relevant background information)
- Conducted within the same two months in all Nordic countries
2011, 2014, ?

The Danish validation study 2009

Relative validation of NFFQ against national dietary survey method, 7 d estimated record (DK), 7 d open-ended record (IS).

The Danish study was conducted in three clusters in Denmark in three age groups: 7-12 y, 13-17 y and 18-65 y. Within the clusters, the Institute of Social Research draw a random sample from the civil registry.

Number of participants by age group in FFQ and FR (response rate from NFFQ to FR)

| | Children 7-12 y | Adolescents 13-17 y | Adults 18-65 y |
|---------------|-----------------|---------------------|----------------|
| NFFQ | 267 | 245 | 276 |
| FR | 201 | 151 | 180 |
| Response rate | 75% | 62% | 65% |

Response rate in Iceland for adolescents: 51%

Dietary indicators

How often (monthly, weekly, daily) do you eat the following?

- fruit,
- Vegetables,
- pommes frites / fried potatoes,
- fish and seafood as a main course,
- sausages as a main meal,
- candy and chocolate,
- buns, cakes and biscuits
- fullfat cheese
- soft drinks, carbonated/not carbonated, sugar sweetened
- soft drinks, carbonated/not carbonated, light/artificial sweetened
- energy drinks
- vegetable/fruit juice

6 Nu vil jeg spørge dig om, hvor ofte du/dit barn spiser/drikker en række fødevarer? Du skal tænke på de sidste 12 måneder, når du svarer.

Svar på alle alternativer, men sæt kun ét kryds i hver række.

99 = uoplyst

| | Gange pr. måned | | | | | Gange pr. uge | | | | | Gange pr. dag | | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | <1* | 1 | 2 | 3 | 99 | 1 | 2 | 3 | 4 | 5 | 6 | 99 | 1 | 2 | 3 | ?4 | 99 |
| Hvor ofte spiser du/dit barn? | | | | | | | | | | | | | | | | | |
| 1 Pommes frites, stegt kartoffel | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2 Fisk og fiskeprodukter | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3 Pølser som hovedret | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4 Chokolade og slik | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5 Kager, kiks, tærte m.m. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6 Fuldfed ost (45-60+ eller 24-44% fedt) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7 Sodavand, saft, isthe, light eller sukkerfri | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8 Sodavand, saft, isthe, alm | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9 Frugt/grøntsagsjuice | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10 Vand, alle slags | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Frequency of intake of bread and type of fat used on bread and in cooking

Both NFFQ and FR data was transformed to frequency per week

FR data calculated as times per week in two different ways:

As **eating occasions** were counted as eaten/not eaten so e.g. a participant ate 2 apples in one meal, this only counted as one eating occasion.

As **servings** were taken into consideration and e.g. two apples in one meal were counted as two servings

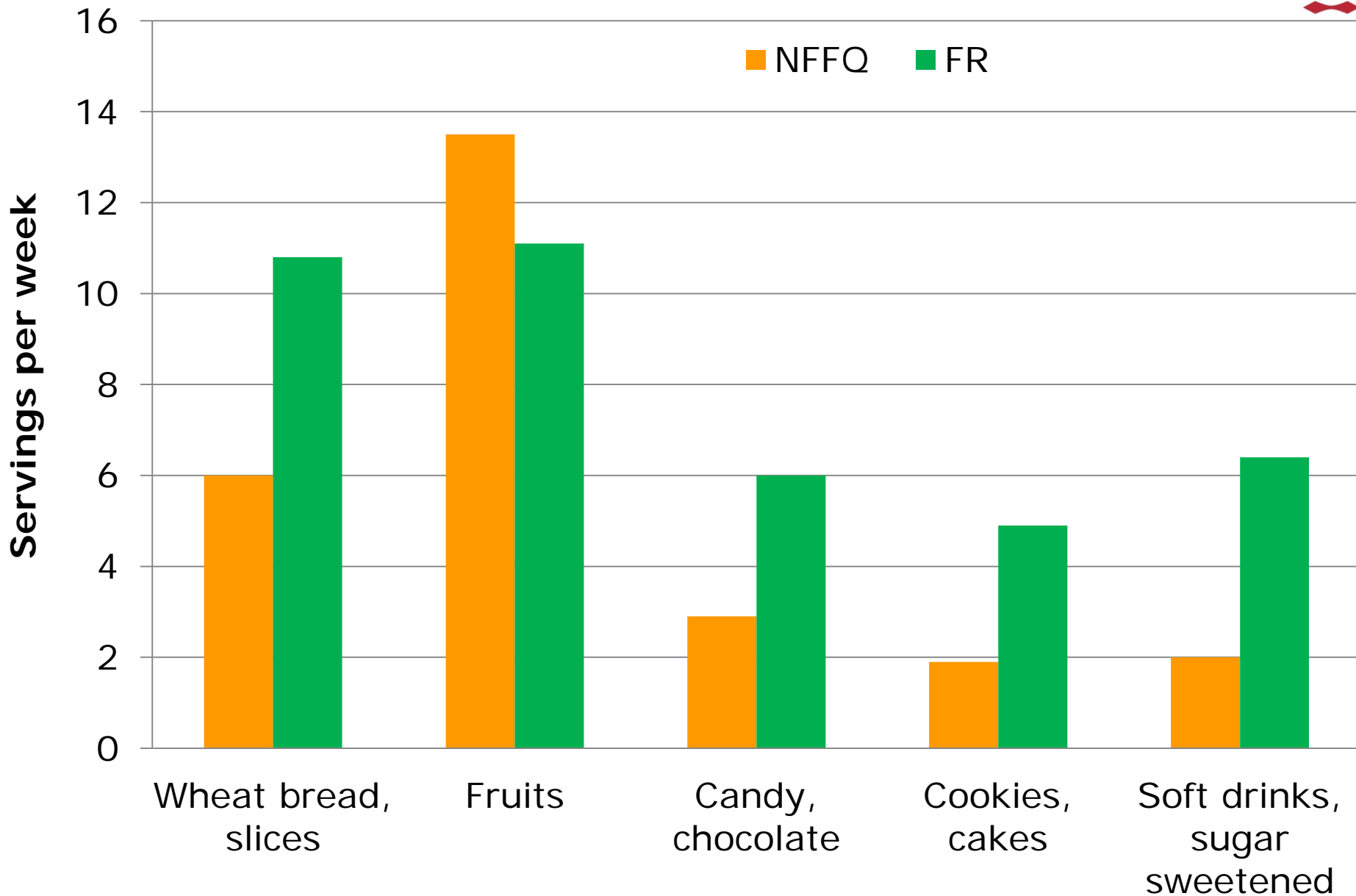
Comparing FFQ data with FR data:

Comparison of frequency (average and distribution),
Agreement and ability to rank subjects

FFQ vs FR

- Retrospective vs prospective – not expect overall agreement
- Time frame – 7 days vs average intake the last year
- But the FFQ should be able to rank in high and low consumers like FR

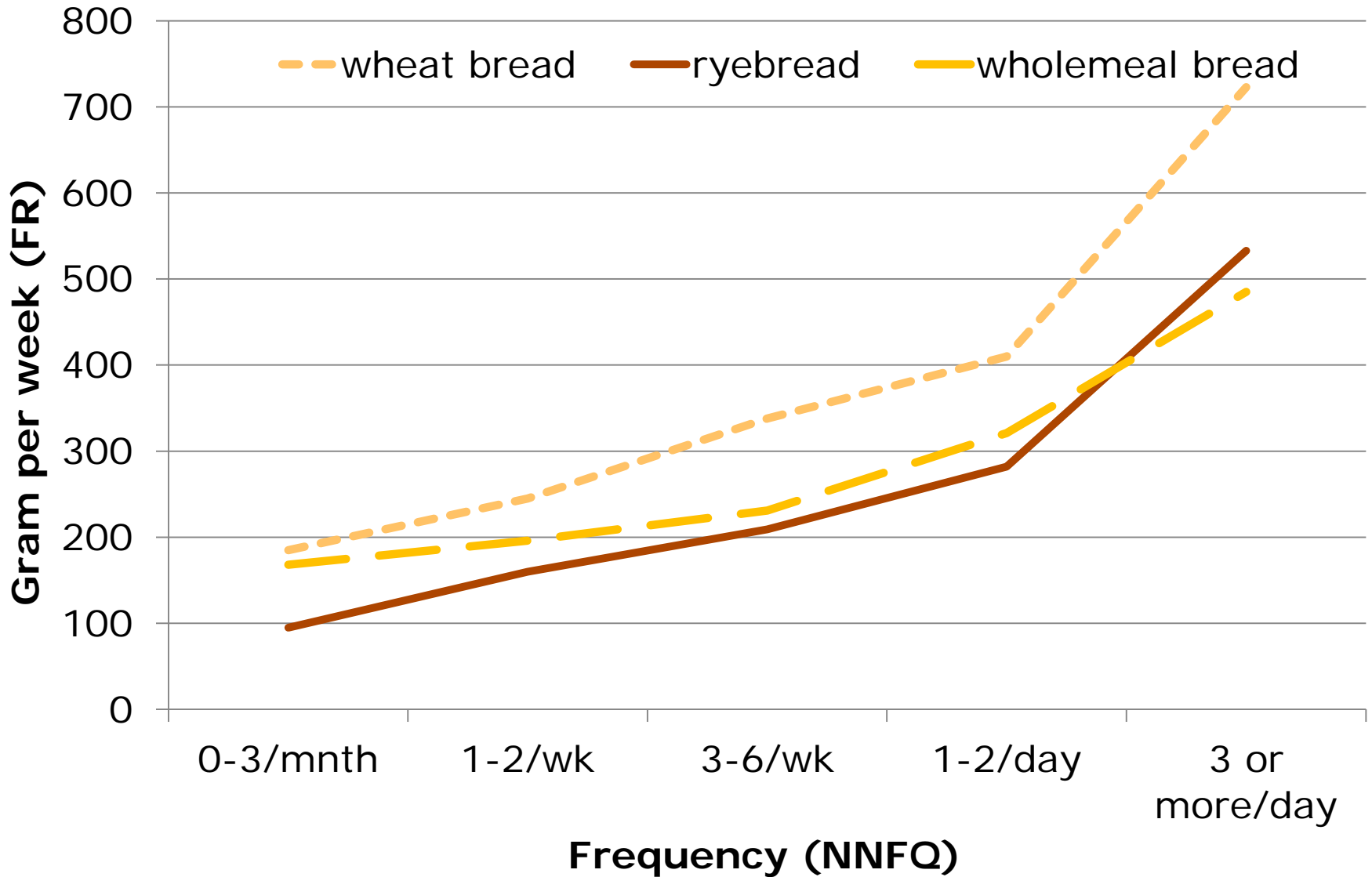
Frequency per week, adolescents, DK



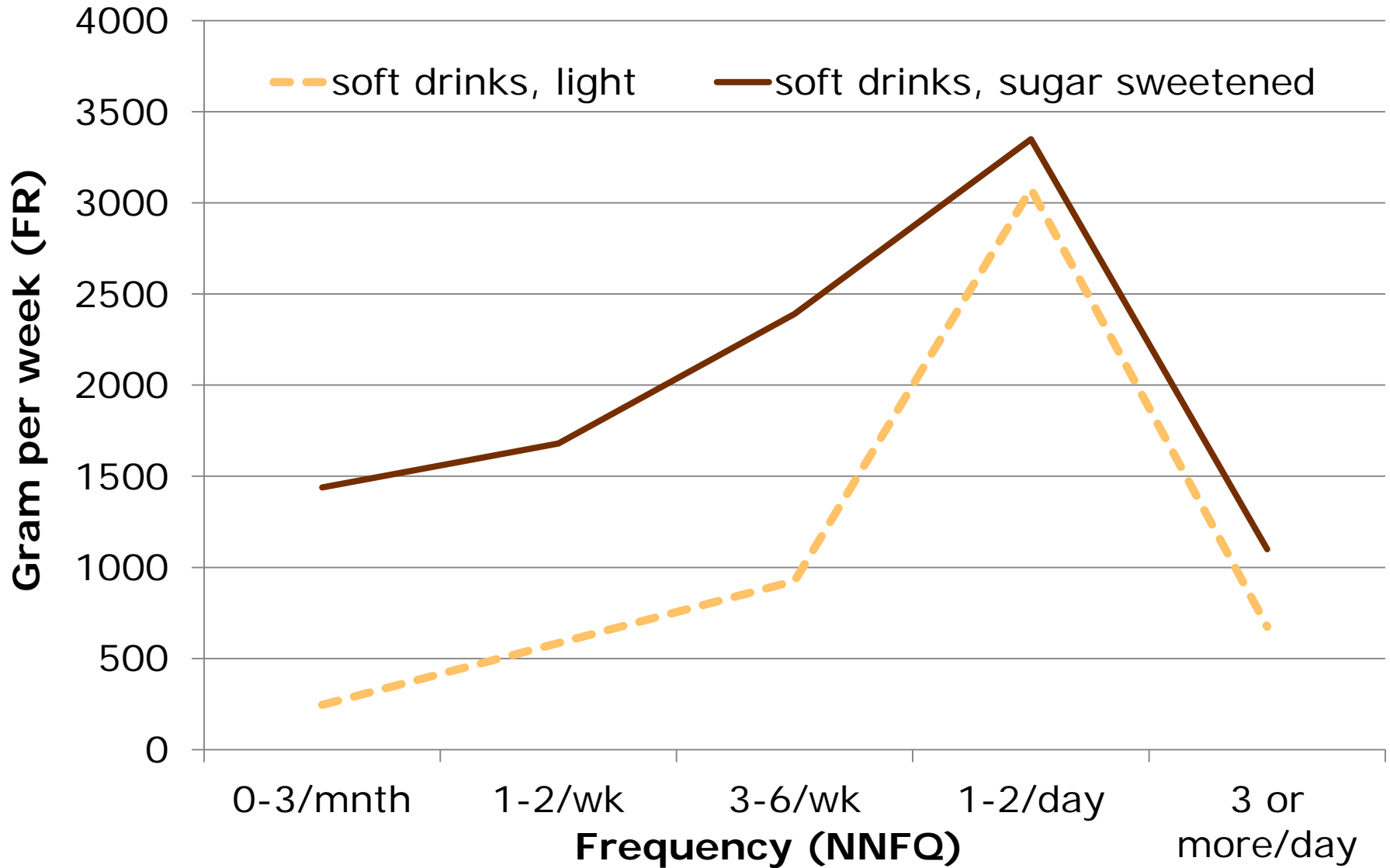
Agreement between NFFQ and FR

- Trends for increasing intake (FR) with increasing consumption (NFFQ). For children and adults significant trends for all foods, but not for adolescents
- Average frequencies FR vs NFFQ – differences for all age groups
- Association between frequency of foods in NFFQ and nutrients of interest in FR, e.g. soft drinks and intake of added sugar, bread and dietary fiber, - but associations better for children and adults than for adolescents
- Same frequency in NFFQ within same age groups corresponds to different amounts in grams eaten in FR in Iceland and Denmark, huge differences in portion sizes

Frequencies from NFFQ in relation to mean intake from FR, adolescents, DK



Frequencies from NFFQ in relation to mean intake from FR, adolescents, DK



Conclusion from the validation study (results from both Iceland and Denmark)

- Agreement between NFFQ and FR (frequencies) - low correlations seen in children and adolescents (but not worse than other studies.....)
- Agreement between NFFQ and macronutrients of interest (calculated from FR) shows good agreement, but better agreement for children and adults than for adolescents
- Low proportion of missclassification – NFFQ is able to rank participants into high or low consumption

Monitoring in 2011 and 2014

- EU tender for collection of data
- Market bureaus did not want to conduct the survey for the specified budget
- Budget constraints forced a reduction in ambitions
- On basis of low response rate among adolescents as well the validation study showing the NFFQ working better in children and adults than in adolescents - > adolescents were omitted

How to improve frequency answers from adolescents?

- Better instructions in how to answer
- Make the interview face-to-face?
- Include portion sizes?
- Or use another method? 24 recall for adolescents?

Thank you for your attention!

