

IN THE SUPREME COURT OF PENNSYLVANIA

Docket Nos. 2, 3 EAP 2018

LORA JEAN WILLIAMS, et al.
Plaintiffs-Appellants,

v.

CITY OF PHILADELPHIA and FRANK BRESLIN, in his official capacity as
Commissioner of the Philadelphia Department of Revenue,
Defendants-Appellees.

**BRIEF OF AMERICAN HEART ASSOCIATION, AMERICAN CANCER
SOCIETY CANCER ACTION NETWORK, AMERICAN MEDICAL
ASSOCIATION, FOOD TRUST, HEALTHY FOOD AMERICA,
MOMSRISING.ORG, NATIONAL ALLIANCE FOR HISPANIC
HEALTH, NATIONAL ASSOCIATION OF CHRONIC DISEASE
DIRECTORS, NATIONAL ASSOCIATION OF COUNTY AND CITY
HEALTH OFFICIALS, NATIONAL ASSOCIATION OF LOCAL BOARDS
OF HEALTH, NOTAH BEGAY III FOUNDATION, PENNSYLVANIA
ASSOCIATION OF STAFF NURSES AND ALLIED PROFESSIONALS,
PENNSYLVANIA MEDICAL SOCIETY, PHILADELPHIA COUNTY
MEDICAL SOCIETY, PHYSICIANS FOR SOCIAL RESPONSIBILITY
PHILADELPHIA, AND PUBLIC HEALTH LAW CENTER
AS *AMICI CURIAE* IN SUPPORT OF APPELLEES**

On appeal from the June 14, 2017 Orders of the Commonwealth Court of
Pennsylvania, Nos. 2077, 2078 CD 2016

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April 13, 2018

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TABLE OF CITATIONS

Cases

Blair Candy Co. v. Altoona Area School District,
613 A.2d 159 (Pa. 1992)23

Commonwealth v. National Biscuit Co.,
36 A.2d 821 (Pa. 1957)23

Statutes

53 P.S. § 15971(a).....24

Regulatory materials

81 Fed. Reg. 33742 (May 27, 2016)12

Other authorities

American Heart Association,
Added Sugars Add to Your Risk of Dying from Heart Disease2, 12

Miguel Alonso-Alonso et al., *Food Reward System: Current Perspectives and Future
Research Needs*, 73 NUTRITION REV. 296 (2015)10

Nicholas Bakalar, *Obesity Is Linked to At Least 13 Types of Cancer*, N.Y. TIMES
(Aug. 24, 2016)14

Rob Beaglehole, *Dentists and Sugary Drinks: A Call to Action*,
146 J. AM. DENTAL ASS’N 73 (2015)20

Emilia J. Benjamin, et al., *Heart Disease and Stroke Statistics – 2018 Update:
A Report from the American Heart Association*,
137 CIRCULATION (Issue 12) e67 (2018)2, 16, 19

Eduardo Bernabé et al., *Sugar-Sweetened Beverages and Dental Caries in Adults:
A 4-Year Prospective Study*, 42 J. DENTISTRY 952 (2014)20

Centers for Disease Control and Prevention, *Communities Putting Prevention
to Work, Philadelphia, Pennsylvania: Obesity and Tobacco Control* (2013)21

Liwei Chen et al., *Reducing Consumption of Sugar-Sweetened Beverages Is Associated
with Reduced Blood Pressure: A Prospective Study among United States Adults*,
121 CIRCULATION 2398 (2010)17

Liwei Chen et al., *Reduction in Consumption of Sugar-Sweetened Beverages Is
Associated with Weight Loss: The PREMIER Trial*,
89 AM. J. CLINICAL NUTRITION 1299 (2009) 7

Jonathan Cummings, <i>Obesity and Unhealthy Consumption: The Public-Policy Case for Placing a Federal Sin Tax on Sugary Beverages</i> , 34 SEATTLE U. L. REV. 273 (2010)	22
Doreen DiMeglio & Richard Mattes, <i>Liquid Versus Solid Carbohydrate: Effects on Food Intake and Body Weight</i> , 24 INT’L J. OBESITY & RELATED METABOLIC DISORDERS 794 (2000)	9
Kiyah J. Duffey et al., <i>Drinking Caloric Beverages Increases the Risk of Adverse Cardiometabolic Outcomes in the Coronary Artery Risk Development in Young Adults (CARDIA) Study</i> , 92 AM. J. CLINICAL NUTRITION 954 (2010).....	8
Eric A. Finkelstein et al., <i>Annual Medical Spending Attributable To Obesity: Payer- And Service-Specific Estimates</i> , 28 Health Affairs w822 (2009).....	21
Julie E. Flood-Obbagy & Barbara J. Rolls, <i>The Effect of Fruit in Different Forms on Energy Intake and Satiety at a Meal</i> , 52 APPETITE 416 (2009)	9
Teresa T. Fung et al., <i>Sweetened Beverage Consumption and Risk of Coronary Heart Disease in Women</i> , 89 AM. J. CLINICAL NUTRITION 1037 (2009)	16, 17
Steven Gortmaker et al., CHOICES Project at Harvard T.H Chan School of Public Health, <i>Brief: Cost-effectiveness of a Sugar-Sweetened Beverage Excise Tax in Philadelphia, PA</i> (2016).....	22
Daphne P. Guh et al., <i>The Incidence of Co-Morbidities Related to Obesity and Overweight: A Systematic Review and Meta-Analysis</i> , 9 BMC PUB. HEALTH 88 (2009).....	13
Alexander Hamilton, THE REPORTS OF ALEXANDER HAMILTON (Jacob E. Cooke ed., 1964).....	3
Frank Hu, <i>Resolved: There Is Sufficient Scientific Evidence That Decreasing Sugar-Sweetened Beverage Consumption Will Reduce the Prevalence of Obesity and Obesity-Related Diseases</i> , 14 OBESITY REV. 606 (2013)	<i>passim</i>
Michael F. Jacobson, Center for Science in the Public Interest, <i>Liquid Candy: How Soft Drinks Are Harming Americans’ Health</i> (2005)	12
Janet James et al., <i>Preventing Childhood Obesity by Reducing Consumption of Carbonated Drinks: Cluster Randomised Controlled Trial</i> , 328 BRIT. MED. J. 1237 (2004).....	7
Rachel K. Johnson et al., <i>AHA Scientific Statement, Dietary Sugars Intake and Cardiovascular Health</i> , 120 CIRCULATION 1011 (2009)	1
Lawrence de Koning et al., <i>Sugar Sweetened and Artificially Sweetened Beverage Consumption and Risk of Type 2 Diabetes in Men</i> , 93 AM. J. CLINICAL NUTRITION 1321 (2011).....	18

Lawrence de Koning et al., <i>Sweetened Beverage Consumption, Incident Coronary Heart Disease, and Biomarkers of Risk in Men</i> , 125 CIRCULATION 1735 (2012).....	16
Lawrence H. Kushi et al., American Cancer Society 2010 Nutrition and Physical Activity Guidelines Advisory Committee, <i>American Cancer Society guidelines on nutrition and physical activity for cancer prevention</i> , 62 CA: CANCER J. CLINICIANS 30 (2012)	13, 14
Béatrice Lauby-Secretan et al., <i>Body Fatness and Cancer — Viewpoint of the IARC Working Group</i> , 375 NEW ENG. J. MED. 794 (2016).....	14
Vasanti S. Malik & Frank B. Hu, <i>Fructose and Cardiometabolic Health: What the Evidence From Sugar-Sweetened Beverages Tells Us</i> , 66 J. AM. COLL. CARDIOLOGY 1615 (2015).....	10
Vasanti S. Malik et al., <i>Intake of Sugar-Sweetened Beverages and Weight Gain: A Systematic Review</i> , 84 AM. J. CLINICAL NUTRITION 274 (2006)	9
Vasanti S. Malik et al., <i>Sugar-Sweetened Beverages and Risk of Metabolic Syndrome and Type 2 Diabetes</i> , 33 DIABETES CARE 2477 (2010).....	10, 17
Vasanti S. Malik et al., <i>Sugar-Sweetened Beverages and Weight Gain in Children and Adults</i> , 98 AM. J. CLINICAL NUTRITION 1084 (2013)	7
Vasanti S. Malik et al., <i>Sugar-Sweetened Beverages, Obesity, Type 2 Diabetes Mellitus, and Cardiovascular Disease Risk</i> , 121 CIRCULATION 1356 (2010).....	18
Ashleigh L. May et al., <i>Prevalence of Cardiovascular Disease Risk Factors Among US Adolescents, 1999-2008</i> , 129 PEDIATRICS 1035 (2012).....	14
Susan Mayne, U.S. Food & Drug Administration, <i>Putting Added Sugars Into Context for Consumers</i> , FDA Voice, July 24, 2015.....	2
Renata Micha et al., <i>Association between dietary factors and mortality from heart disease, stroke, and type 2 diabetes in the United States</i> . 317 JAMA 912 (2017)	5
Alessio Moneleone et al., <i>Responses of Peripheral Endocannabinoids and Endocannabinoid-Related Compounds to Hedonic Eating in Obesity</i> , 55 EUR. J. NUTRITION 1799 (2016)	10
National Center for Chronic Disease Prevention & Health Promotion, <i>National Diabetes Statistics Report, 2017</i> (2017)	19
Marion Nestle, <i>Food Industry Funding of Nutrition Research: The Relevance of History for Current Debates</i> , 176 JAMA INTERN. MED. 1685 (2016)	4
Anahad O’Connor, <i>Coca-Cola Funds Scientists Who Shift Blame for Obesity Away From Bad Diets</i> , N.Y. TIMES, Aug. 9, 2015.....	4

Anahad O'Connor, <i>How the Sugar Industry Shifted Blame to Fat</i> , N.Y. TIMES, Sept. 12, 2016.....	4
S. Jay Olshansky et al., <i>A Potential Decline in Life Expectancy in the United States in the 21st Century</i> , 352 NEW ENG. J. MED. 1138 (2005)	15
An Pan & Frank B. Hu, <i>Effects of Carbohydrates on Satiety: Differences Between Liquid and Solid Food</i> , 14 CURRENT OPINION IN CLINICAL NUTRITION & METABOLIC CARE 385 (2011).....	10
An Pan et al., <i>Plain-Water Intake and Risk of Type 2 Diabetes in Young and Middle-Aged Women</i> , 95 AM. J. CLINICAL NUTRITION 1454 (2012)	17
Philadelphia Department of Public Health, <i>2017 Community Health Assessment</i> (Sept. 2017)	5, 20
Asher Rosinger et al., Centers for Disease Control & Prevention, National Center for Health Statistics Data Brief No. 270, <i>Sugar-sweetened Beverage Consumption Among U.S. Adults, 2011–2014</i> (2017).....	2, 12
Asher Rosinger et al., Centers for Disease Control & Prevention, National Center for Health Statistics Data Brief No. 271, <i>Sugar-sweetened Beverage Consumption Among U.S. Youth, 2011–2014</i> (2017).....	2
Lauren Rossen & Eric Rossen, OBESITY 101 (2012).....	13
Margot Sanger-Katz, <i>The Decline of ‘Big Soda’</i> , N.Y. TIMES, Oct. 2, 2015.....	25
Matthias B. Schulze et al., <i>Sugar-Sweetened Beverages, Weight Gain, and Incidence of Type 2 Diabetes in Young and Middle-Aged Women</i> , 292 J. AM. MED. ASS’N 927 (2004).....	11, 18
Aubrey Sheiham & W. Phillip James, <i>A New Understanding of the Relationship Between Sugars, Dental Caries and Fluoride Use</i> , 17 PUB. HEALTH NUTRITION 2176 (2014).....	19
Aubrey Sheiham & W. Phillip James, <i>Diet and Dental Caries: The Pivotal Role of Free Sugars Reemphasized</i> , 94 J. DENTAL RES. 1341 (2015)	19
Nancy Montgomery, <i>2016 marks first year without combat amputation since Afghan, Iraq wars began</i> , STARS AND STRIPES, March 18, 2017, https://perma.cc/AM9D-522L	19
Lisa Te Morenga et al., <i>Dietary Sugars and Body Weight: Systematic Review and Meta-Analyses of Randomised Controlled Trials and Cohort Studies</i> , 346 BRIT. MED. J. e7492 (2012).....	7, 8, 11
U.S. Department of Agriculture and U.S. Department of Health & Human Services, <i>Dietary Guidelines for Americans 2015–2020</i> (2015).....	10

U.S. Department of Agriculture, <i>Scientific Report of the 2015 Dietary Guidelines Advisory Committee</i>	6, 17
U.S. Department of Health and Human Services, <i>The Surgeon General’s Call To Action To Prevent and Decrease Overweight and Obesity 2001</i> (2001)	2, 13
U.S. Department of Health and Human Services, <i>The Surgeon General’s Vision for a Healthy and Fit Nation 2010</i> (2010)	2
Rob M. van Dam et al., <i>The Relationship between Overweight in Adolescence and Premature Death in Women</i> , 145 ANNALS INTERNAL MED. 91 (2006).....	14
Lenny R. Vartanian et al., <i>Effects of Soft Drink Consumption on Nutrition and Health: A Systematic Review and Meta-Analysis</i> , 97 AM. J. PUB. HEALTH 667 (2007)	9, 10
Miriam Vos et al., <i>Added Sugars and Cardiovascular Disease Risk in Children</i> , 134 CIRCULATION 439 (2016)	9
Ivana Vucenik & Joseph P. Stains, <i>Obesity and Cancer Risk: Evidence, Mechanisms, and Recommendations</i> , 1271 ANNALS N.Y. ACAD. SCI. 37 (2012).....	13
Zachary J. Ward et al., <i>Simulation of growth trajectories of childhood obesity into adulthood</i> , 377 N ENGL. J MED. 2145 (2017)	15
Gail Woodward-Lopez et al., <i>To What Extent Have Sweetened Beverages Contributed to the Obesity Epidemic?</i> 14 PUB. HEALTH NUTR. 499 (2010).....	6, 11, 12
Quanhe Yang et al., <i>Added Sugar Intake and Cardiovascular Diseases Mortality Among US Adults</i> , 174 J. AM. MED. ASS’N INTERNAL MED. 516 (2014)	16
Brenda Yelvington, <i>Excise Taxes in Historical Perspective</i> , in TAXING CHOICE: THE PREDATORY POLITICS OF FISCAL DISCRIMINATION (William F. Shughart II ed., 1997)	3

STATEMENT OF INTEREST OF *AMICI CURIAE*¹

Amici are nonprofit organizations dedicated to the public health of all persons. Given their expertise in both health sciences and public policy, *amici* submit this brief to inform the Court about the devastating health consequences caused by the overconsumption of sugar-sweetened beverages (SSBs). Scientific evidence links SSBs to increased risk of heart disease, type 2 diabetes, obesity, dental caries, and various other diseases. Philadelphia acted within its authority in placing a nonduplicative tax on the distribution of a truly dangerous product into the City's borders. The en banc decision of the Commonwealth Court should be affirmed.

INTRODUCTION AND SUMMARY OF ARGUMENT

A 12-ounce can of cola has over 8 teaspoons of sugar in it.² The large quantities of sugar in soda, and in other beverages covered by the City's distribution tax, have led to dramatic public health problems. Despite the sugar industry's effort to undermine and confuse the science, the evidence is now unequivocal: Sugar-sweetened beverages (SSBs) can increase risks for heart disease, type 2 diabetes, obesity, tooth decay, and other health problems plaguing Philadelphia and the country at large.

¹ No counsel for a party authored this brief in whole or in part and no person other than *amici* and their counsel made a monetary contribution to its preparation or submission.

² Rachel K. Johnson et al., *AHA Scientific Statement, Dietary Sugars Intake and Cardiovascular Health*, 120 CIRCULATION 1011, 1017 (2009), at <https://perma.cc/7FKS-BDCH>.

Though there are certainly unhealthy foods as well, SSBs have played an outsized role in harming public health. Nearly two-thirds of youth and half of adults in the U.S. consume SSBs each day,³ and Philadelphians now consume on average half a liter a day⁴—well above the FDA and American Heart Association’s recommended limits for added sugars.⁵ Today, heart disease is the leading cause of death in the world and in the United States.⁶ And the obesity “epidemic” threatens the progress made in increasing the quality and years of healthy life for Americans.⁷

Given the toll that SSBs have taken on the health of Philadelphians, it is unsurprising that the City decided to tax their distribution within its borders. And given that taxes on products or transactions that have negative externalities are a historic tool that governments use to raise revenue for the public good, it is similarly unsurprising that the Court of Common Pleas and the Commonwealth

³ Asher Rosinger et al., Centers for Disease Control & Prevention, Nat’l Center for Health Stat. Data Brief No. 271, *Sugar-sweetened Beverage Consumption Among U.S. Youth, 2011–2014* (2017).

⁴ City of Philadelphia, Public Health Dep’t, *Sugar Sweetened Beverages and You*, <https://perma.cc/D7Y3-L22Q> (last visited Mar. 8, 2018).

⁵ A 20-ounce bottle of soda by itself exceeds the FDA’s recommended daily limit of 50 grams of added sugars. Susan Mayne, U.S. Food & Drug Admin., *Putting Added Sugars Into Context for Consumers*, FDA Voice, July 24, 2015, at <https://perma.cc/L9Q5-WHQX>. See American Heart Association, *Added Sugars Add to Your Risk of Dying from Heart Disease*, at <http://bit.ly/2gFz5qs> (last visited Mar. 8, 2017).

⁶ Emilia J. Benjamin, et al., *Heart Disease and Stroke Statistics – 2018 Update: A Report from the American Heart Association*, 137 CIRCULATION (Issue 12) e67 (2018).

⁷ U.S. Dep’t of Health and Human Servs., *The Surgeon General’s Vision for a Healthy and Fit Nation 2010*, 1 (2010).

Court upheld the tax’s validity. Alexander Hamilton cited fiscal and health justifications for imposing a tax on whiskey shortly after the American Revolution.⁸ These taxes are a well-established tool of local and federal governments alike; they are just new to soda.⁹

Despite this long history, and the lower courts’ sound analysis of the City’s taxing authority, the plaintiffs attempt to paint the City’s basic distribution tax as an unlawful power-grab preempted by state law. But it is instead their position (and their *amici*’s) that would upset the balance of state and local governance. Their legal theory would invalidate not only this tax, but potentially many other taxes and *nontax* initiatives that further public health by encouraging citizens to reduce their consumption of unhealthy products. Such arguments, if adopted, would tie the City’s hands when it comes to public health. This Court should reject them.

ARGUMENT

I. Sugar-sweetened beverages are associated with increased risk of heart disease, type 2 diabetes, obesity, and other chronic diseases harming the health of Philadelphians.

Recently discovered internal documents from key players in the sugar

⁸ Brenda Yelvington, *Excise Taxes in Historical Perspective*, in TAXING CHOICE: THE PREDATORY POLITICS OF FISCAL DISCRIMINATION 33, 33 (William F. Shughart II ed., 1997) (“[T]he consumption of ardent spirits particularly, no doubt very much on account of their cheapness, is carried on to an extreme, which is truly to be regretted, as well in regard to the health and the morals, as to the economy of the community.”) (quoting Alexander Hamilton, THE REPORTS OF ALEXANDER HAMILTON 34 (Jacob E. Cooke ed., 1964)).

⁹ Though this *amicus* brief focuses only on sugar-sweetened beverages, the City acted within its authority in also including artificially sweetened beverages within its distribution tax.

industry reveal that the industry has long attempted to obfuscate the science concerning the harms of sugar consumption, “derail[ing] the discussion about sugar for decades.”¹⁰ Starting in the 1960s, “a sugar trade association not only paid for but also initiated and influenced research expressly to exonerate sugar as a major risk factor for coronary heart disease.”¹¹ A recent investigation reported that the beverage industry paid millions of dollars to fund research minimizing the link between SSBs and obesity.¹² Indeed, the sugar industry’s efforts have been deemed “reminiscent of tactics used by the tobacco industry, which enlisted experts to become ‘merchants of doubt.’”¹³

But there is no longer any doubt. Scientific studies, including meta-analyses of randomized controlled trials and large-cohort longitudinal studies, demonstrate that sugar—and specifically SSBs—are a key culprit harming the health of Philadelphians and people across the nation. Specifically, the scientific studies demonstrate that consumption of SSBs is associated with increased risk of heart disease, type 2 diabetes, obesity, tooth decay, and myriad other health problems. Indeed, despite questions raised by the beverage industry, a recent review

¹⁰ Anahad O’Connor, *How the Sugar Industry Shifted Blame to Fat*, N.Y. TIMES, Sept. 12, 2016, at <http://nyti.ms/2c5GXmW>; see also Anahad O’Connor, *Coca-Cola Funds Scientists Who Shift Blame for Obesity Away From Bad Diets*, N.Y. TIMES, Aug. 9, 2015, at <http://nyti.ms/1KZUZ4e>.

¹¹ Marion Nestle, *Food Industry Funding of Nutrition Research: The Relevance of History for Current Debates*, 176 JAMA INTERN. MED. 1685, 1685 (2016), at <http://bit.ly/2fOiZ1T>.

¹² *Id.* at 1685.

¹³ O’Connor, *Coca-Cola Funds Scientists Who Shift Blame*, *supra* n.10.

concluded that it is now established by “compelling” scientific evidence “that SSB intake is causally related to increased risk of obesity.”¹⁴ And the connection between SSBs and poor health outcomes has been recognized by the U.S. Surgeon General,¹⁵ the CDC, FDA, every other pertinent federal agency, and by a broad consensus of national and international public health organizations, including *amici*.¹⁶ The result is fatal: Approximately 40,000 deaths from cardiovascular disease and 10,000 deaths from type 2 diabetes were attributed to sugar-sweetened beverage overconsumption in 2012 alone.¹⁷

Philadelphia, unfortunately, has some of the highest rates of heart disease, type 2 diabetes, and obesity among the nation’s largest cities.¹⁸ It is no wonder then that the City chose to single out those profiting from the distribution of SSBs to offset these harms and raise revenue for the public good.

¹⁴ Frank Hu, *Resolved: There Is Sufficient Scientific Evidence That Decreasing Sugar-Sweetened Beverage Consumption Will Reduce the Prevalence of Obesity and Obesity-Related Diseases*, 14 *OBESITY REV.* 606, 612 (2013), at <http://bit.ly/2lhrnx>.

¹⁵ The United States Surgeon General has placed “reduc[ing] consumption of sodas and juices with added sugars” high on the list of changes needed to improve the nation’s health. *The Surgeon General’s Vision for a Healthy and Fit Nation, Opportunities for Prevention (2010)*, at <https://perma.cc/JYU7-4QYJ>.

¹⁶ Hu, *supra* n.14, at 612.

¹⁷ Renata Micha et al., *Association between dietary factors and mortality from heart disease, stroke, and type 2 diabetes in the United States*. 317 *JAMA* 912, 918 (Table 2 and Results) (2017).

¹⁸ Philadelphia Dep’t of Public Health, *2017 Community Health Assessment* (Sept. 2017), at slides 54, 65, 74, available at <https://perma.cc/52CL-RVXV>.

A. Scientific evidence demonstrates the causal link between consumption of sugar-sweetened beverages and obesity.

The evidence is clear. The overconsumption of SSBs is a causal factor—and one of the most important factors—in our country’s obesity epidemic.

1. *The Studies.* “All lines of evidence consistently support the conclusion that the consumption of sweetened beverages has contributed to the obesity epidemic.”¹⁹ Specifically, the strong link between SSB consumption and weight gain “meets all key criteria commonly used to evaluate causal relationships in epidemiology.”²⁰ As the 2015 Dietary Guidelines Advisory Committee (DGAC)—the federal government’s foremost advisory body on nutrition—concluded, there is “[s]trong and consistent evidence . . . that intake of added sugars from food and/or sugar-sweetened beverages [is] associated with excess body weight.”²¹

The evidence comes from the most respected types of scientific studies. *First*, randomized controlled trials demonstrate that SSB consumption leads to weight gain. Randomized controlled trials are considered the gold standard of scientific evidence because they take two similar groups of individuals and evaluate the impact of randomly changing just one variable between the two groups—here, the

¹⁹ Gail Woodward-Lopez et al., *To What Extent Have Sweetened Beverages Contributed to the Obesity Epidemic?* 14 PUB. HEALTH NUTR. 499, 499 (2010), at <http://bit.ly/2h08PtZ>.

²⁰ Hu, *supra* n.14, at 612.

²¹ U.S. Dep’t of Agriculture, *Scientific Report of the 2015 Dietary Guidelines Advisory Committee* [DGAC Report], Part D, Ch. 6, at 20, at <http://bit.ly/1MxhpbX>.

consumption of SSBs. “[C]ontrolled trials provide consistent evidence that increasing or decreasing intake of dietary sugars [particularly liquid sugars] . . . is associated with corresponding changes in body weight.”²² For example, in a randomized trial involving more than 600 children, modestly decreasing SSB intake was found to reduce the number of overweight and obese children after one year.²³ The same is true for adults. An 18-month randomized controlled study of 810 adults demonstrated that “a reduction in liquid calorie intake was significantly associated with weight loss at both 6 and 18 months.”²⁴ Critically, this study demonstrated that SSBs had a greater impact on weight gain (and loss) than solid calorie intake.²⁵

Second, large prospective cohort studies—which track a population over time—further demonstrate “a link between SSB consumption and development of obesity.”²⁶ As a review by Harvard experts concluded, “Findings from well-powered prospective cohorts have consistently shown a significant association . . . between SSB consumption and long-term weight gain and risk of type 2

²² Lisa Te Morenga et al., *Dietary Sugars and Body Weight: Systematic Review and Meta-Analyses of Randomised Controlled Trials and Cohort Studies*, 346 BRIT. MED. J. e7492, at 5 (2012), at <http://bit.ly/2h9W94a>.

²³ Janet James et al., *Preventing Childhood Obesity by Reducing Consumption of Carbonated Drinks: Cluster Randomised Controlled Trial*, 328 BRIT. MED. J. 1237, 1238 (2004).

²⁴ Liwei Chen et al., *Reduction in Consumption of Sugar-Sweetened Beverages Is Associated with Weight Loss: The PREMIER Trial*, 89 AM. J. CLINICAL NUTRITION 1299, 1304 (2009).

²⁵ *Id.*

²⁶ Vasanti S. Malik et al., *Sugar-Sweetened Beverages and Weight Gain in Children and Adults*, 98 AM. J. CLINICAL NUTRITION 1084, 1084 (2013), at <http://bit.ly/2h0pD3P>.

diabetes.”²⁷ For example, looking at data over a 20-year period, researchers observed that a higher “baseline consumption” of SSBs “was associated with a significant increase in the risk of incident high [waist circumference].”²⁸ Significantly, “[t]he associations observed in this study . . . remained after control[ling] for total calories from foods and inclusion of major food groups.”²⁹ That is, among the population studied for 20 years, even controlling for the *sheer volume* of calories, those who consumed more calories from beverages had more weight gain, “suggesting an independent effect of the caloric beverages.”³⁰

Lastly, meta-analyses confirm the contribution of SSBs to weight gain and obesity. Meta-analyses are an important scientific tool because they aggregate the results from a wide range of studies to paint a picture of the research conclusions overall. These meta-analyses point in the same direction: SSBs increase the risk for obesity. One study using World Health Organization (WHO) meta-analysis methodology found strong evidence that the “intake of free sugars or sugar sweetened beverages is a determinant of body weight.”³¹ Another high-quality meta-analysis concluded: “Overall, results from our review support a link between

²⁷ Hu, *supra* n.14, at 606.

²⁸ Kiyah J. Duffey et al., *Drinking Caloric Beverages Increases the Risk of Adverse Cardiometabolic Outcomes in the Coronary Artery Risk Development in Young Adults (CARDIA) Study*, 92 AM. J. CLINICAL NUTRITION 954, 956 (2010).

²⁹ *Id.* at 958.

³⁰ *Id.*

³¹ Te Morenga et al., *supra* n.22, at 1, 5, 7.

the consumption of sugar-sweetened beverages and the risks of over-weight and obesity.”³² A recent analysis of the literature by the American Heart Association similarly found that “[h]igher SSB and added sugars intake has been strongly linked to excess weight gain and an increased risk of obesity” in children and adolescents.³³

2. Causation Explained. Two mechanisms explain why consumption of SSBs increases the risk of obesity. First, research has confirmed that beverages satisfy hunger less than solid foods of the same caloric value, so those who consume SSBs don’t get full, and then don’t compensate by correspondingly reducing their calorie intake from solid foods.³⁴ The result—overall caloric intake is simply higher. Indeed, scientific studies “provide clear and consistent evidence that people do not compensate for the added energy they consume in soft drinks by reducing their intake of other foods, resulting in increased total energy intakes.”³⁵ Additionally, there is some evidence that the increase in energy intake associated with soft drink consumption is even greater than what can be accounted for by the beverages

³² Vasanti S. Malik et al., *Intake of Sugar-Sweetened Beverages and Weight Gain: A Systematic Review*, 84 AM. J. CLINICAL NUTRITION 274, 282 (2006).

³³ Miriam Vos et al., *Added Sugars and Cardiovascular Disease Risk in Children*, 134 CIRCULATION 439, at 8 (2016).

³⁴ Doreen DiMeglio & Richard Mattes, *Liquid Versus Solid Carbohydrate: Effects on Food Intake and Body Weight*, 24 INT’L J. OBESITY & RELATED METABOLIC DISORDERS 794 (2000), at <http://bit.ly/2hkAdUg>; Julie E. Flood-Obbagy & Barbara J. Rolls, *The Effect of Fruit in Different Forms on Energy Intake and Satiety at a Meal*, 52 APPEITITE 416 (2009), at <http://bit.ly/2hpi6G>.

³⁵ Lenny R. Vartanian et al., *Effects of Soft Drink Consumption on Nutrition and Health: A Systematic Review and Meta-Analysis*, 97 AM. J. PUB. HEALTH 667, 669 (2007).

alone, suggesting that food energy intake is also higher.³⁶ In other words, scientists have found that for many people—in particular for overweight populations—sugary drinks actually stimulate cravings to eat *more*.³⁷ Through either of these mechanisms, SSB consumption results in an overall increase in calories consumed, thereby leading to weight gain.³⁸

Secondly, there is evidence that SSBs may contribute to the development of diabetes and cardiovascular risk independently through noncalorically-related metabolic effects of sugar.³⁹ SSBs are the largest source of added sugar in the American diet,⁴⁰ sweetened primarily with high-fructose corn syrup in the U.S.⁴¹ Consuming high intakes of fructose may increase health risks through adverse glycemic effects and increased metabolism of fructose in the liver.⁴² Consuming

³⁶ *Id.* at 669.

³⁷ Alessio Moneleone et al., *Responses of Peripheral Endocannabinoids and Endocannabinoid-Related Compounds to Hedonic Eating in Obesity*, 55 EUR. J. NUTRITION 1799, 1800 (2016), at <http://bit.ly/2hplXWf>; Miguel Alonso-Alonso et al., *Food Reward System: Current Perspectives and Future Research Needs*, 73 NUTRITION REV. 296, 296-98 (2015), at <http://bit.ly/2hpwu3R>.

³⁸ Vasanti S. Malik et al., *Sugar-Sweetened Beverages and Risk of Metabolic Syndrome and Type 2 Diabetes*, 33 DIABETES CARE 2477, 2482 (2010), at <http://bit.ly/2gGrrMD>; An Pan & Frank B. Hu, *Effects of Carbohydrates on Satiety: Differences Between Liquid and Solid Food*, 14 CURRENT OPINION IN CLINICAL NUTRITION & METABOLIC CARE 385 (2011), at <http://bit.ly/2ggPAx6>.

³⁹ Vasanti S. Malik & Frank B. Hu, *Fructose and Cardiometabolic Health: What The Evidence From Sugar-Sweetened Beverages Tells Us*, 66 J. AM. COLL. CARDIOLOGY (Issue 14) 1615, 1620 (Oct. 2015).

⁴⁰ U.S. Dep't of Agriculture and U.S. Dep't of Health & Human Serv., *Dietary Guidelines for Americans 2015-2020*, 55, Fig. 2-10 (2015), <https://perma.cc/ZW5J-9FPX> (sugar-sweetened beverages constitute “39%” of added sugars in the American diet).

⁴¹ Malik & Hu, *supra* n. 39, at 1616.

⁴² *Id.* at 1623.

excess fructose may lead to hepatic uric acid production and the accumulation of visceral adipose tissue and ectopic fat, thereby increasing the risk of diabetes and cardiovascular disease.⁴³

To be sure, SSBs are not the only culprits in the obesity epidemic. But there is still reason to be particularly concerned with the outsized role that SSBs play in harming public health. For one thing, the evidence supporting the association between sweetened beverage intake and excess weight is stronger than for any other single type of food or beverage.⁴⁴ And unlike non-viscous beverages, high-sugar solid foods can at least fill one up and so don't contribute to weight gain with the same magnitude. Rather, soda and other SSBs subject to Philadelphia's tax provide no or little nutritional benefit other than energy and water. Drinking just one SSB per day is associated with an 80% increased risk for women of developing diabetes and a 55% increased risk of obesity for children.⁴⁵

Another reason it makes sense to focus on SSBs is that they are widely consumed and have a correspondingly disproportionate role in the obesity crisis. SSBs by themselves compose 39% of all added sugar intake in the American diet;

⁴³ *Id.* at 1620–21.

⁴⁴ Woodward-Lopez et al., *supra* n.19, at 505.

⁴⁵ Matthias B. Schulze et al., *Sugar-Sweetened Beverages, Weight Gain, and Incidence of Type 2 Diabetes in Young and Middle-Aged Women*, 292 J. AM. MED. ASS'N 927, 927 (2004); Te Morenga et al., *supra* n.22, at 5.

by some calculations they are the largest source of calories of any food group,⁴⁶ and they are the largest source of added sugar in the American diet.⁴⁷ Soda, specifically, “provides the average 12- to 19-year-old boy with about 15 teaspoons of refined sugars a day and the average girl with about 10 teaspoons a day.”⁴⁸ “Those amounts roughly equal the government’s recommended limits for teens’ sugar consumption from *all* foods.”⁴⁹ And “[c]onsumption is particularly high among African-Americans, Hispanics and low-income individuals—the groups with disproportionately high prevalence of obesity and obesity-related chronic diseases.”⁵⁰

Given the ubiquity of SSBs in the American diet, “a simple analysis of national (US) dietary intake data found that the increase in sweetened beverage intake accounted for 43% of the per capita increase in total energy intake and therefore most likely contributed to at least one-fifth of the weight gained over the time period when obesity rates were increasing most rapidly.”⁵¹ Quite simply, SSBs have played a disproportionate role in the obesity epidemic.

⁴⁶ U.S. Dep’t of Agriculture & U.S. Dep’t of Health & Human Serv., *supra* n. 40, at 55; 81 Fed. Reg. 33742, 33803 (May 27, 2016) (“sugar-sweetened beverages . . . are the primary source of added sugars in the American diet”); Hu, *supra* n.14, at 606.

⁴⁷ AHA, *Added Sugars Add to Your Risk of Dying from Heart Disease*, *supra* n.5.

⁴⁸ Michael F. Jacobson, Center for Science in the Public Interest, *Liquid Candy: How Soft Drinks Are Harming Americans’ Health* iv (2005), at <http://bit.ly/2gGsEUd>.

⁴⁹ *Id.*

⁵⁰ Hu, *supra* n.14, at 607; *see also* Rosinger et al., *Sugar-sweetened Beverage Consumption Among U.S. Adults*, *supra* n.3, at 3.

⁵¹ Woodward-Lopez et al., *supra* n.19, at 505.

3. The Health Effects of Obesity. It is difficult to overstate the harmful health consequences associated with obesity. Obesity is associated with and contributes to a wide range of pernicious health problems, ultimately “manifest[ing] itself in premature death and disability, in health care costs, in lost productivity, and in social stigmatization.”⁵²

A systematic review of epidemiological literature concluded that higher body mass indexes and waist circumferences—two of the key markers of obesity—are associated with a wide range of health problems, including cardiovascular disease and type 2 diabetes.⁵³ Other studies confirm that being overweight or obese is a “major risk factor[] for” other noncommunicable diseases such as osteoarthritis, gall stones, fatty liver disease, and psychological disorders.⁵⁴ Obesity is also clearly associated with an increased risk of cancer development and recurrence, as well as decreased risk of survival, for many cancers.⁵⁵ For example, obesity increases the risk of cancers of the female breast (postmenopausal), colon and rectum, kidney,

⁵² U.S. Dep’t of Health and Human Servs., *The Surgeon General’s Call To Action To Prevent and Decrease Overweight and Obesity 2001*, 1 (2001).

⁵³ Daphne P. Guh et al., *The Incidence of Co-Morbidities Related to Obesity and Overweight: A Systematic Review and Meta-Analysis*, 9 BMC PUB. HEALTH 88 (2009).

⁵⁴ Ivana Vucenic & Joseph P. Stains, *Obesity and Cancer Risk: Evidence, Mechanisms, and Recommendations*, 1271 ANNALS N.Y. ACAD. SCI. 37, 38 (2012); see also Lauren Rossen & Eric Rossen, OBESITY 101 (2012).

⁵⁵ Lawrence H. Kushi et al., American Cancer Society 2010 Nutrition and Physical Activity Guidelines Advisory Committee, *American Cancer Society guidelines on nutrition and physical activity for cancer prevention*, 62 CA: CANCER J. CLINICIANS 30, 34 (2012).

and pancreas, among others.⁵⁶ Indeed, obesity is second only to tobacco use as a risk factor for cancer.⁵⁷

These negative health effects manifest from an early age. Obese children are more likely to develop type 2 diabetes, asthma, and heart disease.⁵⁸ And obesity in childhood can have lifelong health effects, even for those who maintain healthy weights later. In a national study of obesity in adolescents, researchers found that 49% of overweight and 61% of obese adolescents had at least one risk factor for cardiovascular disease—particularly important, given the “growing evidence” that “risk factors present during childhood may persist into adulthood.”⁵⁹ A separate study of adolescent women found that a high body mass index during adolescence “remained predictive of premature death,” even after controlling for weight during adulthood.⁶⁰

For many in the medical and public health community, the outlook of the obesity epidemic is grim. Scientists predict that more than half (57 percent) of

⁵⁶ Béatrice Lauby-Secretan et al., *Body Fatness and Cancer — Viewpoint of the IARC Working Group*, 375 NEW ENG. J. MED. 794, 796 (2016).

⁵⁷ Kushi et al., *supra* n.55, at 30; see also Nicholas Bakalar, *Obesity Is Linked to At Least 13 Types of Cancer*, N.Y. TIMES (Aug. 24, 2016), at <http://nyti.ms/2bGbAwZ>.

⁵⁸ Centers for Disease Control & Prevention, *Childhood Obesity Causes & Consequences*, at <http://perma.cc/WX37-BXLY> (last visited Mar. 8, 2017).

⁵⁹ Ashleigh L. May et al., *Prevalence of Cardiovascular Disease Risk Factors Among US Adolescents, 1999-2008*, 129 PEDIATRICS 1035, 1039 (2012).

⁶⁰ Rob M. van Dam et al., *The Relationship between Overweight in Adolescence and Premature Death in Women*, 145 ANNALS INTERNAL MED. 91, 95–96 (2006).

today's children will have obesity by the time they are 35 years old.⁶¹ Obesity has, on net, "been shown to have a substantial negative effect on longevity, reducing the length of life of people who are severely obese by an estimated 5 to 20 years."⁶² In a special report in the *New England Journal of Medicine*, a group of public health experts made a stark prediction: "From our analysis of the effect of obesity on longevity, we conclude that the steady rise in life expectancy during the past two centuries may soon come to an end."⁶³ Given the critical role that SSBs have had in this epidemic, and the toll that obesity takes on our communities, a tax on distribution is but one reasonable response.

B. Scientific studies demonstrate that the overconsumption of sugar-sweetened beverages can increase risk of cardiovascular disease, type 2 diabetes, tooth decay, and other chronic health conditions.

Unfortunately, the deleterious consequences of overconsuming SSBs don't stop at obesity and its attendant harms. What is perhaps less popularly known is that SSBs are contributing to the risk of heart disease, type 2 diabetes, and other problems *even for those who do not gain weight*.

1. Coronary Heart Disease. Heart disease is the leading cause of death in the United States for both men and women. Approximately 2,300 Americans

⁶¹ Zachary J. Ward et al., *Simulation of growth trajectories of childhood obesity into adulthood*, 377 *N ENGL. J MED.* 2145, 2148 (2017).

⁶² S. Jay Olshansky et al., *A Potential Decline in Life Expectancy in the United States in the 21st Century*, 352 *NEW ENG. J. MED.* 1138, 1140 (2005)

⁶³ *Id.* at 1138.

die *every day* from heart disease, stroke, or another form of cardiovascular disease—an average of one every 38 seconds.⁶⁴ Nearly half of African-American adults have some form of cardiovascular disease.⁶⁵ The American Heart Association calculates that the direct and indirect costs of cardiovascular diseases and stroke cost more than \$329.7 billion in health expenditures and lost productivity each year.⁶⁶

Again, the science demonstrates the link between SSBs and heart disease. A 2014 study in *JAMA Internal Medicine* concluded that there was a “significant association between SSB consumption and risk of CVD [(cardiovascular disease)] mortality.”⁶⁷ A 2012 study that followed 40,000 men for two decades found that those in the top quartile of soft drink consumption—drinking several cans of sugary beverages per week—had a 20% higher risk of having a heart attack or dying from a heart attack than men who rarely consumed sugary drinks.⁶⁸ The risks have been demonstrated for women too.⁶⁹

Importantly, “the contribution of BMI [(body mass index)] did not fully explain the association between SSB intake and [coronary heart disease]”; even

⁶⁴ Benjamin et al., *Heart Disease and Stroke Statistics – 2018 Update*, *supra* n.6, at e188.

⁶⁵ *Id.* at e192.

⁶⁶ *Id.* at e430.

⁶⁷ Quanhe Yang et al., *Added Sugar Intake and Cardiovascular Diseases Mortality Among US Adults*, 174 *J. AM. MED. ASS’N INTERNAL MED.* 516, 521, 523 (2014).

⁶⁸ Lawrence de Koning et al., *Sweetened Beverage Consumption, Incident Coronary Heart Disease, and Biomarkers of Risk in Men*, 125 *CIRCULATION* 1735, 1737 (2012).

⁶⁹ Teresa T. Fung et al., *Sweetened Beverage Consumption and Risk of Coronary Heart Disease in Women*, 89 *AM. J. CLINICAL NUTRITION* 1037, 1040 (2009).

when controlling for weight, an unhealthful diet, or lifestyle factors, SSB consumption was still “associated with a higher risk of” coronary heart disease.⁷⁰ Research also has confirmed links between SSBs and high blood pressure (hypertension), even after controlling for body weight.⁷¹ The science leads to one basic conclusion: Excess consumption of SSBs can be bad for your heart.

2. Type 2 Diabetes. The science is likewise unequivocal that excess SSB consumption is associated with a greater risk of type 2 diabetes.⁷² Reviewing the relevant research, the DGAC concluded that there was “strong” evidence—its highest grade—demonstrating “that higher consumption of added sugars, especially sugar-sweetened beverages, increases the risk of type 2 diabetes among adults.”⁷³ Experts estimate that there is an “excess risk of 26%”—or more—for type 2 diabetes associated with higher consumption of SSBs.⁷⁴ The evidence “meet[s] the key . . . criteria to establish a causal relationship between SSB consumption and risk of [type 2 diabetes].”⁷⁵

⁷⁰ *Id.* at 1037, 1040.

⁷¹ Liwei Chen et al., *Reducing Consumption of Sugar-Sweetened Beverages Is Associated with Reduced Blood Pressure: A Prospective Study among United States Adults*, 121 CIRCULATION 2398 (2010).

⁷² Hu, *supra* n.14, at 612–13.

⁷³ DGAC Report, *supra* n.21, Part D, Ch. 6, at 20, 22.

⁷⁴ Vasanti S. Malik et al., *Sugar-Sweetened Beverages and Risk of Metabolic Syndrome and Type 2 Diabetes*, 33 DIABETES CARE 2477, 2480 (2010).

⁷⁵ Hu, *supra* n.14, at 613; see also An Pan et al., *Plain-Water Intake and Risk of Type 2 Diabetes in Young and Middle-Aged Women*, 95 AM. J. CLINICAL NUTRITION 1454 (2012) (citing Nurses’ Health Study II), at <http://bit.ly/2geXmCA>; Lawrence de Koning et al., *Sugar Sweetened and*

Critically, scientists have demonstrated a relationship between SSB consumption and type 2 diabetes risk independent of weight gain. Because these drinks have “high amounts of rapidly absorbable carbohydrates, such as various forms of sugar and high-fructose corn syrup,” they contribute to a “high dietary glycemic load (GL), leading to inflammation, insulin resistance, and impaired β -cell function.”⁷⁶ The result: SSBs “remained significantly associated with an increased risk of diabetes” even when controlling for BMI and overall caloric intake.⁷⁷ Body mass index accounts for only about half of the excess risk of type 2 diabetes.⁷⁸ A recent meta-analysis of 17 cohort studies found that consuming just one additional SSB daily was associated with a 13% increased risk of diabetes, even after adjusting for BMI.⁷⁹

Given the amount of SSBs consumed (and their link to type 2 diabetes) it perhaps should come as no surprise that an American today has an estimated 2 in 5 chance of developing diabetes in his or her lifetime.⁸⁰ If he or she is Hispanic or

Artificially Sweetened Beverage Consumption and Risk of Type 2 Diabetes in Men, 93 AM. J. CLINICAL NUTRITION 1321 (2011), at <http://bit.ly/2h9ZyzM>.

⁷⁶ Vasanti S. Malik et al., *Sugar-Sweetened Beverages, Obesity, Type 2 Diabetes Mellitus, and Cardiovascular Disease Risk*, 121 CIRCULATION 1356, 1356 (2010).

⁷⁷ Schulze et al., *supra* n.45, at 931.

⁷⁸ Malik et al., *Sugar-Sweetened Beverages & Risk of Metabolic Syndrome*, *supra* n.74, at 2481–82.

⁷⁹ Malik & Hu, *supra* n. 39, at 1619.

⁸⁰ Centers for Disease Control & Prevention, *Now, 2 Out of Every 5 Americans Expected to Develop Type 2 Diabetes During their Lifetime*, at <http://bit.ly/1JUmH06>.

African-American, the odds are around 1 in 2.⁸¹ Already about 23.4 million Americans have been diagnosed with diabetes (more than 9 percent of the adult population).⁸² The consequences can be as severe as vision loss or limb amputation. About 108,000 Americans with diabetes underwent amputations in 2014 alone.⁸³ (For comparison: as of 2016, the total number of U.S. military personnel to undergo amputations as a result of the wars in Iraq and Afghanistan was about 1,650.⁸⁴)

3. Dental Caries. In thinking about health impacts, oral health and dental care are often overlooked. But dental caries (i.e., cavities) is actually the single most prevalent chronic disease in the United States, affecting 42% of children, 59% of adolescents, and 92% of adults.⁸⁵ The link between SSBs and dental caries is not complicated. “Sugars are undoubtedly the most important dietary factor in the development of dental caries.”⁸⁶ And the primary source of sugar in the American

⁸¹ *Id.*

⁸² Benjamin et al., *Heart Disease and Stroke Statistics – 2018 Update*, *supra* n.6, at e142.

⁸³ Nat’l Center for Chronic Disease Prevention & Health Promotion, *National Diabetes Statistics Report, 2017*, 9 (2017), at <https://perma.cc/HJ9E-YBLR>.

⁸⁴ Nancy Montgomery, *2016 marks first year without combat amputation since Afghan, Iraq wars began*, STARS AND STRIPES, March 18, 2017, <https://perma.cc/AM9D-522L>.

⁸⁵ Nat’l Institute of Dental and Craniofacial Research, *Dental Caries (Tooth Decay)*, at <http://bit.ly/2hdPmGG> (last visited Mar. 8, 2017).

⁸⁶ Aubrey Sheiham & W. Phillip James, *A New Understanding of the Relationship Between Sugars, Dental Caries and Fluoride Use*, 17 PUB. HEALTH NUTRITION 2176, 2176 (2014), at <https://bit.ly/2pRuZ5l>; *see also* Aubrey Sheiham & W. Phillip James, *Diet and Dental Caries: The Pivotal Role of Free Sugars Reemphasized*, 94 J. DENTAL RES. 1341, 1341 (2015), at <http://bit.ly/2h8tJV7>.

diet is “sugary drinks.”⁸⁷ Even after controlling for socioeconomic factors and behavioral attributes (like the use of fluoride toothpaste), studies show that the more SSBs one drinks, the higher the likelihood of dental caries.⁸⁸

C. Philadelphia is plagued by chronic diseases caused by overconsumption of sugar-sweetened beverages.

Philadelphians face the negative public health consequences stemming from SSBs every day. To be sure, these problems are not unique to Philadelphia; but Philadelphia unfortunately leads the way—with staggering numbers and some of the worst public health outcomes among large cities for heart disease, diabetes, obesity, and other diseases caused by SSBs:

- *Consumption.* Philadelphians drink about 60 million gallons of SSBs each year (about 1/2 liter per person per day).⁸⁹
- *Heart disease.* Philadelphia has the highest premature cardiovascular mortality rate of the ten largest cities in the country,⁹⁰ and the second highest rate of hypertension.⁹¹
- *Diabetes:* Philadelphia has the second highest rate of adult diabetes of the ten largest cities in the country.⁹²

⁸⁷ Rob Beaglehole, *Dentists and Sugary Drinks: A Call to Action*, 146 J. AM. DENTAL ASS'N 73 (2015), at <http://bit.ly/2gg2aaI>.

⁸⁸ Eduardo Bernabé et al., *Sugar-Sweetened Beverages and Dental Caries in Adults: A 4-Year Prospective Study*, 42 J. DENTISTRY 952, 955–56 (2014).

⁸⁹ City of Philadelphia, *Sugar Sweetened Beverages and You*, *supra* n.4.

⁹⁰ Philadelphia Dep't of Public Health, *2017 Community Health Assessment*, *supra* n.18, at slide 65.

⁹¹ *Id.* at slide 69.

⁹² *Id.* at slide 74.

- *Obesity*. “Approximately 67.9% of adults in the city and approximately 41% of youth aged 6-17 are overweight or obese. Additionally, nearly 70% of youth in North Philadelphia, the majority of whom are black or Hispanic, are overweight or obese, which is nearly double the obesity and overweight rate for youth in the United States.”⁹³ That leaves Philadelphia with the highest rate of obese adolescents among the ten largest cities in the country.⁹⁴ Consistent with national trends, the rates of childhood obesity are decreasing in Philadelphia but remain at epidemic proportions.⁹⁵

There is no doubt, then, that the distribution of SSBs—a key contributor to each of these diseases—into the City has harmed the health of Philadelphia’s communities. The costs are often measured monetarily by government spending on health care and associated costs, or by tax revenue decreases from lost wages and inefficiency.⁹⁶ But the costs of poor health are more than monetary. For the City, the harms include lost productivity and innovation. More importantly, the disability, suffering, and premature death associated with the overconsumption of SSBs touches Philadelphia’s families and reduces the vibrancy of the community as a whole. A tax on distributing a product into the City that leads to so much harm helps the City mitigate these negative externalities and provide for the public good.

⁹³ Centers for Disease Control and Prevention, *Communities Putting Prevention to Work, Philadelphia, Pennsylvania: Obesity and Tobacco Control* (2013), at <http://bit.ly/2gGSUO9>.

⁹⁴ Philadelphia Dep’t of Public Health, *Overview of Chronic Disease and Healthy Eating and Active Living Indicators for Philadelphia Adults and Children* 5 (May 5, 2011), at <http://bit.ly/2haHfe0>.

⁹⁵ *Id.* at 4.

⁹⁶ By one estimate, the United States spent approximately \$147 billion per year on medical costs related to obesity—10 percent of all medical spending. Eric A. Finkelstein, et al., *Annual Medical Spending Attributable To Obesity: Payer- And Service-Specific Estimates*, 28 HEALTH AFFAIRS w822, w822 (2009).

II. The industry’s arguments, if adopted, would thwart the City’s basic ability to govern for the public’s health and welfare.

The plaintiffs’ and their *amici*’s arguments against the distribution tax have far-reaching implications beyond this case. If the Court adopts their views, it would not only block this law but also severely curb the City’s ability to govern—through taxes and an array of other municipal tools—to advance the City’s public health and welfare. Like the lower courts, this Court should reject these arguments.

First, the plaintiffs’ overbroad reading of the Sterling Act would severely limit the City’s ability to raise revenue by imposing basic, nonduplicative taxes on harmful products or transactions. Such taxes are a basic tool of governing, used by local governments since our founding.⁹⁷ Governments, at the federal, state, and local levels, typically tax harmful products and transactions for one, or multiple, of the following reasons: (1) to raise revenue; (2) to account for negative externalities caused by the unhealthy product; and (3) to influence consumer behavior.⁹⁸

The plaintiffs argue that Philadelphia cannot use this basic tool of governance because its tax on distribution, as it “operates in practice,” increases the price of a product upon which the Commonwealth already imposes a retail

⁹⁷ Jonathan Cummings, *Obesity and Unhealthy Consumption: The Public-Policy Case for Placing a Federal Sin Tax on Sugary Beverages*, 34 SEATTLE U. L. REV. 273, 288 (2010).

⁹⁸ *Id.* at 288, 293. If the distribution tax were to lead to an increase in the price of SSBs it could (depending on the amount and other factors) have an influence on consumer behavior. *See* Steven Gortmaker et al., CHOICES Project at Harvard T.H. Chan School of Public Health, *Brief: Cost-effectiveness of a Sugar-Sweetened Beverage Excise Tax in Philadelphia, PA* (2016), at <https://perma.cc/V4B2-U3ZD>. But the existence of a “pass-through” effect is not legally relevant to the Sterling Act analysis, so *amici* do not address it here. *See* Comm. Ct. Op. at 16.

tax.⁹⁹ Specifically, the plaintiffs maintain that because some of their distributors have decided to pass the tax on to their retailers, and some of those retailers have decided to raise the price of covered beverages, the distribution tax is *duplicative* of the State’s retail tax, and hence barred by the Sterling Act. But—as the Common Pleas Court and the Commonwealth Court recognized—that is not the law. Pennsylvania courts’ Sterling Act jurisprudence does not invite this *Palsgraf*-type analysis to figure out whether a local tax might, based on the independent decisions of multiple intervening actors, touch upon the same subject matter as a state tax. Under plaintiffs’ analysis, private actors, not state and local governments, would control the legality of a taxation scheme. And that analysis could preclude all sorts of local taxes that are critical to a city’s budget and ability to address public health that may eventually increase the prices of products already taxed by the State.

By contrast, as the lower courts recognized, taxes by the Commonwealth and the City are allowed as long as they have a different “operation or incidence,”¹⁰⁰ such as applying at different points in the stream of commerce.¹⁰¹ That’s for good reason. The Sterling Act largely guarantees the City the authority

⁹⁹ Br. of Appellants, at 17, 20. *See also* Br. of Amici Curiae State Senator Anthony Williams, et al., at 8 (tax preempted because “the practical reality is that the tax is being paid by customers at the sales point”).

¹⁰⁰ *Commonwealth v. National Biscuit Co.*, 136 A.2d 821, 825–26 (Pa. 1957).

¹⁰¹ *Blair Candy Co. v. Altoona Area Sch. Dist.*, 613 A.2d 159, 161–62 (Pa. 1992) (“It is clear that whatever else the [local] cigarette [excise] tax is, it is *not* a sales tax” and therefore not barred by the Sterling Act.)

to impose any taxes on products, transactions, persons, or property, except if they are “subject to a State tax.” 53 P.S. § 15971(a). The plaintiffs would deem any local tax—irrespective of the fact that it is levied upon a distinct transaction and measured in a different manner—duplicative (and preempted) just because private actors may subsequently decide to raise the price of a good “subject to a State tax.” Under that reading, the exception would swallow the rule. And cities would be severely curtailed in their ability to raise revenue with a basic tax to govern for the public good.

Second, the plaintiffs’ preemption argument sweeps even broader, implicating the City’s policy decisions beyond taxation. The plaintiffs and their *amici* argue that the City’s distribution tax is preempted because it generally—and indirectly—interferes with the State’s ability to control taxation and raise revenue.¹⁰² Their argument is that the City’s distribution tax will increase the price of covered beverages, leading to less consumption and less revenue from the State’s tax. This argument, again, overreaches.

Adopting this rationale would invalidate myriad local *nontax* measures designed to curb the use of unhealthy products—like SSBs—that are taxed by the Commonwealth. Philadelphia has not only imposed a distribution tax, but has also

¹⁰² Br. of Appellants, at 30 (City’s tax preempted because “retail consumption will go down or leave the Commonwealth altogether” and the “Treasury will suffer . . . millions of dollars in annual losses. . .”).

undertaken a series of public health measures to reduce the overconsumption of SSBs. For example, “the Philadelphia school district forbids the sale of sugary beverages in schools and limits their availability in public vending machines.”¹⁰³ The City also “provides financial incentives for corner stores to highlight healthy foods” through signs that suggest drinking water and remind customers how much exercise it will take to work off the calories in a can of soda.¹⁰⁴ And the City sends educators into public school classrooms to teach children about nutrition.¹⁰⁵ “Philadelphia, which also has one of the country’s strictest menu-labeling laws, for two years ran radio and television ads encouraging parents to think twice about serving sugary drinks to their children.”¹⁰⁶ Undoubtedly, all these measures are designed to deter purchases of SSBs—and reports already show they’re working (even if consumption is still much higher than health officials recommend).¹⁰⁷ Under the plaintiffs’ and their *amici*’s view, all these measures would be barred because they make it harder for the State to pass its budget. Such a result would be absurd. No court has adopted such a sprawling argument that would hamstring basic public health measures. The Court should not adopt it here.

¹⁰³ Margot Sanger-Katz, *The Decline of ‘Big Soda’*, N.Y. TIMES, Oct. 2, 2015, at <http://nyti.ms/1L8ZEQa>.

¹⁰⁴ *Id.*

¹⁰⁵ *Id.*

¹⁰⁶ *Id.*

¹⁰⁷ *Id.*

Lastly, unmoored from preemption doctrine, the plaintiffs and their *amici* resort to scare tactics; if the Court does not strike down Philadelphia’s SSB tax, they warn, municipalities across the state will start taxing scores of other products—or even the distribution of “all goods”—to the detriment of small businesses, workers, and constituents.¹⁰⁸ For all their focus on “reality,” the plaintiffs have lost all sight of it. There is a crucial check on the proliferation of taxes: voters. If a municipality’s citizens believe that a tax is unreasonable or undue, they can vote against it or the officials who support it. As the debate over Philadelphia’s tax has demonstrated, even for revenue-strapped municipalities suffering from public health crises, it is not easy to pass even a narrow distribution tax targeting a specific transaction. In this instance, however, the voters and their elected officials recognized, in accordance with the scientific research described above, that SSBs present a truly unique harm crippling the City. And they democratically determined to exercise one of the oldest tools in American history as a response: a tax. This Court should not stand in the way.

CONCLUSION

The Court should affirm the Commonwealth Court’s decision.

¹⁰⁸ Br. of Appellants, at 31; Br. of *Amici Curiae* NFIB et al., at 16–18 (hypothesizing a tax on rock salt or “all goods” at the distribution level); Br. of *Amici Curiae* Teamsters Local Union 830, at 6.

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

I certify that this brief complies with Pa. R.A.P. 531(b)(3) because it includes 6,998 words, calculated using the word count feature of Microsoft Word 2016, excluding the parts expected by Pa. R.A.P. 2135(b).

s/Michael J. Quirk

Michael J. Quirk, ID No. 204677

April 13, 2018

CERTIFICATE OF SERVICE

I, Michael J. Quirk, certify that on April 13, 2018, the foregoing brief was served on the following parties via the Court's e-filing system and First Class mail, which satisfies the requirement of Pa.R.A.P. 121:

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ADDENDUM

This addendum describes *amici* nonprofit organizations and their wealth of expertise on public health and governance matters. *Amici* include:

The **American Heart Association** is a voluntary health organization that, since 1924, has been devoted to saving people from heart disease and stroke—the two leading causes of death in the world. AHA teams with millions of volunteers to fund innovative research, fight for stronger public health policies, and provide lifesaving tools and information to prevent and treat these diseases. The Dallas-based association with local offices in all 50 states, as well as in Washington, D.C. and Puerto Rico, is the nation’s oldest and largest voluntary organization dedicated to fighting heart disease and stroke.

The **American Cancer Society Cancer Action Network**—the nonprofit, nonpartisan advocacy affiliate of the American Cancer Society—supports evidence-based policy and legislative solutions designed to eliminate cancer as a major health problem. ACS CAN works to encourage government officials to make fighting cancer a top national priority. ACS CAN gives ordinary people extraordinary power to fight cancer with the training and tools they need to make their voices heard.

The **American Medical Association** is the largest professional association of physicians, residents, and medical students in the United

States. Additionally, through state and specialty medical societies and other physician groups seated in its House of Delegates, substantially all U.S. physicians, residents, and medical students are represented in the AMA's policy making process. The objectives of the AMA are to promote the science and art of medicine and the betterment of public health. AMA members practice in every medical specialty area and in every state, including Pennsylvania. The AMA joins this brief on its own behalf and as a representative of the Litigation Center of the American Medical Association and the State Medical Societies. The Litigation Center is a coalition of the AMA and the medical societies of each state, plus the District of Columbia, whose purpose is to represent the viewpoint of organized medicine in the courts.

The **Food Trust** is a Philadelphia-based nonprofit organization working to ensure that everyone has access to affordable, nutritious food and information to make healthy decisions. Since 2008, The Food Trust has partnered with the Philadelphia Health Department and hundreds of corner store operators to help corner stores stock and sell healthier products like water and 100% fruit juice.

Healthy Food America is a national nonprofit organization based in Seattle, Washington, that acts on science to drive change in food policy and industry practice in order to prevent chronic diseases caused by poor nutrition. HFA focuses on reducing added sugar in the American diet. To that end, HFA

tracks and translates the latest research for policymakers and advocates, and provides technical assistance to communities pursuing sugar-reduction policies, including sugary-drink taxes and warning labels.

MomsRising.org is an on-the-ground and online grassroots organization of more than a million people who are working to increase family economic security, decrease discrimination against women and moms, and build a nation where businesses and families can thrive. MomsRising is working for paid family and medical leave, affordable, high-quality childcare and early learning, and an end to the wage and hiring discrimination that penalizes so many others. MomsRising also advocates for access to healthy food for all kids, health care for all, earned sick days, and breastfeeding rights so that all children can have a healthy start. Established in 2006, MomsRising and its members are organizing and speaking out to improve public policy and to change the national dialogue on issues that are critically important to America's families.

The **National Alliance for Hispanic Health** (the Alliance) is the nation's foremost science-based source of information and trusted advocate for the best health outcomes for all. The Alliance member network represents thousands of Hispanic health providers across the nation providing services to more than 15 million each year, and national organization members delivering services to over 100 million annually, making a daily difference in the lives of Hispanic families and

communities. The Alliance, a nonprofit organization, is dedicated to environments that support the well-being of community residents. As such, the Alliance has filed legal briefs and provided policy support to its members to ensure that local government is able to enact public health policies that foster community well-being, including sugar-sweetened beverage (SSB) taxes and other policies.

The **National Association of Chronic Disease Directors** is a nonprofit public health organization committed to serving the chronic disease directors of each state and U.S. jurisdiction. Founded in 1988, NACDD connects more than 6,000 chronic disease practitioners to advocate for preventive policies and programs, encourage knowledge sharing, and develop partnerships for health promotion. Since its founding, NACDD has been a national leader in mobilizing efforts to reduce chronic diseases and their associated risk factors through state and community-based prevention strategies.

The **National Association of County and City Health Officials** is a national organization representing the nation's 2,800 local public health departments. Many local health departments are actively engaged in programs aimed at reducing chronic, preventable illnesses. NACCHO supports efforts that protect and improve the health of all people and all communities by promoting national policy, developing resources and programs, seeking health equity, and supporting effective local public health practice and systems. NACCHO supports

efforts to address the epidemic of obesity and chronic disease by lowering consumption of sugar-sweetened beverages.

The **National Association of Local Boards of Health** is the national voice for local boards of health. Uniquely positioned to deliver technical expertise in governance, leadership, and board development, NALBOH is committed to strengthen good governance where public health begins—at the local level. For over 20 years, NALBOH has been engaged in establishing this significant voice for local boards of health on matters of national public health policy. In line with its commitment to public health, NALBOH supports healthy food policies, including reducing the overconsumption of sugar-sweetened drinks.

The **Notah Begay III Foundation** is a national nonprofit organization dedicated to reducing Native American childhood obesity and type-2 diabetes. NB3 Foundation works nationally, investing in evidence-based, community-driven, and culturally-centered programs that promote healthy weight, healthy nutrition, and physical activity. Native American children, in particular, have been disproportionately affected by obesity. In NB3 Foundation's home state of New Mexico, for example, 50% of Native third-graders are either overweight or obese, according to the New Mexico Department of Health. Through grant making, research, evaluation, direct programming, and policy advocacy, NB3 Foundation invests in and works closely with tribes and Native-led organizations

across the country that are exploring promising new practices, expanding proven methods, conducting community-based research, and evaluating impact. NB3 Foundation also works with Voices for Healthy Kids, a joint initiative of the American Heart Association and the Robert Wood Johnson Foundation, to help all children grow up at a healthy weight. Included among the strategies is reducing the consumption of SSBs and increasing the consumption of healthy beverages among children ages 0–8.

The **Pennsylvania Association of Staff Nurses and Allied Professionals** is a labor union in Pennsylvania that represents approximately 8,300 nurses and allied health professionals. PASNAP believes in the importance of a strong collective voice in advocating for patients and health care providers. PASNAP supports good education, including pre-kindergarten options, for children, and is committed to public health policies that reduce chronic diseases and address the growing obesity epidemic in the United States.

The **Pennsylvania Medical Society** is a Pennsylvania nonprofit corporation that represents physicians of all specialties. It is the Commonwealth's largest physician organization. PAMED's mission is to be the voice of Pennsylvania's physicians, advancing quality patient care and the ethical practice of medicine, and advocating for the patients they serve. For more than 165 years, PAMED has engaged in efforts to advance public health, public policy, medical

science, education, and ethics. PAMED regularly participates as *amicus curiae* in cases raising important health care issues. PAMED policy supports obesity awareness and prevention efforts, as well as healthy living initiatives.

The **Philadelphia County Medical Society** has been representing physicians for more than 168 years as they treat patients, advance science, maintain the standards of the profession, and protect the public health. The Society is a professional membership organization of more than 3,600 physicians who live or work in the City of Philadelphia. The Society has a tradition of activism on behalf of practitioners and patients. The Society has been working to battle obesity and continues to be involved in efforts to increase public awareness of the causes and management of heart disease, diabetes, and obesity.

Physicians for Social Responsibility (PSR) Philadelphia is a nonprofit organization dedicated to addressing the major public health threats in our society. Their programs are preventive in nature and promote social responsibility by protecting health, the environment, and communities through education, training, direct service, and advocacy. They seek to address upstream problems that are difficult to solve later on, and are committed to obesity awareness and prevention, as well as healthy living initiatives.

The **Public Health Law Center** is a public interest legal resource center dedicated to improving health through the power of law, grounded in the belief

that everyone deserves to be healthy. Located at the Mitchell Hamline School of Law in Saint Paul, Minnesota, the Center helps local, state, national, tribal, and global leaders promote health by strengthening public policies. For almost twenty years, the Center has worked with public officials and community leaders to develop, implement, and defend effective public health laws and policies, including those designed to reduce commercial tobacco use, improve the nation's diet, encourage physical activity, protect the nation's public health infrastructure, and promote health equity. The Center has prepared publications on policy options for regulating sugary drinks, worked to remove sugary drinks from hospitals, provided technical assistance and training to communities considering taxation of sugary drinks, analyzed the beverage taxing authority of municipalities in all states, and studied the ineffectiveness of self-regulation of food and beverage advertising. The Center has filed more than fifty briefs as *amicus curiae* in the highest courts in the United States.