SEPA Fitness Exhibit
A Front End Evaluation Report

Prepared for

OMSI
OREGON MUSEUM OF SCIENCE AND INDUSTRY

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SEPA Fitness Exhibit
Front-end Findings
Scott Ewing
January 31, 2007

Summary

This evaluation was conducted to assist with the development of a new traveling exhibit designed to help families make more informed decisions about fitness. Funded by a National Institutes of Health (NIH) Science Education Partnership Award (SEPA), this exhibition is the second component of a larger project undertaken by OMSI in collaboration with the Small Museum Research Collaborative (SMRC).

This evaluation was conducted at OMSI and the five SMRC partner sites; approximately 100 adults were interviewed. Latinos comprised nearly half of the interviewees and about 45 percent of the interviews were conducted in Spanish by fluent Spanish speakers. Differences throughout the survey will be identified and detailed in the results.

The survey focused primarily on visitors' understanding of clinical research and how research is used to develop nutritional and fitness recommendations. Visitors' general knowledge of the guidelines was probed as well. Since ample research exists on fitness, the focus of this survey was on clinical research.

Most visitors had heard of the recommended number of fruit and vegetable servings to eat in a day, though, generally, they did not have a clear understanding of who establishes the recommendations or how they arrive at them. Though non-Latinos were more likely to understand that the recommendations came from the United States government, both Latino and non-Latinos had difficulty describing how the government came up with them.

Clinical research was not well understood either. Most people understood that it was some form of study, research, or experiments, but had little idea of how "clinical research" differs from other kinds of research. Unfortunately, we were not able to get a proper translation of "clinical research" into Spanish at the time of this study, which makes comparisons to the non-Latino participants on certain questions impossible.

Generally, participants understood that recommendations change over time due to new understanding, research, or studies. However, it was also apparent that people are not very concerned with the changing trends. They were likely to pick recommendations based on personal beliefs and understanding rather than the most current scientific findings.

When asked to estimate amount of exercise children and adults should have in a day, generally Latino visitors underestimated while non-Latinos overestimated. Although exercising more than recommend is not necessarily bad, some of the overestimations seemed extreme enough to be unrealistic for the average person (for example, eight hours of aerobic activity a day).

These findings can be used to help guide the development of the fitness exhibition and programmatic elements, particularly to help improve visitors' understanding of clinical research and its impact on our understanding of fitness and nutrition.

Method

Interviewers spoke with 102 adults at both OMSI and the 5 partner sites. At 4 of the 5 partner sites, random adult visitors were selected for interview. At OMSI, Latino families were recruited to visit the museum to help with the interview and Las Cruces was asked to collect data from their Latino visitors only (who make up a large percentage of their visitor population). Table 1 details how many visitors were interviewed at each site as well as their ethnicity. This interview focused exclusively on adults, 90 percent of whom reported children in the household.

About 45 percent of the interviews were conducted in Spanish by fluent Spanish speakers. The majority of these interviews were conducted at OMSI and Las Cruces.

Table 1: Number of participants and ethnicity by site.

Site	Total	Latino	Not Latino	Not Sure	Total
Bootheel	15	0%	100%	0%	100%
KidZone	15	33%	66%	0%	100%
Las Cruces	22	100%	0%	0%	100%
OMSI	20	100%	0%	0%	100%
PDSC	15	7%	93%	0%	100%
ScienceWorks	15	0%	93%	7%	100%
Total	102	48	53	1	—

The interviewer led visitors through a series of questions designed primarily to understand their knowledge of the role of clinical research and the scientific process in developing fitness and nutrition guidelines and recommendations with a lesser focus on their knowledge of recommended levels of activity. Interviewers recorded visitor responses in longhand on the interview form. Interviews conducted in Spanish were recorded in Spanish and later translated. See Appendix A for copies of all interview forms.

Principle Findings

Visitor Characteristics

Eighty percent of those interviewed were female. Approximately 60 percent of the visitors were between the ages of thirty and fifty years old. However, the Latino visitors were younger on average than the non-Latino participants.

Over 50 percent of the Latino visitors were between nineteen and twenty-nine years of age. Eighty-seven percent of Latino visitors were between the ages of nineteen and forty while sixty-five percent of non-Latino visitors were thirty to fifty years old. Only one African American participated in the study.

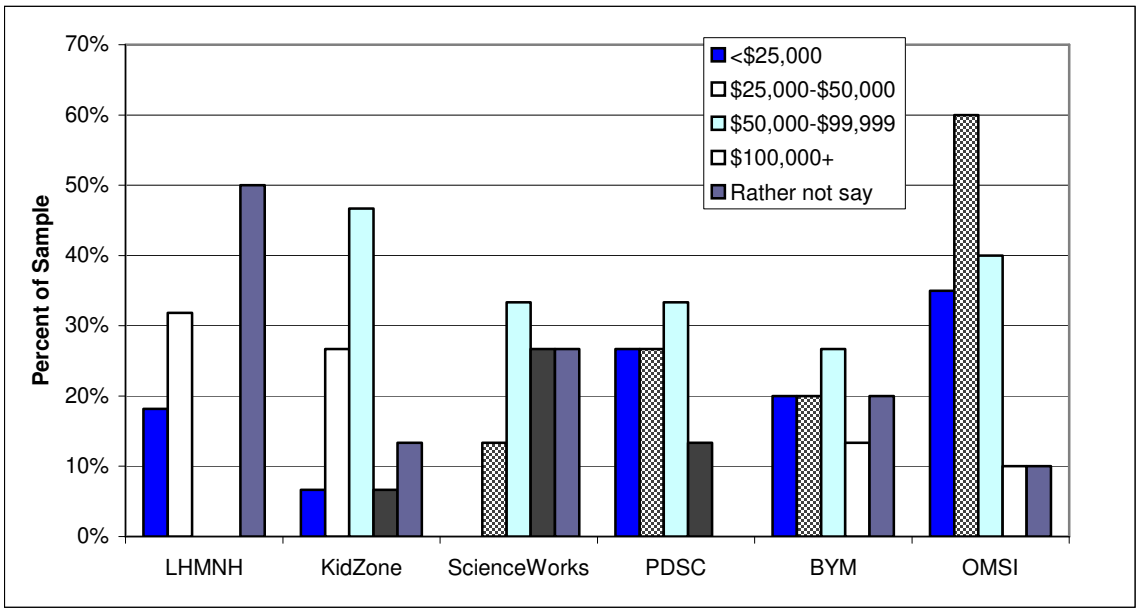
Table 2: Characteristics of participants.

		N	Percent	Not Latino	Latino
Gender	**Female**	**80**	**79%**	**74%**	**83%**
	Male	21	20%	26%	15%
Age	19–29 yrs.	31	30%	11%	**52%**
	30–39 yrs.	**40**	**39%**	**43%**	35%
	40–49 yrs.	17	17%	22%	10%
	50–59 yrs.	7	7%	13%	0%
	60–69 yrs.	5	5%	9%	0%
	70 yrs. or older	1	1%	2%	0%
Race	Asian	0	0%	0%	0%
	African-American	1	1%	2%	0%
	Native American	4	4%	4%	4%
	Pacific Islander	0	0%	0%	0%
	White	**73**	**72%**	**89%**	**59%**
	More than one	19	19%	2%	37%
	Not sure	4	4%	7%	0%
Ethnicity	Latino	48	47%	0%	100%
	Not Latino	**54**	**52%**	100%	0%
Language at home	**English**	**57**	**56%**	100%	6%
	Spanish	45	44%	0%	94%
Household income	< $15,000	10	10%	7%	13%
	$15–24,999	9	9%	6%	13%
	$25–34,999	18	**17%**	7%	**29%**
	$35–49,999	10	10%	9%	10%
	$50–74,999	16	16%	**26%**	4%
	75–99,999	7	7%	11%	2%
	$100,000 or more	9	9%	17%	0%
	Rather not say	23	22%	17%	**29%**

Fifty-six percent of the interviews were conducted in English and 44 percent in Spanish. A few of the Latino visitors preferred to be interviewed in English. As noted above, 6 percent of the Latino visitors also spoke English at home.

In Figure 1, household income profiles differed across both sites and ethnic groups. Around one quarter of the Latino visitors (primarily interviewed at OMSI and Las Cruces) reported family incomes of $25,000 or less, with nearly a third not reporting their income. More than one-half of the Latino visitors reported income of less than $35,000 for the household.

Figure 1: Interviewees' household incomes by site.



Awareness of nutritional recommendations—what are visitors' understanding of governmental recommendations and how they are determined?

Three questions were designed to probe visitors' knowledge of governmental recommendations, specifically a nutritional guideline that was thought to be fairly well recognized. In addition, it was assumed that providing visitors with a guideline would ensure they would have a consistent reference for follow-up questions.

- ***Here's an example of a dietary guideline: "Eat 5–9 servings of fruits and vegetables every day." Have you heard of this specific recommendation before?***

As expected, the vast majority of visitors had heard of this specific recommendation before. The differences between our two populations were small, though more Latino visitors had heard of the recommendation than non-Latino visitors (see Table 3).

Table 3: Nutritional recommendation awareness.

	Not Latino	Latino
Yes	**78%**	**85%**
No	20%	15%
Not sure	2%	0%

- ***Who figures out these kinds of recommendations?***

Here, the limit of our visitors' understanding about governmental recommendations comes to light. In particular, Latino visitors were less aware of how these kinds recommendations are determined than were the non-Latino visitors (Table 4[1]). Twenty-three percent of Latino visitors

[1] Responses judged to demonstrate "full understanding" mentioned the government or specific government agencies involved in setting guidelines and recommendations. Responses in the "partial understanding" category mentioned research or doctors but not the government.

demonstrated a full understanding of the source of recommendations compared to 52 percent of non-Latino visitors.

Table 4: Visitors' understanding of source of recommendations.

	Not Latino	Latino
Full understanding	**52%**	23%
Partial understanding	39%	**63%**
No understanding	4%	6%
Don't know	5%	6%
Not answered	0%	2%

Many visitors mentioned that doctors, scientists, nutritionists, and dieticians determined such guidelines. While this is accurate, it is incomplete since the government plays the primary role in determining the recommendations. This may or may not be important to the development of the exhibit depending on how important the role of the government is to the visitor experience. Most visitors generally understood that the recommendations were the result of research or the government.

Table 5 illustrates the visitors' perception of who determines the recommendations. Latino visitors were less likely to mention the government or specific government agencies than non-Latino visitors. Instead, Latino visitors were more likely to mention doctors, scientists, nutritionists, and dieticians with no reference to the government. Considering many Latino families are not originally from the United States, it seems reasonable to believe their understanding of the government's role would be less than that of visitors who were raised here.

Table 5: Specific sources of recommendations.

	Not Latino	Latino
Government	**61%**	**25%**
FDA	**30%**	**0%**
USDA	13%	19%
Doctors/scientists	**19%**	**40%**
Nutritionists/dieticians	19%	25%
Industry	9%	0%
WIC	0%	8%

- ***How do you think they came up with this recommendation?***

Most visitors, Latino and not, had only a partial understanding or less of how these types of recommendations are determined. Nineteen percent of Latino visitors and only 9 percent of non-Latino visitors gave answers indicating a full understanding. Table 6[2] compares visitors' level of understanding.

[2] Responses demonstrating "full understanding" included a reference to detailed scientific research specifically involving people. Responses that mentioned research in general (but not with people) were scored as "partial understanding." Responses that did not include any of these details or were too vague were judged to demonstrate "little/no understanding."

Table 6: Completeness of visitors' understanding of the process of determining recommendations.

	Not Latino	Latino
Full understanding	9%	19%
Partial understanding	**48%**	**56%**
Little/no understanding	39%	13%
Don't know	4%	12%

Most visitors' responses were vague or incomplete, indicating a lack of understanding of how such recommendations are determined. Below is a sample of answers falling into the three categories of understanding.

> *Based on medical expertise, asking doctors, studying populations. [#64—Full]*
>
> *Probably research, studies. [#58—Partial]*
>
> *Through the government.* [#56—Little understanding]

Although Latinos were more likely than non-Latinos to mention "research" or "studies," only about 15 percent of either group mentioned research or studies specifically involving people. Fifteen percent of non-Latino visitors responded that recommendations came from talking with doctors or nutritionists.

Table 7: Specific ideas related to determining recommendations.

	Not Latino	Latino
Studies or research	**40%**	**60%**
Studies or research with people	**13%**	**17%**
Government	4%	2%
Talking to doctors/nutritionists	**15%**	**2%**
Industry influence	4%	0%
Trial and error	4%	0%
Do what is healthy	9%	6%
Do what is natural	4%	2%
Other	9%	2%

There is a great deal of room for increasing visitors' understanding of where these recommendations come from that can be capitalized on in the exhibition and programs. Visitors generally seem to understand that the guidelines are based in research but can provide little additional detail. This point is particularly highlighted in the next section.

Understanding of Clinical Research—what do visitors know about clinical research and how it affects them?

One question was developed to address visitors' understanding of the concept of clinical testing. This key concept is not well understood by many people as seen below.

- ***What does the term "Clinical Research" mean to you?***

Clinical research refers to studies or research specifically involving humans in strictly controlled (or clinical) settings. The term "clinical research" is not commonly used in Spanish and at the time of the interview we were unable to get the proper translation. However, the obscurity of the term will be an issue in the exhibit as well and care should be taken to ensure that defining the term is properly addressed. In this study, Spanish-speaking visitors were asked about the more generic "investigación" or "research" so comparisons with non-Latino visitors aren't useful.

Only 6 percent of non-Latino visitors demonstrated a full understanding of clinical research (see Table 8[3]). Seventy percent demonstrated only a partial understanding of that concept. Some sample responses demonstrating various levels of understanding are presented below.

> *Research conducted in a clinic—theoretically it's controlled research—they have a group from the specific population they're looking at. [#67—Full]*
>
> *Research done in a lab. [#84—Partial]*
> *Hospitals and doctors—doing research studies. [#89—Partial]*
>
> *Pretty much taking all the children and surveying the information. [#48—Little]*

*Table 8: Completeness of visitors' understanding of clinical research. **

	Not Latino
Full understanding	6%
Partial understanding	**70%**
Little/no understanding	22%
Don't know	2%

** Since clinical research does not translate directly to Spanish, Latino responses are not analyzed here.*

Table 9 shows the various ideas mentioned by visitors. The most common response was that clinical research meant studies, research, or tests of some sort without specifically mentioning "people." Nearly 70 percent of non-Latino visitors used these terms and 20 percent of non-Latino visitors specifically mentioned "research involving people." About half of the non-Latino visitors (but only two Latino visitors) mentioned a "controlled setting" or "research in a laboratory." Since Latino visitors were asked a slightly different question, differences are not useful to interpret.

*Table 9: Specific ideas mentioned while describing clinical research. **

	Not Latino
Studies or research	**67%**
Studies or research with people	**20%**
Food or nutrition	6%
Controlled environment or lab setting	**52%**
Studies or research with animals	4%

** Spanish-speaking visitors were asked about "investigación" or "research."*

[3] Responses demonstrating "full understanding" made reference to research with people in a controlled manner. Responses that mentioned just one or two of those three criteria were scored as "partial understanding." Responses assigned to the "little/no understanding" category were either too vague or provided too little detail.

Understanding changing recommendations—do visitors understand why recommendations change and how do they interpret those changes?

Several questions address visitors' understanding of how recommendations change over time and how they decide what changes to observe.

- ***These recommendations seem to change every few years or so. Why do you think that is?***

Generally slightly more than one-half of these adults understood that governmental recommendations might change based on new or more current research. Non-Latinos were more likely give an answer that reflected little or no understanding of that concept and these adults typically cast the government in a negative light. *"Because the government doesn't know what they're doing. They waste a bunch of taxpayer's money…." [#97].*

About 20 percent of the responses were incomplete, usually attributing changes in recommendations to changes in people's habits or diets (see Table 10[4]).

Table 10: Accuracy of visitors' knowledge of changing recommendations.

	Not Latino	Latino
Full understanding	54%	63%
Partial understanding	24%	21%
Little/no understanding	20%	6%
Don't know	2%	10%

In order to determine the depth of visitors' understanding, they were next asked how they decide what recommendations to use. Due to an error in translation, Latino and non-Latino visitors were asked slightly different questions and are discussed separately.

- ***[ENGLISH] If a new study about healthy eating contradicts an older study, how do you decide which recommendation to follow?***

Even though more than half of the non-Latino visitors displayed a good, accurate understanding of why recommendations change (see Table 10), their decisions about which recommendations to follow are likely to be influenced by either their own situation or lifestyle (41 percent of respondents) or their personal knowledge (15 percent of respondents). Very few consider the source's validity or do further research on their own. Nearly one-quarter tend to follow the most recent recommendation that they hear about and an equal proportion simply ignore changing recommendations entirely, either because they would rather follow their own instincts (15 percent) or the recommendations are too restrictive (4 percent) or change too often (4 percent). While we wouldn't want people to blindly follow any recommendations that came their way, ideally they would make an informed decision based on further research or discussing the recommendations with a professional.

[4] Responses showing "full understanding" mentioned that new research and techniques lead to new understanding. Visitors who demonstrated only "partial understanding" typically attributed changes in recommendations to changes in people's habits or diets (e.g., people eat more fast food, so that has to be better regulated).

Table 11: Specific considerations for determining which recommendations to follow.

	Not Latino
Which ever is best for me/makes the most sense for me	**41%**
Newer study since it's based on newest research	20%
Don't follow—use my own knowledge	15%
Need to research on my own	9%
Don't decide—changes too often	4%
Don't follow—recommendations are prohibitive	4%
Older study	4%
The study from the most valid source	4%
Newer study	2%
Don't know	4%

- ***[SPANISH] If a new study about healthy eating contradicts an older study, does it mean the older study is wrong? Why do you say that?***

Table 12: Are newer studies more valid than older studies?

	Latino
No	**81%**
Yes	17%
Not sure	2%

Approximately 80 percent of the Latino visitors acknowledged that newer studies don't necessarily invalidate older studies. When asked to explain their answer, Latino visitors typically responded that newer studies simply have newer information or newer methods that may or may not be more accurate (see Table 13). Ten percent said there could still be some truth to the older studies and two percent were aware that new studies could have flaws. A full third of the visitors had no response to this follow-up question.

Table 13: Reasons for decision.

	Latino
Older studies aren't necessarily wrong…	**35%**
Newer study just has newer information	**35%**
There is some truth to the older studies	10%
Different studies suit different people	6%
New studies could have flaws	2%
New recommendations are just options	2%
New study proves the old is wrong	6%
Don't know/no answer	35%

Fitness and physical activity—Where do visitors go to get information about physical activity and how accurate is their understanding of recommended amounts of physical activity?

- ***Where do you go or whom do you talk to for reliable information about physical activity or exercise?***

As seen in Table 14, nearly 70 percent of the Latino visitors used their doctor or clinic as a source for reliable information. About 45 percent of non-Latino visitors use the doctor or clinic for their information with another 22 percent from magazines and another 20 percent from the gym or trainer or fitness professional. Interestingly, no Latino visitors reported relying on friends or family for information about fitness (compared with 15 percent of the non-Latino visitors). Only 2 percent of Latinos mentioned using magazines for information. Note that relatively few visitors mentioned using the Internet as a reliable source of fitness information.

Table 14: Sources mentioned for information about physical fitness.

	Not Latino	Latino
Doctor or clinic*	**44%**	**69%**
Magazines*	**22%**	**2%**
Gym or trainer	20%	13%
Books*	15%	6%
Friends, family*	**15%**	**0%**
Internet*	13%	13%
Nowhere in particular*	10%	11%
News or newspaper	11%	2%
Television*	7%	10%
Class*	6%	2%
Nutritionist	4%	6%
Library*	2%	0%
WIC*	0%	8%
Other*	4%	0%

** Categories also mentioned in the SEPA Front-End Report for the Nutrition Exhibit.*

- ***How much physical activity do you think an adult should get in a day? What kind of activity are you thinking of?***

In order to determine how accurate visitors' understanding was of fitness recommendations, they were asked to estimate how much physical activity adults and children should get in a day. In general, Latinos' estimations were lower than those of non-Latinos (see Table 15). Nearly half of Latinos estimated that adults should get 30 minutes of walking or less a day while only fourteen percent of non-Latinos estimated this level of activity was recommended. Twenty-nine percent of Latinos indicated that 30 minutes of aerobic or cardiovascular activity is recommended (versus 44 percent of non-Latino visitors).

Table 15: Recommend levels of adult activity.

	Not Latino	Latino
30 minutes (aerobic)*	**44%**	**29%**
Less than 30 minutes of any activity	4%	6%
30 minutes (unspecified activity)	6%	15%
30 minutes (walking)	4%	**25%**
60 minutes (unspecified)	4%	4%
60 minutes (walking)	9%	10%
60 minutes (aerobic)	**17%**	6%
2 or more hours (walking)	9%	0%
2 or more hours (aerobic)	0%	2%
Don't know	0%	2%

**Approximate recommended physical activity levels.*

- ***How much physical activity do you think a child should get in a day? What kind of activity are you thinking of?***

Table 16 shows visitors' estimations of activity levels recommended for children. Approximately 30 percent of both Latino and non-Latino visitors estimated correctly that 60 minutes of aerobic activity or active play is recommended. Overall, however, Latino visitors' estimates were lower than those of non-Latino visitors (and lower than what is recommended for children). For example, 30 percent of Latinos (but no non-Latinos) estimated that children should get 30 minutes a day or less of a non-aerobic (or unspecified) activity and an additional 25 percent believed that 30 minutes of aerobic activity would be adequate. On the other hand, non-Latinos tended to overestimate recommended activity levels—nearly 40 percent estimated children should engage in two or more hours of active play a day. Some even believed that eight or more hours of active play is recommended. As was the case when non-Latino adults were estimating for themselves, there is the potential that such unrealistic expectations could actually discourage adequate levels of child play.

Table 16: Recommended levels of child activity.

	Non-Latino	Latino
60 minutes (active play)*	**28%**	**29%**
Less than 30	0%	8%
30 minutes (unspecified)	0%	15%
30 minutes (walking)	0%	6%
30 minutes (aerobic/playing)	15%	**25%**
60 minutes (unspecified)	2%	0%
60 minutes (walking)	0%	0%
2 or more hours (unspecified)	11%	0%
2 or more hours (walking)	2%	2%
2 or more hours (aerobic/playing)	**37%**	10%
Don't know	2%	4%

**Approximate recommended physical activity levels.*

Discussion

A number of issues are highlighted in this study that staff might keep in mind as they are developing the exhibit and programs designed to improve families' understanding of physical activity as well as the concept of clinical research.

Differences between Latino and non-Latino visitors appeared throughout the study, though similarities exist as well.

Generally speaking our visitors:

- Recognized that recommendations change periodically due to new information
- Have little detailed understanding of how recommendations are determined
- Are not very influenced by recommendations

Most visitors were aware of the dietary recommendation mentioned but didn't necessarily understand who developed the recommendation. If it is important to know that the government (or a particular agency) is responsible for recommendations, then visitors (particularly Latino visitors) will need to have this emphasized.

More importantly, though, is visitors' understanding of <u>how</u> the recommendations are developed. Neither Latino nor non-Latino adults demonstrated a good understanding of the scientific process involved in determining such recommendations.

Perhaps because they had to give more thought to their answer than simply responding, "the government," Latino visitors gave more detailed descriptions of how recommendations are developed. However, the vast majority of all visitors have room to improve their understanding of that process.

Just as visitors do not understand what kind of research is involved in determining valid scientific recommendations, they generally seem to think that they can use their own common sense and experience to make good judgments about whether to follow specific recommendations. If visitors better understood how a proper research study was conducted and how reliable the information was, perhaps they would be more likely to follow the recommendations from it (rather than dismissing it because they don't think that it "makes sense" or applies to them).

Considering that people are also not very influenced by the source of recommendations nor likely to do much additional research, it will be important to give people the tools to make informed decisions regarding recommendations.

No visitor mentioned "clinical research" as one method used to determine recommendations. When directly asked about the nature of clinical research, visitors demonstrated only a partial understanding of that concept. The emphasis on research with <u>real people</u> needs to be made, as well as the strictly controlled environment in which such studies are conducted. There may be opportunities to have visitors conduct experiments themselves, either at the exhibit or at home. It may be possible to teach how systematic and detailed experiments are repeatable and reliable. Since the translated term for "clinical research" isn't widely known in Spanish, it will be doubly important to clearly and succinctly explain the process for those visitors.

Although not addressed, it would be interesting to see if people trust the government as a source for recommendations about fitness and nutrition and how the negative influence of industry advertising ("at the Hershey Clinic, our research on chocolate…") affects people's perception of clinical research.

When asked to identify their sources of information about physical fitness and activity, non-Latino visitors tended to mention a wider variety of information resources and were more likely to mention sources such as magazines, books, newspapers, and friends or family members. Visitor sources for information about physical activity and exercise differed from those mentioned by adults asked to identify sources for information about nutrition. Unlike the nutrition front-end study, the majority of Latino and non-Latino visitors more often mentioned their doctor or clinic as a source of information and less often, overall, included the Internet as a source of such information. It will be important to provide a variety of sources and offer tips for distinguishing between reliable and unreliable information.

When discussing physical activity for both adults and children, Latino estimates were generally lower than their non-Latino counterparts. About half of Latino estimates were also lower than the recommended levels. On the other hand, non-Latino visitors tended to overestimate the recommended levels of physical activity. Some of these unrealistically high expectations may contribute to people taking no action and getting inadequate exercise.

Regardless of what people reported in this interview, general trends in this country indicate that most people should be more physically active. This project offers us the opportunity to educate both non-Latinos and Latinos about proper amounts of physical activity and help them overcome that disconnect between what they know is appropriate and what they actually do. Both exhibits (nutrition and fitness) should give adults and children the opportunity to practice better decision-making.

Finally, exhibit developers should keep in mind that the visitors interviewed during this study were predominantly female and white and so may not be completely representative of the larger population.

Appendix A: Interview Forms

Here's an example of a dietary guideline: "Eat 5–9 servings of fruits and vegetables every day."

1. **Have you heard of this specific recommendation before?** Yes / No

2. ***Who*** **figures out these kinds of recommendations?**

3. ***How*** **do you think they** [or "people"] **came up with this recommendation?**

4. **What does the term "clinical research" mean to you?**

5. **These recommendations seem to change every few years or so. Why do you think that is?**

6. **If a new study about healthy eating contradicts an older study, how do you decide which recommendation to follow?**

7. **Where do you go or whom do you talk to for reliable information about physical activity or exercise?**

8a. How much physical activity do you think an <u>adult</u> should get in a day? _____ minutes
[If they ask what kind, "Any kind of activity."]
What kind of activity are you thinking about? [Running, walking, etc.]

8b. **How much physical activity should a <u>child</u> get in a day?** _____ minutes
[If they ask what kind, "Any kind of activity."]
What kind of activity are you thinking about? [Running, walking, playing, etc.]

9a. Have you heard of any recent studies or any new information about healthy eating and physical activity?
Yes / No

9b. [If Yes] **What did you hear?**

9c. [If Yes] **What did you find to be most interesting, if anything, about that?**

There are a few questions on this sheet about you. Could you answer these for me?
[Turn to last page and hand questionnaire to visitor]

To be completed by the visitor

Your age (*circle one*):

19–29 30–39 40–49 50–59 60–69 70+

How many children in your household are… ___younger than 2 years
___2 to 6 years old
___older than 6 years

Your gender:
Female Male

Zip code: _____

What language do you speak at home <u>most often</u>? _____

What is your ethnicity?

Latino	Not Latino	Not sure

What is your race?

American Indian or Alaskan Native	Asian	Pacific Islander or Native Hawaiian	Black	White	More than one race	Not sure

What is your household income?

□ Less than $15,000
□ $15,000–$24,999
□ $25,000–$34,999
□ $35,000–$49,999
□ $50,000–$74,999
□ $75,000–$99,999
□ $100,000 or more
□ I'd rather not say

Aquí está un ejemplo de una norma dietética: “Coma de 5 a 9 porciones de frutas y verduras cada día”.

1. **¿Ha escuchado esta recomendación específica antes?** Sí / No

2. **¿*Quién* establece estos tipos de recomendaciones?**

3. **¿Cómo piensa que ellos** [o “la gente”] **llegaron a esta recomendación?**

4. **¿Qué significa el término “Investigación” para usted?**

5. **Más o menos, parece que estas recomendaciones cambian cada cuantos años. ¿Por qué piensa que sucede ésto?**

6. **Si un nuevo estudio sobre la alimentación saludable contradice a un estudio anterior, ¿esto significa que el estudio anterior está equivocado?** Sí / No

¿Por qué dice esto?

7. **¿Adónde va o con quién habla para obtener información confiable acerca de la actividad física o el ejercicio?**

8a. ¿Cuánta actividad física piensa usted que una persona adulta debería realizar en un día?
_____ minutos

¿En qué tipo de actividad está pensando? [correr, caminar, etc.]

8b. ¿Cuánta actividad física debería realizar un niño o una niña en un día? _____ minutos

¿En qué tipo de actividad está pensando? [correr, caminar, jugar, etc.]

9a. ¿Ha escuchado acerca de algunos estudios recientes o alguna nueva información acerca del comer de manera saludable y la actividad física?
[indique con un círculo]
Sí / No

9b. [Si indica que sí] ¿Qué fue lo que escuchó?

9c. [Si indica que sí] ¿Qué le pareció lo más interesante de eso?

Tenemos unas pocas preguntas más acerca de usted. ¿Podría contestarlas por favor?
[Vaya a la última página y entregue el cuestionario al visitante]

Para ser completado por el o la visitante.

Su edad *(Indique con un círculo):*

19–29 30–39 40–49 50–59 60–69 70 años o más

¿Cuántos niños en su casa tienen … menos de 2 años de edad: _____

de 2 a 6 años de edad: _____

más de 6 años de edad: _____

Su género:

Femenino Masculino

Código postal: _____

¿Qué idioma(s) se habla(n) en su casa <u>con más frecuencia</u>?

_____

¿Cuál es su etnicidad?

Hispano/a	No hispano/a	No está seguro/a

¿Cuál es su raza?

Indio/a Americano/a o Nativo/a de Alask	Asiático/a	Isleño/a del Pacífic Nativo/a de Hawai	Negro/a	Blanco/a	Más de una raza	No está seguro/a

¿Cuál es el total anual de ingresos de las personas que viven en su casa?

- □ Menos de $15,000
- □ $15,000–$24,999
- □ $25,000–$34, 999
- □ $35,000–$49,999
- □ $50,000–$74,999
- □ $75,000–$99,999
- □ $100,000 o más
- □ Prefiero no decir

Gracias por su participación.

SEPA Fitness Exhibit
A Front End Evaluation Report

Prepared for

OMSI
OREGON MUSEUM OF SCIENCE AND INDUSTRY

by
OMSI Evaluation and Visitor Studies Division
Portland, Oregon
Contact: Scott Ewing

with the generous support of

NATIONAL INSTITUTES OF HEALTH

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SEPA Fitness Exhibit
Front-end Findings
Scott Ewing
January 31, 2007

Summary

This evaluation was conducted to assist with the development of a new traveling exhibit designed to help families make more informed decisions about fitness. Funded by a National Institutes of Health (NIH) Science Education Partnership Award (SEPA), this exhibition is the second component of a larger project undertaken by OMSI in collaboration with the Small Museum Research Collaborative (SMRC).

This evaluation was conducted at OMSI and the five SMRC partner sites; approximately 100 adults were interviewed. Latinos comprised nearly half of the interviewees and about 45 percent of the interviews were conducted in Spanish by fluent Spanish speakers. Differences throughout the survey will be identified and detailed in the results.

The survey focused primarily on visitors' understanding of clinical research and how research is used to develop nutritional and fitness recommendations. Visitors' general knowledge of the guidelines was probed as well. Since ample research exists on fitness, the focus of this survey was on clinical research.

Most visitors had heard of the recommended number of fruit and vegetable servings to eat in a day, though, generally, they did not have a clear understanding of who establishes the recommendations or how they arrive at them. Though non-Latinos were more likely to understand that the recommendations came from the United States government, both Latino and non-Latinos had difficulty describing how the government came up with them.

Clinical research was not well understood either. Most people understood that it was some form of study, research, or experiments, but had little idea of how "clinical research" differs from other kinds of research. Unfortunately, we were not able to get a proper translation of "clinical research" into Spanish at the time of this study, which makes comparisons to the non-Latino participants on certain questions impossible.

Generally, participants understood that recommendations change over time due to new understanding, research, or studies. However, it was also apparent that people are not very concerned with the changing trends. They were likely to pick recommendations based on personal beliefs and understanding rather than the most current scientific findings.

When asked to estimate amount of exercise children and adults should have in a day, generally Latino visitors underestimated while non-Latinos overestimated. Although exercising more than recommend is not necessarily bad, some of the overestimations seemed extreme enough to be unrealistic for the average person (for example, eight hours of aerobic activity a day).

These findings can be used to help guide the development of the fitness exhibition and programmatic elements, particularly to help improve visitors' understanding of clinical research and its impact on our understanding of fitness and nutrition.

Method

Interviewers spoke with 102 adults at both OMSI and the 5 partner sites. At 4 of the 5 partner sites, random adult visitors were selected for interview. At OMSI, Latino families were recruited to visit the museum to help with the interview and Las Cruces was asked to collect data from their Latino visitors only (who make up a large percentage of their visitor population). Table 1 details how many visitors were interviewed at each site as well as their ethnicity. This interview focused exclusively on adults, 90 percent of whom reported children in the household.

About 45 percent of the interviews were conducted in Spanish by fluent Spanish speakers. The majority of these interviews were conducted at OMSI and Las Cruces.

Table 1: Number of participants and ethnicity by site.

Site	Total	Latino	Not Latino	Not Sure	Total
Bootheel	15	0%	100%	0%	100%
KidZone	15	33%	66%	0%	100%
Las Cruces	22	100%	0%	0%	100%
OMSI	20	100%	0%	0%	100%
PDSC	15	7%	93%	0%	100%
ScienceWorks	15	0%	93%	7%	100%
Total	102	48	53	1	—

The interviewer led visitors through a series of questions designed primarily to understand their knowledge of the role of clinical research and the scientific process in developing fitness and nutrition guidelines and recommendations with a lesser focus on their knowledge of recommended levels of activity. Interviewers recorded visitor responses in longhand on the interview form. Interviews conducted in Spanish were recorded in Spanish and later translated. See Appendix A for copies of all interview forms.

Principle Findings

Visitor Characteristics

Eighty percent of those interviewed were female. Approximately 60 percent of the visitors were between the ages of thirty and fifty years old. However, the Latino visitors were younger on average than the non-Latino participants.

Over 50 percent of the Latino visitors were between nineteen and twenty-nine years of age. Eighty-seven percent of Latino visitors were between the ages of nineteen and forty while sixty-five percent of non-Latino visitors were thirty to fifty years old. Only one African American participated in the study.

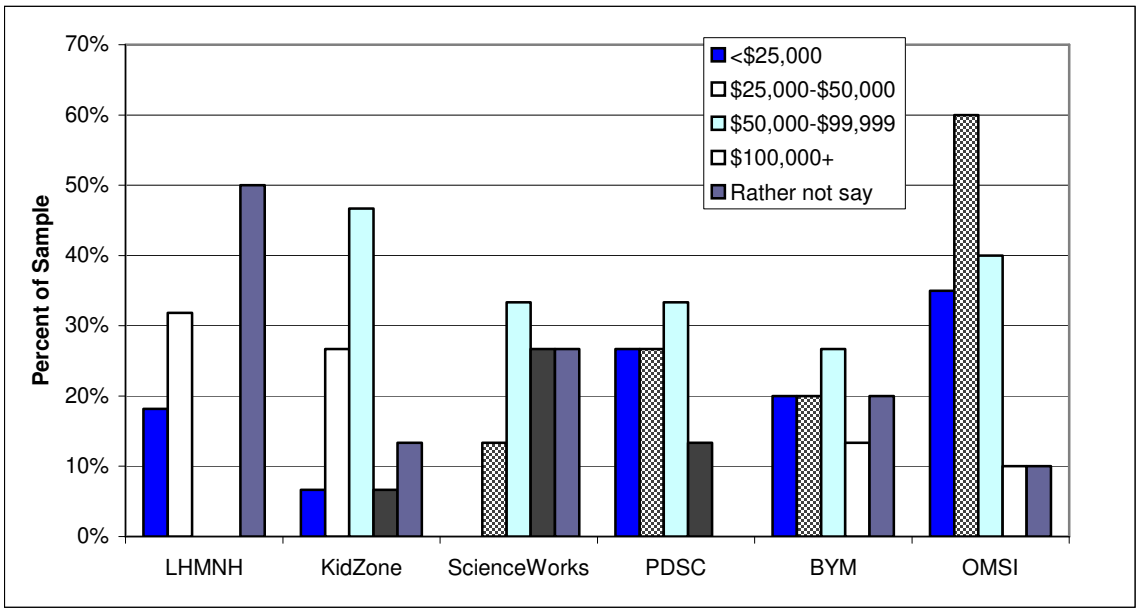
Table 2: Characteristics of participants.

		N	Percent	Not Latino	Latino
Gender	**Female**	**80**	**79%**	**74%**	**83%**
	Male	21	20%	26%	15%
Age	19–29 yrs.	31	30%	11%	**52%**
	30–39 yrs.	**40**	**39%**	**43%**	35%
	40–49 yrs.	17	17%	22%	10%
	50–59 yrs.	7	7%	13%	0%
	60–69 yrs.	5	5%	9%	0%
	70 yrs. or older	1	1%	2%	0%
Race	Asian	0	0%	0%	0%
	African-American	1	1%	2%	0%
	Native American	4	4%	4%	4%
	Pacific Islander	0	0%	0%	0%
	White	**73**	**72%**	**89%**	**59%**
	More than one	19	19%	2%	37%
	Not sure	4	4%	7%	0%
Ethnicity	Latino	48	47%	0%	100%
	Not Latino	**54**	**52%**	100%	0%
Language at home	**English**	**57**	**56%**	100%	6%
	Spanish	45	44%	0%	94%
Household income	< $15,000	10	10%	7%	13%
	$15–24,999	9	9%	6%	13%
	$25–34,999	18	**17%**	7%	**29%**
	$35–49,999	10	10%	9%	10%
	$50–74,999	16	16%	**26%**	4%
	75–99,999	7	7%	11%	2%
	$100,000 or more	9	9%	17%	0%
	Rather not say	23	22%	17%	**29%**

Fifty-six percent of the interviews were conducted in English and 44 percent in Spanish. A few of the Latino visitors preferred to be interviewed in English. As noted above, 6 percent of the Latino visitors also spoke English at home.

In Figure 1, household income profiles differed across both sites and ethnic groups. Around one quarter of the Latino visitors (primarily interviewed at OMSI and Las Cruces) reported family incomes of $25,000 or less, with nearly a third not reporting their income. More than one-half of the Latino visitors reported income of less than $35,000 for the household.

Figure 1: Interviewees' household incomes by site.



Awareness of nutritional recommendations—what are visitors' understanding of governmental recommendations and how they are determined?

Three questions were designed to probe visitors' knowledge of governmental recommendations, specifically a nutritional guideline that was thought to be fairly well recognized. In addition, it was assumed that providing visitors with a guideline would ensure they would have a consistent reference for follow-up questions.

- ***Here's an example of a dietary guideline: "Eat 5–9 servings of fruits and vegetables every day." Have you heard of this specific recommendation before?***

As expected, the vast majority of visitors had heard of this specific recommendation before. The differences between our two populations were small, though more Latino visitors had heard of the recommendation than non-Latino visitors (see Table 3).

Table 3: Nutritional recommendation awareness.

	Not Latino	Latino
Yes	**78%**	**85%**
No	20%	15%
Not sure	2%	0%

- ***Who figures out these kinds of recommendations?***

Here, the limit of our visitors' understanding about governmental recommendations comes to light. In particular, Latino visitors were less aware of how these kinds recommendations are determined than were the non-Latino visitors (Table 4[1]). Twenty-three percent of Latino visitors

[1] Responses judged to demonstrate "full understanding" mentioned the government or specific government agencies involved in setting guidelines and recommendations. Responses in the "partial understanding" category mentioned research or doctors but not the government.

demonstrated a full understanding of the source of recommendations compared to 52 percent of non-Latino visitors.

Table 4: Visitors' understanding of source of recommendations.

	Not Latino	Latino
Full understanding	**52%**	23%
Partial understanding	39%	**63%**
No understanding	4%	6%
Don't know	5%	6%
Not answered	0%	2%

Many visitors mentioned that doctors, scientists, nutritionists, and dieticians determined such guidelines. While this is accurate, it is incomplete since the government plays the primary role in determining the recommendations. This may or may not be important to the development of the exhibit depending on how important the role of the government is to the visitor experience. Most visitors generally understood that the recommendations were the result of research or the government.

Table 5 illustrates the visitors' perception of who determines the recommendations. Latino visitors were less likely to mention the government or specific government agencies than non-Latino visitors. Instead, Latino visitors were more likely to mention doctors, scientists, nutritionists, and dieticians with no reference to the government. Considering many Latino families are not originally from the United States, it seems reasonable to believe their understanding of the government's role would be less than that of visitors who were raised here.

Table 5: Specific sources of recommendations.

	Not Latino	Latino
Government	**61%**	**25%**
FDA	**30%**	**0%**
USDA	13%	19%
Doctors/scientists	**19%**	**40%**
Nutritionists/dieticians	19%	25%
Industry	9%	0%
WIC	0%	8%

- ***How do you think they came up with this recommendation?***

Most visitors, Latino and not, had only a partial understanding or less of how these types of recommendations are determined. Nineteen percent of Latino visitors and only 9 percent of non-Latino visitors gave answers indicating a full understanding. Table 6[2] compares visitors' level of understanding.

[2] Responses demonstrating "full understanding" included a reference to detailed scientific research specifically involving people. Responses that mentioned research in general (but not with people) were scored as "partial understanding." Responses that did not include any of these details or were too vague were judged to demonstrate "little/no understanding."

Table 6: Completeness of visitors' understanding of the process of determining recommendations.

	Not Latino	Latino
Full understanding	9%	19%
Partial understanding	**48%**	**56%**
Little/no understanding	39%	13%
Don't know	4%	12%

Most visitors' responses were vague or incomplete, indicating a lack of understanding of how such recommendations are determined. Below is a sample of answers falling into the three categories of understanding.

> *Based on medical expertise, asking doctors, studying populations. [#64—Full]*
>
> *Probably research, studies. [#58—Partial]*
>
> *Through the government.* [#56—Little understanding]

Although Latinos were more likely than non-Latinos to mention "research" or "studies," only about 15 percent of either group mentioned research or studies specifically involving people. Fifteen percent of non-Latino visitors responded that recommendations came from talking with doctors or nutritionists.

Table 7: Specific ideas related to determining recommendations.

	Not Latino	Latino
Studies or research	**40%**	**60%**
Studies or research with people	**13%**	**17%**
Government	4%	2%
Talking to doctors/nutritionists	**15%**	**2%**
Industry influence	4%	0%
Trial and error	4%	0%
Do what is healthy	9%	6%
Do what is natural	4%	2%
Other	9%	2%

There is a great deal of room for increasing visitors' understanding of where these recommendations come from that can be capitalized on in the exhibition and programs. Visitors generally seem to understand that the guidelines are based in research but can provide little additional detail. This point is particularly highlighted in the next section.

Understanding of Clinical Research—what do visitors know about clinical research and how it affects them?

One question was developed to address visitors' understanding of the concept of clinical testing. This key concept is not well understood by many people as seen below.

- ***What does the term "Clinical Research" mean to you?***

Clinical research refers to studies or research specifically involving humans in strictly controlled (or clinical) settings. The term "clinical research" is not commonly used in Spanish and at the time of the interview we were unable to get the proper translation. However, the obscurity of the term will be an issue in the exhibit as well and care should be taken to ensure that defining the term is properly addressed. In this study, Spanish-speaking visitors were asked about the more generic "investigación" or "research" so comparisons with non-Latino visitors aren't useful.

Only 6 percent of non-Latino visitors demonstrated a full understanding of clinical research (see Table 8[3]). Seventy percent demonstrated only a partial understanding of that concept. Some sample responses demonstrating various levels of understanding are presented below.

> *Research conducted in a clinic—theoretically it's controlled research—they have a group from the specific population they're looking at. [#67—Full]*
>
> *Research done in a lab. [#84—Partial]*
> *Hospitals and doctors—doing research studies. [#89—Partial]*
>
> *Pretty much taking all the children and surveying the information. [#48—Little]*

*Table 8: Completeness of visitors' understanding of clinical research. **

	Not Latino
Full understanding	6%
Partial understanding	**70%**
Little/no understanding	22%
Don't know	2%

** Since clinical research does not translate directly to Spanish, Latino responses are not analyzed here.*

Table 9 shows the various ideas mentioned by visitors. The most common response was that clinical research meant studies, research, or tests of some sort without specifically mentioning "people." Nearly 70 percent of non-Latino visitors used these terms and 20 percent of non-Latino visitors specifically mentioned "research involving people." About half of the non-Latino visitors (but only two Latino visitors) mentioned a "controlled setting" or "research in a laboratory." Since Latino visitors were asked a slightly different question, differences are not useful to interpret.

*Table 9: Specific ideas mentioned while describing clinical research. **

	Not Latino
Studies or research	**67%**
Studies or research with people	**20%**
Food or nutrition	6%
Controlled environment or lab setting	**52%**
Studies or research with animals	4%

** Spanish-speaking visitors were asked about "investigación" or "research."*

[3] Responses demonstrating "full understanding" made reference to research with people in a controlled manner. Responses that mentioned just one or two of those three criteria were scored as "partial understanding." Responses assigned to the "little/no understanding" category were either too vague or provided too little detail.

Understanding changing recommendations—do visitors understand why recommendations change and how do they interpret those changes?

Several questions address visitors' understanding of how recommendations change over time and how they decide what changes to observe.

- ***These recommendations seem to change every few years or so. Why do you think that is?***

Generally slightly more than one-half of these adults understood that governmental recommendations might change based on new or more current research. Non-Latinos were more likely give an answer that reflected little or no understanding of that concept and these adults typically cast the government in a negative light. *"Because the government doesn't know what they're doing. They waste a bunch of taxpayer's money…." [#97].*

About 20 percent of the responses were incomplete, usually attributing changes in recommendations to changes in people's habits or diets (see Table 10[4]).

Table 10: Accuracy of visitors' knowledge of changing recommendations.

	Not Latino	Latino
Full understanding	54%	63%
Partial understanding	24%	21%
Little/no understanding	20%	6%
Don't know	2%	10%

In order to determine the depth of visitors' understanding, they were next asked how they decide what recommendations to use. Due to an error in translation, Latino and non-Latino visitors were asked slightly different questions and are discussed separately.

- ***[ENGLISH] If a new study about healthy eating contradicts an older study, how do you decide which recommendation to follow?***

Even though more than half of the non-Latino visitors displayed a good, accurate understanding of why recommendations change (see Table 10), their decisions about which recommendations to follow are likely to be influenced by either their own situation or lifestyle (41 percent of respondents) or their personal knowledge (15 percent of respondents). Very few consider the source's validity or do further research on their own. Nearly one-quarter tend to follow the most recent recommendation that they hear about and an equal proportion simply ignore changing recommendations entirely, either because they would rather follow their own instincts (15 percent) or the recommendations are too restrictive (4 percent) or change too often (4 percent). While we wouldn't want people to blindly follow any recommendations that came their way, ideally they would make an informed decision based on further research or discussing the recommendations with a professional.

[4] Responses showing "full understanding" mentioned that new research and techniques lead to new understanding. Visitors who demonstrated only "partial understanding" typically attributed changes in recommendations to changes in people's habits or diets (e.g., people eat more fast food, so that has to be better regulated).

Table 11: Specific considerations for determining which recommendations to follow.

	Not Latino
Which ever is best for me/makes the most sense for me	**41%**
Newer study since it's based on newest research	20%
Don't follow—use my own knowledge	15%
Need to research on my own	9%
Don't decide—changes too often	4%
Don't follow—recommendations are prohibitive	4%
Older study	4%
The study from the most valid source	4%
Newer study	2%
Don't know	4%

- ***[SPANISH] If a new study about healthy eating contradicts an older study, does it mean the older study is wrong? Why do you say that?***

Table 12: Are newer studies more valid than older studies?

	Latino
No	**81%**
Yes	17%
Not sure	2%

Approximately 80 percent of the Latino visitors acknowledged that newer studies don't necessarily invalidate older studies. When asked to explain their answer, Latino visitors typically responded that newer studies simply have newer information or newer methods that may or may not be more accurate (see Table 13). Ten percent said there could still be some truth to the older studies and two percent were aware that new studies could have flaws. A full third of the visitors had no response to this follow-up question.

Table 13: Reasons for decision.

	Latino
Older studies aren't necessarily wrong…	**35%**
Newer study just has newer information	**35%**
There is some truth to the older studies	10%
Different studies suit different people	6%
New studies could have flaws	2%
New recommendations are just options	2%
New study proves the old is wrong	6%
Don't know/no answer	35%

Fitness and physical activity—Where do visitors go to get information about physical activity and how accurate is their understanding of recommended amounts of physical activity?

- ***Where do you go or whom do you talk to for reliable information about physical activity or exercise?***

As seen in Table 14, nearly 70 percent of the Latino visitors used their doctor or clinic as a source for reliable information. About 45 percent of non-Latino visitors use the doctor or clinic for their information with another 22 percent from magazines and another 20 percent from the gym or trainer or fitness professional. Interestingly, no Latino visitors reported relying on friends or family for information about fitness (compared with 15 percent of the non-Latino visitors). Only 2 percent of Latinos mentioned using magazines for information. Note that relatively few visitors mentioned using the Internet as a reliable source of fitness information.

Table 14: Sources mentioned for information about physical fitness.

	Not Latino	Latino
Doctor or clinic*	**44%**	**69%**
Magazines*	**22%**	**2%**
Gym or trainer	20%	13%
Books*	15%	6%
Friends, family*	**15%**	**0%**
Internet*	13%	13%
Nowhere in particular*	10%	11%
News or newspaper	11%	2%
Television*	7%	10%
Class*	6%	2%
Nutritionist	4%	6%
Library*	2%	0%
WIC*	0%	8%
Other*	4%	0%

** Categories also mentioned in the SEPA Front-End Report for the Nutrition Exhibit.*

- ***How much physical activity do you think an adult should get in a day? What kind of activity are you thinking of?***

In order to determine how accurate visitors' understanding was of fitness recommendations, they were asked to estimate how much physical activity adults and children should get in a day. In general, Latinos' estimations were lower than those of non-Latinos (see Table 15). Nearly half of Latinos estimated that adults should get 30 minutes of walking or less a day while only fourteen percent of non-Latinos estimated this level of activity was recommended. Twenty-nine percent of Latinos indicated that 30 minutes of aerobic or cardiovascular activity is recommended (versus 44 percent of non-Latino visitors).

Table 15: Recommend levels of adult activity.

	Not Latino	Latino
30 minutes (aerobic)*	**44%**	**29%**
Less than 30 minutes of any activity	4%	6%
30 minutes (unspecified activity)	6%	15%
30 minutes (walking)	4%	**25%**
60 minutes (unspecified)	4%	4%
60 minutes (walking)	9%	10%
60 minutes (aerobic)	**17%**	6%
2 or more hours (walking)	9%	0%
2 or more hours (aerobic)	0%	2%
Don't know	0%	2%

**Approximate recommended physical activity levels.*

- ***How much physical activity do you think a child should get in a day? What kind of activity are you thinking of?***

Table 16 shows visitors' estimations of activity levels recommended for children. Approximately 30 percent of both Latino and non-Latino visitors estimated correctly that 60 minutes of aerobic activity or active play is recommended. Overall, however, Latino visitors' estimates were lower than those of non-Latino visitors (and lower than what is recommended for children). For example, 30 percent of Latinos (but no non-Latinos) estimated that children should get 30 minutes a day or less of a non-aerobic (or unspecified) activity and an additional 25 percent believed that 30 minutes of aerobic activity would be adequate. On the other hand, non-Latinos tended to overestimate recommended activity levels—nearly 40 percent estimated children should engage in two or more hours of active play a day. Some even believed that eight or more hours of active play is recommended. As was the case when non-Latino adults were estimating for themselves, there is the potential that such unrealistic expectations could actually discourage adequate levels of child play.

Table 16: Recommended levels of child activity.

	Non-Latino	Latino
60 minutes (active play)*	**28%**	**29%**
Less than 30	0%	8%
30 minutes (unspecified)	0%	15%
30 minutes (walking)	0%	6%
30 minutes (aerobic/playing)	15%	**25%**
60 minutes (unspecified)	2%	0%
60 minutes (walking)	0%	0%
2 or more hours (unspecified)	11%	0%
2 or more hours (walking)	2%	2%
2 or more hours (aerobic/playing)	**37%**	10%
Don't know	2%	4%

**Approximate recommended physical activity levels.*

Discussion

A number of issues are highlighted in this study that staff might keep in mind as they are developing the exhibit and programs designed to improve families' understanding of physical activity as well as the concept of clinical research.

Differences between Latino and non-Latino visitors appeared throughout the study, though similarities exist as well.

Generally speaking our visitors:

- Recognized that recommendations change periodically due to new information
- Have little detailed understanding of how recommendations are determined
- Are not very influenced by recommendations

Most visitors were aware of the dietary recommendation mentioned but didn't necessarily understand who developed the recommendation. If it is important to know that the government (or a particular agency) is responsible for recommendations, then visitors (particularly Latino visitors) will need to have this emphasized.

More importantly, though, is visitors' understanding of <u>how</u> the recommendations are developed. Neither Latino nor non-Latino adults demonstrated a good understanding of the scientific process involved in determining such recommendations.

Perhaps because they had to give more thought to their answer than simply responding, "the government," Latino visitors gave more detailed descriptions of how recommendations are developed. However, the vast majority of all visitors have room to improve their understanding of that process.

Just as visitors do not understand what kind of research is involved in determining valid scientific recommendations, they generally seem to think that they can use their own common sense and experience to make good judgments about whether to follow specific recommendations. If visitors better understood how a proper research study was conducted and how reliable the information was, perhaps they would be more likely to follow the recommendations from it (rather than dismissing it because they don't think that it "makes sense" or applies to them).

Considering that people are also not very influenced by the source of recommendations nor likely to do much additional research, it will be important to give people the tools to make informed decisions regarding recommendations.

No visitor mentioned "clinical research" as one method used to determine recommendations. When directly asked about the nature of clinical research, visitors demonstrated only a partial understanding of that concept. The emphasis on research with <u>real people</u> needs to be made, as well as the strictly controlled environment in which such studies are conducted. There may be opportunities to have visitors conduct experiments themselves, either at the exhibit or at home. It may be possible to teach how systematic and detailed experiments are repeatable and reliable. Since the translated term for "clinical research" isn't widely known in Spanish, it will be doubly important to clearly and succinctly explain the process for those visitors.

Although not addressed, it would be interesting to see if people trust the government as a source for recommendations about fitness and nutrition and how the negative influence of industry advertising ("at the Hershey Clinic, our research on chocolate…") affects people's perception of clinical research.

When asked to identify their sources of information about physical fitness and activity, non-Latino visitors tended to mention a wider variety of information resources and were more likely to mention sources such as magazines, books, newspapers, and friends or family members. Visitor sources for information about physical activity and exercise differed from those mentioned by adults asked to identify sources for information about nutrition. Unlike the nutrition front-end study, the majority of Latino and non-Latino visitors more often mentioned their doctor or clinic as a source of information and less often, overall, included the Internet as a source of such information. It will be important to provide a variety of sources and offer tips for distinguishing between reliable and unreliable information.

When discussing physical activity for both adults and children, Latino estimates were generally lower than their non-Latino counterparts. About half of Latino estimates were also lower than the recommended levels. On the other hand, non-Latino visitors tended to overestimate the recommended levels of physical activity. Some of these unrealistically high expectations may contribute to people taking no action and getting inadequate exercise.

Regardless of what people reported in this interview, general trends in this country indicate that most people should be more physically active. This project offers us the opportunity to educate both non-Latinos and Latinos about proper amounts of physical activity and help them overcome that disconnect between what they know is appropriate and what they actually do. Both exhibits (nutrition and fitness) should give adults and children the opportunity to practice better decision-making.

Finally, exhibit developers should keep in mind that the visitors interviewed during this study were predominantly female and white and so may not be completely representative of the larger population.

Appendix A: Interview Forms

Here's an example of a dietary guideline: "Eat 5–9 servings of fruits and vegetables every day."

1. **Have you heard of this specific recommendation before?** Yes / No

2. ***Who*** **figures out these kinds of recommendations?**

3. ***How*** **do you think they** [or "people"] **came up with this recommendation?**

4. **What does the term "clinical research" mean to you?**

5. **These recommendations seem to change every few years or so. Why do you think that is?**

6. **If a new study about healthy eating contradicts an older study, how do you decide which recommendation to follow?**

7. **Where do you go or whom do you talk to for reliable information about physical activity or exercise?**

8a. How much physical activity do you think an <u>adult</u> should get in a day? _____ minutes
[If they ask what kind, "Any kind of activity."]
What kind of activity are you thinking about? [Running, walking, etc.]

8b. **How much physical activity should a <u>child</u> get in a day?** _____ minutes
[If they ask what kind, "Any kind of activity."]
What kind of activity are you thinking about? [Running, walking, playing, etc.]

9a. Have you heard of any recent studies or any new information about healthy eating and physical activity?
Yes / No

9b. [If Yes] **What did you hear?**

9c. [If Yes] **What did you find to be most interesting, if anything, about that?**

There are a few questions on this sheet about you. Could you answer these for me?
[Turn to last page and hand questionnaire to visitor]

To be completed by the visitor

Your age (*circle one*):

19–29 30–39 40–49 50–59 60–69 70+

How many children in your household are… ___younger than 2 years
___2 to 6 years old
___older than 6 years

Your gender:
Female Male

Zip code: _____

What language do you speak at home <u>most often</u>? _____

What is your ethnicity?

Latino	Not Latino	Not sure

What is your race?

American Indian or Alaskan Native	Asian	Pacific Islander or Native Hawaiian	Black	White	More than one race	Not sure

What is your household income?

□ Less than $15,000
□ $15,000–$24,999
□ $25,000–$34,999
□ $35,000–$49,999
□ $50,000–$74,999
□ $75,000–$99,999
□ $100,000 or more
□ I'd rather not say

Aquí está un ejemplo de una norma dietética: “Coma de 5 a 9 porciones de frutas y verduras cada día”.

1. **¿Ha escuchado esta recomendación específica antes?** Sí / No

2. **¿*Quién* establece estos tipos de recomendaciones?**

3. **¿Cómo piensa que ellos** [o “la gente”] **llegaron a esta recomendación?**

4. **¿Qué significa el término “Investigación” para usted?**

5. **Más o menos, parece que estas recomendaciones cambian cada cuantos años. ¿Por qué piensa que sucede ésto?**

6. **Si un nuevo estudio sobre la alimentación saludable contradice a un estudio anterior, ¿esto significa que el estudio anterior está equivocado?** Sí / No

¿Por qué dice esto?

7. **¿Adónde va o con quién habla para obtener información confiable acerca de la actividad física o el ejercicio?**

8a. ¿Cuánta actividad física piensa usted que una persona adulta debería realizar en un día?
_____ minutos

¿En qué tipo de actividad está pensando? [correr, caminar, etc.]

8b. ¿Cuánta actividad física debería realizar un niño o una niña en un día? _____ minutos

¿En qué tipo de actividad está pensando? [correr, caminar, jugar, etc.]

9a. ¿Ha escuchado acerca de algunos estudios recientes o alguna nueva información acerca del comer de manera saludable y la actividad física?
[indique con un círculo]
Sí / No

9b. [Si indica que sí] ¿Qué fue lo que escuchó?

9c. [Si indica que sí] ¿Qué le pareció lo más interesante de eso?

Tenemos unas pocas preguntas más acerca de usted. ¿Podría contestarlas por favor?
[Vaya a la última página y entregue el cuestionario al visitante]

Para ser completado por el o la visitante.

Su edad *(Indique con un círculo):*

19–29 30–39 40–49 50–59 60–69 70 años o más

¿Cuántos niños en su casa tienen … menos de 2 años de edad: _____

de 2 a 6 años de edad: _____

más de 6 años de edad: _____

Su género:

Femenino Masculino

Código postal: _____

¿Qué idioma(s) se habla(n) en su casa <u>con más frecuencia</u>?

_____

¿Cuál es su etnicidad?

Hispano/a	No hispano/a	No está seguro/a

¿Cuál es su raza?

Indio/a Americano/a o Nativo/a de Alask	Asiático/a	Isleño/a del Pacífic Nativo/a de Hawai	Negro/a	Blanco/a	Más de una raza	No está seguro/a

¿Cuál es el total anual de ingresos de las personas que viven en su casa?

- □ Menos de $15,000
- □ $15,000–$24,999
- □ $25,000–$34, 999
- □ $35,000–$49,999
- □ $50,000–$74,999
- □ $75,000–$99,999
- □ $100,000 o más
- □ Prefiero no decir

Gracias por su participación.

SEPA Fitness Exhibit
A Front End Evaluation Report

Prepared for

OMSI
OREGON MUSEUM OF SCIENCE AND INDUSTRY

by
OMSI Evaluation and Visitor Studies Division
Portland, Oregon
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NATIONAL INSTITUTES OF HEALTH

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SEPA Fitness Exhibit
Front-end Findings
Scott Ewing
January 31, 2007

Summary

This evaluation was conducted to assist with the development of a new traveling exhibit designed to help families make more informed decisions about fitness. Funded by a National Institutes of Health (NIH) Science Education Partnership Award (SEPA), this exhibition is the second component of a larger project undertaken by OMSI in collaboration with the Small Museum Research Collaborative (SMRC).

This evaluation was conducted at OMSI and the five SMRC partner sites; approximately 100 adults were interviewed. Latinos comprised nearly half of the interviewees and about 45 percent of the interviews were conducted in Spanish by fluent Spanish speakers. Differences throughout the survey will be identified and detailed in the results.

The survey focused primarily on visitors' understanding of clinical research and how research is used to develop nutritional and fitness recommendations. Visitors' general knowledge of the guidelines was probed as well. Since ample research exists on fitness, the focus of this survey was on clinical research.

Most visitors had heard of the recommended number of fruit and vegetable servings to eat in a day, though, generally, they did not have a clear understanding of who establishes the recommendations or how they arrive at them. Though non-Latinos were more likely to understand that the recommendations came from the United States government, both Latino and non-Latinos had difficulty describing how the government came up with them.

Clinical research was not well understood either. Most people understood that it was some form of study, research, or experiments, but had little idea of how "clinical research" differs from other kinds of research. Unfortunately, we were not able to get a proper translation of "clinical research" into Spanish at the time of this study, which makes comparisons to the non-Latino participants on certain questions impossible.

Generally, participants understood that recommendations change over time due to new understanding, research, or studies. However, it was also apparent that people are not very concerned with the changing trends. They were likely to pick recommendations based on personal beliefs and understanding rather than the most current scientific findings.

When asked to estimate amount of exercise children and adults should have in a day, generally Latino visitors underestimated while non-Latinos overestimated. Although exercising more than recommend is not necessarily bad, some of the overestimations seemed extreme enough to be unrealistic for the average person (for example, eight hours of aerobic activity a day).

These findings can be used to help guide the development of the fitness exhibition and programmatic elements, particularly to help improve visitors' understanding of clinical research and its impact on our understanding of fitness and nutrition.

Method

Interviewers spoke with 102 adults at both OMSI and the 5 partner sites. At 4 of the 5 partner sites, random adult visitors were selected for interview. At OMSI, Latino families were recruited to visit the museum to help with the interview and Las Cruces was asked to collect data from their Latino visitors only (who make up a large percentage of their visitor population). Table 1 details how many visitors were interviewed at each site as well as their ethnicity. This interview focused exclusively on adults, 90 percent of whom reported children in the household.

About 45 percent of the interviews were conducted in Spanish by fluent Spanish speakers. The majority of these interviews were conducted at OMSI and Las Cruces.

Table 1: Number of participants and ethnicity by site.

Site	Total	Latino	Not Latino	Not Sure	Total
Bootheel	15	0%	100%	0%	100%
KidZone	15	33%	66%	0%	100%
Las Cruces	22	100%	0%	0%	100%
OMSI	20	100%	0%	0%	100%
PDSC	15	7%	93%	0%	100%
ScienceWorks	15	0%	93%	7%	100%
Total	102	48	53	1	—

The interviewer led visitors through a series of questions designed primarily to understand their knowledge of the role of clinical research and the scientific process in developing fitness and nutrition guidelines and recommendations with a lesser focus on their knowledge of recommended levels of activity. Interviewers recorded visitor responses in longhand on the interview form. Interviews conducted in Spanish were recorded in Spanish and later translated. See Appendix A for copies of all interview forms.

Principle Findings

Visitor Characteristics

Eighty percent of those interviewed were female. Approximately 60 percent of the visitors were between the ages of thirty and fifty years old. However, the Latino visitors were younger on average than the non-Latino participants.

Over 50 percent of the Latino visitors were between nineteen and twenty-nine years of age. Eighty-seven percent of Latino visitors were between the ages of nineteen and forty while sixty-five percent of non-Latino visitors were thirty to fifty years old. Only one African American participated in the study.

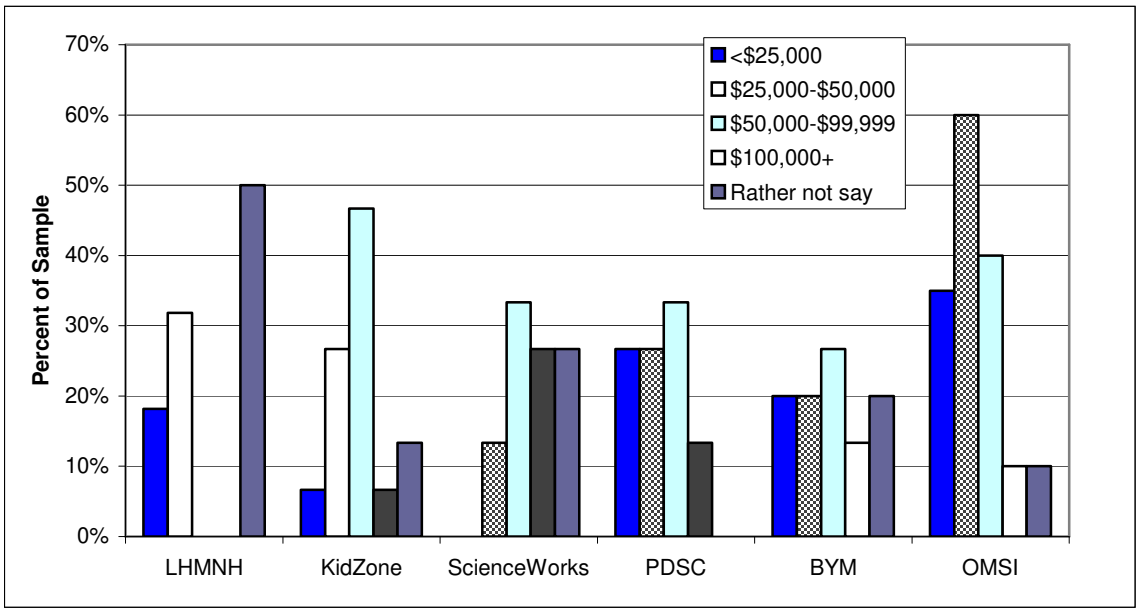
Table 2: Characteristics of participants.

		N	Percent	Not Latino	Latino
Gender	**Female**	**80**	**79%**	**74%**	**83%**
	Male	21	20%	26%	15%
Age	19–29 yrs.	31	30%	11%	**52%**
	30–39 yrs.	**40**	**39%**	**43%**	35%
	40–49 yrs.	17	17%	22%	10%
	50–59 yrs.	7	7%	13%	0%
	60–69 yrs.	5	5%	9%	0%
	70 yrs. or older	1	1%	2%	0%
Race	Asian	0	0%	0%	0%
	African-American	1	1%	2%	0%
	Native American	4	4%	4%	4%
	Pacific Islander	0	0%	0%	0%
	White	**73**	**72%**	**89%**	**59%**
	More than one	19	19%	2%	37%
	Not sure	4	4%	7%	0%
Ethnicity	Latino	48	47%	0%	100%
	Not Latino	**54**	**52%**	100%	0%
Language at home	**English**	**57**	**56%**	100%	6%
	Spanish	45	44%	0%	94%
Household income	< $15,000	10	10%	7%	13%
	$15–24,999	9	9%	6%	13%
	$25–34,999	18	**17%**	7%	**29%**
	$35–49,999	10	10%	9%	10%
	$50–74,999	16	16%	**26%**	4%
	75–99,999	7	7%	11%	2%
	$100,000 or more	9	9%	17%	0%
	Rather not say	23	22%	17%	**29%**

Fifty-six percent of the interviews were conducted in English and 44 percent in Spanish. A few of the Latino visitors preferred to be interviewed in English. As noted above, 6 percent of the Latino visitors also spoke English at home.

In Figure 1, household income profiles differed across both sites and ethnic groups. Around one quarter of the Latino visitors (primarily interviewed at OMSI and Las Cruces) reported family incomes of $25,000 or less, with nearly a third not reporting their income. More than one-half of the Latino visitors reported income of less than $35,000 for the household.

Figure 1: Interviewees' household incomes by site.



Awareness of nutritional recommendations—what are visitors' understanding of governmental recommendations and how they are determined?

Three questions were designed to probe visitors' knowledge of governmental recommendations, specifically a nutritional guideline that was thought to be fairly well recognized. In addition, it was assumed that providing visitors with a guideline would ensure they would have a consistent reference for follow-up questions.

- ***Here's an example of a dietary guideline: "Eat 5–9 servings of fruits and vegetables every day." Have you heard of this specific recommendation before?***

As expected, the vast majority of visitors had heard of this specific recommendation before. The differences between our two populations were small, though more Latino visitors had heard of the recommendation than non-Latino visitors (see Table 3).

Table 3: Nutritional recommendation awareness.

	Not Latino	Latino
Yes	**78%**	**85%**
No	20%	15%
Not sure	2%	0%

- ***Who figures out these kinds of recommendations?***

Here, the limit of our visitors' understanding about governmental recommendations comes to light. In particular, Latino visitors were less aware of how these kinds recommendations are determined than were the non-Latino visitors (Table 4[1]). Twenty-three percent of Latino visitors

[1] Responses judged to demonstrate "full understanding" mentioned the government or specific government agencies involved in setting guidelines and recommendations. Responses in the "partial understanding" category mentioned research or doctors but not the government.

demonstrated a full understanding of the source of recommendations compared to 52 percent of non-Latino visitors.

Table 4: Visitors' understanding of source of recommendations.

	Not Latino	Latino
Full understanding	**52%**	23%
Partial understanding	39%	**63%**
No understanding	4%	6%
Don't know	5%	6%
Not answered	0%	2%

Many visitors mentioned that doctors, scientists, nutritionists, and dieticians determined such guidelines. While this is accurate, it is incomplete since the government plays the primary role in determining the recommendations. This may or may not be important to the development of the exhibit depending on how important the role of the government is to the visitor experience. Most visitors generally understood that the recommendations were the result of research or the government.

Table 5 illustrates the visitors' perception of who determines the recommendations. Latino visitors were less likely to mention the government or specific government agencies than non-Latino visitors. Instead, Latino visitors were more likely to mention doctors, scientists, nutritionists, and dieticians with no reference to the government. Considering many Latino families are not originally from the United States, it seems reasonable to believe their understanding of the government's role would be less than that of visitors who were raised here.

Table 5: Specific sources of recommendations.

	Not Latino	Latino
Government	**61%**	**25%**
FDA	**30%**	**0%**
USDA	13%	19%
Doctors/scientists	**19%**	**40%**
Nutritionists/dieticians	19%	25%
Industry	9%	0%
WIC	0%	8%

- ***How do you think they came up with this recommendation?***

Most visitors, Latino and not, had only a partial understanding or less of how these types of recommendations are determined. Nineteen percent of Latino visitors and only 9 percent of non-Latino visitors gave answers indicating a full understanding. Table 6[2] compares visitors' level of understanding.

[2] Responses demonstrating "full understanding" included a reference to detailed scientific research specifically involving people. Responses that mentioned research in general (but not with people) were scored as "partial understanding." Responses that did not include any of these details or were too vague were judged to demonstrate "little/no understanding."

Table 6: Completeness of visitors' understanding of the process of determining recommendations.

	Not Latino	Latino
Full understanding	9%	19%
Partial understanding	**48%**	**56%**
Little/no understanding	39%	13%
Don't know	4%	12%

Most visitors' responses were vague or incomplete, indicating a lack of understanding of how such recommendations are determined. Below is a sample of answers falling into the three categories of understanding.

> *Based on medical expertise, asking doctors, studying populations. [#64—Full]*
>
> *Probably research, studies. [#58—Partial]*
>
> *Through the government.* [#56—Little understanding]

Although Latinos were more likely than non-Latinos to mention "research" or "studies," only about 15 percent of either group mentioned research or studies specifically involving people. Fifteen percent of non-Latino visitors responded that recommendations came from talking with doctors or nutritionists.

Table 7: Specific ideas related to determining recommendations.

	Not Latino	Latino
Studies or research	**40%**	**60%**
Studies or research with people	**13%**	**17%**
Government	4%	2%
Talking to doctors/nutritionists	**15%**	**2%**
Industry influence	4%	0%
Trial and error	4%	0%
Do what is healthy	9%	6%
Do what is natural	4%	2%
Other	9%	2%

There is a great deal of room for increasing visitors' understanding of where these recommendations come from that can be capitalized on in the exhibition and programs. Visitors generally seem to understand that the guidelines are based in research but can provide little additional detail. This point is particularly highlighted in the next section.

Understanding of Clinical Research—what do visitors know about clinical research and how it affects them?

One question was developed to address visitors' understanding of the concept of clinical testing. This key concept is not well understood by many people as seen below.

- ***What does the term "Clinical Research" mean to you?***

Clinical research refers to studies or research specifically involving humans in strictly controlled (or clinical) settings. The term "clinical research" is not commonly used in Spanish and at the time of the interview we were unable to get the proper translation. However, the obscurity of the term will be an issue in the exhibit as well and care should be taken to ensure that defining the term is properly addressed. In this study, Spanish-speaking visitors were asked about the more generic "investigación" or "research" so comparisons with non-Latino visitors aren't useful.

Only 6 percent of non-Latino visitors demonstrated a full understanding of clinical research (see Table 8[3]). Seventy percent demonstrated only a partial understanding of that concept. Some sample responses demonstrating various levels of understanding are presented below.

> *Research conducted in a clinic—theoretically it's controlled research—they have a group from the specific population they're looking at. [#67—Full]*
>
> *Research done in a lab. [#84—Partial]*
> *Hospitals and doctors—doing research studies. [#89—Partial]*
>
> *Pretty much taking all the children and surveying the information. [#48—Little]*

*Table 8: Completeness of visitors' understanding of clinical research. **

	Not Latino
Full understanding	6%
Partial understanding	**70%**
Little/no understanding	22%
Don't know	2%

** Since clinical research does not translate directly to Spanish, Latino responses are not analyzed here.*

Table 9 shows the various ideas mentioned by visitors. The most common response was that clinical research meant studies, research, or tests of some sort without specifically mentioning "people." Nearly 70 percent of non-Latino visitors used these terms and 20 percent of non-Latino visitors specifically mentioned "research involving people." About half of the non-Latino visitors (but only two Latino visitors) mentioned a "controlled setting" or "research in a laboratory." Since Latino visitors were asked a slightly different question, differences are not useful to interpret.

*Table 9: Specific ideas mentioned while describing clinical research. **

	Not Latino
Studies or research	**67%**
Studies or research with people	**20%**
Food or nutrition	6%
Controlled environment or lab setting	**52%**
Studies or research with animals	4%

** Spanish-speaking visitors were asked about "investigación" or "research."*

[3] Responses demonstrating "full understanding" made reference to research with people in a controlled manner. Responses that mentioned just one or two of those three criteria were scored as "partial understanding." Responses assigned to the "little/no understanding" category were either too vague or provided too little detail.

Understanding changing recommendations—do visitors understand why recommendations change and how do they interpret those changes?

Several questions address visitors' understanding of how recommendations change over time and how they decide what changes to observe.

- ***These recommendations seem to change every few years or so. Why do you think that is?***

Generally slightly more than one-half of these adults understood that governmental recommendations might change based on new or more current research. Non-Latinos were more likely give an answer that reflected little or no understanding of that concept and these adults typically cast the government in a negative light. *"Because the government doesn't know what they're doing. They waste a bunch of taxpayer's money…." [#97].*

About 20 percent of the responses were incomplete, usually attributing changes in recommendations to changes in people's habits or diets (see Table 10[4]).

Table 10: Accuracy of visitors' knowledge of changing recommendations.

	Not Latino	Latino
Full understanding	54%	63%
Partial understanding	24%	21%
Little/no understanding	20%	6%
Don't know	2%	10%

In order to determine the depth of visitors' understanding, they were next asked how they decide what recommendations to use. Due to an error in translation, Latino and non-Latino visitors were asked slightly different questions and are discussed separately.

- ***[ENGLISH] If a new study about healthy eating contradicts an older study, how do you decide which recommendation to follow?***

Even though more than half of the non-Latino visitors displayed a good, accurate understanding of why recommendations change (see Table 10), their decisions about which recommendations to follow are likely to be influenced by either their own situation or lifestyle (41 percent of respondents) or their personal knowledge (15 percent of respondents). Very few consider the source's validity or do further research on their own. Nearly one-quarter tend to follow the most recent recommendation that they hear about and an equal proportion simply ignore changing recommendations entirely, either because they would rather follow their own instincts (15 percent) or the recommendations are too restrictive (4 percent) or change too often (4 percent). While we wouldn't want people to blindly follow any recommendations that came their way, ideally they would make an informed decision based on further research or discussing the recommendations with a professional.

[4] Responses showing "full understanding" mentioned that new research and techniques lead to new understanding. Visitors who demonstrated only "partial understanding" typically attributed changes in recommendations to changes in people's habits or diets (e.g., people eat more fast food, so that has to be better regulated).

Table 11: Specific considerations for determining which recommendations to follow.

	Not Latino
Which ever is best for me/makes the most sense for me	**41%**
Newer study since it's based on newest research	20%
Don't follow—use my own knowledge	15%
Need to research on my own	9%
Don't decide—changes too often	4%
Don't follow—recommendations are prohibitive	4%
Older study	4%
The study from the most valid source	4%
Newer study	2%
Don't know	4%

- ***[SPANISH] If a new study about healthy eating contradicts an older study, does it mean the older study is wrong? Why do you say that?***

Table 12: Are newer studies more valid than older studies?

	Latino
No	**81%**
Yes	17%
Not sure	2%

Approximately 80 percent of the Latino visitors acknowledged that newer studies don't necessarily invalidate older studies. When asked to explain their answer, Latino visitors typically responded that newer studies simply have newer information or newer methods that may or may not be more accurate (see Table 13). Ten percent said there could still be some truth to the older studies and two percent were aware that new studies could have flaws. A full third of the visitors had no response to this follow-up question.

Table 13: Reasons for decision.

	Latino
Older studies aren't necessarily wrong…	**35%**
Newer study just has newer information	**35%**
There is some truth to the older studies	10%
Different studies suit different people	6%
New studies could have flaws	2%
New recommendations are just options	2%
New study proves the old is wrong	6%
Don't know/no answer	35%

Fitness and physical activity—Where do visitors go to get information about physical activity and how accurate is their understanding of recommended amounts of physical activity?

- ***Where do you go or whom do you talk to for reliable information about physical activity or exercise?***

As seen in Table 14, nearly 70 percent of the Latino visitors used their doctor or clinic as a source for reliable information. About 45 percent of non-Latino visitors use the doctor or clinic for their information with another 22 percent from magazines and another 20 percent from the gym or trainer or fitness professional. Interestingly, no Latino visitors reported relying on friends or family for information about fitness (compared with 15 percent of the non-Latino visitors). Only 2 percent of Latinos mentioned using magazines for information. Note that relatively few visitors mentioned using the Internet as a reliable source of fitness information.

Table 14: Sources mentioned for information about physical fitness.

	Not Latino	Latino
Doctor or clinic*	**44%**	**69%**
Magazines*	**22%**	**2%**
Gym or trainer	20%	13%
Books*	15%	6%
Friends, family*	**15%**	**0%**
Internet*	13%	13%
Nowhere in particular*	10%	11%
News or newspaper	11%	2%
Television*	7%	10%
Class*	6%	2%
Nutritionist	4%	6%
Library*	2%	0%
WIC*	0%	8%
Other*	4%	0%

** Categories also mentioned in the SEPA Front-End Report for the Nutrition Exhibit.*

- ***How much physical activity do you think an adult should get in a day? What kind of activity are you thinking of?***

In order to determine how accurate visitors' understanding was of fitness recommendations, they were asked to estimate how much physical activity adults and children should get in a day. In general, Latinos' estimations were lower than those of non-Latinos (see Table 15). Nearly half of Latinos estimated that adults should get 30 minutes of walking or less a day while only fourteen percent of non-Latinos estimated this level of activity was recommended. Twenty-nine percent of Latinos indicated that 30 minutes of aerobic or cardiovascular activity is recommended (versus 44 percent of non-Latino visitors).

Table 15: Recommend levels of adult activity.

	Not Latino	Latino
30 minutes (aerobic)*	**44%**	**29%**
Less than 30 minutes of any activity	4%	6%
30 minutes (unspecified activity)	6%	15%
30 minutes (walking)	4%	**25%**
60 minutes (unspecified)	4%	4%
60 minutes (walking)	9%	10%
60 minutes (aerobic)	**17%**	6%
2 or more hours (walking)	9%	0%
2 or more hours (aerobic)	0%	2%
Don't know	0%	2%

**Approximate recommended physical activity levels.*

- ***How much physical activity do you think a child should get in a day? What kind of activity are you thinking of?***

Table 16 shows visitors' estimations of activity levels recommended for children. Approximately 30 percent of both Latino and non-Latino visitors estimated correctly that 60 minutes of aerobic activity or active play is recommended. Overall, however, Latino visitors' estimates were lower than those of non-Latino visitors (and lower than what is recommended for children). For example, 30 percent of Latinos (but no non-Latinos) estimated that children should get 30 minutes a day or less of a non-aerobic (or unspecified) activity and an additional 25 percent believed that 30 minutes of aerobic activity would be adequate. On the other hand, non-Latinos tended to overestimate recommended activity levels—nearly 40 percent estimated children should engage in two or more hours of active play a day. Some even believed that eight or more hours of active play is recommended. As was the case when non-Latino adults were estimating for themselves, there is the potential that such unrealistic expectations could actually discourage adequate levels of child play.

Table 16: Recommended levels of child activity.

	Non-Latino	Latino
60 minutes (active play)*	**28%**	**29%**
Less than 30	0%	8%
30 minutes (unspecified)	0%	15%
30 minutes (walking)	0%	6%
30 minutes (aerobic/playing)	15%	**25%**
60 minutes (unspecified)	2%	0%
60 minutes (walking)	0%	0%
2 or more hours (unspecified)	11%	0%
2 or more hours (walking)	2%	2%
2 or more hours (aerobic/playing)	**37%**	10%
Don't know	2%	4%

**Approximate recommended physical activity levels.*

Discussion

A number of issues are highlighted in this study that staff might keep in mind as they are developing the exhibit and programs designed to improve families' understanding of physical activity as well as the concept of clinical research.

Differences between Latino and non-Latino visitors appeared throughout the study, though similarities exist as well.

Generally speaking our visitors:

- Recognized that recommendations change periodically due to new information
- Have little detailed understanding of how recommendations are determined
- Are not very influenced by recommendations

Most visitors were aware of the dietary recommendation mentioned but didn't necessarily understand who developed the recommendation. If it is important to know that the government (or a particular agency) is responsible for recommendations, then visitors (particularly Latino visitors) will need to have this emphasized.

More importantly, though, is visitors' understanding of <u>how</u> the recommendations are developed. Neither Latino nor non-Latino adults demonstrated a good understanding of the scientific process involved in determining such recommendations.

Perhaps because they had to give more thought to their answer than simply responding, "the government," Latino visitors gave more detailed descriptions of how recommendations are developed. However, the vast majority of all visitors have room to improve their understanding of that process.

Just as visitors do not understand what kind of research is involved in determining valid scientific recommendations, they generally seem to think that they can use their own common sense and experience to make good judgments about whether to follow specific recommendations. If visitors better understood how a proper research study was conducted and how reliable the information was, perhaps they would be more likely to follow the recommendations from it (rather than dismissing it because they don't think that it "makes sense" or applies to them).

Considering that people are also not very influenced by the source of recommendations nor likely to do much additional research, it will be important to give people the tools to make informed decisions regarding recommendations.

No visitor mentioned "clinical research" as one method used to determine recommendations. When directly asked about the nature of clinical research, visitors demonstrated only a partial understanding of that concept. The emphasis on research with <u>real people</u> needs to be made, as well as the strictly controlled environment in which such studies are conducted. There may be opportunities to have visitors conduct experiments themselves, either at the exhibit or at home. It may be possible to teach how systematic and detailed experiments are repeatable and reliable. Since the translated term for "clinical research" isn't widely known in Spanish, it will be doubly important to clearly and succinctly explain the process for those visitors.

Although not addressed, it would be interesting to see if people trust the government as a source for recommendations about fitness and nutrition and how the negative influence of industry advertising ("at the Hershey Clinic, our research on chocolate…") affects people's perception of clinical research.

When asked to identify their sources of information about physical fitness and activity, non-Latino visitors tended to mention a wider variety of information resources and were more likely to mention sources such as magazines, books, newspapers, and friends or family members. Visitor sources for information about physical activity and exercise differed from those mentioned by adults asked to identify sources for information about nutrition. Unlike the nutrition front-end study, the majority of Latino and non-Latino visitors more often mentioned their doctor or clinic as a source of information and less often, overall, included the Internet as a source of such information. It will be important to provide a variety of sources and offer tips for distinguishing between reliable and unreliable information.

When discussing physical activity for both adults and children, Latino estimates were generally lower than their non-Latino counterparts. About half of Latino estimates were also lower than the recommended levels. On the other hand, non-Latino visitors tended to overestimate the recommended levels of physical activity. Some of these unrealistically high expectations may contribute to people taking no action and getting inadequate exercise.

Regardless of what people reported in this interview, general trends in this country indicate that most people should be more physically active. This project offers us the opportunity to educate both non-Latinos and Latinos about proper amounts of physical activity and help them overcome that disconnect between what they know is appropriate and what they actually do. Both exhibits (nutrition and fitness) should give adults and children the opportunity to practice better decision-making.

Finally, exhibit developers should keep in mind that the visitors interviewed during this study were predominantly female and white and so may not be completely representative of the larger population.

Appendix A: Interview Forms

Here's an example of a dietary guideline: "Eat 5–9 servings of fruits and vegetables every day."

1. **Have you heard of this specific recommendation before?** Yes / No

2. ***Who*** **figures out these kinds of recommendations?**

3. ***How*** **do you think they** [or "people"] **came up with this recommendation?**

4. **What does the term "clinical research" mean to you?**

5. **These recommendations seem to change every few years or so. Why do you think that is?**

6. **If a new study about healthy eating contradicts an older study, how do you decide which recommendation to follow?**

7. **Where do you go or whom do you talk to for reliable information about physical activity or exercise?**

8a. How much physical activity do you think an <u>adult</u> should get in a day? _____ minutes
[If they ask what kind, "Any kind of activity."]
What kind of activity are you thinking about? [Running, walking, etc.]

8b. **How much physical activity should a <u>child</u> get in a day?** _____ minutes
[If they ask what kind, "Any kind of activity."]
What kind of activity are you thinking about? [Running, walking, playing, etc.]

9a. Have you heard of any recent studies or any new information about healthy eating and physical activity?
Yes / No

9b. [If Yes] **What did you hear?**

9c. [If Yes] **What did you find to be most interesting, if anything, about that?**

There are a few questions on this sheet about you. Could you answer these for me?
[Turn to last page and hand questionnaire to visitor]

To be completed by the visitor

Your age (*circle one*):

19–29 30–39 40–49 50–59 60–69 70+

How many children in your household are… ___younger than 2 years
___2 to 6 years old
___older than 6 years

Your gender:
Female Male

Zip code: _____

What language do you speak at home <u>most often</u>? _____

What is your ethnicity?

Latino	Not Latino	Not sure

What is your race?

American Indian or Alaskan Native	Asian	Pacific Islander or Native Hawaiian	Black	White	More than one race	Not sure

What is your household income?

□ Less than $15,000
□ $15,000–$24,999
□ $25,000–$34,999
□ $35,000–$49,999
□ $50,000–$74,999
□ $75,000–$99,999
□ $100,000 or more
□ I'd rather not say

Aquí está un ejemplo de una norma dietética: “Coma de 5 a 9 porciones de frutas y verduras cada día”.

1. **¿Ha escuchado esta recomendación específica antes?** Sí / No

2. **¿*Quién* establece estos tipos de recomendaciones?**

3. **¿Cómo piensa que ellos** [o “la gente”] **llegaron a esta recomendación?**

4. **¿Qué significa el término “Investigación” para usted?**

5. **Más o menos, parece que estas recomendaciones cambian cada cuantos años. ¿Por qué piensa que sucede ésto?**

6. **Si un nuevo estudio sobre la alimentación saludable contradice a un estudio anterior, ¿esto significa que el estudio anterior está equivocado?** Sí / No

¿Por qué dice esto?

7. **¿Adónde va o con quién habla para obtener información confiable acerca de la actividad física o el ejercicio?**

8a. ¿Cuánta actividad física piensa usted que una persona adulta debería realizar en un día?
_____ minutos

¿En qué tipo de actividad está pensando? [correr, caminar, etc.]

8b. ¿Cuánta actividad física debería realizar un niño o una niña en un día? _____ minutos

¿En qué tipo de actividad está pensando? [correr, caminar, jugar, etc.]

9a. ¿Ha escuchado acerca de algunos estudios recientes o alguna nueva información acerca del comer de manera saludable y la actividad física?
[indique con un círculo]
Sí / No

9b. [Si indica que sí] ¿Qué fue lo que escuchó?

9c. [Si indica que sí] ¿Qué le pareció lo más interesante de eso?

Tenemos unas pocas preguntas más acerca de usted. ¿Podría contestarlas por favor?
[Vaya a la última página y entregue el cuestionario al visitante]

Para ser completado por el o la visitante.

Su edad *(Indique con un círculo):*

19–29 30–39 40–49 50–59 60–69 70 años o más

¿Cuántos niños en su casa tienen … menos de 2 años de edad: _____

de 2 a 6 años de edad: _____

más de 6 años de edad: _____

Su género:

Femenino Masculino

Código postal: _____

¿Qué idioma(s) se habla(n) en su casa <u>con más frecuencia</u>?

_____

¿Cuál es su etnicidad?

Hispano/a	No hispano/a	No está seguro/a

¿Cuál es su raza?

Indio/a Americano/a o Nativo/a de Alask	Asiático/a	Isleño/a del Pacífic Nativo/a de Hawai	Negro/a	Blanco/a	Más de una raza	No está seguro/a

¿Cuál es el total anual de ingresos de las personas que viven en su casa?

- □ Menos de $15,000
- □ $15,000–$24,999
- □ $25,000–$34, 999
- □ $35,000–$49,999
- □ $50,000–$74,999
- □ $75,000–$99,999
- □ $100,000 o más
- □ Prefiero no decir

Gracias por su participación.