December 17, 2013

Statement by Concerned Health Professionals of New York in Response to a New Study on Hormone-disrupting Contaminants in Water Near Colorado Drilling Sites*

Of the 700-plus chemicals that can be used in drilling and fracking operations, more than 100 are known or suspected endocrine disruptors. Unique among toxic agents, endocrine-disrupting chemicals (EDCs) interfere with hormonal signals, are biologically active at exceedingly low concentrations, and, when exposures occur in early life, can alter pathways of development.

In a two-part study published on December 16 in the journal *Endocrinology*, a team of researchers led by Susan Nagel at the University of Missouri reported a variety of potent endocrine-disrupting properties in twelve chemicals commonly used in drilling and fracking operations. The team also documented potent endocrine-disrupting activity in ground and surface water supplies collected from heavily drilled areas in Garfield County, Colorado where fracking chemicals are known to have spilled. The levels of chemicals in these samples were sufficient to interfere with the response of human cells to male sex hormones, as well as estrogen. Five samples taken from the Colorado River itself showed estrogenic activity. The catchment basin for this drilling-dense area, the Colorado provides water to 30 million people.

These results, which are based on validated cell cultures, demonstrate that public health concerns about fracking are well-founded and extend to our hormone systems. The stakes could not be higher. Exposure to EDCs has been variously linked to breast cancer, infertility, birth defects, and learning disabilities. Scientists have identified no safe threshold of exposure for EDCs, especially for pregnant women, infants, and children.

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* C.D. Kassotis, D.E. Tillitt, J.W. Davis, A.M. Hormann, and S.C. Nagel, **Estrogen and Androgen Receptor Activities of Hydraulic Fracturing Chemicals and Surface and Ground Water in a Drilling-Dense Region,** *Endocrinology* en.2013-1697; doi:10.1210/en.2013-1697