

Factors Associated with the Accuracy of Parental Perception of
Their Child's Body Weight Status:

The New Jersey Childhood Obesity Study

by

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ABSTRACT

Objectives: Although childhood obesity has received growing attention, parents still fail to recognize overweight and obesity in their children. Accurate identification of overweight or obesity in their child is associated with the parent's responsiveness to interventions aimed at preventing weight-related health issues. Recent research shows that a child's age and gender are associated with parental misperception of their child's weight status, but little is known about the interaction of these factors across various age groups. This study examined the association between a wide range of parent, child, and household factors and the accuracy of parental perception of their child's body weight status compared to parent-measured body weight status.

Methods: Data were collected from a random-digit-dial telephone survey of 1708 households located in five low-income New Jersey cities with large minority populations. A subset of 548 children whose parents completed the survey and returned a worksheet of parent-measured heights and weights were the focus of the analysis. Bivariate and multivariate analyses were performed to determine the factors significantly associated with parental perception of their child's body weight status.

Results: Based on parent-measure heights and weights, 36% of the children were overweight or obese (OWOB). Only 21% of OWOB children were perceived by their parents as OWOB. Child gender, child body mass index (BMI) and parent BMI were significant independent predictors of parents' accuracy at perceiving their child's body weight status.

Conclusion: Boys, OWOB children, and children of OWOB parents had significantly greater odds of parental underestimation of their body weight status. Parents

had better recognition of OWOB in their daughters, especially older daughters, than in their sons, suggesting parental gender bias in identifying OWOB in children. Further research is needed regarding parental gender bias and its implications in OWOB identification in children.

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GLOSSARY

Term	Definition
Body Mass Index (BMI)	Human body weight classification calculated using a formula of weight in kilograms divided by height in meters squared.
BMI for Adults	Adult body weight categories include: Underweight: below 18.5 Normal/Healthy Weight: 18.5 – 24.9 Overweight: 25.0 – 29.9 Obese: 30.0 and above (Centers for Disease Control and Prevention [CDC], 2011).
BMI for Children and Teens	Body weight categories determined by the CDC (2011) BMI-for-age percentile growth charts: Underweight: less than the 5th percentile. Normal/Healthy Weight: 5th percentile to less than the 85th percentile. Overweight: 85th percentile to less than the 95th percentile. Obese \geq 95th percentile.
Accuracy of Parental Perception of their Child’s Weight Status Compared to Parent-Measured Weight Status	Ability of the parents to accurately recognize and classify their child’s weight status compared to parent-measured weight status.
Weight Status	Underweight, Normal/Healthy Weight, Overweight, or Obese weight categories as defined by the child/teen or adult BMI categories.
Accuracy of Parental Perception	In this study, accuracy is defined as either accurate or inaccurate. Inaccurate is further defined as either overestimating or underestimating weight status.

Chapter 1

INTRODUCTION

According to the Institute of Medicine one-third of U.S. children are now overweight or obese (Institute of Medicine [IOM], 2012). When children become overweight or obese, their risk of developing chronic weight-related diseases, as children and adults, increases (IOM, 2012). Guo and colleagues studied the predictive value of childhood BMI for risk of overweight at age 35 and found that overweight children have a greater risk of becoming overweight adults (Guo, Roche, Chumlea, Gardner, & Siervogel, 1994). Utilizing the data of 555 white children from four longitudinal studies, the researchers discovered that 20-30% of overweight children younger than 8 years and 30-40% of overweight children between 8 and 13 years became overweight adults. For obese boys and girls, the risk was as high as 80% of the children becoming overweight adults.

A study by Nader et al. (2006) looked at the predictive value of early childhood BMI on risk of overweight during middle childhood and early adolescent years. Using a longitudinal sample of 1042 children in ten U.S. locations, the authors found that 60% of the children who were overweight at any point during their preschool years, and 80% of children who were overweight at any point during their elementary school years, were overweight at age 12. They also discovered that two out of five children whose BMIs were $\geq 50^{\text{th}}$ percentile by age 3 were overweight when they reached age 12. None of the children who were below the 50^{th} percentile at any time during their elementary school years were overweight at age 12 (Nader, et al., 2006).

Childhood overweight has considerable short-term and long-term physical consequences that put children at greater risk for morbidities such as hypertension, cardiovascular disease, cancer and diabetes (Adams, Quinn, & Prince, 2005). The psychological consequences (e.g., low self-esteem, depression, social discrimination) are not as numerous as the physical consequences, but just as serious to a child with excess weight (Doolen, Alpert, & Miller, 2009). Table 1 contains a comprehensive list of potential consequences of childhood overweight.

Table 1

Consequences of Childhood Overweight

Consequences of Childhood Overweight	
Short-term consequences (might be observed in childhood)	Long-term consequences (might be observed in adolescence or adulthood)
Low self-esteem	Atherosclerosis
Depression	Cardiomyopathy
Dyslipidemia	Left ventricular hypertrophy
Pseudotumor cerebri	Type 2 diabetes
Hypertension	Metabolic syndrome
Slipped capital femoral epiphysis	Gallstones
Blount Disease	Irregular menstruation
Asthma	Polycystic ovarian syndrome
Sleep apnea	Delayed sexual maturity in boys
Nonalcoholic fatty liver	
Early sexual maturity in girls	

Source: Doolen et al. (2009)

Note: Many of the short-term consequences may be seen in adolescence and adulthood, and some of the long-term consequences may be observed earlier in childhood. This arbitrary division is only to give the reader an idea that some of these consequences are visible earlier than others (Doolen et al., 2009).

The causes of overweight and obesity in youth are multifactorial (Jaballas, Clark-Ott, Clasen, Stolfi, & Urban, 2011). The literature indicates that lifestyle choices, environmental factors, and cultural environment have the largest impact on the prevalence of childhood obesity (Faith et al., 2012; Southwell & Fox, 2011). Subsequently, a child's home and school environment plays a large role in their food preferences, food consumption and level of physical activity that result in their weight profile. Ultimately, parents are the most influential force behind their child's eating and activity habits which determine their child's overall health (Baughcum, Chamberlain, Deeks, Powers, & Whitaker, 2000). However, it is the parent's *perception* of their children's food consumption, fitness behaviors, and weight that may determine if the parent will encourage healthy lifestyle habits at home (Jaballas et al., 2011).

Although childhood obesity has received growing attention, parents still fail to recognize overweight and obesity in their children. Parental perception of their overweight or obese (OWOB) child's weight status plays a critical role in the parent's responsiveness to potential interventions aimed at improving their OWOB child's lifestyle behaviors (Doolen et al., 2009). Simply put, if parents cannot recognize overweight in their child, they may not be prepared to instigate or support appropriate weight management interventions.

Subsequently, understanding the specific factors associated with inaccurate parental perception of children's weight status is essential to designing and implementing successful obesity prevention efforts (Adamo et al., 2010). There is a sound body of research that has explored the association between parents' accuracy at perceiving their child's body weight status and a variety of child, parent and household-level

characteristics. The majority of the literature has largely focused on characteristics such as child's age, child's gender, child's weight status/BMI, child's race/ethnicity, and parent's BMI as potential predictors of parents' accuracy at identifying their child's weight status. Fewer studies have examined variables such as household income, primary language spoken at home, immigration/residence status, and the home food environment.

As far as we know, the research investigating the association between parental perception of their child's body weight status and a child's gender has only examined this association within a narrow age group (i.e., adolescents or preschool children). There is a lack of research regarding the association between parental perception of their child's body weight status and a child's gender across multiple age categories within the same population.

Purpose

The purpose of this study, based on secondary data analysis from the New Jersey Childhood Obesity Study (NJCOB), was to examine a wide range of parent, child, and household factors that may be associated with the accuracy of parental perception of their child's body weight status compared to parent-measured body weight status. Using data from NJCOB - a household survey of 1708 families with children age 3-18 years living within five New Jersey cities - these analyses also explored the association between the accuracy of parental perception of their child's body weight status and the child's gender across a wide spectrum of ages within the diverse NJCOB sample.

Research Questions and Hypotheses

The present study addressed the following research questions. Specific hypotheses were developed for each research question.

1. *Does the accuracy of parental perception of their child's body weight status vary by the child's age, gender, race/ethnicity or weight status?*

Hypothesis 1.1: Parents of younger children, parents of boys, and parents of overweight children are more likely to misclassify their children's body weight status.

Hypothesis 1.2: Parental perception of their child's body weight status is less likely to be accurate for overweight and obese boys across all age categories compared to girls.

Hypothesis 1.3: Parental perception of their child's body weight status is less likely to be accurate for parents of daughters under the age of twelve compared to parents of adolescent daughters (age 12-19).

Hypothesis 1.4: Parents of non-Hispanic white children are less likely to inaccurately classify their children's body weight status compared to parents of Hispanic and non-Hispanic black children.

2. *Is the accuracy in parental perception of their child's body weight status associated with specific parent and household characteristics?*

Hypothesis 2.1: Parental perception of their child's body weight status is more likely to be accurate if the child's mother has more than a high school education.

Hypothesis 2.2: Parental perception of their child's body weight status will not significantly differ in accuracy by household income.

Hypothesis 2.3: Parental perception of their child's body weight status is less likely to be accurate if the child's parent is overweight or obese as assessed by measured BMI.

Hypothesis 2.4: Parental perception of their child's body weight status is more likely to be accurate if the primary language spoken at home is English.

Hypothesis 2.5: Parental perception of their child's body weight status is less likely to be accurate if the parent was born outside of the U.S or has lived in the U.S. for less than ten years.

3. *Is the accuracy of parental perception of their child's body weight status associated with the home food environment provided to the child?*

Hypothesis 3.1: Parents of OWOB children who accurately identify their child's body weight status are more likely to have a healthy home environment compare to parents of OWOB children who inaccurately identify their child's weight status.

Chapter 2

REVIEW OF LITERATURE

Parental Perception of Their Child's Body Weight Status Compared to Parent-Measured Weight Status

Overview of Current Research. Towns and D'Auria (2009) defined parental perception of child overweight as “parental recognition of their child’s overweight status or concerns about current and future health problems associated with child overweight.” Research concerning parental perception of their child’s body weight status has become an integral part of studying the dynamics and treatment of childhood obesity (Towns & D’Auria, 2009). Epstein (1998) investigated the characteristics and outcomes of a variety of pediatric obesity interventions through a review of 38 predominantly randomized controlled studies. Epstein (1998) found that the most effective treatments for childhood obesity that resulted in long-term weight management involved both the parents and the children. According to Doolen et al. (2009), a parent’s ability to assess their child as overweight or obese may indicate their readiness to implement essential preventative actions. Also, parents who are concerned that their child’s excess weight could lead to health issues are even more likely to take pre-emptive measures (Doolen et al., 2009).

Doolen et al. (2009) is one of three recent scientific reviews that have examined the current research involving the accuracy of parents’ perception in determining their child’s weight status. These three key studies discovered that the majority of parents and primary caregivers underestimate the weight of their OWOB children (Doolen et al., 2009; Parry, Netuveli, Parry, & Saxena, 2008; Towns & D’Auria, 2009). Towns and D’Auria (2009) examined 15 quantitative and two qualitative cross-sectional studies

involving participants from varied socioeconomic, racial and ethnic backgrounds.

Thirteen of the studies were performed in the U.S., two in the United Kingdom, one in New South Wales, and one in Italy. Only one study involved adolescent children; the age range of the remaining 16 studies was 2-12 years. Their key findings confirmed that most parents underestimate their OWOB child's weight status, and that a child's gender, age, and BMI were the leading predictors of parents' misclassification of child weight. They also discovered that many parents did not associate child overweight with increased health risks (Towns & D'Auria, 2009).

Doolen et al. (2009) reviewed 15 cross-sectional studies involving children (mostly 2-12 years of age) from a wide range of racial/ethnic and age groups from four different countries: United Kingdom (two studies), Italy (one study), Australia (two studies), United States (10 studies). Consistent with the other scientific reviews, they discovered that parents were more likely to correctly classify the weight of their normal/healthy weight child than their OWOB child. For example, in one U.S. study, only 23% of the mothers accurately classified their overweight or obese teen. However, 85% of the mothers correctly assessed the weight status of their normal/healthy weight teen. In another U.S. study reviewed by Doolen and colleagues, only 10.5% of the parents were able to accurately assess the weight status of their OWOB child, compared to 59.4% of the parents of normal/healthy weight children (Doolen et al., 2009).

The review studies also revealed that the percentage of parents' accuracy in perception varies from study to study. Parry et al. (2008) examined 23 studies involving 3864 overweight children age 2 through 12 in seven countries. Ten studies were from the U.S., five from Australia, five from Europe, two from South America, and one from

Mexico. Similar to the other two review studies, the participants came from a variety of socioeconomic, racial and ethnic backgrounds. They found that parents' accuracy at determining their OWOB child's weight status ranged from 6.2% to 73%. In 19 of these 23 studies, less than half of the parents accurately classified their OWOB child; the overall mean accuracy among the 23 studies was 35% based on a random effects model (95% CI: 25.6 - 4.5). Although the authors attributed the variability in accuracy to population differences, possible reporting bias, slight variances in the BMI centile curves used to define overweight/obesity, and to the limitations of small sample sizes, they recognized the importance of their findings: Reliance on parents for timely identification and intervention of child overweight may not be effective. Parents who cannot recognize overweight or obesity in their child may be unable to provide the guidance and environment to assist their child in successful weight management (Parry et al., 2008).

Individual studies reported a range of 40% to 88% of parents who underestimated their child's OWOB status (Adams et al., 2005; Baughcum et al., 2000; Boutelle, Fulkerson, Neumark-Sztainer, & Story, 2004; Carnell, Edwards, Croker, Boniface, & Wardle, 2005; Hernandez, Cheng, & Serwint, 2010; Huang et al., 2007; Jaballas et al., 2011; Mamun, McDermott, O'Callaghan, Najman, & Williams, 2008; Manios, Kondaki, Kourlaba, Vasilopoulou, & Grammatikaki, 2009; Mathieu, Drapeau, & Tremblay, 2010; Maynard, Galuska, Blanck, & Serdula, 2003; Myers & Vargas, 2000; Vanhala et al., 2011; Young-Hyman, Herman, Scott, & Schlundt, 2000). These individual studies, along with the review studies, confirmed the trend of parents' poor awareness of their child's body weight. These original studies represented six different countries (9 out of 14 studies were conducted in the U.S.), were mostly cross-sectional in design, and

investigated a variety of parent and child characteristics associated with parents' perceptions of their child's weight status. Again, the study's participants represented a range of ethnic/racial and socioeconomic groups and mainly involved children (both boys and girls) under the age of 12. Many of these studies will be discussed in greater detail in upcoming paragraphs.

A Universal Problem. Parental misperceptions about their child's body weight appear to be a global issue. Cross-sectional studies performed in Italy, United Kingdom, Australia, United States, Finland, Greece, and Canada consistently reported significant discrepancies between the parent's assessment and the actual weight of the child, especially the OWOB child (Carnell, et al., 2005; Doolen et al., 2009; Mamun et al., 2008; Manios et al., 2009; Mathieu et al., 2010; Vanhala et al., 2011).

For example, Manios et al. (2009) conducted a study using a representative sample of children age 2-5 from randomly-selected nurseries and day care centers in five counties in Greece. Of the 1859 mother-child pairs, approximately 88% of overweight children and 55% of obese children were classified as normal weight by their mothers. In the Finnish study of 855 seven-year-old schoolchildren by Vanhala et al. (2011), 57% of OWOB boys and girls were classified as normal weight by their parents. An Australian longitudinal study (Mamun et al., 2008), which consisted of 2650 mother-child pairs who had been followed up prospectively since the child's birth 14 years earlier, reported that 40% of overweight children were perceived by their mothers as either underweight or normal weight. Mamun found that two of the main predictors of mothers underestimating their OWOB child's body weight status were the child's concern with their physical appearance and the child's dieting behaviors. The more the OWOB child

was dissatisfied with their body shape and size, and the more they dieted to lose weight, the more their mothers underestimated their child's weight (Mamun et al., 2008).

Doolen et al. (2009), who reviewed research conducted in Australia, Italy, United States and United Kingdom, discovered that parents' poor awareness of their child's weight status was consistent across countries. Based on these findings, they theorized that developed countries may hold common belief systems or values that influence and contribute to this increasingly global issue of misperceptions about body weight status. For instance, there is the widely-held belief across all socioeconomic groups that plump infants and toddlers are considered well-nourished, therefore healthier and more desirable. Also, as the trend for larger body sizes continues, the cultural acceptance of heavier physiques as the norm increases (Doolen et al., 2009).

Parry et al. (2008) confirmed that childhood obesity is a worldwide public health problem when they conducted their systematic review of research from seven countries. Based on their overall findings, the authors hypothesized that as the world's population becomes heavier, the prevalence of inaccurate perceptions about weight will increase. They concurred that being overweight has become the new normal and, therefore, increasingly acceptable (Parry et al., 2008).

The Association Between Parental Perception of Their Child's Body Weight Status and Parent, Child and Household Factors

An Overview. The association between parent, child, and household characteristics and parental perception of their child's weight status has been the topic of several research studies for over ten years. The examination of the literature revealed that the most commonly researched characteristics in these studies were the child's age,

gender, and weight status/BMI. Parent's (usually the mother's) weight status/BMI and education level were also studied quite often. Child's race and household income were included in a few studies, but were rarely the focus of the research. Three of the variables investigated in the present study - immigration/residence status, primary language spoken at home, and home food environment - were seldom included as independent variables in the research. In fact, as far as we know, only one other published U.S. study (Huang et al., 2007) discusses the association between the primary language spoken at home and the parent's ability to identify their child's weight status.

The majority of the research literature indicates that a child's age and weight status/BMI are the characteristics most associated with parental identification of their child's weight status, followed by the child's gender. The consensus reached by most of the studies was that parents of boys, younger children, and OWOB children (especially OWOB boys and OWOB younger children) were significantly more likely to misclassify/underestimate their child's body weight status. There were somewhat mixed results about the association between parent's weight status/BMI, parent's education level, child's race, and household income and parents' perception of their child's weight. The following sections include a deeper examination of the literature regarding each household, parent and child-level characteristic examined in the present study.

Child's Age. Several studies (Doolen et al., 2009; Huang et al., 2007; Manios et al., 2009; Maynard et al., 2003; Towns & D'Auria, 2009; Vanhala et al., 2011; Young-Hyman et al., 2000) reported that a child's age was a key determinant in how parent's assessed the weight of their children. The majority consensus was that parents are more likely to correctly assess the weight status of school-aged children (age 5 and above) than

younger children. For example, Maynard et al. (2003) utilized a sample of 5500 children (age 2-11) and mothers from the third National Health and Nutrition Examination Survey (NHANES). They discovered that the younger the child, the greater the odds that the parent would underestimate the weight of their OWOB child. Conversely, Manios et al. (2009) found that there was less misclassification by parents of 2-3 year olds than 4-5 years olds.

Most studies concerning parental perception of their child's weight status have involved children under the age of 12, with 2 to 8 year-olds being studied most often (Towns & D'Auria, 2009). Three studies (Adams et al., 2005; Baughcum et al., 2000; Carnell et al., 2005) found no significant effect of a child's age on a parent's ability to identify their child's body weight. The studies by Baughcum and Carnell involved pre-school age children; Adams studied 5-7 year-olds. Both Adams and Carnell gave three potential reasons why a child's age had little impact on parents' perceptions in their research: The young age of the children in their samples, the narrow age range in the samples, and that differences may not appear until the teen years. All three researchers mentioned that many parents believe that extra weight on pre-school children is a sign of good health and will be out-grown as the child gets older (Adams et al., 2005; Baughcum et al., 2000; Carnell et al., 2005).

Huang et al. (2007), who studied 1098 children age 0-18 and their parents in San Diego County, California, remarked that the acceptance of overweight in young children was alarming due to the increased prevalence in overweight and obesity in children younger than 5 years old, which may result in negative private and public health consequences.

Child's Gender. A child's gender is another demographic characteristic that has been shown to have an important impact on parental perception of their child's body weight status. Parents, especially mothers, are significantly more likely to identify overweight or obesity in their daughters than in their sons (Doolen et al., 2009; Manios et al., 2009; Mamun et al., 2008; Maynard et al., 2003; Towns & D'Auria, 2009; Vanhala et al., 2011). In the study conducted by Vanhala et al. (2011), the researchers discovered that 51% of parents (mostly mothers) of overweight daughters identified their daughter's body weight status, while only 33% correctly classified their overweight son's body weight.

The study by Boutelle et al. (2004) was one of the few U.S. studies that focused on parents' perception of their adolescents' body weight status. Utilizing surveys and interviews, they discovered that adolescent gender was associated with parents' perception accuracy, and that mothers of teen girls were about half as likely to underestimate their child's OWOB status as mothers of teen boys. Maynard et al. (2003), who used NHANES data in their research, were surprised to discover that mothers were three times more likely to correctly assess their OWOB daughters' weight status than their OWOB sons. However, they did not find any significant associations between ethnicity/race and mother's perception of her son's versus daughter's weight status.

No significant association between a child's gender and the parent's recognition of overweight was found by Adams et al. (2005); Baughcum et al. (2000); Carnell et al. (2005); Huang et al. (2007); or Mathieu et al. (2010). Similar to the age variable, Adams et al. (2005) mentioned that the lack of association could be due to the young age and narrow age range of the children in the studies. The other four studies did not provide an

explanation for their lack of association between parent's assessment of their children's weight and the child's gender.

Manios et al. (2009), Maynard et al. (2003), and Vanhala et al. (2011) have suggested that parents are more accepting of extra weight on a boy's frame, which may convey a tougher image than a non-overweight build. In contrast, girls may be subject to more social pressures and stigmas if they become overweight. Therefore, parents may be less tolerant about their daughters achieving overweight status, and therefore, more aware of their daughter's body weight.

Child's Weight Status/BMI. A child's body weight status and BMI score are also key determining factors in the accuracy of the parents' perception of their child's weight (Doolen et al., 2009). Most prior studies consistently reported that the majority of parents of OWOB children were significantly more likely to underestimate their child's weight. In addition, children whose BMI fell into the normal/healthy weight percentile were much more accurately assessed by parents (Adams et al., 2005; Baughcum et al., 2000; Boutelle et al., 2004; Carnell et al., 2005; Doolen et al., 2009; Huang et al., 2007; Manios et al., 2009; Mamun et al., 2008; Maynard et al., 2003; Myers & Vargas, 2000; Towns & D'Auria, 2009; Vanhala et al., 2011; Young-Hyman et al., 2000).

For example, Maynard et al. (2003) revealed that 58% of the mothers in their study underestimated the weight status of their OWOB children. In contrast, 87% of the mothers of normal/healthy weight children correctly identified their child's weight status. Mathieu's (2010) cross-sectional research in Quebec, Canada of 1125 six-year-old children and their parents uncovered that, regardless of the child's gender, 77% of the mothers of overweight and obese children underestimated their child's weight and 84%

of normal weight children were accurately assessed. Carnell's (2005) United Kingdom study of 564 children (age 3-5) attributed parental lack of awareness of OWOB in their child to increased prevalence for overweight, parent's possible reluctance to acknowledge overweight in their children, and pressure on mothers to keep pace with child growth charts.

A high child BMI ($\geq 97^{\text{th}}$ percentile) was a strong predictor of mothers correctly reporting overweight/obesity in their children. (Maynard et al., 2003; Adams et al., 2005). Maynard added that as the child's BMI-for-age z score increased, mother's accuracy was more likely to increase. Adams et al. (2005), who studied 366 Native-American child-caregiver dyads from three Wisconsin tribal communities, found that until children reached a BMI greater than the 99th percentile, overweight children were not classified as overweight by the child's parent or family caregiver.

For Keller, Olsen, Kuilema, Meyermann, and van Belle (2013), child BMI was not a predictor of the accuracy of parents' perception. Keller's U.S. study, which included 75 children age 4-6 years, found that body fat composition data (ratio of trunk and leg fat to total fat) collected using dual X-ray absorptiometry (DXA) were more predictive. They discovered that if children carried a larger proportion of body fat in their trunk or legs, parents were more likely to identify the child as overweight or obese.

Child's Race/Ethnicity. Compared to other child-level variables (age, gender, weight status), few studies have investigated the association between a child's race/ethnicity and their parent's perception of the child's weight status. Boutelle et al. (2004) was one of the rare studies that reported that race/ethnicity were significantly associated with parental perceptions. Boutelle et al., (2004) found that African-American,

Asian, and white teens were more likely to have their body weight status correctly identified by their mothers compared to Hispanic teens or teens classified as “other” races/ethnicities.

Although most current research does not indicate that child’s race/ethnicity was a determining factor in parental perception of weight, some researchers have discussed the cultural beliefs about body weight and size, specifically citing studies from Young-Hyman et al. (2000), Adams et al. (2005) and Myers and Vargas (2000). Young-Hyman conducted interviews and physical examinations of 111 OWOB African American children (age 5-10) and their caregivers during a diabetes prevention program. The authors reported 69% of the children were OWOB, but only 44% of parents were concerned about the potential health risks of overweight. Furthermore, they noted that heavier body types may be more culturally accepted in the African American community, which may be a contributing factor in the disconnect between perceived and actual weight status of their children, and the failure to recognize potential negative health outcomes (Young-Hyman et al., 2000).

Adams et al. (2005), who administered health screenings and surveys to 366 OWOB Native-American children (age 4-8) and their primary caregivers, revealed that only 15% of parents and caregivers correctly classified their overweight/obese child as overweight. This was explained by the cultural belief that heavier children are considered healthier and more appealing. Consequently, normal weight Native-American children may be considered underweight, undernourished and unhealthy. The authors also discovered that parents/caregivers were more concerned about cardiovascular disease and diabetes in their OWOB child than their child’s obesity. Compared to nondiabetic

parents, diabetic parents were significantly more worried about their child's risk of diabetes, no matter the child's weight. Furthermore, only diabetic parents associated child overweight with increased health risks (Adams et al., 2005).

Mothers of 200 obese Hispanic children age 2-5 years were interviewed at a health clinic by Myers and Vargas (2000) in their cross-sectional study. When questioned about their perceptions of their child's obesity, 35% of the mothers did not believe that the child was overweight. Myers and Vargas (2000) stated that cultural influences may play a key role in the preference for larger physiques and in the denial of obesity in children. The authors also saw a need for a culturally-sensitive and individualized approach to gathering and providing information about nutrition, lifestyle and body size.

The review study by Towns et al. (2009) reported comparable findings about African American, Native-American and Latino/Hispanic preference for heavier children. However, Baughcum et al. (2000) found similar results in a study of mainly low income white mothers. These mothers also felt that heavier children were considered healthy, robust, and an indication of good parenting.

Mother's Education Level. A large majority of the studies reviewed for the current study and in past scientific reviews did not find any significant association between maternal education and the mother's ability to correctly classify OWOB status in her children. However, a study by Baughcum et al. (2000) has been widely cited for reporting that mothers with less education (high school degree or less) were less likely to identify overweight in their child compared to mothers with more than a high school degree, even after adjusting for other parent and child characteristics. Baughcum et al.

(2000) surveyed 622 mothers with children age 2-5 years at a Women, Infants, and Children (WIC) clinic. The authors also discovered that mothers with a lower level of education were more likely to be obese compared to mothers with a higher education and that their children were also more likely to be obese.

Similar to Baughcum et al. (2000), the study by Manios et al. (2009) found that mothers with at least some high school education were significantly less likely to underestimate the weight status of their OWOB or non-OWOB child compared to mothers with less than nine years of education. In contrast to Baughcum and Manios, several other studies (Carnell et al., 2005; Hernandez et al., 2010; Huang et al., 2007; Mathieu et al., 2010; Vanhala et al., 2011) found that there was no relationship between the parent's education level and the identification of overweight or obesity in their child. Three of the seven studies mentioned above were conducted in the U.S. (Baughcum et al., 2000; Hernandez et al., 2010; Huang et al., 2007), possibly indicating a need for further U.S. research on the impact of education on parental perception of their child's weight status.

Parent's Weight Status/BMI. Parents have a substantial influence on their children's health, including the child's weight status (Baughcum et al., 2000). If a parent is overweight, they are less likely to recognize overweight in their child (Boutelle et al., 2004; Mamun et al., 2008). In the U.S. study by Boutelle, et al. (2004), which included 755 mothers and teens of diverse ethnic and racial backgrounds, 35% of mothers underestimated their teen's weight status. They also found that overweight mothers were twice as likely as nonoverweight mothers to underestimate their teen's body weight status. Analyses by Huang et al. (2007) and Maynard et al. (2003) also revealed that as a

mother's BMI decreased, they were more likely to accurately identify OWOB children. Adams et al. (2005) found that overweight Native-American mothers were able to identify overweight in their child, but obese mothers were least likely to identify overweight in their child compared to normal and overweight mothers. Parent weight status was not associated with recognition of childhood overweight in Baughcum et al. (2000).

Consistent with most of the aforementioned U.S. research, Mamun et al. (2008), the Australian longitudinal study, confirmed that the risk of childhood obesity increases if one or more of the parents are overweight, and that maternal overweight was especially associated with inaccurate identification of child overweight. However, the Finnish study by Vanhala et al. (2011) found that as a father's BMI increased, recognition of the child's overweight also increased. It is interesting to note that fathers were seldom the subject - or seldom participated - in the study of parental perception of child body weight status. The exception was Vanhala et al. (2011), where almost as many fathers as mothers completed the study's questionnaire. The United Kingdom study by Carnell et al. (2005) did not find any association between parent weight status and their ability to identify a child's weight status.

Household Income. A limited amount of studies have examined household income as a predictor of parental classification of their child's body weight status. Studies that have included household income as an independent variable in their analyses have used slightly different measures of income. Similar to other variables examined in this literature review, results varied among studies.

Maynard's study, which utilized NHANES data, employed a poverty income ratio as the income variable. The ratio was calculated with family income and size using U.S. Census Bureau data. However, Maynard found that income was not significantly associated with maternal identification of their child's weight status (Maynard et al., 2003).

Huang et al. (2007) used a comprehensive list of child and parent socioeconomic demographic characteristics during their research of 1098 parent-child pairs living in San Diego County, California. The researchers defined their income variable as *at or below poverty level* or *above poverty level* based on 2005 U.S. Census bureau statistics. Huang found that parents with incomes above poverty level were over one-and-a-half times more likely to accurately classify their child's body weight status than parents at or below poverty level.

Baughcum et al. (2000) recruited low, middle, and middle-upper income women and their overweight children for their research. Income data from the middle and middle-upper income families was converted to a percentage of the federal poverty level. Income data from the lower income families was categorized as at or below 185% of the federal poverty level. Both bivariate analyses and multivariate logistic regression analyses revealed that family income was not associated with mothers misclassifying their overweight child (Baughcum et al., 2000).

Primary Language Spoken in the Home and Parent's Immigration/Residence Status. These two variables were combined for this discussion due to the extremely limited quantity of studies that investigated these variables' impact on parental perceptions of child body weight status.

The study by Huang et al. (2007) in San Diego County included both of these variables in their analyses to assess the acculturation of their participants and to examine the association between acculturation and parents' ability to identify their child's weight status. When questioned about the primary language spoken at home, 42% of the study's parents responded that they spoke only English at home; 29% spoke only Spanish; 24% were bilingual English-speaking homes; 5% spoke other languages. The parents were also asked the number of family generations in the U.S. Forty-five percent responded that they were the first generation of their family that has lived in the U.S.; 13% were the second generation; 3% were the third generation; 33% were at least the fourth generation. Data analyses of the effect of these two household variables on parental perception revealed that parents who primarily spoke English at home and whose families had lived in the U.S. for at least 2 generations were more likely than comparison parents to accurately classify their children's weight status (Huang et al., 2007).

The Canadian study by Mathieu et al. (2010) examined the effect of immigration status on parental misperception of their child's weight status using a sample from the Quebec Longitudinal Study of Child Development. Parents were classified as immigrants if they were born outside of Canada. The researchers found that parents born in Canada were more likely to overestimate the weight of their underweight child, i.e., to think that the child was heavier than he/she was. Immigration status was not a factor in parents' classification of their normal weight or OWOB child. Mathieu theorized that media's emphasis on thinness combined with the increased prevalence of overweight in society makes it more difficult and confusing to identify underweight in a person.

Home Food Environment. Two key components of helping children maintain a healthy weight is a healthy home food environment and parent's recognition that their child has a weight issue (Davison & Birch, 2001; Mathieu et al., 2010). Unfortunately, even when parents recognize that their child is overweight, they may be reluctant to change the home food environment. Jain, Sherman, Chamberlin, Carter, Powers, & Whitaker, (2001) conducted three focus groups of low-income mothers of overweight and obese preschool children at a WIC clinic. The researcher's questioned mothers about the reasons children become overweight, the barriers to manage and prevent overweight children, and the mother's views about how they decide when a child is overweight or obese. In regards to the child's home food environment and diet, the mothers were not concerned about their child's excess weight if the child was consuming healthy foods in addition to junk foods. These mothers also expressed that they could not change the rest of the family's diet to limit the foods available to their overweight child. Myers and Vargas (2000) discovered that 37% of the parents who were able to identify overweight in their child chose not to take action, but 48% claimed that they attempted to limit the child's snacks.

A study by Neumark-Sztainer, Wall, Story, and van den Berg (2008) specifically examined the association between parents' perception of their adolescent's body weight status and the home food environment, including family meal customs (as reported by the parents). The study's participants consisted of 484 parent-teen pairs. All of the teens were overweight and had participated in Project EAT (Eating Among Teens) through the University of Minnesota. The purpose of the study was to compare the home food environment and family meal customs of parents who accurately classified their

overweight child to the parents who were not accurate. The researchers assessed home food availability and family meal customs by asking questions about the frequency of family meals, the use of fast foods at family meals, and the availability of fruits, vegetables, soft drinks, candy, and salty snacks at home. The researchers found that parents who accurately identified their child as overweight were no more likely than parents who were inaccurate to provide more fruits and vegetables at home, and less salty snacks, soft drinks, candy and fast food. (Neumark-Sztainer et al., 2008).

In summary, most of the studies examined for this literature review revealed a strong connection between parental perception of their child's body weight status and a child's gender and age. Findings specifically indicated that parents were much more likely to accurately identify overweight in their older children (≥ 5 years) and in girls. However, as far as we know, researchers have not investigated if a child's gender is a key predictor of parental perceptions across a variety of age categories within the same population. The aim of this study was to help close this gap in the literature through our own exploration of the determining factors of parental disconnect between the perceived and actual parent-measured weight of their children.

Chapter 3

METHODS

Data Sources

Study Design and Participants. Secondary data analysis was performed utilizing data from the NJCOB study conducted by Rutgers Center for State Health Policy. The NJCOB study consisted of a random-digit-dial landline telephone survey (Appendix A) of 1708 New Jersey households with at least one child between the ages of 3 to 18 years. Eligible households lived within the cities of Camden, Trenton, Vineland, Newark, or New Brunswick. These 1708 households consisted of 400 each from Camden, Trenton and Newark, 300 from Vineland, and 208 from New Brunswick. The sample from each city was weighted to be representative of the population of children ages 3-18 within each of those municipalities. The survey was conducted in English or Spanish and took an average of 36 minutes to complete.

NJCOB survey data was collected between June 2009 and March 2010 with a response rate of 49%. The respondent from each household was an adult, age 18 years or older, who was the most knowledgeable about the health status of the children in the household. Ninety-four percent of the respondents were either the parent or grandparent, and is referred to as the parent in this thesis. One child between the ages of 3 and 18 within each household was randomly selected by computer to be the “index child” (referred to as the child in this thesis) who was the focus of the survey questions. A child of the adult respondent was given priority to be selected as the index child for the survey.

Each respondent gave verbal consent to participate in the survey. After completing the telephone survey, participants were sent a \$10.00 check by mail. These

participants were also asked to take part in a follow-on study to weigh and measure themselves and their child. Those who agreed to participate were sent a tape measure and worksheet to record height and weight data for their child and themselves using guidelines from the CDC (2011). 40.5% of the surveyed participants returned the height and weight worksheet and were sent another \$10.00 incentive.

The present study utilized items from the NJCOB survey related to household, parent and child demographic and socioeconomic characteristics; parent and child height and weight measurements; and parent perceptions about their child's body weight status. The initial NJCOB study was approved by the Institutional Review Board of Rutgers University (Appendix B). The current study utilizing the secondary data was approved by the Institutional Review Board of Arizona State University (Appendix C).

Dependent Variable

The dependent variable in the present study was the accuracy of parental perception of their child's body weight status as compared to parent-measured weight status. Parent-measured weight status was calculated from the parent-measured heights and weights reported on the post-survey worksheet. Using the parent-measured heights and weights and the CDC's BMI classification for children and teens, the children were categorized as: *Underweight*: less than the 5th percentile; *Normal/Healthy Weight*: 5th percentile to less than the 85th percentile; *Overweight*: 85th percentile to less than the 95th percentile; *Obese* \geq 95th percentile (CDC, 2011).

Parental perception of their child's weight status was derived from the following NJCOB survey question: "Compared to what you would like (him/her) to be, would you

say (index child) is very underweight, slightly underweight, about the right weight, slightly overweight, or very overweight?” (Ohri-Vachaspati & Yedidia, 2009)

As shown in Table 2, accuracy of parental perception is defined as either: accurate, an overestimation of the child’s weight status, or an underestimation of the child’s weight status. For example, similar to the study by Manios et al. (2008), an overweight child (based on actual parent measurements) may be perceived by the parent as underweight (an underestimation), normal weight (an underestimation), overweight (an accurate assessment), or obese (an overestimation). For the purpose of this definition of accuracy, parents’ responses of “very underweight” and “slightly underweight” were combined into the *underweight* category.

Table 2

Defining Accuracy of Parental Perception

Parents’ Perception of Child’s Body Weight Status	Actual Body Weight Status Based on Parent Measurements			
	Underweight	Normal Weight	Overweight	Obese
Underweight	Accurate	Underestimate	Underestimate	Underestimate
Normal weight	Overestimate	Accurate	Underestimate	Underestimate
Overweight	Overestimate	Overestimate	Accurate	Underestimate
Obese	Overestimate	Overestimate	Overestimate	Accurate

Independent Variables

Child Demographic Characteristics. Parents were asked the age, gender, ethnicity and race of the index child. To determine the child’s ethnicity as either Hispanic or Non-Hispanic, the parent was asked if the child was of Spanish, Hispanic or

Latino origin or descent. To determine the child's race, the parent was asked if the child was 'White,' 'Black/African American,' 'Hispanic,' 'Asian/Pacific Islander,' 'American Indian/Native American/Alaskan or Eskimo,' or 'Other.' Based on the parent's response to ethnicity and race in this analysis, the child was categorized as *Hispanic, Non-Hispanic White, Non-Hispanic Black, and Non-Hispanic Other*.

Household Income. The respondents were questioned about their total household annual income for 2008 before taxes and other deductions. Households that did not provide their income were imputed an income using city-specific regression models. Based on the respondent's answers and household size, the household income variable was dichotomized into 'less than or equal to 200% of the 2008 federal poverty level' or 'greater than 200% of the 2008 federal poverty level.' Households that had reported or imputed incomes which conflicted with their reported participation in need-based programs (specifically the Supplemental Nutrition Assistance Program and the WIC program), were assigned to the lower income category.

Mother's Education. If the respondent was the mother living in the same household as the index child, she was questioned about the highest grade level or highest level of education she had attained. If the respondent was not the mother, but the mother lived in the household, the mother's education level was ascertained. If the respondent was not the mother of the index child, and the mother did not live within the household, the respondent's education level was collected. For the purpose of this analysis, the participant's responses were categorized into *Completed at Least a 4-Year College Degree, Completed Some College, and Completed High School or Less*.

Parent’s Body Weight Status. The parent’s weight status was determined from the height and weight measurements taken by the parents themselves and classified according to the BMI standard weight status categories for adults: *Underweight*: below 18.5; *Normal/Healthy Weight*: 18.5 – 24.9; *Overweight*: 25.0 – 29.9; *Obese*: 30.0 and above. In this analysis, the small number of parents classified as underweight (n=7) were combined into the normal/healthy weight category. In addition, the 19 parents (out of the 548 in the final sample) who did not provide complete measurement data were coded as “missing values.”

Child’s Body Weight Status. The child’s weight status was determined from the child’s height and weight measurements taken by the parents and classified according to the CDC’s BMI-for-age growth charts for children and teens: *Underweight*: less than the 5th percentile; *Normal/Healthy Weight*: 5th percentile to less than the 85th percentile; *Overweight*: 85th percentile to less than the 95th percentile; *Obese* \geq 95th percentile (CDC, 2011). For the present study, one child out of the 548 in the final sample was coded as a “missing value” due to incomplete measurement data.

Primary Language Spoken at Home. Respondents were asked “What is the primary language spoken in your home?” In the current analysis, their responses were combined into a dichotomized variable with the categories of *English* or speaking *Other Languages* at home.

Parent’s Immigration/Residence Status. Survey respondents were asked a series of questions to determine how many years they had lived in U.S. and if they were born inside or outside of the U.S. For this analysis, their responses were categorized as

U.S Born, Foreign Born Living in the U.S. Less Than 10 Years, or Foreign Born Living in the U.S. Greater Than 10 Years.

Home Food Environment. To assess the respondent's and child's home food environment, the respondent was asked six questions regarding the availability of healthy food items (four questions) and unhealthy food items (two questions) at home. The following questions were derived from the GEMS food availability surveys by Baranowski (2000) which are validated survey tools used to evaluate the accessibility of healthy and unhealthy foods to children in their home environment.

“In the last week, did you have...”

- Fresh, frozen, or canned vegetables available in your home?
- 1% or skim milk available in your home?
- Whole grain bread or whole grain pasta available in your home?
- Fresh, canned, or dried fruit on the counter or somewhere easy for your child to get to?
- Cookies, cakes, or candy available in your home?
- Chips, Nachos, or Doritos available in your home?

In the present study, each question was given a score of 1 for a ‘yes’ response and 0 for a ‘no’ or ‘do not know response.’ The scores from the four ‘healthy’ food assessment questions were summed to arrive at the Healthy Home Food Environment scale (HEFE) with a range of 0-4. The scores from the two ‘unhealthy’ food assessment questions were summed to arrive at the Unhealthy Home Food Environment scale (UNHEFE) with a range of 0-2. The Ratio of Healthy to Unhealthy Home Food Environment scale (range of 0.50-5) was calculated utilizing the formula: $\text{Ratio} = (\text{HEFE} + 1) / (\text{UNHEFE} + 1)$ to avoid division by zero.

Statistical Analysis

Of the 1708 completed surveys, data analysis was restricted to a subset of 592 children whose parents had returned the post-survey worksheet containing parent-measured height and weight data for themselves and their child. An additional 44 children were excluded who had a measured or calculated value considered to be biologically implausible as defined by the CDC (CDC, n.d.). Therefore, the final sample used in the present study totaled 548 children. Statistical analyses were performed in 2013 using IBM SPSS Statistics software version 21.

Descriptive statistics were conducted for analysis of the frequency distribution and descriptive characteristics of the dependent variable (parents' accuracy at determining their child's body weight status) and the independent household, parent and child-level variables. Chi-square tests for independence were utilized for bivariate analyses to test the significance of the association between the dependent variable and each independent variable. The Mann-Whitney U Test, the non-parametric alternative to the independent-samples t-test, was conducted to test the differences in mean rank for the home food environment measures. Multivariate logistic regression was performed to test the significance of the association between the dependent and independent (predictor) variables after controlling for confounding variables. Significance for all analyses was determined at $p < 0.05$.

In this analysis, the small number of children whose parents had overestimated their weight (n=24, 4.4% of current sample) resulted in sample size limitations and small cell values in bivariate and multivariate analyses. Subsequently, the dependent variable for accuracy was dichotomized into "accurate vs. inaccurate/underestimate," the 24

children were coded as missing values, and the *overestimate* category was excluded from all bivariate and multivariate analyses. For bivariate and multivariate analyses that included the child race/ethnicity variable, the children in the ‘other’ race/ethnicity category (n=23, 4.2% of sample) were excluded from that variable due to sample size limitations.

Multivariate logistic regression was performed using the binary logistic procedure in SPSS. The dependent variable utilized was the accuracy of parental perception of their child’s body weight; Independent variables included the aforementioned child, parent and household characteristics. After checking for high intercorrelations among the independent predictor variables using the Spearman rho correlation coefficient test, it was found that two variables (parent’s immigration/residence status and the primary language spoken at home) were shown to have a strong, negative correlation, $r = -.72$, $n = 543$, $p < 0.001$. As a result, the immigration/residence variable was excluded from all logistic regression models.

Chapter 4

RESULTS

Descriptive Characteristic and Statistics

Table 3 presents the descriptive characteristics of the study sample. Of the 548 children in the sample, 50.9% were female and 35.9 % were overweight or obese. Almost half (49.3%) were between the ages of 12-19 years, 34.7% were 6-11 years old, and the remaining 16.1% were 3-5 years old. The majority of the children were either Hispanic (40.9%) or non-Hispanic black (40.9%). Most of the children's parents were also Hispanic (38.1%) or non-Hispanic black (42.5%), were born in the United States (72.2%), and primarily spoke English at home (73.8%). Over half (54.8%) of the children's mothers received a high school education or less, 26.9% had some college education, and 18.3% had earned at least a four-year college degree. A majority of the households (65.3%) were living at or below 200% of the federal poverty level.

Table 4 summarizes the descriptive statistics of the household food environment. Within the range of 0-4 healthy food types available at home, the mean score was 3.19 ($SD = 0.79$). The mean score for unhealthy food types available was 1.39 ($SD = 0.74$) based on a range of 0-2. The mean score for the ratio of healthy to unhealthy food types available at home was 2.04 ($SD = 1.07$) based on a range of 0.5-5.

Table 3

Description of Study Sample (n=548)

	n ^a	% ^b
Child's Gender		
Male	269	49.1
Female	279	50.9
Child's Age		
3-5 years	88	16.1
6-11 years	190	34.7
12-19 years	270	49.3
Child Race/Ethnicity		
Non-Hispanic White	77	14.1
Non-Hispanic Black	224	40.9
Hispanic	224	40.9
Other	23	4.2
Child's BMI in 4 Categories		
< 5 th percentile	21	3.8
5 th to < 85 th percentile	330	60.2
85 th to 94 th percentile	83	15.1
≥ 95 th percentile	114	20.8
Parent's Race/Ethnicity		
Non-Hispanic White	90	16.4
Non-Hispanic Black	233	42.5
Hispanic	209	38.1
Other	16	2.9
Parent's Immigration/Residence Status		
US born	394	72.2
Foreign born, here ≥ 10 years	118	21.6
Foreign born, here < 10 years	34	6.2
Mother's Education		
High School or less	291	54.8
Some College	143	26.9
College +	97	18.3
Parent's BMI		
< 25 Normal/Healthy Weight	131	24.8
25-30 Overweight	160	30.2
> 30 Obese	238	45.0
Language Spoken at Home		
English	402	73.8
Other Languages	143	26.2
Poverty Category^c		
≤ 200% of Poverty Level	358	65.3
> 200% of Poverty Level	190	34.7

^a Sample size in each cell may not add up to 548 due to missing values.

^b Some percentages may not equal 100 due to rounding.

^c Based on 2008 federal poverty level criteria.

Table 4

Descriptive Statistics of the Home Food Environment

Home Food Environment	Mean	SD
Number of Healthy Food Types Available (range 0-4 items)	3.19	.79
Number of Unhealthy Food Types Available (range 0-2 items)	1.39	.74
Ratio of Healthy/Unhealthy Food Types Available (range 0.50-5 items)	2.04	1.07

Table 5 presents the parents' perception of their child's body weight status. The results were derived from the parents' response to classify the weight status of their child. Figure 1 graphically presents these results for a visual comparison of the discrepancies between parental perception of their child's weight and the child's actual parent-measured BMI (see Table 3). For example, only 3.8% of the children were underweight, but 10.4% of the parents thought they had an underweight child. Sixty percent of the children fell into the normal weight category, but 72.6% of the parents considered their child as normal weight. Fifteen percent of the children were overweight, and nearly the same amount of parents (14.1%) classified their child as slightly overweight. The largest discrepancy was the difference between the percentage of obese children (20.8%) and the percentage of parents who thought their child was obese (2.9%).

Table 5

Parental Perception of their Child’s Body Weight Status and Accuracy of Parental Perception Compared to Parent-Measured Weight Status (n=548)

	n ^a	%
Parental Perception of Child’s Body Weight Status^b		
Underweight	57	10.4
About the right weight	397	72.6
Slightly overweight	77	14.1
Very overweight	16	2.9
Accuracy of Parental Perception of Child’s Body Weight Status		
Underestimate	197	36.0
Accurate	326	59.6
Overestimate	24	4.4

^a Sample size in each cell may not add up to 548 due to missing values.

^b Survey question was “Compared to what you would like him/her to be, would you say [this child] is very underweight, slightly underweight, about the right weight, slightly overweight, very overweight.” The underweight categories were combined for this analysis.

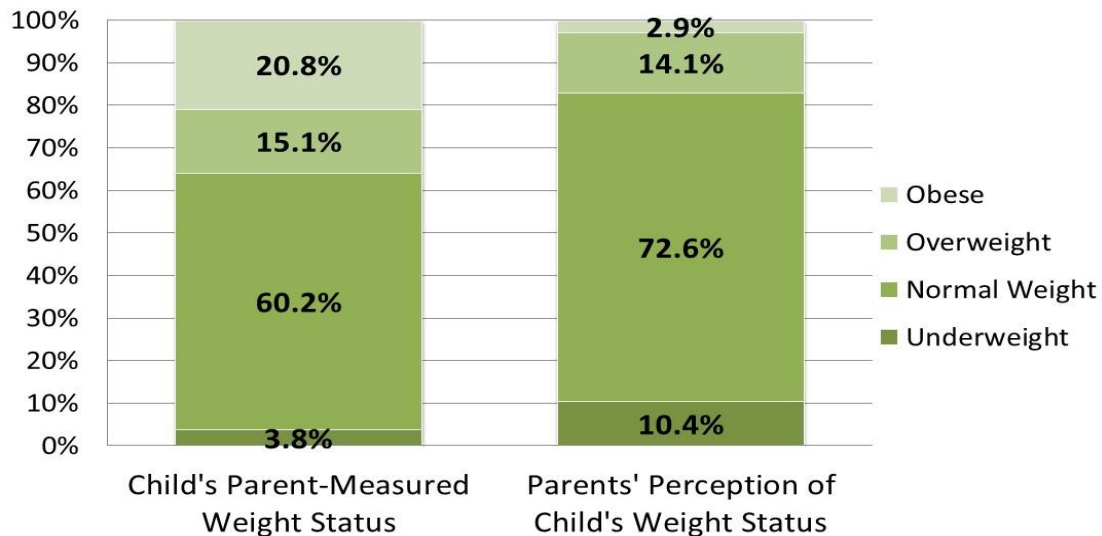


Figure 1. Child’s parent-measured weight status compared to parental perception of their child’s weight status (n = 548).

The accuracy of parental perception of their child’s weight status is shown in Tables 5 and 6. Table 5 reveals that a majority of the parents (59.6%) accurately assessed their child’s body weight status. However, 36.0% underestimated and 4.4% overestimated their child’s weight status. Table 6 displays the detailed breakdown of accuracy by weight categories. For example, the 59.6% of parents who correctly assessed their child’s weight status is broken down by each weight category as shown in the four dark-shaded boxes in the table.

Table 6

Accuracy of Parental Perception by Child’s Parent-Measured Weight Category^a
(*n*=547)

Parental Perception of Child’s Body Weight Status	Actual Body Weight Status Based on Parent Measurements <i>n</i> ^b (% of total) ^c				Total
	Underweight	Normal Weight	Overweight	Obese	
Underweight	Accurate 5 (0.9%)	Underestimate 42 (7.7%)	Underestimate 3 (0.5%)	Underestimate 7 (1.3%)	57 (10.4%)
Normal weight	Overestimate 16 (2.9%)	Accurate 280 (51.2%)	Underestimate 53 (9.7%)	Underestimate 48 (8.8%)	397 (72.6%)
Overweight	Overestimate 0 (0.0%)	Overestimate 7 (1.3%)	Accurate 26 (4.8%)	Underestimate 44 (8.0%)	77 (14.1%)
Obese	Overestimate 0 (0.0%)	Overestimate 0 (0.0%)	Overestimate 1 (0.2%)	Accurate 15 (2.7%)	16 (2.9%)
Total	21 (3.8%)	329 (60.1%)	83 (15.2%)	114 (20.8%)	547 (100%)

^a Statistical analysis performed using chi-square test for independence crosstabulation tables. Pearson Chi-Square value and *p* value not reported due to violation of the assumption of minimum expected cell count of five.

^b Sample size in each category may not add up to 547 due to missing values.

^c Some percentages may not equal 100 due to rounding.

Bivariate Analysis

The first step in testing the current study's hypotheses involved bivariate analysis. Chi-square tests for independence were conducted to examine the association between parents' accuracy at determining their child's body weight status and the child, parent and household-level variables. The results are described below and summarized in Tables 7-11.

Table 7 displays the association between parents' accuracy at determining their child's body weight status and child-level characteristics. A significant bivariate association was found between parents' accuracy and two variables: the child's gender, $\chi^2(1, n = 523) = 12.66, p < 0.05$ and the child's BMI, $\chi^2(3, n = 523) = 236.34, p < 0.001$. The table reveals that parents of boys and parents of OWOB children were significantly less accurate at identifying their child's weight status. However, there was no significant association ($p > 0.05$) between the child's age and parents' accuracy. Child's race/ethnicity approached significance, so additional bivariate analysis was performed comparing two races/ethnicities at a time. The results revealed that compared to parents of non-Hispanic white children, parents of Hispanic children were significantly less accurate at identifying their child's weight status, $\chi^2(1, n = 285) = 4.54, p < 0.05$ (see Table 7 notes).

Table 7

*The Association Between Parental Accuracy at Determining their Child's Body**Weight Status and Child-level Characteristics (n = 523)^{a,d,e}*

	Accurate	Inaccurate/ Underestimate	Pearson Chi- Square Value	p value ^b
	n (%)	n (%)		
Overall Children	326 (62.3%)	197 (37.7%)		
Child's Gender			12.66	< 0.001
Male	138 (54.5%)	115 (45.5%)		
Female	188 (69.6%)	82 (30.4%)		
Child's Age			1.40	0.497
3-5 years	53 (65.4%)	28 (34.6%)		
6-11 years	108 (59.0%)	75 (41.0%)		
12-19 years	165 (63.7%)	94 (36.3%)		
Child's Race/Ethnicity^{c,f}			4.65	0.098
Non-Hispanic White	54 (72.0%)	21 (28.0%)		
Non-Hispanic Black	137 (63.1%)	80 (36.9%)		
Hispanic	122 (58.1%)	88 (41.9%)		
Child's BMI in 4 Categories			236.34	< 0.001
< 5 th percentile	5 (100.0%)	0 (0%)		
5 th to 84 th percentile	280 (87.0%)	42 (13.0%)		
85 th to 94 th percentile	26 (31.7%)	56 (68.3%)		
≥ 95 th percentile	15 (13.2%)	99 (86.8%)		
Child's BMI in 2 Categories			229.00	< 0.001
< 85 th percentile	285 (87.2%)	42 (12.8%)		
≥ 85 th percentile	41 (20.9%)	155 (79.1%)		

^a Sample size in each category may not add up to 523 due to missing values.

^b Significance is determined at the 0.05 level (2-tailed).

^c Excluded 22 children with "other" listed as their race/ethnicity.

^d Due to small cell values, 24 children in the "Overestimate" category were excluded.

^e Statistical analysis performed using chi-square test for independence crosstabulation tables.

^f Difference between Non-Hispanic White and Hispanic was significant ($p = 0.033$); Difference between Non-Hispanic White and Non-Hispanic Black was not significant ($p = 0.164$); Difference between Non-Hispanic Black and Hispanic was not significant ($p = 0.287$).

The association between parents' accuracy at determining their OWOB boys body weight status compared to girls is shown in Table 8. For this analysis, the sample was

limited to the 197 OWOB children. The results indicate that parents were significantly more accurate at determining the body weight status of OWOB girls compared to OWOB boys, $\chi^2(1, n = 197) = 8.16, p < 0.05$.

Table 8

The Association Between Parental Accuracy at Determining their OWOB Boy's Body Weight Status Compared to OWOB Girls (n = 197)^{a,b,d}

	Accurate	Inaccurate/ Underestimate	Pearson Chi-Square Value	p value ^c
	n (%)	n (%)		
Child's Gender			8.16	0.004
Male	13 (12.9%)	88 (87.1%)		
Female	28 (29.5%)	67 (70.5%)		

^a Sample size may not add up to 197 due to missing values.

^b Sample limited to the 197 overweight and obese children. Also, due to sample size limitations, the overestimate category was excluded from analysis.

^c Significance is determined at the 0.05 level (2-tailed).

^d Statistical analysis performed using chi-square test for independence crosstabulation tables.

Table 9 presents the association between parents' accuracy at determining their younger daughters' body weight status compared to their older daughters. The sample was limited to the 270 female children. Based on hypothesis 1.3, the chi-square test for independence was initially performed with the girl's age as a dichotomous variable and age 12 as the dividing point (3-11 years; 12-18 years). No significant association was found ($p > 0.05$). A graph was created (Figure 2) to plot the percent accurate and inaccurate by the child's age as a continuous variable, and to potentially discover any trends in parents' accuracy and inaccuracy by age. The graph exposed a slight trend in increased accuracy for parents of 14-17 year olds. Therefore, a second chi-square test was carried out with age 14 as the dividing point (3-13 years; 14-18 years) which produced a higher chi-square value, but still remained non-significant ($p > 0.05$).

Table 9

The Association Between Parental Accuracy at Determining their Younger Daughter’s Body Weight Status Compared to Their Older Daughter’s Body Weight Status

(n = 270)^{a,c}

	Accurate	Inaccurate/ Underestimate	Pearson Chi-Square Value	p value ^b
	n (%)	n (%)		
Female Child’s Age			0.80	0.373
3-11 years	99 (67.3%)	48 (32.7%)		
12-18 years	89 (72.4%)	34 (27.6%)		
Female Child’s Age			1.780	0.182
3-13 years	122 (67.0%)	60 (33.0%)		
14-18 years	66 (75.0%)	22 (25.0%)		

^a Sample limited to the 270 female children. Also, due to sample size limitations, the overestimate category was excluded from analysis.

^b Significance is determined at the 0.05 level (2-tailed).

^c Statistical analysis performed using chi-square test for independence crosstabulation tables.

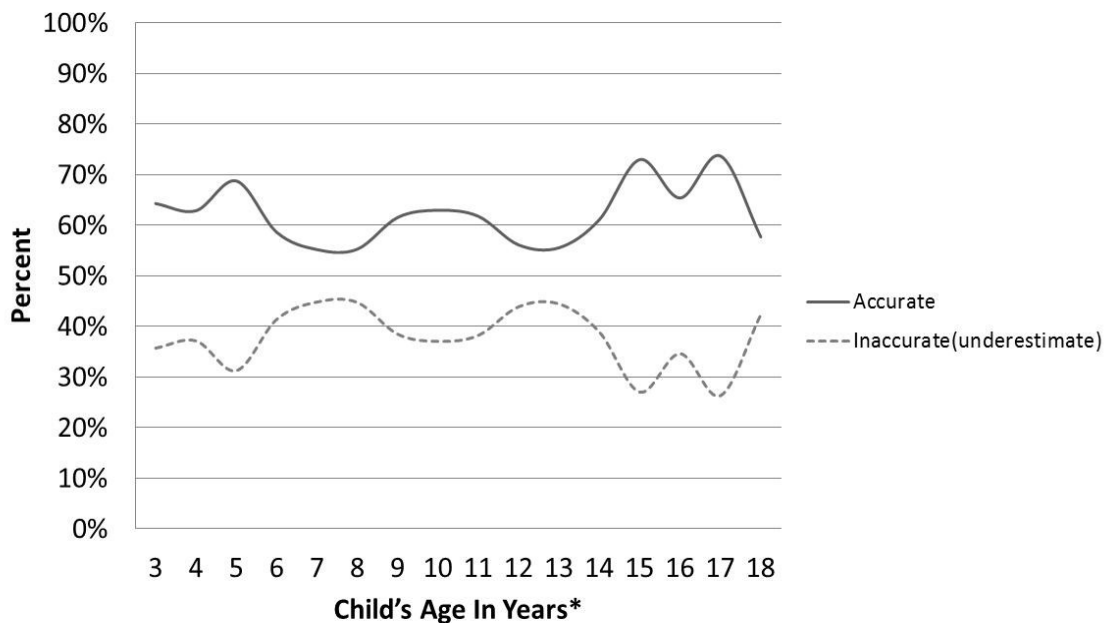


Figure 2. Parental accuracy at determining their child’s body weight status; percentage accurate and inaccurate by the child’s age.

*Due to the small sample size, the two 19 year old children were excluded.

The association between parents' accuracy at determining their child's body weight status and parent-level characteristics are shown in Table 10. A significant negative association was found between parents' accuracy and parents' BMI; as parents' BMI increased, accuracy decreased. $\chi^2(2, n = 523) = 11.37, p < 0.05$. There was no significant association between parents' accuracy and their immigration/residence status or maternal education level ($p > 0.05$). Nonetheless, a trend was noted between maternal education and parents' ability to correctly classify their children; as maternal education level increased, parents' accuracy at classifying their child's weight status also increased.

Table 11 explores the association between parents' accuracy at determining their child's body weight status and household characteristics. Parents living in households above the federal poverty level were significantly more accurate at identifying their child's body weight status compared to parents living at or below the federal poverty level, $\chi^2(1, n = 523) = 4.00, p < 0.05$. No significant association was seen between parents' accuracy and whether English was or was not the primary language spoken at home ($p > 0.05$).

Table 10

The Association Between Parental Accuracy at Determining their Child's Body Weight Status and Parent-level Characteristics (n = 523)^{a,c,d}

	Accurate	Inaccurate/ Underestimate	Pearson Chi-Square Value	p value ^b
	n (%)	n (%)		
Parent's Immigration/Residence Status			0.97	0.615
US born	237 (62.4%)	143 (37.6%)		
Foreign born, here ≥ 10 years	71 (64.5%)	39 (35.5%)		
Foreign born, here < 10 years	17 (54.8%)	14 (45.2%)		
Education Level of Index Child's Mother			4.54	0.104
High School or less	160 (58.4%)	114 (41.6%)		
Some College	90 (65.7%)	47 (34.3%)		
College +	66 (69.5%)	29 (30.5%)		
Parent's BMI			11.37	0.003
< 25 Normal/Healthy Weight	91 (74.6%)	31 (25.4%)		
25-30 Overweight	94 (61.4%)	59 (38.6%)		
> 30 Obese	129 (56.3%)	100 (43.7%)		

^a Sample size in each category may not add up to 523 due to missing values.

^b Significance is determined at the 0.05 level (2-tailed).

^c Due to small cell values, 24 children in the "Overestimate" category were excluded.

^d Statistical analysis performed using chi-square test for independence crosstabulation tables.

Table 11

The Association Between Parental Accuracy at Determining their Child's Body Weight Status and Household Characteristics (n = 523)^{a,c,d}

	Accurate	Inaccurate/ Underestimate	Pearson Chi-Square Value	p value ^b
	n (%)	n (%)		
Language spoken at home			0.07	0.796
English	243 (62.6%)	145 (37.4%)		
Other Languages	81 (61.4%)	51 (38.6%)		
Poverty Category^c			4.00	0.046
≤ 200% of Poverty Level	202 (59.2%)	139 (40.8%)		
> 200% of Poverty Level	124 (68.1%)	58 (31.9%)		

^a Sample size in each category may not add up to 523 due to missing values.

^b Significance is determined at the 0.05 level (2-tailed).

^c Due to small cell values, 24 children in the "Overestimate" category were excluded.

^d Statistical analysis performed using chi-square test for independence crosstabulation tables.

^e Based on 2008 federal poverty level criteria.

Analysis of Home Food Environment with the Mann-Whitney U Test

The association between parents' accuracy at determining their OWOB child's body weight status and the home food environment is highlighted in Table 12. The sample was limited to the 197 OWOB children. The Mann-Whitney U Test, the non-parametric alternative of the independent-samples t-test, was performed for this analysis. Due to grouping variable limitations, the one OWOB child whose parent had overestimated their weight was excluded in this analysis. The test revealed no statistically significant difference in mean rank for all home food environment measures ($p > 0.05$).

Table 12

The Association Between Parental Accuracy at Determining their Overweight or Obese Child's Body Weight Status and the Home Food Environment (n = 197)^a

		n	Mean Rank^b	p value^b
Availability of Healthy Food Types at Home (range 0 – 4 items)	Accurate	41	94.76	0.606
	Inaccurate/ Underestimate	155	99.49	
Availability of Unhealthy Food Types at Home (range 0 – 2 items)	Accurate	41	98.48	0.997
	Inaccurate/ Underestimate	155	98.51	
Ratio of Healthy/Unhealthy Food Types Available (range 0.50 – 5 items)	Accurate	41	95.38	0.688
	Inaccurate/ Underestimate	155	99.33	

^a Sample limited to the 197 overweight and obese children. Due to grouping variable limitations, excluded the 1 overweight/obese child in this sample whose parent had overestimated their weight.

^b Mean Rank and p value derived from the Mann-Whitney U Test. Significance is determined at the 0.05 level (2-tailed).

Multivariate Analysis

To test all of the present study's hypotheses, multivariate analysis was performed to investigate the independent effect of the predictor (independent) variables on parents' accuracy/inaccuracy at determining their child's weight status while controlling for other variables. With "accuracy" represented as a dichotomous dependent variable (accurate vs. inaccurate/underestimate), multivariate logistic regression was performed using the binary logistic procedure.

Table 13 presents the results of multivariate regression analysis to test the association between the child, parent and household predictor variables from each hypotheses (excluding H1.2 and H1.3) on parents' accuracy/inaccuracy for all children in the sample ($n = 525$). The significant bivariate association observed between parents' accuracy and their child's measured body weight status (BMI) remained significant in multivariate analysis after controlling for the other covariates. For example, compared to parents of non-OWOB children, parents of OWOB children had significantly greater odds of inaccurately identifying (i.e., underestimating) their child's body weight status (OR= 29.90, 95% CI: 16.95-52.74). The significant bivariate association between parents' accuracy and the child's gender also remained significant in multivariate analysis; the model in Table 13 shows that parents had 3 times greater odds of underestimating the weight status of boys compared to girls (OR= 2.96, 95% CI: 1.71-5.11). However, in contrast to the bivariate analysis results, household income (as measured by percentage of poverty level) was no longer significant in multivariate regression analysis.

Table 13

Multivariate logistic regression analysis of the association between child, parent and household characteristics (with the child BMI variable) and parents' accuracy vs. inaccuracy/underestimation of their child's body weight status.

Explanatory Variables	Full Sample (n=525)	
	Adjusted OR (95% CI)	p value
Child's Age	0.98 (0.92-1.04)	0.409
Child's Race/Ethnicity^a		
Non-Hispanic White (Ref)		
Non-Hispanic Black	1.24 (0.50-3.05)	0.641
Hispanic	1.88 (0.73-4.83)	0.191
Child's Gender		
Female (Ref)		
Male	2.96 (1.71-5.11)	< 0.001*
Child's BMI		
< 85th percentile		
≥ 85th percentile	29.90 (16.96-52.75)	< 0.001*
Poverty Category^b		
≤ 200% of Pov. Level (Ref)		
> 200% of Pov. Level	1.07 (0.57-2.02)	0.831
Mother's Education		
High School or less (Ref)		
Some College	0.99 (0.52-1.91)	0.981
College +	1.10 (0.50-2.42)	0.813
Parent's BMI		
< 25 Normal/Healthy Wt. (Ref)		
25-30 Overweight	1.00 (0.48-2.12)	0.987
> 30 Obese	1.00 (0.49-2.06)	0.990
Language spoken at home		
Other Languages (Ref)		
English	1.06 (0.49-2.27)	0.887
Availability of Healthy Food Types at Home	1.14 (0.82-1.59)	0.434
Availability of Unhealthy Food Types at Home	1.08 (0.75-1.54)	0.695

* Significant at $p < 0.05$.

^a Excluded 22 children with "other" listed as their race/ethnicity.

^b Based on 2008 federal poverty level criteria.

Ref = Referent category.

Table 14 presents the results of multivariate regression analysis to test the association between the child, parent and household variables on parents' accuracy/inaccuracy for all children in the analytical sample (n = 525) and for a subset of OWOB children (n = 189). Both of these analyses were run after excluding child BMI as an explanatory variable due to the possibility that child BMI was a mediating variable, i.e., in the causal pathway of the association between parent BMI and parental perception of their child's weight status. For example, when child BMI was included as a covariate in Table 13, parent BMI lost the significance that was seen in the bivariate analysis. Furthermore, while the significance of other variables in the same model was weakened, the overall interpretation did not change after omitting child BMI from the full sample model in Table 14. The model with the full sample in Table 14 tests all the hypotheses (excluding H1.2 and H1.3); the model with the subset of OWOB children tests hypotheses H1.1 and H1.2.

Table 14 indicates that parent BMI was a stronger determinant of parents' inaccuracy/underestimation in the full sample than in the OWOB model. The results show that the odds of an obese parent underestimating their child's weight status was over 2 times greater than a non-OWOB parent, controlling for other covariates (OR= 2.27, 95% CI: 1.32-3.90). The odds of an overweight parent underestimating their child's weight status was almost 2 times greater than a non-OWOB parent, but this association only approached significance ($p=0.054$).

Both of the models presented in Table 14 revealed that child's gender was a strong predictor of parents' inaccuracy/underestimation after controlling for all other factors. In the full sample, parents had 2 times greater odds of underestimating the

weight status of boys compared to girls (OR= 1.99, 95% CI: 1.33-2.97). In the model with OWOB children, parents had almost 5 times greater odds of underestimating the weight status of OWOB boys compared to OWOB girls (OR= 4.80, 95% CI: 1.88-12.27).

In addition, child's age was a stronger predictor of parents' inaccuracy/underestimation in the OWOB model compared to the full sample in Table 14; e.g., the older the OWOB child, the less likely the parent would inaccurately classify the child's weight status (OR= 0.86, 95% CI: 0.77-0.96). Child's age was not shown to be significant in bivariate analysis or the other multivariate models during data analysis.

Although child's race/ethnicity overall was not a strong predictor of parents' inaccuracy/underestimation in the full sample shown in Table 14, the OWOB model revealed that, all other factors being equal, parents of OWOB Hispanic children had significantly higher odds of underestimating their children's body weight status compared to parents of OWOB non-Hispanic white children (OR= 4.98, 95% CI: 1.12-22.22). Also, once again, the significant bivariate association for household income (as measure by percentage of poverty level) disappeared in the multivariate logistic analyses.

Table 14

Multivariate logistic regression analysis of the association between child, parent and household characteristics (without the child BMI variable) and parents' accuracy vs. inaccuracy/underestimation of their child's body weight status for the full sample and for OWOB children.

Explanatory Variables	Full Sample (n=525)		OWOB Children (n=189)	
	Adjusted OR (95% CI)	p value	Adjusted OR (95% CI)	p value
Child's Age	0.96 (0.92-1.00)	0.083	0.86 (0.77-0.96)	0.007*
Child's Race/Ethnicity^a				
Non-Hispanic White (Ref)	1.00 (0.51 -1.97)	0.993	1.86 (0.46-7.58)	0.385
Non-Hispanic Black	1.54 (0.76-3.11)	0.232	4.98 (1.11-22.22)	0.036*
Hispanic				
Child's Gender				
Female (Ref)				
Male	1.99 (1.33-2.97)	0.001*	4.80 (1.88-12.27)	0.001*
Poverty Category^b				
≤ 200% of Pov. Level (Ref)				
> 200% of Pov. Level	0.86 (0.53-1.40)	0.548	1.03 (0.37-2.83)	0.960
Mother's Education				
High School or less (Ref)				
Some College	0.71 (0.44-1.17)	0.180	0.84 (0.29-2.45)	0.743
College +	0.68 (0.37-1.26)	0.220	1.12 (0.29-4.24)	0.871
Parent's BMI				
<25 Normal/Healthy Wt. (Ref)				
25-30 Overweight	1.76 (0.91-3.11)	0.054	2.54 (0.58-11.18)	0.218
>30 Obese	2.22 (1.32-3.93)	0.003*	1.76 (0.45-6.92)	0.416
Language spoken at home				
Other Languages (Ref)				
English	1.41 (0.78-2.53)	0.256	1.60 (0.42-6.12)	0.492
Availability of Healthy Food Types at Home	1.18 (0.92-1.53)	0.195	1.19 (0.69-2.04)	0.537
Availability of Unhealthy Food Types at Home	0.96 (0.73-1.27)	0.794	1.19 (0.67-2.11)	0.566

* Significant at $p < 0.05$.

^a Excluded 22 children with "other" listed as their race/ethnicity.

^b Based on 2008 federal poverty level criteria.

Ref = Referent category.

Table 15 displays the results of multivariate regression analysis to test the association between the child, parent and household characteristics (without the child BMI variable) and parents' accuracy vs. inaccuracy/underestimation of their female child's body weight status. To test hypothesis H1.3, the sample was restricted to the 267 female children, then two different multivariate analyses were performed with girl's age as a dichotomous variable.

The first model included the age groups of 3-11 years and 12-18 years (age 12 as the dividing point). The second model included the age groups of 3-13 years and 14-18 years with age 14 as the dividing point. This second model revealed that as their female child increased in age, the parent had half the odds of underestimating their child's body weight status (OR= 0.52, 95% CI: 0.27-1.00). However, this association only approached significance ($p = 0.051$). Parent's BMI became a strong predictor in both models. The results show that the odds of an obese parent underestimating their female child's body weight status was over 2 times greater than an overweight or normal weight parent, controlling for all other factors in the models (OR= 2.38, 95% CI: 1.05-5.39); (OR= 2.48, 95% CI: 1.09-5.65).

Table 15

Multivariate logistic regression analysis of the association between child, parent and household characteristics (without the child BMI variable) and parents' accuracy vs. inaccuracy/underestimation of their female child's body weight status.

Explanatory Variables	Female Children with age 12 as cutoff for older girls (n=267)		Female Children with age 14 as cutoff for older girls (n=267)	
	Adjusted OR (95% CI)	p value	Adjusted OR (95% CI)	p value
Girl's Age 3-11 years (Ref) 12-18 years	0.68 (0.38-1.22)	0.198		
Girl's Age 3-13 years (Ref) 14-18 years			0.52 (0.27-1.00)	0.051
Child's Race/Ethnicity^a Non-Hispanic White (Ref) Non-Hispanic Black Hispanic	1.27 (0.43 -3.76) 2.19 (0.76-6.29)	0.670 0.146	1.14 (0.38-3.43) 2.10 (0.72-6.08)	0.813 0.172
Poverty Category^b <=200% of Pov. Level (Ref) >200% of Pov. Level	0.61 (0.31-1.20)	0.152	0.60 (0.30-1.18)	0.136
Mother's Education High School or less (Ref) Some College College +	0.66 (0.33-1.32) 0.77 (0.32-1.84)	0.237 0.556	0.63 (0.32-1.27) 0.75 (0.31-1.78)	0.199 0.508
Parent's BMI <25 Normal/Healthy Wt. (Ref) 25-30 Overweight >30 Obese	1.73 (0.73-4.09) 2.38 (1.05-5.39)	0.210 0.037*	1.68 (0.71-3.99) 2.48 (1.09-5.65)	0.239 0.031*
Language spoken at home Other Languages (Ref) English	1.55 (0.68-3.52)	0.298	1.61 (0.70-3.68)	0.262
Availability of Healthy Food Types at Home	1.10 (0.77-1.59)	0.606	1.08 (0.75-1.56)	0.665
Availability of Unhealthy Food Types at Home	1.05 (0.70-1.56)	0.812	1.11 (0.74-1.66)	0.610

* Significant at $p < 0.05$.

^a Excluded 22 children with "other" listed as their race/ethnicity.

^b Based on 2008 federal poverty level criteria.

Ref = Referent category.

Chapter 5

DISCUSSION

The purpose of this study was to investigate the association between key child, parent and household factors and the accuracy of parental perception of their child's body weight status compared to parent-measured body weight status. Utilizing data from the New Jersey Childhood Obesity Study, this study also explored the association between the accuracy of parental perceptions and their child's gender across different age groups.

Consistent with prior studies (Doolen et al., 2009; Parry et al., 2008; Towns & D'Auria, 2009), the present study found that parental misclassification of their child's weight status was common and that parents were more likely to underestimate their child's weight, especially if the child was OWOB. For example, only 21% of the OWOB children in the current study were perceived by their parents as OWOB, and 79% of the OWOB children had parents who underestimated their weight.

Child's gender, child's BMI, and parent's BMI were significant predictors of parents' ability to accurately classify their child's body weight status in the current study. Specifically, parents of boys, parents of OWOB children and OWOB parents were significantly more likely to misclassify their child's weight. These findings are also in line with the majority of previous research (Doolen et al., 2009; Huang et al., 2007; Maynard et al., 2003; Towns & D'Auria, 2009; Vanhala et al., 2011). Child's age, child's race/ethnicity, and household income were significant in specific bivariate and multivariate statistical models of our study. Mother's education level, parent's immigration/residence status, primary language spoken at home, and home food environment had no significant association with how parents perceived their child's

weight status. Further details are found in the following discussion. Due to the number of hypotheses tested in this study, this discussion is organized by hypotheses.

Hypotheses 1.1: Parents of younger children, parents of boys, and parents of overweight children are more likely to misclassify their children's weight status.

Child's Age. Previous studies (Doolen et al., 2009; Huang et al., 2007; Manios et al., 2009; Maynard et al., 2003; Towns & D'Auria, 2009; Vanhala et al., 2011; Young-Hyman et al., 2000) reported that a child's age was one of the top three predictors of parental accuracy at identifying their child's weight status. These studies found that parents were more likely to accurately assess the weight status of their older children (≥ 5 years) than their younger children. In the present study, there was no significant association between a child's age and parents' accuracy in bivariate analysis or in multivariate analysis conducted using the full sample of children. However, child's age was a significant predictor of the accuracy of parental perceptions when the sample was restricted to OWOB children in multivariate analysis. The results showed that, with all other factors being equal, the older the OWOB child, the greater odds the parent would accurately classify the child's weight status. This finding is not surprising as many parents regard young children with excess weight as well-fed and healthy, and expect their young child to grow out of their "baby fat stage." At the same time, parents are less likely to believe that older children will outgrow excess weight. (Adams et al., 2005; Carnell et al., 2005).

Huang et al. (2007) stated that the prevalence of overweight and at-risk-for-overweight was increasing among 2-5 year old children. This shift to heavier toddlers and preschoolers may be inadvertently redefining the public's perception of normal

weight in young children. Due to the potential negative health outcomes for these children as they get older, public and private health reminders of the appropriate weight for infants and toddlers are needed as part of childhood obesity prevention strategies (Huang et al., 2007).

Adams et al. (2005), Baughcum et al. (2000), and Carnell et al. (2005), who all studied children under the age of eight, found no association between a child's age and the parent's ability to assess their child's weight. A large majority of the research involving parental perception of their child's body weight status studied children under the age of 12, with 2 to 8 year olds as the most studied population. In contrast, the current study involved a much wider age range (3-19) with nearly half (49%) of the children over the age of 12. Although there was no significant association between child's age and parents' accuracy in multivariate analysis using the full sample of children, the multivariate model which was restricted to female children age 14-18 approached significance ($p = .051$). These results may be confirmed by the graphical analysis in Figure 2 that showed a trend in improved accuracy for parents of 14-17 year old children.

Child's Gender. This improved accuracy by parents may be due to the social pressures experienced by adolescents; particularly adolescent girls, who are more likely to suffer the social consequences of overweight, especially due to increased emphasis on personal appearance in the teen years (Manios et al., 2009; Vanhala et al., 2011). Numerous studies have found that parents, especially mothers, are more likely to correctly identify overweight or obesity in their daughters than in their sons (Doolen et al., 2009; Manios et al., 2009; Mamun et al., 2008; Maynard et al., 2003; Towns & D'Auria, 2009; Vanhala et al., 2011). The present study confirmed these findings as our

results indicated that child gender was a strong and significant predictor of parental accuracy in all bivariate and multivariate analyses and that boys had 2-3 times greater odds of parental underestimation of their weight status compared to girls.

The implications of less accurate assessments of boys' overweight than girls was highlighted by Doolen et al. (2009), Manios et al. (2009), Maynard et al. (2003), and Vanhala et al. (2011). A mother's sharper awareness of her daughter's overweight status may be reflective of current social values that emphasize normal body weight and underweight for women and girls. It is more acceptable for men and boys to have excess body weight which may be considered a strong, sturdy body type and persona. However, parent's reduced awareness of a son's overweight status could lead to a delay in interventions. And although a heightened concern about a daughter's weight could lead to parental guidance of healthy lifestyle behaviors, it could also result in negative self-esteem and body image issues. Consequently, healthcare providers may be hesitant to mention weight issues to young female patients for fear of prompting unhealthy dieting behaviors and eating disorders (Doolen et al., 2009; Manios et al., 2009; Maynard et al., 2003; Vanhala et al., 2011).

Child's Weight Status/BMI. The third and last factor that researchers agree is a strong predictor of parents' accuracy at identifying their child's weight status is the child's weight/BMI. Consistent with the previous research of Baughcum et al. (2000), Boutelle et al. (2004), Carnell et al. (2005), Doolen et al. (2009), Huang et al. (2007), Manios et al. (2009), Mamun et al. (2008), Maynard et al. (2003), and Myers & Vargas (2000), the present study discovered these significant findings: 1) As the child's BMI percentile increased, parent's accuracy was likely to decrease. 2) Parents were more

likely to underestimate their OWOB child's weight. 3) Parents of OWOB children were much more likely to misclassify their child's body weight than parents of non-OWOB children. Surprisingly, multivariate regression analysis in the present study revealed that the odds of a parent underestimating their OWOB child's weight status was 30 times greater than a parent of a non-OWOB child. Compared to other studies investigating the factors associated with parents' accuracy at identifying their child's body weight status, the current study reported a high percentage (79%) of OWOB children whose weight was underestimated by their parents, yet had a similar distribution of OWOB children (36%) and non-OWOB (64%) children.

The explanations for parents' low recognition of overweight and obesity in their children are varied. The more common reasons discussed in the literature are: Parents prefer not to admit they have an OWOB child as it may reflect negatively on their parenting skills; Parents believe the excess weight in children is desirable and will be outgrown; Parent's definition of OWOB is different than child growth chart parameters which they don't understand or find applicable to their child; Parents don't consider OWOB an issue until it impedes the child's physical well-being or until the child is teased about their weight. Also, just as concerning, larger body sizes have become the norm and increasingly acceptable (Jain et al., 2001; Maynard et al., 2003; Myers & Vargas, 2000).

Hypothesis 1.2: Parental perception of their child's weight status is less likely to be accurate for overweight and obese boys across all age categories compared to girls.

Most researchers who have examined the association between parents' perception of their child's weight status and the child's gender have conducted their investigation

using a single age category (i.e., adolescents or pre-school age children). One of the goals of this study was to explore the association between the accuracy of parental perceptions and their child's gender across different age groups. This hypothesis addresses this association specifically for OWOB children. The present study found that parents of OWOB boys had almost 5 times greater odds of underestimating their son's weight compared to parents of OWOB girls across all age categories. The implications of this outcome are similar, but potentially more serious, than the implications mentioned in the discussion of child's gender for hypothesis 1.1 (potential health problems and delay in OWOB prevention efforts for boys, and poor self-esteem and body image for girls). Better recognition by parents of OWOB in daughters at any age may lead to harmful dieting by young girls. Girls as young as 8 years have been known to diet due to negative self-image issues and in response to their mother's dieting practices (Hill & Pallin, 1998).

Hypothesis 1.3: Parental perception of their child's weight status is less likely to be accurate for parents of daughters under the age of twelve compared to parents of adolescent daughters (age 12-19).

The aim of this hypothesis was to continue to explore the association between the accuracy of parents' perceptions and the child's gender across age categories. The original statistical analysis to test this hypotheses (with age 12 as the dividing point) indicated a trend towards improved accuracy for parents of older girls but was not significant. Subsequent analysis with age 14 as the dividing point approached significance ($p = .051$) and revealed a more distinct trend in improved accuracy for parents of 14-18 year old adolescent girls. These findings validate the previously-discussed results and implications about the association between a child's gender and age

to parents' accuracy at identifying their child's weight status: Parents of girls, especially older girls and OWOB girls, were more likely to accurately assess their child's weight. The combination of female gender, OWOB, and adolescence may subject teen girls to additional scrutiny by parents who are weight-conscious. As girls approach adolescence, the social pressures to maintain normal weight (and even underweight) status usually increase. This could result in improved lifestyle choices by the parents and/or teens to maintain a healthy weight, or to potentially unhealthy lifestyle behaviors to avoid the social stigma of OWOB (Maynard et al., 2003; Vanhala et al., 2011).

Hypothesis 1.4: Parents of non-Hispanic white children are less likely to misclassify their children's weight status compared to parents of Hispanic and non-Hispanic black children.

The racial mix of the current study's participants (children and parents) consisted of approximately 41 % Hispanic, 41% non-Hispanic black, 15% non-Hispanic white and 3% other. When statistical analysis was performed, our only significant finding upheld the hypothesis: Parents of non-Hispanic white children were significantly more accurate at classifying their child's weight status compared to parents of Hispanic children, especially if the child was OWOB. Although a large majority of the previous research found no association between a child's race/ethnicity and parents' accuracy, the authors discussed the cultural beliefs about body weight and size. Researchers noted that heavier physiques may be more culturally accepted in Hispanic, African American, and Native American communities, Consequently, parents may not feel that their child's overweight is an issue or a health risk. Ultimately, these cultural beliefs could be a hindrance to the efforts to prevent the weight-related chronic diseases that have become prevalent in

minority communities (Adams et al., 2005; Myers & Vargas, 2000; Young-Hyman et al., 2000).

Hypothesis 2.1: Parental perception of their child's body weight status is more likely to be accurate if the child's mother has more than a high school education.

Examination of the association between maternal education level and parental perception of their child's body weight by researchers in various countries uncovered mixed findings, with the majority of studies reporting no association. The present study also found no significant association in either bivariate or multivariate analyses.

However, the bivariate analysis pointed to a trend: As maternal education level increased, parents' accuracy at identifying the body weight status of their children also increased. According to Manios et al. (2009), mothers with a higher education level may have a better understanding of the definition of overweight, normal weight, etc., and be more aware of the physical and psychological consequences of overweight and obesity.

Hypothesis 2.2: Parental perception of their child's body weight status will not significantly differ in accuracy by household income.

The results of bivariate analysis showed that parents living in households at or above the federal poverty level were significantly more accurate at classifying their child's body weight status. However, this association disappeared in multivariate logistic regression analysis when controlling for the other covariates. The few studies that have examined household income as a predictor variable have used a variety of income measures and reported mixed findings - and therefore, downplayed any role that household income plays as a predictor of parents' perception of child's weight status.

Hypothesis 2.3: Parental perception of their child’s body weight status is less likely to be accurate if the child’s parent is overweight or obese as assessed by measured BMI.

Parents have a considerable influence on their child’s health and well-being. Therefore, it is not surprising that the body of literature is in agreement that if a parent is OWOB, they are less likely to identify overweight in their child (Doolen et al., 2009). The present study confirmed the significant and inverse bivariate relationship between parents’ BMI and their accuracy at identifying their child’s weight status: As the parents’ BMI increased, their accuracy decreased. However, no significant association was seen in the multivariate logistic regression models until child’s BMI was removed as a covariate, due to its role as a possible mediating and confounding variable. When child BMI was excluded from the model, parent BMI became significant and revealed that the odds of an obese parent underestimating their child’s weight status (including girls) was over 2 times greater than an overweight or normal weight parent, controlling for all other variables in the model. These significant results suggest a mediating role of child BMI in the causal pathway of the association between parent BMI and parent’s perception of their child’s weight status. As far as we know, previous studies have not fully examined this issue and further investigation is needed.

Hypothesis 2.4: Parental perception of their child’s body weight status is more likely to be accurate if the primary language spoken at home is English.

Hypothesis 2.5: Parental perception of their child’s body weight status is less likely to be accurate if the parent was born outside of the U.S or has lived in the U.S. for less than ten years.

In the current study, neither the parent's immigration/residence status nor the language spoken at home were significantly associated with parents' accuracy at determining their child's body weight status. Huang et al, (2007) was the only study we found that examined both of these variables' association with parental perception of their child's body weight status. They found that parents whose families had lived in the U.S. for at least two generations and primarily spoke English at home were more accurate at assessing their child's weight status. However, Huang's participants differed significantly in socioeconomic and demographic characteristics than the present study. Huang's participants had a higher level of education, higher household income and a larger percentage of non-Hispanic white and Asian participants. Huang's findings might have had more to do with these characteristics, which are more common predictors of parents' accuracy at identifying weight status, than the two acculturation variables.

The results of the present study suggest that these two measures of acculturation may have little to do with a parent's ability to assess their child's weight, at least for our sample. More studies need to include these variables and conduct a more thorough analysis.

Hypothesis 3.1: Parents of overweight and obese children who accurately identify their child's weight status are more likely to have a healthy home food environment compared to parents of overweight and obese children who inaccurately identify their child's weight status.

A previous study (Neumark-Sztainer et al., 2008) has shown that accessibility to healthy and unhealthy foods in their home environment was associated with the types of foods that a child consumes at home. This hypothesis addressed whether parents who

have correctly classified the weight status of their OWOB children were more likely to provide healthier foods at home. Statistical analyses of the NJCOB three measures of home food environment revealed no significant associations between parents' accuracy at identifying their OWOB child's weight status and their home food environment.

However, due to the comprehensive nature of the NJCOB survey, the few home food environment questions may not have adequately captured the parents' home food environment for this current analysis.

Neumark-Sztainer et al. (2008) is one of very few studies that have examined the association between the home food environment and parents' perception of their child's body weight status. Their findings revealed that parents who correctly identified their child's overweight were no more likely to provide healthy foods at home than parents who did not accurately assess their child's overweight. Instead, they discovered that parents were more likely to promote dieting behaviors to their OWOB child.

Unfortunately, this finding is not surprising since the literature and the current study's results have informed us that parents are more likely to identify overweight in older girls than boys, and that older girls are more likely to be encouraged to diet for weight management than boys.

In summary, the following hypotheses were supported by the current study's findings: Hypothesis 1.1 (for child gender, child BMI, and for child age-but only OWOB children), Hypothesis 1.2, Hypothesis 1.3 (approached significance, $p = .051$), Hypothesis 1.4, Hypothesis 2.2 and Hypothesis 2.3.

Implications

Health care providers and public health advocates fundamentally agree that early identification, prevention, and treatment of childhood OWOB is imperative. An important part of this process is understanding the disconnect between parents' perceptions of their child's body weight status and the child's actual measured weight. Childhood obesity research has examined the role of the Transtheoretical Model of Behavior Change (TTM) in parent's awareness of their child's weight status (Rhee, DeLago, Arscott-Mills, Mehta & Davis, 2005). Similar to TTM, which assesses a person's readiness for behavior change, parents must first recognize that their child is overweight or obese prior to moving through the Stages of Change—pre-contemplation, contemplation, preparation, action, and maintenance of a health behavior change. Therefore, if parents cannot recognize overweight or obesity in their child and understand the potential health risks, they may not be ready to initiate or support effective interventions— at the expense of the child's self-esteem and health. The public health implications are just as troubling. Without parent's support of intervention programs, the public health consequences are likely to include increased health care costs and decreased workforce productivity due to the prevalence of OWOB-related diseases (Maynard et al., 2003; Myers & Vargas, 2000).

Although parents may be poor judges of their OWOB child's body weight status, awareness of OWOB does not guarantee that parents will provide and encourage healthy lifestyle changes for their child. There is a lack of evidence that parental awareness of their OWOB child's body weight status always leads to better parental guidance or improved weight outcomes for their child. Also, caution must be taken with emphasizing

improved accuracy in parental perception as solely a weight-focused approach, as an overweight child is not necessarily unhealthy or unfit. Emphasizing health and fitness awareness over weight and appearance may help lessen the stigmas, issues and cultural implications of OWOB while reducing the risk of negative health outcomes.

Even with improved parental recognition of OWOB in their child, social pressures persist, especially for girls and adolescents, to engage in harmful dieting behaviors that are (too often) supported by parents who have acknowledged their child's OWOB (Maynard et al., 2003). More research is needed regarding the implications of parental gender bias in overweight identification due to parents placing higher expectations on their daughters and lower expectations on their sons to maintain a healthy weight. Additional knowledge in this area could lead to the design of successful gender-based and age-based interventions to address the distinct challenges of adolescent male and female weight management. Furthermore, longitudinal studies could help researchers discover how the impact of child gender on parents' perceptions of their child's weight status changes over time (Towns & D'Auria, 2009).

Similarly, additional research needs to be conducted on the association between parents' ability to accurately assess their child's body weight status and the home food environment and acculturation measures. The lack of research in these areas impedes our understanding of acculturation's impact on how parents view their OWOB child's body size and health risks. Also a deeper look at the home food environment may help us answer an important question: If parents recognize OWOB in their child, will they make meaningful changes in the home food environment to encourage healthier food choices? Further research will help in the design and implementation of individualized and

culturally-appropriate OWOB prevention and intervention programs. The ultimate goal is to increase parental recognition of child overweight and provide them with the tools and support they need to guide their family toward a healthy future.

Limitations and Strengths

There were a few limitations to this study. First, the heights and weights of the NJCOB survey respondents and their children were not professionally measured. Measurements were taken and reported by the child's parents using CDC (2011) instructions and a tape measure mailed to their homes. While parent-measured heights and weights are considered more accurate than parent-reported measurements (Huybrechts et al., 2011) and more highly correlated with measurements taken by professionals (Carnell & Wardle, 2008), it is likely that there were measurement errors compared to professionally-measured heights and weights. Second, children under the age of 3 were not included in the survey. Many of the studies involving parental perception of young children's body weight status included children as young as 2 years of age. Third, although the NJCOB survey question used to assess parental perception of their child's weight status utilized a similar 5-point scale as in comparable studies ("very underweight" to "very overweight"), the overall wording of the question was slightly different. The lack of standardized methods to assess parental perception was noted by the review studies of Parry et al. (2008) and Towns and D'Auria (2009), but was shown not to significantly impact studies' analyses and results. Finally, both the NJCOB study and the current study were cross-sectional in design and captured parental perception at a single point in time, which does not allow for a determination of causality.

There were two key strengths to this study: 1) The survey sample consisted of a larger percentage of adolescent children and a wider age range of children than similar studies. Adolescents have been rarely studied in research involving parental perception of their child's body weight status. 2) Our unique investigation of the association between parental perception of their child's body weight status and a child's gender across age categories within the same population.

Conclusion

This study examined the association between key child, parent, and household factors and the accuracy of parental perception of their child's body weight status compared to parent-measured body weight status. The study's results indicated that parental misclassification of their child's body weight status was common and that parents were more likely to underestimate their child's weight, especially if the child was OWOB. Child gender, child BMI, and parent BMI were significant predictors of parents' ability to accurately classify their child's body weight status after controlling for relevant covariates. Child age, child race/ethnicity, and household income were significant in specific bivariate and multivariate statistical models. However, mother's education level, parent's immigration/residence status, primary language spoken at home, and the home food environment had no significant association with how parents perceived their child's weight status.

The overall findings presented in this study revealed that parents of boys, parents of OWOB children (especially young OWOB children and OWOB boys), parents of Hispanic children, and OWOB parents were significantly more likely to misclassify their child's body weight status. Gender was the strongest predictor of parents' accuracy at

perceiving their child's body weight status. Parents were much more likely to accurately identify OWOB in their daughters, especially their older daughters, than in their sons.

Additional research needs to be performed on the association between parental perception of their child's body weight status and the home food environment and acculturation measures. Further research is also needed regarding parent's gender bias in identifying OWOB in their children.

REFERENCES

- Adamo, K. B., Papadakis, S., Dojeiji, L., Turnau, M., Simmons, L., Parameswaran, M., . . . Reid, R. D. (2010). Using path analysis to understand parents' perceptions of their children's weight, physical activity and eating habits in the Champlain region of Ontario. *Paediatrics & Child Health, 15*(9), e33-e41.
- Adams, A. K., Quinn, R. A., & Prince, R. J. (2005). Low recognition of childhood overweight and disease risk among Native-American caregivers. *Obesity Research, 13*(1), 146-152. doi: 10.1038/oby.2005.19
- Baughcum, A. E., Chamberlin, L. A., Deeks, C. M., Powers, S. W., & Whitaker, R. C. (2000). Maternal perceptions of overweight preschool children. *Pediatrics, 106*(6), 1380-1386. doi:10.1542/peds.106.6.1380
- Baranowski, T. (2000). GEMS (2001-2) documents. Retrieved from: [http://www.bcm.edu/cnrc/faculty/Survey_documents/GEMS\(2001-2\).html](http://www.bcm.edu/cnrc/faculty/Survey_documents/GEMS(2001-2).html)
- Boutelle, K., Fulkerson, J. A., Neumark-Sztainer, D., & Story, M. (2004). Mothers' perceptions of their adolescents' weight status: Are they accurate? *Obesity Research, 12*(11), 1754-1757. doi:10.1038/oby.2004.217
- Carnell, S., Edwards, C., Croker, H., Boniface, D., & Wardle, J. (2005). Parental perceptions of overweight in 3-5 y olds. *International Journal of Obesity, 29*(4), 353-355. doi: 10.1038/sj.ijo.0802889
- Carnell, S., & Wardle, J. (2008). Appetite and adiposity in children: Evidence for a behavioral susceptibility theory of obesity. *The American Journal of Clinical Nutrition, 88*(1), 22-29.
- Centers for Disease Control and Prevention. Division of Nutrition, Physical Activity, and Obesity, National Center for Chronic Disease Prevention and Health Promotion. (2011). *Body mass index*. Retrieved from <http://www.cdc.gov/healthyweight/assessing/bmi/index.html>
- Centers for Disease Control and Prevention. Division of Nutrition, Physical Activity, and Obesity, National Center for Chronic Disease Prevention and Health Promotion. (n.d.). *Cut-offs to define outliers in the 2000 CDC growth charts*. Retrieved from <http://www.cdc.gov/nccdphp/dnpa/growthcharts/resources/BIV-cutoffs.pdf>
- Davison, K. K., & Birch, L. L. (2001). Childhood overweight: A contextual model and recommendations for future research. *Obesity Reviews: An Official Journal of the International Association for the Study of Obesity, 2*(3), 159-171. doi:10.1046/j.1467-789x.2001.00036.x

- Doolen, J., Alpert, P. T., & Miller, S. K. (2009). Parental disconnect between perceived and actual weight status of children: A metasynthesis of the current research. *Journal of the American Academy of Nurse Practitioners*, 21(3), 160-166. doi: 10.1111/j.1745-7599.2008.00382.x
- Epstein, L. (1998). Treatment of pediatric obesity. *Pediatrics (Evanston)*, 101(3), 554.
- Faith, M. S., Van Horn, L., Appel, L. J., Burke, L. E., Carson, J. A. S., Franch, H. A., . . . Council Kidney Cardiovasc Dis. (2012). Evaluating parents and adult caregivers as "agents of change" for treating obese children: Evidence for parent behavior change strategies and research gaps. A scientific statement from the American Heart Association. *Circulation*, 125(9), 1186-1207. doi:10.1161/CIR.0b013e31824607ee
- Guo, S. S., Roche, A. F., Chumlea, W. C., Gardner, J. D., & Siervogel, R. M. (1994). The predictive value of childhood body mass index values for overweight at age 35 y. *The American Journal of Clinical Nutrition*, 59(4), 810.
- Hernandez, R. G., Cheng, T. L., & Serwint, J. R. (2010). Parents' healthy weight perceptions and preferences regarding obesity counseling in preschoolers: Pediatricians matter. *Clinical Pediatrics*, 49(8), 790-798. doi: 10.1177/0009922810368288
- Hill, A. J., & Pallin, V. (1998). Dieting awareness and low self-worth: Related issues in 8-year-old girls. *The International Journal of Eating Disorders*, 24(4), 405-413. doi:10.1002/(SICI)1098-108X(199812)24:4<405::AID-EAT7>3.0.CO;2-D
- Huang, J. S., Becerra, K., Oda, T., Walker, E., Xu, R., Donohue, M., . . . Breslow, A. (2007). Parental ability to discriminate the weight status of children: Results of a survey. *Pediatrics*, 120(1), e112-e119. doi: 10.1542/peds.2006-2143
- Huybrechts, I., Himes, J. H., Ottevaere, C., De Vriendt, T., De Keyzer, W., Cox, B., . . . De Henauw, S. (2011). Validity of parent-reported weight and height of preschool children measured at home or estimated without home measurement: A validation study. *BMC Pediatrics*, 11, 63-2431-11-63. doi:10.1186/1471-2431-11-63; 10.1186/1471-2431-11-63
- Institute of Medicine, Committee on Accelerating Progress in Obesity Prevention Food and Nutrition Board. (2012). *Accelerating progress in obesity prevention: Solving the weight of the nation*. Retrieved from <http://www.iom.edu/Reports/2012/Accelerating-Progress-in-Obesity-Prevention.aspx>
- Jaballas, E., Clark-Ott, D., Clasen, C., Stolfi, A., & Urban, M. (2011). Parents' perceptions of their children's weight, eating habits, and physical activities at

- home and at school. *Journal of Pediatric Health Care*, 25(5), 294-301. doi: 10.1016/j.pedhc.2010.05.003
- Jain, A., Sherman, S. N., Chamberlin, L. A., Carter, Y., Powers, S. W., & Whitaker, R. C. (2001). Why don't low-income mothers worry about their preschoolers being overweight? *Pediatrics*, 107(5), 1138-1146. doi: 10.1542/peds.107.5.1138
- Keller, K. L., Olsen, A., Kuilema, L., Meyermann, K., & van Belle, C. (2013). Predictors of parental perceptions and concerns about child weight. *Appetite*, 62(0), 96-102. doi:http://dx.doi.org.ezproxy1.lib.asu.edu/10.1016/j.appet.2012.11.016
- Manios, Y., Kondaki, K., Kourlaba, G., Vasilopoulou, E., & Grammatikaki, E. (2009). Maternal perceptions of their child's weight status: The GENESIS study. *Public Health Nutrition*, 12(8), 1099-1105. doi: 10.1017/S1368980008004412
- Mamun, A. A., McDermott, B. M., O'Callaghan, M. J., Najman, J. M., & Williams, G. M. (2008). Predictors of maternal misclassifications of their offspring's weight status: A longitudinal study. *International Journal of Obesity*, 32(1), 48-54. doi:10.1038/sj.ijo.0803757
- Mathieu, M., Drapeau, V., & Tremblay, A. (2010). Parental misperception of their child's body weight status impedes the assessment of the child's lifestyle behaviors. *International Journal of Pediatrics*, 2010, 1-9. doi:10.1155/2010/306703
- Maynard, L. M., Galuska, D. A., Blanck, H. M., & Serdula, M. K. (2003). Maternal perceptions of weight status of children. *Pediatrics*, 111(5 Pt 2), 1226.
- Myers, S., & Vargas, Z. (2000). Parental perceptions of the preschool obese child. *Pediatric Nursing*, 26(1), 23-30.
- Nader, P. R., O'Brien, M., Houts, R., Bradley, R., Belsky, J., Crosnoe, R., . . . (2006). Identifying risk for obesity in early childhood. *Pediatrics*, 118(3), e594-e601. doi: 10.1542/peds.2005-2801
- Neumark-Sztainer, D., Wall, M., Story, M., & van den Berg, P. (2008). Accurate parental classification of overweight adolescents' weight status: Does it matter? *Pediatrics*, 121(6), e1495-e1502. doi:10.1542/peds.2007-2642
- Ohri-Vachaspati, P. & Yedidia, M. (2009). New Jersey Childhood Obesity Study. New Brunswick, NJ.
- Parry, L. L., Netuveli, G., Parry, J., & Saxena, S. (2008). A systematic review of parental perception of overweight status in children. *The Journal of Ambulatory Care Management*, 31(3), 253-268. doi: 10.1097/01.JAC.0000324671.29272.04

- Rhee, K. E., De Lago, C. W., Arscott-Mills, T., Mehta, S. D., & Davis, R. K. (2005). Factors associated with parental readiness to make changes for overweight children. *Pediatrics, 116*(1), e94-e101. doi:10.1542/peds.2004-2479
- Southwell, O., & Fox, J. R. E. (2011). Maternal perceptions of overweight and obesity in children: A grounded theory study. *British Journal of Health Psychology, 16*(3), 626.
- Towns, N. & D'Auria, J. (2009). Parental perceptions of their child's overweight: An integrative review of the literature. *Journal of Pediatric Nursing, 24*(2), 115-130. doi: 10.1016/j.pedn.2008.02.032
- Vanhala, M. L., Keinänen-Kiukaanniemi, S. M., Kaikkonen, K. M., Laitinen, J. H., & Korpelainen, R. I. (2011). Factors associated with parental recognition of a child's overweight status--a cross sectional study. *BMC Public Health, 11*, 665. doi: 10.1186/1471-2458-11-665
- Young-Hyman, D., Herman, L. J., Scott, D. L., & Schlundt, D. G. (2000). Care giver perception of children's obesity-related health risk: A study of African American families. *Obesity Research, 8*(3), 241-248. doi: 10.1038/oby.2000.28

APPENDIX A

NEW JERSERY CHILDHOOD OBESITY SURVEY

4462 - Childhood Obesity Questionnaire
5-28-09 FINAL

Introductory script

Hello, this is _____ and I am calling for Rutgers University. We are conducting a survey of New Jersey families in order to understand and improve the health of their children. I need to speak with an adult, 18 years or older, who lives here and makes most decisions about food shopping for this household.

IF ROOMMATES /NO FAMILY MEMBERS, SAY: In that case I can continue with you if you are 18 years of age or older.

IF NO ONE 18 YEARS OF AGE OR OLDER EVER: Is this a dormitory, a medical institution or hospital, some other type of institution, a place of business, or is this your home?

IF HOME: What is the age of the oldest person living in this home? (AS LONG AS THE OLDEST HOUSEHOLD MEMBER IS AT LEAST 18 YEARS OF AGE, WE CAN INTERVIEW THEM.)

IF DORMITORY, INSTITUTION, ETC. RECORD APPROPRIATELY AND END CONVERSATION.

(INT: IF NO ONE IN HH IS 18 YEARS OF AGE OR OLDER ENTER DISPO AS “NO ONE IN HH IS 18 YEARS OF AGE OR OLDER”)

IF NEW RESPONDENT COMES TO PHONE SAY:

Hello, this is _____ and I am calling from Rutgers University. We are conducting a survey of New Jersey families in order to understand and improve the health of their children. I need to speak with an adult, 18 years or older, who lives here and makes most decisions about food shopping for this household.

(IF EXPRESSES CONCERN ABOUT CONFIDENTIALITY READ:)

You as an individual will not be linked to any reports using the data. Only information for groups of people will be reported.

(IF ASKED LENGTH OF INTERVIEW READ:) The first part of the conversation will last only a few minutes. If the computer selects you to continue with a longer interview I'll explain at that time.

(IF RESPONDENT HAS OTHER QUESTIONS ABOUT THE SURVEY...WHETHER THEY AGREE TO CONTINUE OR NOT...READ:) If you have additional questions, you can contact someone at our firm by either calling a toll-free number during normal business hours, or e-mailing us anytime of the day. Would you like the toll free number and/or the e-mail address? Do you have something

to write this down? The number is 1-800-772-9287. Ask to speak to Mr. Munjack. The e-mail address is: njhealth@srbi.com. Would you like me to repeat that/either of them? [IF RESPONDENT WANTS TO MAKE THIS CALL BEFORE CONTINUING...ARRANGE CALLBACK DATE AND TIME.] If you still have questions about this survey, please contact Susan Brownlee at the Center for State Health Policy at Rutgers University, 55 Commercial Avenue, New Brunswick, NJ, 08901-1340, or by telephone at 732-932-4666. If you have any questions about your rights as a research subject, you may contact the IRB Administrator at Rutgers University at:

Rutgers University, the State University of New Jersey
Institutional Review Board for the Protection of Human Subjects
Office of Research and Sponsored Programs
3 Rutgers Plaza
New Brunswick, NJ 08901-8559
Tel: 732-932-0150, ext. 2104
Email: humansubjects@orsp.rutgers.edu

INTRO2. **(IF SC1a=1 OR SC1baa=1:)** Hello, this is _____ and I am calling for Rutgers University. We are conducting a survey of New Jersey families in order to understand and improve the health of their children.

(SHOW FOR ALL:) The survey is confidential and its findings will help shape policies and programs that impact children's health in New Jersey. You have been randomly selected to participate in this study.

We are not selling anything or asking for donations. This study is sponsored by the Robert Wood Johnson Foundation, a non-profit organization. Our goal is to understand and improve the health of New Jersey children. Your participation in the study is voluntary and confidential.

If you are eligible to participate in the full interview we will send you a check for \$10.00 as a token of our appreciation for your time and cooperation.

1 = CONTINUE

SC1. First let me just verify that you are 18 years of age or older? (NASF,SINTRO_1)

1 = Yes

2 = No

8 = (VOL) Don't Know

9 = (VOL) Refused

(IF SC1=1, GO TO SC1ba. ELSE GO TO SC1a.)

(IF SC1=1, GO TO SC1ba. ELSE GO TO SC1a.)

SC1a. I need to speak to an adult 18 years of age or older, who lives in this household and makes most decisions about food shopping for this household.

- 1 = Qualified respondent came to phone
- 2 = Qualified respondent not available
- 3 = Qualified respondent Refused

(IF SC1a=1, GO BACK TO INTRO2. IF SC1a=2, schedule CB. IF SC1a=3, dispo as Refusal.)

SC1ba. And I just want to verify that you make most decisions about food shopping for this household.

(IF THEY ARE AS KNOWLEGEABLE AS ANYONE ELSE OR EQUALLY AS KNOWLEDGEABLE RECORD AS "YES")

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(IF SC1ba=1, GO TO SC2a. ELSE GO TO SC1baa.)

SC1baa. I need to speak to an adult 18 years of age or older, who lives in this household and makes most decisions about food shopping for this household.

- 1 = Qualified respondent came to phone
- 2 = Qualified respondent not available
- 3 = Qualified respondent Refused

(IF SC1baa=1, GO BACK TO INTRO2. IF SC1baa=2, schedule CB. IF SC1baa=3, dispo as Refusal.)

SC2a. In what city do you currently live? (DO NOT READ LIST)

- 1 = Camden
- 2 = Newark
- 3 = New Brunswick
- 4 = Trenton
- 5 = Vineland
- 6 = Other (Do NOT Specify)
- 9 = (VOL) Refused

(Programmer: If SC2a=6, TERMINATE ("S/O SC2a – Not in 1 of 5 cities). If SC2a=7, dispo as Refusal. Else go to SC2a1.)

SC2a1. Do you live within the city limits of (*insert from SC2a*), or do you live outside the city limits?

- 1 = Inside the city limits
- 2 = Outside the city limits
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(Programmer: If SC2a1=2 TERMINATE (“S/O SC2a1 – Not in 1 of 5 cities). If SC2a1=3 or 4, dispo as Refusal. Else go to SC2c.)

(IF (V4=2 or 3), read: “I must have entered some of your previous answers incorrectly. I need to re-ask about the number of family members living in your household.”)

Display: Please tell me how many people are currently living in your household that are in the following age groups.

SC2ca. How many people in your household are currently...Under 3 years of age?

(RANGE = 0 to 10; 10=10 or more; 11=DK; 12=REF)

(IF SC2ca=1 through 10, ASK SC2ca1. ELSE GO TO SC2cb.)

SC2ca1. **(IF SC2ca=1, read:)** Is this child related to you by blood, through marriage or living as married? (INTERVIEWER: If “Yes,” enter “1.” If “No,” enter “0.”) **(IF SC2ca=2 through 10, read:)** How many of them are related to you by blood, through marriage or living as married?

(RANGE = 0 to 10; 10=10 or more; 11=DK; 12=REF)

(Programmer: Answer to SC2ca1 can NOT exceed answer to SC2ca.)

SC2cb. How many people in your household are currently...3 to 18 years of age? Please INCLUDE yourself if you happen to be 18 years of age.

(RANGE = 0 to 10; 10=10 or more; 11=DK; 12=REF)

(Programmer: If ((SC2cb=0 or 11 or 12), TERMINATE (“S/O SC2cb - No 3 to 18 children in HH”). ELSE GO TO SC2b1.)

SC2cb1. **(IF SC2cb=1, read:)** Is this child related to you by blood, through marriage or living as married? (INTERVIEWER: If “Yes,” enter “1.” If “No,” enter “0.”) **(IF SC2cb=2 through 10, read:)** How many of them are related to you by blood, through marriage or living as married? Please COUNT YOURSELF, if applicable.

(RANGE = 0 to 10; 10=10 or more; 11=DK; 12=REF)

(Programmer: Answer to SC2cb1 can NOT exceed answer to SC2cb.)

SC2cc. How many people in your household are currently...OVER the age of 18? Be sure to INCLUDE yourself, if applicable.

(RANGE = 0 to 10; 10=10 or more; 11=DK; 12=REF)

(IF SC2cc=1 through 10, ASK SC2cc1. ELSE GO TO INSTRUCTS BEFORE SC2d1.)

SC2cc1. **(IF SC2cc=1, read:)** Is this person related to you by blood, through marriage or living as married? (INTERVIEWER: If “Yes,” enter “1.” If “No,” enter “0.”) **(IF SC2cc=2 through 10, read:)** How many of them are related to you by blood, through marriage or living as married?

Please COUNT YOURSELF, if applicable.

(RANGE = 0 to 10; 10=10 or more; 11=DK; 12=REF)

(Programmer: Answer to SC2cc1 can NOT exceed answer to SC2cc.)

(IF (SC2cb1=1) AND (SC2cc=0 or SC2cc1=0), TERMINATE (“S/O SC2c – No Adults/Only 1 Child”).

(IF (SC2ca1=11 or 12) OR (SC2cb1=11 or 12) OR (SC2cc1=11 or 12), dispo as Refusal.)

(IF SC2cb1=0, ASK SC2d1. ELSE GO TO SC4b.)

SC2d1. Being that you are NOT related to **(the 3 to 18 year old child / any of the 3 to 18 year old children)**, I am unable to conduct the interview with you. Instead, I will need to speak with the adult in your household who IS related to **(that child / those children)** and

makes most decisions about food shopping for the *child / children*). Is that person available?

1 = Came to Phone/Brought to Phone

2 = Not Available

3 = Refused to Come to Phone / Refused to Bring to Phone

(IF SC2d1=1, ask SC2e. IF SC2d1=2, Schedule CB. IF SC2d1=3, dispo as Refusal.)

SC2e. Hello, this is _____ and I am calling for Rutgers University. We are conducting a survey of New Jersey families in order to understand and improve the health of their children. I have already spoken with one of the other adults in your household and they indicated that you are related to (*if sum from SC2cb > 1, insert: “at least 1 of the 3 to 18 year old children” / if sum from SC2cb =1, insert: “the 3 to 18 year old child”*) in this household. Is that correct?

1 = Yes

2 = No

9 = (VOL) Refused

(IF (SC2e=1), go back to SC2ca. IF SC2e=2, go back to SC2d1. If SC2e=9, dispo as Refusal.)

SC4b. Let me verify that there is a total of (***INSERT SUM FROM SC2ca/SC2cb/SC2cc***) people, INCLUDING YOURSELF, in your household. Is that correct?

1 = Yes

2 = No

8 = (VOL) Don't Know

9 = (VOL) Refused

(IF SC4b=1, GO TO SC5. IF SC4b=2, go back and re-ask SC2ca through SC2cc. ELSE dispo as Refusal.)

(Programmer: Create the following variables:

➤ ***“TOTHH” = Sum of SC2ca/SC2cb/SC2cc.***

➤ ***“TOTFAM” = Sum of SC2ca1/SC2cb1/SC2cc1.***

➤ ***“TOTNFAM” = “TOTHH” minus “TOTFAM”***

➤ ***“NONFAMAD” = “SC2cc” minus “SC2cc1”***

➤ ***“NONFAMCH” = “SC2cb” minus “SC2cb1”***

To complete this section, I just need to have YOUR first name or initials.

SC5. First you...what is YOUR first name or initials?

____ Record Verbatim

SC5a. (INTERVIEWER: RECORD GENDER BY OBSERVATION)

1 = Male
2 = Female

SC5b. What is your age?

(RANGE = 18 to 99; 98 = DK; 99 = REF)

(IF SC5b=98 or 99, ASK SC5b1. ELSE GO TO INSTRUCTS BEFORE SC6.)

SC5b1. Can you please tell me if your age is...(READ LIST)?

(ONLY SHOW CODES 5 through 11)

1 = 3 to 4,
2 = 5 to 9,
3 = 10 to 13,
4 = 14 to 16,
5 = 17 to 18,
6 = 19 to 30,
7 = 31 to 49,
8 = 50 to 61,or
9 = 62 or older?
10 = (VOL) Don't Know
11 = (VOL) Refused

(IF SC5b=18 or SC5b1=5, THEN THE # OF TIMES TO ASK THE SC6/SC7/SC7a/SC7a1 LOOP WILL BE EQUAL TO THE TOTAL FROM SC2cb1.

IF SC5b<>18 AND SC5b1<>5, THEN THE # OF TIMES TO ASK THE SC6/SC7/SC7a/SC7a1 LOOP WILL BE EQUAL TO THE TOTAL FROM SC2cb1 PLUS 1.)

(AUTOPUNCH THE ANSWER FROM SC5 INTO ITERATION #1 OF SC6 (i.e. – the RESP).

AUTOPUNCH THE ANSWER FROM SC5a INTO ITERATION #1 OF SC7 (i.e. – the RESP).

AUTOPUNCH THE ANSWER FROM SC5b INTO ITERATION #1 OF SC7a (i.e. – the RESP).

AUTOPUNCH THE ANSWER FROM SC5b1 (if applicable) INTO

ITERATION #1 of SC7a1 (i.e. – the RESP.)

SC6. [READ FOR REMAINING ITERATIONS]

And what is the first name or initials of the oldest child age 3 to 18 that is related to you?
And the next oldest child age 3 to 18 that is related to you?

(ASK SC6 UNTIL WE HAVE CAPTURED THE SUM FROM (SC2cb1) or (SC2cb1 PLUS Resp)...whichever is applicable.

(Read if necessary: The goal of this survey is to understand and improve children's health. All information is confidential.)

(ASK SC7 to SC7a1 CONSECUTIVELY FOR RESPONDENT AND EACH PERSON FROM SC6.)

SC7. **(Is name or initials)** a male or female?

1 = male

2 = female

SC7a. What is **(name or initials)**'s age?

(RANGE for RESP = 18 to 99; 98 = DK; 99 = REF)

(RANGE for Children = 3 to 18; 98 = DK; 99 = REF)

(ASK IF SC7a IS DK OR REF... OTHERS TO FR1.)

SC7a1. Can you please tell me if **(name or initials)** age is (READ LIST)

(ONLY SHOW CODES 1 through 5, and 10 and 11)

1 = 3 to 4,

2 = 5 to 9,

3 = 10 to 13,

4 = 14 to 16,

5 = 17 to 18,

6 = 19 to 30,

7 = 31 to 49,

8 = 50 to 61,or

9 = 62 or older?

10 = (VOL) Don't Know

11 = (VOL) Refused

SECTION FR1 (HOUSEHOLD/FAMILY ROSTER)

(ASK FR1a FOR EACH CHILD MENTIONED AT SC6 SERIES. IF NO OTHERS GO TO BOX A.)

FR1a. What relation is *(name/initials)* to you?

(NOTE: YOU ARE ALWAYS RECORDING WHAT RELATIONSHIP THE CHILD HAS TO THE RESPONDENT.)

[IF CHILD MENTIONED: “Is that your natural or legally adopted child, your stepchild, your foster child, or a child for whom you are the legal guardian?”]

- 1 = my spouse/husband/wife
- 2 = my unmarried partner/boyfriend/girlfriend/domestic partner
- 3 = my natural or legally adopted child/son/daughter
- 4 = my stepdaughter/son
- 5 = my foster child
- 6 = my grandchild/grandson/granddaughter
- 7 = my child for whom I am the legal guardian
- 8 = partner’s natural or legally adopted child/son/daughter
- 9 = partner’s stepdaughter/son
- 10 = partner’s foster child
- 11 = partner’s grandchild/grandson/granddaughter
- 12 = partner’s child for whom I am the legal guardian
- 13 = my brother/sister/sibling
- 14 = my sister/brother-in-law
- 15 = my daughter/son-in-law
- 16 = my niece/nephew
- 17 = my cousin
- 18 = my great grandchild
- 19 = my other relative, specify: _____
- 20 = other, specify: _____

(NOW GO BACK AND ASK FR1 FOR THE NEXT PERSON. IF NO OTHERS GO TO BOX A.)

V4. The answers that I recorded previously indicate that there is/are *(insert # from SC2cb1)* children in your household between the ages of 3 to 18 years old who are related to you. However, based upon your subsequent answers, it appears that none of these 3 to 18 year old children in your household are related to you. So, I need to know which of the following most accurately describes your household situation? (READ LIST)

- 1 = There are NO 3 to 18 year old children living in this household AT ALL,
- 2 = YOU are over the age of 18 AND there is at least one 3 to 18 year old child living in this household who is RELATED to YOU,

3 = YOU are currently 18, but there is also at least one other 3 to 18 year old child living in this household who is RELATED to YOU, or
4 = YOU are currently 18 years old, and there are NO other 3 to 18 year olds living in this household who are RELATED to YOU?
9 = (VOL) Refused

(IF V4=1 or 4, TERMINATE (“S/O V4 – NO 3 to 18 IN HH”). IF V4=2 or 3, GO BACK TO SC2c. IF V4=3, dispo as Refusal.)

(IF “NONFAMAD” > 0 AND “NONFAMCH” > 0, ask SC9a. ELSE GO TO SC8a.)

SC9a. Do any of the other UNRELATED ADULTS currently living there use the same land line phone as you?

1 = Yes
2 = No
8 = (VOL) Don’t Know3
9 = (VOL) Refused

(IF SC9a=1, ASK SC9b. ELSE GO TO SC8a.)

SC9b. Do they have any children ages 3-18 who are RELATED TO THEM, but are NOT related TO YOU living in this household? (INTERVIEWER: If “Yes,” probe with, “How many?” If “No,” record as “0.”)

(RANGE=0 to 14; 14=14 or more; 15=DK; 6=REF):

_____ Record #

(IF SC9b=0 or 15 or 16, go to SC8a. Else go to SC9c.)

SC9c. What is the name of the adult who makes the food shopping decisions for **(this 3-18 year old child / those 3-18 year old children)**?

1 = Gave Response
9 = (VOL) Refused

SC8a. Do you have more than one landline telephone number in your household?

[IF “NO” ENTER “1”...IF YES ASK: How many different landline telephone numbers do you or anyone else in the household have at this residence at which you NORMALLY receive incoming phone calls? Do NOT include modem or fax lines, beepers, pagers or cell phones.]

(RANGE=1 to 12; 10=10 or more; 11=DK; 12=REF)
_____ Record #

SC8b. At any time during the past twelve months has your household been without any telephone service (working telephone number) for a week or longer?

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(IF SC9=1, GO BOX C. IF SC9=2, SCHEDULE CB. IF SC9=3, DISPO AS REFUSAL.)

(INSERT TIME STAMP)

(AA12 through AA16 IS ASKED ONLY OF EACH CHILD FROM THE "3-18 Family Roster." ALWAYS START WITH THE INDEX CHILD.)

(IF (SC7=2 for Resp) AND (FR1a=3), AUTOPUNCH "1" TO AA12 AND GO TO INSTRUCTS BEFORE

AA14. ELSE ASK AA12.)

AA12. Does ***(CHILD)***'s mother live in the household? (NSAF D7A)

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(IF (SC7=1 for Resp) AND (FR1a=3), AUTOPUNCH "1" TO AA14 AND GO TO INSTRUCTS BEFORE AA16. ELSE ASK AA14.)

AA14. Does ***(CHILD)***'s father live in the household? (NSAF D7C)

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(IF AA12=2 and AA14=2, ASK AA15. ELSE GO TO INSTRUCTS BEFORE AA16.)

AA15. Does ***(CHILD)***'s legal guardian live in the household?

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't Know

9 = (VOL) Refused

(IF MORE THAN ONE CHILD AGES 3-18 IN HOUSEHOLD, ASK AA16. Else go back to AA12 and ask for next child. If no others, go to Section A.)

AA16. Do all the remaining children AGES 3 to 18 THAT ARE RELATED TO YOU in the household have the same *(parents/legal guardians)*?

1 = Yes

2 = No

8 = (VOL) Don't Know

9 = (VOL) Refused

(If AA16=1, go Section A. Else go back to AA10 and ask for next child. If no others, go to Section A.)

SECTION A - HEALTH STATUS

(ASK A1, A2 & A3 CONSECUTIVELY...FIRST FOR RESPONDENT, THEN FOR INDEX CHILD.)

(Read only if "Entire 3-18 Roster" contains MORE THAN 1 individual: "Most of the remaining questions are for you and (INDEX CHILD)." This child was selected randomly from the children in your household.)

The first questions are about health.

A1. Would you say *(your/INDEX CHILD'S)* health is (READ LIST): (CTSp78, e401; NSAFpgF-1, F1)

1 = Excellent,

2 = Very good,

3 = Good,

4 = Fair, or

5 = Poor?

8 = (VOL) Don't Know

9 = (VOL) Refused

A2. Would you say *(your/INDEX CHILD'S)* DENTAL health is (READ LIST):

1 = Excellent,

2 = Very good,

3 = Good,

4 = Fair, or

5 = Poor?

8 = (VOL) Don't Know
9 = (VOL) Refused

A3. Would you say (*your/INDEX CHILD's*) MENTAL health is (READ LIST):

1 = Excellent,
2 = Very good,
3 = Good,
4 = Fair, or
5 = Poor?
8 = (VOL) Don't Know
9 = (VOL) Refused

(NOW GO BACK AND RE-ASK A1-A3 SERIES FOR INDEX CHILD. IF RESP and INDEX CHILD ALREADY ASKED A1-A3, continue to A4.)

A4. Has a doctor or other health professional ever said that you had asthma? (modified BRFSSpg9, 3.1)

1 = Yes
2 = No
8 = (VOL) Don't Know
9 = (VOL) Refused

A5. What about (*INDEX CHILD*)? (modified BRFSSpg9, 3.1)

(IF NEEDED: "Has a doctor or other health professional ever said that (*INDEX CHILD*) had asthma?")

1 = Yes
2 = No
8 = (VOL) Don't Know
9 = (VOL) Refused

A6. Has a doctor or other health professional ever said that you had diabetes? (modified BRFSSpg10, 4.1)

1 = Yes
2 = No
8 = (VOL) Don't Know
9 = (VOL) Refused

A7. What about (*INDEX CHILD*)? (modified BRFSSpg10, 4.1)

(IF NEEDED: "Has a doctor or other health professional ever said that (*INDEX CHILD*) had diabetes?")

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(ASK A8 IF ANY FEMALES AGE 14-49 IN "Family Roster." ELSE GO TO INSTRUCTS BEFORE A9.)

A8. ***(If Resp. female & 14 to 49, insert: "Are you or")*** I/is anyone in your family pregnant?

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(IF A8=1, ASK A8b. ELSE GO TO INSTRUCTS BEFORE A9.)

A8b. Who? Anyone else?

***INSERT ALL FEMALE, 14 to 49 YEAR OLDS FROM FAMILY ROSTER
Add the following codes: "19 = Other Related HH member"
"20 = Other non-related HH member"***

(IF INDEX CHILD UNDER 5 YEARS OF AGE ASK A9...ELSE GO TO A10.)

A9. Is ***(INDEX CHILD)*** limited in any way in activities, including play activities, because of an impairment or a physical or mental health problem?

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

A10. Are you limited in any way in your ability to care for yourself, to work at a job, do housework, school work, or go to school because of an impairment or a physical or mental health problem?

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(ASK A11 IF INDEX CHILD AGE 5-18...ELSE GO TO SECTION B.)

A11. What about (*INDEX CHILD*)?

(IF NEEDED: “Is (*INDEX CHILD*) limited in any way in his/her ability to care for him/herself, do housework, do school work, or go to school because of an impairment or a physical or mental health problem?)

- 1 = Yes
- 2 = No
- 8 = (VOL) Don’t Know
- 9 = (VOL) Refused

(INSERT TIME STAMP)

SECTION B: HEIGHT/WEIGHT – All children AGED 3-18)

(B1-B12a ARE ASKED ONLY OF CHILDREN FROM THE “3-18 Family Roster.” FIRST START WITH THE INDEX CHILD, THEN GO BACK AND ASK B1-B12a FOR REMAINING CHILDREN FROM THE “3-18 Family Roster,” IF ANY. B6-B12a ARE TO BE ASKED ONLY OF THE INDEX CHILD.)

B1. How tall is (*INDEX CHILD/CHILD NAME*) now without shoes?

(ONLY IF NEEDED SAY: “Your best guess is fine”)

- 1 = Answer in feet/inches
(INTERVIEWER: RECORD WHOLE NUMBER ONLY)
- 2 = Answer in meters/centimeters
(INTERVIEWER: RECORD 2 DECIMAL PLACES IF NEEDED)
- 8 = (VOL) Don't know
- 9 = (VOL) Refused

(IF B1=8 or 9, SKIP TO B3. ELSE CONTINUE.)

B2. When was the last time (*INDEX CHILD/CHILD NAME*)’s height was measured? (IF NECESSARY: Your best estimate is fine.)

- 1 = 1 month or less ago
- 2 = 2 months ago
- 3 = 3 months ago
- 4 = 4-6 months ago
- 5 = over 6 months to 1 year ago
- 6 = More than a year ago
- 8 = (VOL) Don’t Know
- 9 = (VOL) Refused

B3. How much does (*INDEX CHILD/CHILD NAME*) weigh now without shoes?

(ONLY IF NEEDED SAY: "Your best guess is fine")

1 = Answer in pounds (INTERVIEWER: RECORD 1 DECIMAL PLACE IF NEEDED)

2 = Answer in kilograms (INTERVIEWER: RECORD 1 DECIMAL PLACE IF NEEDED)

8 = (VOL) Don't know

9 = (VOL) Refused

(IF B3=8 or 9, SKIP TO B5. ELSE CONTINUE.)

B4. When was the last time (*INDEX CHILD/CHILD NAME*)'s weight was measured? (IF NECESSARY: Your best estimate is fine.)

1 = 1 month or less ago

2 = 2 months ago

3 = 3 months ago

4 = 4-6 months ago

5 = over 6 months to 1 year ago

6 = More than a year ago

8 = (VOL) Don't Know

9 = (VOL) Refused

B5. What is the year and month of birth of (*INDEX CHILD/CHILD NAME*)?

1 = Gave Response

9 = (VOL) Refused

(IF B5=1, ASK B5a and B5b. ELSE GO TO INSTRUCTS BEFORE B6.)

B5a. (INTERVIEWER: ENTER YEAR OF BIRTH) (RANGE = 1990 to 2006)

_____ Enter Year

B5b. (INTERVIEWER: SELECT MONTH OF BIRTH)

1 = January

7 = July

2 = February

8 = August

3 = March

9 = September

4 = April

10 = October

5 = May

11 = November

6 = June

12 = December

(IF INDEX CHILD, CONTINUE TO B6. IF NOT INDEX CHILD, DISPLAY THE FOLLOWING: "Now I need to get the heights and weights of your other children" ... THEN GO BACK TO B1 FOR REMAINING CHILDREN BEGINNING WITH THE OLDEST CHILD WHO IS NOT INDEX CHILD. IF NO MORE CHILDREN, GO TO INSTRUCTS BEFORE B13.)

B6. Compared to what you would like (*him/her*) to be, would you say (*INDEX CHILD*) is very underweight, slightly underweight, about the right weight, slightly overweight, or very overweight? (Modified from CHIS adolescent survey)

- 1 = Very underweight
- 2 = Slightly underweight
- 3 = About the right weight
- 4 = Slightly overweight
- 5 = Very overweight
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(IF B6=1 or 2 or 3, GO TO B11. ELSE ASK B7.)

B7. Are you trying to have (*INDEX CHILD*) lose weight?

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(IF CHILD > 10 Yrs, ASK B8. ELSE GO TO INSTRUCTS BEFORE B9.)

B8. Is (*INDEX CHILD*) doing anything to lose weight?

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(If B7 = Yes or B8 = Yes Go to B9 else go to B11.)

B9. Is (*INDEX CHILD*) eating differently to lose weight?

(IF NEEDED: For example, is (*INDEX CHILD*) eating less fat, less calories, or eating more fruits and vegetables, etc.?)

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't know / Not sure
- 9 = (VOL) Refused

B10. Is (*INDEX CHILD*) using any form of physical activity to lose weight?

(IF NEEDED: For example is (*INDEX CHILD*) playing more actively, running, biking, etc.?)

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't know / Not sure
- 9 = (VOL) Refused

B11. In the past 12 months, has a doctor, nurse or other health professional given you advice about **(INDEX CHILD)**'s weight? (IF YES: "Did they suggest **(INDEX CHILD)** lose weight, gain weight, or maintain current weight?")

- 1 = Yes, lose weight
- 2 = Yes, gain weight
- 3 = Yes, maintain current weight
- 4 = No, no advice given about weight
- 8 = (VOL) Don't Know/Not sure
- 9 = (VOL) Refused

(IF B11=1 or 2 or 3, ASK B12. ELSE GO BACK TO B1 FOR REMAINING CHILDREN BEGINNING WITH THE OLDEST CHILD WHO IS NOT THE INDEX CHILD; IF NO MORE CHILDREN, GO TO INSTRUCTS BEFORE B13.)

B12. Did they help you develop a plan to follow the advice about **(INDEX CHILD)** (if **B11=1**, read: "losing" / if **B11=2**, read: "gaining" / if **B11=3**, read: "maintaining") weight?

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't Know / Not sure
- 9 = (VOL) Refused

(IF B12=1, ASK B12a. ELSE GO TO INSTRUCTS BEFORE B13.)

B12a. Did the doctor, nurse or other health professional follow up with you at subsequent visits to see how **(INDEX CHILD)** was doing with the plan to (if **B11=1**, read: "lose" / if **B11=2**, read: "gain" / if **B11=3**, read: "maintain") weight?

- 1 = Yes
- 2 = No
- 8 = Don't know / Not sure
- 9 = Refused

(GO BACK TO B1 FOR REMAINING CHILDREN BEGINNING WITH THE OLDEST CHILD WHO IS NOT THE INDEX CHILD; IF NO MORE CHILDREN, GO TO INSTRUCTS BEFORE B13.)

HEIGHT/WEIGHT – RESPONDENT

(ASK FOR RESPONDENT ONLY)

B13. How tall are you without shoes?

(IF NEEDED SAY: “Your best guess is fine”)

1 = Answer in feet/inches (INTERVIEWER: RECORD WHOLE NUMBER ONLY)

2 = Answer in meters/centimeters

(INTERVIEWER: RECORD 2 DECIMAL PLACES IF NEEDED)

8 = (VOL) Don't know

9 = (VOL) Refused

B14. How much do you weigh now without shoes?

(IF NEEDED SAY: “Your best guess is fine”)

1 = Answer in pounds (INTERVIEWER: RECORD 1 DECIMAL PLACE IF NEEDED)

2 = Answer in kilograms (INTERVIEWER: RECORD 1 DECIMAL PLACE IF NEEDED)

8 = (VOL) Don't know

9 = (VOL) Refused

B15. Compared to what you would like to be, would you say you are very underweight, slightly underweight, about the right weight, slightly overweight, or very overweight?

1 = Very underweight

2 = Slightly underweight

3 = About the right weight

4 = Slightly overweight

5 = Very overweight

8 = (VOL) Don't Know

9 = (VOL) Refused

(IF B15=1 or 2 or 3, go to B19. ELSE ASK B16.)

B16. Are you doing anything to lose weight?

1 = Yes

2 = No

8 = (VOL) Don't Know

9 = (VOL) Refused

(IF B16=2, GO TO B19. ELSE ASK B17.)

B17. Are you trying to eat differently to lose weight?

(IF NEEDED: For example, are you eating less fat, less calories, or eating more fruits and vegetables, etc.)

1 = Yes

2 = No

8 = (VOL) Don't Know

9 = (VOL) Refused

B18. Are you using any form of physical activity to lose weight?

(IF NEEDED: For example, are you walking, running, going to the gym etc.?)

1 = Yes

2 = No

8 = (VOL) Don't Know

9 = (VOL) Refused

B19. In the past 12 months, has a doctor, nurse or other health professional given you advice about your weight? ***(IF RESP IS FEMALE (SC7=2) AND LESS THAN 50 YEARS OF AGE ((SC7a<50) OR SC7a1=5, 6, OR 7) AND NOT CURRENTLY PREGNANT (A8=2 or A8b<>1), READ: "Exclude any advice given if you were pregnant in the past year.")***

(IF YES: "Did they suggest you lose weight, gain weight, or maintain current weight?")

1 = Yes, lose weight

2 = Yes, gain weight

3 = Yes, maintain current weight

4 = No, no advice given about weight

8 = (VOL) Don't Know/Not sure

9 = (VOL) Refused

(IF B19=1 or 2 or 3, ASK B20. ELSE GO TO SECTION C.)

B20. Did they help you develop a plan to follow the advice about ***(if B19=1, read: "losing" / if B19=2, read: "gaining" / if B19=3, read: "maintaining")*** weight?

1 = Yes

2 = No

8 = (VOL) Don't Know

9 = (VOL) Refused

(IF B20=2, GO TO SECTION C. ELSE ASK B21.)

B21. Did the doctor, nurse or other health professional follow up with you at subsequent visits to see how you were doing with the plan to ***(if B19=1, read: “lose” / if B19=2, read: “gain” / if B19=3, read: “maintain”)*** weight?

1 = Yes

2 = No

8 = (VOL) Don't Know

9 = (VOL) Refused

(INSERT TIME STAMP)

SECTION C: Food Environment Questions – Respondent only

READ SLOWLY: Okay, in the next section, please think of your neighborhood as the area within a 20 minute walk, a 5 minute drive, or about 1 mile in all directions around your home.

C1. How long have you lived in this neighborhood?

1 = Less than a year

2 = 1 to less than 2 Years

3 = 2 to less than 5 years

4 = 5 to less than 10 years

5 = 10 years or more

8 = (VOL) Don't know / Not sure

9 = (VOL) Refused

C2. Who does most of the food shopping for your family?

1 = respondent

2 = someone else

3 = respondent and someone else

8 = (VOL) Don't know / Not sure

9 = (VOL) Refused

C3. ***(If C2=1 or 3, read: “Do you” / If C2=2 or 8 or 9, read: “Does your family shopper”)*** usually do most of the food shopping in YOUR neighborhood?

1 = Yes

2 = No

8 = (VOL) Don't Know

9 = (VOL) Refused

(IF C3=2, ASK C4. ELSE GO TO INSTRUCTS BEFORE C5.)

C4. What would you say is the main reason that **(you do/your family shopper does)** not shop for most of your food in your neighborhood? (READ LIST)

- 1 = No food stores in the neighborhood
- 2 = Not convenient
- 3 = Higher cost
- 4 = Poor Quality
- 5 = Lack of variety
- 6 = Lack of healthy choices
- 7 = (VOL) OTHER (Specify): _____
- 8 = (VOL) Don't know / Not sure
- 9 = (VOL) Refused

(If C3=2 or 8 or 9, say: In the next set of questions, I will ask you about the store where **(you do/your family shopper does)** MOST of your food shopping.

C5. Is this store a...(READ LIST)?

(Note: If Resp. says they shop at 2 or more stores equally, ask about the one that is easiest to get to.)

(Note: Target, K-Mart, Costco, Price Club and BJ's are considered "Superstores")

- 1 = Supermarket (like Shop Rite, Pathmark),
- 2 = Superstore like Wal-Mart or Sam's Club,
- 3 = Small grocery store,
- 4 = Ethnic store or bodega,
- 5 = Corner store or convenience stores like 7-11,
- 6 = or some other type of store (Specify): _____
- 8 = (VOL) Don't know / Not sure
- 9 = (VOL) Refused

C6. What would you say is the main reason that **(you shop/your family shopper shops)** for most of your food at this **(INSERT C5 RESPONSE / if C5=DK/REF, insert "store")**? Is it...(READ LIST)?

- 1 = Convenience,
- 2 = Better prices,
- 3 = Better quality, or
- 4 = A larger selection?
- 5 = (VOL) Other (SPECIFY): _____
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

C7. How easy is it for *(you/your food shopper)* to get to this store? Would you say it is very easy, somewhat easy, somewhat difficult, or very difficult?

- 1 = Very easy
- 2 = Somewhat easy
- 3 = Somewhat difficult
- 4 = Very difficult
- 8 = Don't know
- 9 = Refused

C8. How available are fresh fruits and vegetables at this store? Would you say very available, somewhat available, somewhat unavailable, or very unavailable?

- 1 = Very Available
- 2 = Somewhat Available
- 3 = Somewhat Unavailable
- 4 = Very Unavailable
- 5 = (VOL) Store does NOT sell fresh fruits and vegetables
- 8 = (VOL) Don't Know / Not sure
- 9 = (VOL) Refused

(IF C8=5, SKIP TO C12. ELSE CONTINUE.)

C9. Is there a large selection of good quality fresh fruits and vegetables at this store? Would you say a very large selection, somewhat large selection, somewhat limited selection, or very limited selection?

- 1 = Very large selection
- 2 = Somewhat large selection
- 3 = Somewhat limited selection
- 4 = Very limited selection
- 8 = (VOL) Don't Know / Not sure
- 9 = (VOL) Refused

C10. How expensive are fresh fruits and vegetables at this store? Would you say very expensive, somewhat expensive, somewhat inexpensive, or very inexpensive?

- 1 = Very Expensive
- 2 = Somewhat Expensive
- 3 = Somewhat Inexpensive
- 4 = Very Inexpensive
- 8 = (VOL) Don't Know / Not sure
- 9 = (VOL) Refused

(IF C10=1 or 2, ASK C11. ELSE GO TO C12.)

C11. How often does the cost of fresh fruits and vegetables at this store keep ***(you/your food shopper)*** from buying them? (READ LIST)

- 1 = Always,
- 2 = Often,
- 3 = Sometimes,
- 4 = Rarely, or
- 5 = Never?
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

C12. How available are low-fat foods such as low fat milk and lean cuts of meat at this store? Would you say very available, somewhat available, somewhat unavailable, or very unavailable?

- 1 = Very Available
- 2 = Somewhat Available
- 3 = Somewhat Unavailable
- 4 = Very Unavailable
- 8 = (VOL) Don't know / Not sure
- 9 = (VOL) Refused

C13. Is there a large selection of good quality low-fat foods at this store? Would you say a very large selection, somewhat large selection, somewhat limited selection, or very limited selection?

- 1 = Very large selection
- 2 = Somewhat large selection
- 3 = Somewhat limited selection
- 4 = Very limited selection
- 8 = (VOL) Don't Know / Not sure
- 9 = (VOL) Refused

C14. How expensive are low-fat foods at this store? Would you say very expensive, somewhat expensive, somewhat inexpensive, or very inexpensive?

- 1 = Very Expensive
- 2 = Somewhat Expensive
- 3 = Somewhat Inexpensive
- 4 = Very Inexpensive
- 8 = (VOL) Don't Know / Not sure
- 9 = (VOL) Refused

(IF C14=1 or 2, ASK C15 ELSE GO TO C16.)

C15. How often does the cost of low-fat foods at this store keep *(you/your food shopper)* from buying Them? **(READ LIST)**

- 1 = Always
- 2 = Often
- 3 = Sometimes
- 4 = Rarely
- 5 = Never
- 8 = (VOL) Don't know
- 9 = (VOL) Refused

C16. How *(do you/does your family shopper)* usually travel to this **(INSERT C5 RESPONSE / if C5=DK/REF, insert "store")**? **(DO NOT READ LIST)**

- 1 = Drive a car
- 2 = Get a ride
- 3 = Take the bus
- 4 = Take the train
- 5 = Take a taxi
- 6 = Walk
- 7 = Bike
- 8 = (VOL) Don't know
- 9 = (VOL) Refused

C17. How long does it usually take *(you/your food shopper)* to get there when *(you/they)* **(INSERT C16 RESPONSE / if C16=DK/REF, insert "go to this store")**?

(RANGE = 1 to 120; 1=Less than 1 minute; 120= 120 minutes or more; 121=DK; 122=REF)

_____ minutes

(IF C16<>1 and C16<>2, ASK C18. ELSE GO TO C20.)

C18. Is there ever a car available for your family's food shopping?

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't know
- 9 = (VOL) Refused

(IF C18=1, ASK C19. ELSE GO TO C20.)

C19. Is it usually or only sometimes available?

- 1 = Usually
- 2 = Sometimes
- 8 = (VOL) Don't know
- 9 = (VOL) Refused

(IF C8=5, SKIP TO INSTRUCTS BEFORE C21. ELSE ASK C20.)

C20. In the past month, did ***(you/your family shopper)*** usually buy most of your fruits and vegetables at the same store where ***(you/they)*** do most of your shopping?

(IF NEEDED, STATE THAT WE MEAN ALL KINDS of fruits and Vegetables -- fresh, canned, frozen)

- 1 = Yes, same store
- 2 = Somewhere Else
- 3 = (VOL) Buy 50/50 from same store and Somewhere Else
- 4 = (VOL) Don't buy fruits and vegetables
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(IF (C8=5) or (C20=2 or 3), ASK C21. ELSE GO TO C24.)

C21. ***(If C20=2 or 3, read:*** Other than your usual food shopping store, what kind of place is that?)

(IF C8=5, read: In the past month, where did you usually buy fruits and vegetables, or did you not buy any?)

(IF NEEDED, SAY:) Would you say at a supermarket, a superstore like Wal-Mart or Sam's Club, small grocery store, market, bodega, ethnic store (like an Asian market); or a convenience store such as a gas station, a corner store; or a farmer's market or fruit and vegetable store?

(Note: Target, K-Mart, Costco, Price Club and BJ's are considered "Superstores")

- 1 = Supermarket (like Shop Rite, Pathmark),
- 2 = Superstore like Wal-Mart or Sam's Club,
- 3 = Small grocery store,
- 4 = Ethnic store or bodega,
- 5 = Corner store or convenience stores like 7-11,
- 6 = Farmer's market or fruit and vegetable store/produce store
- 7 = or some other type of store (Specify): _____
- 8 = (VOL) Did NOT buy fruits and vegetables
- 9 = (VOL) Don't know / Not sure
- 10 = (VOL) Refused

C22. How often (*do you/does your family shopper*) shop at this store for fruits and vegetables?

- 1 = Gave times per week (RANGE 1-7)
- 2 = Gave times per month RANGE 1-31)
- 3 = Gave times per year (RANGE 1-365)
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

C23. What is the main reason (*you shop/your family shopper shops*) at this store? Is it...(READ LIST)?

- 1 = Convenience,
- 2 = Better prices,
- 3 = Better quality, or
- 4 = A larger selection?
- 17 = (VOL) Other (SPECIFY) _____
- 18 = (VOL) Don't Know
- 19 = (VOL) Refused

C24. Still thinking about your neighborhood, that is the area within a 20 minute walk, a 5 minute drive, or about 1 mile in all directions around your home, are there any fast-food restaurants, delis, pizza, burger, taco or chicken places where you pay before you eat in your neighborhood?

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't know
- 9 = (VOL) Refused

C26. Are there any full-service restaurants in your neighborhood?

(ONLY IF NEEDED: "Examples include a diner, Denny's, or Friendly's")

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't know
- 9 = (VOL) Refused

I will now ask you a few questions about food items available in your home. Please answer yes or no for each of the questions. In the last week, did you have...

(RANDOMIZE ORDER OF C28a-C28e; ALWAYS ASK C28f LAST)

C28a. Fresh, frozen, or canned vegetables available in your home?

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't know
- 9 = (VOL) Refused

C28b. 1% or skim milk available in your home?

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't know
- 9 = (VOL) Refused

C28c. Whole grain bread or whole grain pasta available in your home?

(IF NEEDED: "Include any whole grain, whole wheat, rye, etc. bread or pasta.")

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't know
- 9 = (VOL) Refused

C28d. Cookies, cakes, or candy that were available in your home?

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't know
- 9 = (VOL) Refused

C28e. Chips or Nachos or Doritos available in your home?

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't know
- 9 = (VOL) Refused

C28f. Fresh, canned or dried fruit on the kitchen counter or somewhere easy for your child to get to?

(IF NEEDED, PROBE WITH: "In your home?")

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't know

9 = (VOL) Refused

Please tell me if you strongly agree, somewhat agree, somewhat disagree, or strongly disagree with each of the following statements.

C29a. In general, I eat healthy. Do you Agree or Disagree? Strongly or Somewhat?

- 1 = Strongly agree
- 2 = Somewhat agree
- 3 = Somewhat disagree
- 4 = Strongly disagree
- 8 = (VOL) Don't know
- 9 = (VOL) Refused

C29b. In general, (*INDEX CHILD*) eats healthy. Do you Agree or Disagree? Strongly or Somewhat?

- 1 = Strongly agree
- 2 = Somewhat agree
- 3 = Somewhat disagree
- 4 = Strongly disagree
- 8 = (VOL) Don't know
- 9 = (VOL) Refused

C30. Which one of the following statements best describes the food eaten by your family? Do you have...(READ LIST)?

- 1 = Enough food to eat,
- 2 = Sometimes NOT enough to eat, or
- 3 = Often NOT enough to eat?
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(INSERT TIME STAMP)

SECTION D: PHYSICAL ENVIRONMENT FOR ACTIVITY – Respondent only
unless otherwise noted

For the next few agree/disagree statements, as before, please think of your neighborhood as the area within a 20 minute walk, a 5 minute drive, or about 1 mile in all directions around your home.

(RANDOMIZE ORDER OF D1a-D1f...do NOT rotate D1g or D1h)

D1a. My neighborhood offers many opportunities to be physically active. Do you Agree or Disagree? Strongly or Somewhat?

- 1 = Strongly agree
- 2 = Somewhat agree
- 3 = Somewhat disagree
- 4 = Strongly disagree
- 8 = (VOL) Don't know
- 9 = (VOL) Refused

D1b. My neighborhood is a close-knit or unified neighborhood. Do you Agree or Disagree? Strongly or Somewhat?

- 1 = Strongly agree
- 2 = Somewhat agree
- 3 = Somewhat disagree
- 4 = Strongly disagree
- 8 = (VOL) Don't know
- 9 = (VOL) Refused

D1c. People around here are willing to help their neighbors. Do you Agree or Disagree? Strongly or Somewhat?

- 1 = Strongly agree
- 2 = Somewhat agree
- 3 = Somewhat disagree
- 4 = Strongly disagree
- 8 = (VOL) Don't know
- 9 = (VOL) Refused

D1d. People in this neighborhood generally don't get along with each other. Do you Agree or Disagree? Strongly or Somewhat?

- 1 = Strongly agree
- 2 = Somewhat agree
- 3 = Somewhat disagree
- 4 = Strongly disagree
- 8 = (VOL) Don't know
- 9 = (VOL) Refused

D1e. I trust people in this neighborhood. Do you Agree or Disagree? Strongly or Somewhat?

- 1 = Strongly agree
- 2 = Somewhat agree
- 3 = Somewhat disagree
- 4 = Strongly disagree

8 = (VOL) Don't know
9 = (VOL) Refused

D1f. People in this neighborhood do not share the same values. Do you Agree or Disagree? Strongly or Somewhat?

1 = Strongly agree
2 = Somewhat agree
3 = Somewhat disagree
4 = Strongly disagree
8 = (VOL) Don't know
9 = (VOL) Refused

D1g. On the whole, I get enough exercise or physical activity. Do you Agree or Disagree? Strongly or Somewhat?

1 = Strongly agree
2 = Somewhat agree
3 = Somewhat disagree
4 = Strongly disagree
8 = (VOL) Don't know
9 = (VOL) Refused

D1h. On the whole, (**INDEX CHILD**) gets enough exercise or physical activity. Do you Agree or Disagree? Strongly or Somewhat?

1 = Strongly agree
2 = Somewhat agree
3 = Somewhat disagree
4 = Strongly disagree
8 = (VOL) Don't know
9 = (VOL) Refused

D3. Thinking about TRAFFIC, how safe is it to walk, run, bike, or play in your neighborhood? Would you say very safe, somewhat safe, somewhat unsafe, or very unsafe?

1 = Very Safe
2 = Somewhat Safe
3 = Somewhat Unsafe
4 = Very Unsafe
8 = (VOL) Don't Know / Not sure
9 = (VOL) Refused

D2. Thinking about CRIMINAL ACTIVITY, how safe is it to walk, run, bike, or play in your neighborhood? Would you say very safe, somewhat safe, somewhat unsafe, or very unsafe?

(NOTE: If ask whether we mean “at night” or “during the day,” probe...”We simply mean in general or overall.”)

1 = Very Safe

2 = Somewhat Safe

3 = Somewhat Unsafe

4 = Very Unsafe

8 = (VOL) Don't Know / Not sure

9 = (VOL) Refused

D4. How pleasant is it to walk, run, bike, or play in your neighborhood? For example, are there trees and proper lighting, no graffiti, or abandoned buildings? Would you say very pleasant, somewhat pleasant, somewhat unpleasant, or very unpleasant?

1 = Very Pleasant

2 = Somewhat Pleasant

3 = Somewhat Unpleasant

4 = Very Unpleasant

8 = (VOL) Don't Know / Not sure

9 = (VOL) Refused

D5. For walking after dark, are there working street lights on most streets in your neighborhood?

1 = Yes

2 = No

8 = (VOL) Don't Know / Not sure

9 = (VOL) Refused

D6. Are there sidewalks in most areas of your neighborhood?

1 = Yes

2 = No

8 = (VOL) Don't Know / Not sure

9 = (VOL) Refused

(IF D6=2, GO TO D10. ELSE ASK D7.)

D7. Are the sidewalks generally in good, fair, or poor condition?

1 = Good

2 = Fair

- 3 = Poor
- 8 = (VOL) Don't Know / Not sure
- 9 = (VOL) Refused

D8. How often does (**INDEX CHILD**) use sidewalks in your neighborhood to walk, run, bike, or play? Often, sometimes, rarely, or never?

- 1 = Often
- 2 = Sometimes
- 3 = Rarely
- 4 = Never
- 8 = (VOL) Don't Know / Not sure
- 9 = (VOL) Refused

D9. How often do you use sidewalks in your neighborhood to walk, run, or bike? Often, sometimes, rarely, or never?

- 1 = Often
- 2 = Sometimes
- 3 = Rarely
- 4 = Never
- 8 = (VOL) Don't Know / Not sure
- 9 = (VOL) Refused

D10. Are there parks in your neighborhood where children can walk, run, bike, or play?

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't Know / Not sure
- 9 = (VOL) Refused

(IF D10=2, GO TO D15. ELSE ASK D11.)

D11. Thinking about CRIMINAL ACTIVITY, how safe are these parks? Would you say very safe, somewhat safe, somewhat unsafe, or very unsafe?

- 1 = Very Safe
- 2 = Somewhat Safe
- 3 = Somewhat Unsafe
- 4 = Very Unsafe
- 8 = (VOL) Don't Know / Not sure
- 9 = (VOL) Refused

D12. How pleasant are the parks in your neighborhood? For example, are there trees, proper lighting, no graffiti or trash. Would you say very pleasant, somewhat pleasant, somewhat unpleasant, or very unpleasant?

- 1 = Very Pleasant
- 2 = Somewhat Pleasant
- 3 = Somewhat Unpleasant
- 4 = Very Unpleasant
- 8 = (VOL) Don't Know / Not sure
- 9 = (VOL) Refused

D13. How often does (*INDEX CHILD*) use parks in your neighborhood to walk, run, bike, or play? Often, sometimes, rarely, or never?

- 1 = Often
- 2 = Sometimes
- 3 = Rarely
- 4 = Never
- 8 = (VOL) Don't Know / Not sure
- 9 = (VOL) Refused

D14. How often do you use parks in your neighborhood to walk, run, or bike? Often, sometimes, rarely, or never?

- 1 = Often
- 2 = Sometimes
- 3 = Rarely
- 4 = Never
- 8 = (VOL) Don't Know / Not sure
- 9 = (VOL) Refused

D15. Are there indoor or outdoor exercise facilities such as walking or running tracks, basketball or tennis courts, swimming pool, or school gym in the parks or elsewhere in your neighborhood?

(IF NEEDED: Include public or private facilities)

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't Know / Not sure
- 9 = (VOL) Refused

(IF D15=2, GO TO D22. ELSE ASK D16.)

D16. How convenient are the hours during which these exercise facilities are available for use? Would you say very convenient, somewhat convenient, somewhat inconvenient, or very inconvenient?

(NOTE: If asked “convenient for ME, or for the KIDS, say, “Just in general.”)

- 1 = Very Convenient
- 2 = Somewhat Convenient
- 3 = Somewhat Inconvenient
- 4 = Very Inconvenient
- 8 = (VOL) Don't Know / Not sure
- 9 = (VOL) Refused

D17. Thinking about CRIMINAL ACTIVITY, how safe are these facilities? Would you say very safe, somewhat safe, somewhat unsafe, or very unsafe?

- 1 = Very Safe
- 2 = Somewhat Safe
- 3 = Somewhat Unsafe
- 4 = Very Unsafe
- 8 = (VOL) Don't Know / Not sure
- 9 = (VOL) Refused

D18. In what kind of condition are these facilities (clean, well-maintained, proper lighting, etc)? Would you say very good condition, somewhat good condition, somewhat poor condition, or very poor condition?

- 1 = Very Good Condition
- 2 = Somewhat Good Condition
- 3 = Somewhat Poor Condition
- 4 = Very Poor Condition.
- 8 = (VOL) Don't Know / Not sure
- 9 = (VOL) Refused

D19a. Do these facilities charge a fee?

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(IF D19a=1, ASK D19. ELSE GO TO D20.)

D19. How affordable are these exercise facilities? Would you say very affordable, somewhat affordable, somewhat unaffordable, very unaffordable?

- 1 = Very affordable
- 2 = Somewhat affordable
- 3 = Somewhat unaffordable
- 4 = Very unaffordable
- 8 = (VOL) Don't Know / Not sure
- 9 = (VOL) Refused

D20. Other than during regular school hours, how often does **(INDEX CHILD)** use these indoor or outdoor exercise facilities in your neighborhood? Often, sometimes, rarely, or never?

- 1 = Often
- 2 = Sometimes
- 3 = Rarely
- 4 = Never
- 8 = (VOL) Don't Know / Not sure
- 9 = (VOL) Refused

D21. How often do you use these indoor or outdoor exercise facilities in your neighborhood? Often, sometimes, rarely, or never?

- 1 = Often
- 2 = Sometimes
- 3 = Rarely
- 4 = Never
- 8 = (VOL) Don't Know / Not sure
- 9 = (VOL) Refused

D22. How often does **(INDEX CHILD)** walk to stores, libraries, or recreational facilities in your neighborhood? Often, sometimes, rarely, or never, or are there no such places to walk in the neighborhood? (IF NEEDED: "This can be either alone or with someone else.")

- 1 = Often
- 2 = Sometimes
- 3 = Rarely
- 4 = Never
- 5 = No such places in the neighborhood
- 8 = (VOL) Don't Know / Not sure
- 9 = (VOL) Refused

(IF D22=5, GO TO SECTION E. ELSE ASK D23.)

D23. How often do you walk to stores, libraries, or recreational facilities in your neighborhood? Often, sometimes, rarely, or never, or are there no such places to walk in the neighborhood?

- 1 = Often
- 2 = Sometimes
- 3 = Rarely
- 4 = Never
- 5 = No such places in the neighborhood
- 8 = (VOL) Don't Know / Not sure
- 9 = (VOL) Refused

(INSERT TIME STAMP)

SECTION E: BEHAVIOR – CHILD - FOOD

E1. What grade in school is ***(INDEX CHILD)***?

- 1 = 1st Grade
- 2 = 2nd Grade
- 3 = 3rd Grade
- 4 = 4th Grade
- 5 = 5th Grade
- 6 = 6th Grade
- 7 = 7th Grade
- 8 = 8th Grade
- 9 = 9th Grade
- 10 = 10th Grade
- 11 = 11th Grade
- 12 = 12th Grade
- 13 = Pre-school
- 14 = Kindergarten
- 15 = Graduated HS/Entering College or Tech/Trade/Nursing School
- 16 = (VOL) Not in school
- 17 = (VOL) Home Schooled
- 18 = Other, (SPECIFY)
- 19 = (VOL) Don't Know
- 20 = (VOL) Refused

(IF E1=15 or 16 or 17 or 19 or 20, GO TO E4. ELSE GO TO INSTRUCTS BEFORE E1a.)

(IF SC2a=1 (CAMDEN), ASK E1a. ELSE GO TO INSTRUCTS BEFORE E1b.)

E1a. What is the name of the school that ***(INDEX CHILD)*** currently attends?

(IF CHILD HAS CLASSES AT MULTIPLE LOCATIONS, PROBE: “At which one does (*INDEX CHILD*) have MOST of his/her classes?”)

(ENTER APPROPRIATE CODE FROM BLUE “TACK UP” SHEET)

- 1 = BONSTALL
- 2 = BRIMM MEDICAL ARTS HIGH SCHOOL
- 3 = CAMDEN ACADEMY CHARTER HIGH SCHOOL
- 4 = CAMDEN CAP
- 5 = CAMDEN FORWARD SCHOOL
- 6 = CAMDEN HIGH SCHOOL
- 7 = CAMDEN HOUSE
- 8 = CAMDEN SIP
- 9 = CAMDEN VIRTUA KIDS IN TRANSITION
- 10 = CAMDEN'S PROMISE CS
- 11 = CATTO DEMONSTRATION SCHOOL
- 12 = COOPERS POYNT
- 13 = CRAMER
- 14 = CREATIVE & PRFRMG ARTS HIGH SCHOOL
- 15 = D.U.E. SEASON CS
- 16 = DAVIS ELEMENTARY
- 17 = DUDLEY
- 18 = EARLY CHILDHOOD DEVEL CENTER
- 19 = EAST CAMDEN MIDDLE SCHOOL
- 20 = ENVIRONMENT COMMUNITY CS
- 21 = FOREST HILL
- 22 = FREEDOM ACADEMY CS
- 23 = HATCH MIDDLE SCHOOL
- 24 = HOLY NAME SCHOOL
- 25 = JRC ALTERNATIVE SCHOOL
- 26 = LANNING SQUARE
- 27 = LEAP ACADEMY UNIVERSITY CS
- 28 = THE LEARNING TREE
- 29 = MCGRAW
- 30 = MET EAST HIGH SCHOOL
- 31 = MORGAN VILLAGE MIDDLE SCHOOL
- 32 = MT OLIVET SEVENTH-DAY ADV SCHOOL
- 33 = OLD CATTO ELEMENTARY
- 34 = PARKSIDE
- 35 = POWELL

- 36 = PYNE POYNT FAMILY SCHOOL
- 37 = R C MOLINA ELEM SCHOOL
- 38 = RILETTA CREAM ELEM SCHOOL
- 39 = RIVERFRONT STATE PRISON
- 40 = SACRED HEART GRADE SCHOOL
- 41 = THE SAN MIGUEL SCHOOL
- 42 = SHARP
- 43 = SO CAMDEN ALTERNATIVE SCHOOL
- 44 = ST ANTHONY OF PADUA SCHOOL
- 45 = ST JOSEPH PRO-CATHEDRAL SCHOOL
- 46 = SUMNER
- 47 = U. S. WIGGINS
- 48 = URBAN PROMISE ACADEMY
- 49 = VETERANS MEMORIAL MIDDLE SCHOOL
- 50 = WASHINGTON
- 51 = WHITTIER
- 52 = WILSON
- 53 = WOODROW WILSON HIGH SCHOOL
- 54 = YORKSHIP
- 197 = OTHER (SPECIFY)
- 198 = (VOL) DON'T KNOW
- 199 = (VOL) REFUSED

(NOW GO TO E2.)

(IF SC2a=2 (NEWARK), ASK E1b. ELSE GO TO INSTRUCTS BEFORE E1c.)

E1b. What is the name of the school that (***INDEX CHILD***) currently attends?

(IF CHILD HAS CLASSES AT MULTIPLE LOCATIONS, PROBE: “At which one does (***INDEX CHILD***) have MOST of his/her classes?”)

(ENTER APPROPRIATE CODE FROM GREEN “TACK UP” SHEET)

- 1 = ABINGTON AVE
- 2 = ACADEMY OF ST. BENEDICT
- 3 = ACADEMY OF VOC CAREERS
- 4 = ALEXANDER ST
- 5 = AMERICAN HISTORY HIGH
- 6 = ANN ST
- 7 = ARTS
- 8 = AVON AVE
- 9 = BARRINGER

10 = BELMONT RUNYON
11 = BETHANY CHRISTIAN ACADEMY
12 = BETHEL CHRISTIAN ACADEMY
13 = BLESSED SACRAMENT SCHOOL
14 = BOYLAN EARLY CHILDHOOD CT
15 = BRAGAW AVE
16 = BRANCH BROOK SCHOOL
17 = BROADWAY
18 = BRUCE ST
19 = BURNET ST
20 = CALVARY CHRISTIAN SCHOOL
21 = CAMDEN MIDDLE
22 = CAMDEN ST
23 = CENTRAL
24 = THE CHAD SCHOOL/THE BLACK YOUT
25 = CHAD SCIENCE ACADEMY
26 = CHANCELLOR AVE
27 = CHANCELLOR AVE ANNEX
28 = CHEN SCHOOL
29 = THE CHILDRENS ACADEMY
30 = CLEVELAND
31 = CLINTON AVE
32 = DAYTON ST
33 = DELIVERANCE CHRISTIAN SCHOOL
34 = DISCOVERY CS
35 = DR E ALMA FLAGG
36 = DR WILLIAM H HORTON
37 = EARLY CHILDHOOD PROGRAM
38 = EAST NEWARK PUBLIC
39 = EAST SIDE
40 = EIGHTEENTH AVE
41 = ELLIOTT ST
42 = ESSEX CO. YOUTH HOUSE
43 = ESSEX CTY V N 13TH ST NWK
44 = ESSEX REGIONAL SCHOOL
45 = ESSEX RGC
46 = FIFTEENTH AVE
47 = FIRST AVENUE
48 = FOURTEENTH AVENUE
49 = FRANKLIN
50 = FULL GOSPEL CHRISTIAN ACADEMY
51 = GEORGE WASHINGTON CARVER

52 = GRAY CS
53 = GREATER NEWARK ACADEMY CS
54 = GROWING GARDEN PRE-SCH & KNG
55 = HARRIET TUBMAN
56 = HAWKINS ST
57 = HAWTHORNE AVE
58 = JERSEY PREPARATORY SCHOOL
59 = JOHN F KENNEDY
60 = JUST US KIDS DAY CARE CENTER
61 = LADY LIBERTY ACADEMY CS
62 = LAFAYETTE ST
63 = LINCOLN
64 = LINK COMMUNITY SCHOOL
65 = LOUISE A. SPENCER
66 = LOVE CENTER DAY CARE CENTER
67 = LUIS MUNOZ MARIN MIDDLE
68 = MADISON ELEM.
69 = MALCOLM X SHABAZZ HIGH
70 = MAPLE AVE SCHOOL
71 = MARIA L. VARISCO-ROGERS CS
72 = MARION P. THOMAS CS
73 = MARTIN LUTHER KING JR
74 = MCKINLEY
75 = MILLER ST
76 = MIRACLE TEMPLE DAY CARE CENTER
77 = MORTON ST
78 = MT VERNON
79 = NJ REGIONAL DAY SCH-NEWARK
80 = NEW HORIZONS COMM. CS
81 = NEW LIFE CHILD CARE LEARNING CENTER
82 = NEWARK BOYS CHORUS SCHOOL
83 = NEWARK CHRISTIAN SCHOOL
84 = NEWARK DAY CENTER
85 = NEWARK VOCATIONAL H S
86 = NEWTON ST
87 = NORTH STAR ACAD. CS OF NEWARK
88 = NORTH WARD CHILD DEVELOPMENT
CENTER
89 = NORTHERN STATE PRISON
90 = OLIVER ST
91 = OUR LADY-GOOD COUNSEL SCHOOL
92 = OUR LADY OF GOOD COUNSEL HIGH

SCHOOL

- 93 = PESHINE AVE
- 94 = PROVISION OF PROMISE ACADEMY
- 95 = QUEEN OF ANGELS
- 96 = QUITMAN COMMUNITY SCHOOL
- 97 = RAFAEL HERNANDEZ SCHOOL
- 98 = RENAISSANCE ACADEMY
- 99 = RIDGE ST
- 100 = RISING STAR LEARNING CENTER
- 101 = ROBERT TREAT ACADEMY CS
- 102 = ROBERTO CLEMENTE
- 103 = ROSEVILLE AVE SCHOOL
- 104 = REFUGE OF HOPE
- 105 = SACRED HEART ELEMENTARY SCHOOL
- 106 = SAMUEL L BERLINER
- 107 = SCIENCE HIGH
- 108 = SHILOH RAINBOW ACADEMY INC.
- 109 = SOUTH SEVENTEENTH ST
- 110 = SOUTH ST
- 111 = SPEEDWAY AVE
- 112 = ST BENEDICT'S PREP SCHOOL
- 113 = ST CASIMIE ACADEMY
- 114 = ST FRANCIS XAVIER
- 115 = ST JAMES PREPARATORY SCHOOL
- 116 = ST JOHN THE BAPTIST UKRAINI
- 117 = ST LUCY FILIPPINI ACADEMY
- 118 = ST LUCY SCHOOL
- 119 = ST MARY ELEMENTARY SCHOOL
- 120 = ST MICHAEL SCHOOL
- 121 = ST PATRICK'S SCHOOL
- 122 = ST PHILIPS ACADEMY
- 123 = ST ROCCO SCHOOL
- 124 = ST ROSE OF LIMA SCHOOL
- 125 = ST VINCENT ACADEMY
- 126 = SUSSEX AVE
- 127 = TEAM ACADEMY CHARTER SCHOOL
- 128 = TECHNOLOGY HIGH
- 129 = TENDER CARE
- 130 = THIRTEENTH AVE
- 131 = UNITED ACADEMY
- 132 = UNIVERSITY HEIGHTS CS
- 133 = UNIVERSITY HIGH

- 134 = VAILSBURG CHRISTIAN ACADEMY
- 135 = VAILSBURG MIDDLE SCHOOL
- 136 = WEEQUAHIC
- 137 = WEEQUAHIC DAY NURSERY & SCHOOL
- 138 = WEST MARKET STREET CENTER
- 139 = WEST SIDE HIGH
- 140 = WILLIAM H BROWN ACADEMY
- 141 = WILSON AVE
- 142 = ZION LEARNING CENTER
- 197 = OTHER (SPECIFY)
- 198 = (VOL) DON'T KNOW
- 199 = (VOL) REFUSED

(NOW GO TO E2.)

(IF SC2a=3 (NEW BRUNSWICK), ASK E1c. ELSE GO TO INSTRUCTS BEFORE E1d.)

E1c. What is the name of the school that ***(INDEX CHILD)*** currently attends?

(IF CHILD HAS CLASSES AT MULTIPLE LOCATIONS, PROBE: "At which one does ***(INDEX CHILD)*** have MOST of his/her classes?")

(ENTER APPROPRIATE CODE FROM PINK "TACK UP" SHEET)

- 1 = A CHESTER REDSHAW
- 2 = ALTERNATIVE SCHOOL
- 3 = THE CHILDREN'S CENTER
- 4 = GREATER BRUNSWICK CS
- 5 = GREATER NEW BRUNSWICK DAY CARE
- 6 = JOHNSON & JOHNSON CHILD DEVELOPMENT
- 7 = LINCOLN
- 8 = LIVINGSTON
- 9 = LIVINGSTON AVE CHILD DEVELOPMENT CENTER
- 10= LORD STIRLING
- 11 = MAE J STRONG CHILD DEVELOPMENT CENTER
- 12 = MCKINLEY COMM
- 13 = MIDDLESEX CO. YOUTH CTR.
- 14 = N.B HEALTH AND TECHNOLOGY
- 15 = N.B. MIDDLE SCHOOL

- 16 = NEW BRUNSWICK HIGH
- 17 = PAUL ROBESON COMM
- 18 = REDSHAW
- 19 = ROOSEVELT ELEM
- 20 = ST MARY OF MT VIRGIN SCHOOL
- 21 = ST PETER HIGH SCHOOL
- 22 = ST PETER THE APOSTLE ELEMENTARY
- 23 = WOODROW WILSON
- 197 = OTHER (SPECIFY)
- 198 = (VOL) DON'T KNOW
- 199 = (VOL) REFUSED

(NOW GO TO E2.)

(IF SC2a=4 (TRENTON), ASK E1d. ELSE GO TO INSTRUCTS BEFORE E1e.)

E1d. What is the name of the school that (***INDEX CHILD***) currently attends?

(IF CHILD HAS CLASSES AT MULTIPLE LOCATIONS, PROBE: "At which one does (***INDEX CHILD***) have MOST of his/her classes?")

(ENTER APPROPRIATE CODE FROM YELLOW "TACK UP" SHEET)

- 1 = AFRIKAN PEOPLES ACTION SCHOOL
- 2 = ALBERT E GRICE MIDDLE
- 3 = ANNE KLIEN FORENSIC CENTER
- 4 = CADWALADER
- 5 = CENTRAL RECEPTION AND ADJUSTMENT FACI
- 6 = COLUMBUS
- 7 = DAYLIGHT/TWILIGHT H S
- 8 = EDISON PREP
- 9 = EMILY C REYNOLDS MIDDLE
- 10 = EMILY FISHER CS OF ADV. STUDIE
- 11 = EWING RESIDENTIAL TREATMENT CENTER
- 12 = FAMILY GUIDANCE CENTER-CHILDREN
- 13 = FRANKLIN
- 14 = GEORGE E. WILSON
- 15 = GRACE A DUNN MIDDLE SCH
- 16 = GRANT
- 17 = GREENWOOD
- 18 = GREGORY
- 19 = HAMILTON EAST-STEINERT
- 20 = HAMILTON NORTH-NOTTINGHAM

21 = HARRISON
22 = HEDGEPEETH-WILLIAMS SCH
23 = HOLY ANGELS SCHOOL
24 = HOLY CROSS SCHOOL
25 = IMMACULATE CONCEPTION SCHOOL
26 = INCARNATION ELEMENTARY SCHOOL
27 = INTERNATIONAL CS OF TRENTON
28 = JEFFERSON
29 = JOSEPH F CAPPELLO SCHOOL
30 = JOYCE KILMER
31 = KISTHARDT
32 = KLOCKNER
33 = KUSER
34 = LALOR
35 = LANGTREE
36 = LUIS MUNOZ-RIVERA ELEM
37 = MCGALLIARD
38 = MCVS ASSUNPINK CENT
39 = MCVS PERFORMING ARTS
40 = MEADOW VIEW JUNIOR ACADEMY
41 = MERCER CO. YOUTH DET. CTR.
42 = MERCER JR/SR HIGH SCHOOL
43 = MERCER REGIONAL SCHOOL
44 = MERCERVILLE
45 = MONUMENT
46 = MORGAN
47 = MOTT
48 = MT SINAI SEVENTH-DAY ADVENTIST
SCHOOL
49 = N J REG DAY-HAMILTON
50 = NEW JERSEY STATE PRISON
51 = OFFICE OF EDUCATION ADMINISTRATIVE OFF
52 = OFFICE SYSTEMS
53 = OUR LADY OF SORROWS SCHOOL
54 = P.J. HILL
55 = PARKER
56 = PERKINS CHRISTIAN INSTITUTE
57 = RICHARD C CROCKETT MIDDLE
58 = RING KINDERGARTEN
59 = ROBBINS
60 = ROBINSON
61 = SACRED HEART SCHOOL-TRENTON

62 = SAYEN
63 = SR GEORGINE SCHOOL
64 = ST GREGORY THE GREAT
65 = ST RAPHAEL SCHOOL
66 = STOKES
67 = SUNNYBRAE
68 = TRENTON CENTRAL HIGH
69 = TRENTON COMMUNITY CS
70 = TRENTON PSYCHIATRIC HOSPITAL
71 = TRINITY EPISCOPAL ACADEMY
72 = UNI HTS/HOWARD D MORRISON
73 = VILLA VICTORIA ACADEMY
74 = VILLAGE CS
75 = WASHINGTON
76 = WILSON
77 = YARDVILLE
197 = OTHER (SPECIFY)
198 = (VOL) DON'T KNOW
199 = (VOL) REFUSED

(NOW GO TO E2.)

(IF SC2a=5 (VINELAND), ASK E1e. ELSE GO TO E2.)

E1e. What is the name of the school that (***INDEX CHILD***) currently attends?

(IF CHILD HAS CLASSES AT MULTIPLE LOCATIONS, PROBE: "At which one does (***INDEX CHILD***) have MOST of his/her classes?")

(ENTER APPROPRIATE CODE FROM WHITE "TACK UP" SHEET)

1 = ANTHONY ROSSI INTER. SCH
2 = CAA GRAPE ST PROGRAM
3 = CAA WOOD STREET PROGRAM
4 = CREATIVE ACHIEVEMENT ACD#1
5 = CREATIVE ACHIEVEMENT ACADEMY
#3
6 = CUMBERLAND CHRISTIAN SCHOOL
7 = CUMBERLAND REGIONAL SCHOOL
8 = CUNNINGHAM
9 = DANE BARSE
10 = D'IPPOLITO INTERMEDIATE

- 11 = DR. WILLIAM MENNIES
- 12 = EARLY LEARNING CENTER
- 13 = EAST VINELAND
- 14 = THE ELLISON SCHOOL
- 15 = EMMANUEL DAY SCHOOL
- 16 = JOHN H WINSLOW
- 17 = JOHNSTONE
- 18 = LANDIS INTERMEDIATE SCH
- 19 = LITTLE ACRES LEARNING CENTER
- 20 = MARIE DURAND
- 21 = MAURICE FELS
- 22 = NASH EDUCATION CENTER
- 23 = OAK AND MAIN
- 24 = PAULINE J. PETWAY
- 25 = SACRED HEART HIGH SCHOOL
- 26 = SACRED HEART REGIONAL GRAMMAR
- 27 = SOUTH VINELAND
- 28 = ST. FRANCIS OF ASSISI
- 29 = ST MARY'S REGIONAL SCHOOL
- 30 = T.W. WALLACE MIDDLE SCH
- 31 = VETERANS MEMORIAL INT SCH
- 32 = VINELAND CHILDREN'S RESIDENTIAL C
- 33 = VINELAND MENNONITE SCHOOL
- 34 = VINELAND SR HIGH-NORTH/SOUTH
- 197 = OTHER (SPECIFY)
- 198 = (VOL) DON'T KNOW
- 199 = (VOL) REFUSED

E2. Regardless of whether or not (**INDEX CHILD**) eats food provided by his/her school, how would you rate the nutritional quality of foods offered at (**INDEX CHILD**)'s school? Would you say very unhealthy, somewhat unhealthy, somewhat healthy, or very healthy?

- 1 = Very Unhealthy
- 2 = Somewhat Unhealthy
- 3 = Somewhat Healthy
- 4 = Very Healthy
- 5 = (VOL) School does not provide food
- 8 = (VOL) Don't Know / Not sure
- 9 = (VOL) Refused

(IF E2<5, ASK E3a. ELSE GO TO INSTRUCTS BEFORE E3.)

E3a. On most school days, does (**INDEX CHILD**) have a lunch served by the school?

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(IF E3a=1, GO TO E4. ELSE ASK E3.)

E3. On most school days, does (**INDEX CHILD**) bring lunch from home, buy lunch at an outside restaurant or store, or buy it at a vending machine?

(IF NEEDED: Which of these ways does (**he/she**) get lunch at school most often?)

- 1 = Brings lunch from home
- 3 = Buys at an outside restaurant or store (whether before school or at lunch time)
- 4 = Buys at vending machine (whether on or off campus)
- 5 = (VOL) Does not eat lunch
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

The next few questions are about different kinds of foods (**INDEX CHILD**) ate or drank during the past month. Your best guess is fine. You can tell me number of times per day, per week, or per month.

E4. How often did (**INDEX CHILD**) drink 100% PURE fruit juices such as orange, apple, or grape juice? Do NOT include fruit-flavored drinks with added sugar like Hi-C, Gatorade, or fruit punch. You can tell me number of times per day, per week or per month.

(IF NEEDED: This is IN THE PAST MONTH.)

(INTERVIEWER: If answer is “every day” or “7 days a week”, probe with “How many times a day?”)

- 1 = Gave answer times per day (RANGE 1 – 10: 10=10 OR MORE)
- 2 = Gave answer times per week (RANGE 1 - 7)
- 3 = Gave answer times per month (RANGE 1 - 30)
- 4 = Less than once a month
- 5 = Never
- 8 = (VOL) Don't Know

9 = (VOL) Refused

E5. Not counting juice, how often did (*INDEX CHILD*) eat fruit? Count fresh, frozen, or canned fruit.

(IF NEEDED: This is IN THE PAST MONTH.)

(IF NEEDED, SAY: “Your best guess is fine. Include apples, bananas, applesauce, oranges, fruit salad, watermelon, cantaloupe or musk melon, papaya, mangos, grapes, and berries such as blueberries and strawberries.)

(IF NEEDED, SAY: You can tell me number of times per day, per week or per month.)

(INTERVIEWER: If answer is “every day” or “7 days a week”, probe with “How many times a day?”)

- 1 = Gave answer times per day (RANGE 1 – 10: 10=10 OR MORE)
- 2 = Gave answer times per week (RANGE 1 - 7)
- 3 = Gave answer times per month (RANGE 1 - 30)
- 4 = Less than once a month
- 5 = Never
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

E6. How often did (*INDEX CHILD*) eat a green leafy or lettuce SALAD, with or without other vegetables?

(IF NEEDED: This is IN THE PAST MONTH.)

(IF NEEDED: “Such as American or Western-type RAW salads with leaf lettuce, romaine, mixed-greens, and spinach.”)

(IF NEEDED, SAY: You can tell me number of times per day, per week or per month.)

(INTERVIEWER: If answer is “every day” or “7 days a week”, probe with “How many times a day?”)

- 1 = Gave answer times per day (RANGE 1 – 10: 10=10 OR MORE)
- 2 = Gave answer times per week (RANGE 1 - 7)
- 3 = Gave answer times per month (RANGE 1 - 30)
- 4 = Less than once a month
- 5 = Never
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

E7. NOT INCLUDING FRENCH FRIES OR OTHER FRIED POTATOES, how often did (**INDEX CHILD**) eat any other kind of POTATOES such as baked, boiled, mashed potatoes, or potato salad? You can tell me number of times per day, per week or per month.

(IF NEEDED: This is IN THE PAST MONTH.)

(IF NEEDED, SAY: Fried potatoes include French fries, potato chips, tater tots, home fries, and hash brown potatoes. This includes potatoes prepared in any fashion such as baked, boiled, mashed, au-gratin, or scalloped. It includes potatoes prepared in other dishes such as potato salad. Include white, yellow, red-skinned, yams, and sweet potatoes.)

(INTERVIEWER: If answer is “every day” or “7 days a week”, probe with “How many times a day?”)

- 1 = Gave answer times per day (RANGE 1 – 10: 10=10 OR MORE)
- 2 = Gave answer times per week (RANGE 1 - 7)
- 3 = Gave answer times per month (RANGE 1 - 30)
- 4 = Less than once a month
- 5 = Never
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

E8. How often did (**INDEX CHILD**) eat cooked or canned DRIED beans, such as refried beans, baked beans, bean soup, tofu, or lentils?

(IF NEEDED: This is IN THE PAST MONTH.)

(IF NEEDED, SAY: Include round or oval beans such as navy, Northern, kidney, black, pinto, soy beans, split peas, cow peas, garbanzo beans, or lentils cooked this way. Do NOT include long green beans such as string beans or pole beans.)

(IF NEEDED, SAY: You can tell me number of times per day, per week or per month.)

(INTERVIEWER: If answer is “every day” or “7 days a week”, probe with “How many times a day?”)

- 1 = Gave answer times per day (RANGE 1 – 10: 10=10 OR MORE)
- 2 = Gave answer times per week (RANGE 1 - 7)
- 3 = Gave answer times per month (RANGE 1 - 30)
- 4 = Less than once a month
- 5 = Never
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

E9. Still thinking about the past month...Not including what you just told me about, how often did (**NDEX CHILD**) eat OTHER vegetables such as tomatoes, green beans, carrots, corn, cooked greens, sweet potatoes, broccoli, or any other kinds of vegetables?

(IF ASKED: Do not count any of the following as vegetables: lettuce salads, potatoes, beans, or anything you have already counted.)

(INTERVIEWER: If answer is “every day” or “7 days a week”, probe with “How many times a day?”)

- 1 = Gave answer times per day (RANGE 1 – 10: 10=10 OR MORE)
- 2 = Gave answer times per week (RANGE 1 - 7)
- 3 = Gave answer times per month (RANGE 1 - 30)
- 4 = Less than once a month
- 5 = Never
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

E13. How often did (**INDEX CHILD**) eat at a fast food restaurant, deli, pizza, burger, taco or chicken place where you pay before you eat?

(IF NEEDED: This is IN THE PAST MONTH.)

(IF NEEDED, SAY: You can tell me number of times per day, per week, or per month.)

(INTERVIEWER: If answer is “every day” or “7 days a week”, probe with “How many times a day?”)

- 1 = Gave answer times per day (RANGE 1 - 3)
- 2 = Gave answer times per week (RANGE 1 - 7)
- 3 = Gave answer times per month (RANGE 1 - 30)
- 4 = Less than once a month
- 5 = Never
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(IF E13=1 or 2 or 3, ASK E13a. IF E13=4, ASK E13b. ELSE GO TO E14.)

E13a. How many of these (*insert from E13*) times per (*day/week/month*) did (**INDEX CHILD**) eat healthy choices, such as low-calorie or low-fat items or salads at these places?

- 1 = Gave Response (RANGE=0 to 30) (*can not exceed answer from E13*)
- 2 = (VOL) No such option available
- 8 = (VOL) Don't Know

9 = (VOL) Refused

(NOW GO TO E14.)

E13b. Did (**INDEX CHILD**) eat healthy choices, such as low-calorie or low-fat items or salads at these places?

- 1 = Yes
- 2 = No
- 3 = (VOL) No such option available
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

E14. How often did (**INDEX CHILD**) eat out at a full service restaurant?

(IF NEEDED: This is IN THE PAST MONTH.)

(IF NEEDED, SAY: You can tell me number of times per day, per week, or per month.)

(INTERVIEWER: If answer is “every day” or “7 days a week”, probe with “How many times a day?”)

- 1 = Gave answer times per day (RANGE 1 - 3)
- 2 = Gave answer times per week (RANGE 1 - 7)
- 3 = Gave answer times per month (RANGE 1 - 30)
- 4 = Less than once a month
- 5 = Never
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(IF E14=1 or 2 or 3, ASK E14a. IF E14=4, ASK E14b. ELSE GO TO E12.)

E14a. How many of these (*insert from E14*) times per (*day/week/month*) did (**INDEX CHILD**) eat healthy choices, such as low-calorie or low-fat items or salads at these places?

(IF RESP SAYS, “A salad comes with the meal,” then this counts as a healthy choice.)

- 1 = Gave Response (RANGE=0 to 30) (*can not exceed answer from E14*)
- 2 = (VOL) No such option available
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(NOW GO TO E12.)

E14b. Did (**INDEX CHILD**) eat healthy choices, such as low-calorie or low-fat items or salads at these places?

(IF RESP SAYS, “A salad comes with the meal,” then this counts as a healthy choice.)

- 1 = Yes
- 2 = No
- 3 = (VOL) No such option available
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

[ROTATE ORDER OF E12, E15, E16, E17, E19...E10, E11 and E18 WERE MOVED AFTER E19.]

E12. How often did (**INDEX CHILD**) eat fruits and vegetables as a snack at home or at school? You can tell me number of times per day, per week or per month.

(IF NEEDED: This is IN THE PAST MONTH.)

(INTERVIEWER NOTE: It doesn't matter if it is fruits or vegetables)

(INTERVIEWER: If answer is “every day” or “7 days a week”, probe with “How many times a day?”)

- 1 = Gave answer times per day (RANGE 1 – 10: 10=10 OR MORE)
- 2 = Gave answer times per week (RANGE 1 - 7)
- 3 = Gave answer times per month (RANGE 1 - 30)
- 4 = Less than once a month
- 5 = Never
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

E15. How often did (**INDEX CHILD**) drink fruit flavored drinks such as lemonade, Sunny Delight, Kool-aid, Gatorade, or sweet iced teas? Do not include 100% fruit juice.

(IF NEEDED: This is IN THE PAST MONTH.)

(IF NEEDED, SAY: You can tell me number of times per day, per week, or per month.)

(INTERVIEWER: If answer is “every day” or “7 days a week”, probe with “How many times a day?”)

- 1 = Gave answer times per day (RANGE 1 – 10: 10=10 OR MORE)
- 2 = Gave answer times per week (RANGE 1 - 7)
- 3 = Gave answer times per month (RANGE 1 - 30)
- 4 = Less than once a month
- 5 = Never
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

E16. How often did (*INDEX CHILD*) drink regular carbonated soda or soft drinks that are sweetened such as coke, pepsi, or 7-up? Do not include diet drinks. You can tell me number of times per day, per week or per month.

(IF NEEDED: This is IN THE PAST MONTH.)

(INTERVIEWER: If answer is “every day” or “7 days a week”, probe with “How many times a day?”)

- 1 = Gave answer times per day (RANGE 1 – 10: 10=10 OR MORE)
- 2 = Gave answer times per week (RANGE 1 - 7)
- 3 = Gave answer times per month (RANGE 1 - 30)
- 4 = Less than once a month
- 5 = Never
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

E17. How often did (*INDEX CHILD*) eat salty snacks like chips, Doritos, and Nachos?

(IF NEEDED: This is IN THE PAST MONTH.)

(IF NEEDED: You can tell me number of times per day, per week or per month.)

(INTERVIEWER: If answer is “every day” or “7 days a week”, probe with “How many times a day?”)

- 1 = Gave answer times per day (RANGE 1 – 10: 10=10 OR MORE)
- 2 = Gave answer times per week (RANGE 1 - 7)
- 3 = Gave answer times per month (RANGE 1 - 30)
- 4 = Less than once a month
- 5 = Never
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

E19. How often did (*INDEX CHILD*) eat sweet items like cookies, cakes, candy, or pies?

(IF NEEDED: This is IN THE PAST MONTH.)

(IF NEEDED, SAY: You can tell me number of times per day, per week or per month.)

(INTERVIEWER: If answer is “every day” or “7 days a week”, probe with “How many times a day?”)

- 1 = Gave answer times per day (RANGE 1 – 10: 10=10 OR MORE)
- 2 = Gave answer times per week (RANGE 1 - 7)
- 3 = Gave answer times per month (RANGE 1 - 30)
- 4 = Less than once a month
- 5 = Never
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

E18. In a usual week in the past month, how many days a week did (*INDEX CHILD*) eat breakfast?

(RANGE 0-7; 8=(VOL) DON'T KNOW; 9=(VOL) REFUSED)

_____ # DAYS

E10. How often did (*INDEX CHILD*) eat at least two different kinds of fruits IN A DAY, including 100% fruit juice? DO NOT include fruit flavored drinks like lemonade, Hi-C, or fruit punch.

(IF NEEDED: This is IN THE PAST MONTH.)

(IF NEEDED: For example, a banana at lunch and an apple for a snack.)

[IF NEEDED, SAY: You can tell me number of days per week or per month.]

- 1 = Gave answer times per week (RANGE 1 - 7)
- 2 = Gave answer times per month (RANGE 1 - 30)
- 3 = Less than once a month
- 4 = Never
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

E11. How often did (*INDEX CHILD*) eat at least two different kinds of vegetables IN A DAY, including 100% vegetable juice?. DO NOT include fried potatoes.

(IF NEEDED: This is IN THE PAST MONTH.)

[IF NEEDED, SAY: You can tell me number of days per week or per month.]

- 1 = Gave answer times per week (RANGE 1 - 7)
- 2 = Gave answer times per month (RANGE 1 - 30)
- 3 = Less than once a month
- 4 = Never
- 8 = (VOL) Don't Know

9 = (VOL) Refused

PHYSICAL ACTIVITY

E20. Now think of all (**INDEX CHILD**)’s physical activity in the past 7 days. Adding up all the time (**he/she**) spent in any kind of physical activity that increased (**his/her**) heart rate and made (**him/her**) breathe hard, on how many days was (**he/she**) physically active for a total of AT LEAST 30 MINUTES PER DAY?

(RANGE 0-7; 8=(VOL) DON’T KNOW; 9=(VOL) REFUSED)

_____ # DAYS

(IF E20=0, SKIP TO INSTRUCTS BEFORE E22. ELSE ASK E21.)

E21. **(IF E20=1, read:** Was (**INDEX CHILD**) physically active for a total of AT LEAST 60 MINUTES on that day? (If “Yes,” enter “1.” If “No,” enter “0.”)

(IF E20>1, read: On how many of these (# **from E20**) days was (**INDEX CHILD**) physically active for a total of AT LEAST 60 MINUTES PER DAY?

(READ ONLY IF NEEDED: Add up all the time (**INDEX CHILD**) spent in any kind of physical activity that increases heart rate and makes (him/her) breathe hard some of the time.)

(RANGE 0-7; 8=(VOL) DON’T KNOW; 9=(VOL) REFUSED)

_____ # DAYS **(Answer to E21 can NOT exceed answer from E20.)**

(IF E1= 16 or 17, GO TO E24. ELSE ASK E22.)

E22. Now thinking about the school year, on how many days during a typical week does (**INDEX CHILD**) walk, bicycle, or skateboard to or from school? (Do not include motor scooters)

(RANGE 0-7; 8=(VOL) DON’T KNOW; 9=(VOL) REFUSED)

_____ # DAYS

E23. During the school year, how often does (**INDEX CHILD**) get any type of physical activity or exercise at school (for example, PE class, recess)? You can tell me number of days per week or per month.

1 = Gave answer times per week (RANGE 1 - 5)

- 2 = Gave answer times per month (RANGE 1 – 20; 20=20 OR MORE)
- 3 = Less than once a month
- 4 = Never
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

E24. **(IF E1 <> 16 or 17, READ:)** During the school year, on an average school day, how many hours does **(INDEX CHILD)** watch TV, play video games, or use a computer outside of school? This does not include using the computer for school work.

(IF E1=16 or 17, READ:) On an average weekday, how many hours does **(INDEX CHILD)** watch TV, play video games, or use a computer

- 1 = Gave answer in minutes (RANGE 1-59)
- 2 = Gave answer in hours (RANGE 1-10)
- 3 = (VOL) Does not watch TV/Use computer/Play video games
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

E25. **(IF E1 <> 16 or 17, READ:)** During the school year, on a typical weekend DAY, how many hours does **(INDEX CHILD)** watch TV, play video games, or use a computer? This does not include using the computer for school work.

(IF E1=16 or 17,, READ:) On a typical weekend DAY, how many hours does **(INDEX CHILD)** watch TV, play video games, or use a computer?

(INTERVIEWER: ALWAYS PROBE WITH: “Is that for the whole weekend, or just 1 day out of the weekend?” If resp says “whole weekend”, re-ask about hours for just ONE DAY)

- 1 = Gave answer in minutes (RANGE 1-59)
- 2 = Gave answer in hours (RANGE 1-10)
- 3 = (VOL) Does not watch TV/Use computer/Play video games
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(INSERT TIME STAMP)

SECTION F: BEHAVIOR - ADULT

(QUESTIONS FOR RESPONDENT ONLY)

F1. How many days a week do you usually sit down with your whole family for the dinner meal?

(RANGE 0-7, LESS THAN ONCE/WEEK = 8; DK=9, REF=10)

_____ Record #

The next few questions are about different kinds of foods you ate or drank during the past month. Your best guess is fine. You can tell me number of times per day, per week, or per month.

F2. How often did you drink 100% PURE fruit juices such as orange, apple, or grape juice? Do NOT include fruit-flavored drinks with added sugar like Hi-C, Gatorade, or fruit punch. You can tell me number of times per day, per week or per month.

(IF NEEDED: This is IN THE PAST MONTH.)

(INTERVIEWER: If answer is “every day” or “7 days a week”, probe with “How many times a day?”)

- 1 = Gave answer times per day (RANGE 1 – 10: 10=10 OR MORE)
- 2 = Gave answer times per week (RANGE 1 - 7)
- 3 = Gave answer times per month (RANGE 1 - 30)
- 4 = Less than once a month
- 5 = Never
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

F3. Not counting juice, how often did you eat fruit? Count fresh, frozen, or canned fruit.

(IF NEEDED: This is IN THE PAST MONTH.)

(IF NEEDED, SAY: Your best guess is fine. Include apples, bananas, applesauce, oranges, fruit salad, watermelon, cantaloupe or musk melon, papaya, mangos, grapes, and berries such as blueberries and strawberries.)

(IF NEEDED, SAY: You can tell me number of times per day, per week or per month.)

(INTERVIEWER: If answer is “every day” or “7 days a week”, probe with “How many times a day?”)

- 1 = Gave answer times per day (RANGE 1 – 10: 10=10 OR MORE)
- 2 = Gave answer times per week (RANGE 1 - 7)
- 3 = Gave answer times per month (RANGE 1 - 30)
- 4 = Less than once a month
- 5 = Never

8 = (VOL) Don't Know
9 = (VOL) Refused

F4. How often did you eat a green leafy or lettuce SALAD, with or without other vegetables
(IF NEEDED: This is IN THE PAST MONTH.)

(IF NEEDED, SAY: Such as American or Western-type RAW salads with leaf lettuce, romaine, mixed-greens, and spinach.)

(IF NEEDED, SAY: You can tell me number of times per day, per week or per month.)

(INTERVIEWER: If answer is "every day" or "7 days a week", probe with "How many times a day?")

1 = Gave answer times per day (RANGE 1 – 10: 10=10 OR MORE)
2 = Gave answer times per week (RANGE 1 - 7)
3 = Gave answer times per month (RANGE 1 - 30)
4 = Less than once a month
5 = Never
8 = (VOL) Don't Know
9 = (VOL) Refused

F5. NOT INCLUDING FRENCH FRIES OR OTHER FRIED POTATOES, how often did you eat any other kind of POTATOES such as baked, boiled, mashed potatoes, or potato salad? You can tell me number of times per day, per week or per month.

(IF NEEDED: This is IN THE PAST MONTH.)

(IF NEEDED, SAY: Fried potatoes include French fries, potato chips, tater tots, home fries, and hash brown potatoes. This includes potatoes prepared in any fashion such as baked, boiled, mashed, au-gratin, or scalloped. It includes potatoes prepared in other dishes such as potato salad. Include white, yellow, red-skinned, yams, and sweet potatoes.)

(INTERVIEWER: If answer is "every day" or "7 days a week", probe with "How many times a day?")

1 = Gave answer times per day (RANGE 1 – 10: 10=10 OR MORE)
2 = Gave answer times per week (RANGE 1 - 7)
3 = Gave answer times per month (RANGE 1 - 30)
4 = Less than once a month
5 = Never
8 = (VOL) Don't Know
9 = (VOL) Refused

F6. How often did you eat cooked or canned DRIED beans, such as refried beans, baked beans, bean soup, tofu, or lentils?

(IF NEEDED: This is IN THE PAST MONTH.)

(IF NEEDED, SAY: Include round or oval beans such as navy, Northern, kidney, black, pinto, soy beans, split peas, cow peas, garbanzo beans, or lentils cooked this way. Do NOT include long green beans such as string beans or pole beans.)

(IF NEEDED, SAY: You can tell me number of times per day, per week or per month.)

(INTERVIEWER: If answer is “every day” or “7 days a week”, probe with “How many times a day?”)

- 1 = Gave answer times per day (RANGE 1 – 10: 10=10 OR MORE)
- 2 = Gave answer times per week (RANGE 1 - 7)
- 3 = Gave answer times per month (RANGE 1 - 30)
- 4 = Less than once a month
- 5 = Never
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

F7. Not including what you just told me about, how often did you eat OTHER vegetables such as tomatoes, green beans, carrots, corn, cooked greens, sweet potatoes, broccoli, or any other kinds of vegetables?

(IF NEEDED: This is IN THE PAST MONTH.)

(IF ASKED: Do not count any of the following as vegetables: lettuce salads, potatoes, beans, or anything you have already counted.)

(IF NEEDED, SAY: You can tell me number of times per day, per week or per month.)

(INTERVIEWER: If answer is “every day” or “7 days a week”, probe with “How many times a day?”)

- 1 = Gave answer times per day (RANGE 1 – 10: 10=10 OR MORE)
- 2 = Gave answer times per week (RANGE 1 - 7)
- 3 = Gave answer times per month (RANGE 1 - 30)
- 4 = Less than once a month
- 5 = Never
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

F11. How often did you eat at a fast food restaurant, deli, pizza, burger, taco or chicken place where you pay before you eat?

(IF NEEDED: This is IN THE PAST MONTH.)

(IF NEEDED: You can tell me number of times per day, per week, or per month.)

(INTERVIEWER: If answer is “every day” or “7 days a week”, probe with “How many times a day?”)

- 1 = Gave answer times per day (RANGE 1 - 4)
- 2 = Gave answer times per week (RANGE 1 - 7)
- 3 = Gave answer times per month (RANGE 1 – 30)
- 4 = Less than once a month
- 5 = Never
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(IF F11=1 or 2 or 3, ASK F11b. IF F11=4, ASK F11c. ELSE GO TO F12.)

F11b. How many of these (*insert from F11*) times per (*day/week/month*) did you eat healthy choices, such as low-calorie or low-fat items or salads at these places?

- 1 = Gave Response (RANGE=0 to 30) (*can not exceed answer from F11*)
- 2 = (VOL) No such option available
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(NOW GO TO F12.)

F11c. Did you eat healthy choices, such as low-calorie or low-fat items or salads at these places?

- 1 = Yes
- 2 = No
- 3 = (VOL) No such option available
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

F12. How often did you eat at a full service restaurant?

(IF NEEDED: This is IN THE PAST MONTH.)

(IF NEEDED: You can tell me number of times per day, per week, or per month.)

(INTERVIEWER: If answer is “every day” or “7 days a week”, probe with “How many times a day?”)

- 1 = Gave answer times per day (RANGE 1 - 3)
- 2 = Gave answer times per week (RANGE 1 - 7)
- 3 = Gave answer times per month (RANGE 1 - 30)
- 4 = Less than once a month
- 5 = Never
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(IF F12=1 or 2 or 3, ASK F12a. IF F12=4, ASK F12b. ELSE GO TO F10.)

F12a. How many of these (*insert from F12*) times per (*day/week/month*) did you eat healthy choices, such as low-calorie or low-fat items or salads at these places?

(IF RESP SAYS, “A salad comes with my meal,” then this counts as a healthy choice.)

- 1 = Gave Response (RANGE=0 to 30) (*can not exceed answer from F12*)
- 2 = (VOL) No such option available
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(NOW GO TO F10.)

F12b. Did you eat healthy choices, such as low-calorie or low-fat items or salads at these places?

(IF RESP SAYS, “A salad comes with my meal,” then this counts as a healthy choice.)

- 1 = Yes
- 2 = No
- 3 = (VOL) No such option available
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

[ROTATE ORDER OF F10, F13, F14, F15, F17...F8, F9 and F16 WERE MOVED AFTER F17.]

F10. How often did you eat fruits and vegetables as a snack? You can tell me number Of times per day, per week or per month.

(IF NEEDED: This is IN THE PAST MONTH.)

(INTERVIEWER NOTE: It doesn't matter if it is fruits or vegetables)

(INTERVIEWER: If answer is “every day” or “7 days a week”, probe with “How many times a day?”)

- 1 = Gave answer times per day (RANGE 1 – 10: 10=10 OR MORE)
- 2 = Gave answer times per week (RANGE 1 - 7)
- 3 = Gave answer times per month (RANGE 1 - 30)
- 4 = Less than once a month
- 5 = Never
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

F13. How often did you drink fruit flavored drinks such as lemonade, Sunny Delight, Kool-aid, Gatorade, or sweet iced teas? Do not include 100% fruit juice.

(IF NEEDED: This is IN THE PAST MONTH.)

(IF NEEDED, SAY: You can tell me number of times per day, per week, or per month.)

(INTERVIEWER: If answer is “every day” or “7 days a week”, probe with “How many times a day?”)

- 1 = Gave answer times per day (RANGE 1 – 10: 10=10 OR MORE)
- 2 = Gave answer times per week (RANGE 1 - 7)
- 3 = Gave answer times per month (RANGE 1 - 30)
- 4 = Less than once a month
- 5 = Never
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

F14. How often did you drink regular carbonated soda or soft drinks such as coke, pepsi, or 7-up? Do not include diet drinks. You can tell me number of times per day, per week or per month.

(IF NEEDED: This is IN THE PAST MONTH.)

(INTERVIEWER: If answer is “every day” or “7 days a week”, probe with “How many times a day?”)

- 1 = Gave answer times per day (RANGE 1 – 10: 10=10 OR MORE)
- 2 = Gave answer times per week (RANGE 1 - 7)
- 3 = Gave answer times per month (RANGE 1 - 30)
- 4 = Less than once a month
- 5 = Never
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

F15. How often did you eat salty snacks like chips, Doritos, and Nachos?

(IF NEEDED: This is IN THE PAST MONTH.)

(IF NEEDED: You can tell me number of times per day, per week or per month.)

(INTERVIEWER: If answer is “every day” or “7 days a week”, probe with “How many times a day?”)

1 = Gave answer times per day (RANGE 1 – 10: 10=10 OR MORE)

2 = Gave answer times per week (RANGE 1 - 7)

3 = Gave answer times per month (RANGE 1 - 30)

4 = Less than once a month

5 = Never

8 = (VOL) Don't Know

9 = (VOL) Refused

F17. How often did you eat sweet items like cookies, cakes, candy, or pies?

(IF NEEDED: This is IN THE PAST MONTH.)

(IF NEEDED: You can tell me number of times per day, per week or per month.)

(INTERVIEWER: If answer is “every day” or “7 days a week”, probe with “How many times a day?”)

1 = Gave answer times per day (RANGE 1 – 10: 10=10 OR MORE)

2 = Gave answer times per week (RANGE 1 - 7)

3 = Gave answer times per month (RANGE 1 - 30)

4 = Less than once a month

5 = Never

8 = (VOL) Don't Know

9 = (VOL) Refused

F16. In a usual week in the past month, how many days a week did you eat breakfast?

(RANGE 0-7; 8=(VOL) DON'T KNOW; 9=(VOL) REFUSED)

_____ # DAYS

F8. How often do you eat at least two different kinds of fruits IN A DAY, including 100% fruit juice NOT include fruit flavored drinks like lemonade, Hi-C, or fruit punch.

(IF NEEDED: This is IN THE PAST MONTH.)

(IF NEEDED: For example, a banana at lunch and an apple for a snack.)

(IF NEEDED, SAY: You can tell me number of days per week or per month.)

- 1 = Gave answer times per week (RANGE 1 - 7)
- 2 = Gave answer times per month (RANGE 1 - 30)
- 3 = Less than once a month

4 = Never

8 = (VOL) Don't Know

9 = (VOL) Refused

F9. How often did you eat at least two different kinds of vegetables IN A DAY, including 100% vegetable juice? DO NOT include fried potatoes.

(IF NEEDED: This is IN THE PAST MONTH.)

(IF NEEDED, SAY: You can tell me number of days per week or per month.)

- 1 = Gave answer times per week (RANGE 1 - 7)
- 2 = Gave answer times per month (RANGE 1 - 30)
- 3 = Less than once a month

4 = Never

8 = (VOL) Don't Know

9 = (VOL) Refused

F19a. Now think about your physical activity both at work and at home in the past 7 days. Adding up all the time you spent in any kind of physical activity that increased your heart rate and made you breath hard, on how many days were you physically active for a total of AT LEAST 15 MINUTES PER DAY?

(RANGE 0-7; 8=(VOL) DON'T KNOW; 9=(VOL) REFUSED)

_____ DAYS

(IF F19a>0, ASK F19. ELSE GO TO F20.)

F19. **(IF F19a=1, read:** Were you physically active for a total of AT LEAST 30 MINUTES PER DAY on that day? (If "Yes," enter "1." If "No," enter "0.")

(IF F19a>1, read: On how many of these (# from F19a) days were you physically active for a total of AT LEAST 30 MINUTES PER DAY?

(RANGE 0-7; 8=(VOL) DON'T KNOW; 9=(VOL) REFUSED)

_____ DAYS

(Answer to F19 can NOT exceed answer from F19a.)

F20. Now think about the time you spent walking in the last 7 days. This includes at work and at home, walking to travel from place to place, and any walking that you might do for exercise, or leisure. During the last 7 days, on how many days did you walk for at least 10 minutes at a time?

(RANGE 0-7; 8=(VOL) DON'T KNOW; 9=(VOL) REFUSED)

_____ DAYS

(IF F20=0, SKIP TO F22a; ELSE ASK F21)

F21. **(IF F20=2 through 7, read:)** “On average, how much time did you usually spend walking on one of those *(insert from F20)* days?”

(IF F20=1, read:) “How much time did you spend walking on that day?”

(IF F20=8 or 9, read:) “On average, how much time did you usually spend walking on a typical day?”

- 1 = Gave hours per day
- 2 = Gave minutes per day
- 3 = Time Varies Widely
- 8 = (VOL) Don't Know

9 = (VOL) Refused

(IF F21=1 or 2, GO TO F22a. ELSE ASK F21a.)

F21a. What is the total amount of time you spent walking over THE LAST 7 DAYS?

- 1 = Gave hours per week [Range = 0 - 112]
- 2 = Gave minutes per week [Range = 0 - 6720]
- 8 = (VOL) Don't Know/Not Sure
- 9 = (VOL) Refused

F22a. Have you ridden a bicycle in the past week?

(INTERVIEWER: Does NOT include using a stationary bike.)

- 1 = Yes
- 2 = No
- 3 = (VOL) Don't Know
- 4 = (VOL) Refused

(IF F22a=2, SKIP TO G1. ELSE CONTINUE.)

F22. Now think only about the BICYCLING you did to travel to and from work, to go from place to place, or solely for exercise, or leisure. Do NOT include time spent on a stationary bike.

During the last 7 days, on how many days did you bicycle for at least 10 minutes at a time?

(RANGE 0-7; 8=(VOL) DON'T KNOW; 9=(VOL) REFUSED)

_____ DAYS

(IF F22=9, GO TO SECTION G. ELSE ASK F23.)

F23. How much time did you usually spend bicycling on a typical day?

(INTERVIEWER: An average time for one of the days on which you bicycle is being sought)

- 1 = Gave hours per day
- 2 = Gave minutes per day
- 3 = Time Varies Widely
- 8 = (VOL) Don't Know

9 = (VOL) Refused

(IF F23=1 or 2, GO TO SECTION G. ELSE ASK F23a.)

F23a. What is the total amount of time you spent bicycling over the last 7 days?

- 1 = Gave hours per week [Range = 0 - 112]
- 2 = Gave minutes per week [Range = 0 - 6720]
- 8 = (VOL) Don't Know/Not Sure
- 9 = (VOL) Refused

(INSERT TIME STAMP)

SECTION G – HEALTH CARE COVERAGE

Display: Now, we're going to talk about health insurance.

G1. Do you have some form of health insurance or health care coverage, or not? (ABC, #7)

- 1 = Yes, have insurance
- 2 = No insurance

8 = (VOL) Don't Know
9 = (VOL) Refused

(If G1=1, ask G2. Else go to G4.)

G2. Are you mainly covered by Medicare, Medicaid, NJ FamilyCare, insurance through a current or former job or other private insurance, or do you have coverage from some other source? (ABC, #8)

(IF NEEDED: Medicare is the government health insurance program for people 65 and over and some younger people with disabilities. Medicaid and NJ FamilyCare are government health insurance programs for low-income families.)

1 = Medicare
2 = Medicaid
3 = NJ Family Care
4 = Insurance through a current or former job
5 = Other private insurance
6 = Coverage from some other source
8 = (VOL) Don't Know
9 = (VOL) Refused

(IF G2=2 through 6, ASK G2a. ELSE GO TO INSTRUCTS BEFORE G4.)

G2a. Is (**INDEX CHILD**) covered by your health insurance?

1 = Yes
2 = No
8 = (VOL) Don't Know
9 = (VOL) Refused

(If G2=5 or 6, ask G3. Else go to G4.)

G3. Is that coverage part of a program such as NJ FamilyCare or Medicaid?

1 = Yes
2 = No
8 = (VOL) Don't Know
9 = (VOL) Refused

(IF G2a=1, SKIP TO SECTION H. ELSE ASK G4.)

G4. Does (**INDEX CHILD**) currently have some form of health insurance or health care coverage?

1 = Yes
2 = No

8 = (VOL) Don't Know
9 = (VOL) Refused

(IF G4=1, ASK G5. ELSE GO TO SECTION H.)

G5. Is (***INDEX CHILD***) covered by health insurance through the current or former employer of a parent or guardian or some other private insurance, is (***he/she***) covered by a program such as Medicare, Medicaid, or NJ FamilyCare, or does (***he/she***) have some other kind of health insurance?

(IF NEEDED: Medicare sometimes covers younger people who have certain disabilities).

(IF NEEDED: Medicaid and NJ FamilyCare are government health insurance programs for low-income families)

1 = insurance through current or former employer of parent/guardian
2 = Other private insurance
3 = Medicare
4 = Medicaid
5 = NJ FamilyCare
6 = other coverage
8 = (VOL) Don't Know
9 = (VOL) Refused

(If G5= 2 or 6, ask G6. Else go to SECTION H.)

G6. Is that coverage part of a program such as NJ FamilyCare or Medicaid?

1 = Yes
2 = No
8 = (VOL) Don't Know
9 = (VOL) Refused

(INSERT TIME STAMP)

SECTION H - EMPLOYMENT AND EARNINGS

The next section is about employment.

(IF (((SC5b=18 or SC5b1=5) and (SC2cc=0)) or ((SC5b>18 or SC5b1>5) and (SC2cc=1))) and ((SC7a_2 through SC7a_14 are ALL NOT 18) and (SC7a1_2 through SC7a1_14 are ALL NOT punch 5)), ASK H1. ELSE GO TO INSTRUCTS BEFORE H2.)

H1. Are you working for pay?

1 = Yes

- 2 = No
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(IF (((SC5b=18 or SC5b1=5) and (SC2cc>0)) or ((SC5b>18 or SC5b1>5) and (SC2cc>1))) or ((SC7a_2 through SC7a_14 are ALL > 17) or (SC7a1_2 through SC7a1_14 are ALL > punch 4)), ASK H2. ELSE GO TO H3.)

H2. How many people in your household age 18 and over are working for pay? Please be sure to include yourself, if applicable.

(RANGE: 0 to 16; 15=DK; 16=REF)

_____ Record #

H3. The next questions are about income that your family received during 2008. Again, by family, include all family members living there related by blood, marriage, living as married, and any children of those people.

During 2008, what was your family's total income from all sources, before taxes and other deductions? Include job wages, public assistance, social security, child support, and any other sources of income. (FHIS 7.1)

- 1 = Gave Annual Salary
- 2 = Gave Weekly Salary
- 3 = Gave Bi-Weekly Salary
- 4 = Gave Monthly Salary
- 5 = Gave Bi-Monthly Salary
- 6 = (VOL) No income whatsoever in 2008 **(GO TO H9)**
- 8 = (VOL) Don't Know **(GO TO H5)**
- 9 = (VOL) Refused **(GO TO H5)**

(IF H3=8 or 9, GO TO H5. IF H3=6, GO TO H9. ELSE ASK H4.)

H4. ENTER INCOME: (DO NOT READ:)

(RANGE = 0-999999; 999999 = 999,999 OR MORE)

_____ Record #

(ALL ASKED H4 GO TO H9)

H5. Was your family's 2008 total income from all sources, before taxes: (READ LIST)

(READ PROBES ONLY IF RESPONDENT REFUSES TO ANSWER)

(a) Answers to questions on earnings are important to our survey because they help explain whether people can afford the health care they need. Also, the information you provide will be kept confidential and will only be used in statistical summaries).

(b) Total income includes wages and salaries from jobs, net income from farms or businesses, interest or dividends, pensions or social security, income from rental property, estates or trusts, public assistance or welfare, social security, child support, other sources.

(c) Your best estimate would be fine.

- 1 = Under \$20,000,
- 2 = \$20,000 to \$49,999, or
- 3 = \$50,000 or greater?
- 8 = (VOL) Don't know
- 9 = (VOL) Refused

(IF H5=1, ASK H6. IF H5=8 or 9, GO TO H9. ELSE GO TO INSTRUCTS BEFORE H7.)

- H6. Is it...(READ LIST)?
- 1 = Under \$10,000, or
 - 2 = \$10,000 - \$19,999?
 - 8 = (VOL) Don't Know
 - 9 = (VOL) Refused

(ALL ASKED H6, GO TO H9)

(IF H5=2, ASK H7. ELSE GO TO INSTRUCTS BEFORE H8.)

- H7. Is it...(READ LIST)?
- 1 = Between \$20,000 and \$29,999,
 - 2 = Between \$30,000 and \$39,999 or
 - 3 = Between \$40,000 and \$49,999?
 - 8 = (VOL) Don't Know
 - 9 = (VOL) Refused

(ALL ASKED H7, GO TO H9)

(IF H5=3, ASK H8. ELSE GO TO H9.)

- H8. Is it...(READ LIST)?
- 1 = Between \$50,000 and \$74,999,

- 2 = Between \$75,000 and \$99,999,
- 3 = Between \$100,000 and 149,999, or
- 4 = \$150,000 or more?
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

H9. During the year 2008, did anyone in your family living there receive government assistance such as SSI, SSDI, or TANF (TANIF)?

(IF NEEDED: "SSI=Supplemental Security Income"
"SSDI=Social Security Disability Insurance"
"TANF=Temporary Assistance for Needy Families")

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

H10. Did anyone in your family living there receive food stamps in 2008? (FHIS 7.13)
(IF NEEDED: "Food Stamps" are also referred to as SNAP (Supplemental Nutrition Assistance Program) or as having an EBT card (Electronic Benefits Transfer.)

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

H11. Did anyone in your family living there receive WIC in 2008?

(IF NEEDED: "WIC=Special Supplemental Nutrition Program for Woman, Infants and Children.)

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

H12. Does (**INDEX CHILD**) receive free or reduced-cost breakfast or lunch at school/daycare?

- 1 = Yes
- 2 = No
- 3 = (VOL) Not in school/daycare
- 8 = (VOL) Don't know
- 9 = (VOL) Refused

H14. Do you own or rent your home? (DO NOT READ UNLESS NECESSARY)
(NSAF M-1)

- 1 = Owned or being bought by you/someone in your household
- 2 = Rented for cash, or
- 3 = Occupied without payment of cash rent?
- 8 = (VOL) Don't know
- 9 = (VOL) Refused

(INSERT TIME STAMP)

SECTION I - DEMOGRAPHICS

i1. Are you of Spanish, Hispanic, or Latino origin or descent?

[PROBE FOR REFUSALS: "I understand that these questions may be sensitive. We are asking these questions to help understand different health care problems and needs people have."] (Probe used in CTS, not NASF) (NASF O1, CTS p106)

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

i2. Is (***INDEX CHILD***) of Spanish, Hispanic or Latino origin or descent?

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(ASK i3 IF i1=1. ELSE GO TO INSTRUCTS BEFORE i4.)

i3. What group are you? Would you say you are Mexican, Mexican-American, Puerto Rican, Central or South American, Cuban or some other group?

- 1 = Mexican/ Mexican-American
- 2 = Puerto Rican
- 3 = Cuban
- 4 = Central or South American
- 5 = Dominican
- 6 = Haitian
- 10 = Other (SPECIFY)
- 11 = (VOL) Don't Know
- 12 = (VOL) Refused

(IF (i3=1 through 10) and (i2<>2), ask i4. ELSE GO TO INSTRUCTS BEFORE i5.)

i4. Is (**INDEX CHILD**) also (*insert response to i3*)?

- 1 = Yes, we are the same
- 2 = No, we are not the same
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(IF (i4=2) or (i1<>1 and i2<>2) or ((i3=11 or 12) and (i2<>2)), ASK i5. ELSE GO TO i6.)

i5. What group is (**INDEX CHILD**)? Would you say (**INDEX CHILD**) is Mexican, Mexican-American, Puerto Rican, Central or South American, Cuban or some other group?

[NOTE: If anyone is a combination put the answer as "other" and list the combination – i.e., Mexican and South American]

- 1 = Mexican/ Mexican-American
- 2 = Puerto Rican
- 3 = Cuban
- 4 = Central or South American
- 5 = Dominican
- 6 = Haitian
- 10 = Other (SPECIFY)
- 11 = (VOL) Don't know
- 12 = (VOL) Refused

i6. What is your race? (DO NOT READ LIST)

(IF "HISPANIC", PROBE: Are you Hispanic and black, or Hispanic and white?)
(NASF, O3)

- 1 = Black/African American
- 2 = White
- 3 = American Indian/Native American/Aleutian or Eskimo
- 4 = Asian/Pacific Islander
- 5 = (VOL) Hispanic (ACCEPT ONLY AFTER PROBE)
- 9 = Other (SPECIFY)
- 10 = (VOL) Don't Know
- 11 = (VOL) Refused

i7. What is (**INDEX CHILD**)'s race?

- 1 = Black/African American
- 2 = White

- 3 = American Indian/Native American/Aleutian or Eskimo
- 4 = Asian/Pacific Islander
- 5 = (VOL) Hispanic (ACCEPT ONLY AFTER PROBE)
- 9 = Other (SPECIFY)
- 10 = (VOL) Don't Know
- 11 = (VOL) Refused

i8. Were you or (**INDEX CHILD**) born outside of the United States, Puerto Rico, or other U.S. territories?
 [IF NECESSARY: Puerto Rico and other U.S. territories (Guam, U.S. Virgin Islands, American Samoa, Northern Marianas Islands, or Marshall Islands) are considered inside the United States. If born in a U.S. military family, that is considered born in the U.S. regardless of the country.] (NASF O4)

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(IF i8=1, GO TO i9. ELSE GO TO i12.)

i9. Who was born outside of the United States? (MULTIPLE RECORD) (PROBE: Anyone else?) (NASF, O5)

- 1 = respondent (*read-in Resp name/initials*)
- 2 = index child (*read-in Index Child name/initials*)
- 3 = Other HH member(s)
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(IF i9=1 and/or 2, ASK i10 THROUGH i11NYR CONSECUTIVELY FOR EACH. DO NOT ASK FOR CODE 3 FROM i9. IF i9= 4 or 5, GO to i12.)

i10. (*Are you / Is INDEX CHILD*) a citizen of the United States? (NASF, O7)

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

i11. When did (*you/INDEX CHILD*) come to live in the United States? (NASF, O9)

- 1 = Gave SPECIFIC Year
- 2 = Gave Number of Years
- 8 = (VOL) DON'T KNOW
- 9 = (VOL) REFUSED

(IF i11=1, ASK i11syr. ELSE GO TO INSTRUCTS BEFORE i11nyr.)

i11syr. [INTERVIEWER: ENTER SPECIFIC YEAR; ENTER AS 4 DIGITS, EX: 1970]

“When did *(he/she)* come to live in the United States?”

(RANGE = 1900 – 2009)

(NOW GO BACK TO i10 FOR THE NEXT PERSON. IF NO ONE ELSE, GO TO i12.) (IF i11=2, ASK i11nyr. ELSE GO BACK TO i10 FOR THE NEXT PERSON. IF NO ONE ELSE, GO TO i12.)

i11nyr. [INTERVIEWER: ENTER NUMBER OF YEARS]

“When did *(he/she)* come to live in the United States?”

(RANGE = 1 TO 100)

(NOW GO BACK TO i10 FOR THE NEXT PERSON. IF NO ONE ELSE, GO TO i12.)

i12. What is the primary language spoken in your home?

- 1 = English
- 2 = Spanish
- 11 = Other (Specify)
- 12 = (VOL) Don't Know
- 13 = (VOL) Refused

i13. What is the highest grade or level of school that you have completed?

- 1 = 8th GRADE OR LESS
- 2 = 9th TO 11TH
- 3 = 12TH GRADE, GED OR HIGH SCHOOL DIPLOMA
- 4 = Some voc//tech/business/trade school
- 5 = Some voc.tech/business/trade school certificate or diploma
- 6 = Some college/no degree
- 7 = Associate's degree
- 8 = Bachelor's degree
- 9 = Some graduate/professional school/no degree
- 10 = Graduate/professional degree (MA;MS;PHD;EDD;MD;DDS;JJ/LLB,

ETC)

- 16 = (VOL) Don't Know
- 17 = (VOL) Refused

(If i13=4 OR 5, ASK i14. ELSE GO TO INSTRUCTS BEFORE i13a.)

i14. Do you have a high school diploma or GED?

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(If Resp is the Mother of the Index Child (i.e. – (SC7=2 for Resp) AND (FR1a=3 or 4 or 5 or 7 or 8 or 9 or 10 or 12 for Index Child), then go to i15. Else ask i13a.)

i13a. What is the highest grade or level of school that **(INDEX CHILD)**'s mother has completed?

- 1 = 8th GRADE OR LESS
- 2 = 9th TO 11TH
- 3 = 12TH GRADE, GED OR HIGH SCHOOL DIPLOMA
- 4 = Some voc//tech/business/trade school
- 5 = Some voc.tech/business/trade school certificate or diploma
- 6 = Some college/no degree
- 7 = Associate's degree
- 8 = Bachelor's degree
- 9 = Some graduate/professional school/no degree
- 10 = Graduate/professional degree (MA;MS;PHD;EDD;MD;DDS;JJ/LLB, ETC)
- 16 = (VOL) Don't Know
- 17 = (VOL) Refused

(If I13a=4 OR 5, ASK i14a. ELSE GO TO i15.)

i14a. Does **(INDEX CHILD)**'s mother have a high school diploma or GED?

- 1 = Yes
- 2 = No
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(IF (Sc2cc=1), GO TO CLOSING. ELSE ASK i15.)

i15. Are you the Head of the Household?

(IF NEEDED: This would be the person in your household who provides 50% or more of the financial support and maintenance to 1 or more other people in that household who are closely related to him/her by blood, marriage or adoption.)

(INTERVIEWER: THIS INCLUDES SINGLE PERSON HHs.)

- 1 = Yes
- 2 = No
- 3 = (VOL) Respondent shares joint head of household
- 8 = (VOL) Don't Know
- 9 = (VOL) Refused

(IF i15=1 or 3, GO TO CLOSING. ELSE ASK i16.)

i16. How is the head of the household related to ***(INDEX CHILD)***?

- 1 = his/her father
- 2 = his/her mother
- 3 = his/her step-father
- 4 = his/her step-mother
- 5 = his/her foster father
- 6 = his/her foster mother
- 7 = his/her grandfather
- 8 = his/her grandmother
- 9 = his/her legal guardian (male)
- 10 = his/her legal guardian (female)
- 11 = his/her legally adopted father
- 12 = his/her legally adopted mother
- 13 = partner of respondent
- 14 = partner of other household member
- 15 = his/her uncle
- 16 = his/her aunt
- 17 = his/her brother
- 18 = his/her sister
- 19 = his/her cousin
- 20 = his/her father-in-law
- 21 = his/her mother-in-law
- 22 = his/her great grandfather
- 23 = his/her great grandmother
- 24 = his/her other relative, specify: _____
- 25 = other, specify: _____
- 26 = Don't Know
- 27 = Refused

(INSERT TIME STAMP)

CLOSING. Thank you very much for your time. I want to get your name and your mailing address so I can send you the check as a token of our appreciation.

(INTERVIEWER: IF RESP. REFUSES, FIRST PROBE WITH..."Please know that this information will be held in strictest confidence and will NOT be shared beyond the research team.")

1 = Gave Response
9 = (VOL) Refused

(IF CLOSING=1, GO TO MYGETA. IF CLOSING=2, GO TO CS1.)

(PROGRAMMER: SHOW CONTACT INFO AS A GRID ON 1 SCREEN. UPDATE GRID AS INFORMATION IS BEING ENTERED FROM "MYGETA.")

RESPONDENT NAME -:
STREET -:
APT NUMBER -:
CITY *:
STATE -:
ZIPCODE -:

MYGETA. INTERVIEWER: RECORD RESPONDENT NAME

1 = Gave RESPONDENT NAME
3 = (VOL) DON'T KNOW
4 = (VOL) REFUSED

MYGETA. INTERVIEWER: RECORD STREET

1 = Gave STREET
3 = (VOL) DON'T KNOW
4 = (VOL) REFUSED

MYGETA. INTERVIEWER: RECORD APT NUMBER

1 = Gave APT NUMBER
2 = No Apartment Number
3 = (VOL) DON'T KNOW
4 = (VOL) REFUSED

MYGETA. INTERVIEWER: RECORD CITY

1 = Gave CITY
3 = (VOL) DON'T KNOW
4 = (VOL) REFUSED

MYGETA. INTERVIEWER: RECORD STATE

- 1 = Gave STATE
- 3 = (VOL) DON'T KNOW
- 4 = (VOL) REFUSED

MYGETA. INTERVIEWER: RECORD ZIPCODE

- 1 = Gave ZIPCODE
- 3 = (VOL) DON'T KNOW
- 4 = (VOL) REFUSED

(NOW GO TO W1.)

(IF CLOSING=9, ASK CS1. ELSE GO TO INSTRUCTS BEFORE W1.)

CS1. Would you at least be able to provide us with the cross streets that are nearest to your home?

- 1 = Yes / Gave Response (Record Verbatim):
- 2 = No / Refused

WORKSHEET INSTRUCTIONS

(IF CLOSING=1, ASK W1. ELSE GO TO R2.)

W1. In addition to the \$10 we will be sending you, we will also be sending you a tape measure and worksheet to record you and your children's height and weight. If you complete and send back the worksheet, we will send you an additional \$10 as a token of our appreciation.

- 1 = CONTINUE

RE-CONTACT INFO

R2. Thank you for your cooperation and for taking the time to participate in this important study. In the future, we may be contacting you again to collect some follow-up information on health care issues and concerns. Like the interview today, your participation to a follow-up interview will be voluntary and your responses will remain confidential. Would you be willing to provide us with the name or initials and phone number of 2 friends or family members who would know how to contact you in the event that we would be unable to reach you at this phone number?

- 1 = Yes, willing to provide names/numbers

2 = No, refuses to provide names/numbers

(IF R2=1, GO TO R2a. ELSE GO TO W2.)

R2a. What is the name or initials of the 1st family member or friend?

1 = Gave Response

9 = (VOL) Refused

(IF R2a=9, GO TO W2. ELSE GO TO R2b.)

R2b. And what is the phone number for the 1st family member or friend?

1 = Gave Response

9 = (VOL) Refused

(IF R2b=9, GO TO W2. ELSE GO TO R3a.)

R3a. What is the name or initials of the 2nd family member or friend?

1 = Gave Response

9 = (VOL) Refused

(IF R3a=9, GO TO W2. ELSE GO TO R3b.)

R3b. And what is the phone number for the 2nd family member or friend?

1 = Gave Response

9 = (VOL) Refused

W2. Finally, before we say good-bye if you would like to have more information about Medicaid, NJ Family Care or NJ Ease I can give you the phone numbers.

(PROVIDE NUMBERS REQUESTED: Medicaid: 1-800-356-1561; NJ Ease: 1-877-222-3737; NJ FamilyCare: 1-800-701-0710) (MULTIPLE RECORD)

1 = Didn't want numbers

2 = Gave Medicaid

3 = Gave KidCare/FamilyCare

4 = Gave NJ Ease

CLOSING 2 Thank you for your cooperation and for taking the time to participate in this important study.

LANG. INTERVIEWER PLEASE ENTER THE LANGUAGE OF INTERVIEW

1 = ENGLISH
2 = SPANISH

(INSERT TIME STAMP)

APPENDIX B
INSTITUTIONAL REVIEW BOARD APPROVAL FORM:
RUTGERS UNIVERSITY

RUTGERS UNIVERSITY
Office of Research and Sponsored Programs
ASB III, 3 Rutgers Plaza, Cook Campus
New Brunswick, NJ 08901

December 10, 2010

P.I. Name: Yedidia
Protocol #: 08-501M

Michael Yedidia
Center for State Health Policy (CSHP)
112 Paterson Street, 5th Floor
College Ave Campus

Dear Michael Yedidia:

✓
(**Initial / Amendment / Continuation / Continuation w/ Amendment**)

Protocol Title: "New Jersey Childhood Obesity Study"

This is to advise you that the above-referenced study has been presented to the Institutional Review Board for the Protection of Human Subjects in Research, and the following action was taken subject to the conditions and explanations provided below:

Amendment to Approval Date: 12/8/2010 **Expiration Date:** 4/10/2011
Expedited Category: 8a

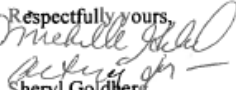
This approval is based on the assumption that the materials you submitted to the Office of Research and Sponsored Programs (ORSP) contain a complete and accurate description of the ways in which human subjects are involved in your research. The following conditions apply:

- **This Approval**-The research will be conducted according to the most recent version of the protocol that was submitted. **This approval is valid ONLY for the dates listed above;**
- **Reporting**-ORSP must be immediately informed of any injuries to subjects that occur and/or problems that arise, in the course of your research;
- **Modifications**-Any proposed changes **MUST** be submitted to the IRB as an amendment for review and approval prior to implementation;
- **Consent Form(s)**-Each person who signs a consent document will be given a copy of that document, if you are using such documents in your research. The Principal Investigator must retain all signed documents for at least three years after the conclusion of the research;
- **Continuing Review**-You should receive a courtesy e-mail renewal notice for a Request for Continuing Review before the expiration of this project's approval. However, it is your responsibility to ensure that an application for continuing review has been submitted to the IRB for review and approval prior to the expiration date to extend the approval period;

Additional Notes: - **Administratively Expedited Amendment Approval per 45 CFR 46.110(b)(2) on 12/8/10 for Additional Key Personnel: N. Fitzgerald & J. Gutierrez**
- **PI is to contact the IRB prior to the recruitment of additional subjects or further interactions/interventions with subjects.**

Failure to comply with these conditions will result in withdrawal of this approval.

Please note that the IRB has the authority to observe, or have a third party observe, the consent process or the research itself. The Federal-wide Assurance (FWA) number for the Rutgers University IRB is FWA00003913; this number may be requested on funding applications or by collaborators.

Respectfully yours,

Sheryl Goldberg
Director of Office of Research and Sponsored Programs
gibel@grants.rutgers.edu

cc: Susan Brownlee

APPENDIX C

INSTITUTIONAL REVIEW BOARD APPROVAL FORM:

ARIZONA STATE UNIVERSITY



Office of Research Integrity and Assurance

To: Punam Ohri-Vachaspati

for From: Carol Johnston, Chair *sm*
Biosci IRB

Date: 03/15/2013

Committee Action: **Renewal**

Renewal Date: 03/15/2013

Review Type: Expedited F7

IRB Protocol #: 1104006295

Study Title: New Jersey Childhood Obesity Study

Expiration Date: 04/05/2014

The above-referenced protocol was given renewed approval following Expedited Review by the Institutional Review Board.

It is the Principal Investigator's responsibility to obtain review and continued approval of ongoing research before the expiration noted above. Please allow sufficient time for reapproval. Research activity of any sort may not continue beyond the expiration date without committee approval. Failure to receive approval for continuation before the expiration date will result in the automatic suspension of the approval of this protocol on the expiration date. Information collected following suspension is unapproved research and cannot be reported or published as research data. If you do not wish continued approval, please notify the Committee of the study termination.

This approval by the Biosci IRB does not replace or supersede any departmental or oversight committee review that may be required by institutional policy.

Adverse Reactions: If any untoward incidents or severe reactions should develop as a result of this study, you are required to notify the Biosci IRB immediately. If necessary a member of the IRB will be assigned to look into the matter. If the problem is serious, approval may be withdrawn pending IRB review.

Amendments: If you wish to change any aspect of this study, such as the procedures, the consent forms, or the investigators, please communicate your requested changes to the Biosci IRB. The new procedure is not to be initiated until the IRB approval has been given.

Please retain a copy of this letter with your approved protocol.