

HAND SAFETY TOOL KIT



Five Tailgate Topics on Hand Safety



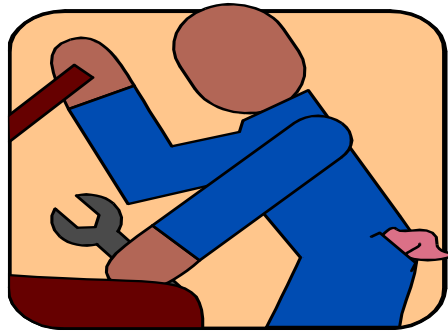
The Choice is Yours!!

1. Primary Hand Protection.
2. Injuries caused by Sharp Objects.
3. Thermal and Chemical Injuries.
4. Injuries Involving Stored Energy.
5. Injuries Received from Pinch Points.



Guide for Supervisors:

- ▶ What potential hazards to the hands are foreseeable for each task?
- ▶ Do your people have the knowledge, skills and training necessary to complete the task safely?
- ▶ Can the hazards be eliminated, isolated, or minimized?
- ▶ Are gloves appropriate (e.g. rotating equipment)?
- ▶ Is the glove application appropriate for the hazard?

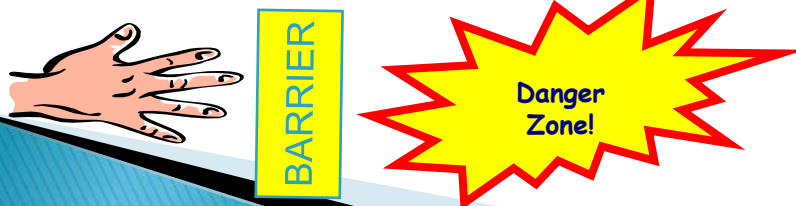


- ▶ Five Talks, which focus on hand safety.
- ▶ Each features a Danger Zone area.
- ▶ Have a look at the examples of real injuries in this presentation and discuss how to avoid the injuries that have occurred in each.
- ▶ A concept that can be used in each Tailgate Talk is shown below.
- ▶ Each talk will cover how to keep hands out of Danger Zones by “primary” or “secondary” means.
- ▶ Secondary means are typically accomplished by gloves, but should always be used in conjunction with primary control measures.

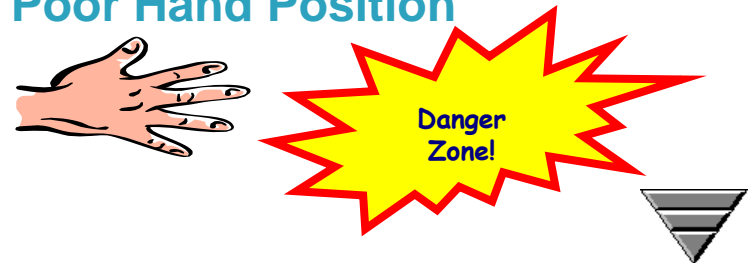


Never rely solely on gloves for protection!!

Good Hand Position



Poor Hand Position



Tailgate Talk No 1

Primary Hand Protection

One of the best and most effective means of primary hand protection is **good hand position**. Don't position your hands where they can be:

- Cut or punctured by sharp objects.
- Burned by hot objects or chemicals.
- Pinched between objects.
- Struck by objects (stored energy).

To ensure you properly position your hands, first recognize the hazard(s), then develop a work practice to keep hands out of “**The Danger Zone!**” or “**Line of Fire!**”

The best safety device for your hands is your mind. By being alert and aware you can avoid poor hand positioning and keep them out of “**The Danger Zone!**”.

Mind and eyes on task at all times!! Conduct your Last Minute Risk Assessment (LMRA)!



Skill Saw Wound on the Index Finger



Tailgate Talk No: 2

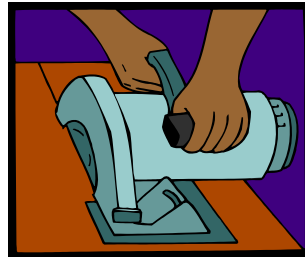
Injuries Caused by Sharp Objects

The hands and fingers are injured the most of all parts of the body and it's very easy to understand why. There are few work activities, which do not involve the hands. The potential for injury is always there!

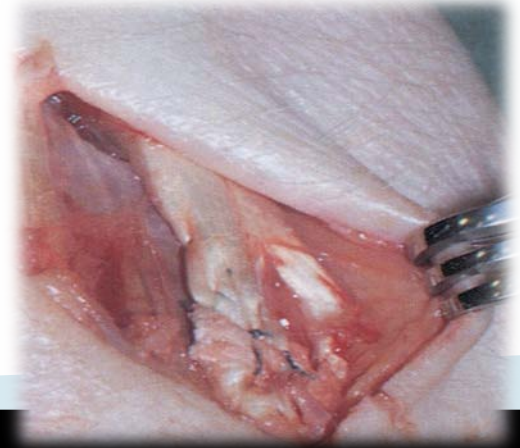
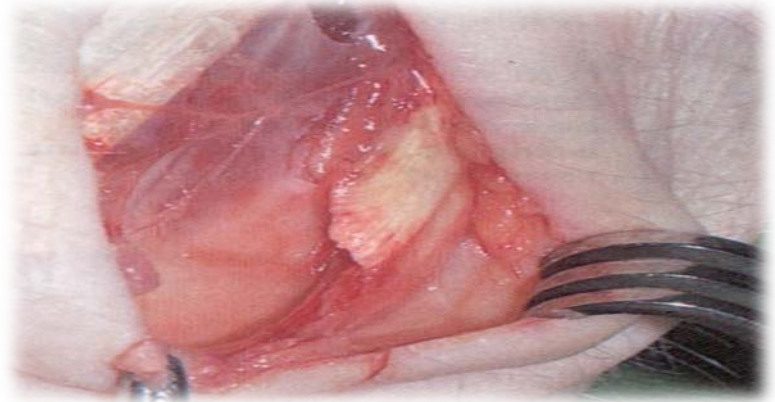
AVOID “THE DANGER ZONE”!!

The most common types of hand injury are puncture wounds and lacerations. These involve:

- cutting fingers through misuse of knives.
- crushing injuries through entrapment .
- burns (both thermal and chemical).



Major Cut on Back of Hand



Tailgate Talk No: 2 (cont'd)



- ▶ As you can tell, all these injuries occurred during normal, everyday type job activities.
- ▶ When we ask ourselves how we could have avoided these injuries, our first impulse is to say “better glove usage”.
- ▶ You might be surprised to know that in most of these incidents, gloves were being worn.
- ▶ Gloves should always be considered as a “secondary” level of defence.
- ▶ While proper gloves for the task, in good condition, prevent many injuries “primary” levels of defence are much more effective, such as:
 - Proper planning for each job activity.
 - Checking material/equipment for rough or sharp edges before handling.
 - Making sure moving machinery is guarded.
 - Maintaining an effective barrier between hands and hazards by using tools or other aids.
 - Good housekeeping on workbenches, etc.



Tailgate Talk No. 2 (cont'd)

On the previous slide are a few of the things to consider (primary levels of defence) in order to prevent exposure to hazards, before considering what gloves (secondary level of defence) are appropriate for the job.

Keep this concept in mind and do whatever it takes to keep your hands out of:

“THE DANGER ZONE”

Remember – wearing gloves at Geotech is **policy** not **option**!!



Wound Caused by Chainsaw



Incision to Palm of Hand



Knife Blade Gripped



Tailgate Talk No: 3



Thermal/Chemical Injuries

- ▶ Thermal and chemical hand injuries, along with the other types of hand injuries, are easily prevented if hands are kept out of:

“THE DANGER ZONE”

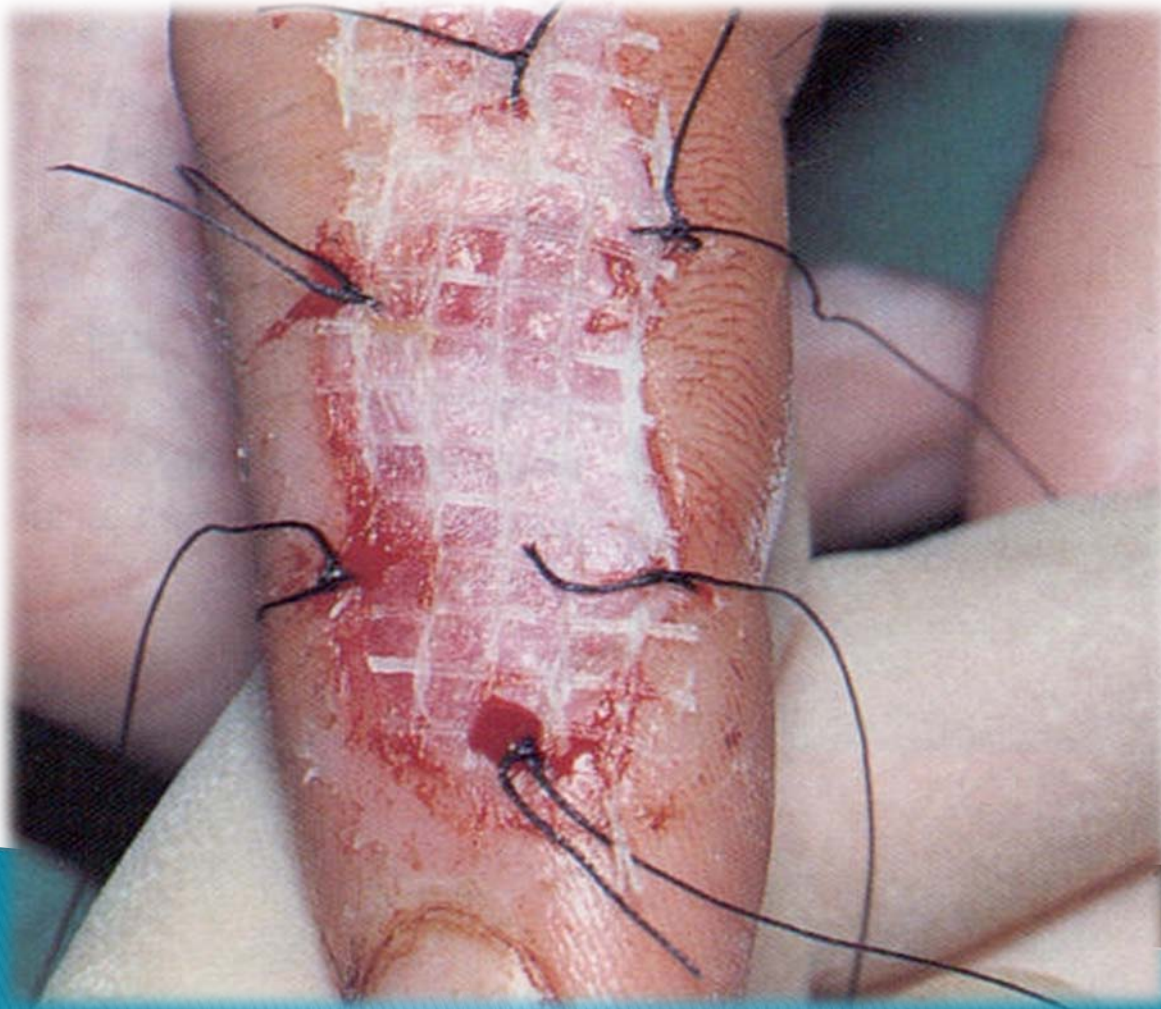
- ▶ The most common hand injuries associated with contact with hot surfaces and chemicals include:
 - burns - both chemical and thermal; and
 - types of dermatitis, known as skin rash.
- ▶ Both types of injuries can be serious and painful.
- ▶ Laundry detergents and other household varieties can cause not only dermatitis, but also chemical burns - skin contact with detergents must be avoided.
- ▶ To clean any part of the body, ensure that the detergent or cleaner has been specifically designed for skin contact.



Skin Graft to Burn Injury



Split Skin Graft



Tailgate Talk No 3 (Cont'd)



- ▶ Chemicals and hot surfaces or materials are the greatest source of exposure.
- ▶ Chemical exposure can be associated with those used in process, during construction and/or repair and maintenance activities.
- ▶ Commonly involves paints, coatings, thinners and other solvents.
- ▶ Materials such as fibreglass insulation and steel wool can also cause dermatitis through irritation.
- ▶ Burns can result from contact with chemicals such as acid or caustic and of course from hot surfaces, liquid or materials.
- ▶ For all of the risks associated with the hazards listed above, the primary line of defence is safe working practices - all intended to keep our hands out of :

“THE DANGER ZONE”



Tailgate Talk No 3 (Cont'd)



- ▶ Below are examples of safe work practices relative to the prevention of hand injuries from thermal or chemical contact:
 - substitute chemicals for less hazardous products that won't cause dermatitis or burns.
 - use simple tools such as pliers to move or hold hot materials.
 - Place warning signs near hot objects.
 - use containers which have been specifically designed to carry and contain chemicals.
 - good hygiene, includes methods to remove contaminated gloves without skin contact.
 - good housekeeping associated with removal of contaminated materials.
- ▶ The “second” line of defence should be gloves, but they must be the right type for the job:
 - heavy duty leather for hot materials, etc.
 - specifically designed to suit chemical type either of synthetic or natural rubber material.
 - check the MSDS to determine glove type.

KEEP OUT OF “THE DANGER ZONE”!!



Tailgate Talk No: 4

Injuries Involving Stored Energy

- ▶ Consider what can we do to protect our hands from injuries that are caused by **stored** energy.
- ▶ When we refer to **stored** energy we mean “**pent-up**” energy, that could be released unexpectedly if not maintained under control.
- ▶ **Stored** energy includes (but is not limited to):
 - hydraulic fluids under pressure.
 - compressed air.
 - energy stored in compressed springs.
 - process chemicals under pressure.
 - potential energy from suspended objects.
 - arm energy e.g. when you push/pull a wrench.



Ring Finger Amputation (left hand)



Ring Finger Amputation (right hand)



Tailgate Talk No: 4 (cont'd)



- ▶ How do we protect our hands from **stored** energy?
- ▶ Firstly, we need to recognise it exists prior to commencing an activity.
- ▶ However, **stored** energy is not always easily recognizable.
- ▶ The electrical power source on a piece of workshop equipment may be locked out, but **pressure** may still be present in a hydraulic cylinder.
- ▶ A in line valve or blank may have **pressure** against it because a valve further upstream has leaked or has been cracked open.
- ▶ An unrecognized **high centre of gravity** may cause a piece of equipment to topple over unexpectedly.



Tailgate Talk No 4 (cont'd)

- ▶ Consider what work practices we can follow to prevent hand injuries associated with “stored” or “pent-up” energy.
 - always lockout and tag energy source(s) before placing hands in the “Danger Zone”!
 - determine if there are multiple energy sources present on the same piece of equipment.
 - remember to bleed off stored energy in cylinders, receivers, pipelines, hoses, etc.
 - look out for alternate supply feeds, bypassed interlocks or valves that may not be properly closed.
 - when applying force (push or pull) be prepared for an unexpected slip or release.
 - keep hands from under suspended loads.
 - consider the force of gravity.
 - always use the right tools for the job and ensure those tools are in good condition.
 - recognize that gloves will not offer you total protection from injuries where stored energy is present.

KEEP HANDS OUT OF “THE DANGER ZONE” !!



Tailgate Talk No 5:

Injuries Received From Pinch Points



Take a moment to look at your hands:

- ▶ Your hands tell a lot about you and give some indication of your past.
- ▶ If you are like most people, one or more visible scars will exist.
- ▶ Each scar will have a unique story of misfortune attached to it.
- ▶ These scars may have been the result of being caught in a pinch-point.
- ▶ Pinch points are created any time two objects come together.
- ▶ A classic example of a pinch-point is where a closing door and door frame come together, a time and a place where you don't want your hand to be!

KEEP HANDS OUT OF “THE DANGER ZONE”!!



Fingers Crushed by a Press



Tailgate Talk No 5 (Cont'd)



- ▶ In the drilling industry we have sustained many injuries involving pinch points.
- ▶ Examples include:
 - Driller and helper hooking rig up to dozer, driller caught his finger in a pinch point causing laceration that required 5 sutures.
 - Individual attempted to hold door to prevent it from slamming, finger caught between door and jamb causing laceration that required sutures.
- ▶ In each of the above examples gloves did little to prevent the injury.
- ▶ The key to avoiding those injuries is the recognition, evaluation and control/elimination of pinch-points associated with each task.
- ▶ An objective over the next week is to identify more pinch points in our work environment.
- ▶ Identify them and then decide how they can be controlled/avoided or eliminated altogether.
- ▶ Use mechanical means to move material or equipment, as opposed to manual application.

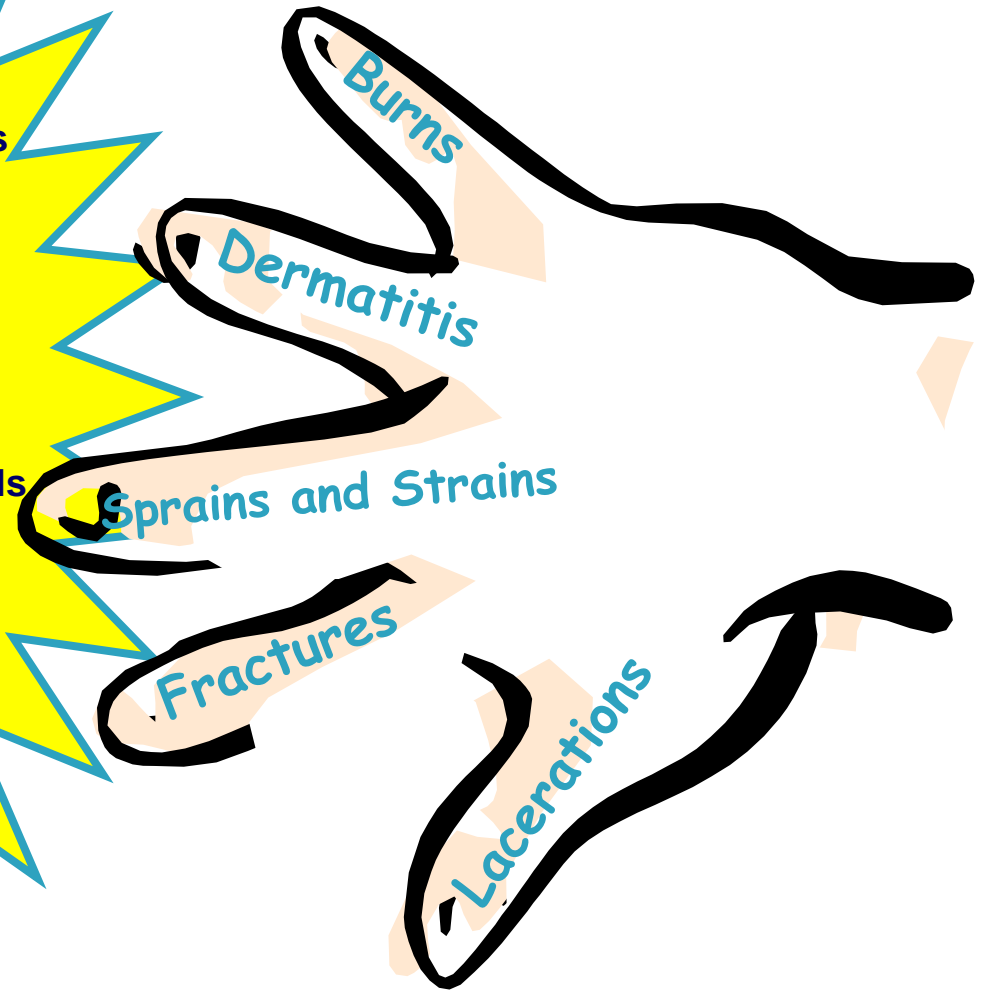
KEEP HANDS OUT OF “THE DANGER ZONE”!!



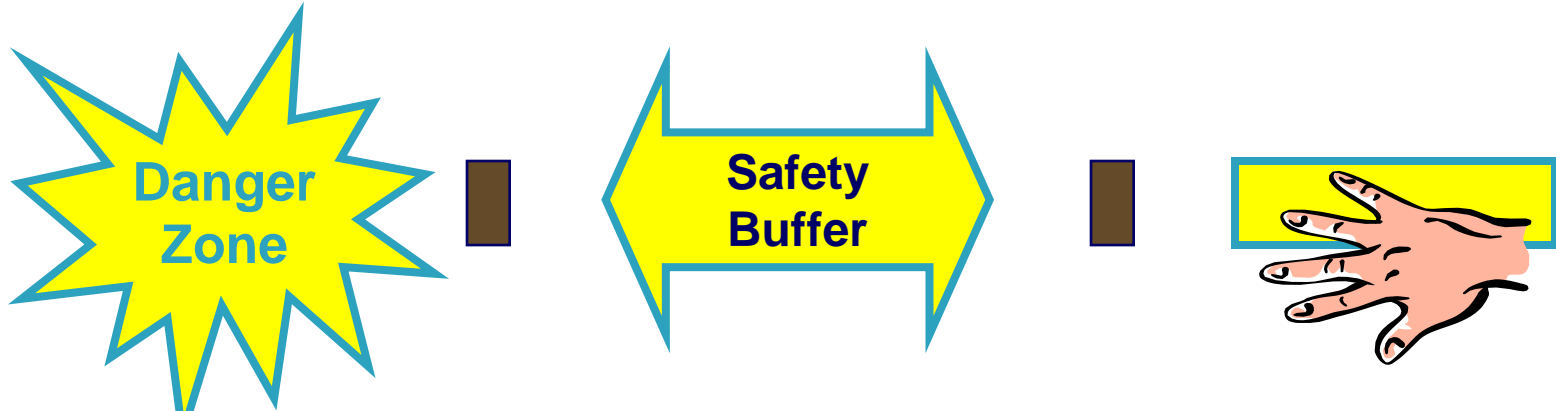
Injury Types

“Danger Zones”

- ☒ Handling or struck by sharp objects
- ☒ Caught in rotating equipment
- ☒ Energized systems
- ☒ Struck by or against objects
- ☒ Caught in pinch points
- ☒ Miss-use of portable power tools; working on energized tools
- ☒ Contact with hot objects or materials
- ☒ Contact with caustic or corrosive materials
- ☒ Poor hygiene practices
- ☒ Repetitive motion/poor equipment design
- ☒ Improperly dressed wounds
- ☒ Poor hand or body position



KEEP OUT OF “THE DANGER ZONE”!!



Primary Levels of Defense

- Awareness
- Safe Work Practices:
 - ✓ Tool Holders
 - ✓ Tag Lines
 - ✓ Correct Tools
 - ✓ Push Tools
 - ✓ Good Hygiene
- Body and Hand Position
- Training/Competence
- Distance
- Equipment Guarding
- Physical Barrier



Secondary Levels of Defense

PPE:

- Gloves required?
- Correct gloves?

ARE BOTH LEVELS IN PLACE?