



**Research Update • Le point sur la recherche**

**Feeling more pain**

Pain experienced during circumcision increases infants' sensitivity to subsequent pain during vaccination even months later, a prospective study by Anna Taddio, Joel Katz, A. Lane Ilersich and Gideon Koren of Toronto, published in *Lancet* (1997;349:599-603), indicates.

Taddio and colleagues looked at baby boys who were uncircumcised, or circumcised after treatment with a topical anesthetic (lidocaine-prilocaine cream) or a placebo cream. When the boys were vaccinated 4 to 6 months later, the encounters were videotaped and the boys' reactions were rated. The person doing the rating was blinded to the boys' circumcision status. The ratings showed that the boys circumcised without anesthetic experienced the

most pain from vaccination, the uncircumcised boys experienced the least pain, and the boys circumcised after anesthetic treatment had a response between the responses in the other groups.

The study arose from an unexpected finding from a previous study involving the use of anesthetic cream before vaccination. "We found that baby boys had a greater reaction [to vaccination] than girls. What could explain this difference? There is no evidence in the literature of a difference between the sexes. So we asked, is this a pain phenomenon?" The researchers made the link with previous circumcision.

Taddio hopes the study will affect the way circumcision is performed. "Enough is enough already. We

know that infants feel pain; we know about drugs. We can't pretend that pain doesn't have any effect; it has a more longstanding effect than we thought."

The study also raises questions about why infants are sensitized to pain even months after experiencing it. "We don't know what the mechanism is. However, adult and animal studies show that there's an alteration in the central nervous system with intense or frequent pain. This phenomenon is called 'central sensitization.'" Taddio says the current theory is that pain causes a series of events at the cellular level in the dorsal horn of the spinal cord, which can result in new gene expression and alterations in the central nervous system's response to pain. — *C.J. Brown*

*In the news . . .*

**Less fat means less dense breast tissue**

Ontario researchers have found that eating a low-fat diet affects the amount of dense breast tissue, which is a risk factor for breast cancer (*J Natl Cancer Inst* 1997;89(7):488-96). A total of 817 women with dense tissue in more than half of their breast area were randomly assigned to eat a low-fat, high-carbohydrate diet or to continue with their usual diet. At 2-year follow-up, the women eating a low-fat diet had 6.1% less area of density on average, whereas the control women had 2.1% less area of density. Since less dense breast tissue is associated with a lower risk of breast cancer, eating a low-fat diet could, theoretically, have some benefits. However, the researchers point out that

longer observation of a larger number of subjects is needed to determine the effects of diet on the incidence of cancer.

**So far so good for HIV vaccine**

A DNA vaccine developed from the HIV-1 virus has protected 2 chimpanzees from HIV infection for 48 weeks. In preliminary results published in *Nature Medicine* (3[5]:526), the US researchers say they vaccinated 2 chimps, then injected them with the HIV-1 virus. So far, polymerase chain reaction coupled with reverse transcription has shown that the vaccinated chimps have been protected from infection, whereas a control chimp that was also infected has a large viral load. Not only are the results promising in the fight against HIV but they also set an important benchmark for the use of

DNA vaccines to produce protective immune responses.

**Exercise cuts risk of breast cancer**

A massive longitudinal study conducted in Norway has shown that regular exercise cuts the risk of breast cancer (*N Engl J Med* 1997;336:1269-75). The researchers followed 25 624 women for a median of 13.7 years and found that the relative reduction in the risk of breast cancer was 37% among women who exercised at least 4 hours a week and 52% among women who did heavy manual labour. The analysis controlled for other factors such as weight and age. The results were not quite statistically significant. Exercise may lower a woman's exposure to estrogen, which is believed to lead to carcinogenesis in the breast.