Testimony of Abby Fleisch, MD, MPH

In Support of LD2013—
An Act Relating to Perfluoroalkyl and Polyfluoroalkyl Substances Contamination in the State
March 15, 2022

Good morning Senator Dill, Representative O'Neil, and members of the Committee on Agriculture, Conservation, and Forestry. My name is Abby Fleisch –I am a pediatric endocrinologist. I live and practice in Portland, Maine, and I lead research on health effects of PFAS. I currently hold a grant from the National Institute of Environmental Health Sciences to study the role of PFAS exposure on fat and bone accumulation.

I am here to testify "in support of" LD2013. During this testimony, I want to tell you more about the research on *health effects* of exposure to PFAS and my current thinking regarding long-term medical monitoring of individuals exposed to PFAS.

Health Effects of PFAS Exposure

Adults

In my research, we have used data from the Diabetes Prevention Program. This was a large study of about 1000 adults at risk for diabetes who were followed over 15 years. Adults with higher PFAS levels at the beginning of the study had greater **weight gain,[1] risk of diabetes,[2] and risk of high cholesterol. [3]**

Other researchers have consistently found PFAS exposure in adults to be associated with high cholesterol, elevated liver markers, abnormal thyroid function, and increased risk for testicular and kidney cancer.[4]

Children

I also study health effects of PFAS exposures in the longitudinal Project Viva study of 1000 children. In the children in Project Viva, we found **no consistent evidence of harmful effects of PFAS exposure on diabetes risk or cholesterol**.[5,6] However, greater PFAS exposure was associated with **adverse changes in body composition.[7,8]**

Other researchers have consistently found PFAS exposure in childhood to be associated with other markers of poor health like lower immune function.[9,10]

Long-term Medical Monitoring

The science of PFAS and health effects is emerging, and guidance from different societies (Agency for Toxic Substances and Disease Registry, Pediatric Environmental Health Specialty Units, and Silent Spring Institute) regarding long-term medical monitoring is conflicting. The

National Academies of Sciences is creating new evidence-based guidance regarding PFAS monitoring and health outcomes which is expected to be released this calendar year. Regarding long-term medical monitoring in individuals with PFAS exposures, I believe that 3 topics in particular require careful consideration.

1) Should medical monitoring include a measure of PFAS concentrations in the blood?
   - Knowing the pattern and degree of PFAS elevation may be helpful in assessing health risk and in identifying sources of PFAS exposure (by comparing the pattern of PFAS in the blood to the pattern in the well water)
2) When is the PFAS exposure (i.e., as estimated from well water levels or measured in the blood) high enough to warrant long-term monitoring?
3) What is the best monitoring protocol?
   - In children and adults, consider baseline and occasional follow-up blood tests of cholesterol, liver function, and thyroid function as well as regular testicular exams.
   - In children, consider regular assessment of growth and puberty as well as testing of post-vaccine antibody response to determine whether re-vaccination is warranted.

<u>Summary</u>

I am in support of LD2013 because research suggests that exposures to PFAS have potential to impact human health, and I believe there may be a role for medical monitoring in highly exposed individuals. Also, LD2013 will help farmers financially and scientifically as they make decisions about how to move forward regarding their land and livelihood.

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