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## HOW PERFORMING MANUAL TASKS AT WORK CAN CAUSE INJURY

**Most musculoskeletal disorders from performing manual tasks at work result from cumulative 'wear and tear' on the musculoskeletal system.**

**The task reported to have 'caused' the injury is commonly 'the straw that broke the camel's back', rather than the single cause of the injury.**

Injuries caused by performing manual tasks are collectively referred to as musculoskeletal disorders and include:

- sprains and strains of muscles, ligaments and tendons;
- back injuries, including damage to the muscles, tendons, ligaments, spinal discs, nerves, joints and bones;
- joint injuries or degeneration, including injuries to the shoulder, elbow, wrist, hip, knee, ankle, hands and feet;

- bone injuries;
- nerve injuries;
- muscular and vascular disorders as a result of hand-arm vibration; and
- soft tissue hernias.

In the WA mining industry from July 2004 to June 2007, 84 per cent of musculoskeletal disorders resulting from performing manual tasks were sprains and strains. The lower back and shoulders were the most frequently injured parts of the body.

Musculoskeletal disorders can result from sudden damage to the musculoskeletal system caused by a single strenuous act, unexpected movement or exertion of force.

For example, lifting an item that is heavier than expected and requires an unexpected exertion of force can result in an acute musculoskeletal disorder. Commonly, however, such injuries are a result of cumulative 'wear and tear' on the musculoskeletal system, caused by regularly performing manual tasks or, over time, undertaking work of a similar nature. For example, repeatedly lifting items from the ground onto the back of a vehicle involves repetitive bending, lifting

and lowering that, over time, can result in musculoskeletal disorders.

Hazardous manual tasks that contribute to musculoskeletal disorders in the WA mining industry include:

- operating mobile plant for prolonged periods – sustained seated posture with concurrent exposure to whole-body vibration;
- lifting unassisted, particularly loading and unloading vehicles – application of high forces and handling loads that are unstable, ▶

### **What is the difference between strains and sprains?**

A strain is a stretching or tearing of a muscle or tendon due to excessive tension or use. Common symptoms are pain, weakness and muscle spasm.

A sprain is a straining or wrenching of the ligaments around a joint or the joint capsule itself following a trauma when the joint is forced beyond its normal range of movement. Common symptoms are bruising, swelling, instability and painful movement.

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unbalanced or difficult to grasp or hold, and lifting in awkward postures and in confined areas;

- repeatedly lifting and handling sample bags – repetitive application of force;
- using hand-held tools over head or at ground level for prolonged periods of time – repetitive application of high force and sustained awkward postures, with simultaneous exposure to hand-arm vibration for power and pneumatic tools;
- working on valves in awkward postures – application of high force and sustained awkward postures; and
- getting on or off plant and machinery – jerky or unexpected forces following periods of sustained sitting and exposure to whole-body vibration.

Often a single event may be reported as the direct cause of a particular musculoskeletal disorder although it really results from extended exposure to sub-critical stress or strain. In other words, the task reported to have 'caused' the injury is in fact 'the straw that broke the camel's back' rather than the single cause of the injury. To effectively manage manual task risk, the cumulative nature of musculoskeletal disorders should be considered. There needs to be a focus on all manual task risk factors in the job, not just those that are immediate precursors to an accident or injury.

#### Data sources

Injury data for 2004-05 to 2006-07 sourced from AXTAT database, Resources Safety, Department of Consumer and Employment Protection.

#### References

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