

OREGON
HEALTH
& SCIENCE
UNIVERSITY



Factors associated with french fry consumption among two year olds in the 2005 Oregon PRAMS-2 cohort

Patrick Hudson, MPH Student, PHPM, OHSU
July 14th, 2010

French Fries

Background

- Most common vegetable consumed by 15 to 24 month olds in the US (Fox, 2004)
- Childhood obesity → larger societal shift with parents working outside of the home, high screen time, less physical activity
- French fries appear to be a common part of the Western Dietary Pattern (WDP) (Ambrosini, 2009; Grzywacz, 2010)

Context

Background

- Obesity
 - Maternal BMI
 - Breastfeeding
- Diet
 - Energy density
 - Fat content vs. energy intake
- SES
 - Food insecurity
 - Stressors
 - Education

Specific Aims

Background

1. Estimate the prevalence of french fries consumption in two year olds;
2. Characterize the associations with predictors of child health behaviors, including maternal age, educational attainment, and maternal BMI; and,
3. Using these variables, create a multivariate model to test the hypothesis that mother-child dyads who breastfed during infancy are less likely than non-breastfed ones to consume french fries when the child is two years old, while also identifying other significant predictors.

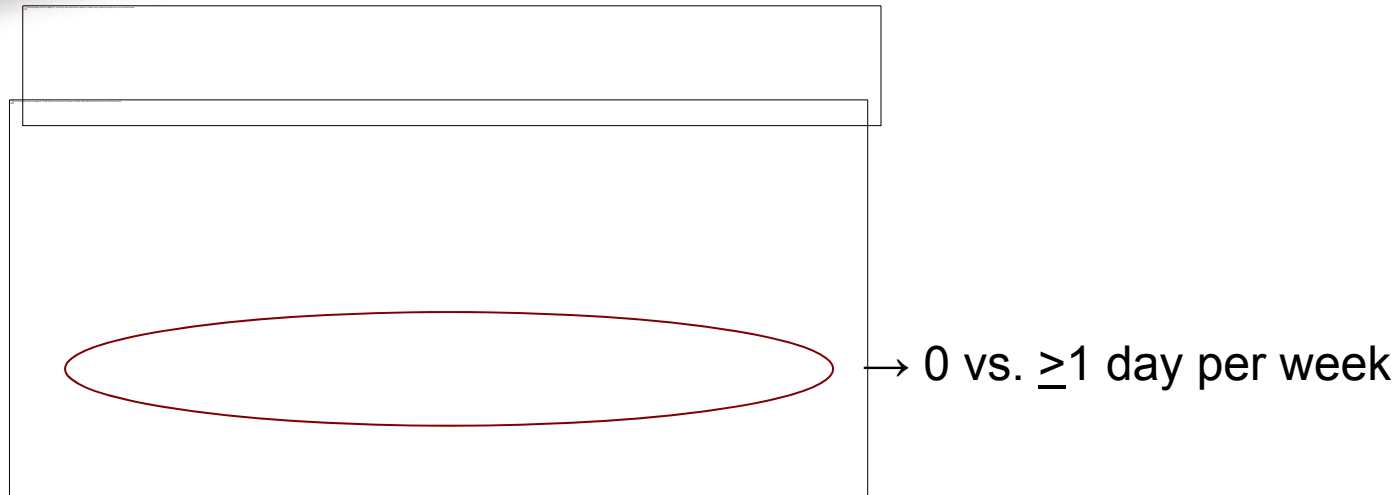
PRAMS and PRAMS-2

Methods

- Pregnancy Risk Assessment Monitoring System (PRAMS)
 - Ongoing survey of mothers identified by stratified random sample from birth certificates
 - Over-sampling, non-response, non-coverage
 - Mean age = 107 d.o.
- PRAMS-2
 - Two year follow-up, weighted response rate = 63%
 - Mean age = 25 m.o.

Variables

Methods



Many predictors...

PRAMS, BC

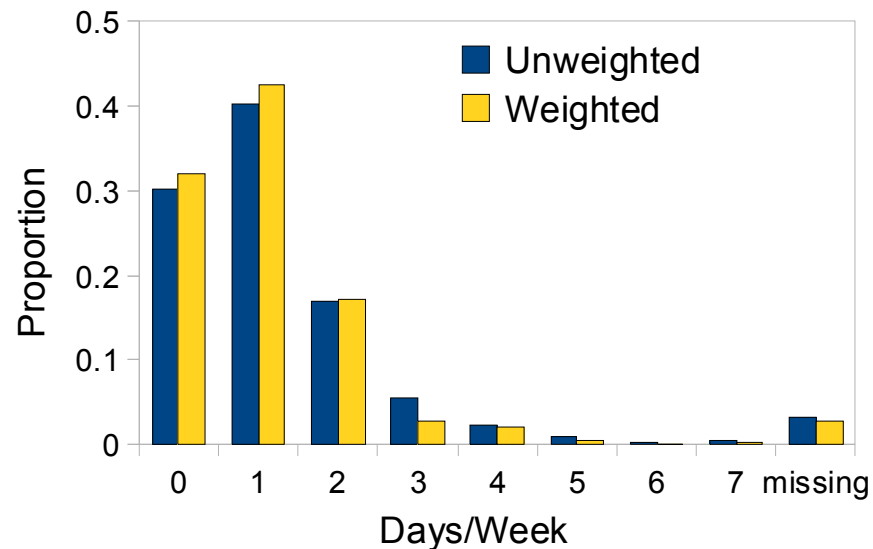
PRAMS-2

Hosmer and Lemeshow Model Building Methods

- Systematic, parsimonious model development
- Overview of steps
 - Include all variables with univariate $p > 0.25$
 - Remove predictor highest p-value (Wald test)
 - Continue until all predictors $p < 0.05$
 - Add back-in removed variables and test sig.
 - Interactions
 - Goodness-of-fit testing

Prevalence Results

French Fry Consumption by 2 y.o. in Oregon, 2007

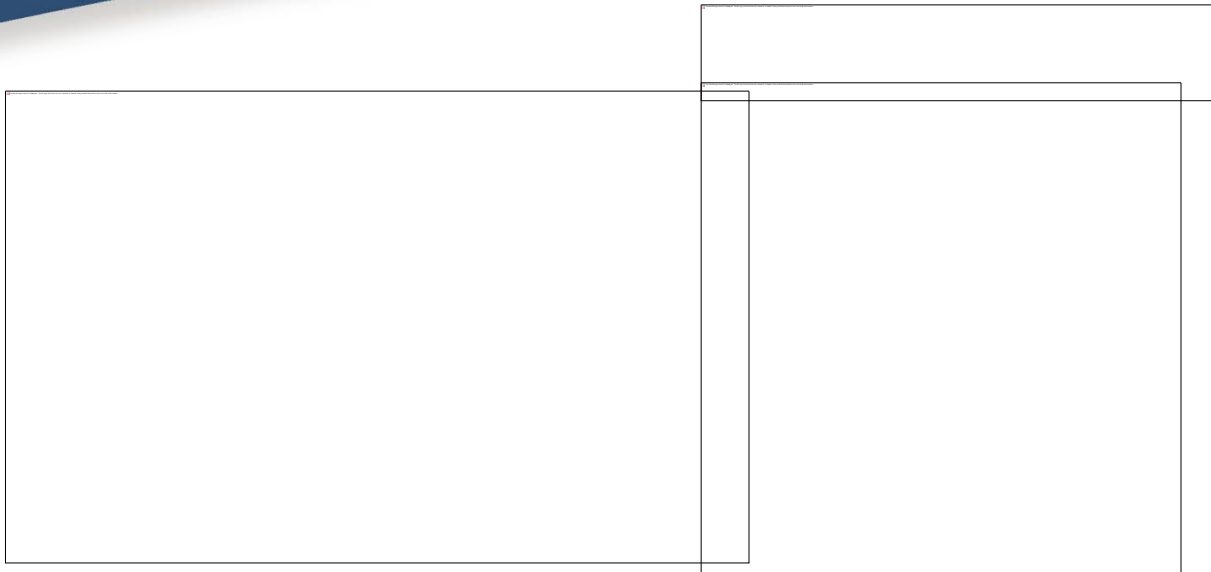


67.0% consumed french fries
in a typical week (weighted)

Univariate Results

Univariate Results

Multivariate Model Results



Other predictors tested for inclusion:

Maternal Race/Ethnicity, Maternal Education, WIC Status, Income >185% FPL, Marital/Partner Status, Financial Stress, Traumatic Stress, Postpartum Depression, Food Insecurity, Smoking, Health Insurance

Comparison

Discussion

8 mo	NC, US	22.2% had french fries in last week	? ~2000's	Grzywacz, 2010
9–11 mo	US	9% had french fries in past 24 hrs (= 63% / week)	2002	Briefel, 2004
19–24 mo	US	25.5% had french fries and other fried potatoes at least once per day	2002	Fox, 2004
30 mo	Sweden	68.8% had french fries or fried potatoes at least once per week	1997	Huus, 2009
2–9 yo	US	42% had fast food in last 24 hours	1998	Paeratakul, 2003
25 mo	OR, US	67.0% had french fries in a typical week	2007	

Dietary Patterns

Discussion

Western Dietary Pattern (WDP) -- meats, desserts, processed foods, sodas, and french fries. Low in fresh fruits and vegetables, whole grains.

WDP associated with increased risk of cancer-, cardiovascular-, and all cause-mortality (Heidemann, 2008)

“Lifestyle” or Socioeconomic Status

Discussion

WDP ~ television and video watching, single-parent household, lower income, a smoking parent, and a increased calorie intake, after adjustment for BMI for age, physical activity, and maternal education in Australian 14 y.o. (Ambrosini, 2009)

French fries at 8 m.o. ~ not married/partnered and less than a college education (Grzywacz, 2010)

French fries and other fried potatoes at 2.5 y.o. inversely associated with BMI increase at 5 y.o., adjusting for other foods, parents' BMI and education (Huus, 2009)

Limitations and Strengths

Discussion

- Confounding
 - Residual, untested measurement
 - Unmeasured, french fries~fast food, SES
 - Unknown
- Bias
 - Selection: adjustment, positive findings
 - Measurement

Implications

Discussion

- High prevalence of french fry consumption in a young group
 - French fry consumption likely part of larger SES and dietary context
- 3.5–5.4 y.o.'s preferences for french fries ~ marketing (Robinson, 2007)
 - “parent of the nation” regulation?
- Existing MCH programs support
 - Breastfeeding, healthy BMI, Preg Intention

Acknowledgements

Kenneth Rosenberg

Rochelle Fu

William Lambert

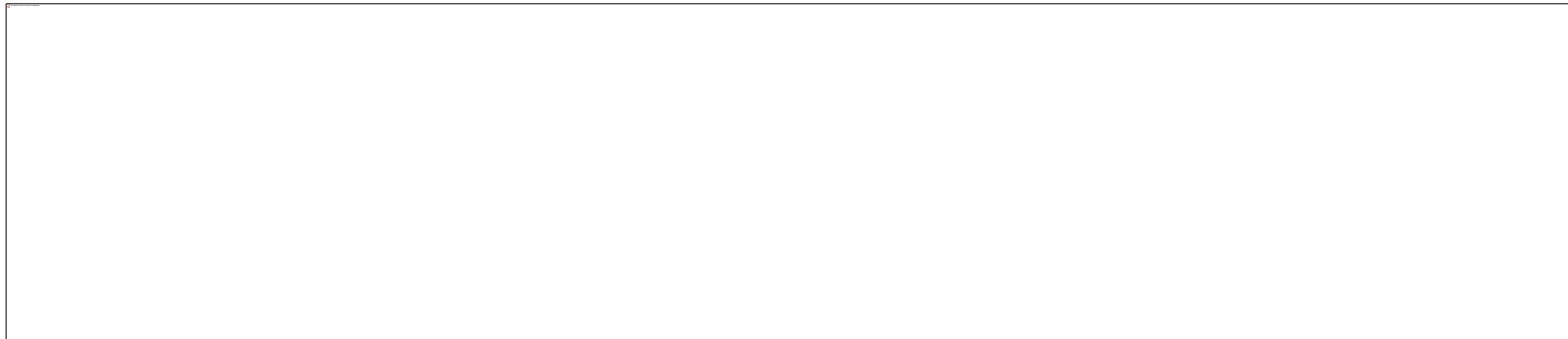
Alfredo Sandoval

Oregon Public Health Division and Centers for
Disease Control and Prevention

Community Health Partnership's Foster Memorial;
David Family; Franz Stenzel M.D. and Kathryn
Stenzel

Eating out, TV, and french fries

Addendum



Eating out, TV, and french fries

Addendum

Days/last
week eating-
out

French fries None vs. any

fastfood_ num	0 vs =>1		Total
	0 days/w	>=1 days	
0	.1088	.0895	.1983
1	.1516	.2611	.4127
2	.0453	.1953	.2406
3	.0104	.1011	.1115
4	.0061	.021	.0272
5	.0045	.002	.0066
6	0	7.7e-04	7.7e-04
7	.0025	0	.0025
Total	.3292	.6708	1

Key: cell proportions

Pearson:

Uncorrected chi2(7) = 106.1957
Design-based F(6.02, 5978.27)= 8.1600 P = 0.0000