

June 4, 2020

Barbara Schneeman, PhD
Chair, 2020 Dietary Guidelines Advisory Committee
c/o Eve Stody, PhD
Designated Federal Officer and Lead Nutritionist
Center for Nutrition Policy and Promotion, Food and Nutrition Service
U.S. Department of Agriculture

Dear Dr. Schneeman and the Members of the 2020 Dietary Guidelines Advisory Committee:

We, the undersigned, submit these comments in response to the Dietary Guidelines Advisory Committee's (DGAC) public deliberations on March 13, 2020 regarding the relationship between sugar-sweetened beverages (SSBs) and growth, size, and body composition. So far, this letter has garnered 51 signatories, including Lawrence Appel, George Bray, Kelly Brownell, Carlos Camargo, William Dietz, Christopher Gardner, Frank Hu, Rachel Johnson, JoAnn Manson, Barbara Millen, Marion Nestle, Eric Rimm, Meir Stampfer, Mary Story, Miriam Vos, and Walter Willett.

More than 70 percent of U.S. adults and 35 percent of children now have overweight or obesity.^{1,2} Excess weight increases the risk of type 2 diabetes, heart disease, stroke, roughly a dozen cancers, and a number of other health problems. The impact and intractability of the obesity epidemic give heightened importance to the DGAC's conclusions on sugary beverages.

The draft conclusions on slide 18 of the Beverages and Added Sugars subcommittee's presentation were:

“Limited evidence suggests that higher sugar-sweetened beverage intake is associated with greater adiposity in *adults*”; and

“Moderate evidence suggests that higher sugar-sweetened beverage intake is associated with greater adiposity in *children*.”

According to slide 34, these conclusions apply to evidence published between 2012 and 2019 and systematically reviewed by the 2020 DGAC.

In contrast, the 2015 DGAC concluded—based largely on three systematic reviews and meta-analyses published in 2013³—that “*strong and consistent* evidence shows that intake of added sugars from foods and/or sugar-sweetened beverages are associated with excess body weight in *children and adults*. The reduction of added sugars and sugar-sweetened beverages in the diet reduces body mass index (BMI) in both children and adults” (emphasis added).

¹ Fryar CD, Carroll MD, Ogden CL. Prevalence of Overweight, Obesity, and Extreme Obesity Among Adults Aged 20 and Over: United States, 1960–1962 Through 2015–2016. *National Center for Health Statistics Health E-Stats*. September 2018. https://www.cdc.gov/nchs/data/hestat/obesity_adult_15_16/obesity_adult_15_16.htm.

² Fryar CD, Carroll MD, Ogden CL. Prevalence of Overweight, Obesity, and Severe Obesity Among Children and Adolescents Aged 2–19 Years: United States, 1963–1965 Through 2015–2016. *National Center for Health Statistics Health E-Stats*. September 2018. [cdc.gov/nchs/data/hestat/obesity_child_15_16/obesity_child_15_16.htm](https://www.cdc.gov/nchs/data/hestat/obesity_child_15_16/obesity_child_15_16.htm).

³ Te Morenga L, Mallard S, Mann J. Dietary Sugars and Body Weight: Systematic Review and Meta-Analyses of Randomised Controlled Trials and Cohort Studies. *BMJ*. 2013;346:e7492; Malik VS, et al. Sugar-Sweetened Beverages and Weight Gain in Children and Adults: A Systematic Review and Meta-Analysis. *Am J Clin Nutr*. 2013;98(4):1084-102; Kaiser KA, et al. Will Reducing Sugar-Sweetened Beverage Consumption Reduce Obesity? Evidence Supporting Conjecture is Strong, but Evidence When Testing Effect is Weak. *Obes Rev*. 2013;14(8):620-33.

Beverages and Added Sugars Subcommittee Chair Dr. Mayer-Davis indicated that the 2020 DGAC's final recommendations would consider the evidence from both its new systematic review on SSBs and the 2015 DGAC conclusion. However, committee members did not discuss *how* they would reconcile the 2020 DGAC's draft conclusions with the 2015 DGAC's final conclusion. That decision-making process is crucial and should be transparent. We urge the DGAC to grade the overall body of evidence as strong, rather than moderate or limited, for the following reasons:

The totality of evidence demonstrates that SSBs increase the risk of excess adiposity in both children and adults.

Virtually every major health authority, including the World Health Organization,⁴ has urged the public to limit or avoid the consumption of SSBs or all sources of added sugars based on a broad body of evidence published both before and since 2012. These authorities include the Centers for Disease Control and Prevention,⁵ the National Academy of Sciences,⁶ the National Heart, Lung, and Blood Institute,⁷ the American Academy of Pediatrics,⁸ the American Academy of Pediatric Dentistry,⁹ the American College of Cardiology,¹⁰ the American Diabetes Association,¹¹ the American Heart Association,¹² the American Institute for Cancer Research,¹³ the American Medical Association,¹⁴ the Academy of Nutrition and

⁴ World Health Organization. *Sugars Intake for Adults and Children*. 2015.

https://www.who.int/nutrition/publications/guidelines/sugars_intake/en/.

⁵ Centers for Disease Control and Prevention. Get the Facts: Sugar-Sweetened Beverages and Consumption.

February 27, 2017. <https://www.cdc.gov/nutrition/data-statistics/sugar-sweetened-beverages-intake.html>.

⁶ Committee on Accelerating Progress in Obesity Prevention, Food and Nutrition Board, Institute of Medicine.

Accelerating Progress in Obesity Prevention: Solving the Weight of the Nation. National Academies Press. May 8,

2012. [ncbi.nlm.nih.gov/books/NBK201139/](https://www.ncbi.nlm.nih.gov/books/NBK201139/); Committee on Prevention of Obesity in Children and Youth, Food and

Nutrition Board, Institute of Medicine. *Preventing Childhood Obesity: Health in the Balance*. National Academies Press. 2005. [ncbi.nlm.nih.gov/books/NBK83825/pdf/Bookshelf_NBK83825.pdf](https://www.ncbi.nlm.nih.gov/books/NBK83825/pdf/Bookshelf_NBK83825.pdf).

⁷ National Heart Lung and Blood Institute. *Integrated Guidelines for Cardiovascular Health and Risk Reduction in*

Children and Adolescents. U.S. Department of Health and Human Services, National Institutes of Health. 2013: 53.

<https://www.nhlbi.nih.gov/health-topics/integrated-guidelines-for-cardiovascular-health-and-risk-reduction-in-children-and-adolescents>.

⁸ Lott M, et al. *Healthy Beverage Consumption in Early Childhood: Recommendations from Key National Health and Nutrition Organizations. Technical Scientific Report*. Healthy Eating Research. 2019.

<http://healthyeatingresearch.org>.

⁹ American Academy of Pediatric Dentistry. Policy on Dietary Recommendations for Infants, Children, and

Adolescents. *The Reference Manual of Pediatric Dentistry*. 2017;40(6):65-67.

https://www.aapd.org/globalassets/media/policies_guidelines/p_recdietary.pdf.

¹⁰ Van Horn L, et al. Recommended Dietary Pattern to Achieve Adherence to the American Heart

Association/American College of Cardiology (AHA/ACC) Guidelines: A Scientific Statement from the American Heart Association. *Circulation*. 2016;134(22):e505-e529.

¹¹ American Diabetes Association. Standards of Medical Care in Diabetes—2019. *Diabetes Care*. 2019;42(Suppl 1):S46-S60.

¹² Van Horn, 2016; Johnson RK, et al. Dietary Sugars Intake and Cardiovascular Health: A Scientific Statement

from the American Heart Association. *Circulation*. 2009;120(11):1011-20; Vos MB, et al. Added Sugars and

Cardiovascular Disease Risk in Children: A Scientific Statement from the American Heart Association.

Circulation. 2017;135(19):e1017-e1034.

¹³ World Cancer Research Fund, American Institute for Cancer Research. Diet, Nutrition, and Physical Activity:

Energy Balance and Body Fatness. Continuous Update Project Expert Report 2018.

<https://www.aicr.org/research/the-continuous-update-project/energy-balance-and-body-fatness/>.

¹⁴ American Medical Association. Strategies to Reduce the Consumption of Beverages with Added Sweeteners H-

150.927. 2017. <https://policysearch.ama-assn.org/policyfinder/detail/sugar-sweetened%20beverages?uri=%2FAMADoc%2FHOD.xml-H-150.927.xml>.

Dietetics,¹⁵ the American Public Health Association,¹⁶ and the European Association for Cardiovascular Prevention & Rehabilitation.¹⁷ If anything, the evidence has grown stronger since the 2015 DGAC reached its conclusion, as the more recent recommendations indicate. The 2020 DGAC—or the 2020-2025 Dietary Guidelines—would need compelling evidence to stray from that widespread consensus.

SSBs lead to increased adiposity in randomized controlled trials in both children and adults. Those trials have randomly assigned children or adults to consume either SSBs or calorie-free beverages for 3 weeks to 1.5 years. One 2012 trial stands out as providing definitive evidence that SSBs lead to increased adiposity. The DRINK (Double-blind, Randomized Intervention Study in Kids) trial randomly assigned 641 primarily normal-weight Dutch children aged 4 to 11 years to consume a daily 8 oz. beverage (provided by the researchers) that was sweetened with either sucrose or sucralose and acesulfame potassium.¹⁸ After 18 months, BMI, weight, fat mass, and skinfold-thickness measurements increased significantly more in the sucrose group than in the sucralose group.¹⁹

Although the DRINK study was done on children, we know of no biological reason why the results would not apply to adults. Similar RCTs with sufficient power, conducted either in adults or children, support the results of the DRINK study.^{20,21} We understand that the DGAC was instructed to evaluate the evidence for adults and children separately and that large, lengthy RCTs have been conducted only in children. However, the DGAC should rely on the totality of compelling evidence that SSBs lead to increased adiposity, regardless of age. As an editorial accompanying two major trials in children²² and an important cohort study on adults²³ concluded, “the time has come to take action and strongly support and implement the recommendations from the Institute of Medicine, the American Heart Association, the Obesity Society, and many other organizations to reduce consumption of sugar-sweetened beverages in

¹⁵ Lott, 2019.

¹⁶ American Public Health Association. Taxes on Sugar-Sweetened Beverages. October 30, 2012. <https://www.apha.org/policies-and-advocacy/public-health-policy-statements/policy-database/2014/07/23/13/59/taxes-on-sugar-sweetened-beverages>.

¹⁷ Piepoli MF, et al. 2016 European Guidelines on Cardiovascular Disease Prevention in Clinical Practice: The Sixth Joint Task Force of the European Society of Cardiology and Other Societies on Cardiovascular Disease Prevention in Clinical Practice (Constituted by Representatives of 10 Societies and by Invited Experts). Developed with the Special Contribution of the European Association for Cardiovascular Prevention & Rehabilitation (EACPR). *Eur Heart J*. 2016;37(29):2315-2381.

¹⁸ de Ruyter JC, et al. A Trial of Sugar-Free or Sugar-Sweetened Beverages and Body Weight in Children. *N Engl J Med*. 2012;367(15):1397-406.

¹⁹ Note: An “evidence synthesis” slide shown at DGAC meeting #5 stated that “randomized controlled trials showed a relationship between a decrease in sugar-sweetened beverages and a decrease in BMI.” The primary outcome of the two major RCTs demonstrated that SSBs led to an increase, not a decrease, in BMI.

²⁰ Ebbeling, 2012; Higgins KA, Mattes RD. A Randomized Controlled Trial Contrasting the Effects of 4 Low-Calorie Sweeteners and Sucrose on Body Weight in Adults with Overweight or Obesity. *Am J Clin Nutr*. 2019;109(5):1288-1301; Raben A, et al. Sucrose Compared with Artificial Sweeteners: Different Effects on Ad Libitum Food Intake and Body Weight After 10 wk of Supplementation in Overweight Subjects. *Am J Clin Nutr*. 2002;76(4):721-9; Maersk M, et al. Sucrose-Sweetened Beverages Increase Fat Storage in the Liver, Muscle, and Visceral Fat Depot: A 6-mo Randomized Intervention Study. *Am J Clin Nutr*. 2012;95(2):283-9. Vazquez-Duran M, et al. A Randomized Control Trial for Reduction of Caloric and Non-caloric Sweetened Beverages in Young Adults: Effects in Weight, Body Composition and Blood Pressure. *Nutr Hosp*. 2016;33(6):1372-1378.doi: 10.20960/nh.797.

²¹ We urge the DGAC to include Raben, et al. 2002 in its review, given that 70% of the sucrose supplied in the trial came from sugar-sweetened beverages.

²² de Ruyter, 2012; Ebbeling, 2012.

²³ Qi Q, et al. Sugar-Sweetened Beverages and Genetic Risk of Obesity. *N Engl J Med*. 2012;367(15):1387-96.

both children and adults.”²⁴

Numerous cohort studies have reported an association between increased adiposity and the consumption of SSBs in both children and adults. The 2015 DGAC relied primarily on two meta-analyses of cohort studies (and RCTs) to reach its conclusions. In a meta-analysis of five cohort studies, Te Morenga et al. reported a 55 percent increased risk of incident overweight or obesity in children who consumed at least one daily serving of SSBs at baseline compared to those who consumed little or none.²⁵ Malik et al. reported that each serving per day increase in SSBs was associated with an additional weight gain of 0.25 to 0.5 pounds in adults and an additional 0.05 to 0.06 unit increase in BMI in children over 1 year.²⁶

Although more studies have been conducted on children than on adults, the consistency of the evidence across age groups should lead the DGAC to reach equally strong conclusions in adults and children. Rating the evidence on SSBs as stronger for children than for adults implies that the effect of SSBs on adiposity could differ by age. In fact, the evidence for age-dependent effects is lacking.

We, the undersigned—researchers, scientists, nutritionists, clinicians, public health professionals, and public health advocates—urge the DGAC to conclude that there is strong and consistent evidence that SSBs are associated with excess body weight in children and adults. This conclusion would align the 2020 recommendations with both the 2015 DGAC and the vast majority of health authorities. By advising both adults and children to limit their intake of SSBs—most of which provide only empty calories—the DGAC could take a much-needed step to help curb the nation’s obesity epidemic. Thank you for your consideration of our comments.

Sincerely,

Abbey Alkon, RN, PNP, MPH, PhD
Professor, UCSF School of Nursing, Department of Family Health Care Nursing
Barbara Durand Presidential Chair in Nursing
Director, California Childcare Health Program
Investigator, UC, Berkeley Center for Environmental Research and Children’s Health

Lawrence J. Appel, MD, MPH
C. David Molina, M.D., M.P.H. Professor of Medicine
Director, Welch Center for Prevention, Epidemiology, and Clinical Research
Johns Hopkins Medical Institutions
Member, 2005 and 2010 Dietary Guidelines Advisory Committees

George Bray, MD
Boyd Professor Emeritus
Pennington Biomedical Research Center

Nigel Brockton, PhD
Vice President, Research
American Institute for Cancer Research

²⁴ Caprio S. Calories from soft drinks—do they matter? *N Engl J Med*. 2012 Oct 11;367(15):1462-3. doi: 10.1056/NEJMe1209884.

²⁵ Te Morenga, 2013.

²⁶ Malik, 2013.

Kelly D. Brownell, PhD
Director, World Food Policy Center
Robert L. Flowers Professor of Public Policy
Professor of Psychology and Neuroscience
Duke University
Member, 2005 Dietary Guidelines Advisory Committee

Carlos A. Camargo, MD, DrPH
Professor of Emergency Medicine, Medicine, and Epidemiology
Harvard University
Member, 2005 Dietary Guidelines Advisory Committee

Fatinah Darwish, MPH, RD

William H. Dietz, MD, PhD
Chair, Sumner M. Redstone Center
Milken Institute School of Public Health
George Washington University
Member, 1995 Dietary Guidelines Advisory Committee

Jennifer Falbe, ScD, MPH
Assistant Professor of Nutrition and Human Development
Department of Human Ecology
University of California Davis

Anne Froment
Clinical Research Manager
University of North Carolina at Chapel Hill

Christopher Gardner, PhD
Rehnborg Farquhar Professor of Medicine
Stanford University

Edward Giovannucci, MD, ScD
Professor of Nutrition and Epidemiology
Harvard T.H. Chan School of Public Health

Praveen S. Goday, MBBS, CNSC
Professor
Pediatric Gastroenterology and Nutrition
Medical College of Wisconsin

Michael I. Goran, PhD
Director, Program for Diabetes and Obesity & Professor of Pediatrics
The Saban Research Institute
Children's Hospital of Los Angeles
Keck School of Medicine, University of Southern California

Christina Hecht, PhD
Senior Policy Advisor
University of California Nutrition Policy Institute

Elyse Homel Vitale, MPH
Executive Director
CCFP Roundtable

Frank B. Hu, MD, PhD
Professor and Chair
Department of Nutrition
Harvard T.H. Chan School of Public Health
Member, 2015 Dietary Guidelines Advisory Committee

Rachel K. Johnson, PhD, MPH, RD, FAHA
Professor of Nutrition, Emeritus
The University of Vermont
Member, 2000 Dietary Guidelines Advisory Committee

Victoria Keeton MS, RN, CPNP-PC, CNS
Clinical Professor
Specialty Coordinator, PNP-PC Program
PNP, ZSFG Children's Health Center
PNP, La Clinica de la Raza Roosevelt School-Based Health
UCSF Dept of Family Health Care Nursing

Hannah Lawman, PhD
Affiliate Faculty
Drexel University

Stephanie Leonard, PhD, MS
Instructor of Epidemiology/Biostatistics
Department of Obstetrics and Gynecology
Stanford University School of Medicine

Judy Lester, MS, RDN, CSG, LDN, CCTD
Clinical Dietitian
UNC Health Care

Bonnie Liebman, MS
Director of Nutrition
Center for Science in the Public Interest

Robert Lustig, MD, MSL
Emeritus Professor of Pediatrics
Division of Endocrinology
University of California, San Francisco

Vasanti Malik, ScD
Assistant Professor, Nutritional Sciences
University of Toronto
Adjunct Assistant Professor, Nutrition
Harvard T.H. Chan School of Public Health

JoAnn E. Manson, MD, DrPH
Professor of Medicine and the Michael and Lee Bell Professor of Women's Health
Harvard Medical School
Professor, Department of Epidemiology
Harvard T.H. Chan School of Public Health
Chief, Division of Preventive Medicine
Brigham and Women's Hospital

Barbara Millen, DrPH, RD
Chair, 2015 Dietary Guidelines Advisory Committee

Michael Miller, MD, FACC, FAHA
Professor of Cardiovascular Medicine, Epidemiology & Public Health
University of Maryland School of Medicine

Amy Mottl, MD, MPH
Associate Professor of Medicine
Division of Nephrology and Hypertension
University of North Carolina School of Medicine

Marion Nestle, PhD, MPH
Professor
New York University
Member, 1995 Dietary Guidelines Advisory Committee

Natalie Price, MPH
Nutrition, Family and Consumer Sciences Advisor
University of California Division of Agriculture and Natural Resources

Francisco Ramos-Gomez, DDS, MS, MPH
Professor
Section of Pediatric Dentistry
UCLA School of Dentistry

Sarah Reinhardt, MPH, RD
Lead Analyst, Food Systems and Health
Food and Environment Program
Union of Concerned Scientists

Tom Rifai, MD FACP
Assistant Professor of Medicine
Wayne State University

Eric Rimm, ScD
Professor of Epidemiology and Nutrition
Harvard T.H. Chan School of Public Health
Member, 2010 Dietary Guidelines Advisory Committee

Lorrene Ritchie, PhD, RD
Director and Cooperative Extension Specialist
University of California Nutrition Policy Institute

Jordi Salas Salvadó, MD, PhD
Professor of Nutrition
Rovira i Virgili University, Spain

Laura A. Schmidt, PhD, MSW, MPH
Professor, Philip R. Lee Institute for Health Policy Studies and
Department of Anthropology, History and Social Medicine
School of Medicine
University of California at San Francisco

Marlene Schwartz, PhD
Director, Rudd Center for Food Policy and Obesity
University of Connecticut

Tia Shimada, MPH
Director of Programs
California Food Policy Advocates

Karen Sokal-Gutierrez, MD, MPH
Clinical Professor
UC Berkeley-UCSF Joint Medical Program
UC Berkeley Interdisciplinary MPH Program
University of California, Berkeley, School of Public Health

Mary Story PhD, RD
Professor, Global Health, and Family Medicine and Community Health
Duke University
Member, 2015 Dietary Guidelines Advisory Committee

Meir Stampfer, MD, DrPH
Professor of Medicine
Harvard Medical School
Professor of Epidemiology and Nutrition
Harvard T.H. Chan School of Public Health
Member, 2000 Dietary Guidelines Advisory Committee

Lucy Martinez Sullivan, MBA
Executive Director
Feed the Truth

May Lynn Tan, DrPH, MHS
Assistant Deputy Director
Evidence for Action
A National Program of the Robert Wood Johnson Foundation
at The University of California, San Francisco

Alison Tovar, PhD, MPH
Associate Professor
Department of Nutrition and Food Sciences
University of Rhode Island

Nikki Highsmith Vernick, MPA
President & CEO
Horizon Foundation of Howard County

Miriam B. Vos, MD, MSPH
Professor of Pediatrics, Division of GI, Hepatology and Nutrition
Co-Director, Center for Clinical & Translational Research
Emory University School of Medicine
Director, Pediatric Fatty Liver Program and Attending Hepatologist
Children's Healthcare of Atlanta

Dianne S. Ward, EdD
Professor, Department of Nutrition
Gillings School of Global Public Health
University of North Carolina at Chapel Hill

Walter Willett MD, DrPH
Professor of Epidemiology and Nutrition
Harvard T.H. Chan School of Public Health

Jean A. Welsh, PhD, MPH, RN
Associate Professor
Department of Pediatrics
Emory University School of Medicine