Is Reward sensitivity linked to snack intake in Flemish adolescents?

Results of REWARD cross-sectional study

2013

http://www.rewardstudy.be/

Ir. Nathalie De Cock

Department of food safety and food quality

(Ghent University)

reward REWARDING HEALTHY FOOD CHOICES

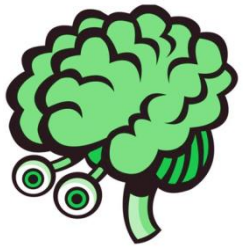
UNIVERSITEIT GENT

KATHOLIEKE UNIVERSITEIT LEUVEN

2. Background

* Snacking and overconsumption of sugar-sweetened beverages are typical dietary problems during adolescence
* Unhealthy eating habits developed during adolescence perist into adulthood
* Snacking and SSB intake have been linked with increased energy intake and overweight

2. Background



* Sensitivity to reward
  * Psychobiological trait
  * Tendency to engage in motivated approach behaviour in the presence of rewarding stimuli
  * Highest during adolescence
  * Related to overeating and obesity

2. Background

* Food=naturual reinforcer
* Snacks and SSB's= highly palatable ➔ highly reinforcing
* Food reinforcement can predict laboratory and usual energy intake

➔Expected that SR influences snack and SSB intake

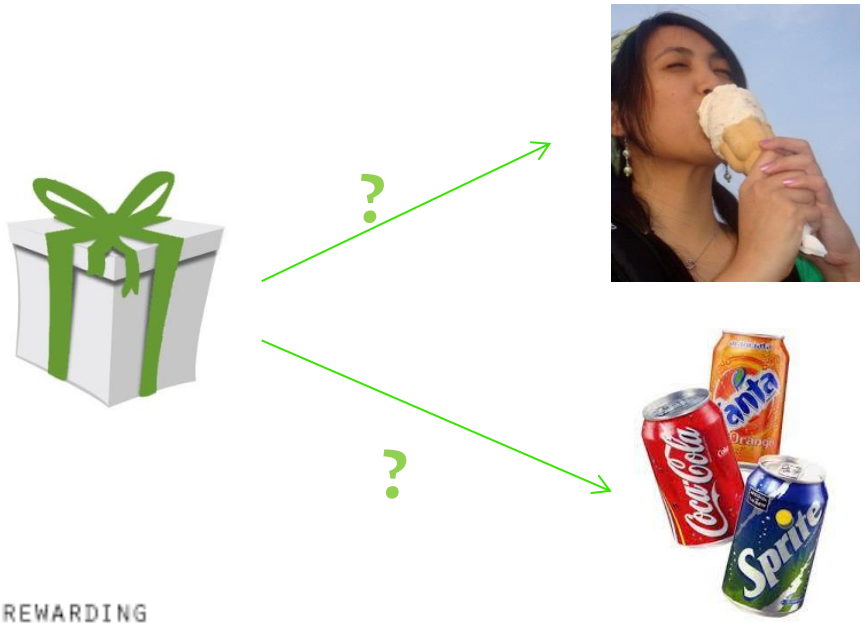
reward REWARDING HEALTHY FOOD CHOICES

UNIVERSITEIT GENT

KATHOLIEKE UNIVERSITEIT LEUVEN

3. Research question

* Does SR influence snack and SSB intake?



4. Outcomes

* Quantity of SSB, total snacks, healthy snacks and unhealthy snacks consumed

* Energy and macro-nutrient intake of SSB, total snacks, healthy snacks and unhealthy snacks

reward REWARDING HEALTHY FOOD CHOICES

UNIVERSITEIT GENT

KATHOLIEKE UNIVERSITEIT LEUVEN

	Mean (st. deviation)
Age	14.7(0.8)
BAS total	31.5(6.6)
BAS drive	9.2(2.9)
BIS	16.8(4.2)
SSB intake per day (ml)	234.8(252.4)
Snack intake per day (g)	321.1(212.7)
Energy intake from SSB per day (kcal)	98.4(107.2)
Energy intake from snacks per day (kcal)	781.7(544.6)
Sugar intake from SSB per day (g)	23.5(25.6)
Sugar intake from snacks per day (g)	49.4(35.2)
Natrium intake from SSB per day (mg)	30.6(41.5)
Natrium intake from snacks per day (mg)	795.2(636.5)
Fat intake from snacks per day (g)	33.3(25.2)
Healthy snack intake (g)	137.5(134.8)
Unhealthy snack intake (g)	174.3(132.8)
	%
Gender	
Girls	49.1
Boys	50.9
Education type	
ASO	46.1
TSO	34
BSO	19.9
BMI	
Underweight	7.6
Normal weight	70.3
Overweight/Obese	22,1

	SSB intake per day	Snack intake per day	Energy intake from SSB	Energy intake from snacks	Fat intake from snacks	Sugar intake from SSB	Sugar intake from snacks	Natrium intake from SSB	Natrium intake from snacks
	b (SE)	b (SE)	b (SE)	b (SE)	b (SE)	b (SE)	b (SE)	b (SE)	b (SE)
BAS total[a]	0.015 (0.006) *	0.008 (0.003) **	0.014 (0.005)	0.010 (0.003)	0.011 (0.002)	0.011 (0.004)	0.007 (0.002)	0.016 (0.005)	0.011 (0.003)
BAS drive[a]	0.042 (0.013) ***	**							.023 0.011) ***
BAS rr[a]	0.005 (0.013)	*							.016 0.007)
BIS[a]	-0.018 (0.010)				*			*	.007 0.005)

SR positively related to :

- SSB and snack intake (⇧high SR⇧ high SSB/snack intake)
- Energy, sugar and natrium intake from SSB and snacks (⇧high SR⇧ high energy, sugar and natrium intake)
- Fat intake from snacks (⇧high SR⇧ high fat intake)

6. Results

3. SR-healthy/unhealthy snacking

* [a]multilevel univariate regression with gender, BMI, type of education and age as control variables
* *0.05%,**0.01%,***0.001%

	Healthy snack intake per day	Unhealthy snack intake per day
	b (SE)	b (SE)
BAS total[a]	0.011(0.005)*	0.010(0.003)***
BAS drive[a]	0.021(0.010)*	0.021(0.006)***
BAS rr[a]	0.023(0.010)*	0.015(0.006)**
BIS[a]	-0.001(0.008)	0.007(0.005)

7. Questions

reward REWARDING HEALTHY FOOD CHOICES

UNIVERSITEIT GENT KATHOLIEKE UNIVERSITEIT LEUVEN