

**Draft
Regulation Impact Statement**

Domestic Trampolines

Product Safety Branch

**Australian Competition and Consumer
Commission**

2012

**Office of Best Practice Regulation
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INTRODUCTION

This Regulation Impact Statement (RIS) has been developed by the Australian Competition and Consumer Commission (ACCC) to examine the need for government regulation to reduce or prevent injury due to the use of domestic trampolines.

The ACCC administers the *Competition and Consumer Act 2010* (CCA). Subsection 105(1) of Schedule 2 to the CCA provides that the Commonwealth Minister may declare that a particular standard or part of a standard, with additions or variations, prepared by Standards Australia International Limited is a safety standard for consumer goods of a particular kind.

Commonwealth responsibility for declaring safety standards under the CCA currently rests with the Parliamentary Secretary to the Treasurer.

In 2010, the NSW Minister for Fair Trading wrote to the then Commonwealth Minister for Competition Policy and Consumer Affairs requesting that the ACCC consider the development of a national mandatory product safety standard for the supply of domestic trampolines. This followed a NSW Products Safety Committee (NSW PSC) inquiry which considered whether supply of domestic trampolines should be prohibited, or be allowed only subject to conditions or restrictions. Information gathered during the course of that inquiry is the source of much of the content incorporated in this draft RIS.

PROBLEM

What is the problem being addressed?

The problem being addressed is the rate and nature of childhood injuries associated with impacting with the frame and suspension system of trampolines used in domestic premises.

Frames and padding

Injury data and research shows that children are injured by impacting with parts of a trampoline such as the frame and suspension system (including steel springs which connect the bed/mat to the frame).¹ The majority of, but not all, domestic trampolines are supplied with padding for the frame and suspension systems but, there is evidence to suggest that in many instances, this padding does not comply with the impact attenuation requirements set out in the Australian Standard² which increases the risk of injury to users.

¹ Victorian Injury Surveillance Unit, Monash University Accident Research Centre, *Hospital treated falls and other injury involving trampolines, Victoria July 2002 to June 2010 (8 years)*, 28 April 2011, p. 4 and Consumer Product Safety Commission, *Trampoline Safety Alert*, available: <http://www.cpsc.gov/cpscpub/pubs/085.html>

² Based on discussion with industry and the NSW PSC report (confidential).

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Falls from a trampoline

Children are also injured by falling off domestic trampolines onto the ground. Some domestic trampolines are supplied with safety net enclosures designed to prevent these injuries.

Standards Australia has accepted a proposal to review AS4989–2006 which includes assessing the introduction of safety net enclosures in the Australian Standard. Once this work has been completed, the ACCC will consider the case for regulation of safety net enclosures.

The market for domestic trampolines

Domestic trampolines are sold by major retail stores, sporting goods outlets, trampoline distributors and suppliers online. Product prices range from \$100 to more than \$2000. Many products are manufactured in Asia and imported into Australia and there is still some manufacturing in Australia.

Industry sources estimate that in excess of 120 000 domestic trampolines are sold annually throughout Australia, though one source estimated this figure could be as high as 200 000 units. The supply of domestic trampolines has increased significantly over recent years. Industry sources differ on whether supply will continue to increase; one source indicated that supply has peaked and another stated that sales are still increasing.³

Increased sales do not necessarily mean increased usage. Estimates of trampoline life span have changed; the International Trampoline Industry Association estimated trampoline life to be 10 years in 1989, but this life span had reduced to five years in 2004.⁴ It is possible that a portion of any increase in sales is due to replacement of existing trampolines. It is also possible that trampoline ownership has increased as product prices fall. Without accurate data on the reason consumers are purchasing a new trampoline, it is not possible to determine to what extent the total number of products in use is increasing.

Injury data

Statistics available from health sources in NSW, Queensland and Victoria suggest that in these states alone close to 3000 children per year are reported injured as a result of trampoline use.⁵ These figures rely on hospital data correctly capturing the product associated with injuries; it is likely that the data provided significantly underestimates the injury rate and consequently, the data available does not provide an accurate figure of the number of injuries linked to domestic trampolines. Information provided by the Victorian Injury Surveillance Unit (VISU) supports this assumption.⁶

³ Based on discussion between ACCC and trampoline suppliers.

⁴ Alexander, K., Eager, D., Scarrott, C. and Sushinsky, G., 2010, *Effectiveness of pads and enclosures as safety interventions on consumer trampolines*, Injury Prevention; 2010; 16, p.186.

⁵ NSWPS report (confidential), p. 3.

⁶ Victorian Injury Surveillance Unit, Monash University Accident Research Centre, *Hospital treated falls and other injury involving trampolines, Victoria July 2002 to June 2010 (8 years)*, 28 April 2011, p. 1.

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Data from the ABS indicates that the combined population of New South Wales, Victoria and Queensland make up 77 per cent of Australia's population.⁷ It is reasonable to assume that the rate of injury in other states is similar to that of New South Wales, Victoria and Queensland. Using this assumption and the ABS data, it is reasonable to estimate that approximately 3900 children in Australia each year are injured in incidents associated with trampolines in Australia.

Research and analysis conducted by VISU indicates that in the eight-year period from 2002–03 to 2009–10 the total number of injuries in Victoria, related to trampolines, was 11 857.⁸ Of these 77 per cent (or 9184 cases) were caused by falls *off* or *onto* the trampoline. The VISU data splits the 'location of injury' into 'home', 'other specified place' (such as sporting hall, school, recreation area) and 'unspecified'. Where a location for trampoline related fall injuries was specified, 88 per cent occurred in the home. Hospital treated fall injuries from trampolines in Victoria averaged 1148 cases per year over the eight-year period and fall related injuries steadily increased during the period (there were 945 fall related injuries in 2004–05 and 1531 in 2009–10).⁹ These statistics are derived from both Victorian hospital admissions and emergency department presentations.

Unfortunately complete data sets are unavailable but by using the data that is available for the period from 2002–03 to 2009–10 and extrapolating, it is possible to estimate that falls *onto* the trampoline represent approximately 28 per cent of all trampoline injuries in Victoria (i.e. 28 per cent of 11857) or approximately 3300 Emergency Department presentations and hospital admissions over the period from 2002–03 to 2009–10.¹⁰

The Queensland Injury Surveillance Unit reported that in the period from 1998 to 1999 there were 668 child trampoline injuries resulting in attendance at Queensland emergency departments. Of those presentations 41 per cent were the result of either falling off a trampoline onto the ground or falling onto the trampoline or its surround. Fractures were the most common injury.

NSW Injury Risk Management Research Centre indicated that for the period from 2002 to 2008 there were over 3600 trampoline related injuries in NSW.¹¹

In 2006 in the United States there were 87 000 children aged under 14 years treated in Emergency Departments for trampoline related injuries.¹² Falling onto the trampoline frame and suspension system is one of the causes of trampoline related injuries in the United States.¹³

⁷ Australian Bureau of Statistics 3101.0 Australian Demographics Statistics, December 2010, Table 4. available: <http://www.abs.gov.au/ausstats/abs@.nsf/mf/3101.0>

⁸ VISU report, pp. 2-5. Note, for the first two years of this period, Emergency Department data was gathered from fewer hospitals than for the remaining years.

⁹ The number of emergency departments surveyed during 2002–03 and 2003–04 was less than for remaining years. Hence the injury data for these years is likely to be understated.

¹⁰ This figure is consistent with the estimate of 29 per cent provided in the NSWPSR report.

¹¹ NSWPSR report (confidential), p. 5.

¹² United States Consumer Product Safety Commission, 2007, *Consumer Product Safety Review*, Vol 11; No. 4, p. 3.

¹³ United States Consumer Product Safety Commission, *Trampoline Safety Alert*, available: <http://www.cpsc.gov/cpscpub/pubs/085.html>

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There are no recorded deaths relating to domestic trampoline use in Australia.

The United States Consumer Product Safety Commission (CPSC) has recorded 11 deaths relating to trampoline use in the period from 1990 to 2000 with six fatalities in the 12 to 19 age group. Falls from the trampoline were the most frequent cause of death followed by landing on the neck while attempting somersaults.¹⁴

Existing Australian regulation

There are currently no legislative requirements relating to domestic trampolines in Australia.

Australian Standard *AS4989–2003 Trampolines—Safety aspects* was published in 2003. The standard was developed to address injuries associated with trampolines. It set out requirements for components and design as well as specifying information on assembly and maintenance.

AS4989–2003 Trampolines—Safety aspects was revised in 2006 to remove specifications for frame design and to focus on other safety aspects, namely padding design, sharp edges and marking and consumer information. Minor amendments were made in 2008 and 2010.

AS4989–2006 Trampolines— Safety aspects (incorporating Amendment Nos 1 and 2) (AS4989—2006) is a voluntary standard. There appears limited compliance with the standard for goods supplied into the Australian marketplace,¹⁵ including in relation to the padding systems which cover the frame and suspension system.

Some suppliers provide domestic trampolines with padding systems, but a number of these systems are of poor quality and the trampoline out lasts the padding thereby creating an added injury risk to users.¹⁶ Research conducted on trampolines in the United States supports this.¹⁷

AS4989—2006 does not address the risk of children falling from the trampoline. While a number of suppliers provide safety nets with their domestic trampolines as a safety measure to reduce the risk that users will fall from the trampoline this is not a requirement currently set out in AS4989—2006. A review of AS 4989—2006 is expected to commence in early 2012 to consider the case for safety net enclosures and it is expected that the review will take up to 18 months to complete.

Existing international regulation

No legislative requirements for domestic trampolines have been identified in other jurisdictions however there are a number of voluntary standards in place. Each voluntary standard includes a requirement for padding the frame and suspension

¹⁴ United States Consumer Product Safety Commission, 2000, *Trampolines*, available: www.cpsc.gov/library/tramp00.pdf

¹⁵ NSWPSR report (confidential) p. 9 and discussion between the ACCC and trampoline suppliers.

¹⁶ Based on ACCC discussion with Australian trampoline suppliers

¹⁷ Alexander, K., Eager, D., Scarrott, C. and Sushinsky, G., 2010, *Effectiveness of pads and enclosures as safety interventions on consumer trampolines*, Injury Prevention; 2010; 16, pp. 187-188.

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system though the specific measurement of impact attenuation is different for each standard.

United States

The American Society for Testing and Materials (ASTM) has developed *ASTM F381-11 Standard Safety Specification for Components, Assembly, Use and Labeling of Consumer Trampolines* (ASTM F381-11) which sets out the trampoline components that must be provided, details of materials to be used and the quality of manufacture as well as performance requirements and information to be provided to the consumer.¹⁸

ASTM F381-11 includes requirements for frame and suspension system padding for consumer trampolines for use in the home environment. It requires frame padding material to have shock-attenuating properties; when tested the pads must have a severity index of less than 450. The severity index is a measure used to evaluate impact attenuation. Testing for the severity index does not need to be conducted with the pads attached to the trampoline frame and suspension system. A drop test is also performed on frame pads to assess pad integrity and frame/suspension system coverage following impact.

New Zealand

New Zealand Standard *NZS5855:1997 Consumer safety specification for components, assembly and use of a trampoline* is intended to address the hazards associated with the use of domestic trampolines. NZS5855 is identical to ASTM F381-95 (the 1995 version) with amendments for New Zealand.¹⁹

Europe

European Standard *EN13219:2008 Gymnastic equipment – Trampolines Functional and Safety Requirements* applies to trampolines intended for use under qualified supervision by a competent person. The European standard does not apply to domestic trampolines.

Does existing regulation address the problem?

There are no existing mandatory regulations which address impact hazards posed by domestic trampolines.

AS4989—2006 has included frame and suspension system padding requirements since 2006 and, based on evidence presented to the NSWPS²⁰ and following discussion between the ACCC and suppliers it appears that many domestic trampolines either do not include frame and suspension system padding or the padding supplied does not meet the standard's requirements.

¹⁸ The preface to AS4989—2006 notes that, in preparation of the revised standard, the Standards Australia Committee was cognisant of the ASTM standard which applied at the time.

¹⁹ ASTM F381 was first approved in 1994 and has been revised a number of times since. The most recent revision was published in June 2011 and replaced the 2009 version.

²⁰ NSWPS report (confidential) p. 3.

OBJECTIVE

The objective of Government action is to reduce both the number and severity of injuries sustained by children resulting from impacting with the frame and suspension systems of domestic trampolines.

Ideally, the aim is to eliminate all injury resulting from falling onto a trampoline frame or suspension system. Unfortunately, because of the nature of trampoline use, injuries resulting from impacting with the frame and suspension system are likely to continue but a reduction in the rate and severity of injury is the goal.

OPTIONS

The viable options to achieve the objective are:

Option 1: Maintain the status Quo

Maintain the status quo, i.e. rely on current industry practices, voluntary compliance with the Australian Standard and consumer education.

Option 2: Government regulation

Government regulation to mandate the key safety elements of the voluntary Australian Standard *AS4989—2006 Trampolines—Safety aspects* combined with consumer education.

The Australian Standard includes the following safety requirements which are relevant to the risks discussed:

- Protection from contact with the suspension system.
- Shock-attenuation²¹ properties for the frame and suspension system padding where the frame and suspension system are in the same plane (i.e. for a 'conventional' trampoline).
- Shock-attenuation properties for 'soft-edge' systems where the frame and suspension system are not in the same plane.

AS4989—2006 requires the maximum acceleration during impact testing of impact attenuating material such as pads (referred to as g_{\max}) to be 200g (+/-1g), where g is the acceleration due to the earth's gravity. The test procedure is valid for impact events with a total duration of more than 6 milliseconds (+/- 0.1 milliseconds).²² The duration of impact is measured from when acceleration increases and equals 10g (+/- 0.5g) until acceleration decreases and falls to 10g (+/- 0.5g). This test procedure replaced the test in the 2003 version of the standard which used the head injury criteria (HIC) and g_{\max} to measure impact attenuation properties of materials. The ASTM standard for trampolines uses the severity index of impact to measure

²¹ The term 'shock-attenuation' in the context of trampolining refers to the transformation of kinetic energy from falls into controlled deceleration behaviour (over time) during impact.

²² If a trampoline has a soft-edge (i.e. the frame and suspension system are not in the same plane as the bed) and g_{\max} is less than 70g this requirement does not apply.

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impact attenuation. During the review of the Australian Standard in 2006 the Standards Australia Committee considered that g_{\max} and a minimum impact time were a more appropriate measure for trampoline impact attenuation.²³ The ACCC understands that the Standards Australia Committee considered that g_{\max} measurements are more repeatable (and therefore more reliable) under test conditions than other measures and are therefore a better measure to include in the Australian Standard.

Impact testing in the Australian Standard is conducted with the frame and suspension system padding attached to the trampoline in accordance with manufacturers instructions. Testing of impact attenuation with the pads attached to the trampoline means that any influence the frame/suspension system exerts on impact attenuation is also assessed so that the impact attenuation properties of the whole trampoline can be determined. For example, if padding is placed over a bolt which is securing sections of the frame, it is likely that the impact attenuation results will be affected by the presence of the bolt. Further, a well designed and manufactured trampoline frame will provide some impact attenuation as well as the pads covering it. The approach in AS4989-2006 is in contrast to that of ASTM F381-11 which allows for testing of frame and suspension system padding impact attenuation when the pads are not attached to the trampoline frame/suspension system.

It is widely accepted that impact attenuation will reduce the number and severity of injuries due to impact with hard surfaces. Considerable work has been undertaken to reduce fall related injury to children in playgrounds by providing impact absorbing surfaces beneath play equipment. While there are other factors to be considered when assessing fall related injury in playgrounds (such as the height of playground equipment), evidence indicates that impact attenuating surfaces are effective in preventing fall related injury.²⁴

Research in the United States indicates that football headgear provides measurable benefits during head to head impacts.²⁵ Additionally many sporting surfaces such as artificial turf fields, sports hall floors, and gymnastic crash mats are required to exceed minimum shock-attenuation criteria. Goal posts, walls and other vertical surfaces are also cushioned to reduce the risk of injury. Shock-attenuation is particularly important when the risk of head injury or other severe injury is non-trivial.²⁶

²³ Discussion between the ACCC and the Chairperson of Standards Australia Committee CS-100. CS-100 developed the Australian Standard for trampolines.

²⁴ Chalmers, D. J., Marshall, S. W., Langley, J. D., Evans, M. J., Brunton, C., R., Kelly, AM., and Pickering, A. F., 1996, *Height and surfacing as risk factors for injury in falls from playground equipment: a case-control study*, Injury Prevention; 2, pp. 98-104 and Sherker, S., Ozanne-Smith, J., Rechnitzer, G. and Grzebieta, R., 2005 *Out on a limb: risk factors for arm fracture in playground equipment falls*, Injury Prevention; 11, pp. 120-124.

²⁵ Withnall, C., Shewchenko, N., Wonnacott, M., and Dvorak, J., 2005, *Effectiveness of headgear in football*, British Journal of Sports Medicine 2005; 39, p. i40-i48.

²⁶ Shorten, M.R. and Himmelsbach, J.A., 2002 *Shock Attenuation of Sports Surfaces*, in "The Engineering of Sport IV: Proceedings of the 4th International Conference on The Engineering of Sport, Kyoto, 3-6 September 2002" Blackwell Science Oxford, p. 1.

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A 2006 United Kingdom study into trampoline related paediatric fractures concluded that the incidence of trampoline injuries is increasing. The authors made a number of recommendations to improve trampoline safety including:²⁷

- that exposed metalwork should be padded (as proposed in this draft RIS);
- children should be supervised; and
- digging the trampoline into the ground, placing padding on the ground and circumferential netting to (ideally) reduce the incidence of injury from falling off a trampoline.

Recent research considered the effectiveness of trampoline pads covering the frame and suspension systems of trampolines in the United States. The ASTM trampoline standard was revised in 1999 to require that padding fully cover both the frame and springs. The research focussed on the five-year period from 2002 to 2007 and concluded that injuries attributable to the frame and springs had not declined over the five-year period. The authors proposed a number of reasons why this may be the case including:²⁸

- the standards are being ignored and trampolines continue to be sold without adequate padding;
- trampolines are being sold with the necessary padding but the trampolines are being assembled without the pads;
- the pads are being included but deteriorate and are not replaced by trampoline owners; and
- it is taking time for standards compliant trampolines to replace old non-compliant trampolines.

The research noted that the way forward may include a number of actions including follow-up studies, upgrading the standards, challenging suppliers to compete on safe design rather than price and, relevant to option 2 outlined in this draft RIS, mandating voluntary standards.²⁹

Residual risk following Government regulation

Evidence indicates that impact attenuation does reduce injury, however a mandatory standard for domestic trampoline padding will not eliminate all risk of injury. User behaviour is an important element of injury prevention. Just as the height of playground equipment (and the distance a child can fall onto the ground) is a factor in playground injury, so is the height to which a child bounces on a trampoline (and falls onto the trampoline surface). As the bounce height increases, so does the risk of

²⁷ Bhangal, K. K., Neen, D. and Dodds, R., 2006 *Incidence of trampoline related pediatric fractures in a large district general hospital in the United Kingdom: lessons to be learnt*, Injury Prevention; 2006;12, pp. 133-134.

²⁸ Alexander, K., Eager, D., Scarrott, C. and Sushinsky, G., 2010, *Effectiveness of pads and enclosures as safety interventions on consumer trampolines*, Injury Prevention; 2010; 16, p.188.

²⁹ Alexander, K., Eager, D., Scarrott, C. and Sushinsky, G., 2010, *Effectiveness of pads and enclosures as safety interventions on consumer trampolines*, Injury Prevention; 2010; 16, p.188.

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injury due to impacting with the frame and suspension system even if adequate padding is provided. As indicated earlier, the risk of injury from impacting the ground will not be directly addressed by mandating adequate padding on the frame and suspension system.

Carers also need to be aware that supervision and ensuring users are aware of the risks of use (and abuse) are still important even when trampolines are fitted with adequate shock-attenuating pads.

Consumer education

Consumer education on the safe use of domestic trampolines is currently provided by the ACCC and most fair trading agencies.³⁰ It is envisaged that consumer education would continue as an adjunct to each of the options set out above but there are doubts about how effective it would be as a stand-alone option. Consumer education would be beneficial in so far as it can provide important information to adults about the ongoing risks associated with trampoline use. Adults can then influence the way children use domestic trampolines. However, consumer education can only go so far, despite the best education campaigns and adult supervision, children will continue to fall onto the frame and suspension systems of domestic trampolines and, if they remain unpadded or inadequately padded, will continue to injure themselves.

IMPACT ANALYSIS

This section of the paper provides a descriptive summary of the effects of the above options on affected groups.

Option 1: Status Quo

Rely on current industry practice, voluntary compliance with the Australian Standard and consumer education.

Costs and benefits to consumers

The status quo would result in the present level of risk to consumers remaining and a continuation of the current level of injury to children caused by falling and impacting with unprotected parts of a trampoline such as the frame and suspension system. Injuries to children have a financial impact on carers. Medical costs not covered by public or private healthcare must be met by carers. Additionally, carers may take leave from work to care for injured children. It is foreseeable that, where a child has sustained significant injury, a carer may exhaust their leave entitlements and totally forgo income to care for their child. While this scenario creates a direct cost to carers, it also creates an indirect cost to the community in terms of lost productivity. There is also an emotional cost of injuries to children in terms of pain and suffering experienced by the child and stress and anxiety experienced by carers.

Domestic trampolines encourage healthy outdoor activity and, if used sensibly with injury risks managed appropriately by suppliers and supervising parents, can improve the health and well being of children. In an environment of increasing injuries,

³⁰ Agencies provide trampoline safety material on their websites.

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consumers may perceive domestic trampolines to be dangerous and avoid use, ruling out this form of healthy activity for children.

On the other hand, maintaining the status quo provides some benefit to consumers in so far as they will not face increased prices due to regulation. Often regulation increases costs for suppliers (such as costs related to improving products, product testing and compliance record keeping) and those costs are usually passed on to consumers via increased prices. Regulation may also reduce the product range if suppliers elect not to comply with the regulation and exit the industry. Maintaining the status quo means that the current product range and prices would not be affected by regulation.

Costs and benefits to industry

Under the status quo, there is no reason to believe that the current level and severity of injuries to children would change. Under these circumstances consumers may come to perceive domestic trampolines as unsafe products and avoid purchasing them. Under this scenario, industry would suffer reduced sales and may struggle to change consumer perception.

On the other hand, maintaining the status quo benefits industry in so far as it would be able to continue to supply the current range of domestic trampolines regardless of whether they comply with voluntary standards. Industry would avoid any residual costs, not recovered via increased product prices, associated with complying with regulation such as changes to manufacturing processes and product testing to ensure regulatory compliance.

Costs and benefits to Government

There are a number of costs to government associated with maintaining the status quo. The most significant cost relates to medical expenses due to injuries from children falling and impacting with unprotected parts of a domestic trampoline such as the frame and suspension system. It is difficult to estimate these costs due to the range and severity of fall related injuries and their treatment. Injury can range from relatively minor sprained ankles through to more severe limb, rib and facial fractures and debilitating spinal and head injury. Treatment is equally wide ranging and can result in many years of medical care and cost.

As noted above, trampolining promotes physical activity which provides health benefits to those involved. If use of domestic trampolines is perceived to be dangerous, parents may prevent their children from participating resulting in children becoming more sedentary. A sedentary lifestyle has long been associated with obesity which in turn is associated with poor health and increasing public health costs. In the United States, a study into the economic costs of obesity and inactivity found that the direct costs of lack of physical activity were approximately 2.4% of United States health care expenditure.³¹ A similar study in Canada found that 2.5% of the total direct health care costs in Canada were attributable to physical inactivity.³²

³¹ Colditz, G. A., 1999, *Economic costs of obesity and inactivity* Medicine and Science in Sports and Exercise, Vol. 31, No. 11, Suppl., pp. S663-S667.

³² Katzmarzyk, P.T., Gledhill, N. and Shephard R.J., 2000, *The economic burden of physical inactivity in Canada*, Canadian Medical Association Journal, November 28;163(11).

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The key benefit to government of the status quo is that there will be no additional regulation for it to develop and enforce. The costs associated with government regulation are set out in option 2 below.

Option 2: Government regulation

Costs and benefits to consumers

If the supply of domestic trampolines is regulated and industry is required to comply with key sections of the voluntary Australian Standard which focus on requirements to address the hazards, industry participants will either comply with the regulation and incur higher costs or decide that they are unable to compete and exit the industry. If suppliers incur higher costs it is expected that those costs would be passed onto consumers via higher prices. If suppliers exit the industry, product range will fall and supply may fall below demand resulting in even higher prices.

It is difficult to estimate any increase in prices due to the long term effect of any supply-demand imbalance arising from suppliers exiting the market. The effect will depend on whether post regulation demand is maintained at pre-regulation levels in the face of any price rise. It is possible that some consumers would only purchase low cost domestic trampolines; if product range is reduced due to suppliers exiting the market, consumers may respond by not purchasing at all.

It is expected that the majority of industry participants would improve their products to ensure compliance with the proposed mandatory safety standard. Industry has provided preliminary advice to the ACCC which indicates that higher priced domestic trampolines are closer to meeting the Australian Standard and would therefore require less improvement to their products to ensure compliance. Several long term industry participants indicated that trampoline prices would increase between 15 and 25 per cent in order to meet the requirements of the Australian Standard.

The most significant benefit to consumers from Government regulation is expected to be a reduction in the number of injuries to children following falling and impacting with unprotected parts of a domestic trampoline such as the frame and suspension system. While adequate padding may not prevent all injuries, it is reasonable to conclude that many injuries will be prevented and the severity of those that continue to occur will be reduced. For example, a child landing awkwardly on a domestic trampoline frame covered by effective padding is more likely to walk away with bruising rather than a more severe injury.³³

A reduction in the number of injuries to children will reduce carer workplace absenteeism. Additionally, injury related emotional trauma and stress for both children and carers will fall once injury rates decline.

There is a possibility that domestic trampoline supply and therefore use will fall following regulation (due to increased prices) which may result in less physical activity and the risk of increased obesity. It is also possible that use will, in the long term, increase as the rate and severity of injury falls as a result of regulation and consumers perceive trampolining to be a less risky activity.

³³ The benefits of impact attenuation have already been discussed earlier in this document.

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The ACCC has not been able to identify deaths in Australia due to impacting with unprotected parts of a domestic trampoline but there is no reason to assume that this will not change in the future. It is highly likely that a mandatory safety standard based on the existing Australian Standard would reduce the risk of death and injury. Many varying estimates of the ‘dollar value’ of a life have been made by overseas and Australian research experts. Although the range of estimates contained in the literature is quite wide, it suffices to say that all experts attribute a fairly significant dollar amount to the value of a human life. In Australia, a 2003 article entitled ‘The value of life and health for public policy’³⁴ estimated the value of a life lost as being in the range of A\$3.3 to A\$6.6 million. More recently a guidance note drafted by the Office of Best Practice Regulation (OBPR) on ‘Value of a Statistical Life’ (which estimates the value society places on reducing the risk of premature death) illustrated the difficulties in providing a meaningful valuation, given that the number of deaths/injuries which might be prevented by a measure will always be hypothetical, as the nature of the assumptions involved is invariably uncertain.³⁵ However, in its guidance note, the OBPR suggests that the value of \$3.5 million (\$2007) be used in assessing the statistical value of a human life for the purposes of developing a RIS.

The valuation of the prevention of injury is similarly problematic. In its guidance note, OBPR notes that some regulation has the benefit of preventing injury and one method of valuing this benefit is to adjust the value of a statistical life year (which may be interpreted as the value of a year of life free of injury, disease and disability) by a factor that accounts for the type of injury. The value of a statistical life year is quoted by OBPR as \$151 000 (\$2007). OBPR also notes that the Australian Institute of Health and Welfare (AIHW) has published disability weights for most diseases and injuries.³⁶ Injuries that may occur due to impacting with unprotected parts of a domestic trampoline such as the frame and suspension system could vary from bruising to limb fractures to severe head injuries or paraplegia. The AIHW data provides weights for unintentional injuries such as fractures (0.153) and intracranial injuries (0.359).

The value of a statistical life year has been escalated from \$2007 to \$2011 using CPI data available from the Australian Bureau of Statistics, as recommended by OBPR, to arrive at a value of \$170 576 (\$2011). VISU provided injury data for fractures, sprains/strains, open wounds and intracranial injuries and these figures have been extrapolated to arrive at national injury estimates due to falling *onto* the trampoline (not falling *from* a trampoline). Using the data provided by VISU, the escalated statistical life year for 2011 and the weights provided by AIHW, the estimated value society places on reducing the risk of injury due to falls onto trampoline frames and suspension systems has been estimated to be approximately \$30 million for one year or \$150 million (\$2011) for a five-year period. This figure does not include the value of savings due to a fall in medical expenses and reduced carer workplace absenteeism.

³⁴ Abelson, P., 2003, *The Value of Life and Health for Public Policy*, The Economic Record, Vol. 9, June 2003, pp. 2–13.

³⁵ See <http://www.finance.gov.au/obpr/docs/ValuingStatisticalLife.rtf>.

³⁶ See Mathers C., Vos T., and Stevenson C. 1999, *The burden of disease and injury in Australia*, AIHW Cat No. PHE 17, AIHW, Canberra pp. 186–202.

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Costs and benefits to industry

Government regulation is likely to result in increased costs for business. It is expected that suppliers would incur costs to ensure products meet any proposed mandatory safety standard. Further, it is expected that suppliers would face regulatory compliance costs in the form of product testing and record keeping costs to demonstrate compliance. It is expected that the majority of these costs would be passed on to consumers via higher prices although there may be some costs that would be borne by business.³⁷ As noted earlier it is expected that domestic trampoline prices could increase by approximately 15 to 25 per cent and a significant proportion of this would be directly related to increased costs to suppliers.

Some suppliers may elect not to meet the requirements of the proposed safety standard and exit the industry. Many low cost domestic trampolines have little or no frame and suspension system padding and those that currently have padding systems may not comply with the impact attenuation requirements of the proposed mandatory safety standard. It is expected that those suppliers would incur the most significant cost increases to ensure compliance and it may become unviable for them to continue supply.

Those remaining in the industry would benefit from regulatory certainty. All suppliers would trade in the knowledge that their competitors' products are required to have similar safety features. A reduction in the number and extent of injuries may result in an increase in demand and therefore sales as those consumers that currently perceive trampolining to be risky, change their attitude.

Costs and benefits to Government

The introduction of a mandatory safety standard will result in costs to government due to the development, administration and enforcement of the standard. Specific costs for a five-year period are estimated and set out in table 1 below and include:³⁸

- the development and (one) review of the proposed mandatory safety standard (\$70 000);
- participation in the review of the Australian Standard (\$10 000);
- enforcement of the proposed mandatory safety standard through market monitoring and compliance/enforcement activities (an average of \$57 000 per annum). Compliance and enforcement activities include market surveillance, market surveys and possible legal action for non-compliance; and
- associated industry education campaign to increase awareness of the safety standard amongst suppliers (\$26 000). Consumer education costs have not been included as it is expected that these costs would apply regardless of the option selected.

³⁷ Suppliers are invited to make submissions to the ACCC on the costs which they are unable to pass on via increased prices.

³⁸ It is expected that a mandatory safety standard would be reviewed after five years.

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Table 1: Summary of Government costs due to regulation of domestic trampolines

Activity	Cost (\$ nominal)	Cost over a five-year period (\$ nominal)
Safety standard development and review (one off cost).	\$70 000	\$70 000
Participation in review of the Australian Standard (one off cost).	\$10 000	\$10 000
Market surveillance and surveys (cost per annum).	\$57 000	\$285 000
Supplier education campaign including developing and distributing a supplier guide and, if required a more comprehensive supplier education campaign involving a webinar. (Costs spread across the five-year period).		\$26 000
Total		\$391 000

The key benefit of government regulation would be a fall in the number of injuries and the pain and suffering associated with them, a corresponding saving in medical costs associated with those injuries and a reduction in carer workplace absenteeism. As noted above, it is expected that these benefits, while difficult to estimate would be significant.

DRAFT CONCLUSION AND RECOMMENDED OPTION

Children using trampolines face the risk of injury from impacting with unprotected (or poorly protected) domestic trampoline frames and suspension systems. Injury data indicates that the number of injuries sustained by children due to impacting with unprotected domestic trampolines is high and has increased steadily over an eight-year period. Injury severity ranges from minor to severe and life threatening. The financial cost of injury and the cost in terms of personal trauma, pain and suffering is high. Trampolining is an activity where it is unlikely that all risk can be eliminated but the goal should be to reduce the number of injuries and their severity to the extent possible and if necessary introduce requirements as are reasonably necessary to achieve this aim. It appears that voluntary compliance with the existing published standards is not addressing the risks associated with domestic trampolines and government intervention may be justified.

Option 2, making a mandatory safety standard based on the key safety aspects of the Australian Standard, is the most appropriate available option to reduce the number of

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injuries to children as a result of impacting with the frame and suspension system of a domestic trampoline.

It is difficult to accurately quantify all the benefits of regulation as it is not possible to predict what percentage of the injuries resulting from impacting with unprotected parts of a domestic trampoline such as the frame and suspension system will be prevented by padding alone. It is however, reasonable to assume that injuries and injury severity will be reduced just as they have with the introduction of impact attenuating surfaces in playgrounds, sporting facilities and for sporting headgear. With a reduction in injury and injury severity there will be a corresponding reduction in medical costs borne by both consumers and the government. If, as suggested earlier, injuries are in fact higher than statistics indicate, the benefits from regulation will be greater.

Consumer costs associated with regulation are estimated to be between \$45 million and \$75 million (based on an estimated price increase of between 15 and 25 per cent) with costs to government of approximately \$391 000, all over a five year period.

Option 1, to maintain the status quo and rely on current industry practice to voluntarily comply with the Australian Standard does not appear viable. For the reasons outlined in this draft RIS, option 1 would not result in a reduction in injuries to children.

FORM OF PROPOSED MANDATORY SAFETY STANDARD

Any proposed mandatory standard could adopt the key safety requirements relating to frame and suspension system padding set out in AS 4989–2006.

In essence the proposed mandatory safety standard would therefore cover the following safety requirements specified in AS 4989 – 2006:

- The suspension system must be designed to protect the user from injury due to contact with sharp parts and it must be able to withstand permitted loads without any permanent deformation (Clause 2.2.1);
- Frame padding systems are required for the frame/suspension system on domestic trampolines (Clause 2.2.2.1);
- The frame padding system must be secure (Clause 2.2.2.2);
- The frame padding system must completely cover the top surface of the frame and suspension system (Clause 2.2.2.3);
- The frame padding must meet the shock-attenuation requirements specified in the standard (Clause 2.2.2.4 and Appendix C);
- General requirements for soft-edge systems (Clause 2.2.3.1);
- Soft-edge systems must also meet the shock-attenuation requirements specified in the standard (Clause 2.2.3.2 and Appendix C); and

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- The trampoline bed must be designed and manufactured so that no part of the frame or legs can be contacted by the user when bouncing (Clause 2.2.4.1(b)).

It is also proposed to replace the definition of 'Trampoline', set out in clause 1.4.25 of AS 4989-2006 with:

A rebound device, which includes a mat, frame and suspension system, activated by vertical jumping, upon which physical exercises are performed.

It is proposed that the consumer goods affected by regulation would be:

New trampolines (i.e. trampolines which are not second hand), which are designed and clearly intended for use in the outdoor home environment and excluding:

- New trampolines which when assembled for use have a vertical distance equal to or less than 360 millimetres from the bottom of the trampoline rebound surface to the ground immediately below the rebound surface when the trampoline is positioned on a flat level surface and which also have a rebound surface area of equal to or less than 1 square metre; and
- Inflatable trampolines.

It is not intended to capture products designed for use by adults during exercise. These types of products are often called rebounders or mini-trampolines and, based on market research, include a bed/mat which is not more than 360mm from the ground and a bed/mat area of not more than 1 square metre (m^2). These products are marketed for and intended to be used by adults to improve physical fitness. It is therefore proposed that trampolines of a height equal to or less than 360 millimetres above the ground which also have a bed/mat surface area of less than 1 m^2 be excluded from the proposed scope of regulation. It is possible that some trampolines, marketed for, and intended to be used by young children may also be excluded from regulation if this proposed scope is applied.

One example of a trampoline excluded from the scope of the proposed regulation is the 'Junior Jumper' trampoline supplied by several large retailers and some specialist trampoline suppliers. The Junior Jumper trampoline bed/mat is 300 millimetres above the ground and has a bed/mat surface area of approximately 0.3 m^2 . A factor which contributes to impact injuries is the height from which a child falls onto a trampoline frame or suspension system. Smaller trampolines, such as the Junior Jumper have a small bed/mat area (less than 1 m^2) and are marketed for use by young children of an age from 12 months. These children would not have the body mass or athletic ability to jump high on a small trampoline and therefore it is reasonable to assume that these smaller trampolines pose less risk to children than larger trampolines which allow children to bounce higher.

Injury data collected by the United States National Electronic Injury Surveillance System (NEISS) during the 13 year period from 1990 to 2002 appears to support this

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assumption; while there were 22,997 injuries reported in relation to full size trampolines there were only 137 injuries reported in relation mini trampolines.³⁹ The journal article, which aimed to compare minitrampoline and full size trampoline injuries in the United States, did not define a mini-trampoline but noted ‘...a minitrampoline was identified in the comment fields [for each case reported in the NEISS] as a minitramp, small tramp, jogging tramp, or exercise tramp.’⁴⁰ This description would include rebounder type trampolines for exercise and arguably smaller trampolines such as the Junior Jumper. The authors noted their study had several limitations. It was noted that the NEISS data may not be representative of trampoline related injuries treated outside of Emergency Departments or injuries which did not receive medical attention and the incidence of trampoline related injuries per hour of exposure could not be determined.⁴¹

While the proposed definition of a trampoline, as set out above, would exclude inflatable style trampolines because they do not include a frame and suspension system, it is proposed to explicitly exclude inflatable trampolines from the scope of consumer goods affected by the proposed regulation.

The scope of the proposed regulation is intended to capture trampolines designed to be installed in the ground (i.e. where part or all of the trampoline legs are dug into the ground). So called ‘inground’ trampolines pose the same frame/suspension system impact injury risk as trampolines installed on top of the ground.

Stakeholders are invited to make submissions on the scope of the consumer goods affected by the proposed regulation.

CONSULTATION

The ACCC has conducted some industry research to gain an understanding of the level of voluntary compliance with the Australian Standard and to discuss the possibility of regulation via a proposed mandatory safety standard.

The ACCC is now providing a copy of this draft RIS to industry and other stakeholders and requesting comments on the draft conclusion and recommended option set out above. Stakeholders are invited to make a written submission on any aspect of this draft RIS by no later than 24 February 2012. In particular, submissions are invited in relation to:

- the current level of compliance with AS4989-2006;

³⁹ Shields, B.J., Fernandez, S. A. and Smith G. A., 2005, *Comparison of minitrampoline and full-sized trampoline-related injuries in the United States, 1990-2002*, Pediatrics Vol. 116; No. 1, pp. 96-103.

⁴⁰ Shields, B.J., Fernandez, S. A. and Smith G. A., 2005, *Comparison of minitrampoline and full-sized trampoline-related injuries in the United States, 1990-2002*, Pediatrics Vol. 116; No. 1, p. 97.

⁴¹ Shields, B.J., Fernandez, S. A. and Smith G. A., 2005, *Comparison of minitrampoline and full-sized trampoline-related injuries in the United States, 1990-2002*, Pediatrics Vol. 116; No. 1, p. 103.

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- the practicalities of complying with the proposed mandatory safety standard as outlined in this draft RIS;
- an estimate of any increased costs associated with compliance with the proposed regulation;
- the likely increase in trampoline prices to recover increased costs;
- the scope of the products proposed to be regulated under the proposed mandatory safety standard being:

New trampolines (i.e. trampolines which are not second hand), which are designed and clearly intended for use in the outdoor home environment and excluding:

- New trampolines which when assembled for use have a vertical distance equal to or less than 360 millimetres from the bottom of the trampoline rebound surface to the ground immediately below the rebound surface when the trampoline is positioned on a flat level surface and which also have a rebound surface area of equal to or less than 1 square metre; and
- Inflatable trampolines;
- the time suppliers would need to obtain stock which is compliant with the proposed mandatory standard; and
- any other matters stakeholders consider are relevant to the proposed regulation.

Submissions should be emailed, by 24 February 2012, to:

productsafety.regulation@accc.gov.au

Alternatively, submissions can be mailed to:

Director
Regulatory Policy Section
Product Safety Branch
Australian Competition and Consumer Commission
GPO Box 3131
CANBERRA ACT 2601

IMPLEMENTATION AND REVIEW

The ACCC will consider submissions on this draft RIS prior to making a decision whether to proceed with the regulation of domestic trampolines.

Under the CCA, a safety standard is a legislative instrument and must be registered on the Federal Register of Legislative Instruments. Legislative instruments are subject to

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the sunset provisions of the *Legislative Instruments Act 2003*. Under these provisions, the safety standard must be reviewed 10 years after it is made, but it may be reviewed in a shorter period if the need arises.

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