# Hair Is a Clue to Poisoning, Chemists Say

By William D. McCrea

Scientists can tell if you have been exposed to high levels of trace metals such as lead or mercury by analyzing your hair.

They can even estimate when the exposure occurred.

New techniques in analyzing human hair are helping to make this an important tool in diagnosing trace metal poisonings, according to two analytical chemists from Colorado State University in Fort Collins.

The chemists, Rod K. Skogerboe and Donald Dahl, described their research yesterday at a meeting of the Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy in the Convention Center.

Hair analysis can be a good indicator of the kind of environment in which a person lives, Skogerboe said in an interview. For example, it can be useful in comparing trace elements found in rural and city air. It may be useful in checking workers exposed to toxic vapors, or in checking ghetto children believed to have eaten lead-based paint.

In some cases, the hair examination could help prevent more serious illness by identifying a problem in time for medication to be given, he said.

The body has no use for such toxic elements as lead, mercury or cadmium, Skogerboe said. Once ingested, much of the material is excreted, but some is stored in the hair.

The hair grows about 0.5 inches a day, with the youngest part nearest the roots, he explained. When analyzed by an atomic absorption spectrometer, a strand of hair can serve as a kind of yardstick, giving the history of a person's exposure to a trace metal, Skogerboe said.

This means scientists can track down approximately when the material was ingested.

Work is being done at the University of Michigan analyzing trace metals in hair samples that are 100 years old or more, he said. Other studies are being done with students and in prisons to see if changes in diet and environment have an effect on trace metal content of the hair.

Research is under way to determine if diseases can be detected by studying the trace metal content of hair and body fluids, Skogerboe said. One study already has linked the lack of chromium in the hair with the presence of diabetes in infants, he added.

0007-SWP-037139