

Dr. Emil Schemitsch can offer new hope for patients with severe traumatic fractures or fractures of fragile, osteoporosis-damaged bone.

Snap! Exactly the sound you don't want to hear when you fall down. When bones break they are subjected to forces they cannot withstand. This can be a traumatic high-energy event such as a major fall or motor vehicle accident, or a chronic application of low-energy force that degrades the bone over time. When the bone can no longer absorb the energy, a fracture occurs.

so the bone can 'grow' together," explains Dr. Schemitsch.

For young people, a traditional cast is often enough to immobilize the broken ends of the bone. However, casts are not always enough to create the necessary stability for bone regeneration.

For many active adults, casts may not provide adequate alignment or sufficient stability. These patients may require surgery to insert pins, plates, screws or rods in order to align the broken bone ends and fix them in place. Traditional plates and screws have been used for decades as a means to support broken bones but the conventional plate has limitations.

Sometimes the bone is brittle and fragile, or "osteoporotic", as is often the case in people suffering from osteoporosis. In other cases, the bone may be very badly shattered, or "comminuted" due to severe trauma. When this happens, traditional plates are not suitable because it is difficult or impossible to attach them to the

damaged bone. The brittle bones break, or the shattered bones simply can't hold a screw.

Orthopaedic surgeons now have a new option when treating serious fractures. Locking Plates are a new technology that provides strong support in fractures with osteoporotic or comminuted bone. Locking Plates are also contoured to the proper shape of the bone and can be fixed in the correct shape and position using screws that lock into the plate – not into the bone. Essentially, they fit over the damaged bone and allow the bone to repair itself.

"Locking Plates can be attached without putting excess pressure on the bone," says Dr. Schemitsch. "As our population ages and the incidence of osteoporosis increases, we will rely more and more on this type of technology...before, we may not have been able to properly repair a severe fracture, leaving some trauma and osteoporosis patients with impaired mobility and more dependent on aids or care givers."

LOCKING PLATE TECHNOLOGY
Available in a variety of sizes and lengths.
Created to fit right and left side body parts.
Obtainable in different metal alloys.
Available for different anatomical locations such as distal lateral tibia or distal medial tibia fractures or distal radial fractures.
Anatomically pre-contoured to create a fit that requires little or no additional bending.

"When we're young and when bone is healthy, it is often a simple matter to repair a fracture," says Dr. Emil Schemitsch, Head of Orthopaedic Surgery at St. Michael's Hospital in Toronto. "Healthy bone is constantly renewing itself, absorbing old cells and creating new ones to replace them."

"In order for a fracture to heal properly, the broken ends have to be properly aligned and kept stable



If this technology were not present, the chance of the bone not healing or healing in a poor position would be increased. Moreover, the chance of the fixation failing and the need for another operation would be higher. The presence of nonunion or fixation failure or poor alignment would re-

sult in the need for more surgeries and if all failed might even result in amputation. During this time, patients might be in hospital, require the use of a walker or be confined to a wheelchair and potentially lose the use of a limb and subsequently their independence.



fast facts

- 1.4 million Canadians have osteoporosis which affects 1 in 4 women and at least 1 in 8 men over the age of 50.¹
- Patients with osteoporosis require special consideration when treating fractures – their bones are often too soft to hold conventional screws and plates.
- Severely shattered bones can also pose problems for traditional screws and plates.
- The heads of the locking screws contain male threads while the holes in the plates contain female threads. This allows the screw head to be threaded into the plate hole, locking the screw into the plate. This technical innovation provides the ability to create a fixed-angle construct while using familiar plating techniques.
- Locking plates will accommodate standard screws, as well as locking screws with threaded heads that allow the screw to be locked into position to facilitate proper plate/screw placement.
- The low profile plate facilitates fixation without impinging on soft tissue.

¹ Osteoporosis Canada
www.osteoporosis.ca (2008)