

# Ergonomic Vehicle Assessment

## Sector - Manufacturing

### Background

The head of health and safety for a large manufacturing client contacted Morgan Maxwell for advice on an individual employee who had reported lower back discomfort when driving his company car.

The employee had a history of lower back discomfort and was able to manage his symptoms with stretches and regular exercise. During the last six months he noticed that driving exacerbated his lower back discomfort. The employee felt that the design of his company car seat combined with the increase in number of hours required to drive to visit clients were the main factors causing his lower back discomfort.

### Results

- ✓ *Reduction in reported lower back pain six weeks after interventions.*
- ✓ *No lost time off work associated with driving .*

### The Ergonomics Vehicle Assessment Investigation Process

Morgan Maxwell's Chartered Ergonomist completed the following process:

- 1. Informal interview with individual to get detailed understanding of history, daily job tasks and discomfort.** Individual spent up to three hours driving per day commuting with some extra time required to meet clients. His job involved some manual handling from his vehicle and exposure to sitting while working with his computer. Physiotherapy and Chiropractor sessions helped reduce discomfort for short periods but were unable to reduce discomfort after periods of driving. Discomfort was reduced during light exercise and when he spent periods of time away from driving.
- 2. Discussion covering posture and set up in relation to driving ergonomics.** Advice provided around the negative effects of sedentary postures on health and wellbeing, loading on the spine when sitting compared to standing, the anatomy of the intervertebral discs in relation to driving ergonomics.
- 3. Task assessment of individual in their vehicle. Data collection such as video, photographs, anthropometric measurements and vehicle adjustments were collected.** Ergonomist collected videos and photographs of current postures which were used within report for comparison against improved postures.



Audit of the vehicles seat and steering column adjustments were completed. Anthropometric measurements of the individual were taken to compare against adjustments offered by vehicle.

4. **Demonstration of stretches and manual handling techniques to reduce risk of injury after long periods of driving.** Lower back stretches were demonstrated to enable individual to reduce the risk of sitting further exacerbating his discomfort. Manual handling techniques were demonstrated covering the importance of a wide base of support when lifting loads from the vehicle.
5. **Debrief of onsite findings with individual.** The Ergonomist spent time running through findings to ensure individual understood identified issues and what the recommendations were.
6. **Full Ergonomics Vehicle Assessment produced setting out findings and recommendations for change.**

## Identified Issues and Recommendations

### Issue 1- Time period sitting during driving and working with PC

Recommendation - Reduce exposure to sitting by regular postural breaks every one hour. Requires support from management to reduce time sitting.

- ✓ Stop driving every one hour to enable standing posture.
- ✓ Stand every 45 minutes while working with computers.

### Issue 2- Limited Lumbar Support

Chair provided support to the middle part of individual's spine (thoracic). Foam in back support was significantly softer in lower back region (lumbar) which promoted more of a flexed non-neutral lumbar posture.

Recommendation - Provide two different size lumbar supports to enable individual to have the extra support required to adopt a flatter lumbar spine when sitting. Two different sizes are used depending on levels of discomfort.

### Issue 3 - Non neutral spinal postures adopted during manual handling of goods from vehicle

Recommendation - Provide advice around adopting strong postures which reduce the loading on the lower back when moving and lifting own body weight and objects.

