



Photo by Diane Poole and Amanda Vandever



Photo by Bryan Kercher



Photo by Dale Lewis



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Eye on Safety

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Safe forklift operation

Forklifts are wonderful tools for moving and stocking material. These trucks can be powered by propane gas, electric power, or diesel fuel. OSHA has developed extensive regulations detailing operator training requirements, forklift inspection needs, safe driving rules, and battery charging and changing requirements. These regulations are located under Powered Industrial Trucks — §1910.178.

Vehicle type

Powered industrial trucks are classified by their manufacturers according to individual characteristics. There are seven classes of powered industrial trucks, ranging from electric, sit-down types to internal combustion types. You must be trained on the type of forklift you will be operating because each forklift has unique characteristics and some inherent hazards.



Center of gravity

The center of gravity for a forklift shifts depending on the weight of the load and how it is positioned. The center of gravity will shift when accelerating, braking, and turning. Therefore, it is very important to avoid quick accelerating, sudden braking, or turning a corner too fast.

Another factor that will affect the center of gravity is the load itself. Position the load close to the mast and tilt back. Tilting the mast back when traveling with a load creates better vehicle/load balance.

Never travel with the load elevated any more than is necessary to clear any bumps or curbs. On an incline of more than ten percent, drive with the load upgrade, forward up a ramp and reverse down a ramp.

Remember that these units are made to travel with loads. An unloaded forklift has the potential to tip because of the extreme weight of the counterbalance. Safe driving is just as important with an unloaded forklift as it is with one that is loaded.

Capacity

Only loads that are within the rated capacity of the truck can be handled. The capacities are found on the truck's nameplate. Typically, there are limitations for how much weight can be handled, how high the load can be raised, and how far the load's center of gravity can be from the truck's vertical load rest.

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**National Institutes of Health
Office of Research Services
Division of Occupational
Health and Safety**

**Providing a safe and healthy
environment for employees,
patients and visitors.**

***“Safe science and good
science go hand-in-hand.”***

The articles in this Newsletter are intended to provide general summary information to the National Institutes of Health (NIH) community. They are not intended to take the place of either the written law or regulations. It is not NIH's intention to provide specific advice to readers of this Newsletter, but rather general information to help better understand how to prevent or reduce workplace injuries and illnesses. Reference in this Newsletter to any specific commercial products, process, service, manufacturer, or company does not constitute its endorsement or recommendation by the U.S. Government or NIH. This is not an NIH publication.

Safe Forklift Operation *(continued from page 1)*

A truck can be equipped with, or modified to accept, attachments that allow it to move odd-shaped material or to do specialized jobs. Any additions or modifications that affect the truck's capacity or safe operation have to be approved by the truck's manufacturer, with the truck's nameplate revised to show the changes. Whenever the truck is equipped with an attachment, you must consider the weight of the attachment, the capacity of the truck, and the change in the truck's center of gravity.

Hazards

Since forklift movement is controlled by the operator, unrestricted movement about the workplace is possible. Be aware of certain hazards.

Tipovers. Because the center of gravity shifts when the load is raised, the truck is less stable with a raised load. Moving an unstable truck can result in a tipover. Always keep the load at its lowest practical point when moving.

In case of a tipover, the operator of a sit-down rider truck should stay with the vehicle and lean away from the direction of the fall. Jumping from the truck as it tips can cause you to land in the path of the overhead guard and be crushed. Seatbelts and restraints help you stay with the truck during a tipover. On the other hand, drivers of stand up rider trucks should step off the rear of the truck during a lateral tipover.

Stability. Moving loads upward, downward, forward, and backward causes a shift of the center of gravity and can adversely affect the vehicle's stability. When a load is raised or moved away from the vehicle, the vehicle's longitudinal stability is decreased. When the load is lowered or moved closer to the vehicle, its longitudinal stability is increased.

Visibility. Loads on the front of an industrial truck can easily restrict your view. This is why it's very common to drive in reverse and look to the rear. Always look in the direction of travel. Watch for overhead obstacles and make sure there is enough clearance around the load. You might need a spotter to guide the truck from a safe position in some situations.

Follow safe operating rules

Operating a forklift is a huge responsibility. Know and follow these operating rules:

- Keep to the right, the same as highway driving with an automobile.
- Obey speed limits. A forklift is not a street rod, but is a slow moving vehicle, designed that way for safety.
- Keep three vehicle lengths away from other vehicles—it's a space cushion around the vehicle.
- Slow down at all intersections, and always sound the horn at blind ones.



- The pedestrian always has the right of way.
- No horse play is allowed. It's basic common sense.
- No riders are allowed on any forklift vehicle.
- Always keep arms and legs inside the vehicle.
- Face the direction of travel, keep your mind on what you are doing, and never travel forward with the load blocking your view.
- Know the position of your forks at all times.
- Be aware of overhead clearances, such as pipes, sprinklers, door beams, and know the load limits of elevators.
- Be alert for oil and grease spots, which could result in an accident.
- Cross railroad tracks at an angle, not perpendicular to the tracks.
- Wear protective equipment when required, such as safety glasses, ear protection, and restraining belts.
- Be careful of changing light conditions, such as coming in from bright daylight into dimly lit areas, and vice versa.
- No towing or pushing is allowed with a forklift.
- Beware of edges on loading docks.
- Stop completely before raising or lowering a load.
- Make sure forks are all the way into a pallet, and tilt the mast back to stabilize the load before moving.
- When moving, always have the unloaded forks no more than six inches high.
- Make sure the load is balanced and secure on the forks.
- Do not attempt to move loads with broken pallets, loads beyond the capacity of the forklift, or loads that are unbalanced.

Safety focus: Using tools safely

Tools have made our lives easier, but you can't take tool safety for granted. Too frequently, tool use causes serious eye injuries, lacerations, fractures, burns, cuts, or bruises. That is why it is so important to follow safety precautions when using portable hand or electric tools.

Hand tool use

When selecting a hand tool, you should think about the job that needs to be done. Consider which tool makes the job less stressful on your body and helps you avoid awkward postures or harmful contact pressures. Keep the following in mind when considering what type of hand tool to use:

- Select a tool without sharp edges or finger grooves on the handle.
- Select a tool that is coated with a soft material. Adding a sleeve to the tool handle pads the surface but also increases the diameter or the grip span of the handle.
- Choose a tool with an angle that allows you to work with a straight wrist. Tools with bent handles are better than those with straight handles when the force is applied horizontally (in the same direction as your straight forearm and wrist). Tools with straight handles are better than those with bent handles when the force is applied vertically.
- Select a tool that can be used with your dominant hand or with either hand.



Prevent contact pressure by making sure the end of the handle does not press on the nerves and blood vessels in the palm of your hand. If the handle is too short, the end will press against the palm of your hand and may cause an injury. You can reduce your risk of injury if you select hand tools that fit both your hand and the job you're performing. Tools used for power require high force. Tools used for precision or accuracy require low force.

Follow these suggested guidelines when using single-handle tools:

- For precision tasks—select a tool with a handle diameter of ¼ inch to ½ inch.
- For power tasks—select a tool that feels comfortable with a handle diameter in the range of 1¼ inches to 2 inches. You can increase the diameter by adding a sleeve to the handle. Choose a tool with a handle length longer than the widest part of your hand, usually 4 to 6 inches.

Follow these suggested guidelines when using double-handle (pliers-type) tools:

- For precision tasks—select a tool with a grip span that is not less than 1 inch when fully closed and no more than 3 inches when fully open. For double-handled

pinching, gripping, or cutting tools select a tool with handles that are spring-loaded to return the handles to the open position.

- For power tasks—select a tool with a grip span that is at least 2 inches when fully closed and no more than 3½ inches when fully open. When continuous force is required, try using a clamp, a grip, or locking pliers.

Electric tool use

When working with electrical equipment, you face hazards from the tools themselves and from the electricity that powers them. Follow these basic safety rules:

- Work with the tools correctly and follow all safety procedures.
- Regularly inspect tools, cords, and accessories. Make repairs only if you are authorized to do so. Otherwise, arrange to have equipment repaired or replaced immediately.
- Be sure you use safety features like three-prong plugs, double-insulated tools, and safety switches.
- Keep electric cables and cords clean and free from kinks. Never carry a tool by its cord.
- Make adjustments and accessory changes when machinery is turned off and unplugged.

General tool safety rules

Follow these basic safety precautions:

- Keep your work area well lit, clean, and dry.
- Stand where you have firm footing and good balance while you use any tools.
- Arrange the work and use portable tools so that the tool will move away from your hands and body if it slips.
- Make sure that the material you are working on is held securely—use clamps or a vise if you need to.
- Use the right tool for the job. Don't force a small tool to do heavy-duty work.
- Never use a dull blade or cutting edge.
- Dress properly. Never wear clothing or jewelry that could become entangled in machinery or power tools.
- Use protective equipment when necessary. This might include safety glasses, hearing protection, and respiratory protection.
- Concentrate—don't take your eyes off your work or talk to anyone as you use tools.
- Maintain your tools. Keep them sharp, oiled, and stored in a safe, dry place.
- If you don't know how to use a particular tool, don't be afraid to admit it. Find someone who does and learn from an experienced worker.

NIH, OD, ORS, DOHS
Bldg 13, Room 3K04
13 South Drive, MSC 5760
Bethesda, MD 20892-5760
Phone: (301) 496-2960
Fax: (301) 402-0313

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Excess weight can increase your risk of cancer

"To lengthen thy life, lessen thy meals."

By

Benjamin Franklin

Here's a health fact that may surprise you: Your weight plays a role in your cancer risk level.

Weighing more than recommended can cause changes in the body that lead to cancer, but more than half of Americans don't realize that obesity and being overweight are associated with this disease, the Centers for Disease Control and Prevention reports.

There are a number of possible explanations for the link between obesity and cancer. One reason could be that people who are obese often have low-level inflammation. Over time, this can damage a cell's DNA and lead to cancer.

Americans are heavier today than they were several decades ago, and data show that most types of obesity-related cancers increased from 2005 to 2014. Obesity can also bring increased levels of insulin in the blood which can contribute to colon, kidney, and other cancers.

In addition, excess amounts of estrogen can be produced by fat tissue, and high levels of estrogen have been linked to an increased risk of breast and ovarian cancer.

Maintaining a healthy weight is one of the

most important things you can do to lower your risk of cancer.

Here is a list of cancers related to being overweight or obese:

- Esophageal
- Kidney
- Uterine
- Ovarian
- Thyroid
- Breast
- Liver
- Gallbladder
- Upper stomach
- Pancreatic
- Colon and rectum
- Meningioma (cancer in the tissue covering the brain and spinal cord)



Maintaining a healthy weight can reduce your cancer risk.

