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By: Juraj Ferin M.D.
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Asbestos Hazard in Furnaces

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Juraj Ferin M.D.*

Summary

This Bulletin reports that a new gas burning household furnace contained asbestos in places that could contaminate household air. Such contamination is a cancer hazard. Furnaces of other makes had no asbestos, but this could vary from model to model. New air heating units should be checked for asbestos before purchase.

Background

Asbestos is one of the best insulators and fire retardants that we have and it has been widely used for these purposes for many years. Asbestos dust is a known occupational hazard, causing lung disease (asbestosis) among workers who inhale rather heavy concentrations on the job. More recently asbestos dust was recognized as a cause of lung cancer. Cancer may appear many years after asbestos exposure; smoking shortens the lag time and adds a hazard of cancer of the upper respiratory tract. With asbestos as with other carcinogens, the smaller the dose the smaller the percent of exposed people who may be damaged, but even low doses are suspected of initiating lung cancer in some victims (1). There is currently also some evidence that heavy exposures to asbestos in air may be a causative factor in cancers of the digestive tract (2). In view of these hazards, the Occupational Safety and Health Administration established a low limit for the allowable concentrations of asbestos in air in a workplace.

Air in homes and in public buildings should be at least as clean as the air in a workplace. New York State has a program to identify and correct sources of asbestos dust in public school buildings. This is necessary because many schools were built with heavy asbestos insulation in ceiling spaces and around heat ducts. Especially in older buildings, dust from insulation was spilling out into the air.

There is no state program for fixing the problem in private schools. There is no legal standard for asbestos contamination of air in office buildings or private homes. One preventive measure taken by the U.S. Consumer Product Safety Commission banned asbestos from commercial spackling compounds used in

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drywall construction and house repairs. Spackle does a satisfactory job without asbestos. There is a second ban on the use of asbestos in artificial fireplace logs and a third on asbestos in consumer clothing. The Consumer Product Safety Commission has not banned any other uses, but many other manufacturers have discontinued the use of asbestos voluntarily, even though it is often more difficult to build, fire-proof and heat insulated products without it. Still, asbestos keeps showing up in places where it can flake off and contaminate inhaled air.

An Unsafe Product

Asbestos should not be used in a household furnace where fibers can be picked up and spread through the house by the stream of warm air. People living in such a house would suffer a chronic, long term exposure to a carcinogenic agent. I recently bought a furnace and after examining it sent a letter to Ms. Sadye Dunn, the Secretary of the U.S. Consumer Product Safety Commission in Washington. The text of the letter which follows is somewhat shortened.

Dear Ms. Dunn:

I would like to bring to your attention the fact that asbestos is used as an insulating material in some new forced warm air furnaces. The unit which I purchased, after assurances from the salesman that the company did not insulate with asbestos, had asbestos at 12 different places.

The asbestos came in two forms: as pressed sheets about 5mm thick and as braided strips about 25mm wide. In both forms the asbestos was used in many parts of the furnace including the section through which warm household air is forced. In my judgement the asbestos could be replaced with other material without any negative effect on the function, efficiency or price of the furnace. Some other manufacturers according to the information I received from them and a short inspection of the furnaces myself, do not use asbestos.

I do not know whether anybody has determined the amount of particulate asbestos released from a furnace during prolonged use. I would assume that the amount may be low; however, prudent preventive practices require that asbestos should not be used in forced warm air furnaces, where it is easily replaceable.

Recommendations

There is no law that mandates building furnaces without asbestos. It, therefore, makes sense to remove the possibility of inhaling asbestos fibers continuously in your home by examining new furnaces before purchase to make sure that there is not exposed asbestos. The advice is especially timely now, when many local residents are replacing old oil-burning furnaces with gas burners.

In looking beyond the furnace, asbestos tape may be found as a cover for air duct joints. This would probably not contaminate the air inside the ducts, but if you want extra protection for the basement it is possible to cover the tape with a dust proof material.

The final identification of asbestos has to be made in a laboratory. The word is used for a variety of minerals, but only some of them are known to be carcinogenic. Some synthetic materials are made to resemble asbestos fabrics. The Monroe County Health Laboratory either analyses samples or can refer you to someone who will. Some Environmental Protection Agency certified laboratories that identify asbestos fibers are:

Carborundum Inc., P.O. Box 1054, Niagara Falls, N.Y. 14302
Rosnagel and Assoc., 234 Route 70, Medford, N.J. 08055
McCrone Assoc. 2820 S. Michigan Ave., Chicago, Ill. 60616
GCA Bedford, Massachusetts Technology Division, Burlington Rd., Bedford
MA, 01730

The equipment needed is expensive and analyses are costly. In Rochester, Delta Laboratories (271-5333) does preliminary screening and sends questionable samples out for final analysis.

References

- (1) Selikoff, I.J. and Douglas H. Lee, *Asbestos and Disease*. Academic Press, 1978
- (2) National Academy of Sciences, *"Drinking Water and Health."* Washington D.C. 1977