

Playground safety



Risk, challenge and supervision for playground safety

To be effective playgrounds need to provide a range of play opportunities in which children experience high levels of physical activities and social interaction. Despite supervision and the best of intentions, injury-resulting accidents will happen. Studies over a 25-year period in Australia indicate that serious (hospital level) injuries reach a peak in both males and females at 6 years-of-age while trauma (emergency treatment before release) injuries peak for males at age 13 and females at age 11. However with at least 5,000 emergency treatments each year of children while at Victorian schools, playground safety needs to be considered as a serious issue.

While there is no in-depth research and there are differences in interpreting statistics, indicative data suggests that for school-aged children, fracture/dislocations and sprains/strains are the most common unintentional injuries and are associated with falls.

Actions directed towards minimizing injury-

related accidents must work from the concept that children are not little adults. We cannot expect them to use play equipment according to adult rules or behaviour, and partly as a consequence, children's injuries and their vulnerability to injury are again non-adult in characteristics.

Risk and challenge

A well-designed playground will stimulate the children's imaginations and tempt them to explore new dimensions to play. However in developing new ideas, children will come up against the boundaries of their current levels of skill – and it is the challenge which is exciting. There is always some risk in meeting a challenge, but this risk can and should be managed by support (physical and psychological), so that the child develops risk-assessment skills. In fact, a child who is not allowed to develop these skills tends to be less competent, especially later in life.

Given that no playground can ever be 100 per cent safe (because children are unpredictable), it is a question of managing the level of

risk, so that children learn to cope with it. This thesis is incorporated into the newly reviewed Playground Safety Standards (2003).

Constructive approaches

1 Design

Not every playground is designed to manage risk. Everyone involved in establishing and maintaining a playground needs to accept responsibility for eliminating unacceptable risks. Professional advice that covers both play and safety requirements should be sought. This could range from the size of grip surfaces to finger entrapment to freefall zones and soft fall areas. Special attention should be paid to climbing (or fixed) equipment design, ensuring that they have multiple access and egress points (since these create break off points which will allow children to withdraw or continue to a level at which they feel comfortable with). In case of litigation, it is necessary to be able to prove compliance with standards and that maintenance is according to a quality-based schedule. A certificate of compliance should be sought from every supplier or contractor.

2 Management

In a comprehensive study of management in playgrounds, King and Ball (1989) considered that:

‘Attitudes to playground safety vary with individual countries. Some tend to stress the need for increased responsibility of children, recommending safety awareness training, while others rely more on “passive” approaches. There is some evidence to suggest that improved safety awareness reduces accident rates in playgrounds, suggesting that there is no essential difference between accident prevention strategies for say roads and playgrounds’.

Since this survey, other studies, which have looked at the linkage between awareness and voluntary changes in behaviour and the general growth in skills, tend to support the theory. However any deliberate strategy should be tailored to the developmental level of the children concerned. There is no single strategy

for all ages. It is therefore suggested that children, parents and staff deliberately work together to develop an acceptable code of risk management. Such a code might include aggressive behaviour on climbing equipment, non-contact rules in ballgames etc. The vital element here is that children are more inclined to comply with a code that they themselves have developed. It could well become a standard project relating to the portions of the playground the children are using.

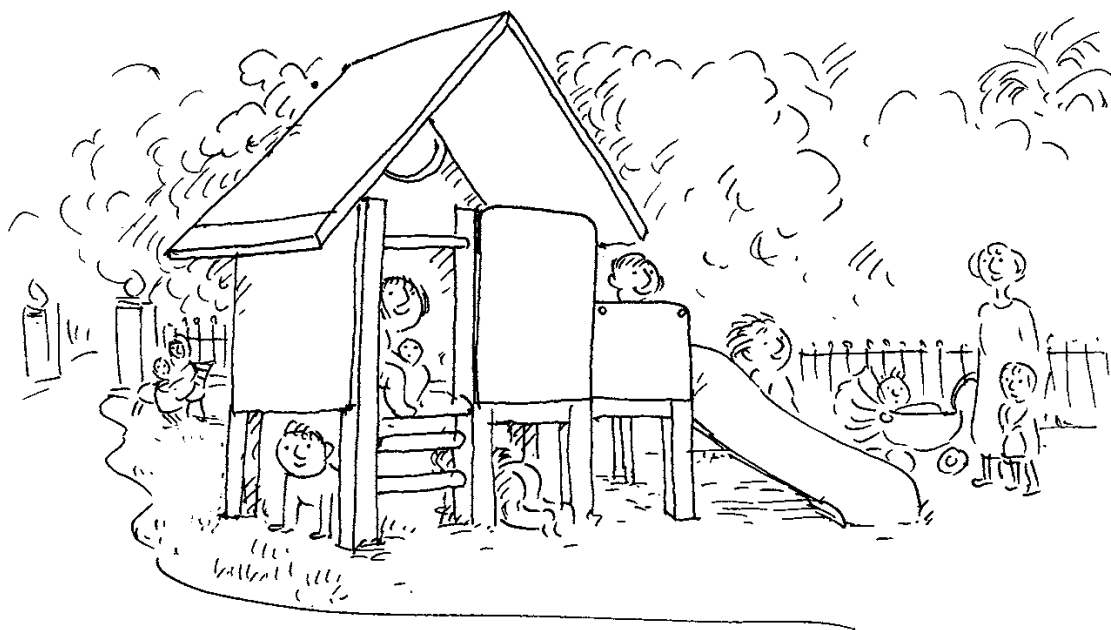
3 Supervision and support

Accidents are caused by a host of interdependent factors. Supervision is only one of these (although the most obvious). Apart from personal attitudes of the supervisor (such as a willingness to intervene), the biggest problem is related to playground design. A supervisor needs to be able to see the whole area by turning in an arc of 180 degrees – including any nooks and hidey-holes, which are a favoured play space of some children. Visual access should be part of the original design planning i.e. use low-level planting in gardens, consider height/placement of mounds or larger equipment. A supervisor also needs to have fast physical access to parts of the playground – which is linked to a careful (and sophisticated) design of access corridors and the location of adult-friendly benches.

It should be noted that equipment design is very important in providing physical or psychological support for children at play. Equipment with graduated challenge, which is age and ability-related provides what Vygotsky calls support scaffolding (a way to encourage a child to reach the next developmental level).

The way forward

Safety should always be assessed in terms of the development level of the children: the younger child may need emphasis on built-in design support, while older children may respond more to behavioural support. Because there is no single cause of playground injury, there can be no single preventative measure. Rather each playground should be assessed (particularly taking into account previous



incidents) for acceptable hazard management.

Children learn through play, but they should be able to do so in an area capable of being supervised. A well-designed playground is safe as well as challenging.

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Our thanks to Play Environment Consulting for contributing this section.

The importance of outdoor play space

Play has an important role in human development. The provision of quality play opportunities is an integral part of a good learning environment. Through positive play, students:

- Interact socially
- Engage in dramatic play and role play
- Extend their creativity and imagination
- Observe, learn about and manipulate the natural environment
- Test themselves physically, while taking greater responsibility for themselves and other in physical challenges
- Develop hand-eye coordination and other

motor skills

- Engage in a range of self-directed activities, which aid each individual to develop independence.

Information for teachers

Play is an important complement to the 'formal' curriculum of the school.

School grounds, that provide a satisfying range of settings for play for students of different ages and interests, are likely to reduce the number of conflicts. The positive spin-offs include benefits to the student's self image and to the image of the school in general, including students that are easier to manage, that are more engaged with the school itself and reduced vandalism. A quality range of outdoor settings often also provides opportunities for staff to transfer some activities beyond the classroom in a real setting with which students can identify.

Play spaces

Engaging students in developing their school-grounds and play settings may also contribute to the school's sustainability. Typically, combinations of the following types of spaces are available:

- Large areas of hard surfaces (for a range of ball games, rebound walls, etc.)
- Smaller hard surfaced areas for hop-scotch,

- elastics and other small group games
- Large grassed area for running, ball games, athletics and other activities
- Play equipment for junior, senior and/or intermediate aged students catering for potentially large groups of students at any one time and providing a range of types of activities
- Small spaces with seating for individuals and small groups
- Smaller grassed areas for a variety of activities requiring intimate spaces
- Sand play areas, dirt, water and planting for creative activities
- Areas suitable for marbles, small cars and toys, digging, and play with loose materials and surfaces
- Areas for dramatic/role play which might include decks, cubbies and planting
- Shade and shelter, tables, seats, drinking water and other utilities
- Shrubs and trees for hiding, shelter, cubbies and imaginative games
- Tables and seats for a range of group activities
- Gathering spaces for assemblies, performances and community activities
- Gardens, including vegetable and flower-beds, arbours or raingardens
- Quiet spaces as well as busy spaces.

Areas around buildings such as steps and stairs, doorways and garden beds are valued play areas and could be appropriated by students for a range of activities. They should be considered when assessing the range of activities available and their safety.

Schools with limited space will need to consider many areas as multi-functional to enable the best value to be obtained out of each part of the grounds.

Resources for teachers and children

KIDS Foundation is dedicated to childhood injury prevention through education. KIDS Foundation aims to provide quality safety education programs that result in reducing preventable child injuries and death.

Our programs:

SeeMore Safety – A preschool health and safety education program delivered through kindergartens and playgroups. The SeeMore Safety program establishes the foundation for developing risk management life skills that will increase safety awareness and decrease injuries in children.

Safety Club – a school-based program developed to guide school communities on issues of child safety and injury prevention. The Safety Club assists schools, teachers and students to identify and manage hazards in their school environment. It is the basis for an on-going school safety program to protect our children.

The Safety Club is student driven with teacher assistance. Students are educated in the process of promoting the Safety Club and identifying, prioritising and managing hazards. Once educated, a core group of students take on the role of Safety Club representatives. These representatives then set about actioning Safety Club campaigns.

These students are safety role models of the school and promote the 'Think Safe, Play Safe' message.

For further information contact:

KIDS Foundation

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Our thanks to the KIDS Foundation for contributing this section.

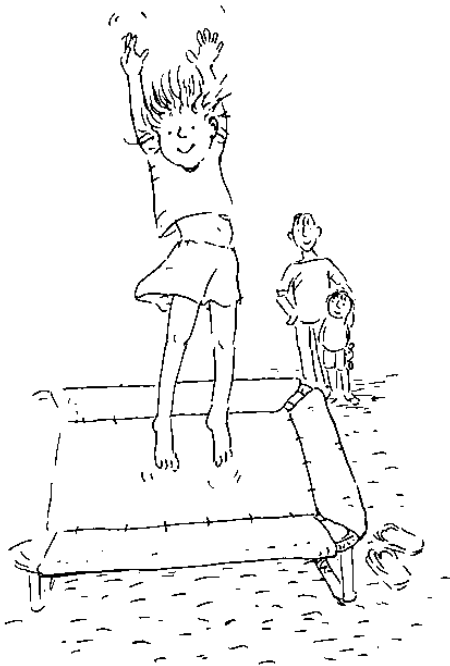
Playground equipment for schools – standards and guidelines

Only approved playground equipment can be erected in school grounds. In general this includes sandpits, slides, horizontal and vertical ladders, gymnastic combinations, climbing nets and frames, and fixed climbing ropes. Seesaws, swings, maypoles, merry-go-rounds, roundabouts, and flying foxes are not approved. To assist with the development of such facilities, the Department has produced the Guidelines for School Playgrounds.

Additional information on playground design and construction can be found at the Playgrounds and Recreation Association of Victoria
W <http://prav.asn.au>

Our thanks to the Department of Education and Early Childhood Development, 2 Treasury Place, 33 St Andrews Place and 23 St Andrews Place, East Melbourne VIC 3002,

W www.education.vic.gov.au



Quality in playground safety

The best way to provide safe playgrounds is to provide a quality outdoor play program in a quality outdoor play environment.

How many hazards are hidden in your playground?

The major cause of playground injury is falling from play equipment onto hard surfaces. The potential for injury from a fall is greater if there is no impact absorbing material under and around the equipment. Impact absorbing material is required for all fall heights, particularly for fall heights above 500mm.

1 Inadequate safe fall zone

Impact absorbing material should not only be provided underneath play equipment but must extend at least 1.5m beyond the outside edges of the equipment. The fall zone shall increase from 1.5m to 2.5m depending on the free height of fall from 500mm to 2500mm maximum.

2 Lack of maintenance

Playgrounds should not be installed and then forgotten. It is essential that all playgrounds be regularly maintained. There should be no missing, broken or worn components. All parts should be stable with no apparent sign of loosening. Impact absorbing materials should be regularly checked for depth and any signs of vandalism. A systematic inspection and maintenance plan should be in place to ensure that the playground is safe.

3 Lack of supervision

Supervision by an adult carer is a key factor in playground safety. To make supervision easier and more comfortable, a play area should be designed to provide shade, seating and a clear view of the play area. Young children constantly challenge their own abilities, but are often unable to recognise potential hazards. In supervising play, the carer should make sure that the child uses equipment which is appropriate for his or her age/size.

4 Platforms without guardrails

Raised surfaces such as platforms, ramps and bridges should have guardrails and barriers (infill) to prevent falls. It is important that rails and barriers are vertical so that they cannot be used as footholds for climbing.

5 Trip hazards

Trip hazards are created by parts of playground equipment or items on the ground. Exposed concrete footings, abrupt changes in surface elevations, playground edging, tree roots, tree stumps and rocks are all common trip hazards that are often found in the play environment. Exposed concrete footings pose a serious risk for injury if a child falls on them. They should be buried at least 200mm below ground level.

6 Age-inappropriate activities

The developmental needs of children vary greatly. To provide a challenging but safe play environment for all ages it is important that the equipment in the playground be appropriate for the age of the intended user. Close supervision is important of younger children in particular. Whilst it is common to provide separate areas for younger and older children, there are significant supervision difficulties in doing this. The best-designed playground is one which

has a diversity of age related activity within a reasonably confined area.

7 Overcrowded play areas

Serious injuries can result from collisions if the play area is overcrowded. Whilst the amount of space between separated play items can vary according to the Australian Standard AS4685, 2.5m is recommended as the minimum distance between each piece of play equipment and all paths, fences, trees, buildings, structures and other equipment in schools. Active play areas should be separated from quiet, creative areas. For example, a slide should not direct children into a sandpit used for creative play.

8 Potential entrapment

Equipment should be built and installed in a way so that a child's head, neck, limbs or fingers cannot become trapped. Any gap in the play equipment is not an entrapment unless it is possible to become trapped due to forced movement, such as going down a slide or a pole.

9 Pinch points and sharp edges

Equipment should be checked regularly to make sure that there are no sharp edges. Moving components such as suspension bridges, track rides, seesaws and swings should be regularly checked to make sure that there are no moving parts or mechanisms that might crush or pinch a small finger.

10 Things that protrude or tangle

Protruding bolts and other pieces of hardware or components of equipment can cause bruises and cuts if a child bumps into them. These protrusions can also act as hooks, which can catch a child's clothing and potentially cause strangulation if a child is caught by a hooded top. Ropes should be anchored securely at both ends so that they cannot form a loop or noose.

Ground surfacing in playgrounds

Why is the ground surface in an outdoor play space so important?

A significant body of scientific research indicates that the frequency and severity of playground head injuries, resulting from falls

from playground equipment, are substantially reduced where an adequate impact-absorbing surface is provided.

Where is an impact-absorbing surface needed?

The Australian Standard states that an impact-absorbing surface is needed wherever falls from play equipment are possible – ie. in the 'fall zone'.

Impact-absorbing surfaces are required in outdoor play spaces to reduce potential head injury to children as a result of normal play.

Impact absorbing surfaces which have been tested are required in any area where falling is possible from a height of 500mm or above.

An impact-absorbing surface is not necessary where falls are prevented by engineering means.

What is the fall zone?

The fall zone is the area under and around a piece of playground equipment from which a child could fall. It extends under and around equipment in every direction in which it is reasonably foreseeable that a child could fall. It is the minimum distance from any part of equipment to any hard surface (borders, paths, tree trunks or adjacent equipment).

Concrete footings should be buried underground. Industry practice is that the top of the concrete be 50–100mm below natural ground level, and then covered with the required depth of impact absorbing material.

How big is the fall zone?

The Australian Standard says that the fall zone must extend from 1.5m minimum to 2.5m out from the playground equipment (or 1.9m in supervised early childhood centres) depending on the free height of fall. This allows for the height of most users, plus the outward momentum they could have as they fall.

For moving equipment this distance is measured from the extremity of the movement. Children falling, jumping or being pushed off equipment should land within the fall zone onto an impact-absorbing surface. Under certain

circumstances fall zones may be reduced (ie. when equipment will not permit falling).

What is the maximum fall height permitted in an outdoor play space?

This is the greatest distance between parts of the equipment to which a child has reasonably foreseeable access and the playing surface or part of equipment beneath. It is measured from the standing surface (usually a platform) to the surface underneath the equipment. If the design of your equipment allows children access to higher parts (not necessarily intended for standing) then this should be considered the fall height.

What is adequate impact-absorbing material?

The required impact-absorbing material depth depends on the material used and the height of the equipment from which falls can occur. The height from which a fall could occur onto a surface that has the capacity to absorb the impact, is the free height of fall. Put briefly, falls from above the free height of fall onto a surface with an inadequate depth could result in head injury.

Impact-absorbing material information required

Playground equipment suppliers are required to provide information on their products' performance and on the required free height of fall. This should be in the form of certified test results, explaining what impact absorbing surface material depth (for loose fill materials) or structure (for fixed or 'unitary' products) is necessary for the required free height of fall.

Suppliers must also provide inspection and maintenance procedures necessary to ensure their product continues to perform at the required level throughout its life.

Suppliers of play equipment need to give written confirmation that their equipment is constructed and installed as per Australian Standard AS4685.

For further information contact: The Playgrounds & Recreation Association of Victoria

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Our thanks to the Playgrounds and Recreation Association for contributing this section.

Safety in sport and recreation

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The importance of physical activity

Physical activity is essential for growth and development. Being physical active can help children obtain physical, social, emotional and intellectual health. In the first two decades of life, sport is among the most developmentally appropriate ways of being physically active. All popular sports in Australia offer developmental pathways into sport that are designed to match the physical and mental health of young participants. The new Safety Guidelines for Children and Young People in sports emphasise that the health benefits from sport far outweigh the risks of inactivity. Being aware of safe sport practices helps ensure positive sporting experiences for children of all abilities. Renowned paediatric exercise researcher, Professor Don Bailey once said 'Sport may not be for all, but the right to try out to be'. Safe practices in junior sport protect that right.

Ten points to remember about Safety Guidelines for Children and Young People in Sport, from Sports Medicine Australia

W <http://www.sma.org.au/pdfdocuments/ChildrenSafetyGuidelines-fulldoc.pdf>

- 1** Clubs, schools and providers should ensure that they identify, manage and monitor the risks involved in sport and recreation activities.
- 2** An estimated 50% of all sports injuries are preventable.
- 3** Coaches should have at least an entry-level qualification from a coaching course conducted by the National or State organisation of their sport.
- 4** A first aider should be present at all sporting events with participants under 16 years of

age. A sports trainer should be present at all sporting events with participants over 16 years of age. Any complaint of pain, tenderness, limitation of movement or disability should be promptly referred to a qualified sports first aider, sports trainer or medical professional for management.

- 5** Appropriate and properly fitted protective equipment, clothing and footwear should be used at all times.
- 6** The environment and facilities should be inspected and made safe before participation.
- 7** All coaches and teachers must be aware of the medical history and other commitments of participants. A pre-season medical and activity questionnaire should be completed by all participants and the current medical state of individuals should be taken into consideration prior to and during participation. A medical clearance must be obtained from the treating doctor before any child or young person taking prescription medication participates in sport or physical activity.
- 8** Warm up, cool down and stretching should be included before and after all participation.
- 9** Activities for children and young people should be well planned and progress from easy to more difficult. Strength training can be safely introduced to young people provided it is carefully supervised. It should involve low-resistance and high repetition to avoid maximal lifts.
- 10** To reduce the likelihood of injury, match the physical and mental maturity of the child to the level of participation, complexity of the task and the game rules.