

Playground Safety



Ages: Birth to 18 years

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How Safe is Your Playground?

By R. Scott Wiley

Did you know that grass, dirt, or asphalt are inappropriate surface materials for playgrounds?

1. Does your playground have a surface covering that cushions falls?

- A child falling onto a hard surface risks serious injury. Impact absorbing materials such as wood fiber, sand, pea gravel, or rubber matting, can reduce the potential for injury. Make sure the depth of the surface material is proportionate to the height of your play equipment. Provide space around and under each piece of equipment for children's potential accidents. The size of these "accident zones" depends on the type of equipment—minimum of six feet in all directions for stationary equipment with greater distances for moving equipment.

Children using improper equipment are more likely to be injured.

2. Is your playground equipment appropriate for the age of your children?

- Toddlers and young children (ages 14 months – 5years) have different abilities from older children (5years – 12). The equipment should fit your children's development levels.

Adults can monitor risk takers and handle injuries quickly.

3. Does your playground have adequate adult supervision every time children are present?

- Children should always have an adult present. Never allow children on the church playground unsupervised. Accidents can happen even with adults present.

4. Do you regularly check and maintain your equipment?

- Check the equipment monthly. Note and repair broken pieces, exposed nail heads, bolt ends, loose parts, or other hazards. Maintain the surface of the playground to keep up impact absorption.

For additional information pertaining to playground safety, contact the U.S. Consumer Product Safety Commission, Washington D.C. 20207. website: www.cpsc.gov

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The entire surface of a playground should be of appropriate material, but the fall zones, those areas directly under and around equipment, are the most dangerous.

Appropriate Material

There are different depth requirements for loose fill based on the height and the activity taking place on the equipment but, according to the U.S. Consumer Product Safety Commission, the general rule is 12 inches of loose material is sufficient.

Loose Materials Advantages

- Low initial cost
- Easily installed
- Does not pulverize
- Not ideal for microbial growth
- Material is readily available
- Not susceptible to vandalism

Loose materials Disadvantages

- Requires regular maintenance
- Weather reduces cushioning potential
- Depth is displaced by use
- Can be swallowed
- Conceals animal excrement
- Conceals trash
- Spreads easily outside containment area
- Can't be installed over asphalt

Synthetic Materials Advantages

- Some can be installed over asphalt
- Low maintenance
- Consistent shock absorbency
- Not displaced by use
- Accessible to the handicapped
- Provide good footing

Synthetic materials Disadvantages

- High initial cost
- Must be used on level surfaces
- Can be flammable
- Subject to vandalism
- Rubber tiles can curl up and cause a tripping hazard

Always make sure all concrete footings are properly buried and keep in mind the climate and availability of material when selecting the surfacing material.

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Fall Zones

Fall zones are defined as the area under the equipment and 6 feet in all directions from the edge of the equipment. Slides and swings have different fall zones based on the height of the apparatus.

Slides:

To determine the fall zones for slides higher than 4 feet, add 4 feet to the height of the slide. For example, a 6 foot slide has a fall zone of 10 feet beyond the exit of the slide.

Swings:

For swings, the fall zone is twice the height of the cross bar or swing hanger that the swing is attached to. For example, if the swing hanger is 10 feet high, the fall zone is 20 feet in front and 20 feet in back of the swing seat when it's directly under the swing hanger.

More than 40 percent of playground injuries at schools are related to inadequate supervision

Supervision

As with all events involving children, supervision at your playground is a requirement that cannot be overlooked. There is no recommended ratio of children to adults, but a ratio similar to a classroom, such as 20 to 1, generally is considered adequate. Always keep in mind that the age of the children and children with special needs can affect the proper ratio.

In addition to keeping order at the playground, a supervisor has a number of duties.

1. Performing routine inspections of the equipment
2. Completing simple maintenance tasks.
3. Report hazards that cannot be immediately fixed. If a piece of equipment is broken and the supervisor cannot fix it, children should not be allowed to use the equipment until it is fixed.

Playground Safety

Supervision (continued)

4. Be aware of all hidden areas, crawlspaces, tunnels, boxes, and do periodic checks of those places.
5. Continuously move throughout the playground.
6. Realize that children can wander into hazardous situations in less than 1 minute.
7. Be aware that direct eye contact with a child oftentimes will halt inappropriate behavior.
8. Be aware of strangers. A playground is a common target for child abduction and molestation.
9. Stress the don't-talk-to-strangers message at the playground.

Supervisors should receive annual training on the use of the equipment and different supervision techniques, facilitating, teaching, and commanding.

Supervision Plan

A supervision plan should be tailored to the site. When developing the plan, get the children involved in creating the rules, **observe the playground in use and evaluate the site.** Once the rules are established, post them in the playground and review them with the children. Remember, a 2 – 5 year old will remember 2 or 3 rules, and children 5 and older will remember up to 5 rules. Always enforce the rules in a consistent manner.

Also, have a plan in place for when an injury occurs.

Supervisors should be trained in first aid and have a stocked first aid kit available at all times. File an injury report after all injuries. Have the child identify which piece of equipment the injury occurred on and give details of what happened.



Playground Safety

Safety

Looking back, many of the injuries at playgrounds could have been avoided with some safety precautions.

Strangulation is the leading cause of playground fatalities.

Strangulation

In many cases, drawstrings in sweatshirts, coat, or clothing become entangled in a piece of equipment. The top area of slides and higher climbing apparatus are two trouble spots.

The best way to avoid the hazard is to close all gaps in equipment, eliminate any protruding bolts or nuts and never have V-shaped openings where material or body parts can become stuck.

Entrapment

Entrapment is another key safety hazard. The general rule is all openings must be smaller than 3.5 inches or larger than 9 inches. Head entrapment occurs when the body fits through a space but the child's head does not. Young children's heads are larger than their bodies. An opening of 3.5 inches is too small to allow feet first entry and a 9 inch opening is large enough for a head to pass through.

Don't allow bike helmets to be worn while on playground equipment. The standards for head entrapment spacing do not include adequate spacing for bike helmets.

Templates

Test templates for the torso and head can be made of cardboard or wood. The torso template should measure 6.2 inches by 3.5 inches. The head template should be a circle 9 inches in diameter. Use the template to test the opening in guardrails, between ladder rungs, and openings in other pieces of equipment.

Playground Safety (continued)



Safety Tips

Platforms more than 6 feet in height should provide an intermediate standing surface where the decision to halt ascent and pursue an alternative means of descent can be made.

Guardrails or protective barriers should be in place to prevent children from falling or jumping from elevated platforms. Remember, children will come up with creative, and sometimes dangerous uses for playground equipment.

There should not be more than two swings in a bay or support structure. Swings should be at least 24 inches apart from each other and 30 inches from a side support. This also applies to tire swings.

All S-hooks on hanging or swinging equipment should be closed.

All pinch points, such as on teeter-totters, should be closed.

Partial car tires or other shock absorbing material should be embedded in the ground underneath the seats of a teeter-totter or attached to the bottom of the seats to prevent a child's limb from being crushed under the seat. Teeter-totters also can be quipped with a spring mechanism that will eliminate this risk and allow a child to use the teeter-totter alone.

Keep children off the equipment if it is wet.

Animal swings that could ram into a child should be eliminated.

Your playground also should be fenced. This will keep the children from wandering away as well as keep others out.

Playground Safety (continued)

Age Appropriate Equipment

Although many of the factors in planning a playground are important, selecting the correct equipment for the users provides the foundation on which all of your safety measures will be built.

Playgrounds should be built for two age groups, 2-5 years and 5-12 years. If both age groups will be served, the playground should be divided by a buffer zone of shrubs or benches. Children also should be directed by supervisors to the correct equipment for their age.

A 4 year old attempting to play on equipment intended for a 10 year old will find the steps and railings too far apart and will not possess the strength needed to use the equipment correctly. The majority of age inappropriate injuries occur when 1 – 4 year olds are using equipment designed for older children.

Appropriate equipment for 2 to 5 years olds

- Areas to crawl
- Low platforms with multiple access points, such as ramps and ladders
- Ramps with handles attached for grasping
- Low tables for sand, water, and manipulation of materials
- Tricycle paths with various textures
- Flexible spring rockers
- Sand area with covers
- Shorter slides

Equipment for the younger group also should be kept closer to the ground.

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Age Appropriate Equipment (continued)

Appropriate equipment for 5 to 12 years olds

- Rope or chain climbers on angles
- Climbing pieces
- Horizontal bars
- Cooperative pieces, such as tire swings
- Merry-go-rounds
- Seesaws
- Swings
- Slides
- Spiral slides
- Sliding poles
- Open space to run and play ball
- Semi-enclosed structures to promote fantasy play and socializing



Heavy use equipment for the older children should be spread out around the playground to avoid heavy concentration of users in a single area and improve safety. It is especially important to locate swings, slides, and merry-go-rounds in remote areas. Be careful not to locate swings too close to a fence.

Equipment recommended to avoid include: ropes that become frayed at the ends, trapeze bars, exercise rings, and trampolines.

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Surface

Falls from equipment account for more than 70 percent of playground injuries, and 80 percent of those occur at playgrounds with unsuitable surfaces.

Appropriate surfaces are loose fill, such as sand, pea gravel, shredded tires, wood chips or wood mulch, or synthetic surfaces, such as rubber tiles, rubber mats, or poured-in-place rubber. Inappropriate surfaces include asphalt, concrete, dirt, and grass.

Loose surfaces are less expensive to install but require more maintenance than synthetic surfaces. Loose fill must be raked, tilled, and replaced on a regular basis, especially in high traffic areas. Synthetic surfaces need to be cleaned and repaired occasionally.



There is no perfect playground surface, but surfaces need to absorb some of the force of a fall to prevent an injury.

Falls from only 1 foot can cause a concussion, and a fall from 8 feet onto dirt is equivalent to hitting a brick wall at 30 mph.