



## Smoking and Fracture Healing



It has been well known among orthopaedic surgeons for many years that persons who smoke often take a particularly long time to heal fractures. Smoking has also been associated with delayed union and actual non-healing of certain fractures.

Research has begun to accumulate definitely linking smoking to difficulty in healing fractures.

It is felt that smokers have a significant deficiency of oxygen (hypoxia) at the cellular level where the fracture is trying to heal. Fractures heal normally in areas which have good blood supply and a very adequate oxygen supply in the region of the fracture.

The problem has also been observed in orthopaedic procedures in which a bone graft is done to fuse a particular area of the body. Examples of this would be a spinal fusion for certain back conditions, fusion of an arthritic ankle joint, and a fusion of joints in the foot and sometimes in the hand. In fact, some orthopaedic surgeons in their practice have insisted that patients stop smoking before elective bone graft surgery is done. They feel that the incidence of delayed healing of bone graft procedures is so high that it would not be worth proceeding with the bone graft surgery while the patient is still smoking.

This delayed process of healing has been observed in almost every type of fracture that orthopaedic surgeons deal with when they are treating patients who smoke.

Obviously, when a fracture occurs in a patient who is presently smoking, it is often difficult to convince the person to stop smoking, since they are already under additional psychological stress because of the injury and its resultant disability.

However, when a person is facing elective bone graft surgery such as a spinal fusion, the orthopaedic spine surgeon will very frequently counsel the person about the



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possibility of delayed healing and possibly non-healing of the fusion. I have done this myself in several cases where patients were advised strongly to stop smoking before bone graft surgery was attempted. It simply is not reasonable to go ahead with an elective procedure knowing that the bone graft may not heal since the patient is still smoking. Nicotine seems to play a significant role in causing the lack of oxygen to the tissues.



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**Please consult Dr. Haverbush or a physician for specific treatment recommendations.**

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