

Why smoking damages your spine

by Singh Chhabra

Physical activity: When you smoke, it reduces the amount of oxygen in the blood and increases the level of harmful substances, such as carbon monoxide. This combined with the effects of smoking on the heart and blood vessels can limit the benefits from physical activity.

Hormonal function: Smoking increases [estrogen](#) loss in both pre-menopausal and post-menopausal women. This can result in loss of bone density, which cause bones to lose strength and become more fragile.

Cigarette smoking and spinal problems

The toxins in cigarettes wreak havoc on our bones and soft tissues. Here are some of the common areas of the spine that bear the brunt of smoking.

Intervertebral discs – The discs that separate adjacent vertebrae — intervertebral discs — get a very low blood supply due to excessive smoking. This further inhibits the blood circulation, making it impossible for these discs to absorb the nutrients and thus lead to health problems of the intervertebral discs.

Vertebrae – Smoking reduces [bone density](#), which puts the vertebrae at greater risk of developing [osteoporosis](#), facet disease, spinal [arthritis](#) and other degenerative spine conditions.

Connective tissues – Nicotine (present in cigarette) causes a reduction in collagen levels, which makes soft tissues and cartilage less elastic and resilient. Tendons and ligaments also become vulnerable to injury.

Muscles – Besides the general degenerative effects of smoking on the muscles, tobacco also harms the lungs, making physical activity difficult. The result can be lowered muscle mass due to inactivity.

Nerves – When cartilage, vertebrae and intervertebral discs get weaken, the chances of a herniated disc or bulging disc increases. These conditions can cause disc material to impinge spinal nerves.

Healing after a spinal fusion

Smoking greatly compromises the healing process during and after a spinal fusion, which is a surgical procedure to treat the bone loss of the spine used to join bony segments of the spine (eg, vertebrae). For the fusion to heal, new bone growth must occur, bridging between the spinal segments. Smoking disrupts the normal function of basic body systems that contribute to bone formation and growth. New bone growth is necessary for a fusion to heal.

Also, smoking compromises the immune system and the body's other defence mechanisms, which can increase the patient's susceptibility to postoperative infection.