



Contact stress in construction work

Contact stress happens when force is concentrated on a small area of the body, pinching or crushing tissue and causing pain. You experience contact stress, for example, when the edge of a work surface digs into your forearm or wrist, when ridges and hard edges on tool handles dig into your hand, and when you use your hand, foot, or knee as a hammer. The sides of fingers, palms, wrists and forearms, elbows and knees are most susceptible to contact stress because in those areas the nerves, tendons, and blood vessels are close to the skin. This pressure may be enough to restrict the movement of tendons and cause inflammation, restrict the flow of blood in the blood vessels, or bruise the muscles.

Contact stress happens when force is concentrated on a small area of the body, pinching or crushing tissue and causing discomfort and often pain.

Avoiding injury

The sharp edges of tools, tables, equipment, and workstations often can be covered with soft padding. Generally, tools that have grooves for the fingers don't work well because the grooves are either too big or too widely spaced. The resulting pressure ridges across the hand can damage nerves or create hot spots of pain. Grooves along the length of the handle, which are intended to prevent slipping, can also cut into the hand and create pressure ridges. Workers should avoid using the base of the palm of the hand or the knee as a hammer. For example, carpet layers often use the knee repeatedly to install carpets, and in doing so are at high risk of injury.

Other suggestions

- Redesign workstations or work processes to eliminate contact stress.
- Avoid resting against sharp edges, or try to have them rounded.
- If a part of the body must rest against a sharp edge, pad the edge or pad yourself to better distribute forces.
- Spread contact forces over a greater surface area to minimize tissue injury. For example, increase the size and length of tool handles.
- Wrap handles with tape or soft, grippy materials such as Viscolas®.
- Tools that have grooves for the fingers don't work well.
- Redesign workstations or work processes to eliminate contact stress.
- Use rigid insoles in rubber boots.



Use knee pads to reduce contact stress.

For further information, see the MSI Prevention Guidance Sheet on *Local Contact Stress*:
<http://ergonomics.healthandsafetycentre.org/s/MSIPreventionProcess.asp>