

Aluminum salts may increase breast cancer risk

From *The Journal of Applied Toxicology* 2006

Printed by Reuters Mar 7, 2006

By Anne Harding

NEW YORK (Reuters Health) - A new report raises the possibility that the aluminum salts contained in many underarm deodorants could increase a woman's breast cancer risk.

Metals including aluminum salts and cadmium have recently been shown to exert estrogen-like effects, while some also promote the growth of breast cancer cells in the laboratory, Dr. Philippa D. Darby of the University of Reading in the UK notes in the *Journal of Applied Toxicology*. Darby's own research has shown that aluminum salts increase estrogen-related gene expression in human breast cancer cells grown in the laboratory.

Given the wide variety of other substances that can mimic estrogen, including certain pesticides, cosmetics and detergents, it is possible that aluminum salts and other inorganic estrogen-related compounds called "metalloestrogens" can further disrupt normal hormonal signalling within the breast, Darby says. "There is no doubt that the human breast is now subject to a wide range of environmental estrogenic insults," she writes.

What is particularly concerning about aluminum, according to Darby, is the fact that it is applied to the underarm, close to the breast, and left on the skin. Deodorants also are frequently used after shaving, making it easier for aluminum salts to enter the blood stream. Studies also have demonstrated that aluminum salts can penetrate human underarm skin even if it is unbroken.

Until recently, Darby notes, only organic chemicals were thought to be capable of exerting estrogen-like effects in the body, or otherwise disrupting the hormone's normal functioning.

"My overall feeling is that we need much more research to begin to ascertain the collective effects of all these chemicals," she told Reuters Health. "Each individual chemical may play a different part in the collective overall effect."

People can reduce their exposure to cadmium by quitting smoking, Darby said.

"The answer for aluminum is to cut down or cut out on application of antiperspirant under the arms and around the breasts," she continued. "I stopped using underarm cosmetics 10 years ago when I first starting thinking about it all. I wash with soap and water twice a day and no one has yet complained."