

DEVELOPMENT OF A SURVEY TO ASSESS THE EFFECTS OF THE NEW WIC  
FOOD PACKAGE ON PARTICIPANT DIETARY AND CHILD FEEDING HABITS

A Thesis

by

KELLY JEANETTE VAUGHAN

Submitted to the Office of Graduate Studies of  
Texas A&M University  
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

May 2010

Major Subject: Nutrition

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## ABSTRACT

Development of a Survey to Assess the Effects of the New WIC Food Package on  
Participant Dietary and Child Feeding Habits. (May 2010)

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The Special Supplemental Nutrition Program for Women, Infants, and Children (The WIC Program), began in 1974, and has not seen any major changes to its food packages since then. In 2009, the WIC Program began implementing changes that mandated the inclusion of whole grains, fruits and vegetables, and low-fat dairy, among other changes. These changes aim to better align the food package benefits of the WIC Program with the Dietary Guidelines for Americans, 2005, and the American Academy of Pediatrics Child Feeding Recommendations.

The objective of this research was to develop a culturally appropriate original questionnaire for The Texas WIC Program, which aimed to assess the dietary/feeding behaviors of Texas WIC participants both before and after the new WIC food package was implemented. The present study aims to present the methodology of how said survey was developed including pilot study and literature review.

A mixed methods, biphasic approach was used to draft, edit and finalize the survey. The first phase consisted of item development, which involved literature review, and expert panel (n= 14) review to refine the instrument prior to piloting. Phase 2 of this

research included recruitment of participants, a timed classroom administration of the survey, data collection, analysis and substantive reasoning based on the results of items to be included in the final survey. Quantitative data from survey piloting at two WIC local agency offices was used. Participants (n=54) completed two survey versions during piloting.

The final questionnaire included measures of behaviors, attitudes and self-efficacy. Results from piloting showed that the “bubble” survey format had fewer errors and was more easily understood by participants. Incorporating relevant and recent scientific literature as related to survey design within a diverse population with social behavioral theory and mixed methods study design yielded a psychometrically sound instrument that has been used on a large scale and provided relevant data.

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## NOMENCLATURE

AAFP	American Academy of Family Physicians
AAP	American Academy of Pediatrics
ACS	American Cancer Society
BRFSS	Behavioral Risk Factor Surveillance System
DGA	Dietary Guidelines for Americans
FNS	Food and Nutrition Services
IOM	Institute of Medicine
LA	Local Agency
TDSHS	Texas Department of State Health Services
TEXFAN	Texas Food and Nutrition Questionnaire
USDA	United States Department of Agriculture
WIC	The Special Supplemental Nutrition Program for Women, Infants, and Children

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## CHAPTER I

### INTRODUCTION

#### Background

The Special Supplemental Nutrition Program for Women, Infants, and Children, more commonly referred to as the WIC Program, has helped low-income families for over thirty years by providing nutritional counseling, supplemental foods and various other social services (1). The WIC Program was established in 1974 by the United States Department of Agriculture in an effort to provide key nutrients deemed important for expectant mothers and their children: protein, Calcium, Iron, Vitamins A, C, and D, and thiamin (2). Each month WIC participants receive vouchers from one of seven food packages, based on each participant's needs and current WIC participant status. Every year, WIC Program participation increases and it is estimated that a little over half of infants born in the United States receive WIC benefits (3).

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This thesis follows the style of the *Journal of the American Dietetic Association*.

Until recently, there have been no major changes to the WIC Program Food packages. Since its inception as a permanent program in 1974, the WIC program has seen vast changes in its demographic and cultural composition while the caloric intake has shifted from too little to too many consumed (4). In addition, the incidence of Type 2 diabetes and obesity are increasing in the United States. In light of this, the United States Department of Agriculture (USDA) Food and Nutrition Service (FNS) charged the Institute of Medicine (IOM) with the task of recommending changes to their food package prescriptions that would align them with current evidence based research.

#### Rationale for the Research

In 2006, the Institute of Medicine published “WIC Food Packages: time for a change” in which they outline their recommendations for the WIC Program food packages. These recommendations were aimed at aligning the WIC food packages with the 2005 Dietary Guidelines for Americans (DGA’s), and to encourage breastfeeding as recommended by the American Academy of Pediatrics (AAP) and American Academy of Family Physicians (AAFP) (5-9).

The USDA-FNS passed a rule in 2007, requiring individual state and territory WIC agencies to implement changes to WIC food package prescriptions by October 1, 2009 (10). Major compositional changes to the food packages included the addition of whole grains, fruits and vegetables, lower fat milk choices for children over two years old and adults, baby food fruits and vegetables, and a reduction in the amount of fruit juice (6).

This change was also aimed at providing WIC participants with a greater variety of foods and WIC State agencies with the autonomy to prescribe food packages for participants with cultural food preferences unique to their regions. In order to serve the greatest number of eligible applicants, the revised food packages were designed to be cost-neutral, that is to cost no more than the packages they replaced. See Table 1. The WIC food package revisions were designed to bring about positive changes in participants' behaviors and outcomes, while minimizing burden on grocers and vendors.

There are seven food packages that include different types and quantities of food. These packages are categorized depending on participant characteristics and the nutritional needs of the participant as follows: I) Infants through 3 months, II) Infants 4-11 months, III) Children or women with special dietary needs, IV) Children ages 1-4, V) Pregnant and breastfeeding women (basic), VI) Non-breastfeeding postpartum women, VII) Breastfeeding women up to one year postpartum.

**Table 1.** WIC Food Packages at a Glance

WIC food packages, before and after the 2007 revisions

Food	Food package and participant group						
	I	II	III	IV	V	VI	VII
<i>Prior to 2007 revisions</i>							
	Infants 0-3 months	Infants 4-11 months	Children/ women with special dietary needs	Children 1-4 years	Pregnant and breastfeeding women (basic)	Nonbreast- feeding postpartum women	Breastfeeding women (enhanced)
Infant formula	X	X	X				
Juice		X	X	X	X	X	X
Infant cereal		X					
Cereal			X	X	X	X	X
Milk				X	X	X	X
Eggs				X	X	X	X
Cheese							X
Dried beans/peas and/or peanut butter				X	X		X
Tuna (canned)							X
Carrots							X
<i>After 2007 revisions</i>							
	Infants 0-5 months <sup>1</sup>	Infants 6-11 months <sup>1</sup>	Infants/ children/ women with special dietary needs <sup>2</sup>	Children 1-4 years	Pregnant/ partially breastfeeding women	Postpartum women	Fully breastfeeding women
Infant formula	X	X	X				
Infant cereal		X					
Baby food (fruits/vegetables)		X	X				
Baby food (meat) <sup>3</sup>		X					
Juice			X	X	X	X	X
Cereal			X	X	X	X	X
Milk			X	X	X	X	X
Eggs			X	X	X	X	X
Cheese			X				X
Fruits/vegetables			X	X	X	X	X
Whole-wheat bread and other whole grains			X	X	X	X	X
Legumes and/or peanut butter			X	X	X	X	X
Fish (canned)			X				X

<sup>1</sup> The amount of formula, and the types and quantities of other foods in food package II, varies according to infant feeding option (fully formula feeding, partially breastfeeding, or fully breastfeeding).

<sup>2</sup> Participants receiving food package III receive the same types and amounts of food they would be entitled to in their respective categories with the addition of WIC formula, which also includes exempt infant formula and WIC-eligible medical foods.

<sup>3</sup> Allowable only to fully breastfeeding infants who do not receive any WIC formula.

Source: 72 *Federal Register* 68965-69032.

Source: 72 *Federal Register* 68965-69032 (10)

## Research Goal

Given that these changes have been the only major alterations to the WIC food package prescriptions since it began, the challenge was to create an instrument that would determine if the WIC food package change met its goal in that WIC participants diets are more reflective of the DGA and their child and/or infant feeding habits more closely resemble those recommended by the AAP. The goal of this research study was to develop an original instrument, the Texas Food and Nutrition Questionnaire (TEXFAN), which was intended to evaluate these changes and possible barriers to adopting these changes.

It is important to note, that this study does not attempt to describe the data analysis and outcomes of the survey, but rather serves as a descriptive study or a methodological note of the survey development process. In this case, an original instrument is necessary due to the novel nature of the change to the WIC Program. The TEXFAN questionnaire was optimally designed, and took into account all salient aspects of the survey development process.

For the sake of clarity, several terms may be used interchangeably throughout the text of this document, when the term “instrument” is used it is referring to a questionnaire, or survey tool. When the term “item” is used, it refers to individual survey questions.

### Objectives

The objectives of this research project will be to develop a questionnaire incorporating the following components:

- 1) Theoretical constructs found to be important through analyses of the extant literature, i.e. construct validity.
- 2) Evaluation and feedback of the instrument by an expert panel, i.e. criterion validity.
- 3) Feedback about the utility of the instrument from WIC participants themselves, i.e. face validity.



## CHAPTER II

### LITERATURE REVIEW

#### WIC Background and Information

To qualify for WIC, applicants must meet categorical, residential, income, and nutritional risk eligibility requirements. To participate in the WIC program, a person must be either:

- A pregnant woman
- A non-breastfeeding woman up to 6 months postpartum
- A breastfeeding woman up to 1 year postpartum
- An infant up to his/her first birthday
- A child up to his/her fifth birthday

WIC applicants must reside within the State where they establish eligibility. The family income of WIC applicants must meet specified guidelines. All state agencies currently set the income cutoff at the maximum of 185 percent of the Federal poverty guidelines (annual income of \$39,220 for a family of four living in the 48 contiguous States as of July 1, 2008) (Table 2). The family's income from the past year or the family's current income may be used to determine an applicant's financial eligibility, whichever most accurately reflects the family's financial status.

**Table 2.** Income Eligibility Guidelines

**WIC income eligibility guidelines  
for the 48 contiguous States and  
DC (effective from July 1, 2008 to  
June 30, 2009)**

Family size	Annual income
<i>Number of people</i>	<i>Dollars</i>
1	19,240
2	25,900
3	32,560
4	39,220
5	45,880
6	52,540
7	59,200
8	65,860
For each additional member, add	6,660

Note: Alaska and Hawaii have higher guidelines.

Source: 73 *Federal Register* 19048.

Nutritional risk is evaluated by a health professional and may include conditions such as inadequate pregnancy weight gain, or any other condition that would indicate a high risk pregnancy, growth problems in infants or children, such as underweight, overweight or anemia. When there are not enough funds to serve all eligible participants, states implement a priority system based on the client's level of risk. Federal regulations recognize five major types of nutritional risk for WIC eligibility:

- Detrimental or abnormal nutritional conditions detectable by biochemical or anthropometric measurements (such as anemia, underweight, or overweight).
- Other documented nutritionally related medical conditions (such as nutrient deficiency diseases, metabolic disorders, or lead poisoning).
- Dietary deficiencies that impair or endanger health (such as inadequate dietary patterns).

- Conditions that directly affect the nutritional health of a person (including alcoholism or drug abuse).
- Conditions that predispose a person to inadequate nutritional patterns or nutritionally related medical conditions (including, but not limited to, homelessness and migrancy).

WIC participants are usually eligible to receive benefits for six months, and must be “re-certified” to continue receiving benefits. Pregnant women are certified for the length of their pregnancy and up to six weeks postpartum. Breastfeeding women and their infants can be certified up to the infant’s first birthday.

#### Rationale of Food Package Changes

Currently, the standard WIC food package provides families with milk, cheese, juice, breakfast cereal, and other basic foods. However, these WIC food packages do not include whole grains or fruits and vegetables. A brief description of the food package change followed by its rationale is given below.

##### *Inclusion of Fruits and Vegetables*

Among the most significant changes to the WIC food packages is the addition of fruits and vegetables. Although there is variation among states, a cash value voucher will be provided for fresh, frozen, and canned fruits and vegetables, for the amount of six, eight, or ten dollars depending on participant category. These vouchers may be used at authorized grocery stores or farmer’s markets.

Eating a diet rich in fruits and vegetables may decrease the risk for heart disease and certain cancers while helping to control body weight for all ages-while studies have consistently shown the typical American diet to be deficient in fruits and vegetables. In 1991, a National Cancer Institute (NCI) sponsored national survey showed that only 23 percent of the population was consuming the recommended number of servings of fruits and vegetables (11). The 1989-1991 Continuing Surveys of Food Intakes, which used a different methodology, found that 32 percent of the population was consuming the recommended number (12). Studies have consistently found that fruit and vegetable intake is lowest among low-income populations, such as the WIC program participants (12-14). Data from fruit and vegetable voucher demonstration projects in the states of California and New York show that providing fruit and vegetable vouchers increased WIC participants' frequency of purchasing fruits and vegetables (15, 16). The importance of increasing fruit and vegetable consumption is underscored by a 1997 report by the American Cancer Society (ACS) indicating that increased fruit and vegetable consumption is the single most important dietary measure in cancer prevention (17). A 2006 report by ACS emphasizes cancer prevention by maintaining a healthy weight through consuming a healthy diet based primarily on plant sources, such as fruits, vegetables and whole grains (18). ACS guidelines are consistent with guidelines from the American Heart Association and the American Diabetes Association for the prevention of coronary heart disease and diabetes, as well as for general health promotion, as defined by the Department of Health and Human Services 2005 DGA's (19).

### *Inclusion of Whole Grains*

Whole grains are associated with reduced risk for chronic diseases such as cardiovascular disease, diabetes and certain types of cancer (20-23). The DGA's and MyPyramid.gov emphasize that half of all grain and cereals consumed should be whole grain products (19, 24). Compliance with this message allows the addition of alternatives such as brown rice, oatmeal, corn and whole wheat tortillas to the WIC food packages. The breadth of whole grain products which may be considered by states for inclusion in the revised food packages may appeal to a multicultural population.

The National Health and Nutrition Examination Survey (NHANES) 1999-2002 survey of food intake indicated that only 8 percent of adults consumed three or more servings of whole grains daily (25). Clinical trials and observational studies demonstrate a link between whole grains and maintaining a healthy body weight. Researchers posit that this link may be due to the effects that the components of whole grains have on hormonal factors, satiety and satiation (26).

### *Reduction of Juice*

Children are the largest consumers of juice and it is estimated that by the age of one year old, almost 90 percent of infants drink some juice, as much as sixteen ounces per day (27). Although juice is a healthy component of a child's diet if consumed in moderation, at the same time it provides a lot of calories. The new WIC food packages provide less juice for women and children and do not allow juice for infants. The new food packages all up to 96 fluid ounces for women, 144 fl oz for pregnant and breastfeeding and up to 128 fl oz for children. Prior to the revision the WIC food

packages allowed for up to 192 fl oz for non-breastfeeding/non-pregnant women, 336 fl oz for breastfeeding women, 288 fl oz for partially breastfeeding, pregnant women and children.

The AAP recommends that children not be given juice before six months of age and that daily is limited to four to six fluid ounces for children between the ages one and six years old (27). Researchers have shown that juice intake is associated with increased weight in children of low socioeconomic backgrounds (28). In addition, Dennison et al. reported that almost half of children, ages two to five years old, who consumed twelve ounces or more of juice per day had a shorter stature and greater body mass index (BMI), than children whose intake was limited to less than twelve ounces of juice per day (29).

#### *Milk and Dairy Restrictions*

The new WIC food packages only allow reduced fat, low-fat and skim milk for women and children over two years of age. Full fat milk remains the only choice for children ages one to two years old. Milk alternatives, such as soy-based beverages and tofu are also offered. In addition, there will be less cheese offered to participants.

Offering low-saturated fat choices, such as low-fat milk and milk alternatives promotes healthy eating patterns within cultural diversity. The revised WIC food packages specify reduced-fat, low-fat or non-fat fluid milk for children over 2 years of age and adults. Whole milk is a major source of saturated fat, and accounts for almost one-third of saturated fat intake in the United States (30). Ballesteros et al. showed that high saturated fat intake and early occurrences of specific biomarkers may partially

explain the prevalence of coronary heart disease and type 2 diabetes in northern Mexico (31). This study may be extrapolated to a large portion of Mexican-American WIC mothers who are a large percentage of Texas WIC participants. Furthermore, substantial data shows that high intakes of saturated fat (greater than 7 to 10 percent of calories consumed) and high in total fat, exceeding 35 percent of total calories may increase risk for overweight and obesity. This supports a lower saturated fat intake for children to establish healthy eating patterns at a young age.

#### *Breastfeeding Promotion*

Components of the revised food package aim to better align breastfeeding rates with those of The Department of Health and Human Services *Healthy People 2010* breastfeeding goals, which are: 75 percent in the early postpartum period and 50 percent at six months of age (32). Mothers who exclusively breastfeed their infants will receive the most variety in food choices and the greatest dollar amount voucher for fruits and vegetables. Mothers of exclusively breastfed infants from six to twelve months will receive larger quantities of baby food fruits and vegetables and have the added component of receiving baby meat. The revised food package for infants will contain less formula allowances to encourage mothers to breastfeed.

Human breastmilk provides complete nutrition for infants and helps protect against certain childhood diseases (8). However, among children born in the United States in 2005, 74 percent were initially breastfed, 43 percent were breastfed at six months of age, and only 21 percent were breastfed at twelve months of age, falling short of Healthy People 2010 objectives regarding breastfeeding duration and exclusivity (7).

Rates of initiation and sustained breastfeeding among WIC participants also remain relatively low. According to a study by Schwartz et al, prenatal WIC participation, combined with breast-feeding advice, significantly increases the initiation of breastfeeding but does not affect duration (33). A 2006 study compared the rates of breastfeeding among WIC mothers to that of non-WIC mothers and showed that mothers who were not enrolled in the WIC program were more than twice as likely to breastfeed at six months of age than mothers who participated in the WIC program (34). Specific incentives have been instituted to promote breastfeeding in WIC. In 1992, federal legislation established a national breastfeeding promotion program in WIC to encourage breastfeeding as the best method of infant feeding, foster wider acceptance of breastfeeding, and assist in the distribution of breastfeeding materials (35).

Breastfeeding has multiple benefits for both the mother and infant. It is nutritionally superior, naturally sterile and supports the infant's immune function with naturally occurring antibodies that protect infants from illness (8, 36). Breast milk is readily available and cost effective, breastfeeding enhances mother-baby bonding, and assists infants with learning to self-regulate intake, which may contribute to a decreased risk of obesity later in life (36). A review of literature regarding the relationship between breastfeeding and childhood overweight showed that there was a decreased risk for overweight among children who had been breastfed (37). Mothers who have a history of breastfeeding for three to six months show greater postpartum weight loss (35).



### Possible Food Package Change Outcomes

Compared with the original food packages, the revised packages are estimated to provide greater amounts of nearly all the nutrients identified by the IOM as deficient in the WIC-eligible population, such as iron and fiber (38). The revised food packages for women and children also provide less saturated fat, cholesterol, total fat, and sodium than the old food packages.

As outlined in their 2009 report, Oleivera and Frazao identify the potential advantages and disadvantages of the new WIC food packages as described below (39). They speculate that the addition of new milk substitutes, such as calcium-set tofu and calcium-fortified soy milk, in the revised packages for women may increase their calcium intake and lower saturated fat intake. Similarly, the addition of whole-wheat bread and other whole-grain products is anticipated to increase intake of whole grain products and dietary fiber. The impact of these changes will depend on the acclimation of the new foods by participants and on the availability of these foods. On the other hand, Oleivera and Frazao posit that the reduction in the amounts of dairy, eggs, and fruit juice and the elimination of whole milk from the food packages for adults and children over the age of two, could reduce consumption of those foods and potentially increase negative consumption substitutions. For example, some participants may replace some of the “loss” in fruit juice with fruit drinks, or other sugar-sweetened beverages that do not contain the same nutrients as fruit juice or those participants who do not adapt to the taste of lower fat milks may choose to drink less milk. These

possible positive or negative consequences of the food package changes, intended or not, are addressed by the TEXFAN questionnaire.

### Instrument Design

In order to construct a questionnaire, first we must define what a questionnaire is, and then describe the development process. According to Schutt and colleagues, a questionnaire is defined as “the survey instrument containing the questions in a self-administered survey” (40). By this definition it is essential that our questionnaire can be understood and completed by the subject, the adult WIC beneficiaries in this case. The first step that was undertaken in order to attain this goal for the TEXFAN questionnaire was brainstorming and reviewing of prior surveys. From this step, an initial draft of the survey was developed followed by a systematic review, evaluation and refinement of the draft questionnaire. According to Schutt, this is quite often the starting point for questionnaire design (40).

The development of the TEXFAN questionnaire utilized a mixed methods approach, employing both quantitative and qualitative methods. A mixed methods approach to research is stronger because it employs both qualitative and quantitative data analysis (41). This method will answer questions that may not be able to be answered by just one form of research, for example, “Do participant views from interviews converge or depart from data obtained via questionnaire?” In other words, utilizing a mixed methods approach will enable a study to yield more comprehensive data. There are many justifications for using mixed methods research, apart from comprehensiveness,

including increased confidence in findings and developing or facilitating one method by guiding the sampling, data collection, or analysis of the other (42).

Cognitive interviewing can be used as a qualitative method in instrument development. It serves to reduce response error by focusing on the following responder processes: 1) comprehension of the questions, 2) retrieval of relevant information from memory, 3) decision processes, and 4) response processes (43, 44). This is a crucial component to the study as it will facilitate the assessment of the target audience and will help tailor questions to their learning and cultural paradigms.

Another factor affecting item construction and structure of the questionnaire is the diversity of the populations in study. According to Ferketich et al., developing a culturally appropriate instrument for a population is crucial in obtaining accurate outcomes (45). Ferketich et al. caution in their study, which focused on rurality and ethnicity, that “active community involvement and planning, attention to the principles of instrument development for diverse groups, and a protocol for format and administration” contributed to a high participation rate in their survey. As Marin and Marin point out, the period of time spent in learning the group’s view is critical (46). With adequate preparation and development of resources within the target group(s), the likelihood of developing a culturally appropriate instrument can be maximized.

#### *Theoretical Framework*

Another important component of designing a health-behavior questionnaire, such as one that is interested in dietary behaviors, is the use of a theoretical framework. Health psychologists have developed a number of theoretical models to elucidate and

characterize the determinants of health behavior that have contributed to our appreciation of health behavior and the capability to modify behavior. Although these theories may all operationalize their concepts differently, Stages of Change Theory examines costs and benefits (47), benefits and barriers are the key measurements in the Health Belief Model (HBM) (48), or behavioral beliefs and outcome evaluations as in the Theory of Reasoned Action which was later extended to the Theory of Planned Behavior (49, 50). Albeit, the details of the theoretical models vary they all serve to identify attitudes as key predictors of health behavior (48-51).

Among these models, the Theory of Reasoned Action (TRA), extended into the Theory of Planned Behavior (TPB) has had arguably the most consistent support in predicting and explaining health behavior (52, 53). TPB speculates that the most proximal determinant of a behavior is the intention behind that behavior, assuming that the behavior is under one's volitional control. Much attention has been given to the relationship between intention and behavior. Despite variation across different behaviors, intention has been found to be reliably, although moderately, correlated with several health behaviors including WIC participant's consumption of fruits and vegetables (54).

Behavioral intention is regarded as a function of three sets of factors; attitudes toward the behavior, subjective norm (the perceived social demands to carry out the behavior), and perceived behavioral control (the amount of control the individual deems they have over the behavior). Attitudes have frequently shown to be a reliable predictor of intentions and behavior in this and other theoretical models of behavior (52, 53, 55).

A substantial amount of research has explored the way in which attitudes vary, and how they correlate to behavior. Attitudes toward nutrition have been shown to vary by socioeconomic position, negative and fatalistic attitudes are overrepresented in lower socioeconomic and less educated individuals (56).

Self Efficacy Theory (SET), as proposed by Bandura in 1977 is held to influence both intention and behavior (57). Bandura defined self-efficacy as “the conviction that one can successfully execute the behavior required to produce the outcomes”, and claims that self-efficacy is the most important precondition for behavioral change (58).

Previous studies have shown self-efficacy to be an important determinant of WIC participants’ consumption of foods to be included in the new food packages, specifically fruits and vegetables (54). Therefore, the TEXFAN questionnaire will attempt to measure WIC participant’s feelings of self-efficacy. A number of studies on the adoption of health practices have measured self-efficacy to assess its potential influences in initiating behavior change. Depending on the specificity of what is being measured, single-item measures or very brief scales (e.g., 4 items) may be used to measure self-efficacy. General self-efficacy measures refer to the ability to deal with a variety of stressful situations; measures of self-efficacy for health behaviors refer to beliefs about the ability to perform certain health behaviors, such as their confidence in preparing fruits and vegetables in a healthy way. These behaviors may be defined broadly (i.e., healthy food consumption) or in a narrow way (i.e., consumption of high-fiber food).

Several studies have shown nutrition related practices related to weight control, and preventive nutrition can be regulated by nutrition self-efficacy beliefs. Participants

who exhibited greater self-efficacy in intervention programs were less likely to relapse to their previous unhealthy diets (59-61).

Nutrition self-efficacy has been shown to be a significant predictor of physical, social and self-evaluative outcome expectancies regarding healthy nutrition (62). In one study, nutrition goal setting was linked to higher dietary fiber self-efficacy and actual fiber intake (63). In a similar study, perceived ability increase fruit and vegetable consumption and outcome expectancies in terms of fruit and vegetable consumption predicted a 24-hour food recall of fruit and vegetable intake (64). Furthermore, these fruit and vegetable specific predictors were inversely related to an unhealthy diet.

The nutrition of women 65 years or older has been found to be related to current nutrition self-efficacy, but not to outcome expectancies (65). Nutrition and exercise self-efficacy were also connected to the ability to maintain a healthy diet and physical activity in breast cancer patients (66). The measurement of this kind of self-efficacy aims at statements that include control over the temptation to eat too much or to choose the wrong foods. Items can include particular foods or food groups, such as "I am certain I can eat at least five portions of fruits and vegetables a day," or can refer to self-regulatory efforts.

Based on the above outlined theoretical models, the survey will aim to not only examine WIC participants' specific behaviors regarding their food consumption and child feeding behaviors, but also their attitudes and nutritional self-efficacy. Although this method is based upon constructs from different theoretical models, previous studies have shown examining attitudes and self-efficacy alone to be strong determinants of dietary-related behaviors (67). Studies have shown attitudes to be the most important determinant in healthy food choices (68). Questions or "items" regarding behaviors are asked on a frequency scale, attitudinal and self-efficacy questions are asked on Likert-scales.

## CHAPTER III

### METHODS

This research study consisted of two phases. The first phase consisted of item development, which involved literature review, and expert panel review to refine the instrument prior to piloting. Phase 2 of the study involved piloting the survey in the WIC clinic setting and subsequent revision of the instrument. During the pilot phase there were two TEXFAN instruments that were piloted. The main difference between the instruments was their styling. Pilot instrument 1 was based on the Behavioral Risk Factor Surveillance System (BRFSS) format and asked participants to fill in the blanks appropriately regarding how many servings of the food they ate each day, week, or month. See Figure 1. Pilot instrument 2 was based on the original BRFSS style, but was converted into a style which respondents could “bubble” in the appropriate response options. See Figure 2.

***Example 1***

If you drink juice 2 times a day, follow this format:

**How often do YOU drink 100% fruit juices such as orange, apple, or tomato?**

Times per day      \_\_\_\_\_ Times per month  
 \_\_\_\_\_ Times per week      \_\_\_\_\_ NEVER      \_\_\_\_\_ Don't know/not sure

**Figure 1.** Format for Pilot Instrument 1



How many times do <u>YOU</u> do each of the following?	Never or Less Than Once Per Week	1 to 3 Per Week	4 to 6 Per Week	1 Per Day	2 Per Day	3 Per Day	4 or More Per Day
8. Drink 100% juices such as orange, apple, or tomato.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Drink other drinks such as, soda, cola, sport drinks, or tea.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Drink diet drinks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Eat fruit. This DOES NOT include juice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Eat green salad, such as spinach, or romaine. This DOES NOT include iceberg lettuce.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Eat French fries, fried potatoes, or potato chips.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Eat potatoes. This DOES NOT include French fries, fried potatoes, or potato chips.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Eat carrots.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Eat other vegetables. This DOES NOT include carrots, potatoes, or salad.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Eat whole-wheat tortillas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. Eat corn tortillas?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. Eat 100% whole-wheat bread.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. Eat brown rice or oatmeal.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. Eat "refined" grain products such as white bread, white flour tortillas, or white rice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Figure 2.** Format for Pilot Instrument 2

Phase 2 of this research included recruitment of participants, a timed classroom administration of the survey, data collection, analysis and substantive reasoning based on the results of items to be included in the final survey. The Institutional Review for Research Involving Human Subjects at Texas A&M University (TAMU) and the Texas Department of State Health Services (TDSHS) approved both phases of the study.

## Phase 1. Instrument Development

After a careful review of the literature was conducted and following several discussions with TDSHS, it was determined that a suitable instrument did not exist to meet this projects needs. This finding necessitated the development of an original instrument, which would become the Texas Food and Nutrition Questionnaire (TEXFAN). The first draft was developed following standard procedures for test construction designed to create a valid instrument with enhanced readability, as determined by the literature (40, 69-71). A bicultural, bilingual, native Spanish speaker employed by TDSHS translated the Spanish version of the instrument. The Spanish version of the questionnaire was field tested in WIC clinics through one-on-one interviews and classroom discussions. A Texas TDSHS employee, with experience translating materials into Spanish for the WIC program, then back-translated the instrument into English.

### *Instrument Purpose*

The first steps in the TEXFAN instrument design were to define the purpose that the instrument would serve. This was done by establishing goals and research questions, defining the context in which the TEXFAN would serve as well as establishing the target population. Also, an explanation of decisions that could be made based on the outcome of the instrument and finally, selection and designing the survey methods of ascertaining dietary intake and other critical information needed to meet the study's goals and research objectives. In order to accomplish these steps a review of existing studies and

an assessment of their strengths and weaknesses, including the survey design, sample size, and methods is necessary.

The instrument was designed to measure WIC participant's current dietary consumption and child and/or infant feeding habits as well as their attitudes feelings of self-efficacy towards those foods. The survey's intent was to determine the relationship between WIC participant's food/nutrition intake and the recommendations of the DGA's and AAP. In addition, barriers to adequate dietary practices towards the revised food packages were of interest.

In order to continue to receive their monthly WIC benefits, receive nutrition education once every three months. Participants may elect to take an in class, in clinic educational class, or able to complete their nutrition education on-line; participants must still present at the WIC clinic to prove that they took their class on-line and to receive their benefits. After brainstorm and discussion with State Agency employees it was determined that the context in which the survey was to be implemented was in the WIC classroom when participants come to receive their nutrition education. As such, the survey was designed to optimally accommodate an instructor-led, group survey administration.

The main purpose of administration of the TEXFAN questionnaire is to allow TDSHS to determine if the implementation of the WIC food package revisions made an impact on WIC participant dietary and child/infant feeding practices. This will be done via multiple administrations of the survey: before implementation of the food package change, six months after the food package change and then one year after the food

package change. This will allow TDSHS to determine not only if there is an immediate change in their consumption pattern, but also if that change is sustainable.

#### *Literature Review*

The literature review was conducted to establish content validity of the TEXFAN questionnaire, and can be found in the introduction section of this document. The literature review included WIC Program policies including food packaging details and participant eligibility. The second component included in the literature review was a review of theoretical models used to design survey. Based on the literature review and the needs of the project, it was determined that the survey would focus primarily on behaviors, attitudes and self-efficacy as related to dietary choices for participants and their dependents. Given that the primary purpose of the survey was simply to evaluate whether the change in the food package exerted its intended effects, the primary focus of the survey was on behaviors, as related to the food packages.

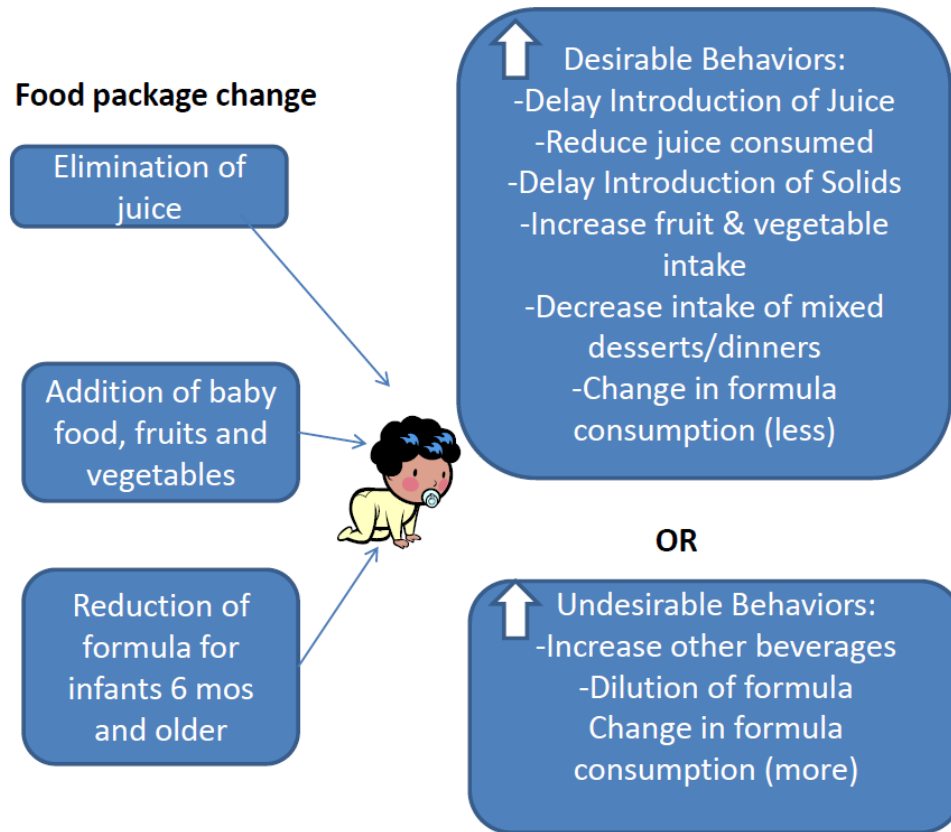
#### *Expert Review*

In an effort to establish criterion validity for the TEXFAN questionnaire, a number of experts assisted with the construction of the instrument. Reviews by experts were used to assess the appropriateness, clarity, and content of survey items. Experts included The University of Texas (UT) “Nutrition Education Team” and Texas Department of State Health Services Nutrition Education Consultants, Managers, Food Package Experts and Outreach specialists.

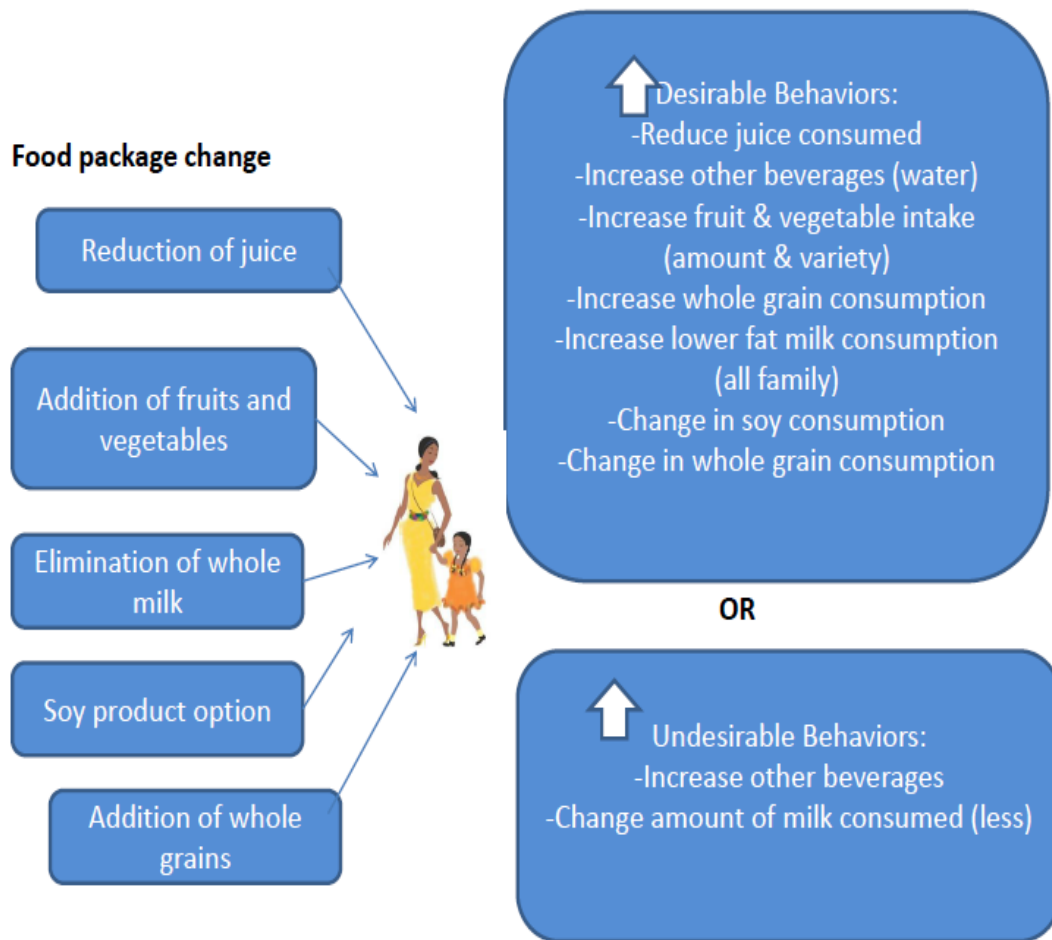
The UT panel of experts (n=4), includes Jennifer Seth and Carol Spaulding who worked on the WIC Child Feeding Study. They have experience developing survey

items and instruments for the WIC Program population as well as insight into different aspects of the WIC Program and participants in general. This group of experts was met with one time during the preliminary stages of instrument development. They were shown an early draft of the survey and were asked to provide feedback regarding the readability, and appropriateness of the instrument for the Texas WIC population.

TDSHS experts (n=6) were consulted via face-to-face meetings and weekly telephone conference calls. Members of these meetings would be e-mailed copies of the most current TEXFAN draft prior to the calls throughout the survey development process. In addition to these experts, a later addition included USDA-FNS members, Jay Hirschman, MPH, CNS, Director, Special Nutrition Staff, Office of Analysis, Nutrition, and Evaluation, FNS, USDA and staff. They received an electronic copy of the survey and provided text comments based on their expertise at a policy level. (See Appendix for FNS comments). FNS members supplied a list of research questions, which upon discussion with the state agency, were to be addressed within the TEXFAN questionnaire. See Figure 3 and Figure 4 for visualization of the research questions. These research questions mainly focused on the intended outcome of a particular food package change. For example, one research question related to the reduction of juice in the child food packages was “Does the reduction of the amount of juice, increase consumption of other beverages, e.g. sugar sweetened, or artificially sweetened?” A full list of FNS research questions are found in Table 3 and Table 4.



**Figure 3.** FNS Research Questions Related to Infants (Visual Aid)



1

**Figure 4.** FNS Research Questions Related to Women and Children (Visual Aid)

An expert in the field of evaluation and implementation assisted throughout the development process. This expert assisted in all of the study procedures to ensure that standard methods of instrument development were being followed.

The resulting instrument that was ready to be piloted was a forty-four item survey (44 questions, not including subscales) consisting of three distinct sections based

on participant categories. For survey purposes the categories were simplified to Section 1- Parent or Guardian, Section 2- Child; and Section 3-Infants. Each section asks classification questions about whom they are filling out the survey to determine if the participant is filling out the correct section, and to allow researchers to discard data from that section if it was filled out incorrectly.

Within each section, items were designed to measure participant behavior, attitudes, and self-efficacy, based on the aforementioned theoretical basis. At the same time, TEXFAN questions were designed to answer the research questions set forth by FNS, as outlined in Tables 3 and 4. Table 5 provides justification for inclusion of items based on theoretical construct and related FNS Research question, if applicable.

After pilot-testing the TEXFAN initially, a major change was made to the formatting, to make the questionnaire “scannable”, these changes changed the formatting and numbering of the questionnaire. For clarity’s sake, the “Question Number’s” referred to in Table 5 are only referring to the first round of survey piloting.



<b>Table 3. FNS Research Questions Related to Women and Children</b>	
<b>Food Package Change</b>	<b>Related Research Question</b>
Reduction of juice	Is there a reduction in consumption of juice?
	Is there a change in the consumption of other beverages?
Addition of fruit and vegetable vouchers	Is there a change in the quantity of fruits and vegetables consumed? The variety consumed?
	Is there an increase in the proportion of WIC participants who meet the DGA's for fruits and vegetables?
Elimination of whole milk for children 2+, and women	Is there a change in the consumption of skim milk, 1% fat milk, 2% fat milk and whole milk?
	Is there a change in the total amount of milk consumed by WIC participants?
	Is there a change in other family members; selection of the type of milk consumed? I.e. skim milk vs. 1%, ETC.
Addition of soy milk for women	Is there a change in WIC participants' consumption patter of soy milk?
Addition of whole grain products	Is there a change in WIC participants' choice of whole grain products?

<b>Food Package Change</b>	<b>Related Research Question</b>
Elimination of WIC juice vouchers	Is there a delay in the introduction of juice?
	Is there a reduction in the amount of juice consumption?
	Is there a change in the consumption of other foods? I.e. water, infant formula, juice drinks, baby food, ETC.
Addition of baby food, fruits and vegetables	Is there a delay the introduction of solid foods?
	Is there an increase in the consumption of fruits and vegetables?
	Is there a decrease in the consumption of less nutritious baby foods? I.e. mixed dinners, and desserts.
Reduction of formula for infants 6 mos and older	Is there a change the amount of formula consumed?
	Do parents' dilute formula offered to infants?
	Is there a change the types of beverages offered to infants?

<b>Theoretical construct related to food package change</b>	<b>Question #(s)</b>	<b>FNS Research Question</b>
<b>Adult behavior</b>		
Drink juices, juice alternative	1	Reduction in consumption of juice?
Eat vegetables	3, 4, 5, 6, 19	Change in the consumption of other beverages?
Eat fruit	2, 18	Change in the quantity/variety of fruits & vegetables consumed?
Eat Whole v. refined grains	7, 8	Increase # of participants who meet the DGA's for fruits & vegetables? Change in choice of whole grain products?
Drink Milk, milk alternative	9, 11, 13	Is there a change in the consumption of skim milk, 1% fat milk, 2% fat milk and whole milk? Is there a change in the total amount of milk consumed by WIC participants? Change in WIC participants' consumption pattern of soy milk?
Eat canned fish	10	

<b>Table 5</b> continued		
<b>Theoretical construct related to food package change</b>	<b>Question #(s)</b>	<b>FNS Research Question</b>
<b>Child Feeding Behavior</b>		
Offer juices, juice alternative	21	Reduction in consumption of juice? Change in the consumption of other beverages?
Offer vegetables	23, 24, 25, 26	Change in the quantity/variety of fruits & vegetables consumed?
Offer fruits	22	Increase # of WIC participants who meet the DGA's for fruits & vegetables?
Offer whole v refined grains	27, 28	
Offer milk, milk alternative	29, 29b, 30,	Is there a change in the consumption of skim milk, 1% fat milk, 2% fat milk and whole milk? Is there a change in the total amount of milk consumed by WIC participants? Change in WIC participants' consumption pattern of soymilk?
<b>Infant Feeding Behavior</b>		
Offer breastmilk	34, 39, 39b, 39c	
Offer infant formula	40, 40b, 40c	
Offer infant cereal	36, 38a	Delay the introduction of solid foods?
"Baby food"	37, 37b, 37c, 38b-d	Increase in the consumption of fruits and vegetables?
Offer Juice to infant	38f	Delay in the introduction of juice? Reduction in amount of juice offered?
<b>Adult Attitude</b>		
Whole grains	8b, 20g	
Milk/milk alternative	9b, 14, 29b, 31, 32g	
Offer alternative milk fat to child	32b, 32c	
Prepare/purchase infant food	37d, 41c, 41d	
<b>Self-Efficacy</b>		
Fruit & Vegetable purchasing	20a, 20b	
Fruit & Vegetable preparation	20c, 20d	
Milk fat choice	20e, 20f	
Ability to choose whole grain	20h	
Ability to feed child fruit & Veg	32a, 32d, 32f	
Ability to feed infant properly	41a, 41b	

## Phase 2. Pilot Testing

The pilot test addressed readability of the questions, interpretations of the questions and response options, and flow of the format of the questionnaire. Feedback provided by participants during this phase provided the survey with face validity, that is, “Does the survey appear to measure what it is intended to?”

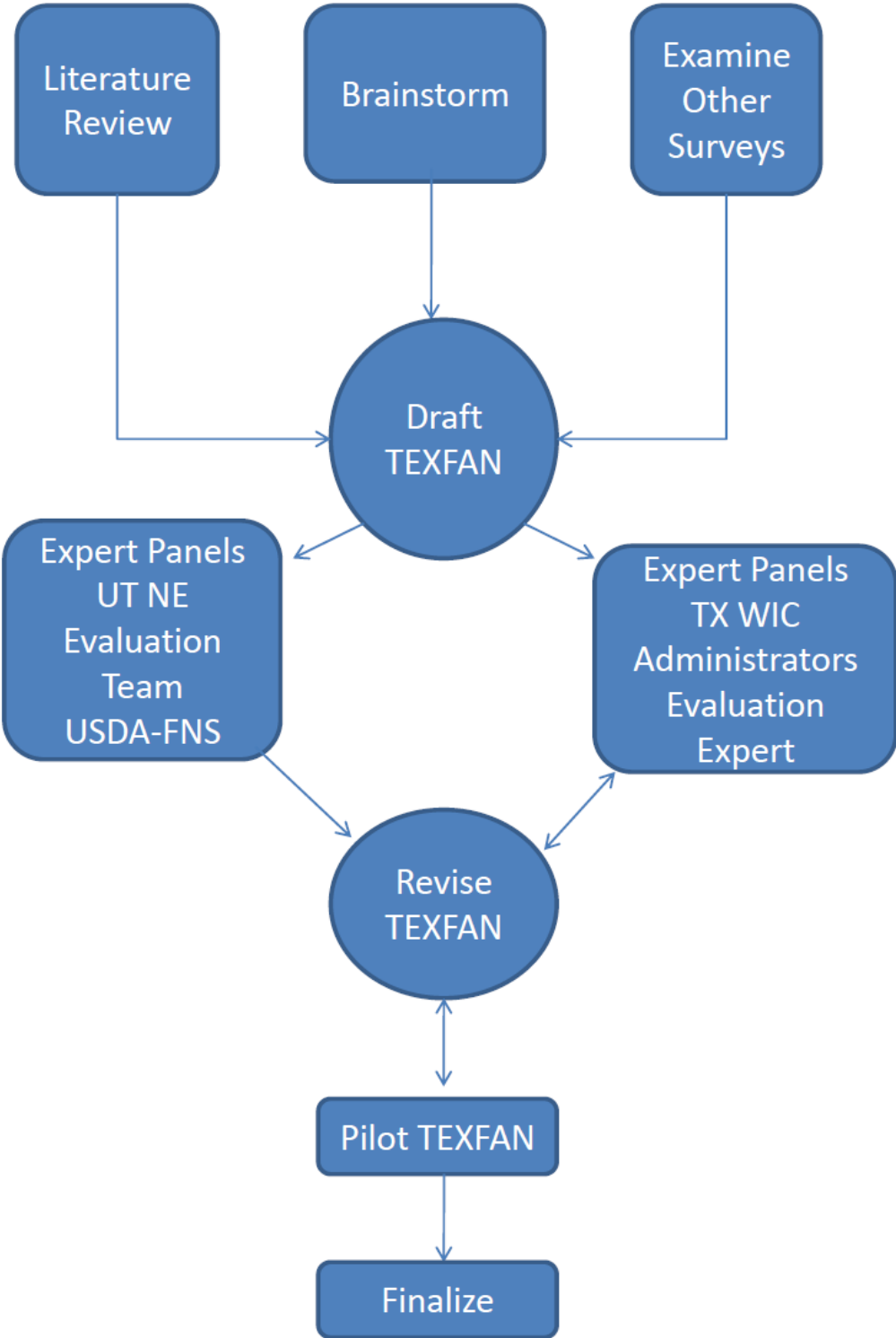
### *Subjects*

Items were pilot tested with a purposive, convenience sample. Participants were recruited from Local Agency (LA) 32 in Bryan, TX, and LA 73 in San Antonio, TX. LA 32 was chosen based on proximity to the research facility; LA 73 was purposively chosen for its high participant volume and a clientele which is more demographically representative of the WIC clientele across the state of Texas. According to data provided by TDSHS, in October 2007 Texas WIC served 935,923 participants total. Those participants self identified their race and ethnicity as follows: 12 percent White, 13 percent Black, 73 percent Hispanic, and approximately 1 percent identified themselves as “Other”. Bryan, LA 32 was represented by 19 percent White, 23 percent Black, 55% percent Hispanic and 2.3 percent of participants identified with “Other” race/ethnicities. San Antonio, LA 73, was represented by 4 percent White, 8 percent Black, 86 percent Hispanic and less than 1 percent of participants self-identified with “Other” races/ethnicities (see Appendix). Choosing these two local agencies gave an ethnically diverse, representative WIC sample population.

### *Procedures*

Participants were recruited to participate in the pilot phase via face-to-face contact as they came in to the WIC clinic for their regularly scheduled class. Participants were asked if they were willing to participate in the study in lieu of their regular educational classes, no participants declined to participate. Trained researchers conducted interviews one-on-one. A form was developed to assist with interviews, which asks broad questions relating to participant's reaction to the general format, or any questions in particular that participants had difficulty understanding (see Appendix). As participants were filling out surveys, cognitive interview methods were employed, i.e. participants were asked to "think aloud" in order to determine if participants were correctly interpreting the survey to assess if any changes to wording or sequence needed to be made (43). Revisions to the survey were made based on aggregate feedback received from participants during cognitive interviews. Figure 5 shows a visualization of the TEXFAN research methodology.

Using Likert-type scales with Spanish speakers presents special challenges especially when literacy levels of the respondents are low (72, 73). Cognitive interviews and using response options ranging from "always-never", rather than "strongly disagree-strongly agree" were used to address these issues, as suggested in the literature. The survey and accompanying consent documentation were evaluated for readability using the Flesch-Kincaid grade level readability test (74).



**Figure 5.** TEXFAN Research Flowchart

## CHAPTER IV

### RESULTS

#### Phase 1

##### *Literature Review*

A detailed literature review is found in the methods section of this document. To summarize, the literature review for this project focused on the WIC program and the WIC food packages. In addition, literature is presented that focused on survey design and social behavioral theory. Based on the results of the literature review, among other factors presented in this document, the TEXFAN survey's focus was on the foods offered to WIC participants and WIC participants' consumption of those foods and their child/infant feeding behaviors. The survey also focuses on WIC participants' attitudes and feelings of self-efficacy towards the foods that they eat and feed to their infants and or children.

##### *Expert Panel*

The use of an expert panel was critical throughout the development process of the TEXFAN questionnaire. TDSHS employees were consulted on a weekly basis and therefore their input has been incorporated throughout the text of this document. University of Texas WIC nutrition education evaluators provided feedback based on an early draft of the survey. Their suggestions were to pilot two versions of the survey to see which works best for the population. It was this groups of experts that initially cautioned against using Likert-type scales with Hispanic-Americans and suggested using

language spoken at home as a measure of acculturation. Their many suggestions were incorporated into our survey and supported with scientific literature as discussed in the Literature Review section. In addition, after the TEXFAN was back-translated in to Spanish, no discrepancies were identified between the back-translated English version and the original English instrument.

FNS experts provided additional framework on which to base our questionnaire by providing research questions, as discussed previously. Based on the material that was to be included in the survey, the literature and experts our survey measures were drafted.

## Measures

The TEXFAN questionnaire includes measures for demographic/classification purposes, in addition to behaviors, attitudes and self-efficacy for themselves as well as their dependent infants and or children on WIC, if applicable. Two versions of the questionnaire were piloted, a fill-in the blank type questionnaire modeled after the BRFSS and a modified “scannable” version of the questionnaire can be found in the appendix. Each version had two separate consent documents. Appropriate amendments were filed with the IRB at Texas A & M and TDSHS. Readability tests showed the each version of the consent documents to be just below a 5<sup>th</sup> grade reading level which is appropriate for the Texas WIC population.

### *Behaviors*

Items measuring behaviors, were concerned with frequency of consuming WIC foods and other foods which may be affected by the food package change: tofu, fruit



juice, fruit juice alternatives, soy milk, fruit, vegetables, whole grains, refined grains. Frequency of consumption had the following mutually exclusively response options, which were found to be a valid form of measure during pilot testing: “Never or Less than Once Per Week”, “1 to 3 times per week”, “4 to 6 times per week”, “1 time per day”, “2 times per day”, “3 times per day”, and “4 or more times per day”. Participants were also given a list of fruits and vegetables that they had eaten regularly during the past year. Questions about participant dairy consumption were concerned with amount consumed, in terms of eight-ounce servings, the kind of milk (i.e. cow’s milk, soy milk, lactose free milk, etc), and the fat content of their cow’s milk, if applicable.

#### *Attitudes and Self-Efficacy*

A primary concern in the development of the TEXFAN was the time it would take participants to complete the questionnaire. Given the large amount of foods that the survey was concerned with, it was decided that the bulk of the survey would focus on participant behavior. There were some measures of attitudes and self-efficacy that were included in the instrument. The small number of questions that focused on these measures resulted from the decision that the TEXFAN questionnaire’s primary purpose was to provide a cross-sectional overview of dietary-behaviors.

Questions that focused on attitudes and self-efficacy asked about participant willingness to drink lower-fat milk, and willingness to feed it to their children. These questions were also concerned with parental ability to utilize fruits and vegetables in their daily lives either via incorporating them in to meals, and/or offering them to their children at snack time.

## Phase 2. Pilot Phase

*Quantitative Component*

A total of thirty-seven individuals between the ages of 16 and 40 years of age participated in the first round (non-scannable surveys) of quantitative portion of the study. Of the 37 individuals who completed TEXFAN pilot version 1, all were female, or declined to disclose their gender. The average age of participants was 25.8 years old, with 45 percent identifying themselves as Hispanic/Latino ethnicity. The sociodemographic characteristics of the study sample are presented in Table 6.

Sociodemographic Characteristics	%	(n)
<b>Gender</b>		
Women	92%	34
Men	0	0
<b>Age</b>		
16-24	49%	18
25-34	24%	9
35+	16%	6
<b>Language Spoken at Home</b>		
English	53%	18
Spanish	27%	10
Other	16%	6
<b>Race/Ethnicity</b>		
White	24%	9
Hispanic/Latino	46%	17
Native American or Alaskan	3%	1
Asian or Pacific Islander	8%	3
Black	16%	6
Other-Black & Hispanic	3%	1

<b>Table 6 continued</b>		
Sociodemographic Characteristics	%	(n)
Educational Attainment	5%	2
1-6 <sup>th</sup> grade	11%	4
7-9 <sup>th</sup> grade	19%	7
10-12 <sup>th</sup> grade	30%	11
Highschool graduate	5%	2
GED <sup>a</sup>	19%	7
Some college/Associates	3%	1
4 year college	0	0
Other		

<sup>a</sup>GED=general equivalency diploma

The average time participants took to complete the survey was 19 minutes and 30 seconds, with a range of 9 to 69 minutes. Common problems encountered were incorrectly completing the food frequency questions, in which they were asked to fill in the blanks with numbers, some respondents simply put check marks; out of a total of 8778 response options, this occurred 22 times. A far more frequent error that occurred was participants “skipping” or ignoring questions (non-response). A total of 630 responses were coded as “missing”, for this version of the survey. That corresponds to a rate of 7 percent of answers missing, or incomplete. Based on these results, changes to formatting of the TEXFAN were made and results follow.

The second version of the TEXFAN survey that was piloted was one in which participants could “bubble” in their response. Once finalized, this version of the survey was sent to Scantron Corporation to be converted in to a “scannable” document that could be fed through a machine to be analyzed. This would allow for rapid aggregation

of a very large amount of data and would limit participants' open ended response options and significantly decrease the non-response rate.

There were seventeen individuals who participated in the second round of survey piloting. Demographic information can be seen in Table 7. Due to the small size of the sample these results may be limited in their generalizability. However, given that with a few minor exceptions the TEXFAN content was the same, the main purpose was to assess participant's ability to fill out the survey with relatively few errors it is reasonable to assume that findings are accurate.

**Table 7** Sociodemographic Characteristics of Participants in Pilot Version 2

Sociodemographic Characteristics	%	(n)
<b>Gender</b>		
Women	100%	17
Men	0	0
<b>Age</b>		
16-24	47%	8
25-34	35%	6
35+	18%	3
<b>Language Spoken at Home</b>		
English	76%	13
Spanish	24%	4
Other	0%	0
<b>Race/Ethnicity</b>		
White, non-hispanic	24%	4
White, Hispanic/Latino	47%	8
Native American,Hispanic/Latino	12%	2
Black, non-Hispanic	12%	2
Declined	5%	1

<b>Table 7</b> continued		
Sociodemographic Characteristics	%	(n)
<b>Educational Attainment</b>		
1-6 <sup>th</sup> grade	0%	0
7-9 <sup>th</sup> grade	5%	1
10-12 <sup>th</sup> grade	24%	4
High school graduate	12%	2
GED <sup>a</sup>	12%	2
Some college	41%	7
Associates/Technical Degree	5%	1
4 year college	0	0

<sup>a</sup>GED=general equivalency diploma

The final round of piloting testing clarified the need to streamline instructions, with the exception of the graphic for instructing participants how to bubble in questions, which needed to be expanded. No difficulty in readability or comprehension was detected and interpretations remained consistent with the intended meaning. The appendix contains the scannable pilot questionnaire. Average time for survey completion was 17 minutes, with a range of 13 to 30 minutes. The non-response rate was less than 1%. Two of the questions that had a high non-response rate, were questions regarding adult participant weight and height, which were eventually taken out the questionnaire. Based on this second round of TEXFAN piloting, it was decided that participants could easily complete it, and understood the questions they were being asked.

The scannable version of the TEXFAN had a lower non-response rate, with fewer errors and participants completed it in a more timely fashion. Based on quantitative analysis it was clear that the scannable survey was better instrument for this research study.

A total of 51 participants participated in the piloting of the TEFAN and relatively few problems were observed. Those problems which were observed were by in large remedied by converting the TEFAN to a scannable form; any other issues were discovered via in-depth participant interviews.

### *Qualitative Component*

Cognitive interviews were also conducted with pilot participants (n=20), interviews were assisted by a standard form used to guide the interviewer (see Appendix). During the participant interviews, several common themes emerged. Many of the participants felt that the instruction given at the beginning of the questionnaire was essential to completing the survey, and that assistance throughout the survey was of great importance with helping them complete the surveys. Participants thought that the instructions be simplified and that more visual aids would be useful. Many of the participants either would not, or could not, read the directions. This reaffirmed the necessity for a WIC staff member to be present during survey administration assisted by a pre-written script. One participant stated that “Bubbling examples should be larger” or should be emphasized somehow. Some participants felt that the survey should have an example showing how to “bubble” in correctly for 37 pounds as “037” as the zero was problematic for some participants. It became clear through the survey piloting and interviewing that many WIC parents did not know how much their child weighs or how tall they are, based on this feedback, questions regarding child anthropometrics were deleted. The survey also asked participants their weight and height with the intention of

comparing anthropometrics before and after the food package change. Some participants revealed that they felt “uncomfortable” answering these questions.

Based on participant feedback from interviews, and more discussion with DSHS more questions were added regarding refined grains and consumption of sugar sweetened beverages. Formatting changes were made to help participants more easily follow the flow of the survey in order to determine which survey sections (Adult, Child, or Infant) applied to them.

## CHAPTER V

### CONCLUSION

#### Discussion

The TEXFAN questionnaire was developed using a mixed methods research approach. Such an approach has become standard in social behavioral research, due to its comprehensive nature. Using quantitative and qualitative methods in combination allows researchers a more comprehensive picture. Mixed-methods research is garnering more attention in the social behavioral health research realm due to its comprehensive nature, among other benefits. This instrument development strategy may serve as a template that can be used to improve the quality of closed-ended survey items that assess a wide range of topics in social behavioral research.

A possible benefit to administering the TEXFAN questionnaire is due to the WIC program's large impact, almost half of all babies born in the United States are born to mothers enrolled in the WIC program and greater than 900,000 participants are served each month in Texas. Nutrition education, in combination with food supplementation and the additional health care supervision that the WIC Program provides has been shown to improve child and maternal health outcomes (75). Therefore, developing a survey to assist in determining possible nutrition education targets by identifying barriers to consuming healthier foods may help to alleviate maternal and child nutrition-related deficiencies.



The TEXFAN questionnaire potentially provides a variety of functions. One of these is the benefit to the State Agency, Texas WIC. Administering the survey before the new food package is implemented will provide a baseline of WIC participant dietary and child feeding habits, attitudes and self-efficacy. Once administered at six months post food package implementation, researchers will be able to determine if these constructs (behaviors, attitudes and intentions) have changed regarding these foods. Based on TEXFAN results, educators will be able to determine which food groups, or feeding behaviors they should target through educational materials to better align WIC participant behaviors with DGA's and AAP child feeding recommendations. Given the State Agency's significant contribution to the development of the survey, we can be sure that it meets their needs and answers their most important research questions. The data from the survey when administered before and after the rollout of the WIC food packages can effectively be analyzed and compared pre-and post-food package change, in order to monitor or assess specific food behaviors that might change post rollout.

## Conclusions

The evidence provided in this thesis suggests that the TEXFAN Questionnaire is a valid and reliable instrument for use in the Texas WIC population that meets the research goals and objectives set forth at the beginning of this document. The TEXFAN was constructed in a scientifically sound manner, utilizing input from a variety of sources including current research (providing construct validity), expert input (providing criterion validity) and WIC participants themselves (providing face validity).

The TEXFAN questionnaire was disseminated in December of 2008 to all 76 local agencies in the state of Texas. Baseline surveys have been returned from local agencies and are being analyzed by collaborators. The National WIC Association also made the decision to adopt the survey, making adjustments to it, to take in to account a more variable demographic and larger sample population. This version of the survey has become known as the NATFAN and has reached almost all 50 US states and minor outlying territories including Puerto Rico and the Mariana Islands. The breadth of WIC agencies both local and national that the original instrument, the TEXFAN, has touched is just one early indicator of success. As data begins to come back and is analyzed further, more interesting and important information regarding WIC participants dietary and child feeding behaviors will emerge. Armed with data from the TEXFAN questionnaire, WIC administrators will be able to determine if their efforts to improve the quality of their participant's dietary and child feeding behaviors are working. They will also be able to determine areas for improvement and targets for their nutrition education component and participant counseling. The data obtained from this study will prove to be of great value to WIC program participants, local agency staff and WIC staff at a state and federal level.

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## APPENDIX A

**FNS Comments on Pretest Draft “WIC Food Package Survey” from Texas  
April 11, 2008**

## General:

- The questionnaire is too long. We suggest splitting it into separate questionnaires for mom, infant and child, and providing only one of these to the mom/caretaker, asking them to complete it to provide information about the sampled WIC participant
- The FFQ-type questions would be best preceded with a stated reference period, and we suggest one month. E.g., “thinking about the past month...” or “over the past month...”
- We note that it is important to decide on the needed focus, that is, if it is important to do a good job on food consumption behaviors, it may be necessary to forgo food purchasing/selection behaviors to keep the questionnaires short enough for widespread use on-site in WIC (see comments on Qs 17, 18, 19 below)
- Items with “Other (please specify)” will need a uniform post-coding system for use by all States to facilitate comparability
- Infant ages: The new WIC food packages group is 4-5 months; 6 month old infants are classified with older infants, and are eligible to receive baby foods. We suggest modifying the age groups to give a 4-5 month group
- For a generic model form, please add a location where the WIC ID Number/record number can be recorded to enable later linking to the administrative record to append demographic and food package information. This would need to be accompanied with some revision to the privacy statements. Including a statement, such as “I consent to linking my answers to WIC administrative records” with a yes/no check right before the space for coding the WIC ID would address future informed consent issues.

**Specific Questions**

Q.7: we suggest changing “flour tortillas” to “white flour tortillas”

Q. 8b We suggest shortening the allergy item to “Food allergy or another medical reason”

Q.9 This Q switches from “you” to the family as the reference unit. We suggest avoiding this change in reference unit. Once the questionnaire is split, it would be best to refer to the sampled person (on mom’s questionnaire “you” and on child’s “your child”).

Q. 9b We suggest shortening the allergy item to “Food allergy or another medical reason”

Q.11 & 29 We suggest

- changing “drink” to “drink or eat” so that it includes milk consumed in cereal and may capture milk consumed in pudding.
- re-ordering so that the types of milk Qs (13 and 14) come before the quantity, as this will make it clearer that you want soy milk included in the day’s total.

- Adding a response category of “less than one cup”

Q.12 It seems that you are trying to get at lactose intolerance. However, some respondents may use lactose reduced/free milk, soy milk or lactase enzyme pills or drops and avoid the symptoms. How would you expect them to answer this question? Pre-testing with such individuals may be needed to develop wording that reduces the risk on false negative responses. Alternatively, this question could be deleted. It would be better assessed as part of the WIC nutrition risk assessment, and later linked to the questionnaire responses.

Q.13 and Q30: we note that those who drink chocolate milk may use the write in option, in which case fat level would be unknown. It would also be unknown for the Lactaid/lactose free milk response. An alternative to consider is breaking the question into two parts, such as:

Q13 - ) **What kind of milk do YOU drink most often?** (Please choose ONE only)

- don't drink milk
- white milk
- chocolate or flavored milk
- Lactaid or lactose free milk (flavored or unflavored)
- Soy
- Goat
- Other

Q13b – If you drink milk is it usually:

- Whole
- 2 percent
- Etc.

Q.17, 18 and 19 These 3 Q's address usual buying habits for the family. It is not clear to us how useful this will be in understanding the WIC food package changes. To shorten the questionnaire, these 3 Q's could be deleted. Alternatively, for moms and children with at least one month experience with the new food packages they could be revised to focus on the foods obtained with the WIC F&V food instruments. However, we note that it is important to decide on the needed focus, that is, if it is important to do a good job on food consumption behaviors, it may be necessary to forgo food purchasing/selection behaviors to keep the questionnaires short enough for widespread use in on-site in WIC.

Q.20 Many of these questions could be misinterpreted, and construct validity testing seems in order if they are to be retained. For example:

“I can afford to but fruits and vegetables”: when asked of someone who just received WIC food instruments for free F&V, they may respond differently than they had only 1 hour ago.

“I know how to pick out fruits and vegetable at the grocery store”: we believe that you mean ...fresh fruits and vegetables...

“I am able to prepare meals using fruits and vegetables everyday”: Those who feel that they can't afford F&V, and those too busy to prepare (e.g., 2 jobs plus new baby) may

give similar disagree answers, complicating interpretation. It is also unclear which of several research questions are of interest. If the interest is in ability to prepare, “everyday” is confusing. If the interest is in frequency, it would be better to delete the words “am able to”

“My family will eat the meals I prepare with fruits and vegetables”: For those who consider fried green tomatoes or fried potatoes vegetables (many do) and fruit juice as fruit, you should expect a lot of “agree” answers; for those who don’t, perhaps less so. Therefore, the responses may relate more to the respondent’s perception of what is a vegetable, and be difficult to interpret. Also, very poor & hungry families may find that anything they prepare will be eaten

“I am will to drink 1% or skim milk”: how should someone who will drink it, but only if no other type of milk, or only if it is chocolate milk, respond? Also, how would you interpret this is the response to Q 13 on currently consumed most often is “Other = chocolate”?

“I am willing to drink 2 % milk”: (see comments on item above) It might be phrased “I am willing to drink 2% milk (but not 1% or skim)”. If you do this, it would be better for place it before the 1% or skim choice.

“I can read a nutrition facts label in order to chose a whole grain bread” The correct answer that should be given by experts is “sometimes”. How will you interpret the responses: indicating that they can’t read/don’t understand the nutrition facts panel? Don’t know what standard to use to define a whole grain bread? Something else? Also, are you trying to find out whether the respondent accepts marketing claims (“made with whole grain”) vs. nutrition (“100% whole grain”)?” If so, different phrasing is needed.

“I am SURE that I know the difference between whole wheat and other breads”: We think that you are trying to assess ability to select the right product, but cognitive testing would be helpful to be sure that this is not taken as in reference to taste. Also, being SURE does not necessarily mean that they are correct in their certainty, it may just mean that WIC will have a harder time correcting their misperception. Also, “difference” may refer to nutritional knowledge about why whole wheat is healthier than refined OR it may refer to the ability to distinguish between 100% whole wheat and other options.

Q32 The response lines 2 & 3, delete “older than”.

- “I can give my child fruits or vegetables at snack time”: What is the intent/construct of interest? This could be difficult for someone who is very poor/hungry and someone whose child is in child care or at grandma’s at snack time DELETED QUESTION
- “I know the proper age at which to give my child low-fat milk”: It is likely that the correct medical/scientific answer will change soon. Also, our comment on the last response for Q.20 applies here. Some people may find the word “proper” confusing – better to say “recommended.”

Q.34: Perhaps better located adjoining Q.42

Q36 & 37 If they get cereal and baby food free from WIC, what response is correct? Some may perceive this as not “buying” the item, and would then skip Q38.

Q38 and 39” – precede question with “If you answered “yes” to question 37,”

Q.39 RE: “jars”, Gerber now sells baby food in plastic containers. Also, comment on Q36 & 37 applies here too.

Q.40: Comment on Q 37 applies here too

Q. 36, 37, 38, 39: What response is expected in someone else (grandma, sister, aunt, boyfriend...) is the one who buys the baby food? Please consider switching “buy” to “use” or another wording edit

Q.42 What if respondent is not the mother? If desire is to determine if baby is breastfed, a different question is needed. Also, how does this relate to the other breastfeeding questions – do you mean breastfeed “now” as opposed to the earlier question on breastfeed ever?

Q.43 What if respondent is not the mother?

Q.44:

“I know...”: see comment on Q.20, last bullet

Last 2 response lines refer to “buy”. Some change would be needed to learn about preferred choice relative to “free from WIC”

Might want to clarify between “I believe I know how to feed...” and “I can afford to feed...”

### **Demographics**

“Classification purposes” sentence may be taken the wrong way (e.g., classified as someone to refer to INS). Please delete this sentence (or replace it with a reminder of confidentiality).

Weight: We suggest deleting the parenthetical sentence, and perhaps replacing with “If you are not sure, go ahead and give us your best guess”

Race/Ethnicity: Please use separate Q’s for race and ethnicity (Hispanic/Latino). Please see WIC’s current race and ethnicity groupings

Marital Status: Please add “Married, not living together”

Income: Please consider making this the last item, as it may result in some non-response and some may stop filling out the questionnaire when they see this.

Item “Number of people living in the household” – might be better to say “your household.”



## APPENDIX B

LA	CLINIC	WIC Codes					Race / Ethnicity				Clinic Total
		Breastfeeding	Child	Infant	Postpartum	Pregnant	White	Black	Hispanic	Other	
032	02	40	346	174	66	74	135	289	274	2	700
032	03	34	352	202	70	48	156	200	343	7	706
032	04	24	252	108	39	53	148	129	191	8	476
032	07	22	222	105	33	40	187	39	194	2	422
032	08	16	150	74	22	22	27	41	213	3	284
032	15	3	27	12	4	1	21	17	5	4	47
032	16	15	104	68	18	17	60	89	66	7	222
<b>LA 032 Total</b>		<b>154</b>	<b>1,453</b>	<b>743</b>	<b>252</b>	<b>255</b>	<b>734</b>	<b>804</b>	<b>1,286</b>	<b>33</b>	<b>2,857</b>
073	01	180	2,926	1,131	411	514	52	89	5,011	10	5,162
073	02	55	720	256	71	117	92	30	1,097	0	1,219
073	05	120	1,018	600	227	338	204	641	1,399	59	2,303
<b>LA 073 Total</b>		<b>355</b>	<b>4,664</b>	<b>1,987</b>	<b>709</b>	<b>969</b>	<b>348</b>	<b>760</b>	<b>7,507</b>	<b>69</b>	<b>8,684</b>

## APPENDIX C

### **Design, Implementation, Feasibility and Impact of a Nutrition Education Intervention Women, Infants Children-Special Supplemental Program**

You are being asked to take part in a research study called: “Design, Implementation, Feasibility and Impact of a Nutrition Education Intervention Centered on the Revised WIC Food Packages. “ This study is being led by Dr. Peter Murano and Dr. E. Lisako McKyer at Texas A&M University (TAMU). This research study is being carried out by the TAMU *Institute for Obesity Research and Program Evaluation* and *Texas Department of State Health Services-WIC Program*.

#### **What is the purpose of this study?**

This purpose of this study is to know what you, as a WIC client, eat, and feed your child(ren) and/or infant(s), and why. The results may be used to make new nutrition education lessons and information services for WIC clients. The nutrition education will be used to help WIC clients know how to use their vouchers with the new WIC food package. The new WIC food package may have foods such as whole grains, fruits and vegetables, and low-fat milk.

#### **Why am I being asked to volunteer?**

You have been asked to volunteer for this study since you, and/or your child or infant receive WIC Program benefits.

You can choose whether or not to take part in this study. Whether you choose to take part or not, will in no way affect your or your child(ren)’s current or future relationship with the WIC Program or Texas A&M University.

#### **What am I being asked to do?**

If you agree to take part in the study, you will be given a paper-based survey in which you will respond to some questions. These questions will ask you about the types of foods and drinks that you eat and drink, and that you feed your children. There will also be some questions that ask why you and your family eat and drink the foods and drinks that you do.

The survey will take about thirty (30) minutes of your time. We may ask you to fill out the survey while you wait for your WIC appointment, or during your scheduled WIC class.

This study will sign up about one thousand (1,000) Texas WIC clients.

#### **What are the benefits of the study?**

There are no benefits to you for taking part in this study. A likely benefit may be that you are more aware of what may be offered to you in your food package by the WIC Program in the near future

**Are there any risks to participating?**

There are minor risks of taking part in this study. Such minor risks might be discomfort or strong feelings caused by the survey questions. Some questions that ask about the types of food that you eat and drink may make you feel discomfort or may cause you to have strong feelings.

This study is confidential. The research staff involved in this project will have access to the data that you volunteer to provide for this study. All research staff involved in this project have been trained to keep research data confidential. The forms and data from the study will be locked up at 1500 Research Parkway, Rm. 220M, Centeq Building A., TAMU. Information that links you to the study will not be included in any sort of report that might be published. Please do not discuss anything that is shared with anyone who did not take part in the study.

**Will I be compensated for participation?**

There is no reward for your taking part in the study since you will take the survey at the time of your normal WIC appointment or class. You may be removed from the study at any time, if you cannot agree with the study rules described in this form.

This research study has been reviewed by the Institutional Review Board – Human Subjects Research, Texas A&M University & Texas Department of State Health Services:

- Contact Dr. Peter Murano (psmurano@tamu.edu) at (979) 458-0946 or Kelly Vaughan (kvaug10@neo.tamu.edu) at (979) 458-0946, with any questions about this study.
- For research-related problems or questions about subjects' rights, you can ask the Institutional Review Board through Ms. Angelia M. Raines, Director of Research Compliance, Office of the Vice President for Research at (979) 458-4067, araines@vprmail.tamu.edu.
- If you feel discomfort about questions asked on the survey, you may ask staff at your local Women, Infants, and Children (WIC) Program for further help.

Please be sure you read the above information and ask any questions that you may have. You will be given a copy of this form, if you ask for it. By signing this form, you agree to take part in this study.

Signature of Participant: \_\_\_\_\_ Date:

\_\_\_\_\_

Signature of Researcher: \_\_\_\_\_ Date:

\_\_\_\_\_

# INFORMATION ABOUT SURVEY

We need your help!

**What is this survey about?**

- We are gathering information about food buying and eating choices of WIC Clients – adults, infants and children.

**Who is being asked to fill out the questionnaire?**

- Adults WIC Clients throughout the state

**How might this affect my WIC status?**

- Completing this questionnaire will not affect your WIC eligibility.
- Your answers will be used ONLY to help WIC improve services such as nutrition lessons, to WIC Clients.
- The information you provide is confidential. Your name will not ever be connected to any information obtained today nor will it be made public in a way which gives away your identity.

**Why am I being asked to provide my WIC ID Number?**

- You are not required to provide your WIC ID number.
- If you provide us consent, we will be able to link questionnaire responses to your administrative records. However, this does not enable WIC to find out your name. It is still confidential

**Then why do you need it?**

- It will allow us more information to find out areas of WIC services that might need special attention or improvements. It will also help us determine if we are doing a good job of meeting your needs.

## CONSENT

**Completing the questionnaire is enough to let us know that you agree to participate in the survey.**

~ ~ ~ ~ ~

**Checking the box below tells us you agree to allow us to link your WIC administrative records to the survey results.**

Yes, I consent to linking my answers to WIC administrative records. I understand my rights, and that includes the assurance that my answers and consent today will not be used to evaluate my WIC status.

Please provide your WIC ID Number in the space below

WIC Food Package Survey  
Pilot Cognitive Interviewing

Participant # \_\_\_\_\_

How does the participant reactive to the general format?

How does the participant react to specific questions?

How long does it take the participant to complete the survey?

Do any questions need to be repeated or explained?

How does the participant indicate answers?

Is the participant confused or surprised at a particular response? Why?

## APPENDIX D

<p><b>WIC Food Nutrition Questionnaire (FF)</b>  <b>Instructor Guide</b></p>
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This year, the WIC participant survey will be administered as a class for credit. (Code: FT-000-49)

**Instructions for class administrator:**

1. Hand out the questionnaires and pencils to participants.
2. Read the script below aloud to clients to explain that they will fill out the questionnaire for class credit and how to mark answers correctly. If you are in a bilingual class, please read the instructions in both English and Spanish.
3. Read the first set of questions aloud to the clients. If you are in a bilingual class, read both languages if necessary.
4. Most clients take about 15 minutes to fill out the survey; however, it may take some as long as 30 minutes. Please be patient and allow everyone the opportunity to complete the survey.
5. At the end of this document are Frequently Asked Questions (FAQ) by survey takers that may assist you in answering client questions about the survey.
6. The first page of the questionnaire asks for a **FID** number. This number is on the voucher or the shopping list (EBT) and can be filled by the clients after they finish the survey, when they are signing for their benefits.

**Important! Read this to clients:**

Welcome. Today you are going to fill out a survey about your food choices. This survey is going out to WIC clients across the State of Texas. WIC wants to know more about you and find out your opinions about what foods you and your family eat. The information will be used to help improve WIC services.

By completing the questionnaire today you will receive class credit.

Before opening your questionnaire, please be sure to check the box on the front and provide your **FID** number. If you do not know it, please refer to your WIC ID card or shopping list(EBT) at the end of the class and fill it in. Providing this information will allow your answers to be linked to your WIC record. You are not required to check the box, and if you choose not to check it your WIC status will in no way be affected.

Now open up your questionnaire. When filling it out please be sure to:

- Completely fill in the bubbles with the pencil provided. If you do not have a pencil please raise your hand and I will get you one. (*Show example of how to fill in bubbles as provided on pages 3 and 4*)
- Erase any stray marks that you make on the paper.

- You can change your answer at any time. Make sure to erase all your marks completely.

**Your answers will be kept private and will not affect your WIC benefits.**

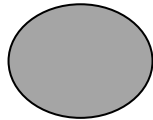
**The survey is divided into four sections: Questions about your family, questions about yourself and questions about your infant and/ or child.**

- If you do not have an infant, DO NOT answer the infant section questions
- If you do not have a child, DO NOT answer the child section questions
- Fill out all sections that apply to you

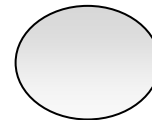
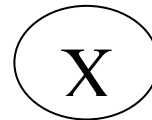
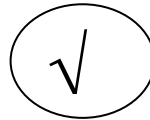
If you have any questions, for instance, if you are not sure what a food is, like tofu, please be sure to ask me.

You may begin.

**CORRECT!**



**INCORRECT!**



### **FREQUENTLY ASKED QUESTIONS: By Question Number**

1. Includes all people living in the house between the age 0 and 5.
2. What other groups, if any, help with providing food for the family?
3. How much are the WIC food choices liked?
4. Is the amount WIC of foods provided enough?
5. Tofu is a packaged soy bean product that is white in color and flavorless before being prepared. May be ANY type of tofu that is prepared in any way.
6. Canned, dried or none (Choose the one **most** frequently purchased).
7. Person filling out survey is currently receiving WIC food package benefits.
8. Just 100% juices (not Sunny D for instance.)
9. Any diet drink including those self-sweetened with Sweet-n-low, Equal, Splenda, etc.
10. Can be any flavor: plain, vanilla, etc. The package will be clearly labeled as “soy milk”. This is not the same thing as lactose-free milk or lactaid.
11. Any drink that is sweetened with sugar will work in this category including Sunny D.
12. Any fruit, not juice.
13. Any vegetable, NOT potatoes.
14. Fried potatoes: French fries, potato chips, tater-tots.
15. Potatoes cooked any other way except fried. Example: scalloped potatoes, baked potatoes.
16. Other vegetables that are not carrots, potatoes or salad, cooked or raw.
17. Whole wheat tortillas. Tortillas made with whole wheat flour.
18. Not taco shells, tostadas, or tortilla chips.
19. Bread labeled as whole grain OR whole wheat.
20. Brown rice, this may include instant, quick cook brown rice.
21. Oatmeal may be quick cooking or instant.
22. White bread, any bread NOT labeled whole wheat or whole grain.
23. Traditional flour tortillas. NOT corn or whole wheat or whole grain.
24. Traditional white rice. NOT brown rice. May be instant or quick cooking. May also be a mix, such as Uncle Ben’s.
25. Pick the fruit eaten in the last year, choose all that apply.
26. Pick the vegetables eaten in the last year, choose all that apply.
27. How much milk they USUALLY drink in a day. Can be any kind of milk.  
Choose only one.
28. Kind of milk – choose only one.
29. Percentage of fat in the cow’s milk. If they do not drink cow’s milk, choose the first bubble: I do not drink cow’s milk.
30. The person buys fruits or vegetables of any kind.
31. Prepares meals with fruits and vegetables.
32. Choose only one.
33. Choose only one.
34. Knowledge of how to choose fresh fruits and vegetables, based on ripeness, cost, etc.



35. Understands how to read a nutrition label in order to choose a whole grain product.
36. Has no doubts regarding their ability to read nutrition label and choose the whole grain product.
37. Degree of willingness to drink 2% milk, also referred to as reduced fat milk.
38. Degree of willingness to drink 1% milk, also referred to as low-fat milk.
39. Degree of willingness to drink fat-free milk, also referred to as skim milk.
40. Current age of adult filling survey out.
41. Current zip code, if homeless fill out zip code of clinic.
42. Gender of person filling out survey.
43. Height Feet and inches. Top row represents feet, bottom row inches.
44. Weight in pounds = if less than 100 pounds bubble in the zero. Please be honest and use your best guess.
45. Language spoken most often at home.
46. Choose all that apply – Ex. some people may be African American and Hispanic.
47. What was the last level of school completed?
48. Employment. Full time is 31 to 40 hours a week. Part time is 0 to 30 hours a week.
49. Pregnant status, if they think they may be pregnant fill in the bubble for “I do not know”.
50. Postpartum status
51. Breastfeeding status
52. Are they a caregiver for an infant on WIC? If yes, complete the section. If no, continue on to the next section.
53. If yes to 51, is the infant currently receiving WIC benefits?
54. Can be grandmother, father, foster parent, aunt, etc as long as they primarily provide for the child.
55. Gender of the infant. If there is more than one infant choose the oldest.
56. Age of infant in months.
57. Does the infant eat or drink anything not listed.
58. Any type of baby food from the store.
59. Only answer if 57 was answered “Yes”.
60. Only answer if 57 was “Yes”.
61. Answer if 57 was “No”. May choose more than one.
62. How old (in months) was in the infant when he/she was first given infant cereal, of any grain: rice, oat, barley or mixed grain. Use best guess of age if not sure.
63. May be any kind of vegetables. Store-bought or home prepared. Use best guess of age if not sure.
64. May be any kind of fruit. Store-bought or home prepared. NOT desserts, like apple-turnover or peach cobbler for instance. Use best guess of age if not sure.
65. May be any kind of meat. Store-bought or home prepared. Use best guess of age if not sure.
66. This includes baby food labeled as desserts like “peach cobbler” or “apple turnover”. Use best guess of age if not sure.

67. 100% fruit juices. This includes “baby juice”. Use best guess of age if not sure.
68. Any kind of infant formula. Provided by WIC or NOT. This will not affect your WIC status. Use best guess of age if not sure.
69. Cow’s milk. Not formula. Use best guess of age if not sure.
70. Drinks sweetened with sugar, NOT juice. Use best guess of age if not sure.
71. Even if the infant was breastfed one time.
72. Does the infant currently drink any amount of breastmilk?
73. Was the infant breastfed at least one time?
74. Does your infant currently drink ANY amount of formula?
75. Fill in the top row circle if the infant is exclusively breastfed. Use your best guess on the amount if not sure.
76. If baby is not exclusively formula fed/given any breastmilk or other foods, the answer may only be a few times a week or day. If they are primarily or exclusively formula fed it may be several times a day.
77. Choose only one.
78. Cow’s milk
79. Can be any flavor: plain, vanilla, etc. The package will be clearly labeled as “soy milk”. This is not the same thing as lactose-free milk or lactaid.
80. 100% juices (not Sunny D for instance.) May be “Baby juice”.
81. Any drink that is sweetened with sugar will work in this category including Sunny D
82. Plain water, with nothing added to it. May be bottled or tap.
83. Any kind of fruits: baby food fruits, or chopped up whole fruits. Baby foods labeled as “peach cobbler” or “apple turnover” would not be included here, but under desserts.
84. May be any kind of vegetables. Store-bought or home prepared.
85. May be any kind of meat. Store-bought or home prepared. Use best guess of age if not sure.
86. Any kind of bread, rice or pasta, like macaroni and cheese.
87. Prepared any way.
88. This refers to infant cereal of any kind, such as rice, oatmeal, barley or mixed grain.
89. This includes baby food labeled as desserts like “peach cobbler” or “apple turnover”, does not include plain fruit.
90. Any child over 1 year old who receives WIC foods.
91. In the last month, was the child receiving WIC food benefits? If more than one child, answer for the oldest. If “no” skip this section.
92. Can be grandmother, father, foster parent, aunt, etc as long as they primarily provide for the child.
93. If more than one child on WIC, answer for the oldest. What gender is the oldest child in the household on WIC?
94. If more than one child on WIC, answer for the oldest.
95. How many full Cups (8 ounces) of milk does the child drink a day, on average. Use best guess if not sure.

96. Kind of milk primarily drank by child – choose only one.
97. Fat content of cow's milk. 2% is sometimes called reduced fat. 1% is sometimes called low-fat. Non-fat and skim milk are the same thing.
98. Pick the fruit the child has eaten in the last year. Choose all that apply.
99. Pick the vegetables the child has eaten in the last year. Choose all that apply.
100. Just 100% juices (not Sunny D for instance.)
101. Drink soy milk. Soy milk will be clearly labeled as such. It may be any flavor, plain, vanilla, etc. This is not the same as lactose-free or lactaid milk.
102. Any diet drink, including those sweetened with Sweet-n-low, Equal, Splenda, etc.
103. Any drink that is sweetened with sugar will work in this category including Sunny D.
104. Any fruit, not juice
105. Just salad, carrots, and sweet potatoes. NOT white potatoes.
106. Fried potatoes: French fries, tater-tots, potato chips.
107. Potatoes cooked any other way except fried. Example: scalloped potatoes, baked potatoes.
108. Other vegetables that are not carrots, potatoes or salad, cooked or raw
109. Whole wheat tortillas. Tortillas made with whole wheat flour.
110. Not taco shells, tostadas, or tortilla chips.
111. Bread labeled as whole grain OR whole wheat.
112. Brown rice, this may include instant, quick cook brown rice.
113. Oatmeal may be quick cooking or instant.
114. White bread, any bread NOT labeled whole wheat or whole grain.
115. Traditional flour tortillas. NOT corn or whole wheat or whole grain.
116. Traditional white rice. NOT brown rice. May be instant or quick cooking.
117. Child enjoys eating any kind of fruits and vegetables.
118. Child will eat any fruit or vegetable at snack time, as opposed to candy, cookies chips or other snack food.
119. Parent feels they can give child fruits or vegetables instead of other snacks as opposed to candy, cookies, chips or other snack foods.
120. Parent is willing to give child reduced fat milk (2%), but not low-fat (1%) or skim (non-fat), milk to a child over 2 years old.
121. Parent is willing to give child low-fat (1%) but not skim (non-fat) milk to a child over 2 years old
122. Parent is willing to give skim (non-fat) milk to a child over 2 years old.

## APPENDIX E

# WIC Food Package Survey

Thank you for agreeing to fill out this survey.  
Your name will not be connected to any of the information obtained today.

## SECTION 1

We'd like to ask you some questions about certain foods that you eat or drink.  
The questions in this section ask about you - not about your children.

Please fill in how often you eat or drink each one. You only need to fill in one blank. Please be as honest and accurate as possible. Your name will not be connected to any of the information obtained today.

**Only fill in one blank. See Example 1.**

<b>Example 1</b>		
If you drink juice 2 times a day, follow this format:		
<b>How often do <u>YOU</u> drink 100% fruit juices such as orange, apple, or tomato?</b>		
<u>  2  </u> Times per day	_____ Times per month	
_____ Times per week	_____ NEVER	_____ Don't know/not sure

1) How often do YOU drink 100% juices such as orange, apple, or tomato?

\_\_\_\_\_ Times per day                      \_\_\_\_\_ Times per month                      \_\_\_\_\_ Don't know/not sure  
\_\_\_\_\_ Times per week                      \_\_\_\_\_ NEVER

2) Not counting juice how often do YOU eat fruit?

\_\_\_\_\_ Times per day                      \_\_\_\_\_ Times per month                      \_\_\_\_\_ Don't know/not sure  
\_\_\_\_\_ Times per week                      \_\_\_\_\_ NEVER

3) How often do YOU eat green salad? (E.g. spinach, romaine, etc. This DOES NOT include iceberg lettuce)

\_\_\_\_\_ Times per day                      \_\_\_\_\_ Times per month                      \_\_\_\_\_ Don't know/not sure  
\_\_\_\_\_ Times per week                      \_\_\_\_\_ NEVER

4) How often do YOU eat potatoes not including French fries, fried potatoes, or potato chips?

\_\_\_\_\_ Times per day                      \_\_\_\_\_ Times per month                      \_\_\_\_\_ Don't know/not sure  
\_\_\_\_\_ Times per week                      \_\_\_\_\_ NEVER

5) How often do YOU eat carrots?

\_\_\_\_\_ Times per day                      \_\_\_\_\_ Times per month                      \_\_\_\_\_ Don't know/not sure  
\_\_\_\_\_ Times per week                      \_\_\_\_\_ NEVER

6) Not counting carrots, potatoes, or salad, how often do YOU eat vegetables?

\_\_\_\_\_ Times per day                      \_\_\_\_\_ Times per month                      \_\_\_\_\_ Don't know/not sure  
\_\_\_\_\_ Times per week                      \_\_\_\_\_ NEVER

7) How often do YOU eat “refined” grain products such as white bread, flour tortillas, or white rice?

\_\_\_\_ Times per day                      \_\_\_\_ Times per month                      \_\_\_\_ Don't know/not sure  
 \_\_\_\_ Times per week                      \_\_\_\_ NEVER

8) How often do YOU eat whole grain products such as whole wheat bread, whole wheat tortillas, whole grain pasta, brown rice, oatmeal or bulgur, etc?

\_\_\_\_ Times per day                      \_\_\_\_ Times per month                      \_\_\_\_ Don't know/not sure  
 \_\_\_\_ Times per week                      \_\_\_\_ NEVER (see 8b)

8b) IF you answered “NEVER” to question 8, what is the reason? (Check all that apply – you can  $\checkmark$  more than 1)

- |   |  |
|---|--|
| <input type="checkbox"/> I don't know what these products are | <input type="checkbox"/> Myself or a family member has a food allergy/medical reason |
| <input type="checkbox"/> I have never tried them              | <input type="checkbox"/> I can't find these products in a store                      |
| <input type="checkbox"/> I don't like how they taste          | <input type="checkbox"/> No specific reason  |
| <input type="checkbox"/> My family doesn't like them          | <input type="checkbox"/> Don't know/not sure   |
| <input type="checkbox"/> They are too expensive               | <input type="checkbox"/> Other (please specify) _____                                |

9) How often does YOUR FAMILY eat soy products such as tofu?

\_\_\_\_ Times per week                      \_\_\_\_ Times per year                      \_\_\_\_ Don't know/not sure  
 \_\_\_\_ Times per month                      \_\_\_\_ NEVER (see 9b)

9b) IF you answered “Never” to Question 9, what is the reason? (Check all that apply – you can  $\checkmark$  more than 1)

- |   |  |
|---|--|
| <input type="checkbox"/> I don't know what these products are | <input type="checkbox"/> Myself or a family member has a food allergy/medical reason |
| <input type="checkbox"/> I have never tried them              | <input type="checkbox"/> I can't find these products in a store                      |
| <input type="checkbox"/> I don't like how they taste          | <input type="checkbox"/> No specific reason  |
| <input type="checkbox"/> My family doesn't like them          | <input type="checkbox"/> Don't know/not sure   |
| <input type="checkbox"/> They are too expensive               | <input type="checkbox"/> Other (please specify) _____                                |

10) How often do YOU eat canned fish such as salmon, tuna or sardines?

\_\_\_\_ Times per week                      \_\_\_\_ Times per year                      \_\_\_\_ Don't know/not sure  
 \_\_\_\_ Times per month                      \_\_\_\_ NEVER

11) How many cups of milk do YOU drink in a day? (Please choose ONE only)

- None  
 1 Cup (8 ounces)  
 2 Cups (16 ounces)  
 3 Cups (24 ounces)  
 4 or more Cups

12) After drinking a glass of milk do you get gas, bloating, or diarrhea?

- Always     Often     From time to time     Never     Don't know/not sure

13) What kind of milk do YOU drink most often? (Please choose ONE only)

- I do not drink milk                       Lactaid, or lactose free milk  
 Whole milk                                       Soy milk  
 2%, Reduced fat milk                       Goat's milk  
 1%, Low-fat milk                               Other (please specify) \_\_\_\_\_  
 Skim, non-fat milk

14) Why do YOU drink this type of milk? (Check all that apply)

- It is the healthiest choice                       I have lactose intolerance or milk allergy  
 It tastes best to me                               Don't know/not sure  
 My family prefers it                               Other (please specify) \_\_\_\_\_

15) How do you feel about the amount of milk WIC gives you each month?

- Too much     Just right     Not enough     Don't know/ not sure

16) How do you feel about the amount of juice that WIC provides you each month?

- Too much     Just right     Not enough     Don't know/ not sure

17) Do you *usually buy* beans that are:                       Canned                       Dried (Packaged)

18) Do you *usually buy* vegetables for you and/or your family that are: (Please choose ONE only)

- Fresh     Frozen     Canned     Dried


19) Do you *usually buy* fruit for you and/or your family that is: (Please choose ONE only)

- Fresh     Frozen     Canned     Dried (such as raisins, prunes, etc)

Please mark how much you agree or disagree with the following statements:

20) Please check the most appropriate box.

	Disagree a lot	Disagree a little	Neither agree/nor disagree	Agree a little	Agree a lot
I can afford to buy fruits and vegetables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I know how to pick out fruits & vegetables at the grocery store	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am able to prepare meals using fruits and vegetables everyday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My family will eat the meals I prepare with fruits and vegetables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am willing to drink 1% or skim milk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am willing to drink 2% milk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can read a nutrition facts label in order to choose a whole grain bread	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am SURE that I know the difference between whole wheat, and other breads	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



## SECTION 2

The questions in SECTION 2 are about **YOUR CHILD** between the age of 1 and 5 years old.

If you do not have a child between the age 1 and 5 please skip to SECTION 3 on page 6.

If you have more than one child between the age 1 and 5, please answer for your oldest child.

Is this child a:

Boy

Girl

What is this child's age? \_\_\_years\_\_\_months

What is this child's height? \_\_\_feet\_\_\_inches *(If you are not sure, please estimate to the best of your ability)*

What is this child's weight? \_\_\_\_\_pounds *(If you are not sure, please estimate to the best of your ability)*

21) How often does YOUR CHILD drink 100% juices such as orange, apple, or tomato?

\_\_\_ Times per day

\_\_\_ Times per month

\_\_\_ Don't know/not sure

\_\_\_ Times per week

\_\_\_ NEVER

22) Not counting juice how often does YOUR CHILD eat fruit?

\_\_\_ Times per day

\_\_\_ Times per month

\_\_\_ Don't know/not sure

\_\_\_ Times per week

\_\_\_ NEVER

23) How often does YOUR CHILD eat green salad? (E.g. spinach, romaine, etc. This DOES NOT include iceberg lettuce)

\_\_\_ Times per day

\_\_\_ Times per month

\_\_\_ Don't know/not sure

\_\_\_ Times per week

\_\_\_ NEVER

24) How often does YOUR CHILD eat potatoes not including French fries, fried potatoes, or potato chips?

\_\_\_ Times per day

\_\_\_ Times per month

\_\_\_ Don't know/not sure

\_\_\_ Times per week

\_\_\_ NEVER

25) How often does YOUR CHILD eat carrots?

\_\_\_ Times per day

\_\_\_ Times per month

\_\_\_ Don't know/not sure

\_\_\_ Times per week

\_\_\_ NEVER

26) Not counting carrots, potatoes, or salad, how often does YOUR CHILD eat vegetables?

\_\_\_\_ Times per day                      \_\_\_\_ Times per month  
 \_\_\_\_ Times per week                      \_\_\_\_ NEVER                      \_\_\_\_ Don't know/not sure

27) How often does YOUR CHILD eat "refined" grain products such as white bread, flour tortillas, or white rice?

\_\_\_\_ Times per day                      \_\_\_\_ Times per month                      \_\_\_\_ Don't know/not sure  
 \_\_\_\_ Times per week                      \_\_\_\_ NEVER

28) How often does YOUR CHILD eat whole grain products such as whole wheat bread, whole wheat tortillas, whole grain pasta, brown rice, oatmeal or bulgur, etc?

\_\_\_\_ Times per day                      \_\_\_\_ Times per month                      \_\_\_\_ Don't know/not sure  
 \_\_\_\_ Times per week                      \_\_\_\_ NEVER (go to 28b)

28b) If you answered "Never" to question 28, what is the reason? (Check all that apply – you can ✓ more than 1)

- |   |  |
|---|--|
| <input type="checkbox"/> I don't know what these products are | <input type="checkbox"/> My child has a food allergy/medical reason not to |
| <input type="checkbox"/> My child has never tried them        | <input type="checkbox"/> I can't find these products in a store            |
| <input type="checkbox"/> My child doesn't like how they taste | <input type="checkbox"/> No specific reason                                |
| <input type="checkbox"/> My family doesn't like them          | <input type="checkbox"/> Don't know/not sure                               |
| <input type="checkbox"/> They are too expensive               | <input type="checkbox"/> Other (please specify) _____                      |

29) How many cups of milk does YOUR CHILD usually drink in a day? (Please choose ONE only)

- None  
 1 Cup (8 ounces)  
 2 Cups (16 ounces)  
 3 Cups (24 ounces)  
 4 or more Cups

30) What kind of milk does YOUR CHILD drink most often? (Please choose ONE only)

- |   |  |
|---|--|
| <input type="checkbox"/> My child does not drink milk | <input type="checkbox"/> Lactaid, or lactose free milk |
| <input type="checkbox"/> Whole milk                   | <input type="checkbox"/> Soy milk                      |
| <input type="checkbox"/> 2%, Reduced fat milk         | <input type="checkbox"/> Goat's milk                   |
| <input type="checkbox"/> 1%, Low-fat milk             | <input type="checkbox"/> Other (please specify) _____  |
| <input type="checkbox"/> Skim, non-fat milk           |  |



31) Why does YOUR CHILD drink this type of milk? (Check all that apply)

- It is the healthiest choice for him/her     My child has lactose intolerance or a milk allergy  
 It tastes best to him/her     Don't know/not sure  
 My family prefers it     Other (please specify) \_\_\_\_\_

Please mark how much you agree or disagree with the following statements:

32) Please check the most appropriate box.

	Disagree a lot	Disagree a little	Neither agree/nor disagree	Agree a little	Agree a lot
My child likes to eat fruits and vegetables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am willing to give my child older than two years or older 1% or skim milk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am willing to give my child older than two years or older 2% milk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can give my child fruits or vegetables at snack time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My child will eat fruits or vegetables at snack time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can feed my child fruits instead of candies, cookies, crackers and chips	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I know the proper age at which to give my child low-fat milk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



### SECTION 3

These questions in SECTION 3 ask about YOUR INFANT- younger than 12 months/1 year old.

If you are not the parent of an infant please skip to SECTION 4: DEMOGRAPHICS on page 8.

33) How old is YOUR INFANT?

- Less than 4 months old     4 to 6 months old  
 7 to 9 months old     10 to 12 months old

34) Did you ever breastfeed YOUR INFANT?

- Yes     No     Don't know/not sure

35) Do you give YOUR INFANT anything other than breast milk, formula or water?

- Yes     No     Don't know/not sure

36) Do you buy infant cereal for YOUR INFANT?

- Yes     No     Don't know/not sure

37) Do you buy baby food for YOUR INFANT?

Yes  No (If No, go to 40)  Don't know/not sure

38) What kinds of baby food do you buy? (Check all that apply)

Fruit  Dinners  
 Vegetables  Desserts  
 Meats  Don't know/not sure  
 Dinners  Other (please specify) \_\_\_\_\_

39) How many jars of baby food do you purchase in an average week? \_\_\_\_\_ jars per week

Don't know/not sure |

40) If you answered "no" to question 37, why do you not purchase baby food? (Check all that apply)  
 SKIP this question if you did not check "no".

My infant is too young  My infant does not like them  
 It is too expensive  I make my own food for my infant  
 It is not healthy  Don't know/not sure  
 It is not fresh  Other (please specify) \_\_\_\_\_

41) Please mark the age at which the following foods were first fed to YOUR INFANT:

	Less than 4 months	4-6 months	7-8 months	9-12 months	My infant does not eat this
Cereal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vegetables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fruit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Meat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Desserts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
100% Juice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

42) Do you breastfeed YOUR INFANT?

Yes  No (Go to 43)

42b) How many times a day do you breastfeed?  
 \_\_\_\_\_ Times per day

42c) How many minutes each time?  
 \_\_\_\_\_ Minutes

43) Do you formula feed YOUR INFANT?

Yes  No (Go to 44)

43b) How many ounces at each feeding does YOUR INFANT drink? \_\_\_\_\_ oz per feeding

Don't know/not sure |

43c) How many bottles a day does YOUR INFANT drink? \_\_\_\_\_ bottles

Don't know/not sure |

Please mark how much you agree or disagree with the following statements:

44) Please check the most appropriate box.

	Disagree a lot	Disagree a little	Neither agree/nor disagree	Agree a little	Agree a lot
I believe I can feed my infant so that he/she will grow properly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I know the right times of my infant's life to give him/her new foods to try	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would rather make my own baby food than buy it from a store	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would rather feed my baby other foods, than buy baby food or make it at home.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### SECTION 4: DEMOGRAPHICS

Now we'd like to ask you a few more questions about **YOURSELF**. These questions are for classification purposes only. Please fill in or check the appropriate box.

Please tell us **YOUR**:

Age \_\_\_\_\_ years

Zip Code \_\_\_\_\_

Are you?

Male

Female

\*What is your height? \_\_\_\_\_ feet \_\_\_\_\_ inches

\*What is your weight? \_\_\_\_\_ pounds

(\* please provide the best estimate. If you elect not to answer these questions, please leave them blank.)

What is your race or ethnicity (check all that apply)?

White

Asian or Pacific Islander

Hispanic/Latino

Black

Native American or Alaskan

Other (please specify) \_\_\_\_\_

Don't care to say

What is the main language spoken at home?

English

Spanish

Other (please specify) \_\_\_\_\_

Marital status:

Single, never married

Divorced

Married, living together

Widowed

**Highest level of education attained:**

- |   |   |
|---|---|
| <input type="checkbox"/> 1-6 <sup>th</sup> grade                | <input type="checkbox"/> GED                            |
| <input type="checkbox"/> 7 <sup>th</sup> -9 <sup>th</sup> grade | <input type="checkbox"/> Some college/Associates degree |
| <input type="checkbox"/> 10-12 <sup>th</sup> grade              | <input type="checkbox"/> 4 year college                 |
| <input type="checkbox"/> High school graduate                   | <input type="checkbox"/> Other (please specify) _____   |

**Are you employed?**

- No                       Yes, part-time                       Yes, full-time

**Monthly income:**

- |  |  |
|--|--|
| <input type="checkbox"/> Less than \$1,000 | <input type="checkbox"/> \$2,000-\$2,999 |
| <input type="checkbox"/> \$1,000-\$1,999   | <input type="checkbox"/> \$3,000 or more |

**Number of people living in the household: \_\_\_\_\_ people**

**Are you currently pregnant?**

- Yes                       No

**Are you currently breastfeeding?**

- Yes                       No

**How many infants/children in the household currently receive WIC benefits?**

- |                               |                                    |
|-------------------------------|------------------------------------|
| <input type="checkbox"/> None | <input type="checkbox"/> 3         |
| <input type="checkbox"/> 1    | <input type="checkbox"/> 4         |
| <input type="checkbox"/> 2    | <input type="checkbox"/> 5 or more |

# FOOD & NUTRITION QUESTIONNAIRE

## TEXFAN – C 6



### FOOD & NUTRITION QUESTIONNAIRE

WIC is changing. We want to be better for you! We need information about your nutrition habits so we can better meet your needs.

While you are not required to give your WIC ID number to participate in the questionnaire, providing us with your number will allow us to compare your questionnaire results to the services you are receiving.

No one will know who filled out the questionnaire—they will only know what kind of benefits you are getting and how we might do a better job of delivering the services you need.

### CONSENT

By filling out this questionnaire, you are giving us permission to use your answers in our study. We are glad you agreed to participate in this questionnaire.

Checking the box to the left tells us you agree to allow us to link your WIC administrative records to the questionnaire results.

Yes, I consent to linking my answers to WIC administrative records. I understand my rights, and that includes the assurance that my answers and consent today will not be used to evaluate my WIC benefits or services.

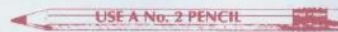
Please provide your WIC ID Number in the space below.

#### MARKING INSTRUCTIONS

FORM SS-02

2

- Use a No. 2 pencil only.
- Do not use ink, ballpoint, or felt tip pens.
- Make solid marks that fill the circle completely.
- Erase cleanly any marks you wish to change.
- Make no stray marks on this form.
- Any mention of "drug" refers to *non-prescription drugs*.



CORRECT: ●

INCORRECT: ☒ ☓ ○

**REMINDER!**  
 Your answers to these questions will help Texas WIC improve programs and services to better meet our participants' needs. Please remember that your answers to these questions will NEVER be used to determine your WIC eligibility.

The questionnaire is divided into FOUR sections  
 (Family, Adult, Infant, and Child).  
 Complete the Family, Adult and the last two sections, if they apply.

**FAMILY**  
 Everyone fills out this section!

1. How many infants/children in YOUR household currently receive WIC benefits?

None	<input type="radio"/>
Infants & Children	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8 <input type="radio"/> 9 <input type="radio"/> 10 <input type="radio"/> 11 or more

2. Other than WIC, who helps YOU get food? (*Choose all that apply – you can choose more than one*)

Food Stamps	<input type="radio"/>	Family	<input type="radio"/>
Food Bank	<input type="radio"/>	None	<input type="radio"/>
Religious Organization, or Church, Synagogue or Mosque	<input type="radio"/>	Other (please specify)	<input type="radio"/>

Please choose the best answer for each of the following statements:

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
3. I like the food choices offered by WIC.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. I like the food amount offered by WIC.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. How often in the past month did YOUR FAMILY eat tofu, if ever?

Never or Less Than 1 Per Month	1 Per Month	2-3 Per Month	1 Per Week	2 Per Week	3-4 Per Week	5-6 Per Week	2 Or More Per Day
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. What type of beans do you *usually* buy for YOU and/or YOUR FAMILY? (Choose one only)

Canned	<input type="radio"/>
Dried	<input type="radio"/>
None- I do not buy beans	<input type="radio"/>

**YOU HAVE FINISHED THIS SECTION ABOUT YOUR FAMILY. THANK YOU!**  
**THE NEXT SECTION IS ABOUT YOU.**  
 Please continue to the next section.



**Adult**  
**Everyone fills out this section!**

7. Did YOU receive WIC foods in the past 30 days? Yes  No

How many times do <u>YOU</u> do each of the following?	Never or Less Than Once Per Week	1 to 3 Per Week	4 to 6 Per Week	1 Per Day	2 Per Day	3 Per Day	4 or More Per Day
8. Drink 100% juices such as orange, apple, or tomato.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Drink artificially sweetened drinks such as diet cola, diet soda, or Crystal Light®.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Drink sugar sweetened drinks such as Kool-Aid®, soda, cola, sports drinks, or sugar sweetened tea.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Eat fruit, NOT including juice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Eat vegetables such as salad, carrots, or sweet potatoes. This DOES NOT include potatoes, French fries, or potato chips.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Eat French fries, fried potatoes, or potato chips.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Eat potatoes, NOT including French fries, fried potatoes, or potato chips.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Eat other vegetables, NOT including carrots, potatoes, or salad.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Eat whole-wheat tortillas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Eat corn tortillas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. Eat whole-wheat or whole grain bread.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How many times do <u>YOU</u> do each of the following?	Never or Less Than Once Per Week	1 to 3 Per Week	4 to 6 Per Week	1 Per Day	2 Per Day	3 Per Day	4 or More Per Day
19. Eat brown rice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. Eat oatmeal.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. Eat white bread.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. Eat white flour tortillas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. Eat white rice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

24. During the past year, which fruits did YOU usually eat? (Choose *all that apply* - you can choose more than one)

<input type="radio"/> I DO NOT eat fruit.	<input type="radio"/> Cherries	<input type="radio"/> Lemon or lime	<input type="radio"/> Pineapple
<input type="radio"/> Apples	<input type="radio"/> Blackberries	<input type="radio"/> Mangos	<input type="radio"/> Prunes
<input type="radio"/> Apricots (fresh)	<input type="radio"/> Figs	<input type="radio"/> Nectarines	<input type="radio"/> Raisins
<input type="radio"/> Apricots (dried)	<input type="radio"/> Dates	<input type="radio"/> Oranges	<input type="radio"/> Rhubarb
<input type="radio"/> Bananas	<input type="radio"/> Grapefruit	<input type="radio"/> Papayas	<input type="radio"/> Strawberries
<input type="radio"/> Blueberries	<input type="radio"/> Grapes	<input type="radio"/> Peaches	<input type="radio"/> Watermelon
<input type="radio"/> Melons (cantaloupe, honey dew)	<input type="radio"/> Kiwis	<input type="radio"/> Pears	

25. During the past year, which vegetables did YOU usually eat?

(Choose *all that apply* - you can choose more than one)

<input type="radio"/> I DO NOT eat vegetables	<input type="radio"/> Peppers	<input type="radio"/> Okra
<input type="radio"/> Asparagus	<input type="radio"/> Corn	<input type="radio"/> Onions
<input type="radio"/> Avocados	<input type="radio"/> Cucumbers	<input type="radio"/> Potatoes
<input type="radio"/> Beets	<input type="radio"/> Eggplant	<input type="radio"/> Spinach
<input type="radio"/> Broccoli	<input type="radio"/> Greens (collard, mustard, turnip)	<input type="radio"/> Summer Squash (yellow, zucchini)
<input type="radio"/> Brussels Sprouts	<input type="radio"/> Green Beans	<input type="radio"/> Sweet Potatoes
<input type="radio"/> Cabbage	<input type="radio"/> Green Peas	<input type="radio"/> Tomatoes
<input type="radio"/> Carrots	<input type="radio"/> Lettuce (all varieties)	<input type="radio"/> Tomatillos
<input type="radio"/> Cauliflower	<input type="radio"/> Mushrooms	<input type="radio"/> Winter Squash (acorn, pumpkin)

26. How many cups of milk do YOU drink in a day? (Choose *one only*) 1 Cup = 8 oz

- |  |                                      |
|--|--------------------------------------|
| <input type="radio"/> None - I do not drink milk | <input type="radio"/> 2 Cups         |
| <input type="radio"/> Less than 1 Cup            | <input type="radio"/> 3 Cups         |
| <input type="radio"/> 1 Cup                      | <input type="radio"/> 4 or more Cups |

27. What kind of milk do YOU drink most often? (Choose *one only*)

<input type="radio"/> I DO NOT drink milk.	<input type="radio"/> Soy milk-any flavor
<input type="radio"/> White cow's milk	<input type="radio"/> Rice milk
<input type="radio"/> Chocolate or flavored cow's milk	<input type="radio"/> Lactaid or lactose free milk
<input type="radio"/> Goat's milk	



28. What kind of cow's milk do YOU usually drink?

I DO NOT drink cow's milk. <input type="radio"/>	1% milk <input type="radio"/>	I DO NOT KNOW the kind of cow's milk I drink. <input type="radio"/>
Whole milk <input type="radio"/>	½% milk <input type="radio"/>	
2% milk <input type="radio"/>	Skim milk <input type="radio"/>	

Please choose the best answer that best indicates your response:

	Never	Rarely	Sometimes	Often	Always
29. I buy fresh fruits and vegetables.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. I prepare meals using fruits and vegetables.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Fresh	Canned	Frozen	Dried
31. When I buy vegetables I <u>usually</u> buy:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. When I buy fruit I <u>usually</u> buy:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please choose the best answer that best indicates your response:

	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
33. I know how to pick out fresh fruits and vegetables.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. I know how to use product labels to choose 100% whole grain bread.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35. I am sure I can select 100% whole-wheat or whole-grain breads.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36. I am willing to drink 2% milk.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37. I am willing to drink 1% milk.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38. I am willing to drink skim milk.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

<p><b>EXAMPLE</b></p> <p>What is <u>YOUR</u> age?</p> <div style="display: flex; align-items: center;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr><td>0</td><td>0</td></tr><tr><td>1</td><td>1</td></tr><tr><td>2</td><td>2</td></tr><tr><td>3</td><td>3</td></tr><tr><td>4</td><td>4</td></tr><tr><td>5</td><td>5</td></tr><tr><td>6</td><td>6</td></tr><tr><td>7</td><td>7</td></tr><tr><td>8</td><td>8</td></tr><tr><td>9</td><td>9</td></tr> </table> <div style="margin-left: 10px;"> <p>This person is 37 years old.</p> </div> </div>	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	<p>39. What is <u>YOUR</u> age?</p> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr><td>0</td><td>0</td></tr><tr><td>1</td><td>1</td></tr><tr><td>2</td><td>2</td></tr><tr><td>3</td><td>3</td></tr><tr><td>4</td><td>4</td></tr><tr><td>5</td><td>5</td></tr><tr><td>6</td><td>6</td></tr><tr><td>7</td><td>7</td></tr><tr><td>8</td><td>8</td></tr><tr><td>9</td><td>9</td></tr> </table>	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	<p>40. What is <u>YOUR</u> Zip code?</p> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr><tr><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td></tr><tr><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td></tr><tr><td>4</td><td>4</td><td>4</td><td>4</td><td>4</td></tr><tr><td>5</td><td>5</td><td>5</td><td>5</td><td>5</td></tr><tr><td>6</td><td>6</td><td>6</td><td>6</td><td>6</td></tr><tr><td>7</td><td>7</td><td>7</td><td>7</td><td>7</td></tr><tr><td>8</td><td>8</td><td>8</td><td>8</td><td>8</td></tr><tr><td>9</td><td>9</td><td>9</td><td>9</td><td>9</td></tr> </table>	0	0	0	0	0	1	1	1	1	1	2	2	2	2	2	3	3	3	3	3	4	4	4	4	4	5	5	5	5	5	6	6	6	6	6	7	7	7	7	7	8	8	8	8	8	9	9	9	9	9
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41. What is YOUR sex?       Male       Female

42. What is YOUR height?

Feet	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6	<input type="radio"/> 7				
Inches	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6	<input type="radio"/> 7	<input type="radio"/> 8	<input type="radio"/> 9	<input type="radio"/> 10	<input type="radio"/> 11

43. What is YOUR weight in pounds?

Pounds		
<input type="radio"/> 0	<input type="radio"/> 0	<input type="radio"/> 0
<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 1
<input type="radio"/> 2	<input type="radio"/> 2	<input type="radio"/> 2
<input type="radio"/> 3	<input type="radio"/> 3	<input type="radio"/> 3
<input type="radio"/> 4	<input type="radio"/> 4	<input type="radio"/> 4
<input type="radio"/> 5	<input type="radio"/> 5	<input type="radio"/> 5
<input type="radio"/> 6	<input type="radio"/> 6	<input type="radio"/> 6
<input type="radio"/> 7	<input type="radio"/> 7	<input type="radio"/> 7
<input type="radio"/> 8	<input type="radio"/> 8	<input type="radio"/> 8
<input type="radio"/> 9	<input type="radio"/> 9	<input type="radio"/> 9

**EXAMPLE**

Pounds		
<input checked="" type="radio"/> 0	<input type="radio"/> 0	<input type="radio"/> 0
<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 1
<input type="radio"/> 2	<input type="radio"/> 2	<input type="radio"/> 2
<input type="radio"/> 3	<input type="radio"/> 3	<input type="radio"/> 3
<input type="radio"/> 4	<input type="radio"/> 4	<input type="radio"/> 4
<input type="radio"/> 5	<input type="radio"/> 5	<input type="radio"/> 5
<input type="radio"/> 6	<input type="radio"/> 6	<input checked="" type="radio"/> 6
<input type="radio"/> 7	<input type="radio"/> 7	<input type="radio"/> 7
<input type="radio"/> 8	<input checked="" type="radio"/> 8	<input type="radio"/> 8
<input type="radio"/> 9	<input type="radio"/> 9	<input type="radio"/> 9

This person weighs 186 pounds.

Pounds		
<input checked="" type="radio"/> 0	<input type="radio"/> 0	<input type="radio"/> 0
<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 1
<input type="radio"/> 2	<input type="radio"/> 2	<input type="radio"/> 2
<input type="radio"/> 3	<input type="radio"/> 3	<input type="radio"/> 3
<input type="radio"/> 4	<input type="radio"/> 4	<input type="radio"/> 4
<input type="radio"/> 5	<input type="radio"/> 5	<input type="radio"/> 5
<input type="radio"/> 6	<input type="radio"/> 6	<input type="radio"/> 6
<input type="radio"/> 7	<input type="radio"/> 7	<input type="radio"/> 7
<input type="radio"/> 8	<input checked="" type="radio"/> 8	<input type="radio"/> 8
<input type="radio"/> 9	<input type="radio"/> 9	<input checked="" type="radio"/> 9

This person weighs 89 pounds.  
(First column is marked as zero)

44. What language is spoken MOST OFTEN at home?  
(Choose one only)

English	<input type="radio"/>
Spanish/English	<input type="radio"/>
Spanish	<input type="radio"/>
Other Please Specify:	<input type="radio"/>

45. What is YOUR race?  
(Choose all that apply – you can choose more than one)

White, non-Hispanic	<input type="radio"/>	Pacific Islander, non-Hispanic	<input type="radio"/>
White, Hispanic	<input type="radio"/>	Pacific Islander, Hispanic	<input type="radio"/>
Black, non-Hispanic	<input type="radio"/>	Asian, non-Hispanic	<input type="radio"/>
Black, Hispanic	<input type="radio"/>	Asian, Hispanic	<input type="radio"/>
Native American, non-Hispanic	<input type="radio"/>	Do not want to answer	<input type="radio"/>
Native American, Hispanic	<input type="radio"/>		

46. What is the highest level of education YOU have completed?

1 <sup>st</sup> – 6 <sup>th</sup> grade	<input type="radio"/>	GED	<input type="radio"/>
7 <sup>th</sup> – 9 <sup>th</sup> grade	<input type="radio"/>	Some College	<input type="radio"/>
10 <sup>th</sup> – 12 <sup>th</sup> grade	<input type="radio"/>	Associate's degree or Technical College degree	<input type="radio"/>
High School graduate	<input type="radio"/>	Bachelor's degree or higher	<input type="radio"/>

47. Are YOU employed?  No  Yes – Part Time  Yes – Full Time

48. Are YOU currently pregnant?

Yes	<input type="radio"/>
No	<input type="radio"/>
Does not apply (I am a male)	<input type="radio"/>
I do not know	<input type="radio"/>

50. Are YOU currently breastfeeding?

Yes	<input type="radio"/>
No	<input type="radio"/>
Does not apply (I am a male)	<input type="radio"/>

49. Have YOU had a baby within the last six months?

Yes	<input type="radio"/>
No	<input type="radio"/>
Does not apply (I am a male)	<input type="radio"/>

**YOU HAVE FINISHED THIS SECTION ABOUT YOURSELF. THANK YOU!  
THE NEXT SECTION IS ABOUT YOUR INFANT.**



### INFANT

Fill out this section if you have an INFANT under 12 months, if NOT skip to page 11.

51. Do you have an INFANT (younger than 12 months) in your household who receives WIC foods or formula?  
Yes  No

➤ 52. If YES, did your INFANT receive WIC foods in the past 30 days? Yes  No

53. Are you the PRIMARY CAREGIVER for this INFANT? Yes  No

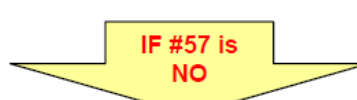
54. Is this INFANT a: Boy  Girl

**55. How old is your INFANT?**

Less Than 1 Month Old	1 to 2 Months Old	3 to 4 Months Old	5 Months Old	6 Months Old	7 to 8 Months Old	9 to 10 Months Old	11 Months Old
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**56. Do you feed your INFANT anything other than breastmilk, formula or water?** Yes  No

**57. Do you feed prepared (jars/containers) baby food to your INFANT?**  
 Yes  No



**58. What kinds of baby food do you choose?**  
*(Choose all that apply – you can choose more than one)*

Fruits	<input type="checkbox"/>
Vegetables	<input type="checkbox"/>
Cereal	<input type="checkbox"/>
Meats	<input type="checkbox"/>
Dinners	<input type="checkbox"/>
Dessert	<input type="checkbox"/>
Others (Please specify)	<input type="checkbox"/>

**59. How many jars/containers of baby food do you feed your INFANT in an average week?**

<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>

**60. If you rarely or never feed baby food or cereal to your INFANT what are the reasons?**

*(Choose all that apply – you can choose more than one)*

My infant is too young.	<input type="checkbox"/>
I think it is too expensive.	<input type="checkbox"/>
I don't think it is healthy.	<input type="checkbox"/>
I don't think it is fresh.	<input type="checkbox"/>
My infant does not like it.	<input type="checkbox"/>
I make my own food for my infant.	<input type="checkbox"/>
Family/cultural tradition/practice is to give homemade food.	<input type="checkbox"/>
Types I want are not available.	<input type="checkbox"/>
Other (please specify)	<input type="checkbox"/>

Please choose the age at which the following foods were first fed to your **INFANT**:

	My Infant Does Not Eat This	Less Than 4 Months Old	4 to 5 Months Old	6 Months Old	7 to 8 Months Old	9 to 11 Months Old
61. Cereal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
62. Vegetables	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
63. Fruit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
64. Meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
65. Desserts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
66. 100% Juice, such as orange, apple or tomato	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
67. Formula	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
68. Milk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
69. Other drinks, such as Kool-Aid®, soda, cola, sports drinks, tea, sugar water, or diet drinks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

70. What was the age of your infant when you STOPPED breastfeeding?

Never, I DID NOT breastfeed	Less Than 1 Month	1 to 2 Months	3 to 4 Months	5 to 6 Months	7 to 8 Months	9 to 10 Months	11 Months	Still Breastfeeding
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

71. Is your **INFANT** currently breastfed or given breastmilk? Yes  No

72. Was your **INFANT** ever breastfed at least one time? Yes  No  Don't Know / Not Sure

73. Does your **INFANT** drink formula? Yes  No

74. How many ounces of formula does your **INFANT** drink per feeding?

My infant does not drink formula.

Ounces per feeding  1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16

75. How often does your **INFANT** drink formula?

Never or Less Than Once Per Week	1 to 2 Times Per Week	3 to 4 Times Per Week	5 to 6 Times Per Week	1 Time Per Day	2 to 3 Times Per Day	4 to 5 Times Per Day	6 to 7 Times Per Day	8 to 9 Times Per Day	10 to 11 Times Per Day	12 to 13 Times Per Day	14 or more Times Per Day
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

76. When you run out of WIC formula, what do YOU usually do?  
(Choose one only)

WIC provides enough formula, so formula does not usually run out.	<input type="radio"/>
I buy or am given additional formula.	<input type="radio"/>
I add extra milk to the formula to make the formula last until I receive the next WIC package.	<input type="radio"/>
I add cereal to the formula to make the formula last until I receive the next WIC package	<input type="radio"/>
I add extra water to the formula to make the formula last until I receive the next WIC package.	<input type="radio"/>
I try to give more breast milk to my infant until I receive the next WIC package.	<input type="radio"/>
I breastfeed my infant often enough so that I do not run out of formula.	<input type="radio"/>
My infant is only breast fed and <u>DOES NOT</u> drink formula.	<input type="radio"/>

How often does your <u>INFANT</u> :	Never or Less Than Once Per Week	1 to 3 Per Week	4 to 6 Per Week	1 Per Day	2 Per Day	3 Per Day	4 or More Per Day
77. Drink milk other than breast milk or formula?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
78. Drink 100% juice, such as apple, orange or tomato?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
79. Drink other drinks, such as Kool-Aid®, sugar water, soda, cola, sports drinks, or sweet tea?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
80. Eat fruits?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
81. Eat vegetables?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
82. Eat meat?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
83. Eat bread, rice, or pasta?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
84. Eat potatoes. NOT including sweet potatoes?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
85. Eat cereal?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
86. Eat desserts?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**YOU HAVE FINISHED THIS SECTION ABOUT YOUR INFANT. THANK YOU!  
THE NEXT SECTION IS ABOUT YOUR CHILD.**



### CHILD

If you have a **CHILD** between the ages one and under five years, please complete the next section; Otherwise, you have **FINISHED** the questionnaire!

87. Do you have a **CHILD** over 1 year or older who receives WIC foods?

Yes  No

➤ 88. If **YES**, did your **CHILD** receive WIC foods in the past 30 days? Yes  No

89. Are you the **PRIMARY CAREGIVER** for this **CHILD**? Yes  No

90. Is this **CHILD** a: Boy  Girl

91. What is this **CHILD'S** age?

Years	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4							
Months	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6	<input type="radio"/> 7	<input type="radio"/> 8	<input type="radio"/> 9	<input type="radio"/> 10	<input type="radio"/> 11

92. How many cups of milk does your **CHILD** usually drink in a day? (Choose one only) 1 Cup = 8 oz

- None - my child does not drink milk  
 Less than 1 Cup  
 1 Cup  
 2 Cups  
 3 Cups  
 4 or more Cups

93. What kind of milk does your **CHILD** drink **most often**? (Choose one only)

My <b>CHILD</b> does not drink milk. <input type="radio"/>	Soy milk –any flavor <input type="radio"/>
White cow's milk <input type="radio"/>	Goat's milk <input type="radio"/>
Chocolate or flavored cow's milk <input type="radio"/>	Rice milk <input type="radio"/>
Lactaid or lactose free milk <input type="radio"/>	

94. What kind of cow's milk does your **CHILD** usually drink?

My <b>CHILD</b> does not drink cow's milk. <input type="radio"/>	½% milk <input type="radio"/>
Whole milk <input type="radio"/>	Skim milk <input type="radio"/>
2% milk <input type="radio"/>	I DO NOT KNOW the kind of cow's milk my <b>CHILD</b> drinks. <input type="radio"/>
1% milk <input type="radio"/>	

95. During the past year, which fruits did **YOUR CHILD** usually eat?

(Choose all that apply - you can choose more than one)

<input type="radio"/> <b>MY CHILD DOES NOT</b> eat fruit.	<input type="radio"/> Cherries	<input type="radio"/> Lemons or limes	<input type="radio"/> Pineapple
<input type="radio"/> Apples	<input type="radio"/> Blackberries	<input type="radio"/> Mangos	<input type="radio"/> Prunes
<input type="radio"/> Apricots (fresh)	<input type="radio"/> Figs	<input type="radio"/> Nectarines	<input type="radio"/> Raisins
<input type="radio"/> Apricots (dried)	<input type="radio"/> Dates	<input type="radio"/> Oranges	<input type="radio"/> Rhubarb
<input type="radio"/> Bananas	<input type="radio"/> Grapefruit	<input type="radio"/> Papayas	<input type="radio"/> Strawberries
<input type="radio"/> Blueberries	<input type="radio"/> Grapes	<input type="radio"/> Peaches	<input type="radio"/> Watermelon
<input type="radio"/> Melons (cantaloupe, honey dew)	<input type="radio"/> Kiwis	<input type="radio"/> Pears	

96. During the past year, which vegetables did **YOUR CHILD** usually eat?

(Choose all that apply - you can choose more than one)

<input type="radio"/> MY CHILD DOES NOT eat vegetables.	<input type="radio"/> Peppers	<input type="radio"/> Okra
<input type="radio"/> Asparagus	<input type="radio"/> Corn	<input type="radio"/> Onions
<input type="radio"/> Avocados	<input type="radio"/> Cucumbers	<input type="radio"/> Potatoes
<input type="radio"/> Beets	<input type="radio"/> Eggplant	<input type="radio"/> Spinach
<input type="radio"/> Broccoli	<input type="radio"/> Greens (collard, mustard, turnip)	<input type="radio"/> Summer Squash (yellow, zucchini)
<input type="radio"/> Brussels Sprouts	<input type="radio"/> Green Beans	<input type="radio"/> Sweet Potatoes
<input type="radio"/> Cabbage	<input type="radio"/> Green Peas	<input type="radio"/> Tomatoes
<input type="radio"/> Carrots	<input type="radio"/> Lettuce (all varieties)	<input type="radio"/> Tomatillos
<input type="radio"/> Cauliflower	<input type="radio"/> Mushrooms	<input type="radio"/> Winter Squash (acorn, pumpkin)

How often does <b>YOUR CHILD</b> do the following?	Never or Less Than Once Per Week	1 to 3 Per Week	4 to 6 Per Week	1 Per Day	2 Per Day	3 Per Day	4 or More Per Day
97. Drink 100% juices such as orange, apple, or tomato.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
98. Drink artificially sweetened drinks such as diet cola, diet soda, or Crystal Light®.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
99. Drink sugar sweetened drinks such as Kool-Aid®, soda, cola, sports drinks, or sugar sweetened tea.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
100. Eat fruit, NOT including juice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
101. Eat vegetables such as salad, carrots, or sweet potatoes. NOT including potatoes, French fries, or potato chips.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
102. Eat French fries, fried potatoes, or potato chips.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
103. Eat potatoes, NOT including French fries, fried potatoes, or potato chips.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
104. Eat other vegetables, NOT including carrots, potatoes, or salad.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
105. Eat whole-wheat tortillas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
106. Eat corn tortillas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
107. Eat whole-wheat or whole grain bread.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
108. Eat brown rice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
109. Eat oatmeal.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
110. Eat white bread.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
111. Eat white flour tortillas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
112. Eat white rice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Please mark in the space, which best indicates your response to the items below:

	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
113. My <u>CHILD</u> likes to eat fruits and vegetables.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
114. My <u>CHILD</u> will eat fruits or vegetables at snack time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
115. I can feed my <u>CHILD</u> fruits, instead of candies, cookies, crackers or chips.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
116. I am willing to give my <u>CHILD</u> two years or older 2% milk.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
117. I am willing to give my <u>CHILD</u> two years or older 1% milk.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
118. I am willing to give my <u>CHILD</u> two years or older skim milk.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**YOU HAVE FINISHED THE FOOD AND NUTRITION QUESTIONNAIRE!**

**THANK YOU!**

## APPENDIX F

**DATE:** 29-Nov-2007

**MEMORANDUM**

**TEXAS A&M UNIVERSITY**  
**VICE PRESIDENT FOR RESEARCH - OFFICE OF RESEARCH COMPLIANCE**

1186 TAMU  
College Station, TX 77843-1186  
1500 Research Parkway, Suite B-150

979.458.1467  
FAX 979.862.3176  
<http://researchcompliance.tamu.edu>

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Institutional Biosafety Committee   Institutional Animal Care and Use Committee   Institutional Review Board

**TO:** MURANO, PETER S

**FROM:** Office of Research Compliance  
Institutional Review Board

**SUBJECT:** Initial Review

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**Protocol Number:** 2007-0641

**Title:** "Design, Implementation, Feasibility and Impact of a Nutrition Education Intervention Centered on the Revised WIC Food Packages"

**Review Category:** Exempt from IRB Review

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The Institutional Review Board (IRB) has determined that the referenced protocol application meets the criteria for exemption and no further review is required. However, any amendment or modification to the protocol must be reported to the IRB and reviewed before being implemented to ensure the protocol still meets the criteria for exemption.

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**This determination was based on the following Code of Federal Regulations:**  
(<http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.htm>)

45 CFR 46.101(b)(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior, unless: (a) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (b) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

## VITA

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