

HOMEBUILDING: PLUMBING

Photocopy this profile and distribute it as widely as possible!

Musculoskeletal disorders (MSDs), such as chronic back pain or shoulder problems, often take time to develop. Forceful exertion, awkward positions, hand-arm and whole-body vibration, contact stress, and repetitive tasks can add up over time to produce an MSD.

This profile can help you identify and control MSD hazards in your job. We recommend that you add the best practices outlined here to your company's health and safety program. The hazards in a particular job, however, may be different than the ones on this profile, so evaluate the risks of your particular activities.

In general, when implementing controls, consider the following ergonomic principles:

- 1. Use handling equipment when possible.** The most effective intervention to control the risk of developing an MSD is to eliminate or reduce the frequency of lifting, carrying, pushing, and pulling. Use material-handling equipment such as carts, dollies, pallet jacks, or manual forklifts.
- 2. Don't lift a load from the floor.** Lifting from the floor or below standing knuckle height can expose your back to significant stresses and reduce your lifting capacity. Avoid this procedure by storing objects above standing knuckle height and below standing shoulder height.
- 3. Avoid working on the floor.** Constantly working on the floor can result in injuries to your back, hips, and knees because it usually requires kneeling and bending your back forward. When possible, raise the work height by using a workbench.
- 4. Minimize work above your shoulder.** High lifting or constant reaching above the shoulder level is harmful for three reasons.
 1. Your muscle strength is reduced because most of the muscle work is performed by your shoulders and arms instead of by the bigger muscles in your back and legs.
 2. Your shoulder and arm muscles fatigue more quickly than your back and leg muscles because of reduced blood flow.
 3. Lifting or removing an object from a high shelf can be dangerous because you could drop the object.
- 5. Move smaller weights often or get help.** Smaller weights put less stress on your back than larger weights, even if the frequency of lifting is increased.
- 6. Exercise programs.** Consider exercise programs. They help to prevent MSDs and promote general good health.

Tasks	What can happen (Hazards/Risks)	Potential Controls
<p>Rough-in</p> <ul style="list-style-type: none"> ▶ Installs waterlines using copper and PEX tubing system ▶ Installs ABS vent and drain pipes ▶ Installs and handles bathtubs (offloads bathtubs from trucks and carries them into homes) ▶ Installs water services 	<ul style="list-style-type: none"> ▶ Overexertion injuries to the arms and hands from repetitive use of ABS cutters, crimping tools, and knives ▶ Neck and shoulder injuries from awkward neck positions and working above shoulder level ▶ Knee and back injuries from prolonged kneeling, squatting, and bent-over postures ▶ Overexertion injuries to the shoulder and lower back from manual handling of bathtubs 	<ul style="list-style-type: none"> ▶ Keep all cutting tools sharp to reduce strain on your wrists and arms. If you're using crimping tools, make sure that they are properly calibrated. ▶ Use the right-sized drill or boring bit and make sure that the cutting edge is sharp to reduce strain on your arms and the tool. ▶ Wear kneepads for work on the floor. ▶ Avoid prolonged awkward postures. Move between kneeling, squatting, and standing. ▶ If working below knee level, use a stool such as a milk crate or a mobile stool with castors to reduce stress on your knees and to help keep your back straight. ▶ Set your work up at waist level using benches or tables. ▶ For a PEX tube system, using mechanical crimping tools (e.g., Wisboro, Uponor) can help reduce strain and injury. ▶ When lifting from the ground, limit the load to 23 kg or 51 lb. ▶ Ask for help with heavy or awkwardly shaped material. ▶ Follow proper lifting techniques. <ol style="list-style-type: none"> 1) Lift with your legs, not your back. 2) Do not twist your body. 3) Keep the load close to your body. See the chapter on "Back Care" in IHSA's <i>Construction Health and Safety Manual</i>.

Tasks	What can happen (Hazards/Risks)	Potential Controls
<p>Finishing (installs fixtures)</p> <ul style="list-style-type: none"> ▶ Installs plumbing fixtures ▶ Off-loads fixtures from trucks and carries them into homes 	<ul style="list-style-type: none"> ▶ Knee and back injuries from prolonged kneeling, squatting, and bent-over postures while installing heavy equipment ▶ Overexertion injuries to the shoulder and lower back from handling heavy objects such as bathtubs and toilets 	<ul style="list-style-type: none"> ▶ Keep all cutting tools sharp to reduce strain on your wrists and arms. If you're using crimping tools, make sure that they are properly calibrated. ▶ Wear kneepads for work on the floor. ▶ Use material handling equipment when lifting and carrying heavy objects to reduce strain and injury. ▶ Ask for help with heavy materials. ▶ Use proper lifting techniques when handling heavy objects. ▶ On stairs, the tallest person should be at the bottom of the load. ▶ When carrying loads, ensure that entry ramps to houses are secure and are at least 46 cm (18") wide and strong enough to bear any expected loads. ▶ Avoid prolonged awkward postures. Move between kneeling, squatting, and standing. ▶ When lifting from the ground, limit the load to 23 kg or 51 lb.

A publication of the Residential Labour-Management Health and Safety Committee
 in partnership with the Infrastructure Health & Safety Association

1-800-263-5024 | info@ihsa.ca | www.ihsa.ca