Asbestos blamed

Brake lining dust linked to cancer

By JEAN PEARSON
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Asbestos in autombile brake linings may be a potential cause of cancer, a Wayne State University School of Medicine research team fears.

Dr. Andrew Reeves, chief of the research team, said yesterday that overexposure to asbestos particles is known to be the cause of a number of lung diseases, including cancer.

But what isn't known, he said, is whether use of the brakes releases harmful particles into the air.

ASBESTOS is used in brake linings, building materials and, to some extent, in the clothing industry.

In addition to lung cancer, overexposure to asbestos may lead to asbestosis, a degenerative type of lung disease, and possibly to mesothelioma, a tumor of the lining of the chest cavity, or pleura.

Dr. Reeves said the asbestos industry denies, on good evidence, that asbestos released into the air from automobile brakes poses a health hazard because the high temperatures incurred in braking mean the asbestos has taken another form.

"But the final word is not known," Dr. Reeves said, nothing that it is not known yet what that form is and whether it presents any hazard to humans.

Seeking "the final word," Dr. Reeves and his research team are planning an experimental system that will simulate the mechanical action of brakes, heat the asbestos to 1,500 degrees Fahrenheit and blow the dust into chambers for inhalation by guinea pigs.

The guinea pigs will then be checked to determine whether the heat-changed, inhaled asbestos particles are as toxic as the inhalation of regular asbestos particles.

The asbestos industry, Dr. Reeves said, is concerned about the potential hazards and is "cooperating in a very nice way and not trying to coverup."

One evidence of their cooperation, he said, is that Johns-Manville supplies him "asbestos by the ton" for his experiments.

Dr. Reeves, an associate professor of occupational and environmental health, is doing research on a number of potential and known health problems related to asbestos and beryllium which is used in a number of industrial processes. His studies are supported by a grant from the National Institutes of Health.

Though his research animals are guinea pigs, Dr. Reeves is especially concerned about the levels of both asbestos and beryllium which can be inhaled safely by humans.

Guinea pigs are like humans and unlike rats in their reaction to beryllium, he said.

"In our research here at Wayne," Dr. Reeves said, "we found that, after rats had been exposed to beryllium, they had a very high incidence of cancer.

"But beryllium does not seem to cause cancer in humans or in guinea pigs. It is a toxic substance that appears to be species specific."

Beryllium particles, however, are associated with a lung disease called berylliosis.

Dr. Reeves' team is trying to determine not only what levels of beryllium are dangerous but how to immunize persons exposed to the substance.

Working with guinea pigs, they are examining the possibility of immunizing against berylliosis.

"We have not reached the point where we can apply our findings to humans but that is our goal," he said.

The team's beryllium research has been oriented toward chronic studies, exposing guinea pigs for seven hours a day over a relatively long period.

EACH MONTH, a selected group of the exposed guinea pigs are dissected and microbiological and chemical studies are made to determine the effect of the beryllium dust.

Dr. Reeves said asbestos is much more difficult to study than beryllium because of the difficulty in breaking asbestos up into particles small enough to be blown into chambers for inhalation by guinea pigs.

The team had to design and build a special hammer to do the job. But the hammer itself introduced a problem because it erodes slightly as it is used.

Despite the researchers' attempts to remove trace metals, the "foreign particles" introduced may be inhaled along with the asbestos particles.

Then, the researchers have a difficult time trying to ascertain whether the effects upon the guinea pigs of the inhaled material should be attributed to asbestos or to the trace metals.

Dr. Reeves serves on the air pollution evaluation committee of the American Industrial Hygiene Association.

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