HAND SAFETY TOOL KIT

Five Toolbox Topics on Hand Safety

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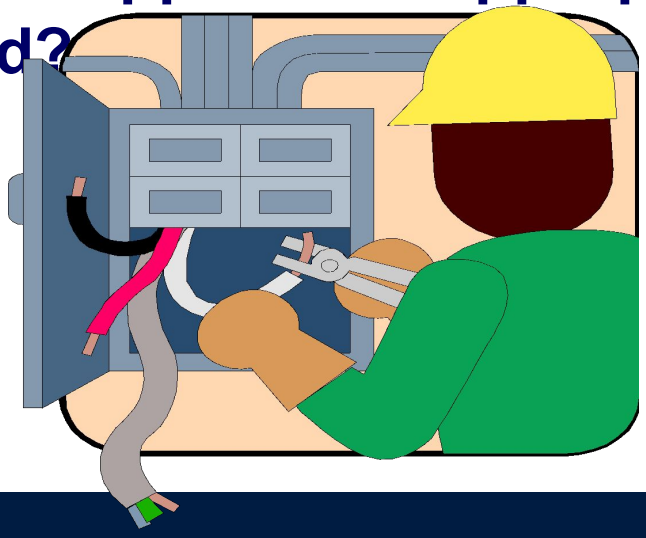
Guide for Supervisors:

- What hazards to the hands are foreseeable with this 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?



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Toolbox Talk No 1

- Five Toolbox 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 can occur in each
- A concept that can be used in each Toolbox Talk is shown below
- Each talk will be about how you 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 method

Good Hand Position on gl

Poor Hand Position

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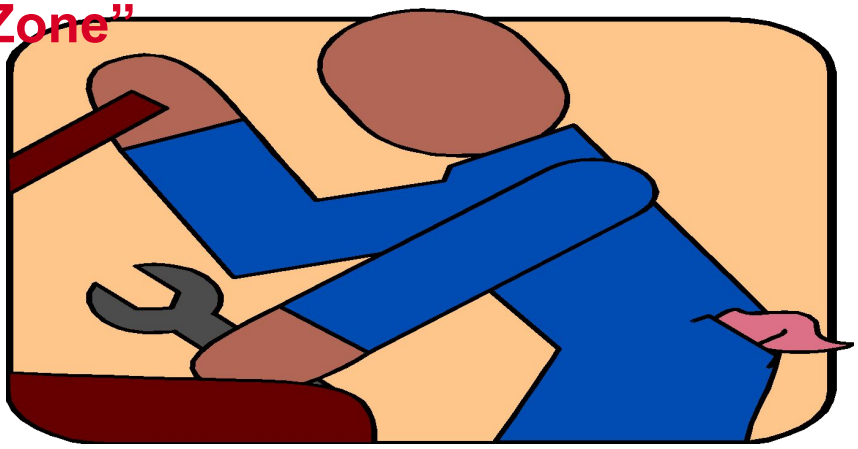
Primary Hand Protection

- 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)

- In order that you properly position your hands, first recognize the hazard, then develop a work practice to keep hands out of "The Danger Zone!"

- 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"



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Saw Wound on the Index Finger

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Toolbox Talk No: 2

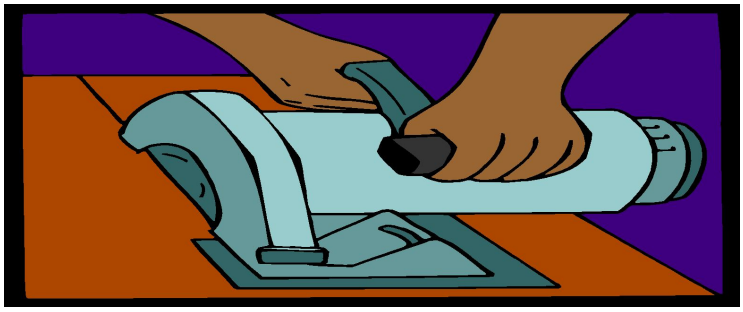
Injuries Caused by Sharp Objects

The hands and fingers are the most often injured 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**
- **chemical burns**



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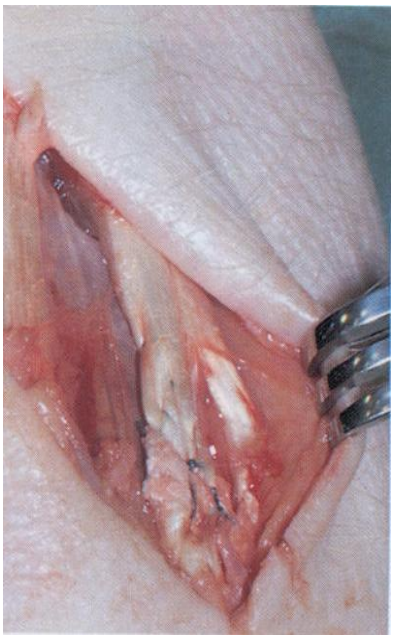
Incision and Inside Front of Hand



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Toolbox 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 defense
- While proper gloves for the task, in good condition, prevent many injuries "primary" levels of defense are much more effective

Examples Include:

- Proper planning 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.

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Toolbox Talk No. 2 (cont'd)

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

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

THE DANGER ZONE

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Wound Caused by Chainsaw

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Incision to Palm of Hand

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Knife Blade Gripped

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Toolbox Talk No: 3

Thermal/Chemical Contact Injuries

- Thermal and chemical contact 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
  - 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 cleaners has been specifically designed for skin contact

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Skin Graft to Burn Injury

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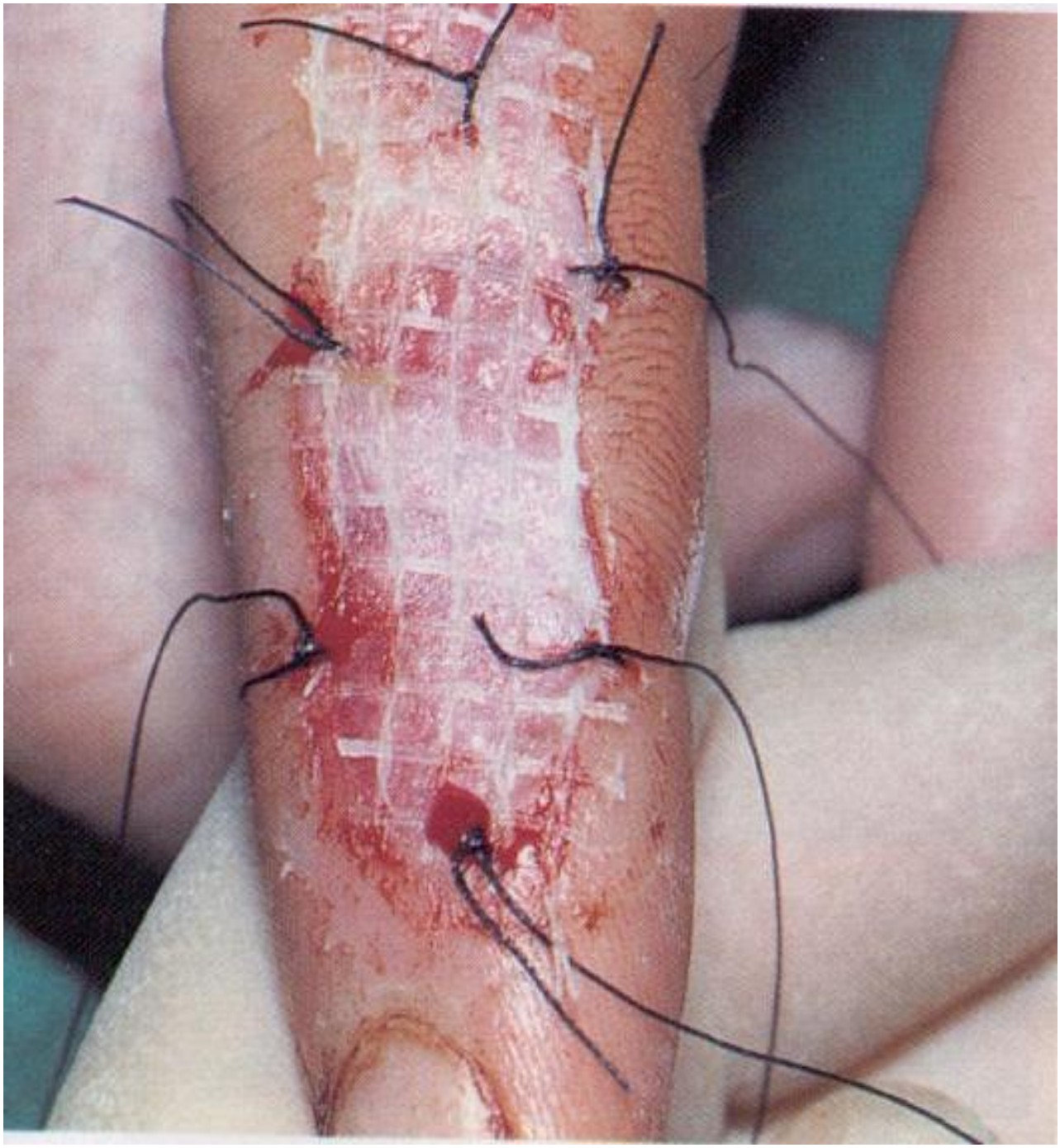
Split Skin Graft



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Toolbox 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
- Usually involves paints, coatings, thinners and other solvents
- Materials such as fibreglass insulation and steel wool can also cause dermatitis through mechanical 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 defense is safe working practices - all intended to keep our hands out of :

KEEP OUT OF THE DANGER ZONE

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Toolbox Talk No 3 (Cont'd)

- Below are examples of safe working 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 "hot" 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 defense should be gloves, but they must be the right type for the job
  - heavy duty leather for hot metal 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

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Toolbox 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:
  - 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

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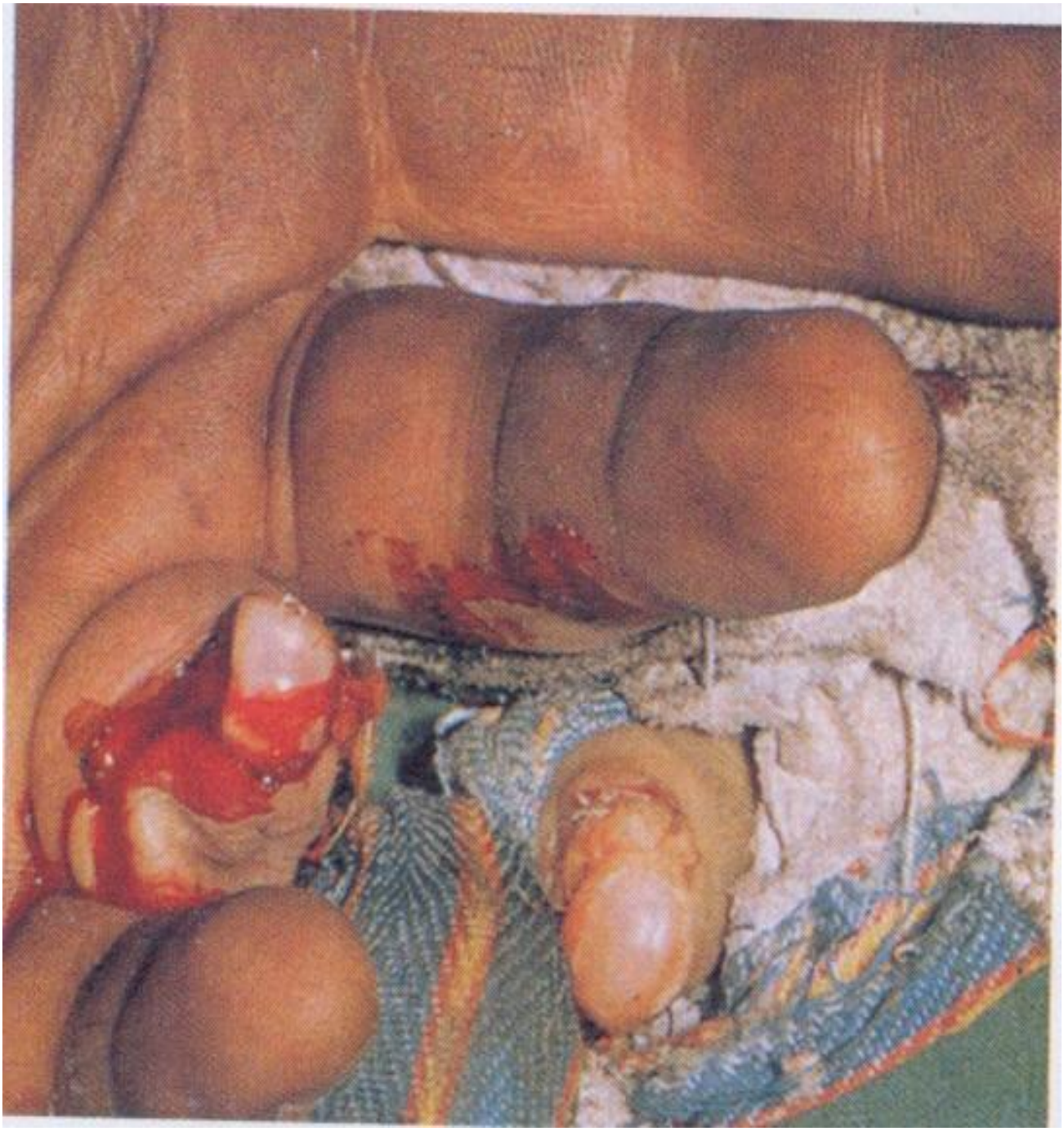
Ring Finger Amputation



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Ring Finger Amputation

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Toolbox 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 an item of workshop equipment may be locked out, but pressure may still be present in a hydraulic cylinder
- A valve or blank in line 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

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Toolbox Talk No 4 (cont'd)

- **Consider what work practices we can follow to prevent hand injuries associated with stored or pent-up energy**
  - always lock-off and tag energy sources 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 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 the means of total protection from injuries where stored energy is present

KEEP YOUR HANDS OUT OF THE DANGER ZONE

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Toolbox Talk No 5:

Injuries Received From Pinch Points

Take a brief 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 will perhaps 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**

KEEP OUT OF THE DANGER ZONE

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Fingers Crushed by a Press

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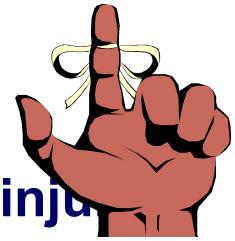
Toolbox Talk No 5 (Cont'd)



- In this industry we have sustained many injuries involving pinch points
- Examples include:
  - Floorman and Driller removing elevators from bales, thumb caught in pinch point between elevators and bales causing laceration that required sutures
  - Crewmember attempted to hold door to prevent it from slamming, finger caught between door and jamb causing laceration that required sutures
- In each of those examples gloves did little to prevent the injury
- The key to avoiding those injuries is the identification and recognition of pinch-points associated with each task
- An objective over the next week is to identify pinch points in our work environment
- Identify them and then decide how they can be avoided
- Use mechanical means to move material or equipment, as opposed to manual application

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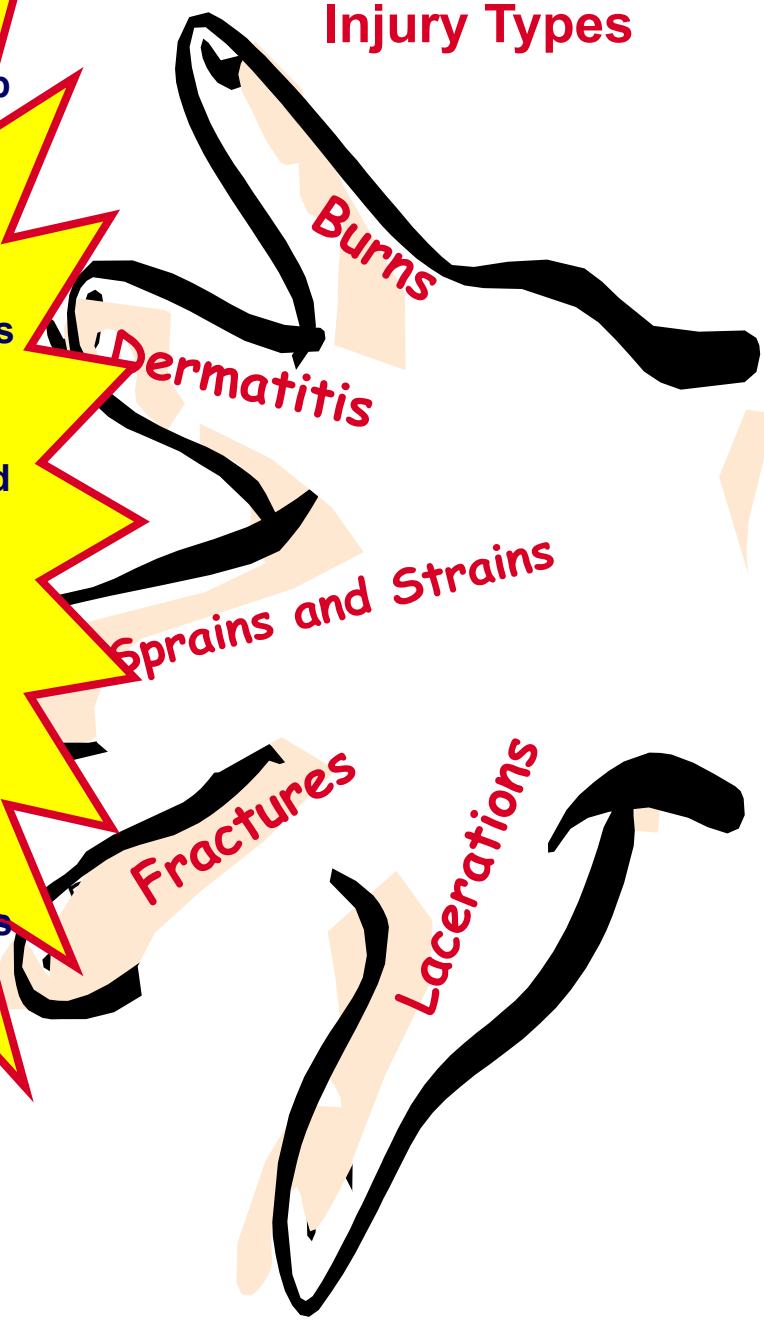
Danger Zones

- 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

Injury Types



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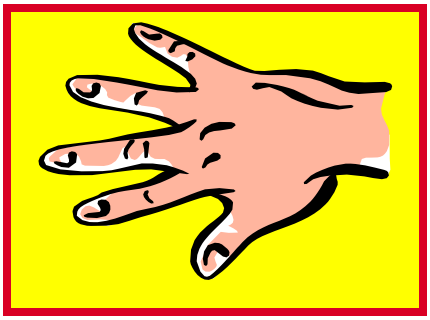
KEEP OUT OF THE DANGER ZONE

Danger Zone

Safety Buffer



Safety Buffer

Primary Level of Defence

- 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 Level of Defence

PPE:

- Gloves required?
- Correct gloves?

ARE BOTH LEVELS IN PLACE?