From: Edward Archer [mailto:archer.edwardc@gmail.com]
Sent: Monday, August 21, 2017 2:53 PM
To: Web Info Quality (CDC) <infoquality@cdc.gov>; Rosinger, Asher Yoel (CDC/OPHSS/NCHS) <yxm9@cdc.gov>; Herrick, Kirsten (CDC/OPHSS/NCHS) <goi7@cdc.gov>; dvt4@cdc.gov; Park, Sohyun (CDC/ONDIEH/NCCDPHP) <geo7@cdc.gov>; Frenk, Steven M. (CDC/OPHSS/NCHS) <xar3@cdc.gov>
Subject: Information Quality Appeal; Vol. 66, No. 6, Page 181

Ryne Paulose, PhD

Associate Director for Science

Division of Health and Nutrition Examination Statistics

National Center for Health Statistics

Centers for Disease Control and Prevention

Re: Information Quality Appeal

Dear Dr. Paulose,

Thank you for providing the Centers for Disease Control and Prevention's (CDC) response to my February 24, 2017 email communication requesting the retraction or correction of its 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 (hereafter SSB *QuickStats*).

Formal Appeal

In my original communication (copied below), I provided evidence supporting my position that the SSB *QuickStats* seriously misled the public, and thus was in violation of both the Data Quality Act passed by the United States Congress in Section 515 of the Consolidated Appropriations Act in 2001, and the US Department of Health and Human Services Guidelines

for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated to the Public.

The CDC response of July 24, 2017, as enumerated below, was wholly insufficient, insubstantial, and tangential, because it failed to cite or address the facts in evidence and the specific scientific critiques (Archer et al. 2015d, c) presented in my original communication. As such, this communication, dated August 21, 2017 is a formal appeal for the CDC to reconsider its refusal to correct or retract a demonstrably biased and misleading publication.

The Facts and the Insufficiency of the CDC Response

1. The validity of the NHANES dietary data published in the SSB *QuickStats* was refuted by rigorous, peer-reviewed scientific research (Archer et al. 2013; Archer et al. 2015d). Nevertheless, the authors of the SSB *QuickStats* failed to cite or even acknowledge this body of contrary empirical work. This lack of due diligence led to an inaccurate, incomplete, and biased publication that seriously misled the public and undermined the mission of the CDC to provide valid information to protect the health of our nation.

    a. The CDC response failed to address the fact that the SSB *QuickStats* omitted the contrary research that directly refuted the validity of the NHANES dietary data it presented. By law, the public has a right to know if the health data published by the CDC are valid, or if the validity was seriously challenged by rigorous, peer-reviewed research. The SSB *QuickStats* failed to protect this right, and the CDC response provided no explanation nor remedy for this failure.

2. The CDC response acknowledged the ongoing scientific controversy surrounding the memory-based dietary data collection methods (M-BMs) employed in the National Health and Nutrition Examination Survey (NHANES) and used to collect the data published in the SSB *QuickStats*. This controversy encompasses dozens of peer-reviewed publications arguing for and against the validity and value of M-BMs, **yet the SSB QuickStats failed to alert the reader of this ongoing controversy** (Archer et al. 2015d; Davy et al. 2015; Archer et al. 2017; Archer et al. 2015c; Satija et al. 2015; Subar et al. 2015; Hébert et al. 2014; Hebert et al. 2015; Archer 2016b; Archer 2016a; Archer 2016c; Archer 2017b, c; Dhurandhar et al. 2016; Dhurandhar et al. 2014; Schoeller et al. 2015; Schoeller et al. 2013; Subar et al. 2016; Archer 2017a; Archer 2017d; Ioannidis 2013; Mitka 2013).

a. The public has a right to know if the methods used to collect the data the CDC publishes are valid; yet the authors of the SSB *QuickStats* failed to acknowledge or even mention the controversy. The result was a misleading and unscientific publication which undermines the mission of the CDC.

b. The CDC response was incomplete and wholly inadequate because it failed to explain the omission or provide a remedy for the publication of misleading data, results, and conclusions.

c. While the CDC response acknowledges the controversy, it is biased and incomplete because the rigorous, peer-reviewed research that generated the controversy was not cited nor were the critiques presented in my original communication addressed (Archer et al. 2015b; Archer et al. 2015d, c). These omissions led to a very biased presentation of the current body of evidence, and compromise the integrity of CDC communications. It is a clear violation of the Data Quality Act to omit contrary evidence in both the original publication and the CDC response.

3. It is a fact that the authors of the SSB *QuickStats* presented physiologically implausible M-BM (self-reported) energy intake data as fact (Archer et al. 2013; Archer et al. 2015d, c; Mitka 2013; Ioannidis 2013). This unscientific presentation was published even though a large and growing body of nutrition and obesity investigators now support Archer et al.'s results and conclusions, and state unequivocally that M-BM (self-reported) energy intake data cannot be used "*as a measure of true energy intake*" (Subar et al. 2015); see also (Schoeller et al. 2015; Schoeller et al. 2013; Dhurandhar et al. 2016; Dhurandhar et al. 2014).

a. **Given that the methods employed in the SSB *QuickStats* were in direct conflict with established practices**, the failure of the CDC to address this fact in the response dated July 24, 2017 demonstrates a surprising lack of scientific due diligence that seriously compromised the integrity of CDC communications.

b. It should be obvious that physiologically implausible (i.e., meaningless) data are not, and cannot be as claimed in the CDC response, valid *"estimates of the percentage of total daily kilocalories consumed from sugar-sweetened beverages (SSB) on a given day among US children"*. As such, the CDC response is illogical and unscientific.

4. In peer-reviewed publications, the NHANES dietary data were demonstrated to be "pseudoscientific" and "inadmissible" as scientific evidence because the measurement error on the individual level was non-quantifiable (i.e., non-falsifiable), and on the population level these data were implausible and incompatible with human survival (Archer 2016a; Archer 2017b, c; Archer et al. 2015a, b; Archer et al. 2013; Archer et al. 2017; Archer et al. 2015d, c; Archer 2013, 2016d; Ioannidis 2013; Mitka 2013).

a. The CDC response was insufficient because it merely presented ipse dixit statements alleging the validity of the NHANES M-BMs and data rather than addressing the critiques or citing the rigorous peer-reviewed publications presenting these critiques.

5. Importantly, the CDC response erroneously presented conclusions regarding measurement error, when in fact M-BMs are not a measurement protocol but are merely an inexact tool for data collection. Educated readers will note the distinction between a scientific measurement protocol and mere data collection. For example, M-BMs capture dietary anecdotes/guesstimates and do not measure actual or true dietary consumption, and it is well established that there are large and clinically significant qualitative and quantitative differences between what people remember eating and drinking, what they are willing and able to report eating and drinking, and the actual foods and beverages they consumed.(Archer et al. 2015d, c; Archer et al. 2013). These simple facts are the primary reason a growing number of investigators and scholars now agree that the NHANES M-BMs do not measure dietary consumption but instead collect data on highly edited, reported memories of consumption (i.e., whatever the respondents were willing and able to report consuming). We contend that these nominal psychological data (i.e., reported memories of consumption) are irrelevant to examining the quantitative physiologic effects of actual dietary intake on health (Archer 2017c, b; Archer 2017a; Archer 2017d; Archer et al. 2015d, c).

a. The CDC response failed to address this critique or cite the publications presenting this novel perspective and existential threat to M-BMs. As such, the CDC response was biased and insufficient due to a lack of scientific due diligence.

6. The CDC's response cited Subar et al. 2015 when defending the use of M-BM (self-reported) energy intake data in the SSB *QuickStats.* Yet Subar et al., explicitly stated, *"do not use self-reported [M-BMs] energy intake as a measure of true energy intake."* (Subar et al. 2015). This suggests that the CDC personnel accountable for the response dated July 24,

2017 were either ignorant of the contents of Subar et al. 2015 or guilty of willful obfuscation. Either situation demands remediation.

7. The CDC response attempted to defend the statistical machinations used by nutrition epidemiologists to overcome the fact that M-BM data are implausible. While numerous publications explicitly refuted the validity of these machinations (Archer et al. 2015b; Archer et al. 2015d, c; Bellach et al. 1998), none were cited in the CDC response. For example, *"energy-adjusted food and nutrient intakes"* were unequivocally refuted due to the differential misreporting of specific foods, beverages, and nutrients (e.g., sugar, fat, vegetables) (Archer et al. 2015b; Archer et al. 2015d, c; Bellach et al. 1998); yet this evidence was omitted from the CDC response.

8. It is interesting to note that the CDC response cited Labonte et al. while failing to cite the more recent publication demonstrating the pseudoscientific nature of the M-BMs it supports (Archer 2017b). As such, the CDC response is incomplete and dated.

9. If, as the CDC's response states, that misreporting of dietary intakes "*has long been recognized*", why was the public not informed that the data presented in the SSB *QuickStats* were known to be inaccurate? This contradiction demands retraction or correction of the SSB *QuickStats*.

Summary

The public has a right to know if the health data presented by the CDC are valid. Additionally, the pubic needs to be informed of scientific controversies that are relevant to inferences and conclusions of CDC publications. Nevertheless, the CDC response demonstrated a surprisingly lack of scientific due diligence by omitting the rigorous evidence questioning the validity of the NHANES dietary data explicitly presented in my initial communication of February 24, 2017 (Archer et al. 2015d, c). I think it is unacceptable, but not unexpected (Archer et al. 2017), that the CDC, as part of the administrative branch of the US Federal Government, refused to incorporate rigorous, peer-reviewed contrary evidence explicitly presented in a formal communication. Given this obfuscation, it may be posited that the CDC response of July 24, 2017 and the SSB *QuickStats* are exemplars of the biased, misleading publications the Data Quality Act was designed to prevent.

The public has a right not to be subjected to biased, incomplete, and misleading CDC publications that obfuscate rather than educate. Rigorous and highly cited peer-reviewed studies and reviews that question the validity of published CDC data should be cited, and critiques of the CDC's methods and data should be explicitly acknowledged and addressed rather than omitted or obscured. This rudimentary level of scientific due diligence was not performed in either the SSB *QuickStats* or the CDC's response of July 24, 2017. Thus, the integrity of CDC scientific communications was compromised and this fact demands correction or retraction of the SSB *QuickStats* as per the Data Quality Act.

In closing, the public cannot be expected to read the scientific literature supporting or condemning the use of M-BMs. Therefore, CDC personnel have a duty to perform scientific due diligence and provide the public an unbiased exposition of the ongoing scientific controversy regarding the validity of the NHANES methods and data in all past and future communications. This duty has yet to be performed, and I respectfully request the retraction or correction of the SSB *QuickStats.*

Sincerely,

Edward Archer, PhD., MS.

References

Archer, E. 2016a. "At what point does it become scientific misconduct to continue to publish physiologically implausible dietary data? ." *BMJ* 353 (i2343):available at: http://www.bmj.com/content/353/bmj.i2343/rr-6

Archer, E. 2013. "A Wolf in Sheep's Clothing." *The Scientist* Available at: http://www.the-scientist.com/?articles.view/articleNo/37918/title/Opinion--A-Wolf-in-Sheep-s-Clothing/.

Archer, E. 2016b. "A lack of credible evidence for a relationship between socio-economic status and dietary patterns: a response to 'Associations between socio-economic status and dietary patterns in US black and white adults'." *Br J Nutr* 115 (8):1438-1438. doi: 10.1017/s0007114516000271.

Archer, E. 2016c. "Letter by Archer Regarding Article, "Southern Dietary Pattern is Associated With Hazard of Acute Coronary Heart Disease in the Reasons for Geographic and Racial Differences in Stroke (REGARDS) Study"." *Circulation* 133 (8):e415. doi: 10.1161/circulationaha.115.019770.

Archer, E. 2016d. *The U.S. Dietary Guidelines: A Scientific Fraud*. available at: http://www.realclearscience.com/articles/2016/03/02/the_us_dietary_guidelines_a_scientific_fraud_109552.html ; last accessed 05/07/2016: Real Clear Science.

Archer, E. 2017a. "The Use of Implausible Data without Caveats is Misleading." *American Journal of Clinical Nutrition;* In Press.
Archer, E., and S. N. Blair. 2015a. "Implausible data, false memories, and the status quo in dietary assessment." *Advances in Nutrition* 6 (2):229-30. doi: 10.3945/an.114.007799.
Archer, E., and S. N. Blair. 2015b. "Reply to LS Freedman et al." *Adv Nutr* 6 (4):489-90. doi: 10.3945/an.115.009183.
Archer, E., G. A. Hand, and S. N. Blair. 2013. "Validity of U.S. Nutritional Surveillance: National Health and Nutrition Examination Survey caloric energy intake data, 1971-2010." *PLoS One* 8 (10):e76632. doi: 10.1371/journal.pone.0076632.
Archer, E., M. Marlow, and R. Williams. 2017. *Government Dietary Guidelines: Uncertain Science Leads to Questionable Public Health Policy*. Available at: https://www.mercatus.org/publications/government-dietary-guidelines-public-health-policy ; last accessed 04.30.17: Mercatus Center.
Archer, E., G. Pavela, and C. J. Lavie. 2015c. "A Discussion of the Refutation of Memory-Based Dietary Assessment Methods (M-BMs): The Rhetorical Defense of Pseudoscientific and Inadmissible Evidence." *Mayo Clinic Proceedings* 90 (12):1736-1738.
Archer, E., G. Pavela, and C. J. Lavie. 2015d. "The Inadmissibility of What We Eat in America and NHANES Dietary Data in Nutrition and Obesity Research and the Scientific Formulation of National Dietary Guidelines." *Mayo Clinic Proceedings* 90 (7):911-26. doi: 10.1016/j.mayocp.2015.04.009.
Archer, Edward. 2017b. "Discussion of “Dietary assessment is a critical element of health research – Perspective from the Partnership for Advancing Nutritional and Dietary Assessment in Canada” − Misrepresentations distort the scientific record." *Applied Physiology, Nutrition, and Metabolism*:1-1. doi: 10.1139/apnm-2016-0583.
Archer, Edward. 2017c. "Letter by Archer Regarding Article, “Sugar- and Artificially Sweetened Beverages and the Risks of Incident Stroke and Dementia: A Prospective Cohort Study”." *Stroke* 48 (e236). doi: 10.1161/strokeaha.117.018032.
Archer, Edward. 2017d. "The NHANES Dietary Data are Physiologically Implausible and Inadmissible as Scientific Evidence." *American Journal of Clinical Nutrition;* In Press.
Bellach, B., and L. Kohlmeier. 1998. "Energy adjustment does not control for differential recall bias in nutritional epidemiology." *J Clin Epidemiol* 51 (5):393-8.
Davy, Brenda M., and Paul A. Estabrooks. 2015. "The Validity of Self-reported Dietary Intake Data: Focus on the “What We Eat In America” Component of the National Health and Nutrition Examination Survey Research Initiative." *Mayo Clinic Proceedings* 90 (7):845-847. doi: http://dx.doi.org/10.1016/j.mayocp.2015.05.009.
Dhurandhar, N. V., D. Schoeller, A. W. Brown, S. B. Heymsfield, D. Thomas, T. I. Sorensen, J. R. Speakman, M. Jeansonne, and D. B. Allison. 2014. "Energy balance measurement: when something is not better than nothing." *Int J Obes (Lond)* 39 (7):1109-1113. doi: 10.1038/ijo.2014.199.
Dhurandhar, Nikhil V, Andrew W Brown, Diana Thomas, and David B Allison. 2016. "We Agree That Self-Reported Energy Intake Should Not Be Used as a Basis for Conclusions about Energy Intake in Scientific Research." *The Journal of Nutrition* 146 (5):1141-1142. doi: 10.3945/jn.115.227017.

Hébert, J., T.G. Hurley, S.E. Steck, D.R. Miller, F.K. Tabung, K.E. Peterson, L.H. Kushi, and E.A. Frongillo. 2014. "Considering the Value of Dietary Assessment Data in Informing Nutrition-Related Health Policy." *Advances in Nutrition* 5:447-455.
Hebert, J. R., T. G. Hurley, S. E. Steck, D. R. Miller, F. K. Tabung, L. H. Kushi, and E. A. Frongillo. 2015. "Reply to E Archer and SN Blair." *Adv Nutr* 6 (2):230-3. doi: 10.3945/an.114.007831.
Ioannidis, J.P.A. 2013. "Implausible results in human nutrition research." *BMJ* 347. doi: 10.1136/bmj.f6698.
Mitka, M. 2013. "Do flawed data on caloric intake from NHANES present problems for researchers and policy makers?" *JAMA* 310 (20):2137-8. doi: 10.1001/jama.2013.281865.
Satija, A., E. Yu, W. C. Willett, and F. B. Hu. 2015. "Understanding nutritional epidemiology and its role in policy." *Adv Nutr* 6 (1):5-18. doi: 10.3945/an.114.007492.
Schoeller, D. A., D. Thomas, E. Archer, S. B. Heymsfield, S. N. Blair, M. I. Goran, J. O. Hill, R. L. Atkinson, B. E. Corkey, J. Foreyt, N. V. Dhurandhar, J. G. Kral, K. D. Hall, B. C. Hansen, B. L. Heitmann, E. Ravussin, and D. B. Allison. 2013. "Self-report-based estimates of energy intake offer an inadequate basis for scientific conclusions." *Am J Clin Nutr* 97 (6):1413-5. doi: 10.3945/ajcn.113.062125.
Schoeller, Dale, Edward Archer, John A Dawson, and Steven Heymsfield. 2015. "Implausible Results from the Use of Invalid Methods." *The Journal of Nutrition* 145 (1):150. doi: 10.3945/jn.114.199521.
Subar, A. F., L. S. Freedman, J. A. Tooze, S. I. Kirkpatrick, C. Boushey, M. L. Neuhouser, F. E. Thompson, N. Potischman, P. M. Guenther, V. Tarasuk, J. Reedy, and S. M. Krebs-Smith. 2015. "Addressing Current Criticism Regarding the Value of Self-Report Dietary Data." *J Nutr* 145 (12):2639-45. doi: 10.3945/jn.115.219634.

Subar, Amy F, Laurence S Freedman, Sharon I Kirkpatrick, Carol Boushey, Nancy Potischman, Patricia M Guenther, and Susan M Krebs-Smith. 2016. "Reply to NV Dhurandhar et al." *The Journal of Nutrition* 146 (5):1142-1143. doi: 10.3945/jn.116.230854.