OUR READERS ASK

???? How effective are nicotine patches?

Highly effective. Smokers who use patches are roughly twice as likely to quit successfully as smokers who don't use patches. For many people, however, the patch may not be enough. *Key:* Professional counseling and learning what situations trigger the desire to smoke will markedly enhance the odds of successfully quitting.

Michael Fiore, MD, MPH, director, Center for Tobacco Research and Intervention, University of Wisconsin Medical School, Madison.

???? What's the more important blood pressure reading—the top or bottom number?

Diastolic pressure—the bottom number—is generally a good predictor of heart disease and stroke in young people. But in persons older than 60, the top number—systolic pressure—is often more significant. Beware: The old dictum that a normal systolic pressure is "100 plus your age" is not correct. Systolic pressure of 160 or above, even if the diastolic is less than 90, should generally be treated with medication.

Samuel Mann, MD, associate professor of clinical medicine, New York Hospital-Cornell Medical Center. New York City.

???? My mom and grandmother had breast cancer. Does that mean that I'll get it, too?

Heredity plays a smaller role in breast cancer than previously believed. Women with a family history of breast cancer had long been considered *three* times more likely to develop it than other women. *New finding:* Their risk is only about *twice* that of women without a family history. *And real-world risk may be even lower:* In a study of almost 2,400 breast cancer patients, only 6% of cases could be linked to a family history of the disease.

Graham Colditz, MD, associate professor of medicine, Harvard Medical School, Boston.

Send your questions to The Editors, *Health Confidential*, 330 W. 42 St., New York 10036.

ON OTHER PAGES

 VOLUME 7, NUMBER 12

DECEMBER 1993

Privileged interviews with America's leading health authorities

CONFIDENTIAL

How To Protect Yourself Against Your Drinking Water

Richard P. Maas, PhD
Environmental Quality Institute

mericans are concerned about their drinking water—and rightly so. Roughly 20% of households have dangerous levels of lead in their tap water...and the once-sporadic cases of bacterial and industrial-chemical contamination seem to be occurring with increasing frequency.

Yet despite the real and ever-growing threat, there are effective ways to protect yourself and your family.

What's the biggest threat? By far the biggest threat is lead. Ingestion of lead causes a wide variety of serious health problems. Children who drink lead-tainted water often sustain irreversible brain damage—resulting in reduced IQ scores, short attention spans and other mental problems. (These problems are also common among infants born to mothers who drink lead-tainted water while pregnant.)

In adults, lead poisoning can cause kidney damage, high blood pressure and brittle bones. It can also cause brain damage, although adult neurological tissue is less sensitive to lead than children's neurological tissue.

Exposure of skin to lead-containing water—during a bath or shower,

for example—is not considered dangerous.

How does lead get into tap water? It leaches into tap water as the water passes through lead-containing pipes or plumbing fixtures. Homes of all ages can show lead contamination from leaded solder joints or lead alloy pipes.

Even if your water pipes are made of plastic, however, *faucets* may still be leaching lead into your drinking water. *Reason:* Even faucets touted as "lead-free" are allowed by federal law to contain up to 8% lead.

The lead can also come from outside your home. In some parts of the country—including parts of New York City, Boston, Chicago and the Pacific Northwest—the municipal water systems are built with leadjointed pipes. Even water from private wells can be contaminated with lead.

Bottom line: Any home can have lead in its water.

What can I do to protect myself? Have your tap water tested. Your local water utility may provide you with a



Health Confidential interviewed Richard P. Maas, PhD, associate professor of environmental studies, University of North Carolina, Asheville, and director of the university's Environmental Quality Institute, the nation's largest research center on tap water purity.

free test kit—or may be able to recommend a water-testing agency in your area.

Test kits are also available from...

- •Suburban Water Testing Labs, 4600 Kutztown Rd., Temple, Pennsylvania 19560. 800-433-6595. \$35.
- National Testing Laboratories, 6555 Wilson Mills Rd., Cleveland 44143. 800-458-3330, \$35.
- •Clean Water Lead Testing, 29½ Page Ave., Asheville, North Carolina 28801. 704-251-0518. \$17.

A typical test requires two water samples. The first sample is taken early in the morning, when the water has been sitting overnight in your home's pipes. The second is taken after the water has been running for one minute.

Even if the first sample contains dangerous concentrations of lead,

CONFIDENTIAL

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HEALTH CONFIDENTIAL (ISSN 0894-4172) is published monthly by Boardroom Reports, Inc., at 330 W. 42nd St., New York 10036. \$49/yr., \$5/issue. Second-class postage paid at New York, NY and additional mailing offices. Canadian GST#: R126735513. Copyright ©1993 by Boardroom Reports, Inc. Quotation not permited. Material may not be reproduced in whole or in part in any form whatsoever.

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the second sample will not in nine out of 10 cases.

So I can eliminate the threat of lead simply by purging my water for one minute? Yes, in most cases. But purging your faucet once in the morning—the old advice—is not really valid. *Reason*: Lead leaches into water much more rapidly than previously thought. If it's been more than a few minutes since the last time you drew water, purge the tap again. To save time and water, keep a gallon pitcher of water *from a purged tap* in your refrigerator.

Can't I just boil my water? No. Although boiling water generally gets rid of bacteria, it does not eliminate lead or other heavy metals.

What if purging my tap water doesn't get rid of lead? Get a water-purification system...

- •Cation-exchange filters remove 80% to 90% of lead. *Cost:* Less than \$200.
- •Reverse-osmosis filters remove 90% to 95% of lead. *Cost:* \$300 to \$400.
- Distillation units remove nearly 100% of lead. Unlike cation-exchange or reverse-osmosis systems, they do not need periodic filter-element changes. But unlike these other systems, distillation units do require electricity. Cost: \$200 to \$300—plus about \$100 a year for electricity.

Caution: Filter makers generally specify a schedule for changing the filter elements on cation-exchange and reverse-osmosis units. But an element that lasts six months in one home might last half as long in a home with higher concentrations of lead.

Self-defense: Until you get a sense of how long the filter element lasts in your home, have your filtered water tested for lead every four months or so. Periodic testing is no longer necessary once you know how long the filter continues to work.

What about bottled water? Bottled water is another safe—and generally less costly—option. We've tested a variety of brands. All have proven safe with respect to lead. Just to be sure you're getting pure water, however, choose bottled spring water over bottled water from a municipal water supply. Even better: Distilled water. It's cheaper than spring water and should be absolutely free of lead or any other impurities.

What about germs? Very rarely do water supplies be-

come contaminated with *E. coli* or other potentially harmful bacteria or parasites. When this happens, local water authorities are generally quick to alert people to the problem—which is easily solved by boiling your tap water or switching to bottled water until the microbes are eliminated.

Bacterial contamination is uncommon in the US because almost all municipal water is now chlorinated. Unfortunately, when chlorinated water comes into contact with dissolved organic matter commonly found in municipal water systems, *trihalomethanes* (THMs) and related compounds are created.

THMs are suspected of causing cancer of the colon, rectum and bladder. Federal regulations now set the maximum allowable THMs at 100 parts per billion (ppb), and this will likely be reduced to 50 ppb within the next couple of years.

How can I tell if my water contains dangerous levels of THMs? Contact your local water authority. If levels of THMs have approached or exceeded the 50 or 100 ppb level in recent months (or if you're simply worried about the accuracy of the water authority's records), simply let water stand in an *open* container for at least six hours before using. Most of the THMs will dissipate if the water is exposed to air in this fashion.

Another way to get rid of THMs is via a granulated activated carbon (GAC) filter. *Cost*: \$80 to \$200. GAC filters remove more than 80% to 90% of THMs...and they are equally effective at filtering out most organic industrial pollutants that may have found their way into your tap water.

Caution: GAC filters do not remove lead.

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Statement of Ownership, Management and Circulation, Published annually as required by the US Postal Service. Health Confidential ISSN #08844172. USP\$# 001-537. Date: Oct. 1, 1993. Frequency: Monthly, No. of issues published annually: 12. Annual subscription price: \$49. Location: 330 West 42 St., New York 10036-6901. Publisher: Martin Edelston, 330 West 42 St., New York 10036-6901. Editor: David Freeman, 330 West 42 St., New York 10036-6901. Owner: Boardroom Reports, Inc., 330 West 42 St., New York 10036-6901. Stockholders owning 1% or more of total amount of stock: Martin Edelston. There are no bondholders, mortgages, or other security holders owning 1% or more of total amount of bonds, mortgages, or other securities. Extent and nature of circulation: Average each issue preceding 12 months—Total no. copies printed: 1,548. Paid circ., mail subscriptions: 18,015. Total paid circulation: 18,015. Free distribution: 2,404. Total distribution: 20,419. Office use, leftover, spoiled: 1,129. Total 21,548. Actual single issue nearest filing date—Total no. copies printed: 18,944. Paid circ., mail subscriptions: 16,847. Total paid circulation: 16,847. Free distribution: 747. Total distribution: 17,594. Office use, leftover, spoiled: 1,350. Total: 18,944.

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