DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service
Centers for Disease Control and Prevention

National Center for Health Statistics
3311 Toledo Road
Hyattsville, Maryland 20782

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Edward Archer, PhD, MS
Chief Science Officer EnduringFX
PO Box 11695
Columbia, SC 29211
850-570-3162
archer.edwardc@gmail.com

Dear Dr. Archer:

We have reviewed your Information Quality Appeal related to the February 17, 2017 Morbidity and Mortality Weekly Report (MMWR) publication, "QuickStats: Percentage of Total Daily Kilocalories Consumed from Sugar-Sweetened Beverages Among Children and Adults, by Sex and Income Level — National Health and Nutrition Examination Survey, United States, 2011–2014" (Vol. 66, No. 6, Page 181). The Information Quality Appeal you submitted on August 21, 2017 stated that the CDC response dated July 24, 2017 was "insufficient"… "because it failed to cite or address facts in evidence or specific scientific critiques".

We continue to assert that the use of self-reported data on population nutrition intake, including data collected by 24-hour recalls used in NHANES, is supported by the scientific and nutrition research community. This is evidenced by several peer-reviewed publications (Davy & Estabrooks, 2015a Hébert et al., 2014; Labonté et al., 2016; Satija et al., 2015a; Subar et al., 2015), the Dietary Reports of the U.S. Department of Agriculture (USDA), the Scientific Report of the 2015 Dietary Guidelines Advisory Committee (US DHHS and USDA 2015a), and the 2015-2020 Dietary Guidelines for Americans (US DHHS and USDA 2015b).

Our initial response, dated July 24, 2017, described the challenges of dietary assessment and the strengths and limitations of the NHANES dietary data used in the QuickStats. We recognize that dietary assessment based on self-reported intake data is a subject of ongoing dialogue and numerous peer-reviewed articles and commentaries (including the work you cited) have been and will continue to be published on both sides of this discussion. Several investigators, largely in response to criticisms by yourself and others (Archer et al, 2013; Archer et al., 2015; Archer 2017b; Dhurandhar et al., 2015), have commented on the value of self-reported dietary data at a population level to provide critical detailed information on food, beverage and nutrient intakes and to examine diet-disease relationships (Davy and Estabrooks, 2015b; Gu and Tucker, 2017; Hébert et al., 2015; Lamarche et al., 2017; Satija et al., 2015b, Shikany et al., 2016; Subar et al., 2016).

As part of your appeal, your response cited the paper by an eminent group of nutrition researchers, Subar et al., (2015). You noted that one of their conclusions was that investigators not use self-reported energy intake as a measure of energy intake. However, Subar et al. also concluded that investigators should use self-reported energy intake for energy adjustment of other self-reported dietary constituents to improve risk estimation in studies of diet-health associations. This was reiterated more recently by Willett et al., in response to your critique of their study (Archer, 2017a;

Willett et al., 2017). As indicated in our previous response, the QuickStats did not describe total energy intake. Instead, it provided estimates for the percentage of total energy consumed from sugar-sweetened beverages, by adjusting for energy intake. Thus, the QuickStats meets the recommendation described by Subar et al.

Regarding your response that the validity of the NHANES dietary data published in the QuickStats has been refuted by your own research, and therefore should be rendered invalid, we would like to point out the following from Subar et al. (2015), which indicates that the debate over error in energy intake has not been definitively answered by your, or any other, research:

> *The bottom line is that the magnitude of underreporting is not as abysmal as Archer et al. [Archer et al, 2013] estimate, and the preponderance of scientific evidence with regard to energy underreporting does not justify the conclusions that all self-reported foods and dietary constituents are misreported to the same extent and that self-report data are worthless.*

This view is also supported by the Scientific Report of the 2015 Dietary Guidelines Advisory Committee:

> *The strengths and shortcomings of these dietary assessment methods have been discussed over time in various meetings (e.g., International Conference on Diet and Activity Methods and American Society for Nutrition/Experimental Biology), workshops, and expert groups. This has also been discussed for several years in the scientific literature (Beaton 1994; Berdainer et al., 2008) and in recent articles (Archer et al., 2013; Hébert et al., 2014; Webb, 2013). No assessment method is perfect and the choice of dietary method is based on the purpose for which it is intended. For NHANES, repeated 24-hour recalls remain the backbone of dietary assessment and monitoring. These data are useful in providing national- and group-level estimates of dietary intakes of the U.S. population, on a given day as well as in describing usual intake distributions using appropriate statistical approaches, to inform nutrition policy.*

Regarding your comment that the public has a right to know regarding the validity of the CDC health data, a peer-reviewed paper was published by CDC and USDA scientists in 2016 (Ahluwalia et al., 2016). This paper provides details on the NHANES dietary data collection, including analytical considerations and appropriate uses. It specifically discusses measurement error and validity issues around dietary data and cites references including your own (Archer et al., 2013). The paper also describes the strengths and limitations of these data as well as methods of statistical correction and adjustment. The paper is a free resource, easily accessible to the public via the Journal website or on the NHANES homepage (https://www.cdc.gov/nchs/nhanes/new_nhanes.htm).

After careful consideration of your appeal, we respectfully decline to retract or change this *QuickStats* publication.

Sincerely,

/S/

Charles J. Rothwell
Director, National Center for Health Statistics

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