Preventing Flight Crew Back Injuries

By: Paulo M. Alves, MD, MSc
Global Medical Director, Aviation Heath, MedAire Worldwide

Lifting, bending, pushing and pulling - it’s all part of the job for most crew members. Unfortunately, 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 lower back basically functions as the center 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 lower back's musculoskeletal frame actually withstands nearly 10 times 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 minimizing and preventing back injuries in the aircraft environment.

When lifting a heavy object into the baggage storage area, crewmembers 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
• 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 any luggage carts, crewmembers should:**

• Push instead of pull since pulling can cause significant disc compression
• 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, remember this advice:**

• 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 crewmember 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 muscle strengthening, along with improved cardiovascular endurance, regular stretching and a good diet, will also help minimize back injuries and allow for a healthier lifestyle.

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