

Are our playgrounds and parking lots safe?

Tony Tucci 16.SEP.09

A cancer-causing sealant that covers thousands of parking lots, school playgrounds and driveways in Austin and Travis County has officials debating over its effect on human health.

Coal tar, a byproduct of the steelmaking process, contains toxic amounts of polycyclic aromatic hydrocarbons (PAHs) that have been proven to cause cancer in laboratory animals and in workers exposed to high concentrations of the sealant.

While coal tar usage was banned in the city in 2006, more than 15,000 surfaces that were paved prior to that date still exist, and most of them are covered with coal tar. Thousands more exist outside the city, where there is no regulation of coal tar sealants at all.

Since Austin adopted its ban, two other cities, Madison, Wisconsin, and Washington, D. C., also banned coal tar. On Aug. 3, George S. Hawkins, the District of Columbia's director of the Department of the Environment, testified before the U. S. Senate, calling for a nationwide ban on coal tar sealants.

PAHs can enter the body in three ways – they can be consumed, they can be inhaled, or they can be absorbed through the skin. And there is plenty of opportunity around Austin for people to come in contact with it. People walk on it, children play on it, shoppers put their bags on it while they unlock their car doors, and they all track it into their cars and homes.

When asked whether coal tar, if inhaled, consumed or absorbed through the skin, can cause cancer, Janet Pichette, manager of epidemiology and disease surveillance for the Austin/Travis County Health and Human Services, replied:

"Once applied to a parking lot or playground, there is no evidence to suggest that inhalation exposure, skin contact or incidental ingestion to PAHs, coal tar-based sealants, or sealant dust or debris will result in any adverse human health effects."

Her statement seems to contrast with the wording in a brochure printed by the City that states:

"Exposure to PAHs will not necessarily result in harmful effects. However, some health impacts have been documented:

- "Some people exposed to high concentrations over a long period of time have developed cancer.



A city scientist collects a sample of paving sealant from a parking lot in Southwest Travis County. Tests showed it was not coal tar, as indicated by the gray color. Coal tar lots are blacker in color.

- "Skin contact to high concentrations of PAHs can cause skin irritation and rashes.
- "Developmental and reproductive effects have been seen in laboratory animals exposed to high concentrations of PAHs.
- "Little is known about the potential impacts associated with short-term exposure to PAHs in forms such as pavement sealant debris."

Ironically, Pichette and the Austin/Travis County Health and Human Services Department participated in the writing of the brochure along with the City's Watershed Protection and Development Review Department. Copies are supposed to be distributed to school districts in the county. City officials met with Austin Independent School District officials Sept. 3 and gave them copies of the brochure, but most of the brochures have not been distributed.

The brochure went on to say that PAHs may be contained in the soil at the edges of paved surfaces and suggested that people:

- "Clean and remove shoes before entering the house.
- "Wash hands and face often, especially before eating or drinking.
- "Keep children's play areas and toys clean.
- "Damp mop or clean floors and other household surfaces to reduce dust and dirt in homes and buildings.
- "Bag and throw any visible accumulation of degraded asphalt sealants in the trash.
- "Maintain grass, landscaping or lawns to provide a barrier to exposed soils.

The brochure also recommends that people wear protective clothing when handling products containing PAHs and avoid using coal tar-based shampoos and creams.

It's strange language in view of Pichette's statement that coal tar is harmless to humans. In contrast to Pichette, other experts have expressed concerns. The District of Columbia's Hawkins said, "Given the alarmingly high concentrations of toxic PAHs in coal tar pavement products used nationwide, the documented impact on aquatic resources, the growing concern about human exposure, and the fact that alternative products (such as asphalt) are readily available, a national ban on such products is low-hanging fruit."

He said other sources of PAHs, such as cars and power plants, are heavily regulated. Hawkins said research suggests that PAHs washed off parking lots and into our waterways could be reduced by as much as 90 percent with a nationwide ban.

Here in Austin, Dr. Robin Fuchs-Young, a researcher from MD Anderson Cancer Center, said, "There is no reason to put additional carcinogens into the environment if a less toxic alternative is available."

Coal tar and PAHs first came into the public eye in 2003, when the American-Statesman reported that high levels of PAHs had been found in the sediment of Austin's crown jewel, Barton Springs Pool.

The reaction was deafening. The city closed the pool. Residents lined up to testify at public hearings. Experts weighed in. The final ruling: Persons swimming in the pool would receive substantially less PAH exposure than they would get from consuming a charcoal broiled steak.

The pool was reopened. The furor was over. The reporter whose stories caused the ruckus was criticized for faulty research, and was so distraught he hung himself at Barton Creek. He never knew that the controversy he created would develop into a nationwide debate. While the water in the pool was relatively safe to humans, the sediment beneath the water contained toxic amounts of PAHs harmful to aquatic life.

More was running into our waterways after every rain. And even more PAHs remained on school playgrounds, parking lots and driveways. A subsequent study by the city and U.S. Geological Survey concluded that coal tar sealants contribute the majority of PAHs in streams.

Environmentalists continued to be concerned, and in 2006 Austin became the first city in the nation to ban coal tar. Austin's ordinance calls for a fine of from \$500 to \$2,000 a day for the sale or use of coal tar.

Prior to passage of the ban, coal tar was used almost exclusively. The sealant industry stated in 2004 that there was only one lot in the city that was sealed with an alternative. These lots are exempt from the city's ban.

Thomas Ennis, division manager of the city's Watershed Protection and Development Review Department, said asphalt-based sealants tend to gray as they age, whereas coal tar sealants remain black for a long time.

"So if you see a lot that is black but fairly well worn, it is most likely coal tar sealant," he said.

In 2008, the City inspected 352 larger paved lots and found that 203 of them covering 1,896 acres had been sealed, probably with coal tar. The City has not surveyed the smaller lots, but Ennis said there are more than 15,000 paved surfaces, including driveways and parking lots, in the city.

Ennis said the coal tar on lots sealed prior to 2006 could be removed from paved surfaces with a procedure similar to sand blasting, but the City's ban does not require it.

The City found only four violations of the ban on surfaces paved since 2006. Two of the violators placed another sealant over the new coal tar, one put asphalt over the coal tar, and the fourth removed the coal tar completely. Ennis said complete removal would be required in the future.

Ennis said questions about danger to human health have been brought up in meetings with the Austin/Travis County Health Department and the Texas Department of Health.

"We met with them in January, and they assured us that there is nothing to suggest from an exposure standpoint that there is a human health risk associated with degraded coal tar debris."

There was more concern in Leander last year when the school district, in response to parental concerns, hired Weston Solutions Inc. to conduct an environmental assessment to determine if an elementary school built on the site of a former chemical research facility was contaminated.

According to a report from the U.S. Department of Health and Human Services, soil samples from storm water retention ponds and landscaped areas adjacent to parking lots contained PAHs "at concentrations that could cause a low to moderate increased risk for cancer." The district removed the PAHs from the parking lot and replaced adjacent PAHs-containing soils with clean soil.

If there's no evidence of a human health threat, there certainly is evidence of a threat to aquatic life. According to a U.S. Geological Survey report, City scientists presented Peter van Metre with sediment from local waterways in 2001 "showing levels of PAH contamination that van Metre found literally unbelievable."

Van Metre said that if PAHs can get loose enough to flow from parking lots into the water, "then it's certainly worth looking into whether they get unstuck in other places, such as playgrounds, and cause health problems."

The fact that the PAHs are in sediment at the bottom of the lake doesn't mean they are getting into the public water supply, however.

Don Sparling, a wildlife toxicologist at Southern Illinois University who studies amphibians, said the impact of coal tar sealant needs further study. "The use of sealants, either asphalt or coal tar, is very widespread and it's an issue that really hasn't been explored before. This could have a potentially broader impact that just salamanders."

- Oak Hill Gazette