



Effekt av innføring av gratis skolefrukt

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Subscription program The Norwegian School Fruit Program



Offered to all Norwegian elementary schools

- Cost:
 - NOK 2.50 per school day (approximately EUR 0.30)
 - Subsidised by the Norwegian Government by NOK 1.00 per pupil per school day



The FVMM project



- 38 schools, 1950 6th and 7th graders
- School fruit intervention (October 01 – June 02):
 - Free school fruit: 9 schools
 - Subscription program: 9 schools
 - No program: 20 schools
- Data collections:
 - Baseline (September 01)
 - Follow-up (May 02)
 - Follow-up (May 05)

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- Free fruit was much more effective in increasing children's fruit and vegetable intake than the existing subscription program

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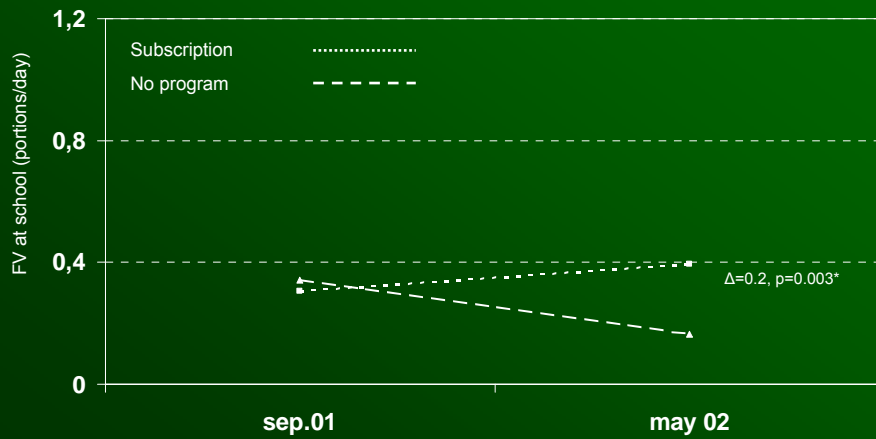
Main challenge with existing subscription program



- Low participation (spring 2006)
 - 41% of the schools participated
 - 28% of the pupils at participating schools subscribed
- 12% of Norwegian 1st to 10th graders

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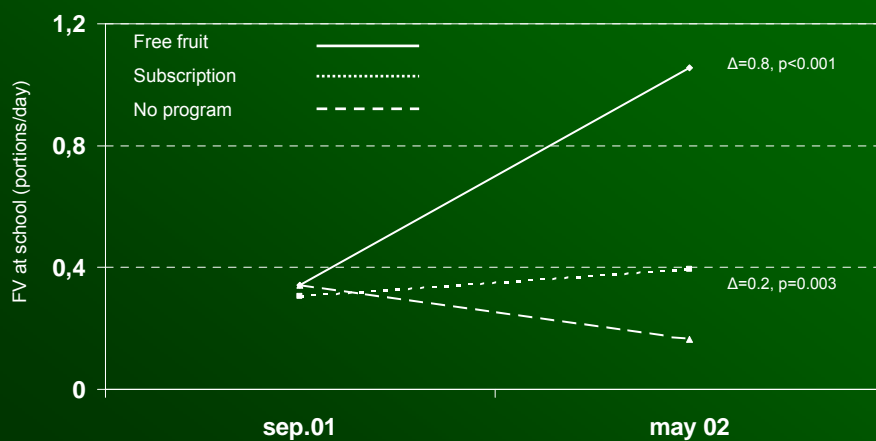
Existing subscription program Increased FV intake at school



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Bere et al., *Preventive Medicine*, 2005

Free fruit More effective than subscription program



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Bere et al., *Preventive Medicine*, 2005

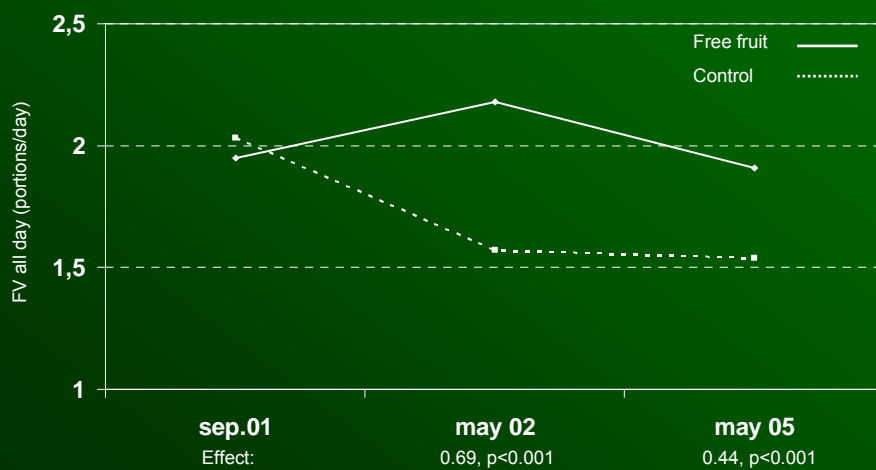
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- Free fruit showed long term effects

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Free fruit Showed long term effect



Bere et al., *International Journal of Behavioral Nutrition and Physical Activity*, 2007

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De som fikk gratis skolefrukt i 01/02 – abonnerte oftere senere



- 2003
 - 31% av gratis skolefruktelever (3 av 9 skoler)
 - 7% av kontrollelever (2 av 10 skoler)
- 2005
 - 16% av gratis skolefruktelever (2 av 9 skoler)
 - 1% av kontrollelever (1 av 25 skoler)

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Cost-benefit analysis



- Free school fruit for all (10 years) is economically profitable if:
- Mean lifelong FV intake increase...

2,5 grams



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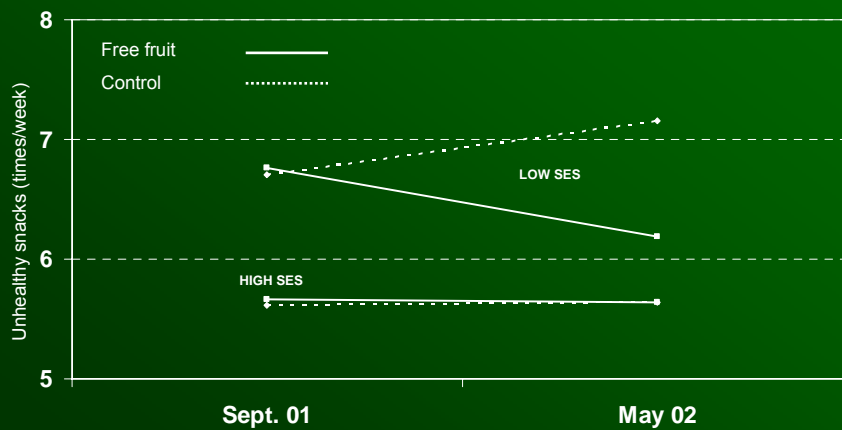


- Increased fruit and vegetable intake reduced consumption of unhealthy snacks

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Free fruit

Reduced consumption of unhealthy snacks



Bere and Klepp, poster *EGEA III*, 2005 (and Bere et al., *Preventive Medicine*, 2005)

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- The existing subscription program increase, while free fruit tended to decrease social inequalities, in FV intake

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Subscription program

Subscribers are different



	Non-subscribers	Subscribers	p-value
Gender (female)	46%	59%	0.05
Education plans (plans of college/university edu.)	49%	68%	0.001
BMI (mean)	21.3	20.5	0.05
FV all day (portions/day, 24-h recall)	1.9	3.2	<0.001
Soda/candy/chips (times/week)	6.9	5.2	0.002
Ate breakfast 'yesterday'	75%	92%	<0.001

Bere and Klepp, in: *Ethics and the politics of food*, 2006; (and Bere et al., *Preventive Medicine*, 2005)

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Subscription program

Subscribers' parents are different

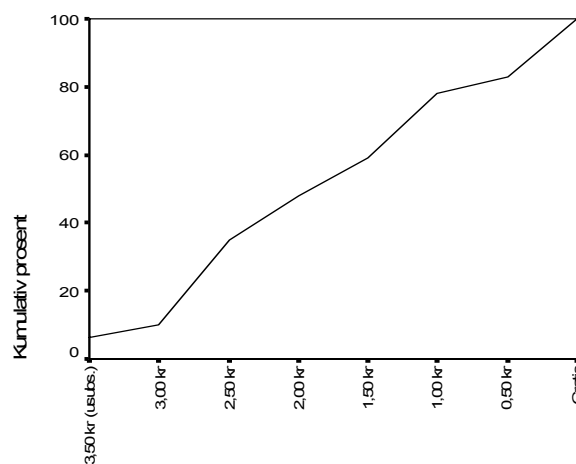


	Non-subscribers' parents	Subscribers' parents	p-value
Age (years)	39.9	42.0	0.002
Household income (in upper half)	47%	65%	0.02
FV all day (portions/day, 24-h recall)	2.6	3.3	0.009
TV watching (hours/day)	1.7	1.2	0.006
Smokers	38%	23%	0.03

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 Bere and Klepp, in: Ethics and the politics of food, 2006;
 (and Bere et al., *Preventive Medicine*, 2005)

Norwegian School Fruit Programme

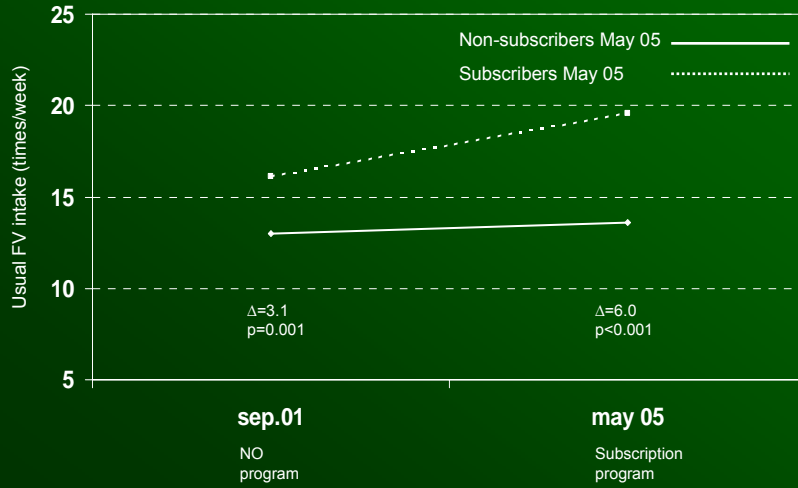
Hypothetical subscription% vs. price



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Subscription program

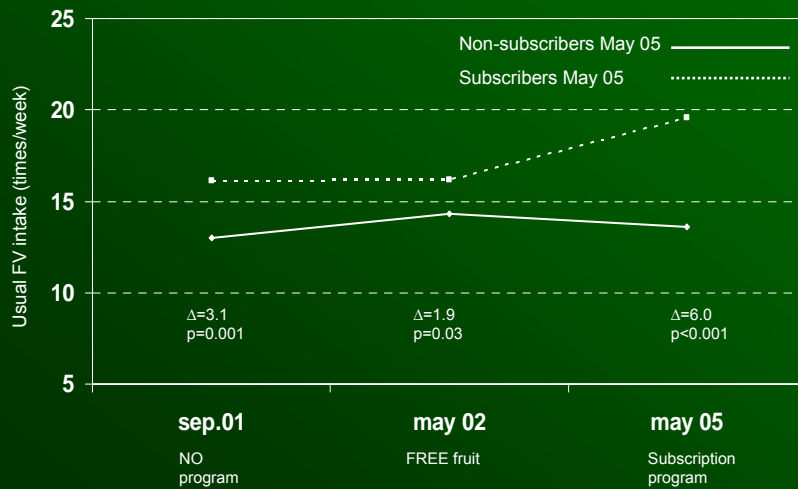
Increases social inequality in FV intake



2008 Elling Bere Bere and Klepp, in: *Ethics and the politics of food*, 2006

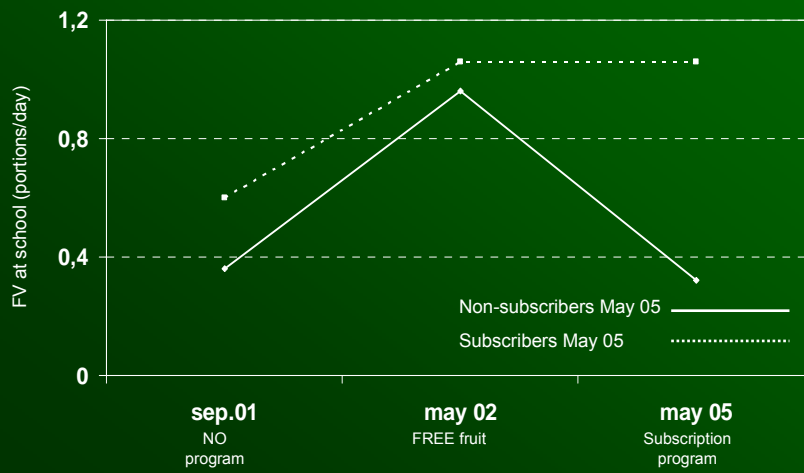
Free fruit

Decreases social inequality in FV intake



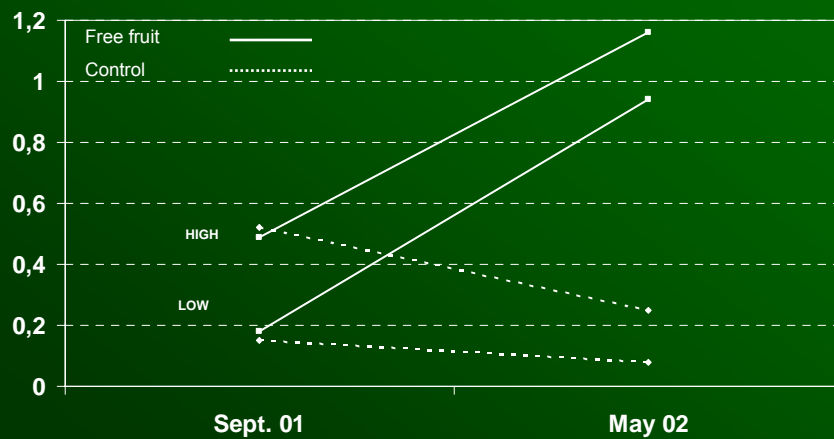
2008 Elling Bere Bere and Klepp, in: *Ethics and the politics of food*, 2006

Subscribers vs. non-subscribers



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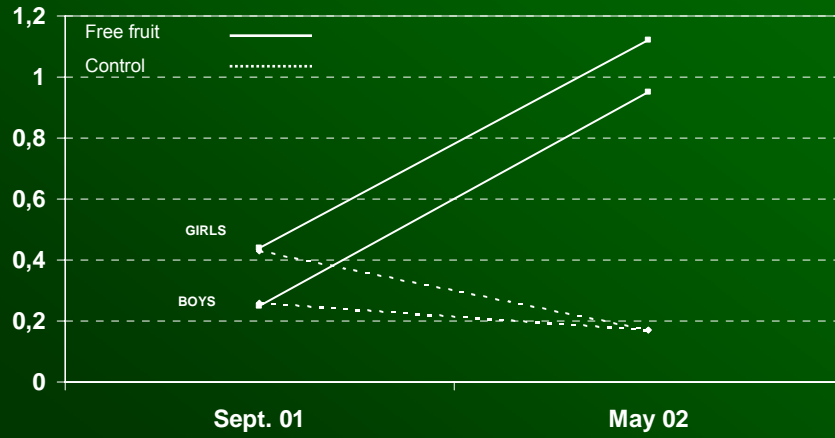
Free fruit Habitual FV intake



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Free Fruit

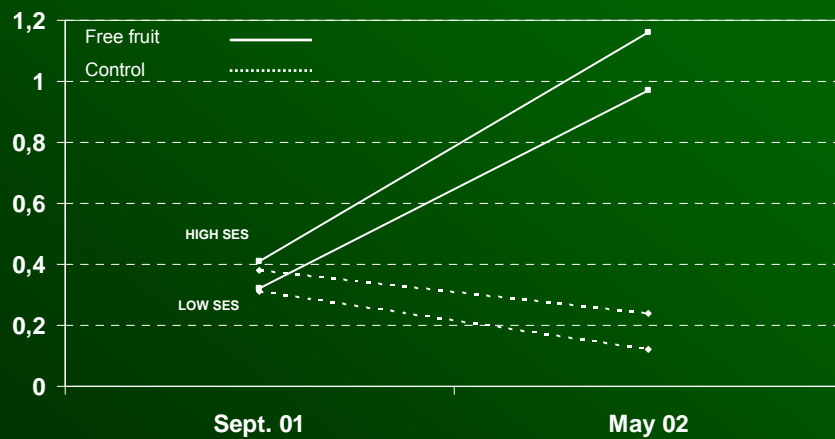
Gender



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Free fruit

Socioeconomic status



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Conclusion



- Free school fruit is more effective than the existing subscription program
- Free school fruit show long-term effects
- Free school fruit decrease consumption of unhealthy snacks
- Free school fruit tend to reduce social inequalities

Bere and Klepp, *Norsk tidsskrift for ernæring*, 2007

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Now: Free school fruit for all schoolchildren in grades 8-10 ++





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NYHETER POLITIKK

Barna snytes for gratis frukt

Vi støtter
Puerto Li

Bli
bedrift
og få n
å sav

SOS-
Langsiktig

MEST LEST
08:54 Vil innfe

 **Agriculture and Rural Development**

European Commission > Agriculture and Rural Development > ... > Fruit and vegetables > School Fruit Scheme

15-16 December 2008, Brussels: **Conference on the School Fruit Scheme.** [Details and Call for posters](#)

School Fruit Scheme: Which role for the European Union?

The Commission proposal

08/07/2008 - The European Commission today proposed to establish a European Union-wide scheme to provide free fruit and vegetables to school children. European funds worth €90 million every year would pay for the purchase and distribution of fresh fruit and vegetables to schools, and this money would be matched by national funds in those Member States which chose to make use of the programme. This is the latest stage in the Commission's efforts to improve health and nutrition, as set out in the 'Strategy for Europe on Nutrition, Overweight and Obesity and related health issues'. The School Fruit Scheme aims to encourage good eating habits in young people, which studies show tend to be carried on into later life. Besides providing free fruit and vegetables, the scheme would require participating Member States to set up national strategies including educational and awareness-raising initiatives and the sharing of best practice. An estimated 22 million children in the EU are overweight. More than 5 million these are obese and this figure is expected to rise by 400,000 every year. Improved nutrition can play an important part in combating this problem. The proposal will now be sent to the Council and European Parliament.

[Commission proposal](#) | [Impact Assessment: Text \[pdf\]](#) | [Summary \[pdf\]](#) | [Annexes \[pdf\]](#)

The proposal for a School Fruit Scheme follows an undertaking made during the negotiations on the reform of the Common Market Organisation for fruit and vegetables in June 2007. Since then, the Commission has engaged in a wide-ranging public consultation and an in-depth impact assessment of different options.

Experts agree that a healthy diet can play an integral role in reducing obesity rates, and cutting the risk of serious health problems – such as cardiovascular disease and diabetes 2 – in later life. Key to this is the consumption of sufficient amounts of fruit and vegetables. The World Health Organisation recommends a daily net intake of 400 grams of fruit and vegetables per person. The majority of Europeans fail to meet this target and the downward trend is particularly evident among the young.

Studies show that healthy eating habits are formed in childhood. People who eat a lot of fruit and vegetables in childhood remain good consumers. Those who eat little tend not to change their ways and also pass on their habits to their own children. Research has also shown that families with a lower level of income tend to consume less fruit and vegetables. As such, the free provision in schools of these healthy products can make a real difference, particularly in underprivileged areas.

Commission analysis of existing national policies and consultations with experts have demonstrated that the benefits of the school scheme can be enhanced if the provision of fruit is accompanied by awareness-raising and educational measures to teach children the importance of good eating habits. Encouragement will also be given to networking between different national authorities which run successful school fruit schemes. These already exist in some EU countries, and take many different forms. But there is much more that can be done and this EU scheme provides a perfect basis to get new programmes off the ground. The Commission is putting on the table €90 million per year for the provision of fruit and vegetables in schools. Governments would have the choice of whether to participate or not. The programmes would be co-financed, either on a 50/50 basis, or 75/25 in the so-called 'convergence regions', where GDP/capita is lower. This money could not be used to replace existing national financing, but would encourage additional activities, be it linked to





Noen nye resultat fra FVMM prosjektet

SEX disparity



- Boys 11.9, girls 14.5 times/week
- Mediators of sex disparity:
 - Preferences explained uniquely 25%
 - Accessibility explained 10%
 - Modelling, intention, self-efficacy, knowledge did not explain much

Bere et al., *Public Health Nutrition*, 2008a

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SES disparity



FV intake	Parental education		diff.	p-value
	LOW	HIGH		
2002	12.8	14.0	1.3	0.03
2005	12.7	15.1	2.4	<0.001

- Mediators of SES disparity
 - Accessibility at home explained 45% in 2002 and 14% in 2005
 - Preferences, modelling, intention, self-efficacy, knowledge did not explain much

Bere et al., *European Journal of Public Health*, in press

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Perceived accessibility at home



Home accessibility of fruits and vegetables
(range: -10/10)

	Adolescents' reports	Parental reports
Boys	3.2	5.2
Girls	4.6	5.3
P-value	<0.001	0.62
LOW parental edu.	3.5	4.8
HIGH parental edu.	4.6	5.8
P-value	<0.001	<0.001

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I 2007 var det 130 tusen aktive mannlige jegere i Norge mot kun 7000 kvinnlige...

Brusdriking – u.skoleelever



TOTALT INNTAK

(2 ganger/uke eller mer)

- Brus med sukker
 - Gutter vs jenter: OR=2.1
 - Lav vs høy SES: OR=1.5
- Lettbrus
 - Gutter vs jenter: OR=0.8
 - Lav vs høy SES: OR=1.4

PÅ SKOLEN

(1 gang i uken eller mer)

- Brus med sukker
 - Gutter vs jenter: OR=4.4
 - Lav vs høy SES: OR=1.9
- Lettbrus
 - Gutter vs jenter: OR=1.7
 - Lav vs høy SES: OR=1.9

Bere et al., *Public Health Nutrition*, 2008b

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Hva spises på skolen? Upubliserte data fra FVMM

24-h recall Did you eat/drink ... at school yesterday?	Overall mean	School range	
		min	max
Lunch	88 %	77 %	96 %
Fruit	20 %	5 %	41 %
Vegetable	12 %	5 %	46 %
Water	49 %	16 %	68 %
Soda with sugar	11 %	4 %	37 %
Soda without sugar	2 %	0 %	6 %
Instant noodles	1 %	0 %	7 %
Sweet bakeries	15 %	0 %	31 %
Candy/chips	14 %	0 %	78 %

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Hva spises på skolen? Upubliserte data fra FVMM

FFQ (n=2870)

	Overall mean	School range	
		min	max
Eating/drinking ... once a week or more at school			
Fruits and vegetables	40 %	16 %	79 %
Candy/chips	33 %	9 %	93 %
Instant noodles	5 %	0 %	23 %
Sweet bakeries	36 %	18 %	61 %
Soda with sugar	24 %	6 %	67 %
Soda without sugar	8 %	0 %	21 %
Water	79 %	55 %	97 %

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Grønnsaker til middag I GÅR:

(6 og 7 klassinger)



SES:

- Lav SES: 33%
- Høy SES: 47%

Kjønn:

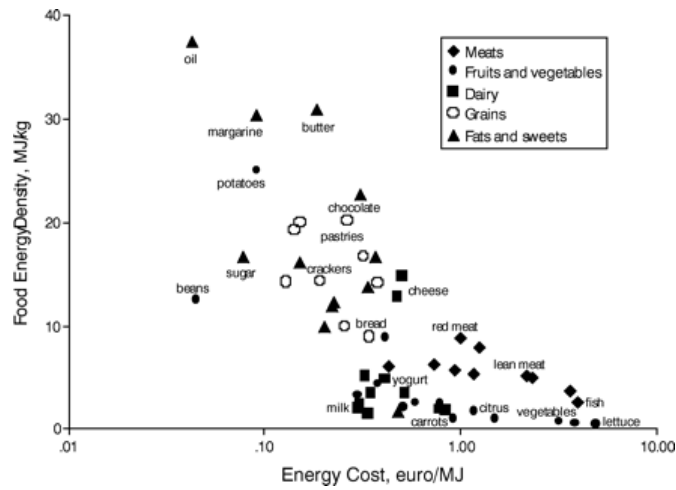
- Gutter: 34%
- Jenter: 43%

- Lav SES gutter: 29%
- Høy SES jenter: 53%

Vejrup et al., *Appetite*, 2008

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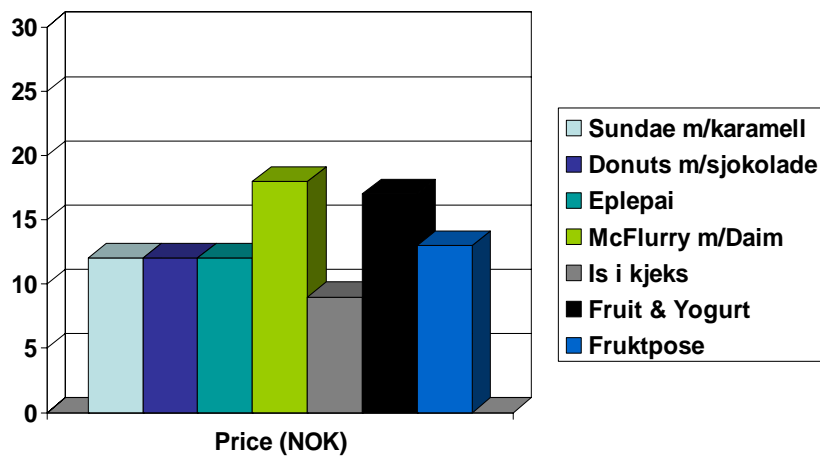
FV are expensive!



Drewnowski et al., AJPH, 2004

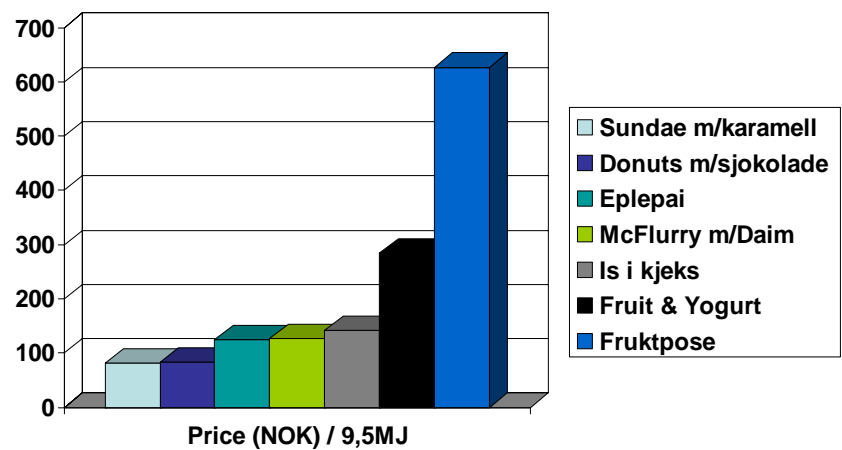
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Dessert at McDonald's?



2006 Eiling Bere

Dessert at McDonald's?



2006 Elling Bere

