Two green apples are shown at the top of the slide, one slightly behind the other. The background is a light green gradient.

# **Relationship between the Canada's Food Guide Adherence and Obesity: A cross-sectional study using the Canadian Community Health Survey (CCHS)**

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# Outline

- Background
- Objectives & Methods
- Results
- Limitations

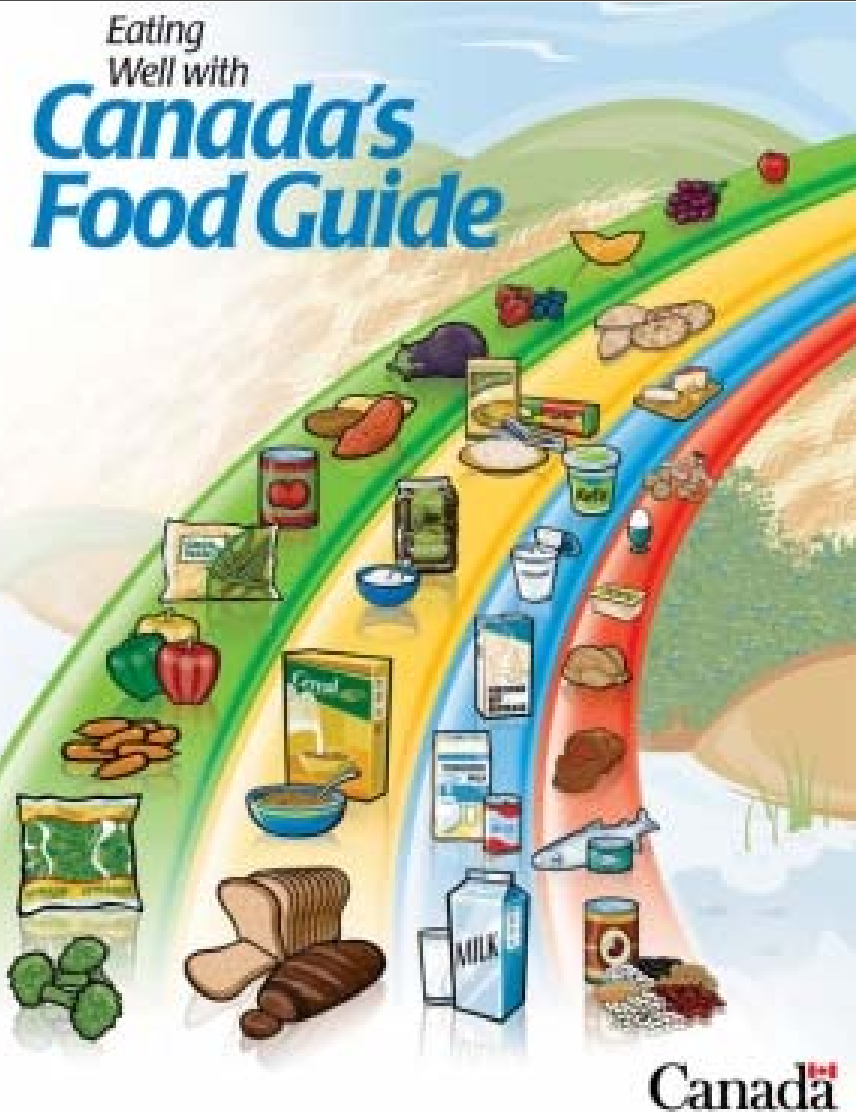


# Obesity in Canada



# Canada's Food Guide (CFG)

Eating Well with  
**Canada's Food Guide**



- Vegetables and Fruit
- Grain Products
- Milk and Alternatives
- Meat and Alternatives

# Objectives

- To compare self-reported and measured body mass index (BMI) in working-age CCHS respondents (18-65)

$$\text{BMI} = \text{weight (kg)} / \text{height (m}^2\text{)}$$

- To examine the association between CFG adherence in the four food groups and overweight/obesity



# CCHS Cycle 2.2

- National survey maintained by Statistics Canada and Health Canada
- Cycle 2.2 designed to understand Canadians' nutritional choices with the 24-hour dietary recall module



# Recommended Number of Food Guide Servings per Day

Age in Years Sex	Adults			
	19-50		51+	
	Females	Males	Females	Males
<b>Vegetables and Fruit</b>	7-8	8-10	7	7
<b>Grain Products</b>	6-7	8	6	7
<b>Milk and Alternatives</b>	2	2	3	3
<b>Meat and Alternatives</b>	2	3	2	3

## Adherence Definition:

- a. Meeting minimum number of servings
- b. Meeting exact number of servings & Exceeding maximum number of servings

# Methods

- Logistic regression: overweight/obese, CFG adherence (4 food groups), and potential confounders
  - Demographics
  - Health determinants
  - Health status



# Results

	Male n=3,770	Female n=4,682
Measured BMI Mean (95% CI)	27.5 (27.3, 27.7)	27.2 (27.0, 27.4)*
Self-reported BMI Mean (95% CI)	26.6 (26.1, 27.0)	25.8 (25.2, 26.3)*
Mean Diff (95% CI)	0.83 (0.64, 1.01)	1.16 (0.97, 1.35)*
Underweight (<18.5)	-0.79 (-1.96, 0.38)	-1.00 (-2.72, 0.71)
Normal (18.5-<25)	0.06 (-0.20, 0.31)	0.56 (0.38, 0.73)*
Overweight (25-<30)	0.98 (0.76, 1.21)	1.07 (0.78, 1.36)
Obese (≥30)	1.80 (1.31, 2.30)	2.45 (1.95, 2.96)

Note:

Mean difference = Measured minus Self-reported

\* denotes statistical significance at 5%



	Male n=3,770	Female n=4,682
Vegetables and Fruit		
% met guideline (min)	24	25
% met guideline (exact)	10	9
Grain Products		
% met guideline (min)	36	35
% met guideline (exact)	8	15*
Milk and Alternatives		
% met guideline (min)	39	32*
% met guideline (exact)	15	15
Meat and Alternatives		
% met guideline (min)	73	74
% met guideline (exact)	12	19*

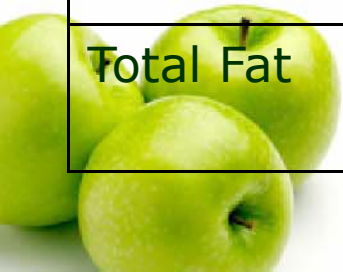
\* denotes statistical significance at 5%



# Logistic Regression

	Obesity Model 1a: Met minimum servings	Obesity Model 1b:		Obesity Model 1c: % of calories obtained
		Met exact servings	Exceeded max servings	
Vegetables and Fruit	0.805* (0.720, 0.899)	0.774* (0.658, 0.910)	0.830* (0.726, 0.950)	0.999 (0.994, 1.00)
Grain Products	0.802* (0.725, 0.886)	0.867 (0.747, 1.01)	0.774* (0.689, 0.869)	0.996* (0.992, 1.00)
Milk and Alternatives	0.946 (0.853, 1.05)	1.05 (0.915, 1.21)	0.879* (0.776, 0.996)	1.00 (0.996, 1.01)
Meat and Alternatives	1.14* (1.02, 1.26)	1.12 (0.965, 1.31)	1.14* (1.02, 1.27)	1.01* (1.01, 1.01)
Total Fat	NA	NA	NA	0.995 (0.989, 1.00)

\* denotes statistical significance at 5%



# Logistic Regression (subgroups)

	18-50 Women	18-50 Men	51+ Women	51+ Men
FV	0.750*	0.826	0.804	0.955
Grain	0.864	0.780*	0.666*	0.924
Milk	0.924	0.991	1.24	0.868
Meat	1.08	1.03	1.55*	1.23

\* denotes statistical significance at 5%



# Additional Analyses

- Re-categorize obesity
- Employ different regression model
- Exclude under-reporters (if  $EI < EE$ ) and underweight individuals



# Summary



# Limitations

- Self-reported survey data
- Longitudinal data recommended for future studies



# Policy Implications

- Use classification based on measured BMI
- Emphasize on over-eating in Meat and Alternatives



# Thank you

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**“The four food groups are: stuff that’s bad for you, stuff that’s really bad for you, stuff that will kill you now, and stuff that will kill you later.”**