

HEALTH EVIDENCE REVIEW COMMISSION (HERC)

MULTISECTOR INTERVENTIONS FOR THE PREVENTION AND TREATMENT OF OBESITY

For Obesity Task Force meeting materials 6/3/2016 (revised 5/31/2016)

The interventions listed here are reviewed in the evidence summary below and are recommended by a major body with expertise in public health. The HERC does not recommend for or against these interventions, as the interventions, populations, and settings described here are heterogeneous and may not be suitable for all situations. The HERC's evidence assessment is based on a search conducted in February 2016 of recent systematic reviews (published since 2012). Studies which did not report on weight or Body Mass Index outcomes were not included. ID letters are provided for easy reference and do not denote priority.

HERC EVIDENCE ASSESSMENT				
ID	Intervention/Reference	Type of Intervention	Evidence Assessment <i>(Cost-effectiveness findings in italics)</i>	Related recommendations from others*
A	Sugar-sweetened beverage taxes (Cabrera Escobar et al., 2013, Long, et al., 2015)	Public policy	Limited/mixed evidence supports; reduce beverage demand and consumption but effects on weight outcomes are modest <i>Modeling studies estimate this to be cost-saving (Gortmaker, et al., 2015)</i>	IOM (Accelerating Progress...) #2 CDC #9 WHO #1 White House #4.9
B	Elimination of tax subsidy for advertising unhealthy food to children	Public policy	<i>Modeling studies estimate this to be cost-saving (Gortmaker, et al., 2015)</i>	IOM (Accelerating Progress...) #2,5 IOM (Children) #4 WHO #1,5 White House set #1

HERC EVIDENCE ASSESSMENT				
ID	Intervention/Reference	Type of Intervention	Evidence Assessment (<i>Cost-effectiveness findings in italics</i>)	Related recommendations from others*
C	Changes in food voucher policy (Mayne, et. al., 2015)	Public policy	Evidence shows no association	IOM (Accelerating Progress...) #2,3 IOM (Children) #4 ASTHO #2 WHO #1 White House #4.8
D	Environmental interventions (stairway signs, cafeteria signs, farmers markets, walking groups, etc.). (Hillier-Brown, et al., 2014a)	Community, including businesses, schools, and others	Limited/mixed evidence supports; showed positive results only among higher-educated participants	IOM (Accelerating Progress...) #1,2,4 White House #3.6
E	Interventions to increase use of stairs (signs, stairwell improvements) (Bellicha, et al., 2014)	Community	Limited evidence shows a modest effect on stair use; weight-related outcomes not reported.	IOM (Accelerating Progress...) #1,2,4

HERC EVIDENCE ASSESSMENT

ID	Intervention/Reference	Type of Intervention	Evidence Assessment <i>(Cost-effectiveness findings in italics)</i>	Related recommendations from others*
F	School-based interventions to reduce BMI. (Lavelle, et al., 2012) School-based physical activity interventions (Sun, et al., 2013)	School (programs and environmental)	Evidence supports (especially those which contain a physical activity component. Stratification shows greater effect shown in girls. Programs targeting overweight/obese participants showed larger effect)	IOM (Accelerating Progress...) #1,5 IOM (Children) #3,4 CDC #12,13,14 WHO #2,5 White House #3.16,5
G	Parental support interventions for diet and physical activity (group education) (Kader, et al., 2015)	Group settings	Evidence supports these, but not those which provide “information only”	IOM (Accelerating Progress...) #1 IOM (Children) #3,4 WHO #2,4
H	Physical activity interventions targeting women 18-65 years old	Community-based programs	Evidence supports for other associated outcomes but not for weight-related outcomes	IOM (Accelerating Progress...) #1,4

HERC EVIDENCE ASSESSMENT

ID	Intervention/Reference	Type of Intervention	Evidence Assessment <i>(Cost-effectiveness findings in italics)</i>	Related recommendations from others*
I	School nutrition policy and day care meal standards (Mayne, et al., 2015)	School/Day care	Evidence supports mixed results not sustained at 24 months <i>Modeling studies estimate nutrition standards for food and beverages sold in schools outside of meals to be cost-effective. Modeling studies suggest nutrition standards for school meals to be cost effective. (Gortmaker, et al., 2015)</i>	IOM (Accelerating Progress...) #2,3,5 IOM (Children) #4 CDC #1,2,7,8,9,10 ASTHO #2 WHO #1,5 White House #3
J	Light rail use associated with self-reported BMI reduction (Mayne, et. al., 2015)	Public policy (transit)	Limited evidence supports	IOM (Accelerating Progress...) #1 ASTHO #2
K	Obesity prevention interventions in childcare settings (nutrition education, healthy cooking classes, physical activity and playful games) (Zhou, et al., 2014)	Childcare	Limited/mixed evidence supports <i>Modeling studies estimate that improved early childhood education policies and practices, including the Nutrition and Physical Activity Self-Assessment for Child Care (NAP SACC) program are cost-effective. (Gortmaker, et al., 2015)</i>	IOM (Accelerating Progress...) #1 IOM (Children) #3,4 CDC #12,13,14 WHO #2,4

HERC EVIDENCE ASSESSMENT

ID	Intervention/Reference	Type of Intervention	Evidence Assessment <i>(Cost-effectiveness findings in italics)</i>	Related recommendations from others*
L	Community-based group health education and counseling interventions, Workplace education interventions, family-based group education programs delivered in schools. Community-based education/counseling showed modest, short-term reductions in BMI (Hillier-Brown, et al., 2014a)	Community programs	Limited/mixed evidence supports	CPSTF #2 IOM (Accelerating Progress...) #1,4 IOM (Children) #3,4 ASTHO #2 WHO #2,5,6
M	Workplace and college interventions to improve physical activity (Gudzune, et al., 2013, Malik, et al., 2014)	Workplace or college policy/Environmental	Limited/mixed evidence supports	CPSTF #2 IOM (Accelerating Progress...) #1,4 ASTHO #2 WHO #2
N	Financial incentives to change health habits around physical activity and healthy eating are effective at up to 12 months (Mantzarei, et al., 2015)	Workplaces, communities, healthcare	Limited evidence supports	IOM (Accelerating Progress...) #4 ASTHO #3

HERC EVIDENCE ASSESSMENT

ID	Intervention/Reference	Type of Intervention	Evidence Assessment <i>(Cost-effectiveness findings in italics)</i>	Related recommendations from others*
O	Interventions to reduce sedentary screen time (in some studies, also to increase physical activity and nutrition). (Ramsey Buchanan, et al., 2016; Hillier-Brown, et al., 2014b)	Diverse settings (family, community, individual, classroom)	Evidence supports, particularly among children and in individual settings. (Greater effectiveness with children, lower income participants, higher intensity interventions including electronic monitoring and control.)	CPSTF #1 IOM (Accelerating Progress...) #1,5 IOM (Children) #3, #5 CDC #15 WHO #2,4 White House #1.8-1.11
P	Group and individual mentored health promotion programs to prevent childhood obesity (Hillier-Brown, et al., 2014b)	Individual, Community, Societal	Evidence supports for individual programs; Inconclusive/mixed evidence for group and societal	IOM (Accelerating Progress...) #1 IOM (Children) #3,4 WHO #2,4
Q	Home-based interventions on childhood obesity (Showell, et al., 2013)	Individual/primary care	Inconclusive evidence	IOM (Accelerating Progress...) #1,3 IOM (Children) #3,4 WHO #2

*Recommendations referenced are from the Policy Landscape section of this document.

PURPOSE

This document was developed to inform staff recommendations for inclusion of multisector interventions to prevent and manage obesity on Oregon's Prioritized List of Health Services. The Health Evidence Review Commission (HERC) requested that staff research available interventions to address obesity, including interventions outside traditional healthcare systems.

Increasingly, public and private healthcare payers, including HERC, recognize that in order to achieve their goals to improve patient experience of care, population health and the cost-effectiveness of health care, they must consider evidence-based multisector interventions along with individually-focused clinical care. In so doing they can most effectively maximize health and economic outcomes.

Multisector interventions such as the ones described here can be cost-effective ways to prevent, treat or manage disease at a population level. This report was prepared in consultation with the Obesity Task Force members (See Appendix A), who served as subject matter experts from a variety of related disciplines.

While these interventions will directly inform the Prioritized List and are intended to aid Coordinated Care Organizations as they seek to effectively address obesity, we hope that they will be useful to private health plans as well as other policymakers interested in using the tools at their disposal to prevent and reduce obesity.

BACKGROUND

Today, more than 1 in 4 adults in Oregon are obese, which equates to over 800,000 people. In addition, 15 percent of Oregon's 6-9 year olds were obese in 2012. Children who are obese are more likely to become obese adults, putting them at greater risk of chronic disease.

Obesity can lead to diabetes, cancer, high blood pressure, high cholesterol, arthritis, heart disease and stroke taking a toll on families and the health care system. In Oregon, obesity contributes to 1,500 deaths per year. It is second only to tobacco as a leading cause of preventable death. Nearly 73 percent of adult Oregonians with a history of heart attacks were overweight or obese in 2009.

According to a 2012 report from the Institute of Medicine, national costs attributed to treating obesity-related diseases are estimated to be \$190 billion, which represents 21 percent of all healthcare spending. Obesity-related chronic diseases cost Oregonians about \$1.6 billion in medical expenses each year, with \$339 million of that paid by Medicare and \$333 million paid by Medicaid. People who are obese are estimated to have annual medical costs that are \$1,429 higher than people who are not obese.

Clinical strategies to prevent and treat obesity include screening, behavioral counseling, medications, referral to weight loss programs, and surgery. Many of these have limited efficacy and primarily focus on treatment, rather than prevention of obesity. Given the widespread prevalence of obesity and its significant impact on morbidity, mortality, and societal costs, it is important to understand the range of effective interventions that happen both inside and outside of a clinical setting. Preventing obesity in the first place is likely to be the most cost-effective strategy, and solutions in the community setting have the potential to impact a large number of people. This report on multisector interventions for

obesity examines interventions for the prevention and treatment of obesity that occur in community settings, and can be policies, programs, or environmental changes.

EVIDENCE REVIEW

General Multisector Interventions

Mayne, et al., 2015

This is a narrative systematic review of natural or quasi-experimental studies conducted to examine the effects of policy and built environment changes on obesity outcomes. The authors identified 37 studies, but only three of these studies measured weight or body mass index (BMI) outcomes (the remaining studies only examined changes in dietary composition or physical activity). One study of school nutrition policy and day care meal standards involving almost 68,000 children in Chile found mixed results for the outcomes of BMI z-score and obesity prevalence and the initial improvements were not sustained at 24 months. The second study examined the effects of changes in food voucher policy among 72,000 low-income immigrant adults in the United States and found no association between the policy change and BMI. The third study, which was designed as a longitudinal within-person study of the effects of a new light rail system in Charlotte, North Carolina found that use of the light rail system was associated with a self-reported BMI reduction of 1.18 kg/m² (95% CI -2.22 to -0.13) and reduced the odds of incident obesity. The authors did note that weaker study designs are more likely to report positive findings.

Bottom line: There is limited evidence from a study in one community that use of a new light rail system was associated with a small reduction in self-reported BMI and incident obesity. The results of nutritional policy interventions were mixed.

Amiri Farahani, et al., 2015

This is a narrative systematic review of community-based physical activity interventions targeting women ages 18 to 65 years old. The authors identified nine studies including four methodologically rigorous randomized controlled trials (RCTs). Most of the studies were done in the United States and involved multi-component interventions to promote physical activity. Most of the interventions involved social support, goal setting, barrier anticipation, and self-monitoring; these were provided in theoretical constructs of social cognitive theory and social marketing theory. One trial involved a combined exercise program for mothers and daughters and one included a free gym membership. While seven of the nine studies reported positive effects on physical activity, only four studies reported statistically significant improvements. No studies reported on weight or BMI outcomes. The authors concluded that there was “insufficient evidence to assess the effectiveness of community-based interventions for enhancing physical activity among women.”

Bottom line: While several programs found improvements in physical activity, there is insufficient evidence for the effectiveness of community-based physical activity promotion programs for weight loss in adult women.

Hillier-Brown, et al., 2014a

This is a narrative systematic review of interventions applied at various levels to reduce socioeconomic disparities in adult obesity. Interventions were classified as occurring at the individual, community, or societal levels. Five studies at the individual level were included; four examined tailored weight-loss

plans delivered via primary care, while the fifth was a long-term study of an educational intervention for obesity prevention. The individually tailored weight-loss plans delivered in primary care appeared to be effective at up 12 months and several of the studies showed greater effects among African-American participants. At the community level, authors identified 12 studies; eight of these examined community-based group health education and counseling interventions, two examined workplace education interventions, and two examined family-based group education programs delivered in schools. Overall, the results of the community-based interventions were mixed, but some of the studies of community-based education and counseling programs showed modest reductions in BMI, but only in the short term (3 to 6 months). At the societal level, the authors identified 3 studies. The first was an initiative involving environmental strategies to encourage healthful eating and physical activity through “social marketing...stairway signs, cafeteria signs, farmers markets, walking groups, challenges, workshops, educational displays, newsletters, project website, project information centre and print materials.” This study showed modest positive results, but only among the higher-educated participants. The final two societal level studies examined the effects of changes in the structure of nutrition assistance programs for poor women; neither study found significant effects on obesity.

Bottom line: There is some evidence of effectiveness for individual level interventions (particularly those involving tailored weight-loss plans in primary care) in reducing inequalities in adult obesity, but there was less evidence for the effectiveness of community and societal level interventions.

Workplace Interventions

Bellicha, et al., 2015

This is narrative systematic review of studies examining the effectiveness of interventions to promote the use of stairs. Fifty studies, conducted in a mix of workplace and public settings, were included. The primary outcome measure was stair climbing (ascent only) or stair use (ascent and descent combined). The interventions consisted of a mix of motivational and directional signs with or without stairwell enhancements. The study designs were nearly all pre-post comparisons and none were judged to be high quality. Modest improvements in stair climbing (absolute median increase of about 4%) were noted in most studies during the intervention period. The combination of motivational and directional signs appeared to be more effective than motivational signs alone. Three of the four studies of stairwell enhancements showed similar results (absolute median increase in stair climbing of 4.4%) to the motivational and directional signs. The authors did note that elements of external validity (i.e. implementation) were “largely underreported” in the literature. No weight, BMI, or health outcomes were reported.

Bottom line: Motivational and directional signs as well as stairwell improvements probably lead to modest increases in stair use, but the external validity of these studies remains uncertain.

Malik, et al., 2014

This is a narrative systematic review of health promotion interventions in the workplace to increase physical activity. The authors identified 58 studies including exercise interventions (6 studies), counseling and support interventions (13 studies), and informational or health promotion message interventions (39 studies). The primary outcomes were measures of physical activity. The exercise intervention studies were mostly RCTs or cluster randomized trials. Two of the six studies showed statistically significant increases in physical activity (increased step counts in both of the positive

studies); the remaining studies did not demonstrate an effect. The counseling and support interventions, which included telephonic counseling and peer support programs, used mostly RCT and quasi-experimental designs but there were substantial issues with blinding, use of intention-to-treat, baseline group differences, and attrition. Eight of the thirteen studies showed statistically significant increases in measures of physical activity or total energy expenditure. The informational and health promotion message interventions were diverse and mostly studied using RCT and quasi-experimental designs, but as with other included studies there were methodologic flaws in most trials. Twenty-two of the thirty-nine studies showed statistically significant increases in physical activity; programs that included stage-of-change matched informational materials were more likely to report significant results. Weight, BMI, and health outcomes were not reported. The authors' overall conclusion was that the evidence for workplace health promotion interventions was mixed and inconclusive.

Bottom line: Evidence that workplace health promotion interventions lead to increased physical activity is mixed.

Gudzune, et al., 2013

This is a narrative systematic review of workplace or college-based interventions to prevent weight gain. The authors identified seven workplace and two college-based studies using randomized, cluster-randomized, or quasi-experimental designs. The age, gender, and other participant characteristics varied by study site. The studied interventions were diverse and included environmental changes, health promotion and informational programs, educational programs (including a 4 month college course on preventing weight gain), supported self-management programs, or some combination of the interventions. Five of the workplace studies and both college-based studies reported BMI outcomes at 12 to 24 months.

At 24 months, one of the workplace studies showed intervention group participants had a BMI 0.3 kg/m² lower than the control group. Another showed the intervention group with a BMI 0.2 kg/m² higher than the control group at 12 months. Both of these results were statistically significant, while 3 other studies showed no difference between intervention and control groups.

Both of the college-based programs showed lower BMI at 12 months (-0.5 kg/m² and -1.6 kg/m²) in the intervention group, though only the former result was statistically significant. Overall, the authors deemed the evidence for BMI reduction to be low strength because of issues with bias in the non-randomized trials and inadequate blinding of outcomes assessors. The authors concluded that there was limited evidence for workplace and college-based interventions to prevent weight gain.

Bottom line: There is mixed evidence that workplace interventions are effective to prevent weight gain. There is limited evidence that college-based interventions are effective.

Sugar-sweetened Beverage Taxes

Cabrera Escobar, et al., 2013

This is a systematic review and meta-analysis of the effects of sugar-sweetened beverage (SSB) taxes on SSB demand and obesity. Nine studies, six from the US and one each from Mexico, Brazil, and France were included. The primary outcomes were own-price and cross-price elasticity (measured as the percentage change in quantity demanded), and change in obesity rates or BMI. All studies showed negative own-price elasticity ranging from -0.85 to -4.45 with a meta-analytic estimate of -1.3 (95% CI -1.089 to -1.509). These results suggest that the demand for SSBs is elastic and that SSB price increases

are associated with reduced demand. Cross-price elasticities meant to measure effects of SSB price increases on demand for other beverages were studied in five of the nine studies. The overall estimate is that SSB price increases result in slightly increased demand for fruit juice and milk and slightly lower demand for diet beverages. Meta-analysis could not be performed for the effect of SSB taxes on obesity and BMI. One study estimated that a 10% increase in SSB price would lead to a reduction in the point prevalence of obesity of -0.34% for men and -0.05% for women. A second study estimated that a SSB price increase of 20% would reduce the point prevalence of overweight -0.045% and obesity by -0.03%. A third study estimated that a 20% increase in the price of SSBs would reduce BMI by -0.065 kg/m². A fourth study reported that 1% grocery soda taxes and soft drink vending machine taxes would increase BMI by 0.012 kg/m² and 0.011 kg/m² respectively, though neither result was statistically significant. The fifth study found that a 1% increase in SSB price would produce only small effects on BMI of -0.0031 kg/m² for adults and -0.015 kg/m² for children and adolescents. Overall, the authors conclude that SSB taxes or price increases may benefit health.

Bottom line: SSB prices are elastic and SSB taxes can reduce demand, but the estimated effects of SSB price increases on obesity prevalence and BMI are modest.

Long, et al., 2015

This is a modeling study of the cost-effectiveness of SSB taxes in the U.S. Key assumptions of the model include an own-price elasticity for SSBs of -1.22 and that a reduction of SSB consumption of 8 oz/day leads to weight loss of about 1 kg in children and 12 oz/day leads to BMI change of -0.39 kg/m² for adults. Health gains were estimated over 10 years using a Markov cohort model. The model accounts for downstream changes in a variety of obesity-related illnesses to produce estimates of quality-adjusted life years and disability-adjusted life years. The model also estimated differences in healthcare expenditures based on inputs from the Medical Expenditure Panel Survey. Based on the model, a national SSB excise tax of \$0.01/oz would lead to a 20% reduction in consumption which, in turn, would reduce average adult BMI by 0.08 kg/m² and youth BMI by 0.16 kg/m². The prevalence of obesity among adults and children would drop by 0.99% and 1.38% respectively. Over the 10 year period between 2015 and 2025, the SSB excise tax would lead to 871,000 QALYs gained and reduce health care costs by \$23.6 billion. Thus, the intervention was deemed cost-saving, a finding that was maintained across varied inputs in the sensitivity analysis.

Bottom line: This modeling study suggests that a national SSB excise tax of \$0.01/oz would reduce the prevalence of obesity by about 1% and avert nearly \$25 billion in health care costs over 10 years.

Financial Incentives

Mantzari, et al., 2015

This is a systematic review and meta-analysis of financial incentives for changing health-related behaviors. The review identified fifteen studies examining the effects of financial incentives on markers of healthier eating and physical activity and two studies on physical activity alone. Most of the studies were done in the U.S. and were conducted in a variety of settings including workplaces, communities, health care, and academia. The magnitude and duration of the financial incentives varied greatly across studies and some studies used financial incentives with other interventions like counseling. The studies were a mix of randomized and cluster randomized designs. Financial incentive targeted at indicators of healthier eating and physical activity showed positive results at up to 12

months (OR for attainment of target behaviors 1.39, 95% CI 1.03 to 1.88), but the improvements were not sustained after removal of the financial incentive (OR 1.11, CI 0.76 to 1.63). Although not observed in the diet and physical activity trials, the authors did observe that use of higher value financial incentives was more effective than lower value incentives when used for smoking cessation.

Bottom line: Financial incentives to change health habits around healthful eating and physical activity are effective at up to 12 months, but the effects are attenuated beyond 12 months and appear not to be sustained once the incentive is removed.

Note: A separate systematic review and meta-analysis (*Giles, et al., 2014*) included studies of financial incentives for smoking cessation, vaccinations, and physical activity, though they identified only one study on physical activity. Across all the studies, the relative risk for attainment of target behaviors was 1.62 (95% CI 1.38 to 1.91), but the authors note that the effect size decreased at post-intervention follow-up. Their overall conclusion is that financial incentives are more effective than usual care.

General Multisector Interventions for Children

Ramsey Buchanan, et al., 2016

This is a systematic review and meta-analysis of interventions to reduce recreational sedentary screen time. It was prepared for the Centers for Disease Control and Prevention (CDC) Community Guide. The authors identified 49 studies; 12 studies focused on reducing screen time only, while 37 studies examined interventions to reduce sedentary screen time and improve physical activity or nutrition. The interventions in the included studies were diverse and included classroom-based education, tracking and monitoring of screen time, coaching or counseling, and family or peer social support. Additional intervention components were devices to monitor and limit screen time, media and educational campaigns, and contingent rewards (i.e. screen time as a reward for physical activity). The authors defined high-intensity interventions as those that included electronic monitoring and limitation of screen time and at least three personal or computer-based interactions. Reported outcomes of interest included BMI, BMI z-score, and obesity prevalence. For children, two screen time-only and twelve screen time-plus studies showed an aggregate decrease in BMI z-score of -0.13 (interquartile interval [IQI] -0.23 to -0.01). For adults, two studies showed BMI reductions of -0.18 kg/m² and -0.19 kg/m². In terms of obesity prevalence, ten high-intensity screen time-plus interventions were estimated to decrease median obesity prevalence by -2.1% (IQI -3.9 to -1.1, baseline obesity prevalence of 10.3%). Four studies of low-intensity screen time interventions were estimated to reduce median obesity prevalence by -4.6% (IQI -7.6 to -1.1, baseline obesity prevalence of 12.3%). Among five studies that stratified analysis according to socioeconomic status (SES), four found greater effectiveness for reducing BMI and obesity prevalence among low income participants.

Bottom line: Interventions to reduce screen time are effective in reducing BMI and obesity prevalence. This effect has been observed mostly in children <13 years old, but a smaller number of studies also support the effectiveness of these interventions in adults. Interventions that include electronic monitoring and control of screen time appear to be more effective. The results also suggest that screen time interventions may reduce disparities in obesity prevalence between high and low SES children.

Kader, et al., 2015

This is a narrative systematic review of studies examining the effectiveness of parental support interventions to promote dietary changes and increase physical activity. The authors identified 35 studies and divided the parental support interventions into four categories: individual counseling, group education, informational-only, and individual telephone counseling. Sixteen of the 35 studies reported on weight outcomes for children, but most of these studies were not powered to detect changes in BMI. One of the four studies of face-to-face counseling found a decrease in the prevalence of obesity among girls but not boys and those results were not sustained at later follow-up. Four of the seven studies involving group education showed improvement in weight-related outcomes. Information-only programs appeared to be ineffective. One of the two studies on telephone counseling showed a reduction in BMI z-score. The authors conclude that for weight-related outcomes, group education programs appear to be more effective than other universal parental interventions. Among five studies that were conducted exclusively in low SES or minority populations, 6 to 12 group education sessions for parents of preschool-age children were associated with “desirable effects on weight status.”

Bottom line: Group education programs appear to be more effective than other types of parental intervention for weight outcomes, especially for low SES and minority children.

Hillier-Brown, et al., 2014b

This is a narrative systematic review of interventions applied at various levels to reduce socioeconomic disparities in childhood obesity. Interventions were classified as occurring at the individual, community, or societal levels. The authors identified four studies at the individual level, seventeen studies at the community level, and one study at the societal level. Among the individual interventions, screen time reduction and mentored health promotion programs showed the most promise for reducing disparities. The authors concluded that the evidence for community level interventions was inconclusive with mixed results in studies of school- and community-based health promotion programs. The single societal level study of environmental changes in Swiss pre-schools showed no significant differences in BMI or overweight prevalence, but there was a “trend towards more beneficial effects in higher SES children.” There was no evidence that any of the interventions worsened inequalities in obesity outcomes. The authors conclude that there is limited evidence but that some individual and community level interventions may be effective in reducing disparities in obesity-related outcomes for children.

Bottom line: Some individual interventions (screen time reduction and mentored health promotion programs) show promising results for reducing disparities in childhood obesity, while reported outcomes for community interventions were inconclusive or mixed.

Showell, et al., 2013

This is a narrative systematic review of home-based interventions on childhood obesity. The authors identified six studies including combined physical activity and diet interventions (3 studies), diet only interventions (1 study), interventions spanning home, school and primary care settings (1 study), and interventions with primary care and consumer health informatics components (1 study). Overall, none of the studies showed statistically significant reductions in BMI or obesity prevalence, though three studies showed improvements in diet or physical activity. The authors judged the evidence quality to be low or insufficient and called for better studies of home-based interventions.

Bottom line: There is insufficient evidence that home-based interventions are effective for reducing BMI or obesity prevalence in children.

School-based Interventions

Sun, et al., 2013

This is a narrative systematic review of trials examining school-based direct delivery of physical activity interventions. The authors identified six large, high-quality RCTs of high dose physical activity in schools. Three of the six studies found statistically significant reductions in BMI; the three remaining trials did not find statistically significant effects. Overall, the authors note that high dose direct delivery of physical activity in schools is associated with improved fitness measures, but that the effects on BMI, body fat, and waist circumference are inconclusive.

Bottom line: High dose physical activity interventions in schools improve fitness measures, but do not have a clear effect on weight-related outcomes.

Lavelle, et al., 2012

This is a systematic review and meta-analysis of school-based interventions to reduce BMI. The authors identified 43 RCTs, cluster-randomized, and quasi-randomized trials of school-based interventions that reported on BMI outcomes. These interventions were diverse (targeting physical activity, sedentary behavior, and nutrition) and variably included components of direct physical activity, nutrition and activity education, self-management and self-esteem building, and environmental changes (i.e. school meal changes or removal of vending machines). As expected, there was a high degree of heterogeneity. Two-thirds of the studies showed reductions in BMI with 16 of those demonstrating statistically significant differences. In the meta-analysis, the estimate of BMI reduction was -0.17 kg/m^2 (95% CI -0.26 to -0.08). Notably, in the stratified analyses, the results were only statistically significant for girls. Among the studies in which interventions were only targeted at overweight and obese children, the meta-analysis showed a reduction in BMI of -0.35 kg/m^2 (95% CI -0.58 to -0.12).

Bottom line: School-based interventions, particularly those that contain a physical activity component, are associated with a statistically significant reduction in BMI and the effect is greatest in overweight and obese children.

Childcare-based Interventions

Zhou, et al., 2014

This is a narrative systematic review of obesity prevention interventions delivered in childcare settings. The authors identified fifteen randomized, cluster randomized and non-randomized controlled trials that reported on adiposity outcomes. The study participants were 2 to 6 year old children in preschool childcare centers in several countries; about half the participants were socioeconomically disadvantaged. The interventions were varied and included structured age-appropriate nutrition education, healthy cooking classes, physical activity, and playful games. Several programs also included a component of parental education. The interventions lasted from six months to two years. Overall, the results were mixed with seven of the fifteen studies reporting improvements in measures of adiposity including BMI, body fat percentage, weight circumference, or decreased prevalence of overweight compared to controls. All of the studies with positive results included both nutrition and

physical activity components. Among the remaining studies many reported positive effects on measures of physical activity or nutrition, but did not show improvements in adiposity outcomes.

Bottom line: There is mixed evidence about the effectiveness of interventions delivered in childcare settings in general to reduce obesity. Studies with positive results for this outcome all included combined physical activity and nutrition interventions.

OTHER DECISION FACTORS

Resource Allocation

A recent article in Health Affairs (Gortmaker, et al., 2015) summarized research on seven interventions to reduce childhood obesity. The study estimated the effects of each of the seven interventions using an evidence review protocol. A microsimulation model was developed to calculate the costs and effectiveness of the interventions through their impact on BMI changes, obesity prevalence, and obesity-related health care costs over ten years (2015–25).

Three of the interventions were found to save more in health care costs than they cost to implement:

- Sugar-sweetened beverage excise tax of one cent per ounce
- Nutrition standards for food and beverages sold in schools outside of meals
- Elimination of the tax subsidy for advertising unhealthy food to children

The other studied interventions cost more to implement than they save on health care costs but are likely still cost-effective:

- Restaurant menu calorie labeling
- Nutrition standards for school meals
- Improved early childhood education policies and practices, including the Nutrition and Physical Activity Self-Assessment for Child Care (NAP SACC) program
- Four-fold increase in the use of bariatric surgery among adolescents. In particular, increasing adolescents' access to bariatric surgery was found to have a negligible impact on obesity prevalence.

POLICY LANDSCAPE

Recommendations from others

The Community Preventive Services Task Force - Obesity Prevention and Control: Interventions in Community Settings

1. Behavioral interventions that aim to reduce recreational sedentary screen time among children

Definition: These are behavioral interventions that aim to reduce recreational (i.e., neither school-related nor work-related) sedentary screen time by teaching behavioral self-management skills to initiate or maintain behavior change. Interventions may be screen-time only interventions as well as interventions that combine a focus on reducing recreational screen time with increasing physical activity and improving diet.

Evidence Base: The [Community Preventive Services Task Force](#) reviewed the evidence in August 2014 and recommended behavioral interventions to reduce recreational sedentary screen time among

children aged 13 years and younger. This finding is based on strong evidence of effectiveness in reducing recreational sedentary screen time, increasing physical activity, improving diet, and improving or maintaining weight-related outcomes. Evidence includes studies of interventions that focus only on reducing recreational sedentary screen time (screen-time-only) and studies that focus on reducing recreational sedentary screen time and improving physical activity and/or diet (screen-time-plus). Limited evidence was available to assess the effectiveness of these interventions among adults.

2. Worksite interventions

Definition: These are a suite of interventions operating on both individual and systemic levels through a combination of policy and system change, as well as individual encouragement. Components include:

- Informational and educational strategies that aim to increase knowledge about a healthy diet and physical activity (e.g., educational software or lectures)
- Behavioral and social strategies target the thoughts (e.g. awareness, self-efficacy) and social factors that affect behavior changes (e.g., individual or group counseling and skill building)
- Policy and environmental approaches aim to make healthy choices easier and target the entire workforce by changing physical or organizational structures (e.g., improve access to healthier options in cafeterias, provide on-site facilities for exercise, employers cover health club membership)
- Worksite weight control strategies may occur separately or as part of a comprehensive worksite wellness program that addresses several health issues (e.g., smoking cessation, stress management, cholesterol reduction).

Evidence Base: The [Community Preventive Services Task Force](#) reviewed the evidence in 2007 and recommended worksite programs intended to improve diet and/or physical activity behaviors based on strong evidence of their effectiveness for reducing weight among employees.

3. Technology-supported multicomponent coaching or counseling interventions to reduce weight and maintain weight loss

Definition: Technology-supported multicomponent coaching or counseling interventions use technology to facilitate or mediate interactions between a coach or counselor and an individual or group, with a goal of influencing weight-related behaviors or weight-related outcomes. These interventions often also include other components, which may be technological or non-technological (e.g., in-person counseling).

Evidence Base: The [Community Preventive Services Task Force](#) reviewed the evidence in 2009 and recommended technology-supported multicomponent coaching or counseling interventions **intended to reduce and maintain weight** loss on the basis of sufficient evidence that they are effective in improving weight-related behaviors or weight-related outcomes.

The Institute of Medicine – Accelerating Progress in Obesity Prevention

Goal 1: Make physical activity an integral and routine part of life

Recommendation: Communities, transportation officials, community planners, health professionals, and governments should make promotion of physical activity a priority by substantially increasing access to places and opportunities for such activity.

Recommended Strategies: 1) Enhance the physical and built environment. 2) Provide and support community programs designed to increase physical activity. 3) Adopt physical activity requirements for licensed child care providers and 4) Provide support for the science and practice of physical activity.

Goal 2: Create food and beverage environments that ensure that healthy food and beverage options are the routine, easy choice

Recommendation: Governments and decision makers in the business community/private sector should make a concerted effort to reduce unhealthy food and beverage options and substantially increase healthier food and beverage options at affordable, competitive prices.

Recommended Strategies: 1) Adopt policies and implement practices to reduce overconsumption of sugar-sweetened beverages. 2) Increase the availability of lower-calorie and healthier food and beverage options for children in restaurants. 3) Utilize strong nutritional standards for all foods and beverages sold or provided through the government, and ensure that these healthy options and available in all places frequented by the public. 4) Introduce, modify, and utilize health-promoting food and beverage retail policies. 5) Broaden the examination and development of U.S. agriculture policy and research to include implications for the American diet.

Goal 3: Transform messages about physical activity and nutrition.

Recommendation: Industry, educators, and governments should act quickly, aggressively, and in a sustained manner on many levels to transform the environment that surrounds Americans with messages about physical activity, food, and nutrition.

Recommended Strategies: 1) Develop and support a sustained, targeted physical activity and nutrition social marketing program. 2) Implement common standards for marketing foods and beverages to children and adolescents. 3) Ensure consistent nutrition labeling for the front of packages, retail store shelves, and menus and menu boards that encourages healthier food choices. 4) Adopt consistent nutrition education policies for federal programs with nutrition education components.

Goal 4: Expand the role of health care providers, insurers and employers in obesity prevention.

Recommendation: Health care and health service providers, employers, and insurers should increase the support structure for achieving better population health and obesity prevention.

Recommended Strategies: 1) Provide standardized care and advocate for health community environments. 2) Ensure coverage of, access to, and incentives for routine obesity prevention, screening, diagnosis and treatment. 3) Encourage active living and healthy eating at work. 4) Encourage healthy weight gain during pregnancy and breastfeeding, and promote breastfeeding-friendly environments. IOM (Children) #3

Goal 5: Make schools a national focal point for obesity prevention.

Recommendation: Make schools a national focal point for obesity prevention.

Recommended Strategies: 1) Require quality physical education and opportunities for physical activity in schools. 2) Ensure strong nutritional standards for all foods and beverages sold or provided through schools. 3) Ensure food literacy, including skill development, in schools.

Institute of Medicine – Recommendations on Early Childhood Obesity Prevention Policies

[This report does not include a recommendation 1]

2. Growth Monitoring

Goal: Assess, monitor, and track growth from birth to age five.

Recommendation 2-1: Healthcare providers should measure weight and length or height in a standardized way, plotted on World Health Organization growth charts (ages 0–23 months) or Centers for Disease Control and Prevention growth charts (ages 24–59 months), as part of every well-child visit.

Recommendation 2-2: Healthcare professionals should consider 1) children’s attained weight-for-length or BMI \geq 85th percentile, 2) children’s rate of weight gain, and 3) parental weight status as risk factors in assessing which young children are at highest risk of later obesity and its adverse consequences.

3. Physical Activity

Goal: Increase physical activity in young children.

Recommendation 3-1: Child care regulatory agencies should require child care providers and early childhood educators to provide infants, toddlers, and preschool children with opportunities to be physically active throughout the day.

Recommendation 3-2: The community and its built environment should promote physical activity for children from birth to age five.

Goal: Decrease sedentary behavior in young children.

Recommendation 3-3: Child care regulatory agencies should require child care providers and early childhood educators to allow infants, toddlers, and preschoolers to move freely by limiting the use of equipment that restricts infants’ movement and by implementing appropriate strategies to ensure that the amount of time toddlers and preschoolers spend sitting or standing still is limited.

Goal: Help adults increase physical activity and decrease sedentary behavior in young children.

Recommendation 3-4: Health and education professionals providing guidance to parents of young children and those working with young children should be trained in ways to increase children’s physical activity and decrease their sedentary behavior, and in how to counsel parents about their children’s physical activity.

4. Healthy Eating

Goal: Promote the consumption of a variety of nutritious foods, and encourage and support breastfeeding during infancy.

Recommendation 4-1: Adults who work with infants and their families should promote and support exclusive breastfeeding for six months and continuation of breastfeeding in conjunction with complementary foods for 1 year or more

Recommendation 4-2: To ensure that child care facilities provide a variety of healthy foods and age-appropriate portion sizes in an environment that encourages children and staff to consume a healthy diet, child care regulatory agencies should require that all meals, snacks, and beverages served by early childhood programs be consistent with the Child and Adult Care Food Program meal patterns and safe drinking water be available and accessible to the children.

Recommendation 4-3: The Department of Health and Human Services and the U.S. Department of Agriculture should establish dietary guidelines for children from birth to age two years in future releases of the Dietary Guidelines for Americans.

Goal: Create a healthful eating environment that is responsive to children’s hunger and fullness cues.

Recommendation 4-4: State child care regulatory agencies should require that child care providers and early childhood educators practice responsive feeding.

Goal: Ensure access to affordable healthy foods for all children.

Recommendation 4-5: Government agencies should promote access to affordable healthy foods for infants and young children from birth to age five in all neighborhoods, including those in low-income areas, by maximizing participation in federal nutrition assistance programs and increasing access to healthy foods at the community level.

Goal: Help adults increase children’s healthy eating.

Recommendation 4-6: Health and education professionals providing guidance to parents of young children and those working with young children should be trained and educated and have the right tools to increase children’s healthy eating and counsel parents about their children’s diet.

5. Marketing and Screen Time

Goal: Limit young children’s screen time and exposure to food and beverage marketing.

Recommendation 5-1: Adults working with children should limit screen time, including television, cell phone, or digital media, to less than two hours per day for children aged two–five.

Recommendation 5-2: Healthcare providers should counsel parents and children’s caregivers not to permit televisions, computers, or other digital media devices in children’s bedrooms or other sleeping areas.

Recommendation 5-3: The Federal Trade Commission, the U.S. Department of Agriculture, Centers for Disease Control and Prevention, and the Food and Drug Administration should continue their work to establish and monitor the implementation of uniform voluntary national nutrition and marketing standards for food and beverage products marketed to children.

Goal: Use social marketing to provide consistent information and strategies for the prevention of childhood obesity in infancy and early childhood.

Recommendation 5-4: The Secretary of the Department of Health and Human Services, in cooperation with state and local government agencies and interested private entities, should establish a sustained social marketing program to provide pregnant women and caregivers of children from birth to age five with consistent, practical information on the risk factors for obesity in young children and strategies for preventing overweight and obesity.

6. Sleep

Goal: Promote age-appropriate sleep durations among children.

Recommendation 6-1: Child care regulatory agencies should require child care providers to adopt practices that promote age-appropriate sleep durations.

Recommendation 6-2: Health and education professionals should be trained in how to counsel parents about their children's age-appropriate sleep durations.

Centers for Disease Control and Prevention – Recommended Community Strategies to Prevent Obesity

Strategies to Promote the Availability of Affordable Healthy Food and Beverages

Strategy 1. Communities should increase availability of healthier food and beverage choices in public service venues.

Strategy 2. Communities should improve availability of affordable healthier food and beverage choices in public service venues.

Strategy 3. Communities should improve geographic availability of supermarkets in underserved areas.

Strategy 4. Communities should provide incentives to food retailers to locate in and/or offer healthier food and beverage choices in underserved areas.

Strategy 5. Communities should improve availability of mechanisms for purchasing foods from farms.

Strategy 6. Communities should provide incentives for the production, distribution, and procurement of foods from local farms.

Strategies to Support Healthy Food and Beverage Choices

Strategy 7. Communities should restrict availability of less healthy foods and beverages in public service venues.

Strategy 8. Communities should institute smaller portion size options in public service venues.

Strategy 9. Communities should limit advertisements of less healthy foods and beverages.

Strategy 10. Communities should discourage consumption of sugar-sweetened beverages.

Strategies to encourage Breastfeeding

Strategy 11. Communities should increase support for breastfeeding.

Strategies to Encourage Physical Activity or Limit Sedentary Activity among Children and Youth

Strategy 12. Communities should require physical education in schools.

Strategy 13. Communities should increase the amount of physical activity in PE programs in schools.

Strategy 14. Communities should increase opportunities for extracurricular physical activity.

Strategy 15. Communities should reduce screen time in public service venues.

Strategies to Create Safe Communities That Support Physical Activity

Strategy 16. Communities should improve access to outdoor recreational facilities.

Strategy 17. Communities should enhance infrastructure supporting bicycling.

Strategy 18. Communities should enhance infrastructure supporting walking.

Strategy 19. Communities should support locating schools within easy walking distance of residential areas.

Strategy 20. Communities should improve access to public transportation.

Strategy 21. Communities should zone for mixed use development.

Strategy 22. Communities should enhance personal safety in areas where persons are or could be physically active.

Strategy 23. Communities should enhance traffic safety in areas where persons are or could be physically active.

Strategy to Encourage Communities to Organize for Change

Strategy 24. Communities should participate in community coalitions or partnerships to address obesity.

Association of State and Territorial Health Officials – Recommendations for Preventing and Reducing Obesity

1. Support Infrastructure for State and Territorial Health Agencies to Address Obesity.

Partnerships

- Promote partnerships across state, territorial, federal, and local governments, private sector partners and businesses, community groups, and healthcare systems that provide safe, culturally competent, and appropriate programs. These partnerships should transform communities by affecting policy and implementing initiatives, cross-cutting programs, and consistent targeted messages.
- Promote partnerships within state and territorial health agencies to support coordination among all programs, such as nutrition and physical activity, heart disease and stroke prevention, injury and violence prevention, diabetes prevention and control, maternal and child health, the

Behavioral Risk Factor Surveillance System, and other related chronic disease prevention programs.

- Promote partnerships across state and territorial health agencies that support obesity prevention policy and environmental change in cooperation with agencies overseeing education, transportation, housing, agriculture, healthcare, and other sectors.

Coordination

- Foster engagement among multiple sectors, including state health agency leadership and to provide comprehensive systematic change to address issues such as food deserts, which encourage unhealthy eating and are most often found in low-income, rural, and minority neighborhoods.
- Address healthy eating and active living policies and programs with an effective, coordinated, sustainable infrastructure within state health agency programs.
- Coordinate chronic disease programs to provide infrastructure for all programs in order to have adequate and coordinated leadership that supports communication, evaluation, surveillance, and management of related programs.

Leadership

- Adopt comprehensive healthy workplace policies within health agencies and throughout state government with the support of state leadership, including implementing health risk assessments; healthy food procurement policies that include agency food purchasing, events and meetings, vending machines, and cafeterias; and other incentives for employees to improve their health.

2. Support Policy and Environmental Changes across the Lifespan.

National Guidelines

- Implement policy, programmatic, and other system changes in accordance with the Dietary Guidelines for Americans and the Physical Activity Guidelines for Americans to ensure that healthy food and physical activity is accessible to all populations and consider regulatory approaches to implement and enforce obesity prevention measures. (For example, breastfeeding policies in government nutrition programs, such as the Women, Infants, and Children program and Adult Care Food program; encouraging and supporting hospitals to pass Baby-Friendly Hospital practices; and supporting adequate time and space for breastfeeding or expressing milk in all workplaces.)
- Promote the food marketing principles developed by the U.S. Interagency Working Group that guides the food industry in determining which foods would be appropriate and desirable to market to children ages 2 to 17 to encourage a healthful diet and which foods the industry should voluntarily refrain from marketing to children.
- Encourage and enforce nutrition labeling in restaurants and similar establishments and vending policies that provide consumers with appropriate information at the point of purchase and encourage support for state health agencies to provide the regulatory structure to enforce these policies.

Education

- Support early childhood education policies that describe access to healthy foods and beverages through the Child and Adult Food Care Program and state child care licensing standards that

include nutrition and wellness guidelines, age-appropriate physical activity time and intensity, limited screen time, and meals and snacks that meet nutrition guidelines.

- Support education policies that encourage healthy students through coordinated K-12 school health programs, adequate time and intensity of physical education and activity, access to healthy foods and beverages through the National School Lunch and Breakfast Program and throughout the school day that meet updated standards developed by USDA and the Dietary Guidelines 2010, and implementation of school wellness policies, farm to school programs, and joint use agreements.

Improved Industry Standards

- Promote worksite wellness policies and accreditation programs that encourage a healthy work environment, such as incentive programs for individuals to maintain healthy weight; inclusion of preventive services in routine clinical practice, including reimbursement for proven clinical preventive services; healthy foods and physical activity at meetings and events, and healthy foods in vending machines; and policies for breastfeeding or expressing milk in the workplace. Work closely with business and private sector partners to support efforts for spread and sustainability.
- Support agriculture policies that shift federal subsidies; support less processed foods; increase access to affordable fresh fruit and vegetables through commodity programs; create agriculture policies that support healthy foods in food assistance programs; expand farmers markets and encourage the use of electronic benefit transfer at farmers markets; increase access to fresh fruit and vegetable through distribution to schools; and address the problem of food deserts.
- Support transportation policies that boost partnerships with planners, transportation, and developers; support mixed-use, healthy communities that meet the needs of users of all ages and abilities; support key walking and biking programs and access to public transportation; support Safe Routes to Schools programs; encourage Complete Streets policies; and increase the use of Health Impact Assessments to analyze policies and programs.

3. Support Outreach and Education to Inform and Prepare Providers.

Incentives

- Identify opportunities to assist and advocate for financial incentives for healthcare professionals and institutions, such as physicians, nurses, and other clinicians, hospitals, accountable care organizations, and insurers that track body mass index (BMI) and other health indicators. Offer evidence-based nutrition and physical activity counseling (including breastfeeding), develop targeted and culturally appropriate interventions, and provide leadership in community-based obesity prevention efforts.
- Provide training, educational materials, and technical assistance to communities, worksites, early care and education, and schools interested in offering healthy eating and physical activity programs and policies, especially targeting health disparities and other social determinants of health.

4. Support the Evaluation of Obesity Efforts

Data Collection

- Practice routine data collection and use of public health surveillance data, including the Behavioral Risk Factor Surveillance System, the Youth Risk Behavior Surveillance System, electronic health

information, and hospital discharge data to identify jurisdictions' most pressing needs and efficiently target scarce resources.

- Conduct collection of community design data as communities redesign environments to promote physical activity and access to nutritious foods.
- Gather state-level quantitative and qualitative data on obesity disparities and the social and environmental factors that contribute to them to identify and prioritize populations with the greatest need.

Analysis and Tracking

- Track progress of obesity rates in populations, schools, worksites, communities, and states and territories through public health metrics, including vital statistics, hospital discharge data, and health surveillance systems.
- Utilize clear benchmark goals and measurement of overall rates of obesity according to the best attainable average level of “goodness” and the smallest feasible differences in obesity rates among individuals and groups, or “fairness.”

Evaluation

- Engage state leadership in the development of robust health information exchange with the clinical sector to improve public health and clinical services.
- Evaluate the feasibility of harmonizing state data collection with HHS data collection on race, ethnicity, sex, primary language, and disability status as required by Section 3101 of the Public Health Services Act.

World Health Organization – Recommendations of the Commission on Ending Childhood Obesity

1: Implement comprehensive programmes that promote the intake of healthy foods and reduce the intake of unhealthy foods and sugar-sweetened beverages by children and adolescents.

1.1 Ensure that appropriate and context-specific nutrition information and guidelines for both adults and children are developed and disseminated in a simple, understandable and accessible manner to all groups in society.

1.2 Implement an effective tax on sugar-sweetened beverages.

1.3 Implement the Set of Recommendations on the Marketing of Foods and Non-alcoholic Beverages to Children to reduce the exposure of children and adolescents to, and the power of, the marketing of unhealthy foods.

1.4 Develop nutrient-profiles to identify unhealthy foods and beverages.

1.5 Establish cooperation between Member States to reduce the impact of cross-border marketing of unhealthy foods and beverages.

1.6 Implement a standardized global nutrient labelling system.

1.7 Implement interpretive front-of-pack labelling, supported by public education of both adults and children for nutrition literacy.

1.8 Require settings such as schools, child-care settings, children's sports facilities and events to create healthy food environments.

1.9 Increase access to healthy foods in disadvantaged communities.

2: Implement comprehensive programmes that promote physical activity and reduce sedentary behaviours in children and adolescents.

2.1 Provide guidance to children and adolescents, their parents, caregivers, teachers and health professionals on healthy body size, physical activity, sleep behaviours and appropriate use of screen-based entertainment.

2.2 Ensure that adequate facilities are available on school premises and in public spaces for physical activity during recreational time for all children (including those with disabilities), with the provision of gender-friendly spaces where appropriate.

3: Integrate and strengthen guidance for noncommunicable disease prevention with current guidance for preconception and antenatal care, to reduce the risk of childhood obesity.

3.1 Diagnose and manage hyperglycaemia and gestational hypertension.

3.2 Monitor and manage appropriate gestational weight gain.

3.3 Include an additional focus on appropriate nutrition in guidance and advice for both prospective mothers and fathers before conception and during pregnancy.

3.4 Develop clear guidance and support for the promotion of good nutrition, healthy diets and physical activity, and for avoiding the use of and exposure to tobacco, alcohol, drugs and other toxins.

4: Provide guidance on, and support for, healthy diet, sleep and physical activity in early childhood to ensure children grow appropriately and develop healthy habits.

4.1 Enforce regulatory measures such as The International Code of Marketing of Breast-milk Substitutes and subsequent World Health Assembly resolutions.

4.2 Ensure all maternity facilities fully practice the Ten Steps to Successful Breastfeeding.

4.3 Promote the benefits of breastfeeding for both mother and child through broad-based education to parents and the community at large.

4.4 Support mothers to breastfeed, through regulatory measures such as maternity leave, facilities and time for breastfeeding in the work place.

4.5 Develop regulations on the marketing of complementary foods and beverages, in line with WHO recommendations, to limit the consumption of foods and beverages high in fat, sugar and salt by infants and young children.

4.6 Provide clear guidance and support to caregivers to avoid specific categories of foods (e.g. sugar-sweetened milks and fruit juices or energy-dense, nutrient-poor foods) for the prevention of excess weight gain.

4.7 Provide clear guidance and support to caregivers to encourage the consumption of a wide variety of healthy foods.

4.8 Provide guidance to caregivers on appropriate nutrition, diet and portion size for this age group.

4.9 Ensure only healthy foods, beverages and snacks are served in formal child-care settings or institutions.

4.10 Ensure food education and understanding are incorporated into the curriculum in formal child-care settings or institutions.

4.11 Ensure physical activity is incorporated into the daily routine and curriculum in formal child-care settings or institutions.

4.12 Provide guidance on appropriate sleep time, sedentary or screen-time, and physical activity or active play for the 2–5 years of age group.

4.13 Engage whole-of-community support for caregivers and child-care settings to promote healthy lifestyles for young children.

5: Implement comprehensive programmes that promote healthy school environments, health and nutrition literacy and physical activity among school-age children and adolescents.

5.1 Establish standards for meals provided in schools, or foods and beverages sold in schools, that meet healthy nutrition guidelines.

5.2 Eliminate the provision or sale of unhealthy foods, such as sugar-sweetened beverages and energy-dense, nutrient-poor foods, in the school environment.

5.3 Ensure access to potable water in schools and sports facilities.

5.4 Require inclusion of nutrition and health education within the core curriculum of schools.

5.5 Improve the nutrition literacy and skills of parents and caregivers.

5.6 Make food preparation classes available to children, their parents and caregivers.

5.7 Include Quality Physical Education in the school curriculum and provide adequate and appropriate staffing and facilities to support this.

6: Provide family-based, multicomponent, lifestyle weight management services for children and young people who are obese.

6.1 Develop and support appropriate weight management services for children and adolescents who are overweight or obese that are family-based, multicomponent (including nutrition, physical activity and psychosocial support) and delivered by multi-professional teams with appropriate training and resources, as part of Universal Health Coverage.

White House Task Force on Childhood Obesity – Solving the Problem of Childhood Obesity

I. Early Childhood				
Recommendation	Federal action	State or local action	Private sector action	Page

Recommendation 1.1: Pregnant women and women planning a pregnancy should be informed of the importance of conceiving at a healthy weight and having a healthy weight gain during pregnancy, based on the relevant recommendations of the Institute of Medicine.	x	x	x	12
Recommendation 1.2: Education and outreach efforts about prenatal care should be enhanced through creative approaches that take into account the latest in technology and communications. Partners in this effort could include companies that develop technology-based communications tools, as well as companies that market products and services to pregnant women or prospective parents.			x	12
Recommendation 1.3: Hospitals and health care providers should use maternity care practices that empower new mothers to breastfeed, such as the Baby-Friendly hospital standards.	x	x	x	16
Recommendation 1.4: Health care providers and insurance companies should provide information to pregnant women and new mothers on breastfeeding, including the availability of educational classes, and connect pregnant women and new mothers to breastfeeding support programs to help them make an informed infant feeding decision.	x	x	x	16
Recommendation 1.5: Local health departments and community-based organizations, working with health care providers, insurance companies, and others should develop peer support programs that empower pregnant women and mothers to get the help and support they need from other mothers who have breastfed.	x	x	x	16
Recommendation 1.6: Early childhood settings should support breastfeeding.	x	x	x	16
Recommendation 1.7: Federal and State agencies conducting health research should prioritize research into the effects of possibly obesogenic chemicals.	x			17
Recommendation 1.8: The AAP guidelines on screen time should be made more available to parents, and young children should be encouraged to spend less time using digital media and more time being physically active.		x	x	18
Recommendation 1.9: The AAP guidelines on screen time should be made more available in early childhood settings.		x	x	18
Recommendation 1.10: The Federal government, incorporating input from health care providers and other stakeholders, should provide clear, actionable guidance to states, providers, and families on how to increase physical activity, improve nutrition, and reduce screen time in early child care settings.	x			21
Recommendation 1.11: States should be encouraged to strengthen licensing standards and Quality Rating and Improvement Systems to support good program practices regarding nutrition, physical activity, and screen time in early education and child care settings.		x	x	21

Recommendation 1.12: The Federal government should look for opportunities in all early childhood programs it funds (such as the Child and Adult Care Food Program at USDA, the Child Care and Development Block Grant, Head Start, military child care, and Federal employee child care) to base policies and practices on current scientific evidence related to child nutrition and physical activity, and seek to improve access to these programs.	x			21
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II. Empowering Parents and Caregivers				
Recommendation	Federal action	State or local action	Private sector action	Page
Recommendation 2.1: The Federal government, working with local communities, should disseminate information about the 2010 Dietary Guidelines for Americans through simple, easily actionable messages for consumers and a next generation Food Pyramid.	x			26
Recommendation 2.2: The FDA and USDA's Food Safety and Inspection Service should collaborate with the food and beverage industry to develop and implement a standard system of nutrition labeling for the front of packages.	x		x	27
Recommendation 2.3: Restaurants and vending machine operators subject to the new requirement in the Affordable Care Act should be encouraged to begin displaying calorie counts as soon as possible.			x	27
Recommendation 2.4: Restaurants should consider their portion sizes, improve children's menus, and make healthy options the default choice whenever possible.			x	27
Recommendation 2.5: The food and beverage industry should extend its self-regulatory program to cover all forms of marketing to children, and food retailers should avoid in-store marketing that promotes unhealthy products to children.			x	32
Recommendation 2.6: All media and entertainment companies should limit the licensing of their popular characters to food and beverage products that are healthy and consistent with science-based nutrition standards			x	32
Recommendation 2.7: The food and beverage industry and the media and entertainment industry should jointly adopt meaningful, uniform nutrition standards for marketing food and beverages to children, as well as a uniform standard for what constitutes marketing to children.			x	32

Recommendation 2.8: Industry should provide technology to help consumers distinguish between advertisements for healthy and unhealthy foods and to limit their children's exposure to unhealthy food advertisements.	x		x	32
Recommendation 2.9: If voluntary efforts to limit the marketing of less healthy foods and beverages to children do not yield substantial results, the FCC could consider revisiting and modernizing rules on commercial time during children's programming.	x			32
Recommendation 2.10: Pediatricians should be encouraged to routinely calculate children's BMI and provide information to parents about how to help their children achieve a healthy weight.			x	35
Recommendation 2.11: Federally-funded and private insurance plans should cover services necessary to prevent, assess, and provide care to overweight and obese children.	x		x	35
Recommendation 2.12: Dentists and other oral health care providers should be encouraged to promote healthy habits and counsel families on childhood obesity prevention as part of routine preventive dental care.			x	35
Recommendation 2.13: Medical and other health professional schools, health professional associations, and health care systems should ensure that health care providers have the necessary training and education to effectively prevent, diagnose, and treat obese and overweight children.			x	35

III. Healthier Food in Schools

Recommendation	Federal action	State or local action	Private sector action	Page
Recommendation 3.1: Update Federal nutritional standards for school meals and improve the nutritional quality of USDA commodities provided to schools.	x			39
Recommendation 3.2: Increase resources for school meals.	x	x	x	40
Recommendation 3.3: USDA should continue its outreach and technical assistance to help provide training for school food service professionals.	x	x	x	40
Recommendation 3.4: Schools should consider upgrading their cafeteria equipment to support the provision of healthier foods, for example, by swapping out deep fryers for salad bars.	x	x	x	41

Recommendation 3.5: USDA should work with all stakeholders to develop innovative ways to encourage students to make healthier choices.	x	x		41
Recommendation 3.6: USDA should work to connect school meals programs to local growers, and use farm-to-school programs, where possible, to incorporate more fresh, appealing food in school meals.	x	x	x	41
Recommendation 3.7: Schools should be encouraged to make improvements in their school meal programs through the HealthierUS Schools Challenge in advance of updated Federal standards.	x	x	x	42
Recommendation 3.8: Increase the alignment of foods sold at school, including in the a la carte lines and vending machines, with the Dietary Guidelines.	x			43
Recommendation 3.9: Food companies should be encouraged to develop new products and reformulate existing products so they meet nutritional standards based on the Dietary Guidelines and appeal to children.			x	43
Recommendation 3.10: USDA and the U.S. Department of Education should collaborate with states to increase the availability and consistency of nutrition education in schools.	x	x		44
Recommendation 3.11: Where possible, use school gardens to educate students about healthy eating.		x	x	45
Recommendation 3.12: Technical assistance should be provided to schools about how to a cafeteria and lunch room environment can support and encourage a healthful meal.		x		45
Recommendation 3.13: Schools should be encouraged to ensure that choosing a healthy school meal does not have a social cost for a child.		x		45
Recommendation 3.14: Schools should be encouraged to consider the impact of food marketing on education.		x	x	45
Recommendation 3.15: School districts should be encouraged to create, post, and implement a strong local school wellness policy.	x	x	x	45
Recommendation 3.16: Promote good nutrition through afterschool programs.	x	x	x	47
Recommendation 3.17: Promote healthy behaviors in juvenile correctional and related facilities.	x	x	x	47

IV. Access to Healthy, Affordable Food

Recommendation	Federal action	State or local action	Private sector action	Page
Recommendation 4.1: Launch a multi-year, multi-agency Healthy Food Financing Initiative to leverage private funds to increase the availability of affordable, healthy foods in underserved urban and rural communities across the country.	x	x	x	53
Recommendation 4.2: Local governments should be encouraged to create incentives to attract supermarkets and grocery stores to underserved neighborhoods and improve transportation routes to healthy food retailers.		x		54
Recommendation 4.3: Food distributors should be encouraged to explore ways to use their existing distribution chains and systems to bring fresh and healthy foods into underserved communities.	x		x	54
Recommendation 4.4: Encourage communities to promote efforts to provide fruits and vegetables in a variety of settings and encourage the establishment and use of direct-to-consumer marketing outlets such as farmers' markets and community supported agriculture subscriptions.		x		54
Recommendation 4.5: Encourage the establishment of regional, city, or county food policy councils to enhance comprehensive food system policy that improve health.		x		54
Recommendation 4.6: Encourage publicly and privately-managed facilities that serve children, such as hospitals, afterschool programs, recreation centers, and parks (including national parks) to implement policies and practices, consistent with the Dietary Guidelines, to promote healthy foods and beverages and reduce or eliminate the availability of calorie-dense, nutrient-poor foods.	x	x	x	54
Recommendation 4.7: Provide economic incentives to increase production of healthy foods such as fruits, vegetables, and whole grains, as well as create greater access to local and healthy food for consumers.	x			59
Recommendation 4.8: Demonstrate and evaluate the effect of targeted subsidies on purchases of healthy food through nutrition assistance programs.	x			59
Recommendation 4.9: Analyze the effect of state and local sales taxes on less healthy, energy-dense foods.	x	x		59

Recommendation 4.10: The food, beverage, and restaurant industries should be encouraged to use their creativity and resources to develop or reformulate more healthful foods for children and young people.			x	60
Recommendation 4.11: Increase participation rates in USDA nutrition assistance programs through creative outreach and improved customer service, state adoption of improved policy options and technology systems, and effective practices to ensure ready access to nutrition assistance program benefits, especially for children.	x	x	x	62

V. Increasing Physical Activity

Recommendation	Federal action	State or local action	Private sector action	Page
Recommendation 5.1: Developers of local school wellness policies should be encouraged to include strong physical activity components, on par with nutrition components.		x		73
Recommendation 5.2: The President's Challenge should be updated to ensure consistency with the Physical Activity Guidelines for Americans and to ensure ease of use and implementation by schools. Private sector partners with an interest in physical activity should help enroll children in the Presidential Active Lifestyle Award program.	x		x	73
Recommendation 5.3: State and local educational agencies should be encouraged to increase the quality and frequency of sequential, age- and developmentally-appropriate physical education for all students, taught by certified PE teachers.		x	x	73
Recommendation 5.4: State and local educational agencies should be encouraged to promote recess for elementary students and physical activity breaks for older students, and provide support to schools to implement recess in a healthy way that promotes physical activity and social skill development.		x		73
Recommendation 5.5: State and local educational agencies should be encouraged to provide opportunities in and outside of school for students at increased risk for physical inactivity, including children with disabilities, children with asthma and other chronic diseases, and girls.		x	x	74
Recommendation 5.6: Federal, state, and local educational agencies, in partnership with communities and businesses, should work to support programs to extend the school day, including afterschool programs, which offer and enhance physical activity opportunities in their programs.	x	x	x	77

Recommendation 5.7: State and local educational agencies should be encouraged to support interscholastic sports and help decrease prohibitive costs of sports by curbing practices such as “pay-to-play,” working with other public and private sector partners.	x	x	x	78
Recommendation 5.8: Reauthorize a Surface Transportation Act that enhances livability and physical activity.	x	x		81
Recommendation 5.9: The Environmental Protection Agency should assist school districts that may be interested in siting guidelines for new schools that consider the promotion of physical activity, including whether students will be able to walk or bike to school.	x	x		81
Recommendation 5.10: Communities should be encouraged to consider the impacts of built environment policies and regulations on human health.	x	x		81
Recommendation 5.11: The Federal Safe Routes to School Program (SRTS) should be continued and enhanced to accommodate the growing interest in implementing Safe Routes to Schools plans in communities.	x			82
Recommendation 5.12: “Active transport” should be encouraged between homes, schools, and community destinations for afterschool activities, including to and from parks, libraries, transit, bus stops, and recreation centers.		x	x	82
Recommendation 5.13: Increase the number of safe and accessible parks and playgrounds, particularly in underserved and low-income communities.	x	x	x	83
Recommendation 5.14: The Federal government should continue to support investments in a wide range of outdoor recreation venues, such as National Parks, Forests, Refuges and other public lands, and expand opportunities for children to enjoy these venues.	x			84
Recommendation 5.15: Local governments should be encouraged to enter into joint use agreements to increase children’s access to community sites for indoor and outdoor recreation.		x		84
Recommendation 5.16: The business sector should be encouraged to consider which resources and physical assets like fields and gyms can be used to increase students’ access to outdoor and indoor recreational venues.			x	84
Recommendation 5.17: Entertainment and technology companies should continue to develop new approaches for using technology to engage children in physical activity.			x	84

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