

Community Efforts to Reduce the Impact of Areas of Low Access:

Changing the Food Environment by Working with Food Stores

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Topics

- Changing the Food Environment
- Food Store Trials
- Healthy Stores Programs
 - Community Participation
 - Program Format
 - Results
- Future Directions and Challenges

Types of Environmental Approaches

- Change access to foods
 - Build new food stores
 - Increase availability of healthy foods
 - Decrease availability of less healthy foods
 - Price promotions
 - Change the physical location of foods
- Change perceptions of foods through promotion
- Improve food networks (distributors, producers, retailers)
- Changing setting for provision of information (POP promotions)
- Improve local production
- Change the amount of food provided
- Increase nutrient content of foods

Food Store Intervention Trials: Limitations

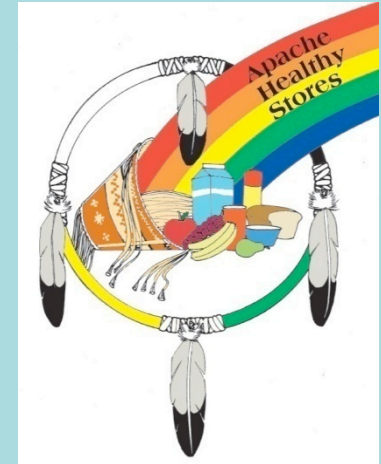
- Little or no formative research
- Little emphasis on participatory approaches
- Limited use of theoretical frameworks
- Little process evaluation
- Few have worked in small stores
- Few intervention strategies, with limited reinforcement/integration of activities
- Limited evaluation (e.g. lack of dietary assessments)
- Tend to be short duration
- No work on sustainability

(References: *Seymour et al 2004, Glanz et al 1995, Wechsler et al 2000, French and Stables 2005*)



Apache Healthy Stores Goals

1. To implement a store-centered nutrition program on the White Mountain and San Carlos Apache reservations
2. To increase sales of healthy foods
3. To increase healthy food purchasing, preparation and diets of community members



Formative research conducted

Type of formative research	Number completed
In-depth interviews with large store owners, managers and staff	6
In-depth interviews with small store owners and managers	10
In-depth interviews with store customers	22
In-depth interviews with community leaders	13
Observations of food purchasing in small stores	11
Focus groups for testing intervention materials	7
24 hour dietary recalls	53

Community Workshops

A photograph of three women sitting in a row, facing left, in a room with wood-paneled walls. The woman in the foreground is wearing a grey hoodie with a pink collar and glasses, and is speaking. The woman in the middle is wearing a light blue jacket over a striped shirt and glasses, and is listening. The woman on the right is wearing a blue jacket and glasses, and is also listening. A person's hand and arm are visible on the right side of the frame, wearing a watch and rings. A decorative item with a red and white floral pattern and a tassel is visible in the bottom right corner.

First, everyone tells their story...

Brainstorming list of “problem foods”



Voting for top “problem foods”



Problem foods

Nunavut Workshops						NWT Workshops						Nunavut recalls	R a n k	NWT recalls	R a n k	FOOD	S C O R E
Taloyoak		R k	Cambridge Bay		R k	Inuvik		R k	Tuktoyuktuk		R k						
Pop	1 4	1 0	Pop	1 4	1 0	Pop	1 0	1 0	Sugar	1 2	1 0	Sweete ned drink	1 0	Sweete ned drink	1 0	POP	47
Potato chips	1 2	9	Candy (chocolate)	1 0	9	Chips	8	9	Fast food	9	9	White bread	9	Sugar	9	CHIPS	38
Sugary snacks	7	8	Chips	1 0	8	Sugar	7	8	Salt	9	8	Bannoc k, fried	8	Pop	8	SUGAR	33
White flour	7	7	Sweetened drinks	1 0	7	Process ed food	7	7	Pop	8	7	Pizza	7	Muktuk	7	SWEETEN ED DRINKS	31
Chocolate bars	6	6	Expired foods	8	6	Fast food	6	6	Energy drinks	8	6	Sugar	6	White bread	6	CANDY	24
TV dinners	6	5	French fries	8	5	Candy	6	5	Sugary cereals	8	5	Chips	5	Chips	5	FAST FOOD	23
Oysters	6	4	Bad quality/ costly FV	6	4	Lard	5	4	Powdere d juice	7	4	Oatmeal	4	Butter	4	WHITE BREAD	16
Sugary cereal	5	3	Microwave/ fast foods	5	3	Sugar cereals	5	3	Coffee mate	6	3	Arctic char	3	Candy	3	SUGARY CEREAL	14
Butter	5	2	Fried chicken	4	2	Bacon	4	2	Chips	6	2	Soda	2	Caribou soup	2	FATS (butter, lard)	10
Candy	0	1	White bread	4	1	Alcohol	4	1	Candy	6	1	Caribou	1	Pizza	1	TV DINNER	10

Voting for healthier alternatives for top problem foods



Healthier alternatives for pop

Nunavut				NWT				Total Votes
Taloyoak		Cambridge Bay		Inuvik		Tuktoyuktok		
Frozen juices	12	River water or tap water	6	Water	7	NA		Water: 23-25
Bottled water	10	Water w/lemon	4	Diet pop	7	NA		Diet pop: 14
Diet pop	6	Tea	3	Crystal Light	6	NA		Fruit juice: 6
Flavoured water	1	Bottled water	2	Unsweetened fruit juice	3	NA		Crystal Lite: 8
Smoothies	1	Apple juice	2	Herbal teas	2	NA		
Kool-aid jammers	0	Kungulek juice (plant)	2	Flavoured milks	2	NA		
Juice	0	Sugar free kool-aid/crystal light	2	Flavoured water (fizzy)	0	NA		
Decaf coffee	0	Frozen concentrate juice	1	Milk	0	NA		
Decaf tea	0	Cranberry juice	1	Tea	0	NA		
Single packet Kool-aid	0	Diet pop	1	Coffee	0	NA		



Putting it together to develop messages



Apache Healthy Stores Program Phases (June 2003 – June 2004)

Phase	Theme
0	Teasers
1	Kickoff/Eating Healthy Snacks
2	Start the Day with a Healthy Breakfast
3	Cooking and Eating with Less Fat
4	Quick and Healthy Dinners
5	Drinking Healthy Beverages
6	Healthy Lunches and Snacks

FOOD PROMOTION LIST

Date	Food	Minimum Amount needed per store
PHASE 1:	Pretzels	20 units Large and small bags
	Baked potato chips	20 units. Large and small bags
	Pretzels (low sodium)	10 units
	Baked tortilla chips	20 units
	Saltine crackers	20 units
	Fresh fruit	10-20 units
PHASE 2:	2% milk	20 units
	1% milk	10 units
	Skim milk	10 units
	Any of the following cereals: Cheerios, Wheaties, Nutrigrain. Shredded wheat, Life, Corn Flakes, Chex	20 units (of all varieties combined)
	Fresh fruit	20 units
PHASE 3:	Cooking spray	10 units
	Eggs	20 units
	Potatoes	20 units
PHASE 4:	Pork and beans	25 units
	Corn (frozen or canned)	20 units
	Onions	20 units
	Healthy deli offerings	10 units
	Cooking spray	25 units
	Lean ground meat	10 units (not done if store does not stock meat)
PHASE 5:	Diet sodas, cans	100 units-
	Water in bottle	100 units-
	Diet soda offered on fountain	--

Sample Materials



Shelf labels

Flyers



Displays

Save money, drink water!

59 cents for 20 ounces of soda

25 cents for 20 ounces of water

EAT RIGHT, BE STRONG, LIVE LONG!

QUENCH YOUR THIRST WITH WATER

WATER HAS ZERO CALORIES AND COSTS LESS THAN SODA. WHY NOT GO FOR THE WATER WHEN YOU'RE THIRSTY?

ADVANTAGES OF WATER

1. Really quenches your thirst
2. Keeps up your body fluids so you perform better
3. Far cheaper and better for your health than soda

SAVE MONEY & CALORIES BY CHOOSING WATER!

APACHE HEALTHY STORES Q & A

Q: Aren't diet sodas only for people with diabetes or other health conditions?

A: Diet sodas are for anyone who wants to consume less sugar or calories. This includes diabetics, but can include any health-conscious person.

How much sugar is in your soft drink*?

*Amount of sugar in a 12 ounce soda. 1 sugar cube = 1 teaspoon or 4 grams.

Orange or cream soda: 10 sugar cubes

Mountain Dew: 10 sugar cubes

Cola, Root Beer, or Sprite: 10 sugar cubes

7-UP: 10 sugar cubes

Diet sodas: ZERO Sugar, or water: ZERO Calories!

NOTE: If you are drinking more than 10 ounces of soda, you are consuming more sugar than is pictured here. For every 4 grams of sugar, think you are consuming a teaspoon of sugar.

Posters

Food labels are a rainbow of information!

Nutrition Facts	
Serving Size 1 oz. (About 17 pretzels)	
Servings per Container About 15	
Amount Per Serving	
Calories 110	Calories from Fat 10
% Daily Value	
Total Fat 1g	2%
Sodium 580 mg	24%
Total carbohydrate 23g	8%
Dietary Fiber 1g	3%
Sugars less than 1g	
Vitamin A 0%	Vitamin C 0%
Calcium 0%	Iron 10%

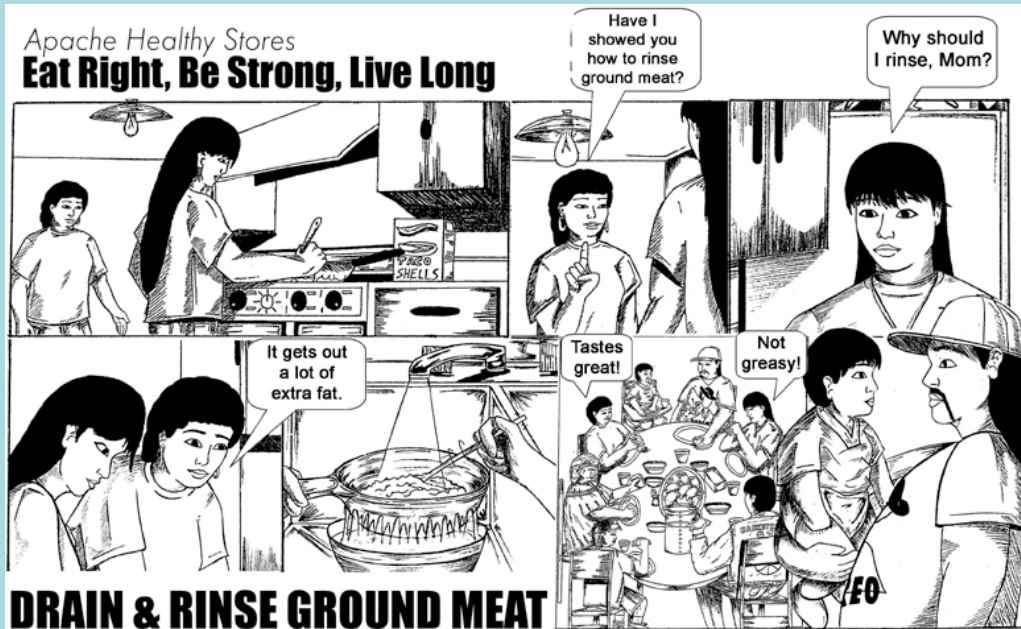
*Percent Daily Values are based on a 2,000 calorie diet.

APACHE HEALTHY STORES
helping you make healthy food choices

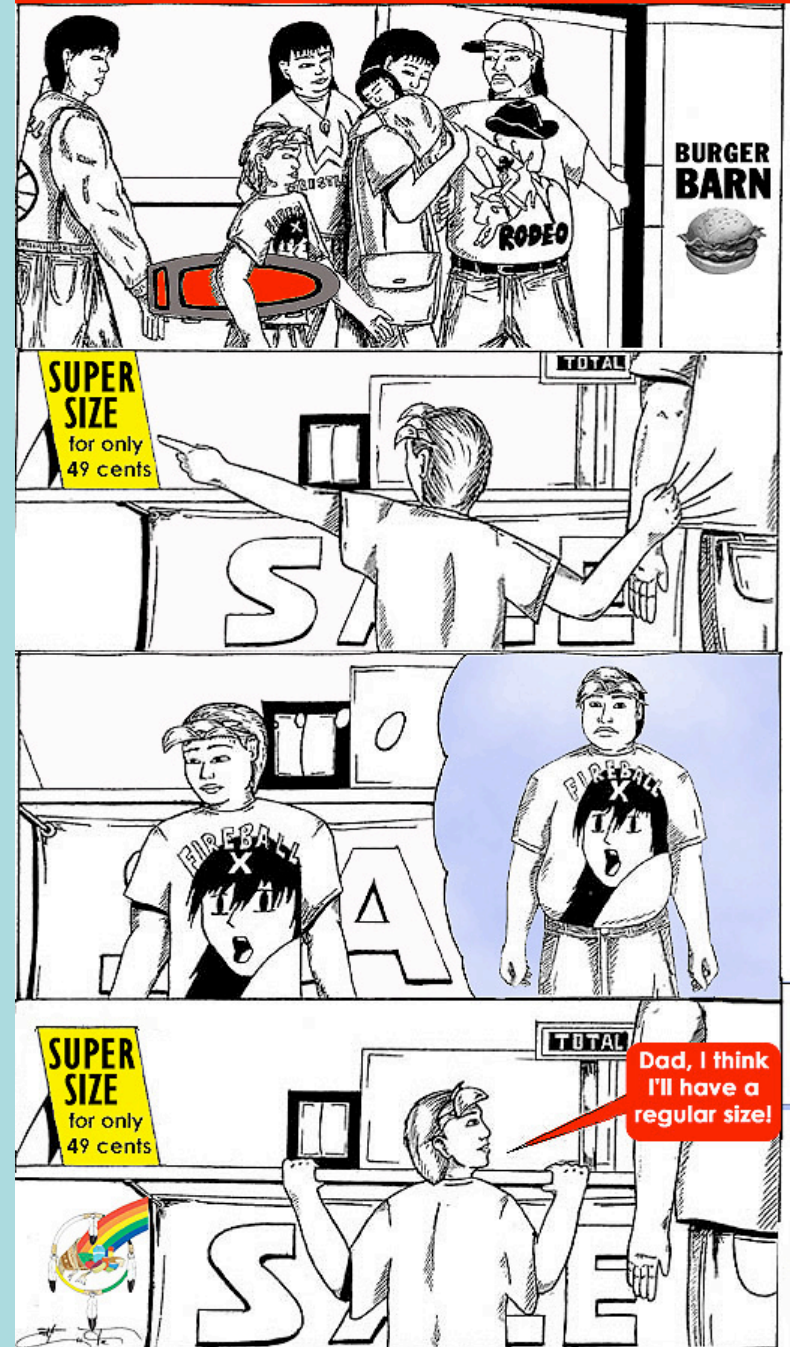
Cooking demos/Taste tests



Newspaper cartoons



APACHE HEALTHY STORES
Eat Right, Be Strong, Live Long!



Culturally themed radio announcements



Impact of Apache Healthy Stores program on daily gram consumption of PROMOTED foods

Food	Pre		Post		T test/Wilcoxin	
	Intervention	Comparison	Intervention	Comparison	Difference (postint- preint) - (postcom- precom)	P
	Mean n=69	Mean n=82	Mean n=69	Mean n=82		
Vegetables:	59.0	62.4	62.2	50.3	+22.4	0.047
Fruits:	122.2	135.2	124.3	134.6	+2.7	0.91
2% or 1% Milk	58.9	109.0	120.5	92.7	+77.9	0.03
Canned fish	4.0	6.0	11.5	5.8	+7.7	0.049
Healthy Cereals: High fiber, low sugar cereals	6.3	12.1	15.9	17.7	+3.90	0.048

Impact of Apache Healthy Stores program on daily gram consumption of DEMARKETED foods

Food	Pre		Post		T test/Wilcoxin	
	Intervention	Comparison	Intervention	Comparison	Difference (postint- preint) - (postcom- precom)	P
	Mean n=69	Mean n=82	Mean n=69	Mean n=82		
Fried Mexican/ Apache foods	133.0	93.6	100.8	107.9	-46.5	0.05
Ramen noodles, canned soups	70.7	42.6	61.4	70.4	-37.0	0.03
Whole Milk	16.6	23.6	35.4	69.4	-27.0	0.05
Unhealthy Snacks: chips, nachos, popcorn	50.3	28.3	44.3	42.3	-20.0	0.09

Mean indicates the daily gram weight consumption of that food

Apache Healthy Stores Results

- After adjustment for baseline value, age, sex, education and SES, a food store environmental intervention was associated with significant improvements in:
 - Food-related knowledge
 - Healthy food purchasing
 - Daily gram consumption of healthier foods
- Increased unit sales of promoted healthy food options
- First food store intervention to show impact on diet

Sustaining (and expanding) Apache Healthy Stores: Ongoing Work

- San Carlos Apache Diabetes Prevention Program
 - Full transfer of existing program, adaptation and integration of activities (including evaluation)
- White Mountain Apache Tribe, Cibecue Community
 - Partial transfer of existing program
- Navajo Special Diabetes Program
 - Full partners in development, implementation

Baltimore Healthy Stores Goals



- To increase access to healthy foods for residents of Baltimore City.
- To promote these foods at the point of purchase
- To work in collaboration with community agencies, the city of Baltimore, and local food sources.



Community Workshops to Plan Program

7 10:36 AM

Materials for Store Owners

- Incentive cards
- Nutrition education session
- Stocking guidelines
- Cultural Guidelines for Korean Store Owners:

Cultural Guidelines for Korean Store Owners in Local Community

For the long term success of your store, it is important to build a strong relationship with local community. There are TWELVE guidelines to follow which can help:

1. Keep prices steady throughout the month.
2. Buy foods for your shelves that are not close to expiration. Check to see that all packaged foods are at least 1-2 months before expiration.
3. Contribute part of your profits back to the community and advertise it. (For example, donate food to needy residents, provide support for schools, recreation and public safety)
4. Greet your customers when they enter your store. (Hi, Hello, How are you?) In American culture, it is appropriate to greet.
5. Make eye-contact and small talk (jokes, comment on the weather, discuss personal experiences).
6. Do not ignore customers (it is considered a direct insult).
7. Do not watch customers constantly.
8. Do not put change on the counter; put it back into the customer's hand.
9. Say goodbye when they leave (Thank you, See you later, Take care, Have a nice day).
10. From time to time, ask regular customers what they would like you to stock and get those items.
11. Hire workers from the community.
12. Set-up a bulletin board for community members to post information.

상점을 운영하시는 분들을 위한 안내문

특인 지역사회에서 안전하고 장기적인 비즈니스를 위해서, 지역 사회와 좋은 관계를 유지하는 것은 매우 중요한 일입니다. 아래는 간단하지만, 도움이 되는 12가지 지침입니다.

1. 한달 동안 일정한 물건가격을 유지해주세요. 장기적으로 보면 신뢰를 바탕으로 한 거래가 더 많은 이익으로 되돌아 올 것입니다.
2. 도매상에서 쇼핑하실 때 유통기간이 오래 남아있는 물건을 고르세요. 최소한 유통기한이 1-2달 이상 남은 물건을 구입하세요.
3. 상점이윤의 일부를 커뮤니티를 위해 쓰시고 그것을 홍보하세요. 특히 가난한 이웃에게 먹을 것을 제공하고, 학교나 커뮤니티 시설들에 재정적 지원을 하는 것은 좋은 예가 됩니다.
4. 상점에 들어오는 손님에게 간단하지만 친절한 인사말을 건네주세요. (Hi, Hello, How are you?)
5. 손님과 눈을 마주치며 사소한 이야기를 건네주세요. 작은 농담이나 날씨에 관한 이야기라도 좋은 소재거리가 됩니다.
6. 손님을 무시하지 마세요. 이런 행동은 직접적인 모욕이 됩니다.
7. 손님을 계속적으로 감시하지 마세요.
8. 계산대에 잔돈을 내려놓는 것보다 손님의 손에 직접 잔돈을 건네주세요. 이것이 더 친절한 방법입니다.
9. 상점을 나가는 손님에게 간단한 배웅인사를 해주세요. (Thank you, See you later, Take care, Have a nice day)
10. 매달로 단골 손님들에게 어떤 물건을 상점에 갖다 놓으면 좋을지 의논해 보세요. 그들은 잘 팔리는 상품에 대한 아이디어를 줄 것입니다.
11. 믿을 만한 곳을 통해 소개를 받은 특인 종업원을 고용해 보세요.
12. 주민들을 위해 지역정보를 나눌 수 있는 게시판을 만들어 놓아보세요.

Phase 1: Low Calorie Beverages

- Educational Display
- Flyer

Quench Your Thirst with Water

Baltimore Healthy Stores Q & A

Q: Aren't diet sodas only for people with diabetes or other health conditions?

A: Diet sodas are for anyone who wants to consume less sugar or calories. This includes diabetics, but can include any health-conscious person.

How much sugar is in your soft drink*?

*Amount of sugar in a 12 ounce soda
1 sugar cube = 1 teaspoon or 4 grams

Orange or cream soda:	10 cubes
Mountain Dew:	8 cubes
Cola, Root Beer, or Sprite:	10 cubes
7-Up:	8 cubes
Diet sodas or water:	0 cubes

SAVE MONEY, DRINK WATER!

COLA
33-44 cents per quart

PEPSI
20 cents per quart

ADVANTAGES OF WATER

1. Really quenches your thirst
2. Keeps up your body fluids so you perform better
3. Far cheaper and better for your health than soda

Water has zero calories and costs less than soda. Why not go for the water when you're thirsty?

LOOK FOR THE HIDDEN WATER LEVEL

DID YOU KNOW?

The Baltimore City Department of Social Services can help you get food stamps, temporary cash assistance and medical care. To find out if you qualify go to your local social services center. To find your local center, call 410-361-4800.

SAVE MONEY & CALORIES BY CHOOSING WATER!

NOTE: If you are drinking more than 12 ounces of soda, you are consuming more sugar than pictured here. For every 4 grams of sugar listed, you are consuming a teaspoon of sugar.

HOW MANY CALORIES ARE YOU DRINKING?

No Sugar—> No calories

9 tps of sugar—>150 calories

1 teaspoon of sugar=16 calories.
9 teaspoons= ??

- Coupon

Baltimore Healthy Stores
Bottled Water COUPON

50 cents OFF

This coupon entitles you to 50 cents off a bottled water!

*Bottled water must be promoted by the BHS
*See reverse for list of participating stores

Coupon ID: _____
Expiration Date: 12/3/08

Baltimore Healthy Stores: Store Results

Stocking and sales scores at baseline, post-phase and 6 months post-intervention

	Stocking Score (range 0–10)			Sales Score (range 0–10)		
	Intervention	Comparison	Significance	Intervention	Comparison	Significance
Baseline	5.9 ± 2.0	6.8 ± 1.6	NS	4.4 ± 1.8	5 ± 1.5	NS
Post-phase	8.3 ± 1.0	6 ± 1.8	0.004	7.1 ± 2.0	5.8 ± 1.8	0.05
6 mon. Post-intervention	7 ± 2.0	5.5 ± 1.5	0.009	6.4 ± 1.8	4.7 ± 1.5	0.003

Baltimore Healthy Stores: Consumer Results

- After adjustment for baseline value, age, sex and SES:
 - Significant impact on food preparation methods and frequency of purchase of promoted foods
 - Trend of impact on food intentions

Healthy Stores Studies Results: Summary

Program	Significant Impacts Observed			
	Consumer psychosocial	Consumer behavior	Consumer diet	Store
Marshall Islands Healthy Stores	Knowledge	Healthy food purchasing	N/A	N/A
Apache Healthy Stores 1	Knowledge	Healthy food purchasing	Increased healthy foods, decreased unhealthy foods	Increased stocking and sales
Zhiwaapenewin Akino'magewin (First Nations)	Knowledge (assoc. w/ exposure)	Healthy food purchasing	?	N/A
Baltimore Healthy Stores 1	Intentions (assoc. w/ exposure)	Healthy cooking methods, purchasing labeled foods	?	Increased stocking and sales
Healthy Foods Hawaii	Caregiver knowledge, convenience of healthy foods, children's healthy food intentions	?	?	?
Healthy Foods North (Arctic)	?	?	?	?
Navajo Healthy Stores	?	?	?	?

Ongoing and Future Work

- Apache Healthy Foods:
 - Linking in with culinary arts students in local schools
- Baltimore Healthy Stores:
 - Expansion to West Baltimore stores
 - Work in and around youth recreation centers and city churches
- Zhiwaapenewin Akino'maagewin:
 - Proposed expanded trial with food stores and schools under review
- Navajo Healthy Stores:
 - Farms to Table program

Some Challenges

- Figuring out the best institutional base(s) for sustaining food store programs
- Determining which combination of venues (e.g., stores, schools, worksites, etc.) is most effective
- How to keep prices low to improve access

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- Community Partners
 - Bashas supermarkets
 - Red Mesa Stores
 - Diabetes Prevention Programs
 - Kids on the Hill
 - Government of Nunavut, NWT
 - Tribal Governments
 - Special Diabetes Programs
- Students and Staff
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- Former & Ongoing Students/Staff
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 - Nadine Eads
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- USDA/Food Assistance Nutrition Research Program
- USDA/CSREES/National Research Institute/ Nutrition and Obesity Program
- Robert Wood Johnson Foundation Healthy Eating Research program
- American Diabetes Association
- Stulman Foundation
- Isador and Gladys Foundation

Some Resources

- www.healthystores.org
 - For more information on the healthy stores projects
- www.riskfactor.cancer.gov/mfe
 - Online searchable database of articles on measurement of the community food environment, and instruments