Reducing Injuries: Using Power Tools at Work and at Home!
Action - Reaction

.2 of a second can change your whole life!
Action - Reaction

Circular Saw at 4700 rpm
.2 second = 15.6 revolutions
16 tooth blade = 249.6 cuts
Categories of Power Tools

The primary groups of power tools based on their power source:

- Electric
- Battery
- Pneumatic
- Gasoline
- Hydraulic
- Powder-actuated or butane actuated
Hazards Associated with Power Tools

Electric shock
Amputation
Cuts and abrasions
Puncture wounds
Eye injuries
Hearing loss
Contusions/crushing
Burns
Common Causes of Injuries

Electric Shock
Improper grounding
  (removing the ground prong from the plug)

Not unplugging equipment when maintaining repairing or changing accessories

Frayed cords

Pulling on the cord to unplug the equipment

Standing in water or wet surfaces

Not using a ground fault circuit interrupter (GFCI)
Common Causes of Injuries

- Amputation, puncture wounds, cuts, abrasions, contusions and burns
- Removal of guards
- Using damaged equipment
- Improper use of equipment
- Using the wrong tool
- Stored energy or free - wheel parts
Common Causes of Injuries

Hearing loss and Eye injuries

Not wearing the correct personal protective equipment (PPE)

- ear plugs or muffs
- safety glasses, goggles or face shield
Common Causes of Injuries

Fatigue & Overexertion

Working in an awkward position or from a stooped position.

- Reaching above your head
- Excessive vibration

Complacency or Distractions
Hazards Associated with Power Tools

Secondary hazards – reaction to using a tool

Objects that fall, fly, abrasive, or splash

  Harmful dusts, fumes, mists, vapors, and gases

Materials can change temperature, become splintered or abrasive

Debris = tripping or slipping hazards
Tool Selection

Select the right tool for the job

Consider the tools shape and size – the tool should be comfortable to hold

Do not select undersized tools for the job

Consider the quality of the tool including its sharpness for cutting
Tool Selection

Select power tools designed to have minimal vibration

Select power tools that provide guarding and other safety features such as an automatic shutoff, safety trigger, shield or kickback guard

Select electric power tools that are double-insulated

Select power tools that have the Underwriters Laboratories symbol
Tool Selection

Select spark-resistant tools when working around flammables or explosive material

Select insulated hand tools when working around electricity

Select battery powered tools for wet locations
Tool Storage

Store in a secure location to avoid unintended use.

Put tools away after use
- never leave power tools plugged into outlets for long periods of time.

Avoid storing power tools in a damp or wet environment

Store tools in a manner that prevents crimping or damage to the cord
Organization and Housekeeping

Organize tool storage / usage in a manner that works for you.

Work stations should accommodate the user/s.

Take time at the end to clean up debris and safely store tools.

Keep and maintain owners manuals and documentation
Carry & Transport of Tools

Use a tool box, tool-holder, belt or pouch, this will protect the person and the tool.

Carry pointed or sharp tools with the point or cutting edge away from the body.

Do not pull tools by the cord, up ladders.

Do not lay tools down where people can trip on them or they can fall on someone.

Hand tools off, do not throw them.
Maintenance & Repair of Tools

Purchase tools of high quality

Inspect tools for dull or damaged edges, and damaged handles or grips

Redress or replace edges or blades when they become dull

Unplug tools when changing blades, bits or accessories

Inspect plugs and power cords for damage
Maintenance & Repair of Tools

Inspect air or hydraulic hoses for leaks

Clean tools with a recommended nonflammable and nontoxic solvent

Use air drying in place of blow drying with compressed air
Power Tools - Precautions

Keep people not involved with the work away from the work

Secure work with clamps or a vise, freeing both hands to operate the tool

Consider what you wear – loose clothing and jewelry can get caught in moving parts

HOT WORK = Fire Extinguisher

First Aid Kit Available

Know where it is

Know what is in it
5 Basic Rules to Prevent Injuries

1. Keep all tools in good condition with regular maintenance
2. Use the right tool for the job
3. Examine each tool for damage before use and do not use damaged tools
4. Operate tools according to the manufacturers’ instructions
5. Properly use the appropriate PPE
Where can I find more information?

www.agsafety.osu.edu
www.extension.osu.edu
www.ohioline.osu.edu

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