



Extension FactSheet

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Machinery Hazards

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Machinery helps farmers with important jobs on the farm. While each piece is unique in the work it does, there are several common hazards associated with all farm equipment. Machinery hazards can be classified into four main categories by the kind of injury it causes. Most machinery has **pinch points, wrap points, cut points or crush points**. These points cause thousands of injuries every year.

Pinch points are found wherever two pieces of machinery move together and at least one of them moves in a circle. One example of a pinch point is where a drive belt contacts a pulley wheel. When your hand is near one of these areas, the drive belt can force your hand into the pulley. Image an apple being squeezed into apple cider. This is how your finger would look and feel after being pinched.

The second type of hazards are **wrap points**. These usually involve a part of the machine spinning at high speeds. A Power Take-Off shaft (commonly called a PTO) is the main cause for these kinds of injuries. You should never go near a piece of machinery that has a PTO running. A frayed shirt, loose clothing, or long hair can be caught or wrapped up in the PTO shaft. The rapid turning of the PTO will not give you any time for reaction. Image how twisted clothes look after being spun in the washing machine. Your clothes and body would look the same way after being caught in a PTO shaft.

Cut points are the third type of machinery hazards to be aware of. Cut points can be found where two

moving edges slide across one another, or a single edge slides across a stationary edge. Mowers, combine heads, and forage choppers are just a few kinds of machinery that have cut points. Most machinery does not have to be moving for you to be injured. The edges are very sharp so they can cut grain, grass or hay. You can be injured by falling onto the combine header, hay mower or rotary mower. Grain augers are used to move small grains, like corn or soybeans, from gravity wagons to storage bins. Augers are spiral shaped and their edges are very sharp. Never stick your hand into a moving grain auger.

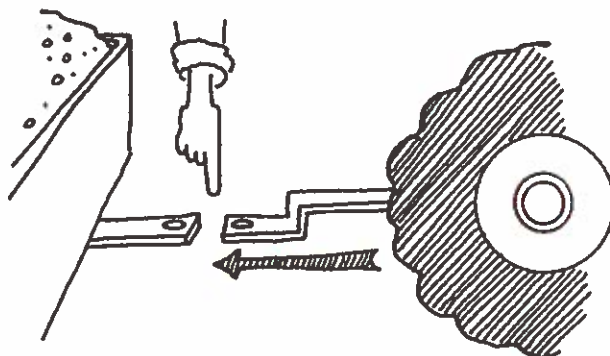
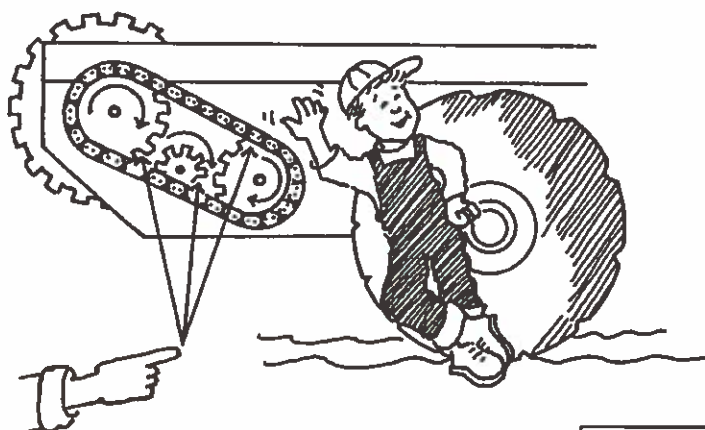
The final type of machinery hazards are **crush points**. You can become injured when a part of your body is squashed between two pieces of moving equipment. Sometimes only one piece of equipment has to be moving. For example, you can be caught between the tractor and the piece of machinery you are helping to hitch. It is possible to be crushed between the ground and a piece of hydraulically controlled equipment that has suddenly lost pressure. Another common crush injury happens when you roll a piece of equipment (like a garden mower or All-Terrain Vehicle) on top of yourself while operating on a steep hill.

There are many pieces of machinery to find on farms. It is difficult to list all of the examples of accidents that could happen if you get too close to working equipment. Knowing about pinch points, wrap points, cut points, and crush points will help you prevent injuries from most farm machinery.

Draw a line from the hazard point to where it is located on each piece of equipment.

A

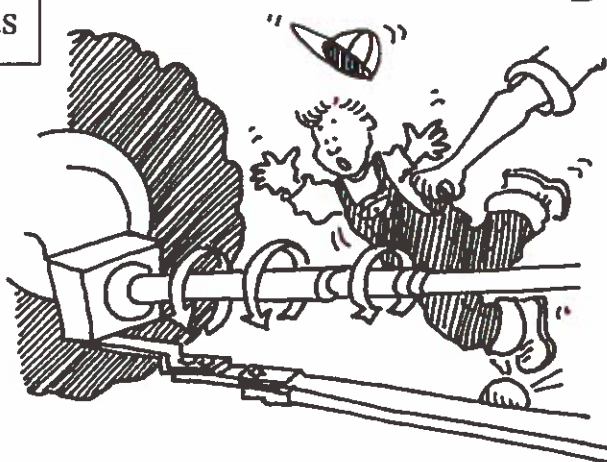
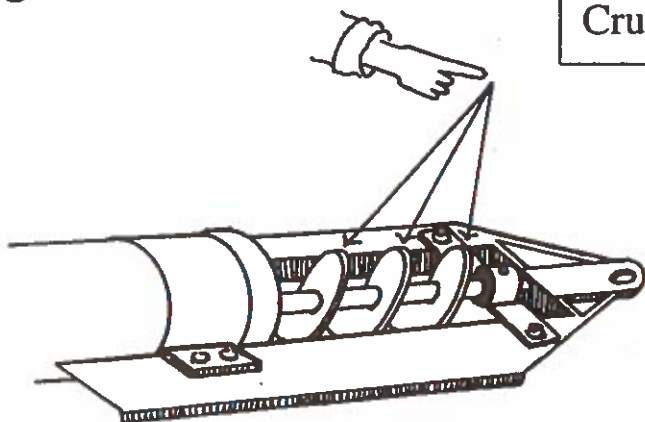
B




Pinch Points
 Wrap Points
 Cut Points
 Crush Points

C

D



Answers:
 A - Pinch Points
 B - Crush Points
 C - Cut Points
 D - Wrap Points



Thousands of children are injured every year on farms. As parents, you are responsible for making sure your children know about hazards on the farm. Talk to your child about pinch, wrap, cut and crush points. Understanding where these points are located and the type of damage that they do to the body is important. Entanglements in augers, PTO shafts, belts and pulleys and other moving parts are the causes of nearly 10% of all child injuries on farms. Children should learn that machinery is *off limits*. Never allow children to play near working or idle equipment. Old machinery graveyards are especially dangerous.

Sources

- 1) Indiana Rural Safety and Health Council. *Careful Country Farm Safety Coloring and Activity Book*. IN: West Lafayette.
- 2) Murphy, D. (1992). *Safety and Health for Production Agriculture*. MI: St Joseph.

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