

Testimony of

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**Senate Committee on Environment and Public Works
Subcommittee on Superfund, Toxics and Environmental Health**

**Field Hearing on
Risks of Toxic Chemicals to Children's Health**

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Good morning. Chairman Lautenberg, Ranking Member Inhofe and Members of the Subcommittee. My name is Doctor Sanjay Gupta. I am a practicing neurosurgeon and CNN's chief medical correspondent. I'm also a father of three young girls. As a journalist and a father, I can tell you the topic of toxic chemicals and children's health is very important to me.

While I am not a toxicologist by training, nor a chemist, as CNN's chief medical correspondent, I was part of a year-long investigation into toxic chemicals and health for two hours of special programming on CNN. It was an eye-opening experience.

At the start of our *Toxic Childhood* special, we showed an old advertisement for the pesticide DDT. In the late 1940s, the ad played in the housewares section of department stores and declared DDT "harmless to animals and humans." It shows a suburban housewife cheerfully spraying the chemical around the house. She sprays under the rugs and couch cushions. Next to the barbecue. She even sprays the dog. At the time, DDT was seen as a great convenience. A safe way to get rid of those annoying bugs. Now, of course, we know better, and DDT is banned in this country.

I bring this up as a way of pointing out that as science moves forward, we get a better understanding of risks. We often find out chemicals we thought were harmless are not as safe as we imagined. Let me give you another example – lead.

Back in the 1970s, the Centers for Disease Control and Prevention sent a pair of young investigators to El Paso, Texas. The CDC wanted them to look into whether the tons of lead coming from the stacks of a lead smelter were causing harm to children in the area. At the time, lead poisoning was considered all or nothing. Either you were sickened by lead or you were fine. Dr. Philip Landrigan and his colleague Stephen Gehlbach found children close to the smelter were, in fact, poisoned. Lead exposure caused vomiting, muscle weakness and convulsions. That was no surprise. But the CDC investigators found something else. Something unexpected. Children farther away, exposed to smaller amounts of lead, were affected, too. The symptoms weren't so obvious parents took their children to the doctor. But the lead exposure had a profound, life-long affect on these kids with lower levels of exposure. There was a loss of intelligence, disruptive behavior -- a whole range of damage to the brain and nervous system.

Now, we know no amount of lead is completely safe.

I'm not here to say all chemicals are bad in all circumstances. You can even make a case that DDT has a role in preventing malaria in poor, tropical countries where malaria kills a lot of children.

But the stories of DDT and lead show us what we don't know really can hurt us. And there are a lot of chemicals in use that we simply don't know a lot about. Out of the roughly 80,000 chemicals in commerce, the EPA has only required testing of 200 and restricted just five. As a dad and a doctor, I was surprised to learn this. I'd always assumed government watchdogs had evaluated and signed off on the safety of the chemicals we encounter in our lives.

Time and again, experts we talked to for our special said chemicals in this country are “innocent until proven guilty.” And the only way they’re proven guilty is by health effects turning up in people who have been exposed, often years later. That makes us all guinea pigs.

Something else struck me during my research. Babies in this country are born “pre-polluted.” They are being exposed to chemicals in the womb. One study of umbilical cord blood found 287 chemicals. These chemicals include things like lead, mercury, flame retardants, pesticides, dioxins, even PCBs, which were banned in 1979. Research tells us exposure to these chemicals can be dangerous. I’m sure Dr. Perera will have a lot more to say on that. She has done some truly remarkable work looking at how a pregnant woman’s exposure to airborne pollutants can affect her child – even years later.

It’s not easy to tease out exactly how much risk this chemical exposure *in utero* poses to newborns as they enter the world. There are some pretty alarming statistics about the rise in such childhood diseases as leukemia, brain tumors, asthma and, of course, autism. Proving that any particular chemical exposure resulted in any one of these conditions may well be impossible. In science, we expect absolute proof, but we don’t always have it. The problem is thirty years from now a devastating health problem may emerge. That’s what we saw with lead.

As you know, Mr. Chairman, the European Union has adopted a different standard to evaluate chemicals. It goes by the acronym REACH and it takes a precautionary approach. No longer are chemicals innocent until proven guilty. The burden of showing a chemical is safe has shifted from the regulator to the producer. I know there has been some concern that adopting a precautionary principle here would hurt companies’ bottom lines and stifle innovation. As part of our research, we spoke with very smart folks working in “green chemistry.” These are chemists with many years of experience in industry who want to find new, less toxic ways of making products. They told us just the opposite would occur if we adopted the precautionary principle here. These “green chemists” say it would spark innovation. They were confident industry would find ways to make products using fewer hazardous chemicals and emerge as profitable as ever.

As Congress moves forward on this issue, we need to remember children are especially vulnerable to toxic chemicals. Children are not simply small adults. For one thing, children have a faster metabolism. They take in – pound for pound --- more air, water and food than adults.

Infants and toddlers also spend a lot of time close to the ground, where dust accumulates. And we know from research this dust can contain toxic chemicals like flame retardants, shed from our televisions and other appliances. Young children can breathe in this dust. As a father, I also know first-hand how little kids like to put their hands in their mouths. That’s another potential route of exposure.

Children are more also susceptible because their immune systems are still developing. Kids are simply not as good at getting rid of toxic chemicals. That means toxic chemicals stay in their bodies longer. Also, their growing bodies are not as good at repairing damage from exposures to toxic chemicals.

There's something else. As the president's cancer panel noted in its report this year, the blood-brain barrier in children is more porous than adults, potentially exposing their developing brains to more of the harmful chemicals we all encounter in our daily lives. And, the report also noted, children have lower levels of some chemical-binding proteins "allowing more of a toxic agent to reach various organs."

Finally, we know our exposure to many chemicals accumulates over time – what's known as body burden. So what children are exposed to now can build as they age, and their risks of harm from these chemicals could rise with their body burden. So we need to take into account the long-term risks of chemical. After all, children – and the rest of us – are still being exposed to PCBs, which the government calls "probable carcinogens," and PCBs have been banned for more than 30 years.

I appreciate the committee's work looking into toxic chemicals and children's health and welcome any questions you might have.