Chemicals in the Home

Anne Johnson: Welcome to Environmental Health Chat, a podcast about how the environment affects our health, from the National Institute of Environmental Health Sciences Division of Extramural Research and Training. I'm your host Anne Johnson.

Think about the cleaning products that are in your bathroom or kitchen. [spraying sound] Or maybe you've done some home improvement work with solvents, varnishes, or glues. [power tool/sanding sound] When was the last time you read the labels on all of those products? How can you know if you're using them safely?

Joining us to talk about the hazards of household chemicals is Dr. Paul Blanc. He's a professor of medicine and chief of the division of occupational and environmental medicine at the University of California, San Francisco. He's also author of the book, How Everyday Products Make People Sick.

Many of the environmental exposures we talk about in our podcast are chronic, low-level exposures that add up to long-term health problems—things like air pollution, or radon. But the problems associated with household chemicals are more likely to be acute exposures with symptoms that are not subtle. Paul says it's crucial to understand what you're using.

> Paul Blanc: Advice: People rely too much on simple labeling. Take this as seriously as when you get a new medication and look up side effects. Access chemical information and take it seriously.

Anne Johnson: Things that can be inhaled are often the most dangerous, and respiratory problems are one of the most common health effects. Ventilation is key. For example, the solvent methylene chloride, which is available at hardware stores and used for paint stripping, can be deadly if you inhale too much.

Bleach mixtures are also a common danger. Using bleach at the same time as other products such as tile cleaners or ammonia creates a toxic gas. In addition to the immediate health risks of such exposures, breathing toxic fumes can leave people with persistent asthma-like symptoms that last for years.

Household chemicals can also cause skin reactions. A few can cause neurological damage. For example, some pesticides used by exterminators can cause harmful exposures if mixed or applied incorrectly, or if you re-enter your home too soon after it's been fumigated.

It can be tempting to dismiss such exposures as rare outliers or accidents. But Paul says the problem goes deeper.

> Paul Blanc: There are a lot of people in public health who very much object to the term accident because it suggests this is unpredictable and an act of nature of some sort, but these are predictable mishaps that could be avoided by appropriate labeling, appropriate education, and in some cases, simply not making a product available.

Anne Johnson: Paul said it's a good idea to not use any chemicals that are stronger than what you need to do the job. If soap and water will suffice, use that instead of a harsher chemical cleaner. If regular water-based glue will hold your project together, don't go for the super-strength epoxy. And if you need to use a stronger product, do your homework on the chemicals it contains.

But while it's always good to stay vigilant, it's also important to keep things in perspective. Exposures you get from regular household use are typically orders of magnitude lower than what workers encounter when making or using these chemicals. That makes occupational exposures the canary in the coal mine, and Paul said research and rules aimed at reducing occupational exposures would go a long way toward protecting consumers, as well.

> Paul Blanc: There is a tendency for people to ask well should I shop green products and restrict what I bring into the home? And although I think personal action and personal responsibility is always important, these are really societal protection issues. We don't tell people to boil water to have it be safe to drink; we demand of our protective agencies that we can turn the tap on and be able to drink the water and I think the same is true for products which are potentially hazardous or unreliable.

Anne Johnson: But it's not always easy to tell which products are potentially hazardous, especially in the context of household use. Paul said epidemiological studies have an important role to play, but it can be hard to get sufficient data from traditional study designs. People use a wide variety of different products, sometimes regularly, sometimes only occasionally, and it can be hard to correlate exposures and health effects.

> Paul Blanc: Perhaps one area that will provide us data in the future will be from mining existing data, and this may be an area where large data can give us some clues that are hard to obtain from other sources. That could include data on mapping variability and rates of problems related to sales of certain products, for example.

Anne Johnson: As researchers explore those avenues, it's still extremely valuable to track poisonings and long-term chronic effects and try to pinpoint dangerous products.

So, what do you do if you think you're having a reaction? Of course, if there's an immediate health danger, call 9-1-1 or contact a poison control center. If you're having a skin reaction or chronic respiratory problems, talk to your doctor or consider visiting a clinic that specializes in occupational and environmental health.

One warning: Paul said to take advice or consultation you get on the Internet with a grain of salt. Typically, tracking down the source of a household exposure is time-consuming and difficult—and not something easily done online.

Of course, something that is easy to do online is to check out our other podcasts related to protecting your home and family from environmental exposures. Visit our website at niehs.nih.gov/podcasts to find

episodes such as Controlling Allergens in Your Home, Keeping Your Home Safe from Radon, and Chemicals in Personal Care Products. Thanks again to today's guest, Dr. Paul Blanc.

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