



# Review of the mandatory safety standard for treadmills

## Consultation paper

December 2016



## Disclaimer

The Australian Competition & Consumer Commission (ACCC) has developed this consultation paper to seek the views of stakeholders about the mandatory safety standard for treadmills.

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## 1. Introduction

The ACCC is reviewing the mandatory safety standard for treadmills in Australia. This is the first review of the mandatory safety standard since it started in 2009.

The mandatory safety standard was introduced to reduce the risk of injury to young children when they make contact with the conveyor belt of an operating treadmill. It followed an earlier mandatory labelling requirement in NSW.

Treadmill-related injury rates appear to have declined since 2009, but some of these injuries can still be severe and permanently debilitating. We seek information from stakeholders that could help our review identify new solutions to address this issue.

**The consultation process outlined in this paper may be the only opportunity for you to provide input into this review.**

**We encourage you to make a submission.**

## 2. Policy options

This consultation paper discusses three policy options:

Option 1 Keep the current mandatory safety standard (status quo)

Option 2 Mandate safety design requirements

Option 3 Revoke the mandatory safety standard.

## 3. Background

The treadmills sold in Australia are essentially the same as those supplied in other major international markets. Treadmills have evolved to include extra features over time but most treadmills are motor-driven.

Domestic (in-home) treadmills are generally less powerful and robust than commercial treadmills intended for use in gyms and fitness clubs. However, many domestic treadmills now align with commercial treadmills in size and configuration.

Smaller domestic treadmills are likely to fold up so that they may be stored away when not in use, while larger domestic treadmills are less likely to fold up. Most modern treadmills also feature an emergency stop function and/or safety-lock key. Depending on factors such as power, build quality, variable speed, incline mechanisms, accessories and electronic features, treadmills generally retail from around \$200 to over \$5000.

Treadmills are widely available in a range of health and fitness and sporting goods stores throughout Australia and online. Most domestic treadmills are manufactured in China and the US and are imported by distributors with a local network.

### 3.1 Injuries

The mandatory safety standard is intended to reduce the risk of injury to young children by preventing them from making contact with the conveyor belt of an operating treadmill. The

most common injuries occur when unsupervised young children place their hands on the moving conveyor belt at the rear of the treadmill.

Friction burns to hands and wrists are the most common treadmill-related injuries among young children. These injuries can range from minor to deep second or third degree burns, requiring skin grafts and the potential for permanent loss of the use of hands or fingers.

Consolidated national injury data on treadmill friction burns to young children is unavailable. However, there have been studies from New South Wales, Queensland and Victoria.

### **Injuries before 2010**

Before 2010, studies from Queensland<sup>1</sup> and NSW<sup>2</sup> found that the number of children suffering friction burns from domestic treadmills had been increasing and noted an increase in domestic treadmill sales around this time.

In 2008, a NSW Product Safety Committee Report<sup>3</sup> found that treadmill burns were usually severe and were increasing, and that most injuries were to children aged 2-3 years. The report cited over 100 cases nationally of children suffering severe friction burn injuries from treadmills, with 70 reports in NSW since 2001. The NSW Health Severe Burn Injury Service reported 64 injuries up to April 2008 that involved hospital presentations, with almost half of these (30) requiring surgery and extensive rehabilitation.

### **Recent injuries**

A study of paediatric treadmill burn patients admitted to burn injury units in NSW over a longer period (2005-2014) reported 298 cases of children aged 0-15. Almost half of these children required skin grafts. The study shows a steep increase in treadmill burns from 2007 to 2008 and that injury numbers remained steady after this.<sup>4</sup>

Recent data from Victorian emergency departments (EDs), rather than specialist burn units, recorded 914 presentations for treadmill-related injuries from mid-2007 to mid-2015. It shows that ED injury presentations have been stable for several years<sup>5</sup>.

The Victorian EDs admitted or transferred 81 of the 914 presentations to hospital for further treatment. Young children were overrepresented in these 81 cases of people of all ages, with 21 children aged 0-4 and 15 in the 5-15 age group. Young children aged 0-4 also accounted for more than one third of all these Victorian ED presentations (319 out of 914 presentations) and they are more likely to sustain friction burn injuries to the fingers and hands. Of the 319 presentations of children aged 0-4 years, most of the injuries occurred at home (264) and most of the children (298) were treated in the emergency department and sent home.

The data also show that adults are more likely to sustain less severe injuries such as sprains, strains, dislocations, and injuries resulting from overexertion.

One major Australian supplier recently told the ACCC that treadmill sales have also remained stable over the past three years. Domestic treadmills have a lifespan of around 10 years, depending on use and maintenance, so the number of treadmills in Australian homes is likely to have increased markedly since the mandatory safety standard started in 2009. On

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<sup>1</sup> Jeremijenko et al, 'Paediatric treadmill friction injuries', *Journal of Paediatrics and Child Health* 45 (2009) 310–312

<sup>2</sup> Wong et al, 'Paediatric treadmill injuries: a public health issue', *Journal of Pediatric Surgery* (2007) 42, 2086–2089

<sup>3</sup> NSW Product Safety Committee report to the Minister for Fair Trading on the safety of domestic treadmills, 8 August 2008

<sup>4</sup> Goltsman et al, 'Paediatric Treadmill Burns: Assessing the effectiveness of prevention strategies', 2016. *Burns* 42 (2016) 1581-1587.p.1582

<sup>5</sup> Victorian Injury Surveillance Unit (VISU), Victorian Emergency Minimum Dataset (VEMD): emergency department presentations (including subsequent admissions), July 2007- June 2015

that basis, it appears that injury rates may have declined in comparison to the number of treadmills in use in Australia.

There have been no child deaths identified from accessing the moving parts of treadmills.

## 3.2 The mandatory safety standard

The Australian mandatory safety standard requires treadmills to display a permanent warning that is conspicuous and visible to a user when the treadmill is in use:

**WARNING:** Keep young children away from this machine at all times.  
Contact with the moving surface may result in severe friction burns.

The safety standard requires that:

- the word 'WARNING' is in bold upper case letters, not less than 5 mm in height
- the remaining words are in lower case letters, not less than 2.5 mm in height
- the warning label is separate from any other warning or label on the treadmill.

The mandatory safety standard does not prescribe any design or performance requirements.

We are unaware of any other country that has mandated a similar safety standard for treadmills.

### Compliance

Our 2015 national survey showed overall high compliance with the mandatory safety standard for treadmills. Previous surveys showed some non-compliance among budget and high-end treadmills where the warning labels were absent or inadequate.

In September 2016, a supplier voluntarily recalled four brands of treadmills due to incorrect labelling. The supplier rectified the non-compliance by providing the correct warning labels. This is the first treadmill recall since the mandatory safety standard started. The ACCC also recently observed that almost all of the treadmills available for purchase in retail stores appeared to meet the labelling and design requirements of the ASTM or ISO standards.

## 3.3 Consumer warning labels

Since the introduction of the mandatory safety standard for treadmills, we have refined our understanding of what makes a warning effective. In the past five years, we have:

- commissioned an expert report to review available scientific research into warning labels
- commissioned research on consumer comprehension of specific warnings
- reviewed specific warnings.

This work indicates that effective warnings:

- start with an alert word to draw attention and signal the degree of risk
- identify the risk
- specify a positive action to reduce the risk.

The warning specified by the mandatory safety standard for treadmills addresses the above points by:

- 1) starting with the alert word WARNING to draw attention and signal the degree of risk
- 2) identifying the risk of severe friction burns to young children
- 3) specifying a positive action of keeping children away from the machine at all times.

## 4. Adopting international standards

There is no voluntary Australian standard for treadmills but there are two relevant voluntary international standards - neither of these international standards are mandatory:

- *ASTM F2115-12 Standard specification for motorised treadmills*; supplemented and amended by *ASTM F1749-15 Standard specification for fitness equipment and fitness facility safety signage and labels*
- *ISO 20957-1:2013 Stationary training equipment - General safety requirements and test methods*; supplemented and amended by *ISO 20957-6:2005 Stationary training equipment - Treadmills, additional specific safety requirements and test methods*.

The ACCC uses the following criteria when assessing international standards for use in Australia:<sup>6</sup>

- 1) Addressing safety concerns: Is there evidence that the international standard provides an acceptable level of consumer safety?
- 2) Comparable jurisdiction to Australia: Is the international standard published or developed by a legitimate standards body or government agency from an economy or nation with comparable economic and regulatory processes to Australia?
- 3) Applicability to the Australian context: Is the international standard applicable and sufficient in the Australian context?

### 4.1 The ASTM standard

The American Society for Testing and Materials (ASTM) developed and published the ASTM standard. ASTM is a reputable standards development body and the US is a jurisdiction with comparable economic and regulatory processes to Australia.

#### **Safety warnings**

The ASTM standard safety warning is broadly similar to the requirements of the mandatory safety standard, except it does not prescribe specific wording. Instead, it mandates the following minimum information: to keep children away and that serious injury or death is possible if caution is not used.

The ASTM standard sets a smaller minimum font size: the word WARNING must be in upper case letters, not less than 4 mm in height and other words must be in lower case letters, not less than 1.5 mm in height.

However, the ASTM safety warning is inadequate for Australia, as it does not require a specific warning identifying that contact with the moving surface may result in severe friction burns to young children.

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<sup>6</sup> ACCC, International standards for the safety of consumer products - criteria for acceptance, ACCC policy principles, 22 July 2015, [www.productsafety.gov.au/publication/international-standards-for-the-safety-of-consumer-products-criteria-for-acceptance](http://www.productsafety.gov.au/publication/international-standards-for-the-safety-of-consumer-products-criteria-for-acceptance).

## Design requirements

The ASTM standard includes design requirements that address the risk of injury to young children:

- guards to prevent finger entrapment
- emergency shut-off switches
- immobilisation devices to prevent unauthorised use
- testing methods to support conformity assessment.

These parts of the ASTM standard, aimed at reducing the risk of injury to young children, are suitable to be included in a policy option allowing compliance with trusted international standards. However, the ACCC is not aware of any evidence that suggests that mandating the design requirements would reduce the severity or rate of injuries.

**We encourage suppliers to comment on any increased compliance costs if the design requirements from the ASTM standard were included in the mandatory safety standard.**

## 4.2 The ISO standard

The International Organization for Standardization (ISO) published the ISO standard. It was developed from the European EN 957 series of standards published by the European Committee for Standardization (CEN). CEN is a reputable standards development body and Europe is a jurisdiction with comparable economic and regulatory processes to Australia.

### Safety warnings

The ISO standard only requires a statement that instructs the user to read the information supplied by the manufacturer (usually in the form of an owner's manual). The owner's manual must have a statement about the importance of keeping unsupervised children away from the equipment. However, the warning label is not required to use the alert word WARNING, does not require a statement identifying the key risk of friction burns to young children or an action statement to keep children away at all times.

The safety warning requirements in the ISO standard are therefore inadequate for Australia.

### Design requirements

Similar to the ASTM standard, the ISO standard includes design requirements to address the risk of injury to young children:

- methods to prevent access to squeeze and shear points, transmission elements and rotating parts
- emergency shut-off switches
- immobilisation devices to prevent unauthorised use
- testing methods to support conformity assessment.

These parts of the ISO standard aimed at reducing the risk of injury to young children are suitable to be included in a policy option allowing compliance with trusted international standards. However, the ACCC is not aware of any evidence that suggests that mandating the design requirements would reduce the severity or rate of injuries.

**We encourage suppliers to comment on any increased compliance costs if the design requirements from the ISO standard were included in the mandatory safety standard.**

## 5. Detailed description of policy options

### Option 1 - Keep the current mandatory safety standard (status quo)

#### **Description**

Maintaining the status quo would mean no changes to the mandatory safety standard for treadmills. Treadmills would remain subject to the same warning label requirements that currently apply and there would be no design or performance requirements.

Suppliers would continue to supply products with specific warnings for the Australian market.

#### **Benefits**

Consumers would continue to be made aware of the risk of young children coming into contact with the moving conveyor belt of a treadmill.

The penalties associated with breaching the mandatory safety standard would continue to provide an incentive to suppliers to supply treadmills in compliance with the requirements.

There would be no additional compliance and regulatory costs. The cost of continued compliance would remain low, as there would continue to be no design or performance requirements.

#### **Limitations**

Suppliers would continue to have to re-label products designed for other markets since international standards do not have the same warning label requirements as the mandatory safety standard.

Although the rate of injuries appears to have decreased in relation to the number of treadmills in use, some children continue to suffer severe injuries from contact with treadmills, despite the mandated safety warnings.

### Option 2 - Mandate safety design requirements

#### **Description**

This option would amend the mandatory safety standard to incorporate safety design requirements. It would adopt some of the design requirements of the ASTM and ISO standards that address the key risk of friction burn injuries to young children.

The ASTM and ISO standards are the most widely accepted voluntary safety standards for treadmills.

Suppliers would need to become familiar with the terms of the revised mandatory safety standard and ensure products complied.

Suppliers would still need to comply with the warning label requirements of the current mandatory safety standard as the warning labels in the ASTM and ISO standards are insufficient.

A period of transition would be required to allow suppliers to adjust to the updated mandatory safety standard and to sell through existing stock. During this period, suppliers would have the option of complying with the current or the new mandatory safety standard.

## **Benefits**

An updated mandatory safety standard that references safety design requirements from the ASTM and ISO standards may reduce injuries to young children from treadmills.

The penalties associated with breaching the updated mandatory safety standard would continue to apply as an incentive to suppliers to supply compliant treadmills.

Many suppliers are already familiar with the ASTM and ISO standards.

## **Limitations**

To our knowledge, there has been no systematic evaluation of the efficacy of these features in reducing injury. No government has mandated either standard anywhere in the world. Studies such as those of Goltsman, Wong and Jeremijenko cited previously note features in addition to those required in the ASTM and ISO standard that might reduce the incidence or severity of child injury but these are offered as design ideas and have not been evaluated.

The safety devices that the ASTM and ISO standards require may not be enough to prevent child injuries. Almost every treadmill recently surveyed by the ACCC appeared to comply with the labelling and design requirements of the ASTM or ISO standards. Mandating compliance with the design requirements of these standards may therefore have no benefit and may not reduce injuries to children.

Updating the mandatory safety standard to include safety design requirements would impose additional regulatory costs on suppliers, as they would need to ensure their products comply with the new requirements.

## **Option 3 - Revoke the mandatory safety standard**

### **Description**

Most consumer goods in Australia are not regulated by mandatory safety standards. Revoking the mandatory safety standard would mean suppliers would still need to have regard to the consumer protection provisions of the Australian Consumer Law (ACL). The ACL provides consumers with specific protections for consumer transactions called statutory consumer guarantees every time they purchase goods or services. One of those guarantees is that goods will be of acceptable quality, meaning they are safe and fit for purpose.

Consumer protections also exist to safeguard against suppliers engaging in conduct that is likely to be misleading or deceptive. Additionally, there are provisions for injury reporting, recalls and product liability. These provisions give suppliers an incentive to ensure that the goods they supply are safe. The ACCC would still be able to take safety action if needed – for example, through recalls.

### **Benefits**

There would be no direct compliance costs for industry under this option. Any international trade restrictions resulting from the current mandatory safety standard would be removed, making it easier for businesses to import products to Australia. This may result in lower prices and a wider range of products becoming available to Australian consumers.

Governments would no longer incur costs associated with maintaining the mandatory safety standard for treadmills.

## Limitations

Without the mandatory safety standard, consumers may not become aware of the risks of young children contacting the moving conveyor belt of a treadmill. This may lead to an increase in friction burn injuries to young children. It could also reduce consumer and retailer confidence in treadmills and in the safety of these products.

## 6. Preliminary position

The ACCC is currently of the view that keeping the current mandatory safety standard (Option 1) provides the greatest net benefit for consumers, suppliers and government. Stakeholder submissions to this consultation will help us test this position.

The Office of Best Practice Regulation (OBPR) has advised that a Regulatory Impact Statement (RIS) is not required, as we currently do not propose to change the mandatory safety standard.

## 7. Consultation questions

Please consider the following questions when making a submission:

1. Do you agree with the ACCC's preliminary position to keep the current mandatory safety standard?
2. Do you believe or have any evidence to show that adding select design requirements of the ASTM or ISO standards to the mandatory safety standard would reduce the severity or rate of injuries to young children?
3. How much would compliance costs increase if select design requirements of the ASTM or ISO standards were included in the mandatory safety standard?
4. Do the treadmills currently supplied in Australia already comply with the ASTM or ISO standards?
5. Are there other safety devices that can prevent child injuries that the ACCC should consider including in the mandatory safety standard?
6. What is your preferred option, and why?
7. Are there any other policy options that the ACCC should consider to reduce the severity or rate of injuries to young children?
8. Do you have any other comments?

## 8. Have your say

The ACCC invites stakeholders and interested parties to comment on these policy options.

Consultation is open from **7 December 2016 to 24 February 2017**.

The ACCC prefers submissions via the ACCC consultation hub at [consultation.accc.gov.au](http://consultation.accc.gov.au).

The ACCC will alert stakeholders and interested parties to the consultation through the Product Safety Australia website [www.productsafety.gov.au](http://www.productsafety.gov.au) and [www.business.gov.au](http://www.business.gov.au).

Alternatively, email submissions to [productsafety.regulation@acc.gov.au](mailto:productsafety.regulation@acc.gov.au) or via post:

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

Submissions will be published on the ACCC website at the end of the consultation period.

Please note any information that you believe to be of a confidential nature should be clearly marked or identified as confidential. The ACCC will not disclose the confidential information to third parties, other than advisors or consultants engaged directly by the ACCC, without first providing you with notice of its intention to do so, such as where it is compelled to do so by law.

## Glossary

Term	Definition
ASTM standard	ASTM F2115-12: Standard specification for motorized treadmills ASTM F1749-15: Standard specification for fitness equipment and fitness facility safety signage and labels
ISO standard	ISO 20957-1:2013 Stationary training equipment- General safety requirements and test methods ISO 20957-6:2005 Stationary training equipment- Treadmills, additional specific safety requirements and test methods
Mandatory safety standard	The Australian mandatory safety standard for treadmills <a href="#">Trade Practices (Consumer Product Safety Standard) (Treadmills) Regulations 2009</a>
Treadmill	A treadmill is an exercise device that consists of an endless conveyor belt that is either rotated manually or by a motor and on which a person can walk or jog in one place