

Preventing flight crew back injuries

By Robb Leigh MD

Lifting, bending, pushing and pulling – all part of the job for most airline crew members. Unfortunately, though, such repetitive movements often translate to back injury, one of the most incapacitating and common work-related injuries.

Why do back injuries occur?

It is no wonder that back injuries are common among people who perform repetitive lifting and bending, especially considering the fulcrum effect.

The low back basically functions as the centre of a seesaw, with the upper body and the load being lifted as one end. The lumbar muscles and ligaments applying traction on the back are the other end. The low back's musculoskeletal frame actually withstands nearly tenfold the actual weight of the object being lifted. As a result, disc injury and degeneration are common precipitants of back pain, along with bone spurs and the tearing of ligaments and muscles.

Any process involving the anatomical components of the back – bones, discs, ligaments or muscles – may result in pressure on the nerve roots exiting the spinal cord and can create severe back pain.

Common causes of back injuries

The most common mechanisms of back injury can frequently be encountered in the aircraft environment: heavy lifting, twisting while lifting or holding a heavy load, reaching and lifting, lifting or carrying objects with odd shapes, working in awkward positions, sitting or standing for prolonged periods in one position, slipping on a wet floor and, occasionally, poor sleeping positions.

Preventing back injuries: proper techniques

Adaptation and improvisation of instinctive movements are the keys to minimising and preventing back injuries in the aircraft environment.



Straightforward medical advice can help airline staff, including cabin crew, to avoid back pain.

When lifting a heavy object into the overhead bin or onto the security conveyor belt, a crew member should:

- keep feet shoulder-width apart and bend at the knees;
- squat down and hug the object to be lifted, keeping the spine straight when standing up, and;
- change directions by turning the entire body in the desired direction.

Furthermore, when lifting carry-on bags, use only the arms while keeping the back straight. As the bag reaches the waist level, use one hand to hold the bottom and then use both arms to lift the bag.

When putting an object down, squat with a straight spine until reaching the floor with the load.

When pushing and pulling a beverage cart, a crew member should:

- if possible, push instead of pulling. Pulling can cause significant disc compression, and;
- maintain an erect posture with a straight spine when pushing or, when pulling is the only option, try not to bend or arch the lower back.

When operating in an aircraft's tight spaces, the following advice should be remembered.

- If bending is necessary, face the desired direction before bending and bend at

the waist, limiting any simultaneous turning.

- To turn to the side, turn the entire body in the desired direction and bend again at the waist.
- When reaching, find a stable anchoring point with one arm and hand while reaching with the other hand. Balancing with feet alone, while the trunk muscles are tightened and twisted, can result in a pulled lower back muscle.

Everyday prevention measures

Any airline employee can take steps to prevent back problems and to improve posture.

When sitting, adopt an upright position without slouching and develop a habit of holding in the belly. A protruding belly places undue load on the spine. Core muscles strengthening, along with improved cardiovascular endurance, regular stretching and a good diet, will also help to minimise back injuries and allow for a healthier lifestyle. ■

As a practising emergency physician in metropolitan Phoenix, Arizona, and a medical advisor for MedAire, Robb Leigh is involved in handling medical emergencies daily in an urban emergency room as well as remotely via MedAire's venues.

The **Regional** International Medical Advisory is provided courtesy of ERA member MedAire Ltd.