Investigating dietary habits and promoting health in Icelandic youth – *challenges and opportunities when using IT-tools, apps and photos*

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HÁSKÓLI ÍSLANDS

Background – the topics of today

- HPHS-Study on the project „health promoting high schools“ which was initiated by the Directorate of health in 2010.
  - Difficult but interesting agegroup to study
  - Nutritition is just part of the studyprotocoll
  - one of four main aims of HPHS to have an impact of dietary habits
  - Experience with using webbased questionnaires
  - Development of a health promoting app
- Promeal =Prospects for promoting health and performance by school meals in Nordic countries
  - Nordforskfunded project of Sweden, Iceland, Norway and Finland – Agneta Hörnell in Umeå Sweden is PI
  - Development and validation of a photograph-method to evaluate what children are eating during school lunch.

Why HPHS?

- Adolescence is a crucial period in life full of changes
  - physiological
  - psychological
  - behavioural
    - not least in health behaviours
    - associated with increased independence.

- The associations of diet ,fitness and bodycomposition are not always clear
- Baseline measurements of 16 year old children starting high-school
  - followed-up twice during their high-school years, when 18 and 20 y.
  - One school introducing the project Health promoting schools and the other with delayed onset of the programme

Health promoting high-schools

- A holistic approach towards promoting health and preventing risk behaviour among youth involving stakeholders within school and in its surroundings.

HREYFING NÆRING
GEÐRÆKT LÍFSSTÍLL

A circulation of 4 years with one focus point each year

Heilsueflandi framhaldsskóli

http://www.landlaeknir.is

Methods

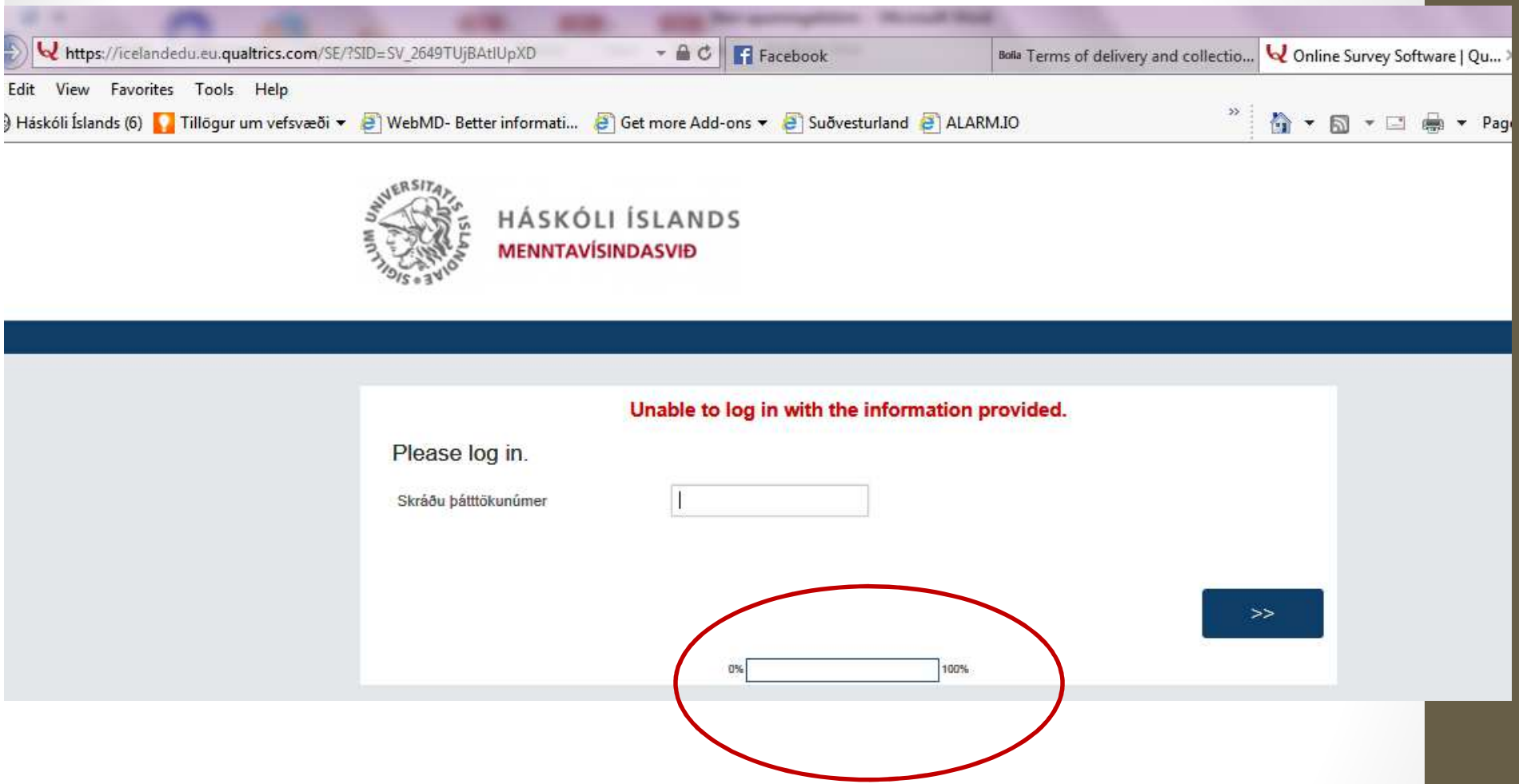
Focus on quality AND frequencies, some of the questions semi-quantitative but not all.
Question on nutrition knowledge, attitudes and additonal behaviour questions as well

- Initial study (year 2010):
- 255 participants
  - a total of 230 finished questionnaires about diet and lifestyle
    - A diet quality score (0-7 points) was created based on Icelandic food based recommendations and calculated from the questionnaire.
    - Approximately 200 also finished ...
      - anthropometric measurements height, weight, waist and upper arm circumference, and skinfold measurement
      - a graded execise test on bicycle
      - And around 150 gave blood samples

Does the method fit? – our experience

- Original aim was to invite all student to fill out questionnaires, also those not being active participants
- Several problems:
  - Getting parents signed consent for this agegroup
  - Teachers involvement – classroom or not?
  - Access to computers and timing – when and where to fill out
  - Length of questionnaire
  - Dyslexia and other problems, also technical problems

  - Ended up with adding some lists on paper for those needing it, used paper for first follow up, which scholars liked more.
  - For second followup we are using a new form of the webbased questionnaire – but filled out only by participants and duringt collection on other data with computers we provide and us being present.



- Not as much schrolling down the screen – more frames
- Bigger letters and type of letters - easier to read
- Changes over time, both participants age and this being a more common form now
- Some questions are difficult though...

DEVELOPING A HEALT PROMOTING APP

Cowork with HPHS and more

- Developing **science-based and scientifically tested** mobile solutions for the prevention and treatment of lifestyle-related diseases, using the state of the art in health promotion, health communication and mobile health technology.
- Huge group of investigators from several countries, will be tried and tested in Iceland and Sweden.
- Two PhD students working on the development, first piloting is starting soon. *(founder & PhD student: Tryggvi Þorgeirsson)*
- Developed with the help of "users", discussing their needs and wants in small groups.
- Meetings with stakeholders during development.
- Focus on small steps – changing health behaviours related to food, physical activity and mental health.

http://www.goodlifeme.com/

School meals in nordic countries

Promeal

http://www.kost.umu.se/forskning/promeal
Project leader: Agneta Hörnell, Umeå Sweden.

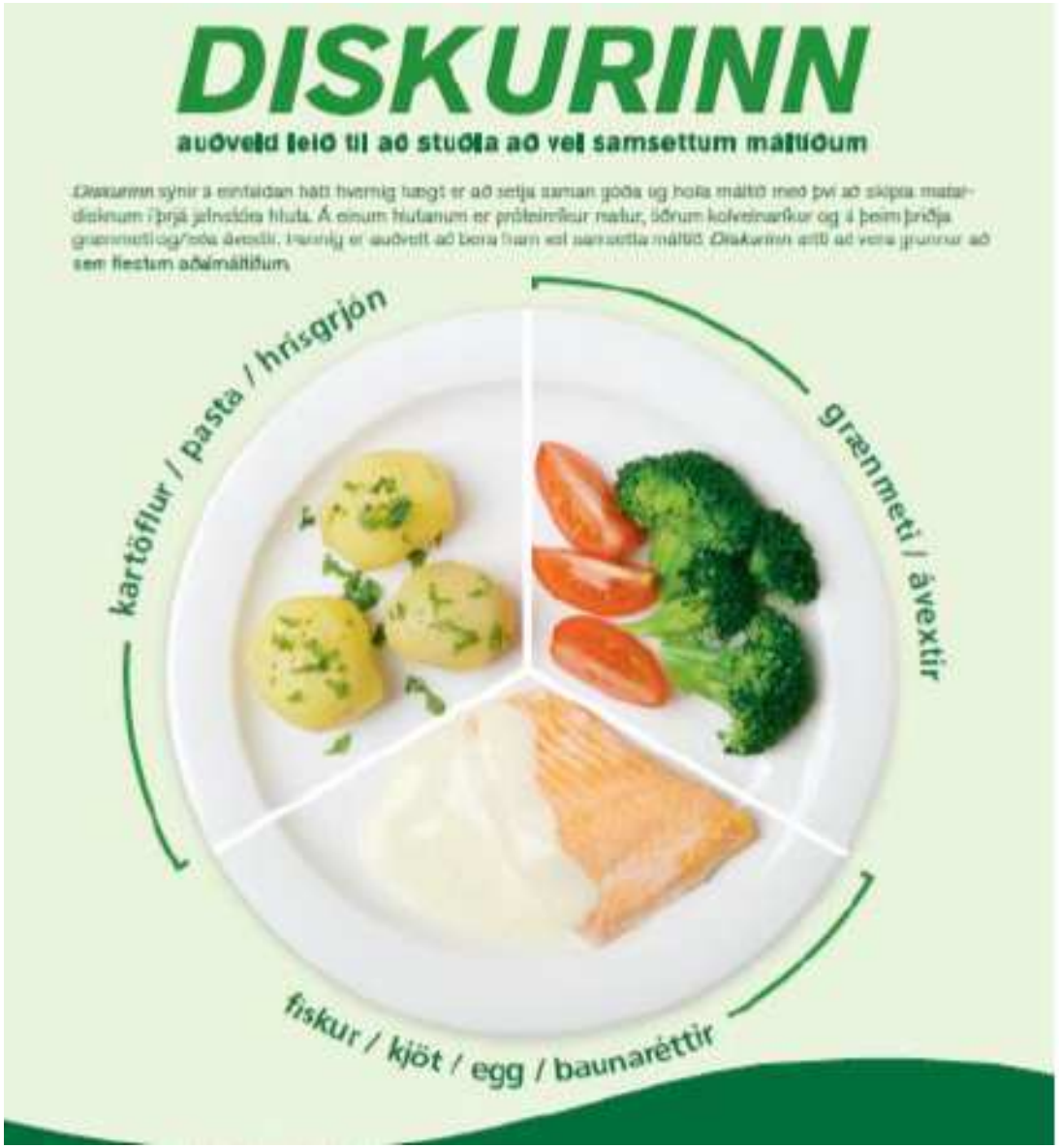
- **=Prospects for promoting health and performance by school meals in Nordic countries**
- This research project aims to determine whether school lunches improve the overall healthiness of children's diets and learning conditions and explores the children's main concerns regarding school lunches in a Nordic context.
- The knowledge generated by the collaboration can be used to strengthen both practices and policies in a Nordic arena. The project will also help to develop innovative methodologies within educational research related to food and nutrition.
- This project is funded by the Nordic Council of Ministers, within the sub-project "Nutrition, Learning and Health" under the Nordic globalisation initiative "Health and Welfare".

Participants in Promeal

- The specific aims will be studied and compared between the Nordic countries Sweden, Iceland, Finland and Norway.
- Countries with different systems for organizing meals in schools e.g. free cooked school lunch (Sweden and Finland), subsidized cooked school lunch (Iceland) and lunch box brought from home (Norway).

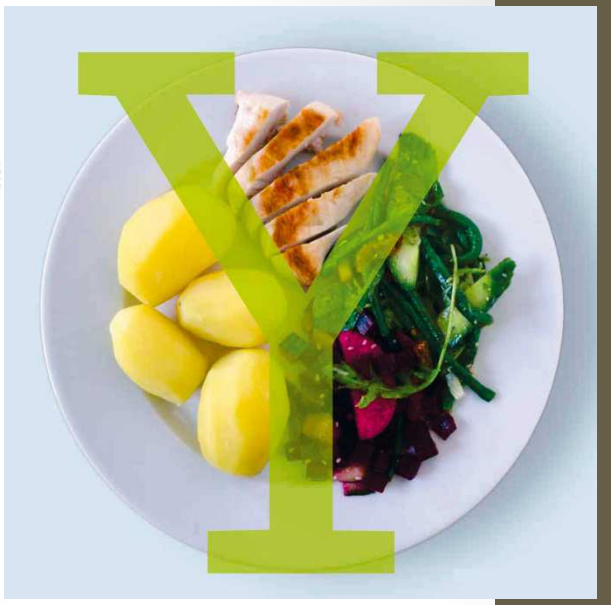
Validation of photomethod for estimating portion sizes

- Performed in Iceland (and Sweden)
- Standard plates with weighed portions
  - Whole and half portion
  - Two views/angles for each plate
- Pictures of plates from pupils
  - Before and after meals in one school on five days
- All foods weighed before and after
- Visual estimate with photos of standard plates and information on the weight on the items on that plate used as aid for the estimate
- Four validators viewed and estimated each picture


DISKURINN
auðveld leið til að stuðla að vel samsettum máltíðum
kartöflur / pasta / hrísgrjón
grænmeti / ávextir
fiskur / kjöt / egg / baunaréttir

Finnland

Sweden



Denmark

USA

Different eating patterns and plate models between countries

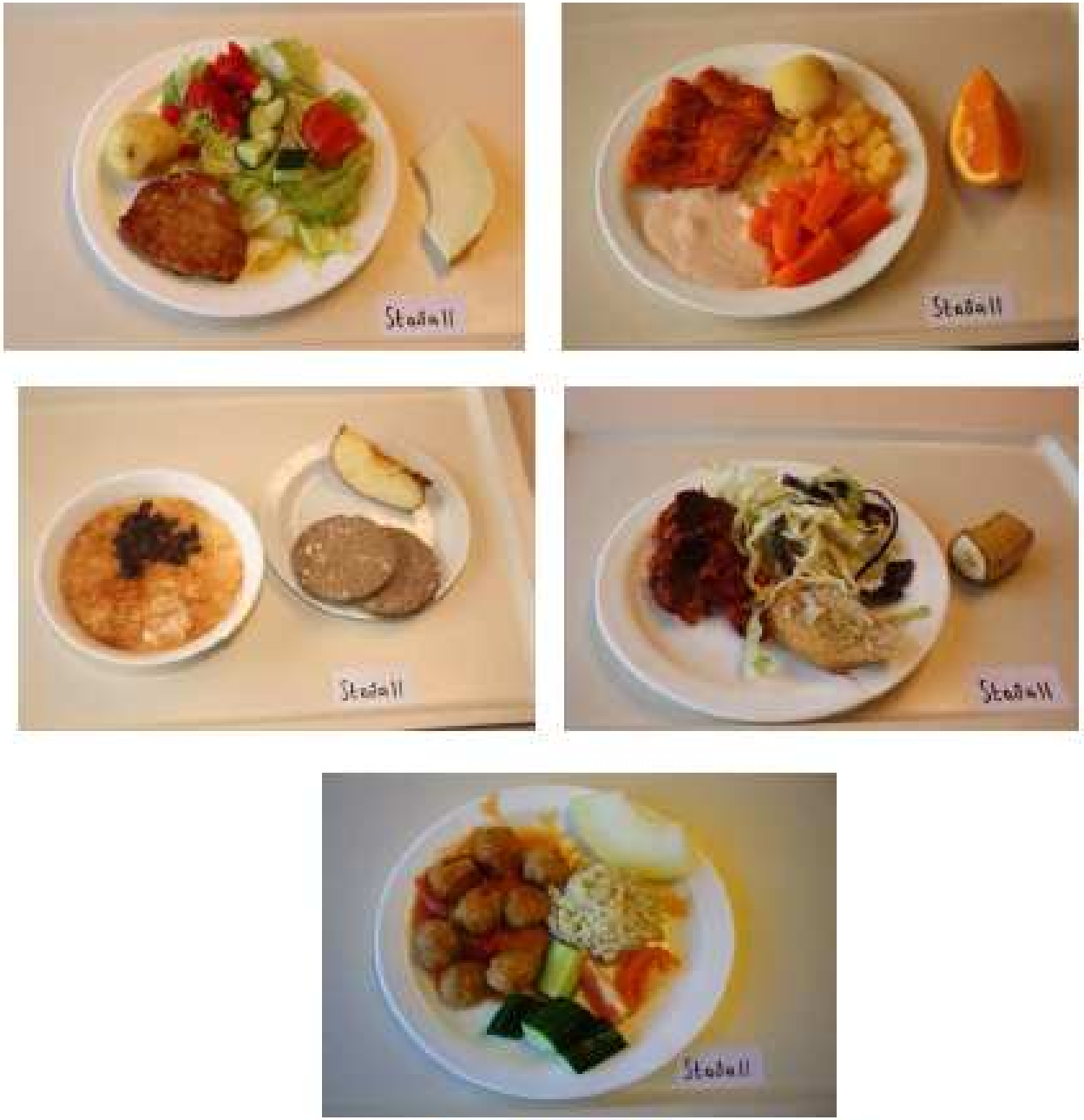
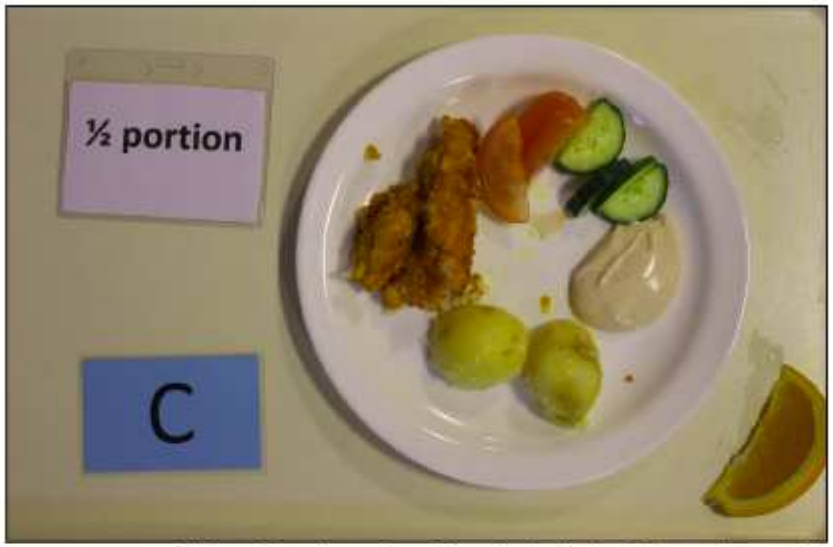


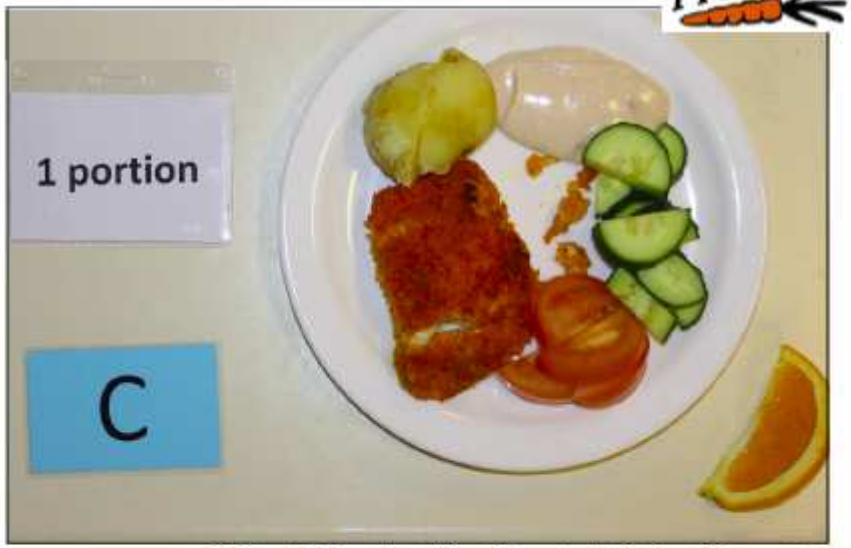
Figure 2 . The five dishes – full portion standards.

School: 1 Date: 30.10.2013. Country: Iceland

Meal: Steikt ýsa með kartöflum og grænmeti



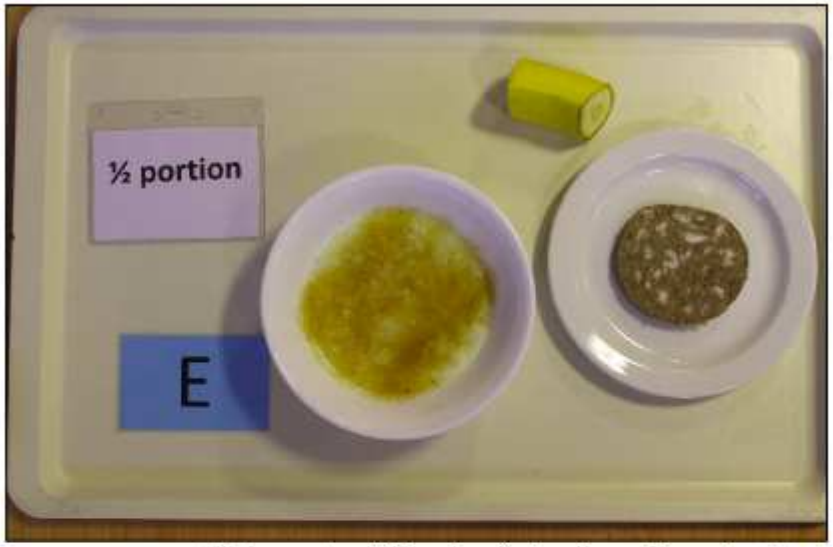
1/2 portion Fiskur 88 g – kartöflur 63g – kokteilsósa 25 g – tómatar 34 g – gúrka 20 g – appelsína 32g



Full portion Fiskur 147 g – kartöflur 84 g – kokteilsósa 45 g – tómatar 48 g – gúrka 45 g –appelsína 32 g

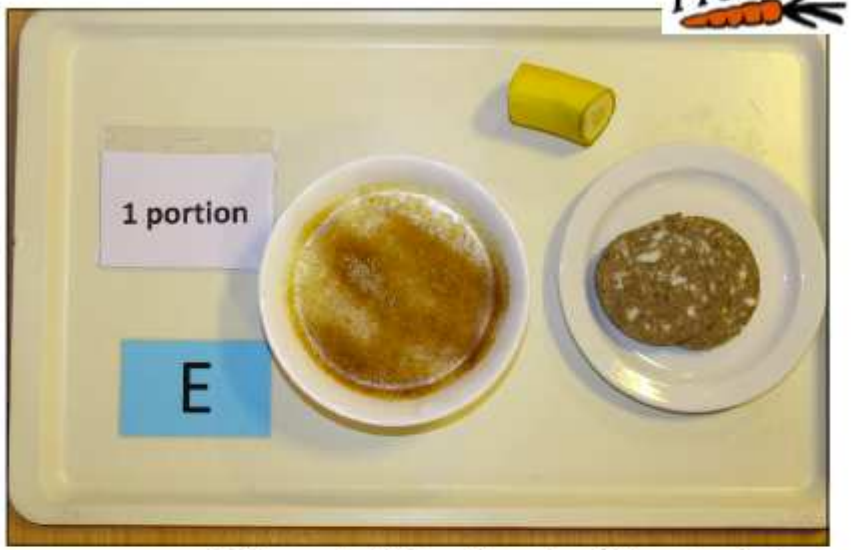
Fiskur: 170– kartöflur: 261 – kokteilsósa: 344– tómatar: 302 – gúrka: 329 – appelsína: 303

School: 1 Date: 01.11.2013. Country: Iceland
Meal: Grjónagrautur og lifrarpylsa



1/2 portion Grjónagrautur 128 g – kanilsykur 6 g – lifrarpylsa 49 g – banani 53 g

Grjónagrautur 124 – kanilsykur 127– lifrarpylsa 223 – banani 305

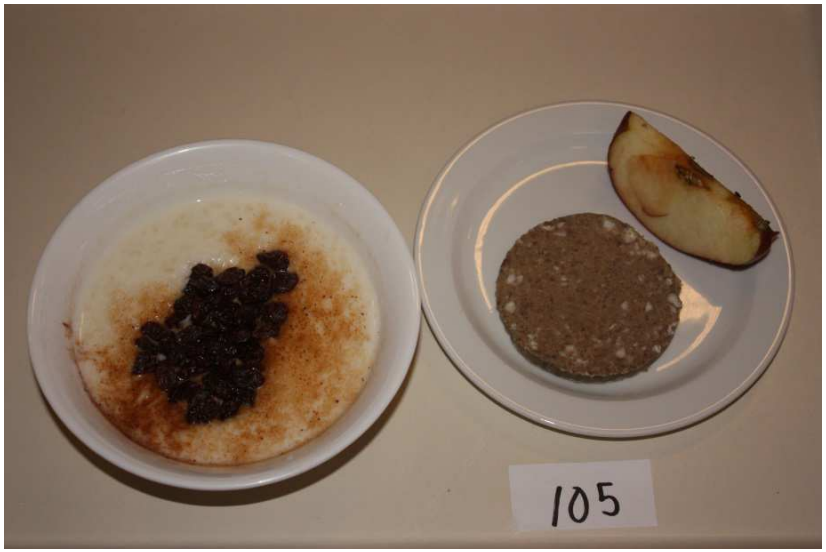


Full portion Grjónagrautur 256 g – lifrarpylsa 100 g – kanilsykur 11 g – banani 53 g

Figure 1. Lasagna left overs

Meal of one participant and leftovers – example 1

Meal of one participant and leftovers – example 2



Luckily not our case!

- Our method/ the validation for the method is limited to schools meals – possible to have standards to calculate from if you are in a canteen
- It will be exciting to see if we get the same results for both Iceland and Sweden since there are different ways of serving and variety in food availability
- Norway has packed lunches and as such did not fit for the validation.

Final remarks

- Technical solutions and new ways of both doing research and reaching the target group are promising in many ways.
- However, it is not always the easiest and there are endless point to consider and develop further.
- Need for sharing best practice and experiences since many of these „first steps“ never get published.