Anne Johnson: Welcome to Environmental Health Chat, a podcast about how the environment affects our health, from the National Institute of Environmental Health Sciences. I'm your Host, Anne Johnson, and today we're talking about hydraulic fracturing, also known as fracking. The use of fracking has expanded in recent years as a way of extracting natural gas from underground deposits. The practice has fueled a national debate about the shale gas extraction process. Today we'll take a look at the potential impacts of fracking on public health and what researchers are doing to learn more.

I called on Dr. Roxana Witter, who is an Assistant Research Professor in the Colorado School of Public Health. She studies fracking and its impacts on local communities. I asked her to start by telling us what exactly fracking is?

Roxana Witter: It's a process that's used to break apart rock to release natural gas and increasingly being used to release liquid hydrocarbons, as well. It's a process that has been used for quite some time, but it's being used in new ways. There are wells now that can be drilled much deeper, either on a slant or vertically and then horizontally, making wells much longer, and their whole process more intensive.

Anne Johnson: Roxana explained why some people living near drilling operations are concerned about this more intensive extraction process.

Roxana Witter: When the rock is being broken apart and the gas being released there's a possibility that the fractures of the rock would communicate to drinking water sources and chemicals that are being used for fracturing and the natural gas, itself, and chemicals that it may be associated with the natural gas may follow those fractures up to a drinking water source. That I believe has been the concern.

There are other ways that water contamination can occur and doesn't necessarily have to do with the fracturing process, itself. Water contamination could occur and has occurred when a well is improperly installed, when spills occur from trucks or tanks and, thus, the chemicals can then seep down into the groundwater.

Anne Johnson: I asked her to tell us what scientists know and what they don't know about the actual risks to human health?

Roxana Witter: What we know is that chemicals are released into the air, could be released into water, and what we really don't know is the concentrations and the levels that people could potentially be exposed to.

Anne Johnson: So why don't we have definitive answers on these things?

Roxana Witter: Finding out the answers takes time, takes a lot of planning and cooperative efforts between researchers and the industry. We've got a new technology, and nobody thought, well, we'd better stop and not use this technology until we've got public health research conducted. So the technology started being used before people started thinking about whether there needed to be public health considerations.

Anne Johnson: Scientists are now working to find those answers. Roxana and her colleagues have been studying how one community is responding to proposed fracking in their area. Battlement Mesa is home to about 4,500 people in Western Colorado. The scientists conducted a health impact assessment to identify how drilling might affect members of the community.

Roxana Witter: The idea of the health impact assessment is to try and bring together stakeholders, including the people of the community, as well as industry, and have them work with either researchers or public health officials to identify possible impacts and do this at the planning stages of a project.

Anne Johnson: She found that the people in Battlement Mesa weren't only concerned about the potential for water and air contamination.

Roxana Witter: They were also concerned about things like noise, traffic, and change to their – that these other impacts might have on their community. They considered their community a very active and outdoor oriented kind of community and they were worried that with a lot of trucks and noise that the livability of their community would change.

Anne Johnson: She said understanding the broader impacts of these activities can help community leaders, residents, and health workers involve themselves more effectively in deciding whether to support fracking or other operations in their area.

Roxana Witter: I think that there's opportunities to protect public health. I think that the opportunities include having a comprehensive and open, transparent planning process so that communities and public health professionals know what the plans are for a given area and can plan for it and can try and be proactive rather than strictly being reactive.

Anne Johnson: For a more in-depth discussion of hydraulic fracking and health please check out our 90-minute webinar, which features Roxana Witter and other environmental health experts. Find it at youtube.com/TheNIEHS or follow the link from our podcast page.

Thanks, again, to Roxana Witter for helping us understand this complex issue. Roxana is an Assistant Research Professor at the Colorado School of Public Health.

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