



September 10, 2014

Dear Chairwoman Millen and Members of the Dietary Guidelines Advisory Committee,

We, the undersigned researchers, scientists, nutritionists, clinicians, and public health professionals, are aware, as you are, of the many adverse health effects of sugar-sweetened beverages (SSBs). We know that the American public consumes SSBs in excess. And we know that water should be promoted as a beverage of choice and the best non-caloric substitute for SSBs. In light of these facts, we urge the committee to strengthen the language for drinking water in the 2015 Guidelines and the USDA to add a water graphic to MyPlate.

The MyPlate graphic is the primary representation of the Dietary Guidelines for Americans for the American public. Posters of MyPlate are nearly ubiquitous in the nation's school cafeterias, and the MyPlate concept is used by SNAP-Ed and Expanded Food Nutrition Education Program (EFNEP) educators. While the Dietary Guidelines document provides an invaluable resource for professionals, educators, and anyone who seeks a fuller understanding of healthful eating, what most Americans see and learn from is the MyPlate graphic. For example, Cooperative Extension Nutrition Advisors in California reported to us that they would find the addition of a water symbol to MyPlate useful in their educational programs.

In order to reach the public, we believe that both the Guidelines and MyPlate should consistently encourage the benefits of water consumption.

### **Recommendations for Water Consumption**

The 2010 Dietary Guidelines for Americans is replete with language describing Americans' excessive consumption of added sugars. The Guidelines also identifies SSBs as a major source of added sugars, encouraging reduction of their consumption as a key strategy for the prevention of obesity and overweight and highlighting water as an excellent substitute for SSBs. The DGA states, "To limit excess calories and maintain healthy weight, individuals are encouraged to drink water and other beverages with few or no calories..."<sup>1</sup>. For example, in Table A2, entitled "Key Consumer Behaviors and Potential Strategies for Professionals," the DGA urges "Choose water, fat-free milk, and 100% fruit juice, or unsweetened tea or coffee as drinks rather than sugar-sweetened drinks"<sup>1</sup>.

Since the release of the 2010 Dietary Guidelines, new scientific evidence and escalating medical costs<sup>2,3,4</sup> have increased concern over the linked epidemics of obesity and diabetes<sup>5</sup>. New

research has also expanded the knowledge base on the benefits of drinking plain water and on the adverse consequences of SSBs. In Appendix 1 to this letter we highlight research since 2009 on the health benefits of drinking water and, in Appendix 2, we summarize research on the negative health impacts arising from consumption of SSBs.

Despite the increase in knowledge among professionals, many in the general public remain unfamiliar with the importance of water and lack an understanding of the factors mediating the amount of water required by an individual on any given day<sup>6</sup>. In addition, many are unaware of the high level of added sugars and calories they consume each day while quenching their thirst with SSBs<sup>7</sup>. The science is known. It is now time to communicate to the American public the importance of making water a beverage of choice.

### **Water is the ideal substitute for SSBs**

Scientific bodies such as the Institute of Medicine's Committee on Accelerating Progress in Obesity Prevention<sup>8</sup>, Centers for Disease Control and Prevention<sup>9</sup>, and the American Heart Association Voices for Healthy Kids<sup>10</sup> have embraced the importance of water in chronic disease prevention and have called for improvements in community-wide drinking water access. The American Academy of Pediatrics encourages water as the best source of hydration for young people<sup>11</sup>.

In terms of adequate hydration, most Americans get enough to drink. The issue at stake is what they are drinking. Recent research shows that substituting drinking water for SSBs (sodas, juice drinks, pre-sweetened tea and coffee drinks, sports drinks, and energy drinks) can help reduce intake of calories from added sugars among both children and adults<sup>12,13,14,15</sup> and can reduce the risk of dental caries<sup>16</sup>.

### **Recommendations for 2015**

#### Dietary Guidelines

We urge the Dietary Guidelines Advisory Committee to develop language that strengthens the 2010 Dietary Guidelines language on the adverse effects of SSBs and the benefits of drinking water. Incorporating a general message into the otherwise more specific recommended daily intakes would be similar to the "Steps to a Healthier You" beside the prior pyramid. In Appendix 3 we present numerous examples of how other countries have addressed this important issue.

#### MyPlate

In parallel with the 2015 Dietary Guidelines we urge the USDA to add a simple graphic to MyPlate: a symbol for water.

Alternatively the symbol could be the Partnership for a Healthier America's Drink Up water drop, which would align with their water promotion campaign (they have told us they would be happy with this usage). Taglines with educational materials might include "Don't forget to drink plain water," "Thirsty? Drink water," "Think water first for thirst," or, "Drink your fat-free milk

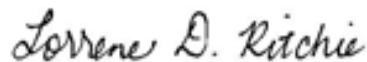
– and then quench your thirst with plain water.” We wish to emphasize that we do not recommend replacing the milk glass symbol on MyPlate with the proposed water graphic.

Promotion of water via strengthened Dietary Guidelines and MyPlate, by encouraging water consumption, would in turn increase the momentum for improved access to clean and safe tap water, needed in many schools and other public sites across the country<sup>17,18</sup>. Including water with the MyPlate icon will support effective implementation of the two provisions of the Healthy, Hunger-Free Kids Act of 2010 requiring ready access to water in childcare and in our schools.

Inclusion of water on MyPlate would increase knowledge among those segments of the population that are most vulnerable, including young people to whom SSBs are heavily marketed<sup>19,20</sup>. This action would be in concordance with the Partnership for a Healthier America’s Drink Up campaign to raise public awareness about the benefits of drinking water<sup>21</sup> as well as with key strategies of the Centers for Disease Control and Prevention designed to decrease the consumption of SSBs<sup>22</sup>.

Clear public policy components are essential to building any change toward healthful behavior. We urge the Dietary Guidelines Advisory Committee to strengthen language in the 2015 Dietary Guidelines regarding the importance of water and we urge the USDA to add a graphic promoting drinking water to MyPlate.

Yours sincerely,



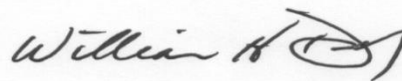
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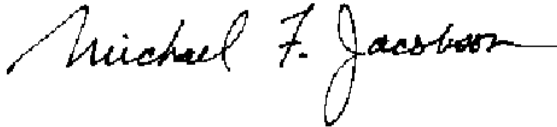
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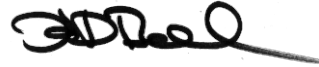
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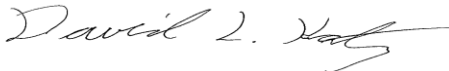
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## **Appendix 1: Water is important to health**

Water is an essential nutrient<sup>23</sup>. Without water, human life can be sustained for only a few days. Adequate hydration is crucial for the proper function and regulation of the kidneys and heart thus affecting heart rate, blood pressure, vaso-vagal response, lipid regulation, removal of body waste products and thermoregulation; good hydration also supports mental concentration, mood, skin health, helps prevent headache and lubricates joints<sup>6,24,25,26,27,28,29,30,31,32,33</sup>. While hydration can come from many sources, low intake of plain water has been found to be associated with poor dietary quality and physical inactivity in youth<sup>34</sup>.

In most instances Americans do not suffer from dehydration. However, children should be drinking more water<sup>35,36</sup>. Current research indicates that children, in particular, are subject to “voluntary dehydration” from low intake of plain water<sup>37,38,39</sup>. Between 2005 and 2010, more than a quarter (28%) of children aged 4-13 years old in the U.S. did not have a drink of plain water on two consecutive days<sup>36</sup>. Plain water accounted for less than one third of total daily dietary water intake from beverages and foods for children aged 4-13 years old<sup>36</sup>. While it is possible to meet all hydration needs with other sources, plain water is ideal because, unlike sugar-sweetened beverages, plain water does not contain calories.

## Appendix 2: Adverse health effects of SSBs

Sugar-sweetened beverages are beverages containing added sugars or any caloric sweetener, and include sodas, juice drinks, pre-sweetened tea and coffee drinks, and fortified or energy drinks<sup>22</sup>. They occupy a unique niche among food and beverages: they are among the top sources of calories for children and adolescents<sup>40</sup> and they are a major contributor of empty calories<sup>1</sup>. Even though SSB consumption in the U.S. has declined in recent years<sup>41</sup>, between the late 1960s and early 2000s the consumption of SSBs doubled<sup>42</sup>. SSBs are the single largest source of added sugars in the diet for children and adolescents<sup>43</sup>. Miller<sup>44</sup> recently re-evaluated data from the U.S. National Health and Nutrition Examination Survey (NHANES) to assess sugar-sweetened beverage consumption by age, gender and ethnicity and by type of SSB and found that Americans consume more calories from added sugars in beverages than previously reported. While the American Heart Association recommends no more than 6 teaspoons of added sugars per day for women and 9 teaspoons per day for men, the average U.S. consumption remains too high at 17 teaspoons per day<sup>45</sup>, or as much as 15% of daily calories<sup>46</sup>. SSB intake as early as infancy has been found to be predictive of both SSB intake and obesity later in life<sup>13</sup>. Of concern is the disparity in SSB consumption among population sectors; for example, low-income populations have higher intakes of SSBs<sup>47</sup> and Latino children drink more SSBs than white children<sup>48</sup>.

Since the 2010 Dietary Guidelines for Americans was issued, knowledge of the magnitude of the risk and extent of adverse effects from SSB consumption has increased. The public health consequences of the nation's consumption of excess sugars are increasingly costly at both the individual and population level. Obesity, diabetes and dental caries are well-known adverse *sequelae* of added sugar consumption, especially in the form of SSBs. Scientific evidence has grown on other serious sugar-related morbidities and inflammatory conditions.

**Obesity.** Two-thirds of American adults are overweight or obese<sup>49</sup>. One in three overweight (and one in two obese) adolescents has at least one risk factor for cardiovascular disease<sup>50</sup>. Of concern is the disparity in overweight and obesity among subsets of the population. For example, non-Hispanic blacks have the highest age-adjusted rate of obesity at 47.8%<sup>51</sup>. Among children the prevalence of obesity is highest in low-income children<sup>52</sup>.

**Diabetes.** A new Lancet study of lifetime diabetes risk states that 40% of U.S. adults are now expected to develop diabetes during their lifetime and these figures are worse for Hispanics and for African-American women<sup>53</sup>. In 2012, 29.1 million people or 9% of the U.S. population had diabetes and 37% of adults were pre-diabetic<sup>5</sup>. Total direct and indirect costs of diabetes in the U.S. in 2012 were \$245 billion<sup>5</sup>. In 2007-08 nearly one-quarter of U.S. teens had diabetes or were pre-diabetic<sup>50</sup>. Diabetes is not equal opportunity: one in three U.S. children is predicted to become diabetic over his lifetime and this rises to one in two Hispanic children<sup>54</sup>.

**Other sugar-related morbidities.** Cardiovascular disease, present in more than one-third of American adults<sup>55</sup>, is now understood to be exacerbated by the inflammatory effects of excess sugar consumption<sup>56,57,58,59,60</sup>. Excess sugar consumption is a risk factor for non-alcoholic fatty liver disease, a precursor to diabetes mellitus<sup>61</sup>.

**Dental caries.** U.S. adults (aged 20 to 64) have an average of 3.28 decayed or missing permanent teeth and 13.65 decayed and missing permanent surfaces<sup>62</sup>. The NHANES, 1999 to 2002, reported that 41% of children aged 2–11 years had dental caries in the primary dentition, and that 42% of children and adolescents aged 6–19 years had caries in the permanent dentition<sup>63</sup>. Dental caries are particularly endemic to specific population subsets: Hispanic subgroups and those with lower incomes have more severe decay in their permanent teeth<sup>62</sup>.

### **Appendix 3: Examples of dietary guidance for water from countries around the world (courtesy of Dr. Barry Popkin)**

#### ARGENTINA

2003

Guías alimentarias para la población argentina; p39

AADYND, Asociación Argentina de Dietistas y nutricionistas dietistas

<http://www.msal.gov.ar/promin/publicaciones/pdf/guias-alimentarias.pdf>

#### AUSTRALIA AND NEW ZEALAND

2006

Nutrient reference values for Australia and New Zealand; p53; National Health and Medical Research Council

[http://www.nhmrc.gov.au/files\\_nhmrc/publications/attachments/n35.pdf](http://www.nhmrc.gov.au/files_nhmrc/publications/attachments/n35.pdf)

Australian Dietary Guidelines, National Health and Medical Research Council

<http://www.nhmrc.gov.au/guidelines/publications/n55>

#### BELGIUM

Voedingsaanbevelingen Voor België; Hoge Gezondheidsraad

<http://www.health.belgium.be/internet2Prd/groups/public/@public/@shc/documents/ie2form/19066661.pdf>

De actieve voedingsdriehoek: een praktische voedings- en beweeggids

<http://www.vigez.be/index.php?page=59&detail=227>

#### BRAZIL

2005

Guia alimentar para a população brasileira; p114; MoH: Ministry of health

[http://dtr001.saude.gov.br/editora/produtos/livros/pdf/05\\_1109\\_M.pdf](http://dtr001.saude.gov.br/editora/produtos/livros/pdf/05_1109_M.pdf)

#### EUROPE

2010

Scientific opinion on dietary reference values for water; p38; European Food Safety Authority (EFSA)

<http://www.efsa.europa.eu/en/efsajournal/pub/1459.htm>

#### FRANCE

2000

De l'eau sans modération, Programme National Nutrition Santé (PNNS)

<http://www.inpes.sante.fr/CFESBases/catalogue/pdf/1179.pdf>

#### GERMANY

2002

DGE: German nutrition society

<http://www.dge.de/modules.php?name=News&file=article&sid=162>

#### MEXICO



2008

¿Sabes cómo llevar una buena alimentación?, Instituto nacional de Salud pública

[http://www.insp.mx/bajale/docs/talleres/dieta\\_grupos\\_alimentos\\_necesidades\\_nutrimientales.pdf](http://www.insp.mx/bajale/docs/talleres/dieta_grupos_alimentos_necesidades_nutrimientales.pdf)

SPAIN

2007

Rueda de los Alimentos, Sociedad Española de Dietética y Ciencias de la Alimentación (SEDCA)

[http://www.nutricion.org/publicaciones/revistas/NutrClinDietHosp08\(28\)2\\_3\\_19.pdf](http://www.nutricion.org/publicaciones/revistas/NutrClinDietHosp08(28)2_3_19.pdf)

SOUTH AFRICA

2012

South African guidelines for healthy eating. National Department of Health. Directorate: Nutrition

[ftp://ftp.fao.org/es/esn/nutrition/dietary\\_guidelines/zaf\\_eating.pdf](ftp://ftp.fao.org/es/esn/nutrition/dietary_guidelines/zaf_eating.pdf)

TURKEY

2011

Dietary guidelines for Turkey; p20; MoH: Ministry of Health

[http://www.beslenme.gov.tr/content/files/yayinlar/ingilizce\\_yayinlar/books/dietary\\_guidelines.pdf](http://www.beslenme.gov.tr/content/files/yayinlar/ingilizce_yayinlar/books/dietary_guidelines.pdf)

USA/CANADA

2005

DRI, Dietary reference intake for water, potassium, sodium, chloride and sulfate, p73; Institute of Medicine (IOM)

[http://www.nap.edu/openbook.php?record\\_id=10925&page=7](http://www.nap.edu/openbook.php?record_id=10925&page=7)

The FAO and other organizations have collected food guidance models from around the world. The following are links to their websites, demonstrating that numerous other countries include water in their food guidance.

<http://www.fao.org/ag/humannutrition/nutritioneducation/fbdg/en/>

<http://fnic.nal.usda.gov/dietary-guidance/past-food-pyramid-materials/ethnic-cultural-food-pyramids>

<http://www.eufic.org/article/en/expid/food-based-dietary-guidelines-in-europe/>

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