

Policy Legislation And Nutrition: What Works to Improve Student Health?

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Policy Legislation And Nutrition (PLAN) Study



Federal/state laws and regulations mandate nutrition policies & sample policy

School districts develop policies

School districts implement policies

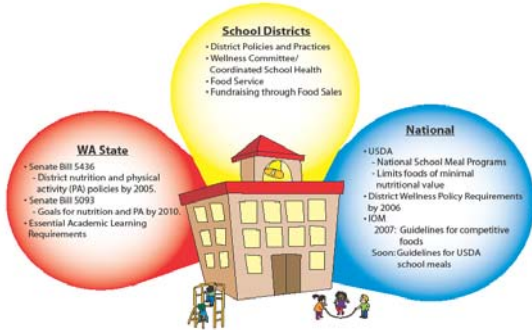
Each school has a "food environment"

Students consume foods at school

Students' total diets are impacted by foods available at school

Students' health outcomes improve

School Nutrition Policy Authorizing Environment



PLAN timeline

Year 1

- Recruit schools
- Tool development
- Interview people involved in policy development process

Year 2

- Data collection at 64 schools
 - Rated district policies
 - 7th grader Beverage and Snack Questionnaire
 - Record nutrition facts for all items offered in the school
 - Interviewed principals & kitchen managers on policy implementation

Year 3

- Analyze relationships between:
 - School policies and strategies used to develop the policies
 - Policies and school nutrition environments
 - Policies and students' diets
 - School nutrition environments and students' diets
- Dissemination results

How to Abstract School Nutrition & Physical Activity Policies

Step 1: Review 96 items in code book

Step 2: Read district policy

Washington Valley School District
Policy 2124
Instruction

Health and Fitness Policy

All students in grades one through eight are required to complete an average of one hundred instructional minutes per week of physical education. This includes instruction and practice in basic movement and fine motor skills, progressive physical fitness, and wellness

How to Abstract School Nutrition & Physical Activity Policies

Step 3: Compare strength of statements in district policy to examples in code book, decide if statement scores as a 0, 1, or 2

Step 4: Mark score on score sheet

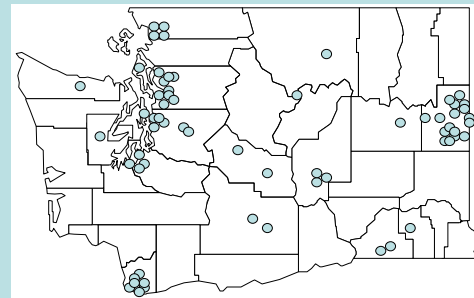
IV. Physical Education		V. Physical Activity	
PE01	PE curriculum for each grade	PA01	FW goals for PA
PE02	Time/week of PE for elementary	PA02	PA for every grade level
PE03	Time/week of PE for middle	PA03	PA for school staff
PE04	Time/week of PE for high school	PA04	PA throughout the day
PE05	Physically active lifestyle	PA05	Intramurals or interscholastic
PE06	Competency assessment	PA06	Community use facilities for PA
PE07	Addresses PE quality	PA07	Safe active routes to school
PE08	Inclusive play	PA08	Not using PA as punishment
PE09	Addresses PE classes or credits	PA09	Recess freq. or amt for elementary
PE10	Frequency of required PE	PA10	Recess quality to promote PA
PE11	Teacher-student ratio for PE		
PE12	Safe/adequate equipment/facilities		

Beverage & Snack Questionnaire

- Developed in partnership with researcher at Fred Hutch and the Social Development Research Group
- Cognitive interviews with 7th graders
- 19 item Food Frequency Questionnaire, “At School” and “Not at School”

Entering Items in Food BEAMS

64 Study Schools in 28 Districts



PLAN School Characteristics

	Number of Schools
District Size	40
Schools in Large Districts (> 9000 students)	18
Schools in Medium Districts (2000-9000 students)	
Schools in Small District (< 2000 students)	6
Geographic Distribution	
City	24
Non-City	40
Student Demographics	
Schools with > 30% Free/Reduced Price Eligible	42
Schools with > 30% Non-White	19
Schools with > 30% Hispanic	4

PLAN School Characteristics: Students

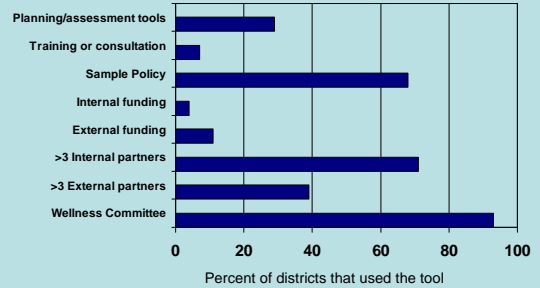
	Mean (SD)	Range
Proportion of Students Free and Reduced Price Eligible	38.9% (18.6)	2.6-93.3%
Race/Ethnicity		
Asian / Pacific Islander	5.8% (6.9)	0.1-37%
American Indian/ Alaskan Native	3.0% (4.1)	0.2-25%
Black	4.3% (6.5)	0.6-46%
Hispanic	11.2% (13.1)	1.5-82%
White	75.0% (18.4)	3.6-94%



Policy Development



Resources districts used extensively during policy development (n=28)



Major Barriers to Policy Development (n=28)



	Number of Districts
Lack of time	10
Lack of funds	11
Fear of loss of revenue from food sales	23

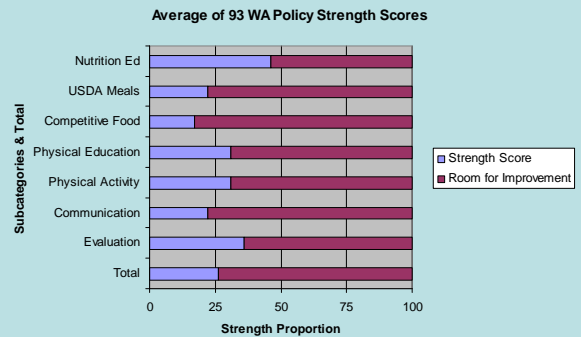
Concerns

- Almost all Districts
 - Threat of decreased revenue
 - Confusion about nutrition standards & foods allowed
 - Complaints from students
- Most Districts
 - Product availability
 - Existing vending or pouring contracts
 - Burden of unfunded mandate
- About Half the Districts
 - Vending company compliance
 - Complaints from parents
 - Complaints from food service workers

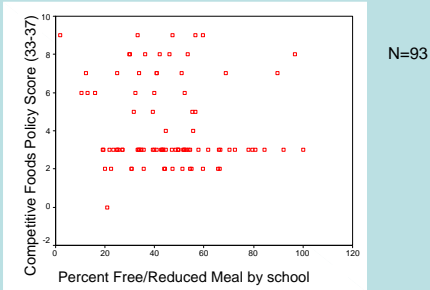
Policy Quality



Strength of WA Wellness Policies

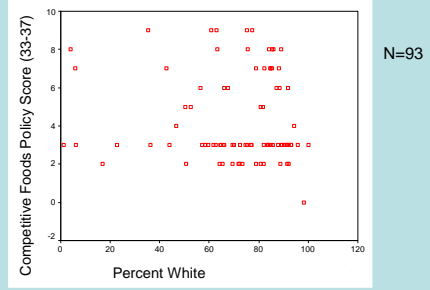


Quality of competitive food policy **NOT** associated with Percent Free & Reduced Meal Eligible



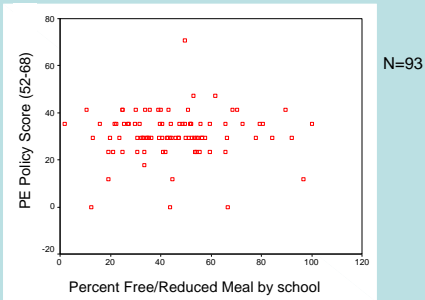
Pearson Correlation = -0.079, not significant

Quality of competitive food policy **NOT** associated with percent white students



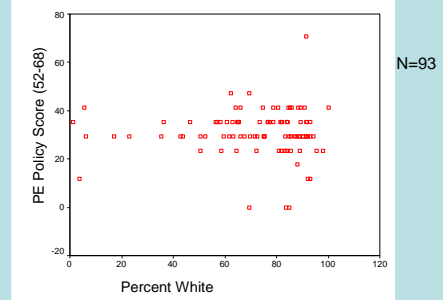
Pearson Correlation = -0.113, not significant

Quality of PE policy **NOT** associated with percent Free & Reduced Meal Eligible



Pearson Correlation = 0.38, not significant

Quality of PE policy **NOT** associated with percent white students



Pearson Correlation = 0.004, not significant

SB 5093 Goals	WA Wellness Policies
Not more than 35% of calories from fat, and not more than 10% of calories from saturated fat	~ 30% had specific fat limits for food; 10% had specific fat requirements for beverages; 20% limited the fat content of milk
Not more than 35% of total weight or 15 grams per food item from sugar	~ 20% specified some kind of sugar limits for food and/or beverages
Provide at least 150 minutes of quality physical education to students in grades 1-8	Few policies specified \geq 150 minutes of PE per week
All health and fitness instructors will be certified	~ 20% had requirements about the qualifications of PE teacher
Form school health advisory committees in all districts	~ 30% established a health advisory committee that went beyond policy development




Student Consumption of Snacks and Beverages



Mean Student Consumption per Week (n~9,000)

	At School	Not at School
Sugar Sweetened Beverages	4.6	13.1
Milk	5.4	11.1
Water	2.0	5.1
Juice	1.1	2.3

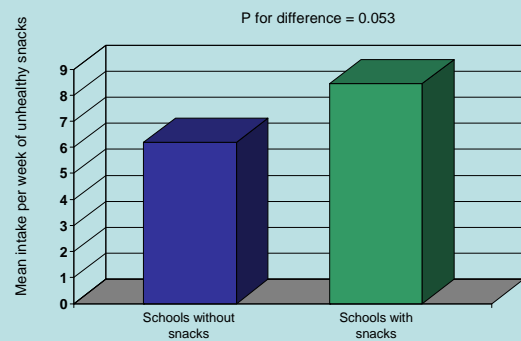
Mean Student Consumption per Week (n~9,000)

	At School	Not at School
Unhealthy Snack (BSQ, q10-17)	7.7	19.1
Fruit & Vegetables 	8.1	20.7

In schools with higher meal participation, students drink more milk

Data removed

Student Consumption of Unhealthy Snacks in Schools With and Without Snacks for Sale



Competitive Foods in the School Environment



Access to Sugar Sweetened Beverages in Schools (n=64)

Beverage category	Available on campus	Available in vending machines	Available in the cafeteria, snack bar/ cart, or School Store	Vending machines per school Mean (SD)	Vending slots per school Mean (SD)
Number of Schools					
Soda	11	11	1	1.16 (2.9)	2.00 (4.8)
Other Beverages with sugar*	46	38	25	5.33 (7.0)	9.22 (11.6)

*Other Beverages with Sugar are defined as non-soda beverages that contain any grams of added sugar including sweetened juice drink, carbonated sweetened juice drink, sports drink, sweetened coffee, sweetened tea drink, hot chocolate and sweetened water drink

Unhealthy Snack per IOM

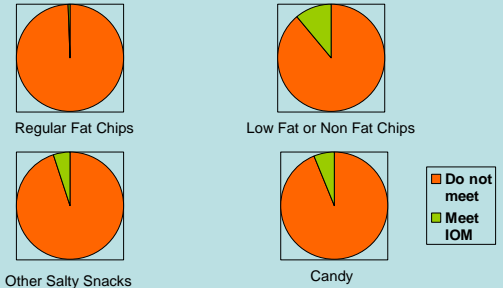
Defined as any item that does NOT meet the IOM Tier 1 Standards:

- ≤ 200 Kcal per item as packaged
- ≤ 35% Kcal from fat
- ≤ 10% Kcal from saturated fat
- 0 Trans fat per item as packaged
- ≤ 35% Kcal from sugar*
- ≤ 200 mg Sodium per item as packaged

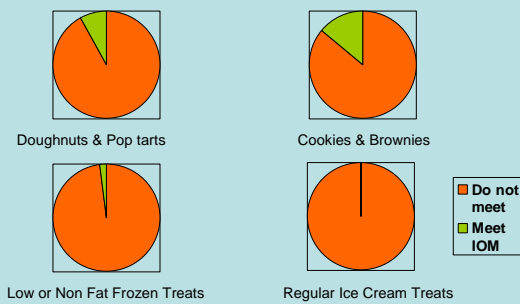


*Yogurt may have ≤ 30 grams sugar per 8 oz

Proportion of foods that meet IOM guidelines



Proportion of foods that meet IOM guidelines



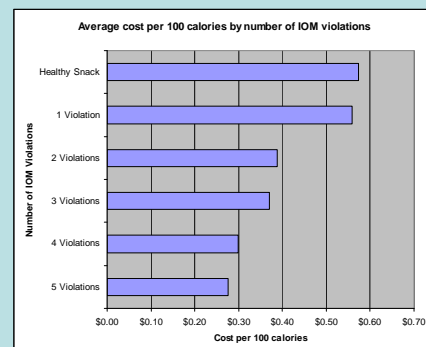
Can you find the items that meet the IOM's definition of a healthy snacks?

- Miss Vickie's jalapeño potato chips
- Sunchips french onion
- Lay's Original baked chips
- Oberto hickory beef jerky
- Kellogg's yogo's bits strawberry slam
- Tree Top Flat Fruit, 100% fruit snacks
- Grandma's chocolate chip cookies
- General Mills cinnamon toast crunch milk 'n cereal bar
- General Mills cinnamon toast crunch cereal
- Snickers
- Kellogg's blueberry-frosted pop tarts
- Quaker Chewy cereal bar 90 calories, chocolate chunk

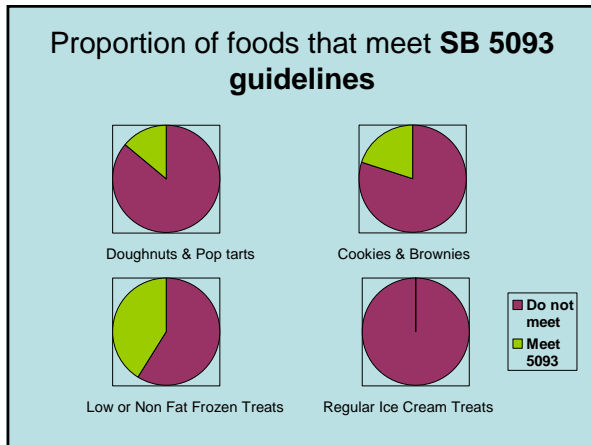
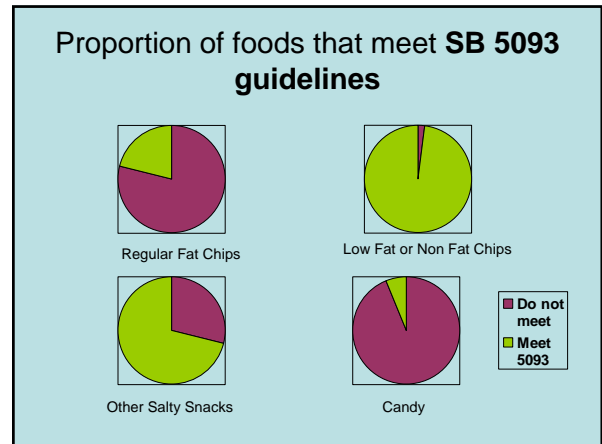
Healthy snacks

- Miss Vickie's jalapeño potato chips
- Sunchips french onion
- Lay's Original baked chips
- Oberto hickory beef jerky
- Kellogg's yogo's bits strawberry slam
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Healthy foods cost more per calorie



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Percent of items meeting standards

	IOM	SB 5093
Low fat chips	11	98
Other Salty Snacks	5	71
Low fat frozen desserts	2	41

Policies & The Foods and Beverages Found in School

Sugar Sweetened Beverage Policy Indicators (n=28)

	Not mentioned (Score = 0)	Stated in weak or suggested language (Score = 1)	Stated in a specific and measurable way (Score = 2)
Number of Districts			
Degree to which policy:			
Limits sugar content of beverages	13	4	11
Limits availability of soda	5	10	13
Limits beverages other than soda containing added caloric sweeteners	8	14	6

School policy score versus sugar sweetened beverage (SSB) exposure

For each policy score, the same symbol indicates schools from same district.

Data removed

Exposure to Foods and Beverages at School & Student Consumption



White students significantly have lower consumption of unhealthy snacks at school ($p < .001$)

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Females have significantly lower consumption than males at school ($p = .001$)

Data removed

Students who are not eligible for FRPM have significantly lower consumption of unhealthy snacks ($p < .002$)

Data removed

More SSB exposure at school associated with a higher percent of students drinking SSB at school

Data removed

More Unhealthy snack exposure at school associated with a higher percent of students eating unhealthy snacks at school

Data removed

PE conclusions

- None of the schools met all national recommendations
- PE teachers needed more resources, especially space, to meet the policies



PLAN: Major Findings about Nutrition Policies

Policy Development & Implementation

- Sample policy widely used
- District processes differed widely
- Little funding available for policy development
- Considerable disagreement and confusion in schools about the content and implications of the district policies
- Fear of loss of revenue from food sales very common

Policy Quality

- WSSDA sample policy not strong for competitive foods
- Few policies reflect goals of SB 5093
- Considerable room for improvement compared to national recommendations and standards

PLAN: Major Findings about Nutrition Policies

Student Consumption

- In schools with higher meal participation students drink more milk
- On average, students have almost one sugar sweetened beverage and 1.5 unhealthy snacks per day at school
- Males, non-whites and students eligible for free and reduced price meals report higher unhealthy snack consumption

Foods in Schools

- Almost all competitive foods in PLAN schools do not meet IOM standards
- Many low-fat chips, other salty snacks and low fat frozen treats meet SB 5093 goals, but other foods often do not

In schools with fewer sugar sweetened beverages & unhealthy snacks, students have healthier diets