Transcript Details
This is a transcript of an educational program. Details about the program and additional media formats for the program are accessible by visiting: https://reachmd.com/programs/clinicians-roundtable/understanding-the-many-drivers-of-severe-asthma/54195/

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Understanding the Many Drivers of Severe Asthma

Announcer:
Welcome to *Clinician's Roundtable* on ReachMD. On this episode, we'll hear from Dr. Sally Wenzel. In addition to serving as the Director of the Asthma Institute at UPMC, she's also the Chair for the Department of Environmental and Occupational Health at the University of Pittsburgh's School of Public Health. She'll be discussing how we can advance precision medicine in severe asthma. Here's Dr. Wenzel now.

Dr. Wenzel:
One of the things that we've targeted probably too much, to be quite honest with you, in the precision medicine approaches is the genetic molecular processes that underlie asthma and severe asthma. They're very important; please don't mistake that I don't think that they are. But there are other factors that control a patient's severity of their disease and their level of control, and they can be environmental factors or social factors. So I think there are very big opportunities to better incorporate the environment into understanding why a patient has the asthma that they have. And we've often talked about, 'oh, you have a cat in the home, and you're allergic to cats. So that's part of the problem.' But what if you live at a busy intersection where there's a lot of traffic pollution every day? What if you live next to a power plant that is still emitting various toxicants? All of those things can influence asthma too. And I think we often don't ask about those things and even the occupational aspects to asthma. Do you work in a very dusty job? All of those things we've kind of marginalized, which I don't fully understand. But I think sometimes they're a little bit harder to quantify.

And then of course, you've got the huge range of social aspects to asthma as well. Asthma is a disease that has disproportionately affected marginalized populations that don't necessarily have the best social support structure—often more poor individuals. We still don't do a very good job of incorporating that into our broad approach to taking care of patients.

And then yes, of course there are still many molecular aspects to this disease that remain to be understood. And I think identifying: what is the pathway that is really driving the eosinophils that you see in adult-onset disease versus the eosinophils that you see in allergic disease, and why are eosinophils in one really toxic and problematic and in another they're not so toxic and problematic?

And I think the last element is how the genes and the environment interact. We have known for many years that certain genes or alleles may be more impacted by exposures to various toxicants in the environment. We've also known about things called epigenetic changes, where the genes themselves are not impacted, but the way that they are transcribed and then translated into proteins can very much change in relationship to a whole range of environmental factors—not just pollutants, certainly cigarette smoke is part of that, but also can be handed down from generation to generation. Which leaves us with many opportunities at this epigenetics level to try to intervene if you were born in the wrong place, you've had an impact of your mother's smoking, pollution, or having a very stressful childhood. There are literally molecular elements that could be targeted that would help reverse some of those changes.

Announcer:
That was Dr. Sally Wenzel sharing strategies for advancing precision medicine in severe asthma. To access this and other episodes in our series, visit *Clinician's Roundtable* on ReachMD.com, where you can Be Part of the Knowledge. Thanks for listening!