

George Sushinsky, Chairman, ASTM Sub Committee F08.63 on Playground Surfacing  
Harvey C Voris, Chairman, ASTM Committee F08  
(cc: Leonard Morrissey, Director, TCO Division, ASTM International)  
c/o ASTM International  
100 Barr Harbor Drive  
PO Box C700  
CONSHOHOCKEN, PA 19428  
United States of America

16 Feb 2015 – by email

Dear Mr Sushinsky and Mr Voris

### **ASTM proposal to reduce the HIC threshold for playground surfacing**

This letter asks you to put on hold the publication of this standard, pending a wider review. It follows our December 2014 letter. We understand that your committees have approved publication, but that this decision has been appealed to ASTM's Committee on Standards for consideration on 4 March 2015, giving a window of opportunity. While we understand that this Committee normally only examines procedural questions and not substantive issues, we also gather that, as chairmen of the relevant committees, you have the power to delay publication.

As you know, our view is that this is a complex topic, which demands proper consideration of evidence and arguments from a variety of perspectives and disciplines. Any decision by ASTM to reduce the Head Injury Criterion (HIC) threshold for playground surfacing would have major implications for playground providers and manufacturers not just in the USA but around the world. Hence we think it should not be taken before a broad, transparent review is carried out, involving a wide range of stakeholders.

Concern about ASTM's current position is growing. Since writing our original letter, we have been in touch with members of your committees who share some of our concerns, and who agree with us that a more in-depth review of the topic is needed. We are also aware of wider concern beyond your committees, in the USA and beyond. Indeed as you may know our earlier letter has been endorsed by BSI, your sister organisation here in the UK. This makes us more certain of the need for a pause in the ASTM process, and a wider review.

It goes without saying that every life-changing injury or fatality is a tragedy. Moreover, concern appears to be growing about traumatic brain injury and its consequences, which can be severe or fatal. However, statistics on accidents suggest that playgrounds are comparatively safe places for children, and that traumatic head injuries from playground falls are comparatively rare events.

Accident figures from CDC suggest that in the decade 1990-2000, there was on average a single child fatality each year as a result of falls in American public playgrounds. By contrast, almost 1100 child vehicle passengers under 15 died in a single year, and almost 300 child pedestrians (US Dept of Transportation figures for 2012). Looking at recreational contexts, around 700 children under 14 drown each year (CDC). And there are on average 12 fatalities per year amongst high school and college American football players (Am J Sports Medicine).

Studies also show that playground accidents rarely result in permanent brain injury. A [2004 World Health Organisation review](#) [pdf link] quotes two relevant studies: one states that 1.7% of school playground equipment-related injuries were concussions, and another suggests that fewer than 1% of injuries in US daycare centres were concussions from playground falls. Moreover, concussions do not always have long-term health consequences.

These figures raise serious questions about whether, given the overall goal of tackling child injuries, scarce taxpayer dollars are best spent on resurfacing playgrounds. There are many causes of child accidents and injury, and many possible responses to them. Policies that drive up spending in one area will leave less funding for others. Ignoring this reality – difficult though it may be – is not a sound basis for making decisions or setting priorities.

We accept that there is evidence from biomechanical and laboratory studies that, in the event of a direct head impact on a surface, a lower HIC value makes a traumatic brain injury less likely. But there are many other issues and questions that need to be addressed before a reduction in HIC threshold can be properly justified. Here are some:

- The evidence base supporting a reduction is weak in clinical terms. (We have found no evidence based on real-world intervention studies or randomised controlled trials, the most robust study types used to support many public health and clinical measures.)
- A HIC reduction may make other types of injury such as long bone fractures more likely in the event of a fall. (Australian sports safety academic Prof David Eager has [argued](#) that some forms of surfacing have had this effect.)
- Children may take more risks in playgrounds when they are playing above surfaces with greater absorbency, increasing the chance of them falling off - and similarly, some adults may be more likely to allow their children to take more risks in these situations. (A [peer-reviewed study](#) suggests that children in real-life situations do take more risks when they wear safety measures such as head gear.)
- How much would the reduced HIC threshold cost to implement, and how cost-effective is it in reducing child deaths and serious injuries compared to other safety measures? (A [peer-reviewed paper](#) by Prof David Ball, an adviser to the Play Safety Forum, raises questions about the cost-effectiveness of playground surfacing.)
- Instead of spending public funds on upgrading surfacing in existing playgrounds, would investing in more new playgrounds be a better accident prevention measure, because children would have less far to travel and hence be less likely to be killed or injured on the roads? (Peer-reviewed studies in [Germany](#) and the [USA](#) support this line of argument.)
- What are the practicalities involved in retesting playground surfacing – in the factory and in the field?

We are not expecting ASTM or your committees to have all the answers to questions like these. But we do ask you to recognise their importance and relevance, and hence the need for a wider review.

Moreover, in calling for such a review, we are not questioning the technical expertise of your committees. Neither do we doubt that you and your colleagues share our goal of giving children exciting, engaging play experiences while protecting them from unacceptable risk. The truth is that behind this goal lies a complex and difficult balancing act. Only a wide-ranging, transparent review will ensure that we get this balance right for children and families in America and beyond.

We are copying this letter to a number of people with an interest in the topic, and also publishing it online, in order to open up the debate.

We look forward to hearing from you,

Yours sincerely

Robin Sutcliffe  
UK Play Safety Forum Chairman

Tim Gill, adviser to Play Safety Forum