August 2, 2021

Dear Dr. Breysse,

We are members of Project TENDR (Targeting Environmental Neuro-Development Risks), a group of scientists, health professionals, and children’s and environmental advocates concerned about the contributions of environmental chemicals to neurodevelopmental disorders such as intellectual and learning disabilities, autism spectrum disorder, and attention deficit hyperactivity disorder.

We urgently call for the Centers for Disease Control and Prevention (CDC) to update U.S. blood lead standards to bring them in line with current science. Specifically, we call on CDC to decrease the reference value for blood lead concentrations in children. In 2012, the Centers for Disease Control and Prevention (CDC) abandoned the concept of a “level of concern” or “action level” for blood lead because of the overwhelming evidence that there is no concentration that is safe for children. To replace the level of concern, the CDC established a reference value, defined as the 97.5th percentile of the distribution of blood lead concentrations in children at that point in time. It was intended to identify children whose exposure is “…much higher than most children’s levels.” CDC said it would re-evaluate the reference value every 4 years and update it as necessary using the two most recent survey cycles of available National Health and Nutrition Examination Survey (NHANES) data.

The current reference value of 5 µg/dL is based on NHANES data that are more than a decade old (2007-2008 and 2009-2010). More recent survey cycles indicate that the distribution of blood lead concentration in young children has steadily shifted toward lower values since the initial reference value was set. The estimated 97.5th percentile of blood lead levels in children at ages 1-5 years in the NHANES 2011-2014 was 3.48 µg/dL. The CDC has not re-evaluated the reference value since 2012, as it said it would do every 4 years. It is time to do so and lower this value accordingly. The importance of taking this step is supported by the National Toxicology Program’s 2012 conclusion, that adverse effects are apparent on academic achievement, IQ, attention-related behaviors, and behavioral problems even at blood lead concentration below 5 µg/dL.

Historically, lead poisoning has provided a case study in environmental injustice and systemic racism, as children of color have suffered the greatest burden from this toxicant. The EPA’s 2019 report on children and the environment found that among children with the highest blood lead levels in 2013-16, Black children had higher levels than White or Hispanic children. Children living in poverty had higher blood lead levels than children above the poverty line, and Black children living below the poverty line had higher blood lead levels than White or Hispanic...
children living below the poverty line. These differences have life-long consequences. The lifetime earnings lost due to childhood lead exposure are estimated to be 46-55% higher for Black children than for White or Hispanic children. It is critical to continue the efforts to close the disparity between Black children and children of other race/ethnicities.

The current 5 μg/dL blood lead reference level (BLRL) serves as the basis for numerous regulations that seek to reduce children’s exposure to lead sources and improve health outcomes. The U.S. Environmental Protection Agency (EPA), one of the lead agencies on the President’s Task Force on Environmental Health Risks and Safety Risks to Children, helped to develop a federal action plan to address childhood lead exposure and identified several key regulatory actions to reduce children’s harm from lead. These regulations include the Lead and Copper Rule (LCR), which regulates the control and monitoring of lead in drinking water as well as the lead National Ambient Air Quality Standards (NAAQS), which sets limits for allowable levels of lead in air emissions. Practically speaking, EPA is currently overhauling the LCR and is using a cost-benefits analysis to demonstrate how revisions to the LCR are expected to result in significant health benefits. One key component to the benefits analysis includes the use of the BLRL to help quantify the incremental contribution of blood lead concentrations (at or below 5 μg/dL) to cognitive function in children from three months to 16 years of age. The lead NAAQS has not been changed since 2008 and is at the early stages of a new five-year review cycle. Scientists have been calling for a more stringent lead NAAQS, noting that while lead emissions have decreased over time, there are still hundreds of tons of lead emitted into the air via anthropogenic sources, according to EPA’s National Emissions Inventory. In the current review cycle, EPA is well positioned to finally strengthen the lead NAAQS and will undoubtedly use the CDC BLRL in its quantitative analysis of human exposure health risk assessment – as it has done in previous reviews.

Lead-based paint and lead contaminated dust remains the most significant source of lead exposure in most children. In 2017, the U.S. Department of Housing and Urban Development (HUD) revised its Lead Safe Housing Rule to modify the definition of “elevated blood lead level” (“EBLL”) so hazard reduction requirements – including remedial action – to reduce lead dust in homes are triggered when a child presents with a blood lead level of 5 μg/dL (rather than the previous 20 μg/dL) to align with the CDC’s reference level. Importantly, HUD’s definition of EBLL states that when CDC changes the reference value, HUD intends to apply the changed reference value as the basis for defining elevated blood lead in children and the level at which action should be taken to reduce lead-based environmental hazards. Any revision to the reference level will undoubtedly affect the underlying parameters used to improve these and other federal regulations concerning lead exposure.

As Project TENDR has previously advocated, primary prevention of children’s lead exposure is the key to reducing the ills that it causes. Exposure to any amount of lead threatens the developing brain. Reducing the reference value will benefit children from all racial and ethnic backgrounds and be an important step forward in terms of identifying children who are at greatest risk of such harms and eliminating the disparities that currently result in the greatest burden falling on Black children and children living in poverty.
Thank you for your consideration of this letter. We would be glad to discuss this issue with you and your staff.

Sincerely,

Jerry P Abraham, MD MPH CMQ*
Director, Kedren Vaccines
Representative, National Hispanic Medical Association

Dr. Laura Anderko PhD RN*
M. Fitzpatrick College of Nursing
Villanova University

John R. Balmes, MD*
Prof. of Medicine, UCSF; Prof. Environmental Health Sciences, UC Berkeley
Director, Northern Calif Center for Occupational & Environmental Health
UC Berkeley-UC Davis-UCSF

David C. Bellinger, PhD, MSc*
Research Director, Boston Children’s Hospital
Professor, Harvard Medical School and Harvard T.H. Chan School of Public Health

Deborah Bennett, PhD*
Professor, Department of Public Health Sciences
School of Medicine, University of California, Davis

Linda S. Birnbaum, PhD, DABT, ATS*
Scientist Emeritus and Former Director (retired), National Institute of Environmental Health Sciences and National Toxicology Program
Scholar in Residence, Nicholas School of the Environment Duke University

Asa Bradman, PhD, MS*
Professor, Department of Public Health
University of California, Merced

Charlotte Brody, RN*
National Director
Healthy Babies Bright Futures

Carla Campbell, MD, MS*
Associate Professor of Public Health, Retired
University of Texas at El Paso, El Paso, Texas

Aimin Chen, MD, PhD*
Professor of Epidemiology, Department of Biostatistics, Epidemiology and Informatics (DBEI) Center of Excellence in Environmental Toxicology (CEET)
Perelman School of Medicine, University of Pennsylvania
Jeanne A. Conry, MD, PhD*
President, Environmental Health Leadership Foundation
President-Elect, International Federation of Gynaecology & Obstetrics

Kristie Ellickson, PhD*
Adjunct, Division of Environmental Health
School of Public Health, University of Minnesota

Stephanie M. Engel, PhD*
Professor, Department of Epidemiology, Gillings School of Global Public Health
University of North Carolina, Chapel Hill

Brenda Eskenazi, PhD*
Professor of the Graduate School
Director, Center for Environmental Research and Children's Health (CERCH)
School of Public Health, University of California, Berkeley

Robert M. Gould, MD*
Associate Adjunct Prof, Program on Reproductive Health and Environment,
UCSF School of Medicine
Past President, Physicians for Social Responsibility

Tracy Gregoire*
Healthy Children Project Director
Learning Disabilities Association of America

Russ Hauser, MD, ScD, MPH*
Frederick Lee Hisaw Professor of Reproductive Physiology,
Professor of Environmental and Occupational Epidemiology,
Harvard T.H. Chan School of Public Health
Professor of Obstetrics, Gynecology and Reproductive Biology, Harvard Medical School

Shelley A. Hearne, DrPH*
Executive Director, Forsythia Foundation
Inaugural Deans Sommer and Klag Professor of the Practice for Public Health Advocacy
Director, Center for Public Health Advocacy
Johns Hopkins University Bloomberg School of Public Health

Irva Hertz-Picciotto, PhD, MPH*
Director, UC Davis Environmental Health Sciences Center
Professor, Dept. of Public Health Sciences & Medical Investigations of Neurodevelopmental Disorders (MIND) Institute, University of California, Davis

Deborah Hirtz, MD*
Professor, Neurological Sciences and Pediatrics
University of Vermont School of Medicine
Katie Huffling, RN, MS, CNM*
Executive Director
Alliance of Nurses for Healthy Environments

Margaret R. Karagas, MS, PhD*
Professor & Chair, Department of Epidemiology
Director, Children’s Environmental Health & Disease Prevention Research Center
Geisel School of Medicine, Dartmouth College

Tanya Khemet Taiwo, PhD, CPM, MPH*
Assistant Professor, Department of Midwifery, Bastyr University
Co-Director, Environmental Health Sciences Center, UC Davis

Philip J. Landrigan, MD, MSc, FAAP*
Director, Global Public Health Program
Director, Global Observatory on Pollution and Health
Professor of Biology, Boston College

Arthur Lavin, MD, FAAP*
Pediatrician, Advanced Pediatrics
Associate Clinical Professor of Pediatrics
Case Western Reserve University School of Medicine

Michelle Mabson, MPH, MS*
Staff Scientist, Earthjustice
Chief Advocacy Officer, Black Millennials 4 Flint

Emily Marquez, PhD*
Staff Scientist, Pesticide Action Network North America

Mark Miller, MD, MPH*
Director,
University of California San Francisco Pediatric Environmental Health Specialty Unit

Pamela Miller, MS*
Executive Director, Alaska Community Action on Toxics
Co-Chair, International Pollutants Elimination Network

Mark A. Mitchell MD, MPH, FACPM*
Co-Chair, Commission on Environmental Health
National Medical Association

Rachel Morello-Frosch, PhD, MPH*
Professor, Department of Environmental Science, Policy and Management
Professor, School of Public Health
University of California, Berkeley
Heather B. Patisaul, PhD*
Associate Dean for Research and Professor, College of Sciences,
Center for Human Health and the Environment, WM Keck Center for Behavioral Biology
NC State University

Jerome A. Paulson, MD, FAAP*
Professor Emeritus, Pediatrics and of Environmental & Occupational Health
George Washington University School of Medicine and Health Sciences
George Washington University Milken Institute School of Public Health

Frederica Perera, DrPH, PhD*
Professor of Public Health
Director, Translational Research
Founding Director, Columbia Center for Children’s Environmental Health,
Mailman School of Public Health, Columbia University

Beate Ritz MD, PhD*
Professor of Epidemiology, Center for Occupational and Environmental Health
Fielding School of Public Health, University of California Los Angeles

Leslie Rubin, MD*
Assoc. Prof., Dept. of Pediatrics, Morehouse School of Medicine
Co-director, Southeast Pediatric Environmental Health Specialty Unit, Emory University
Founder, Break the Cycle of Health Disparities, Inc.

Susan L. Schantz, PhD*
Professor Emeritus of Toxicology and Neuroscience
Beckman Institute for Advanced Science and Technology
University of Illinois, Urbana-Champaign

Veena Singla, PhD*
Senior Scientist
Natural Resources Defense Council

Maureen Swanson, MPA*
Director of Environmental Risk Reduction & Project TENDR
The Arc of the United States

Heather Volk, PhD*
Associate Professor, Dept. of Mental Health
Johns Hopkins Bloomberg School of Public Health

Thomas Webster, PhD*
Professor, Dept. Environmental Health
Boston University School of Public Health
Robin M. Whyatt, DrPH*
Professor Emeritus, Department of Environmental Health Sciences
Mailman School of Public Health, Columbia University

Nsedu Obot Witherspoon, MPH*
Executive Director
Children’s Environmental Health Network

R. Thomas Zoeller, PhD*
Professor Emeritus, Biology Department
University of Massachusetts Amherst

Ami Zota, ScD, MS*
Assistant Professor, Dept. of Environmental and Occupational Health
Milken Institute School of Public Health
The George Washington University

*Affiliations are provided for identification purposes only and do not imply institutional endorsement or support.