Research Update • Le point sur la recherche

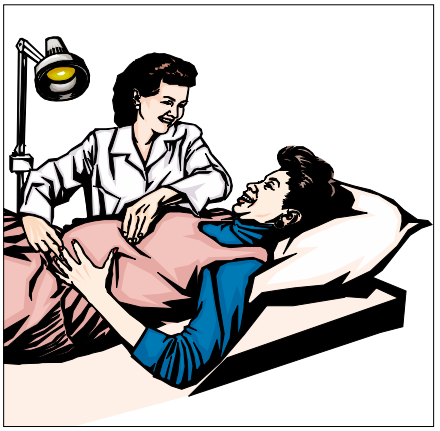
Eating for two: Where's the evidence?

Current recommendations that women should gain 25 to 35 lb. (11.4 to 15.9 kg) during pregnancy are not supported by clinical studies and may be "feeding an epidemic of obesity in industrialized countries," Drs. Denice Feig of Mount Sinai Hospital and David Naylor of the Institute for Clinical Evaluative Sciences argued in a recent viewpoint article (*Lancet* 1998;351:1054-5).

The researchers say that existing guidelines from the US Institute of Medicine and the American College of Obstetricians and Gynecologists are based on weak evidence that insufficient weight gain contributes to premature birth and low-birth-weight infants. "These guidelines are applied to the individual woman, but the supporting evidence is limited to observational epidemiological studies," explains Naylor. "This is an area where the public-health perspective and the clinical perspective may not be compatible."

The article points out that the observational studies linking inadequate weight gain and adverse birth outcomes did not account for many confounding factors. On the other hand, a study from the Dutch famine of 1944–45 showed that only extreme deprivation affects fetal growth. And 2 observational studies have shown a relation between high maternal weight gain and short-term adverse outcomes such as macrosomia (unusually large fetuses) and operative delivery.

But the main concern is long-term maternal obesity. "The hard reality is that most of us are carrying a little more body fat than is needed," says Naylor. "Even a 25-pound weight gain with a 7- to 8-pound infant includes about 7 pounds of maternal



fat. And with one-third of pregnant women gaining more than 35 pounds, is it any wonder that, for many women, weight control first becomes a problem during their childbearing years?"

One study showed that, among women with a high body mass index who gained more than 25 lb. during pregnancy, 34% were still more than 14 lb. heavier than their pre-pregnancy weight several months after delivery.

"It is not inconceivable," says Naylor, "that substantial harm is being done to many women by encouraging them to 'eat for two.' The trade-offs here have been made without consideration of the total spectrum of benefits and harms."

He advocates the design and conduct of "big, simple, randomized trials" to ascertain the effects of different levels of energy intake during pregnancy on short- and longer-term maternal and infant outcomes. In the meantime, Naylor contends that current guidelines should be revisited. "Let's at least have that debate in the next year or 2 and consider a more prudent approach to weight gain during pregnancy for the majority of women who start gestation at or somewhat above ideal body weight." — *C. J. Brown*

In the news . . .

Preventing arthritis and its damage

Researchers have prevented arthritis in animals by pinpointing a cytotoxic oxidant that causes cellular damage, and inhibiting it (*Proc Natl Acad Sci USA* 1998;95[7]:3867-72). They found that peroxynitrite, a cytotoxic oxidant, breaks DNA strands, activating a nuclear enzyme. Giving animals with induced arthritis an inhibitor of the enzyme delayed the onset of arthritis and the development of clinical signs, and improved joint status.

New ways to fight S. aureus

US scientists have found new ways to combat infection with *Staphylococcus aureus*, the ubiquitous bacteria that causes diseases ranging from skin abscesses to toxic shock syndrome (*Science* 1998;280:438-40). Controlling *S. aureus* infection is a major concern, because about one-third of strains isolated in US hospitals are resistant to every antibiotic except vancomycin. In experiments, mice were successfully protected from *S. aureus* infection through 1 of 2 methods. Some were vaccinated with an *S. aureus* protein (RNAIII activating protein, or RAP) that, in the bacteria, activates RNAIII and produces the bacterial toxin. Others were treated with a peptide (RNAIII inhibiting peptide, or RIP) that inhibits the production of the bacterial toxin.