feeds the child using responsive feeding practices, 3) whether the caregiver provides nutritious complementary foods and beverages at the appropriate developmental stage, 4) whether the caregiver ensures that the child has adequate sleep, 5) to what degree the caregiver excludes sugar sweetened beverages for infants and limits them for toddlers, 6) whether the caregiver fosters healthy eating behaviors through shared family meals and mealtime routines, 7) how much time the caregiver allows the child to spend watching TV or having other screen viewing time, 8) and to what degree the caregiver provides opportunities for physical activity for the child.

[0083] In an embodiment, the method further includes generating a personalized behavioral guidance/counseling plan based on the obesity risks. In an embodiment, the plan is provided to any health care professionals involved in the care of the child.

[0084] In still yet another embodiment, a computer implemented method of reducing childhood obesity within the first two years of age is provided. The method includes collecting basic biological or demographic information about a child from the child's caregiver and collecting information relating to the caregiver's current level of performing modifiable risk factors associated with childhood obesity. The information is then input into a computer implemented program and processed on a computer processor using a science-based algorithm. The child's percent chance of becoming overweight or obese within the first two years of age and the specific risk for the child from each modifiable risk factor using the algorithm is calculated and a behavioral guidance plan for the child's caregiver optimized to the child's calculated percent chance of becoming overweight or obese and the child's specific risk level from the modifiable factors is generated.

[0085] In an embodiment, only one algorithm is used.

[0086] In an embodiment, the method may be used to calculate a child's risk at any point within a child's first two years of life.

[0087] In an embodiment, one to all of the modifiable risk factors may be assessed, depending on the child's age.

[0088] In an embodiment, at least one of the modifiable risk factors assessed in an obesity risk calculation is whether the caregiver chooses to feed the child breast milk and the risk factor is assessed in a third trimester of a mother of the child.

The toddler developmental stage typically occurs after about twelve months. The preschooler developmental stage typically occurs after about 24 months. Developmental milestones associated with each developmental stage are provided below at Table 3.

[00112] In an embodiment, the method further includes providing the caregiver with at least one education tool selected from the group consisting of a menu planner, visuals of serving sizes, breastfeeding tracker, growth tracking tools, or combinations thereof. The at least one education tool may be provided to the caregiver by a media source selected from the group consisting of mailers, email, video, telephone, printed sources, web-related applications, mobile phone applications, computer implemented programs, or combinations thereof.

[00113] In an embodiment, the method further includes providing the caregiver with at least one support source selected from the group consisting of a registered dietitian, a certified lactation specialist, or combinations thereof. The caregiver may access the at least one support source using a media source selected from the group consisting of mailers, email, video, telephone, printed sources, web-related applications, mobile phone applications, computer implemented programs, or combinations thereof. In an embodiment, the caregiver may access the support source using a telephone.

[00114] It is an advantage of the present disclosure to provide methods for calculation risk of obesity.

[00115] It is an advantage of the present disclosure that the obesity risk calculator can be used by caregivers to mitigate risk of obesity for children under two years of age.

[00116] It is an advantage of the present disclosure that the obesity risk calculator can be independently used by health care providers to improve patient counseling and to individualize care.

[00117] It is an advantage of the present disclosure to provide methods for reducing childhood obesity.

[00118] It is another advantage of the present disclosure to provide a multi-component feeding method and obesity risk calculator that aid in reducing childhood obesity.

regulation and the evolution of normal growth as the basis for prevention of obesity in children," J. Am. Diet. Assoc., 1996;96:860-4 (1996); Satter E.M., "The feeding relationship" J. Am. Diet. Assoc., 86:352-6 (1986). The primary objective of the division of responsibility is to protect, or increase, the parents' sensitivity to feeding cues presented by the child and respond appropriately with timing, amount, and pacing of nutritious food. In short, this parent-child feeding approach is driven by the construct that the parent is responsible for providing appropriate foods, and the child decides if, and how much, to eat. The Satter approach is consistent with an authoritative parenting style from the child development literature, see, Satter, E., "Feeding is parenting," The Vision Times (4), 1-4 (2006), which has been associated with parent feeding styles that engage in less restrictive practices, see, Hubbs-Tait L., et al., "Parental feeding practices predict authoritative, authoritarian, and permissive parenting styles," J. Am. Diet. Assoc., 108:1154-61 (2008), and supported by observational studies as being a factor linked to healthy eating, see, Hoerr S.L., et al., "Associations among parental feeding styles and children's food intake in families with limited incomes," Int. J. Behav. Nutr. Phys. Act., 6:55 (2009), and factors associated with obesity prevention, see, Rhee K.E., et al., "Parenting styles and overweight status in first grade," Pediatrics, 117:2047-54 (2006); Berge J.M., et al., "Parenting style and family meals: cross-sectional and 5-year longitudinal associations," J. Am. Diet. Assoc., 110:1036-42 (2010). As mentioned above, parent restriction of children's eating or restricting their access to food has been frequently associated with childhood weight gain, particularly in older children and adolescents. Fisher J.O., et al., "Restricting access to palatable foods affects children's behavioral response, food selection, and intake," Am. J. Clin. Nutr., 69:1264-72 (1999); Carper J.L., et al., "Young girls' emerging dietary restraint and disinhibition are related to parental control in child feeding," Appetite, 35:121-9 (2000); Fisher J.O., et al., "Parents' restrictive feeding practices are associated with young girls' negative self-evaluation of eating," J. Am. Diet. Assoc., 100:1341-6 (2000); Fisher J.O., et al., "Eating in the absence of hunger and overweight in girls from 5 to 7 y of age," Am. J. Clin. Nutr., 76:226-31 (2002); Birch L.L., et al., "Learning to overeat: maternal use of restrictive feeding practices promotes girls' eating in the absence of hunger," Am. J. Clin. Nutr., 78:215-20 (2003); Faith M.S., et al., "Parent-child feeding strategies and their

"Parental influence on children's early eating environments and obesity risk: implications for prevention," Int. J. Obes. (Lond), 34:1116-24 (2010). Few studies have systematically examined whether an intervention program designed to educate parents on the potential role their infant or child feeding behavior could play on the weight status of their young children are available. Moreover, controlled, prospective and longitudinal intervention studies to address these observations are unavailable for children less than two years of age. Additional study to address the directionality of relationships among some parent feeding behaviors with infants and toddlers is needed.

[00202] Given the above findings, education on feeding behavior that is directed by the parent, with high responsiveness to hunger and satiety cues, allowing for self-regulation of food intake by the child, is needed to curb the potential adverse effects that parent feeding styles can have on children's innate ability to regulate energy intake. Fox M.K., et al., "Relationship between portion size and energy intake among infants and toddlers: evidence of self-regulation," J. Am. Diet. Assoc., 106:S77-S83 (2006). Such an intervention would also require practical education of parents as to the different hunger and satiety cues associated to each developmental stage of the infant, especially from birth to two years of age, and ideally be delivered in an anticipatory way, prior to the infant reaching the next stage of development, rather than recommending remedial approaches once an infant is past this formative stage. Interventions for obesity prevention and/or reduction that do not address constructs regarding parenting approaches to feeding are unlikely to be successful. Hubbs-Tait L., et al., "Parental feeding practices predict authoritative, authoritarian, and permissive parenting styles," J. Am. Diet. Assoc., 108:1154-61 (2008). However, to date, no large study representative of the general infant population has addressed these constructs within a multifactorial approach towards the prevention and/or reduction of childhood obesity.

[00203] TV/Screen Viewing Time and Active Play

[00204] The American Academy of Pediatrics consensus Statement on Prevention and Treatment of Childhood Obesity recommends that children two years old and younger should not be exposed to television, and children over age two should limit daily media exposure to only one to two hours of quality programming for TV

approach to calm an overtired-fussy infant, or as a "sleep aid for infants" may be part of the mechanism for these associations. Wasser H., et al., "Infants perceived as "fussy" are more likely to receive complementary foods before 4 months," Pediatrics, 127:229-37 (2011); Kavanagh K.F., et al., "Educational intervention to modify bottle-feeding behaviors among formula-feeding mothers in the WIC program: impact on infant formula intake and weight gain," J. Nutr. Educ. Behav., 40:244-50 (2008); Hodges E.A., et al., "Maternal decisions about the initiation and termination of infant feeding," Appetite 2008;50:333-9 (2008). Recent intervention trials by Taveras and others that promote the use of alternative approaches to feeding for soothing a fussy infant or increasing nocturnal sleep duration have reported encouraging results. Taveras E.M., et al., "First Steps for Mommy and Me: A Pilot Intervention to Improve Nutrition and Physical Activity Behaviors of Postpartum Mothers and Their Infants," Matern. Child Health J. (2010); Paul I.M., et al., "Preventing Obesity during Infancy: A Pilot Study," Obesity (Silver Spring) (2010). Given findings of observational studies indicating sleep duration, particularly that nocturnal sleep duration during infancy and early childhood is associated with pediatric obesity, addressing this variable as part of a multicomponent pediatric prevention program for healthy weight has been recommended. Paul I.M., et al., "Opportunities for the primary prevention of obesity during infancy," Adv. Pediatr., 56:107-33 (2009).

[00212] Shared Family Meals

[00213] As part of its initiative to prevent and/or reduce childhood obesity, the AAP recommends that families regularly eat meals together (www.aap.org/obesity/families.html) and the frequency of regular family meals is significantly related to the nutritional health and weight in children. Meta-analysis of 17 studies of children (age 2.8 years and older) that examined children's weight status, food consumption, and eating patterns identified a 12% reduction in odds of pediatric overweight (e.g., > 85th percentile) with a family meal frequency of three or more meals together per week. Hammons, A., et al., "Is Frequency of Shared Family Meals Related to the Nutritional Health of Children and Adolescents?", Pediatrics (2011). The majority of studies included children of adolescent age; however, when age was tested as a potential moderator, it was found to be non-significant. Similarly, cross sectional analysis of a nationally representative sample of ~ 8550 four year old US