



## Solving stubborn-wound problem could save millions, team says

Lynne Swanson

### In brief

Why do some wounds refuse to heal? A team in London, Ont., is attempting to determine the cellular and molecular clues that could lead to better treatment of recalcitrant wounds.

A unique Canadian multidisciplinary team that is studying and treating recalcitrant wounds hopes to become a world leader in the field within a decade.

The 18-member Wound Healing Group in London, Ont., is studying the cellular and molecular reasons why recalcitrant wounds fail to heal. The group, which was launched last July, hopes to discover and test novel methods of accelerating the healing process.

"We're trying to understand why in some people [a cut or an ulcer] doesn't heal — what's the cellular mechanism?" explains group member Dr. Gregor Reid, associate scientific director of the Lawson Research Institute and professor of microbiology and immunology at the University of Western Ontario. "Normally things come together and you get a nice healing wound. That takes a process, so what is it? How do these cells get a signal that they have to come to this site? How do you get enough information, but not too much information? How do you stop the bacteria from colonizing that wound and infecting a patient? How do you clear it up if they do that? That's not simply the mechanism of healing, but the basic science behind it."

Impaired wound healing is most frequently seen in elderly and diabetic patients, and in those with suppressed immune systems or spinal cord injuries. Not only is it painful and potentially debilitating, it's also expensive. In North America, chronic wound care costs an estimated \$10 billion annually. "Imagine if you were able to reduce either the length [of time] to wound healing or the number of people who have a problem with it by only 1%," says Reid. "That's \$100 million. If our group is able to make a small impact, it would be a phenomenal savings for our health care system."

The Wound Healing Group members are based at the St. Joseph's Health Centre, the Lawson Research Insti-



Dr. Bing Siang Gan leads London's Wound Healing Group

tute, the University of Western Ontario and the Parkwood Hospital. The team comprises a plastic surgeon, family physician, dermatologist, immunologist, epidemiologist, microbiologist, nurse practitioner, clinical nutritionist, pharmaceutical chemist, 2 biochemists, 2 chemists, 3 occupational therapists and 2 physiotherapists.

The members have been divided among 5 research groups: infection and inflammation, cell motility, angiogenesis, biomaterials and tissue engineering, and clinical investigation.

Clinics at the Parkwood Hospital and St. Joseph's Health Centre are acting as "outreach arms" for the group. Its leader, Dr. Bing Siang Gan, says this allows it to achieve its goal of bringing "findings from the bench to the bedside, and back." Gan, a plastic surgeon, researcher and professor at Western, says that because of the multitude of approaches available, "delineation of the problems" is often an issue. "There are so many causes."

Reid stresses that much good work in wound-healing treatment and research is already under way across Canada, and "we're not unique in that sense." However, Gan says the group is unique in Canada in terms of its composition and the recognition its members have received. "Ultimately, we hope to be a world leader within 5 to 10 years."

Lynne Swanson is a freelance writer in London, Ont.