5. OVERWEIGHT, SEDENTARY ACTIVITY, AND NUTRITION

Overweight and Sedentary Activity

Obesity in childhood is an epidemic that affects more than one in eight children nationally. About 13% of children age 6-11 (up from 6% in the early 1970s)\(^\text{35}\) and 12% of adolescents age 12-17 are overweight.\(^\text{34}\) The association between early childhood height and weight, sedentary time, and physical exercise with obesity in adolescence and adulthood has become better understood in recent years. In childhood, overweight can produce physical health problems that impair a child’s health. Overweight can also cause problems in children’s socialization and interaction with peers that in turn can undermine the social and emotional capacities required for children to start school ready to learn. Weight in early childhood is also important because it sets the stage for overweight in childhood and adolescence. Studies show that weight for length during early infancy predicts weight for height in childhood. Similarly, children who are overweight in early childhood have a higher risk of being overweight as adults. Overweight in infancy and early childhood may signify problems with feeding practices or family behaviors that may contribute to poor diet and inactivity in adolescence and adulthood.\(^\text{35}\)

Overweight for children has been defined as weight above the 95th percentile on national growth charts, adjusted for age and gender.\(^\text{36}\) CHIS 2001 data show that a significant number of young children are at risk for obesity.\(^\text{37}\) About 17.8% of infants are at risk for overweight. Rates are similar for toddlers age 1-2 (17.3%) and for children age 3-4 (14.3%) and are slightly lower for children age five (8.8%). Although these rates do not indicate obesity, they do show that a substantial number of young children in California are at risk for overweight.

Exhibit 24 shows that overweight is a problem for children in low-income as well as in higher income households. Pediatric providers in all settings have a role to play in addressing overweight. Rates of overweight vary little by the predominant source of the child’s health care.

Given the impact of obesity on physical as well as social and emotional dimensions of child health, it is important to educate parents about the importance of proper nutrition and exercise for their children. This is particularly important because parents can be poor judges of whether their children are overweight. Parents are essential to obesity prevention efforts with preschoolers because mothers play such a critical role in forming diet and physical activity patterns of young children.\(^\text{38}\)

Physical Exercise/Sedentary Time

Many lifestyle patterns develop in childhood. Obese children are at greater risk of becoming obese adults,\(^\text{39}\) and physical inactivity has a significant impact on obesity. Greater physical activity and less time spent in sedentary activities are major recommendations to combat obesity in children and adolescents. Additionally, physical activity has many inherent benefits for children that include improving endurance, strengthening growing muscles and bones, developing motor skills, reducing fat, and increasing overall health.\(^\text{40}\)

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36 Most studies of overweight and underweight in young children use physical measures taken through the NHANES or other direct measurement surveys. In contrast, CHIS 2001 (like the NHIS) asks parents to report the height and weight of the child. Although body mass index (BMI) calculated from weight and height/length is used for children, youth, and adults, this measure is more problematic for young children.\(^\text{39}\)

37 This report provides estimates of overweight using only weight-for-age. Most national surveys use the Body Mass Index (BMI) that accounts for both weight and height and are thus not directly comparable to the overweight rates in this report. Nationally, the Pediatric Nutrition Surveillance System (PNSS) shows that the prevalence of overweight for children under two years old in 1997 was 11.2% and was 8.6% among children age 2-5 years. Prevalence of overweight also varies nationally by race/ethnicity of the child. The National Health and Nutrition Examination Survey (NHANES) data shows that about 3.4% of children 2-5 years of age and 7.9% of children 4-5 years of age are overweight. Overweight among boys 2-3 years of age ranges from 1.1% of Non-Latino White to 2.8% of African-American and 6.2% of Mexican-American boys. Among girls, the rates range from 2.8% of Non-Latino White to 5.6% of African-American and 10.5% of Mexican-American girls.


# Exhibit 24 – Overweight by Child Age, Race/Ethnicity, Income, Health Care Setting, and Health Insurance, Children Age 0-5 Years, California 2001

<table>
<thead>
<tr>
<th></th>
<th>&gt; 95% Percentile Weight for Age and Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
</tr>
<tr>
<td>Less Than 12 Months</td>
<td>17.8%</td>
</tr>
<tr>
<td>1-2 Years</td>
<td>17.3%</td>
</tr>
<tr>
<td>3-4 Years</td>
<td>14.3%</td>
</tr>
<tr>
<td>5 Years</td>
<td>8.8%</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic White</td>
<td>13.5%</td>
</tr>
<tr>
<td>Latino</td>
<td>16.3%</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>10.6%</td>
</tr>
<tr>
<td>African-American</td>
<td>18.0%</td>
</tr>
<tr>
<td>American Indian/Alaska Native</td>
<td>18.7%</td>
</tr>
<tr>
<td><strong>Income</strong></td>
<td></td>
</tr>
<tr>
<td>Less Than 100% FPL</td>
<td>15.8%</td>
</tr>
<tr>
<td>100%-199% FPL</td>
<td>17.2%</td>
</tr>
<tr>
<td>200-299% FPL</td>
<td>14.5%</td>
</tr>
<tr>
<td>300% FPL and Above</td>
<td>12.9%</td>
</tr>
<tr>
<td><strong>Health Care Setting</strong></td>
<td></td>
</tr>
<tr>
<td>No Usual Source</td>
<td>21.8%</td>
</tr>
<tr>
<td>Physician Office</td>
<td>15.0%</td>
</tr>
<tr>
<td>Community Clinic</td>
<td>13.7%</td>
</tr>
<tr>
<td><strong>Health Insurance</strong></td>
<td></td>
</tr>
<tr>
<td>Employment-Based</td>
<td>13.6%</td>
</tr>
<tr>
<td>Medi-Cal</td>
<td>17.4%</td>
</tr>
<tr>
<td>Healthy Families</td>
<td>12.8%</td>
</tr>
<tr>
<td>Uninsured</td>
<td>17.3%</td>
</tr>
</tbody>
</table>

Tests of the association of overweight with income and with health care setting are not statistically significant. Tests of the association of overweight with child age and race/ethnicity are statistically significant (p<0.05) (chi square).
physiological health and well being. Physical activity is important for promoting overall health and development in children. Yet in the past 10-20 years, children’s physical activity has declined nationally. Disparities among communities in the availability of safe parks and playgrounds may contribute to differences in exercise and play outside of the home throughout California.

The time children spend in physical activity declines when children spend excessive time watching television. The amount of television viewing is an important school readiness indicator because excessive television viewing is associated with lower physical activity as well as lower academic attainment for children. The American Academy of Pediatrics (AAP) recommends that infants and toddlers younger than two years of age should be discouraged from any television viewing. The AAP also recommends that children age two and older have total media time (television, video games, and computer use) limited to less than one to two hours per day.

CHIS 2001 shows that many preschool children are exceeding AAP recommendations for television and media exposure. One indicator is the proportion of children watching at least two hours of television (and/or video games) each weekday, and the second indicator is the proportion of children being exposed to more than two hours of television, video games, and/or other media such as computers. About 67.1% of young children age four years and 65.4% of children age five years spend at least two hours per weekday (Monday through Friday) watching television. Slightly fewer children watch this much television on weekends. Somewhat fewer children exceed two hours of media exposure during the week. About 32.5% of four and five year olds spend more than two hours daily on weekdays watching television or using computers.

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40 Mary Story, Ph.D., R.D., Bright Futures in Practice: Nutrition (2nd ed.)
Exhibit 25 shows that young children in low income as well as in higher income households spend a similar amount of time in these sedentary activities. Rates of both television watching and total media exposure are similar. Exhibit 26 shows that children throughout California spend a similar amount of time watching television or using the computer, with rates of 65.3% in urban areas and 72.1% in rural areas.

Summary
Television viewing and recreational computer use can be educational. However, it takes the place of other development-promoting activities such as reading, exercising, and outdoor play. Parents can help by providing encouragement and opportunities for physical activity. Communities can support physical activity by providing alternatives to television viewing through recreation programs, and by improving the safety of local parks and recreation areas. Promoting physical activity within early care and education programs, including family day care as well as preschool, is one way of reducing television viewing and increasing physical activity during the day.

NUTRITION
Healthy eating is an essential part of the growth and development of infants and young children. Proper nutrition can guard against health problems in childhood, such as iron deficiency, obesity, eating disorders and dental problems. Developing healthy eating habits can also prevent chronic illnesses in adulthood, such as heart disease and diabetes. The U.S. Department of Agriculture estimates that 24% of children age 2-5 years have a good diet, while 68% need an improved diet and 8% have a poor diet.

Measuring and comparing nutritional intake from CHIS 2001 to national estimates is difficult because U.S. data come from detailed nutrition surveys that precisely measure servings as well as intake. In addition, the U.S. Department of Agriculture considers tomatoes and tomato products as vegetables. These measurement issues limit the comparability of California and U.S. statistics.

Tests of the association of television watching with area of residence, and total media with area of residence, are not statistically significant.

43 Mary Story, Ph.D., R.D., Bright Futures in Practice: Nutrition (2nd ed.)
Eating Healthy: Fruits and Vegetables

CHIS 2001 shows that most children age 2-5 years (86.1%) consume enough fruit according to national nutrition recommendations. A similar proportion of toddlers (89%) and preschoolers (87.2%) receive the recommended two daily servings of fruit and/or 100% fruit juice, with slightly fewer five year olds (81.4%) meeting the recommendation. Although intake of fruit does not quite meet national recommendations, it is much higher for California’s young children than for children nationally. Only 44% of children age 2-5 years in the U.S. receive the daily recommended intake of fruit.

While young children in California do well on this important Healthy People 2010 objective, the AAP recommends that children eat whole fruits to meet their recommended daily fruit intake. CHIS 2001 shows that fruit consumption rates are much lower when fruit juice is excluded from daily servings. About one third of California children age 2-5 years (38.1%) consume at least two servings of fruit. Fewer toddlers (27.8%) than preschoolers (57.7%) and five year olds (53.4%) receive two servings of fruit daily.

CHIS 2001 shows that few young children in California (17.7% of children age 2-5 years) eat enough vegetables. Vegetable intake is low for young children of all ages. About 20.4% of toddlers, 17.7% of preschoolers, and 15.4% of five year olds meet the recommendation of three daily servings of vegetables (Exhibit 27). Young children in California appear to consume less vegetables than young children nationally. About 23% of children age 2-5 years nationally—compared to 18% in California—receive the daily recommended servings of vegetables.

Potatoes are included in USDA nutrition recommendations for vegetable servings. About half as many children in California (8.1% of children age 2-5 years) would meet

Tests of the association of milk intake, fruit intake, and soda drinking with child age are statistically significant (p<0.05) (chi square). Test of the association of vegetable intake with child age is not statistically significant.


recommendations for vegetable intake if potatoes were not included, ranging from 10.3% of toddlers to 8.2% of preschoolers and 6.3% of children age five years.

Unhealthy Eating Habits: Drinking Soda

While intake of fruits and vegetables is important for young children’s health, soda intake in early childhood is an indicator of poor nutritional habits. Drinking soda contributes to excess calorie consumption and tooth decay in children. Nationally, nearly all soda (91%) consumed by children age 2-5 years is regular (non-diet).\textsuperscript{46} Soft drinks now provide 20-24% of daily calories for children age 2-19 years.\textsuperscript{47} Because soda consumption reduces the milk that children drink, has no nutritional value, and increases risk of tooth decay, reducing soda intake for young children is an important goal.\textsuperscript{48}

CHIS 2001 shows that about one-quarter (24.7%) of young children drink soda on any given day. However, soda consumption increases with age from about 18.8% of children age two to 25% of children age 3-4 years and 29.5% of children age five. Soda drinking is a particular problem for low-income children in California. About 45.6% of children age five years under 100% FPL drank soda in the prior day compared to 31.6% of children at 100-199% FPL, 25.6% of children at 200-299% FPL, and 21.7% of children at 300% FPL or above. Exhibit 27 demonstrates the significant income gradient in daily soda consumption by young children in California. For example, about 25.2% of children age two in households under 100% FPL drink soda daily, compared to 10.2% of those with household income of 300% FPL or above. Nearly half of children age five in households below the poverty level consume soda. This gradient in daily soda consumption suggests the need for greater education about the harms of regular soda intake to be especially targeted at low income families.


\textsuperscript{48} ibid
Soda consumption is a particular concern because many young children are not drinking enough milk. Only two-thirds of children age 1-5 years in California (66.6%) drink the recommended two or more glasses of milk daily. The proportion of children drinking the recommended amount of milk drops from 73.5% of children age two years to about 65% of children age 3-5 years. Exhibit 28 shows the apparent substitution of soda for milk as children grow from toddlers (two years) into preschool age (3-4 years). For children age 3-4 years, fewer children who drink soda (66.7%) than children who do not (58.7%) drink enough milk during the day.

**Summary**

Families with little time to prepare nutritious meals have trouble instilling good eating habits and meeting nutritional guidelines for their children. CHIS 2001 shows that many toddlers and preschoolers are not receiving recommended amounts of fruit, vegetables, and milk. Vegetable intake actually declines for preschoolers and toddlers, and in fact soda intake increases for preschoolers.

CHIS 2001 suggests that a range of nutrition issues require attention to promote optimal health of young children. Many children are not receiving the recommended nutritional intake that is associated with good health outcomes. Moreover, one-quarter of young children drink soda, which reduces their intake of healthier drinks and has no nutritional value. The combination of soda intake with poor access and utilization of dental health care shows that many children are at risk for tooth decay. CHIS 2001 shows that much more can be done to improve early childhood nutrition as part of a plan to improve health-promoting and disease prevention activities. Given income gradients and disparities in healthy eating behaviors, it would appear that public programs and health care providers that provide other health and social services to low-income families could take up the charge of improving nutritional status and behaviors. The WIC program is an obvious starting point for educational interventions since most infants and their mothers in low-income households participate in WIC.49

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Young children depend on their parents for performing and modeling many positive health behaviors. CHIS 2001 includes several measures of parental behaviors known to directly impact child health outcomes. These behaviors serve as indicators of a general orientation toward prevention and also suggest where a large number of children are experiencing preventable risks. For example, use of sunscreen is an indicator of a positive health behavior for young children. Smoking parents can adversely affect their child’s health when they expose their child to second-hand smoke. Excessive alcohol use is another example of parent behavior that places a young child’s health and development at risk.

Sunscreen

Use of sunscreen is an important protective health behavior in California to avoid various forms of skin cancer. Most sun exposure (up to 80%) occurs before adulthood.50 CHIS 2001 shows that about two-thirds of parents of young children in California (67.8%) say they apply sunscreen to their child “sometimes” or “always” when the child is outdoors on a sunny day. Sunscreen use increases with child age, which may be due to older children spending more time outside. Sunscreen is applied “always” or “sometimes” on a sunny day for 44.4% of infants, 68.9% of toddlers age 1-2 years, 72.7% of children age 3-4, and 76.2% of five year olds. Sunscreen use varies by race/ethnicity, but it does not reach recommended levels even for children with the lightest skin. About 90% of Non-Latino White children use sunscreen at least occasionally on sunny days, with 57% using it always and 32% using it sometimes.

Sunscreen use in California falls short of national recommendations but does exceed the national average. Nationally about 53% of parents use sunscreen on children younger than age two, and 58% apply sunscreen to 3-4 year olds.51 Because parents who do apply sunscreen may not use it sufficiently or frequently enough to provide the recommended level of protection, this continues to be an important indicator of parent-home-health behaviors for young children.

Tobacco

Parent use of tobacco can have a lasting effect on young children’s health and well-being. Young children with a parent or parents who smoke are at greater risk for developing respiratory illnesses and other disorders. Further, children who live in families where there is a smoker are more likely to begin smoking themselves.52 CHIS 2001 shows that about 15.1% of parents of children age 0-5 years currently smoke. About half of parents who have ever smoked (52.6%) do not currently smoke, while 50.3% report smoking daily and 17.2% smoke some days during the week. Among the parents who currently smoke, about 50.1% smoked six or fewer cigarettes daily in the past 30 days, while 17.2% smoke one or more packs of cigarettes a day.

Smoking is of special concern for young children due to its impact on asthma. Exposure to cigarette smoke is a well known cause of asthma exacerbation and overall severity for children. CHIS 2001 shows that parent smoking is just as common among children ever diagnosed with asthma (17.3%) as among children who do not have asthma (15.2%). Although reducing home allergens and smoking exposure is important for reducing triggers for children with asthma, parents of symptomatic children are not eliminating exposure. Parents of 24.5% of asthmatic children who have frequent symptoms (with at least monthly asthma symptoms) smoke.

Alcohol

The U.S. Department of Health and Human Services states that prenatal exposure to drugs and alcohol represent only a small proportion of the children affected and potentially endangered by parental substance abuse. While prenatal

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exposure has known physiological effects, excessive use of alcohol in the household can affect the young child’s physical environment and emotional well-being.

About 52.3% of parents reported drinking alcohol in the past month. Of parents who have consumed alcohol in the past month, most report having either one drink (44.7%) or two drinks (28.6%) on the days that they drink. A smaller proportion (15.8%) have on average three or more drinks on days in which they drink. Heavy drinking (five or more drinks on any one occasion) in the past month is reported by about 26.3% of parents who drink. In total, 13.7% of parents of children age 0-5 years (407,000) drank heavily at least once in the past month. These findings may actually be underestimates because they are self-reported negative behaviors that parents may not feel fully comfortable reporting.

Exhibit 29 shows that heavy drinking varies little with income, ranging from 12% of those below the poverty level to 14.2% of those at 300% FPL or above. Among parents who drink, however, heavy drinking is a bigger problem among lower income parents than among higher income parents. This is because parents who drink heavily are a larger proportion of parents who drink at all in the lowest income households, and a small proportion of parents who drink at all in the highest income households. One-third of parents in lower income households who consume alcohol drink heavily (36.6%) compared to one-fifth (21.1%) of parents in the highest income households.

Exhibit 30 shows that population rates of heavy drinking vary little by race/ethnicity. Among those parents who drink, however, a larger percentage of Latino parents than parents of other racial/ethnic groups drink heavily. Over one-third (35.4%) of Latino parents who consume alcohol at all say they drink heavily (at least once monthly), compared to about one-quarter of American Indian/Alaska Native, African-American, White, and Asian parents.

The frequency and intensity of reported alcohol use by California parents is of concern. Excessive (greater than five drinks at one time) alcohol use is associated with a range of mental health and parenting difficulties. This
shows a need for intervention and education. National studies suggest that up to 11% of U.S. children live with a parent who is alcoholic or needs treatment for abuse of illicit drugs. Only a small percentage of those children and families are identified or receive services.\textsuperscript{53}

**Summary**

Exposure of children to second-hand cigarette smoke and to environments and care-giving-relationships plagued by heavy alcohol use are indicators of important and preventable risks. They may also be indicators of family environments where other parental behaviors may be less than optimal, including exposures to higher levels of violence, unstable care giving, poor nutrition, and lack of adequate emotional and learning supports. As First 5 expands family education and support services, attention should be paid to the role that these and other harmful behaviors can have on inhibiting healthy development of young children.

**CHILD SAFETY**

_Neurons to Neighborhoods_ emphasizes that a safe and loving environment is critical for a child to develop and learn. Because many injuries for young children occur in the home, it is important to minimize risks to safety within the household. Unintentional injuries are the leading cause of death among all children. The Centers for Disease Control and Prevention (CDC) report that every year about 20-25% of all children sustain an injury that is severe enough to require medical attention, missing school, or bed rest. Nationally the two most common home injuries for young children are scalding injuries and falls.

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**Injury**

CHIS 2001 shows that few young children (6.9%) sustain injuries within the year that are serious enough to require medical advice or treatment. Injuries are more common among toddlers and children of preschool age than among infants, affecting 1.6% of children under one year of age, 7.8% of children age 1-2 years, 7.5% of children age 3-4 years, and 8.6% of children age five years. These injuries result from many different types of accidents. The most common single reason for accidents (43%) is an accidental fall. About 4.4% of injuries requiring medical attention are caused by motor vehicles or by bicycle injuries. Most accidents occur in the home (57.7%). Other common locations for injuries are at school, day care, and recreation areas.

Children in higher income families have nearly twice the injury rate (9.2%) of children in the lowest income families (5.2%). Rates of injury are higher among Non-Latino White children (10.4%) than among Latino (3.8%), Asian/Pacific Islander (4.7%), and African-American (5.2%) children. Home safety measures—such as padding sharp corners, turning down the thermostat of the hot water heater, and locking cabinets—can reduce injuries for young children. National data show that parents of young children age 0-3 years more often take injury prevention precautions, such as protecting electrical sockets, that actually cause few injuries in children, but less often take precautions—such as padding furniture—that would actually reduce many more injuries in the home.54

**Household Firearms**

Firearms in the home are a danger to children. Children as young as 3-4 years are able to pull the trigger of most handguns. CHIS 2001 shows that about 15.8% of children age 0-5 years in California live in households in which there is a firearm. Of these households, about two-thirds (65.6%) have a handgun. This shows that a small (but not insignificant) number of young children in California are at risk for injury. Other studies show that in about 13% of households with children and with firearms, at least one firearm was unlocked or unloaded with ammunition often left nearby. These are simple measures that California parents can take to protect their young child from accidental firearm injuries at home.55

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