

A photograph of two soccer players in action on a grass field at dusk. The player on the left is wearing a red and black striped jersey with 'PATRICK' and 'Riko-Printers' visible. The player on the right is wearing a blue jersey. A soccer ball is in the air above them. The background shows a line of trees under a dark sky. The text 'Headmatters' is overlaid in large white letters, and 'Advice on preventing sports-related brain injuries' is overlaid in smaller white letters below it. There are also some diagonal grey bars at the bottom of the page.

Headmatters

Advice on preventing
sports-related brain injuries



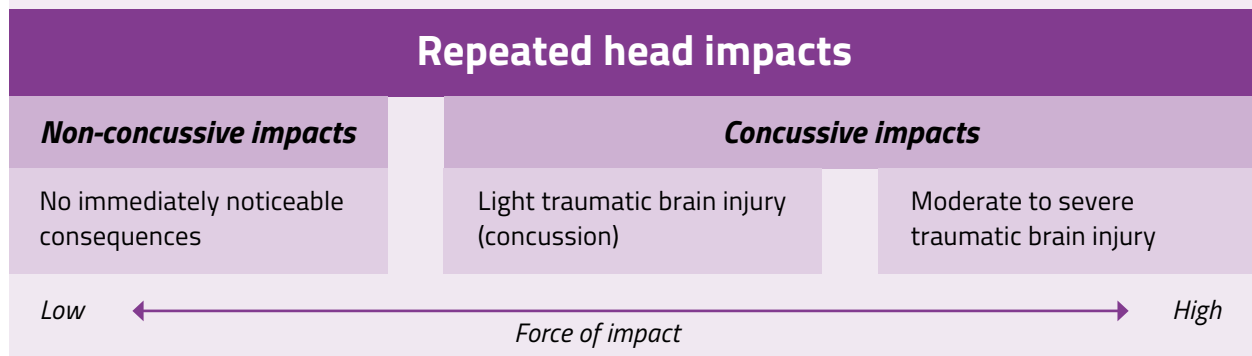
Summary

// Many people enjoy playing sports, which has important physical and mental health benefits. However, there are also risks involved, such as the risk of injury. Research conducted by the Health Council of the Netherlands has shown that there is an elevated risk of chronic brain injury when a sportsman repeatedly receives a blow or bump to the head, with or without concussion symptoms. As the brains of children and young people are not yet fully developed, it stands to reason that the risk for them is particularly high. For this reason, the Netherlands Sports Council advises taking measures to protect people who play sports (particularly young people), thereby making it even healthier to play sports.

Request for advice by the Ministry of Health, Welfare and Sport

With this advice, the Netherlands Sports Council meets the request by the Ministry of Health, Welfare and Sport to devise perspectives for action for government bodies, sports organisations and people who play sports to help them prevent sports-related brain injury and its consequences. To arrive at this advice, the Netherlands Sports Council investigated the protocols of sports and care providers for prevention, diagnosis and treatment of sports-related repeated head impacts and traumatic brain injury.

Repeated head impacts are defined as multiple head impacts with no immediately noticeable consequences, possibly in combination with traumatic brain injury. Traumatic brain injury, on the other hand, is characterised by immediate consequences, such as loss of consciousness, a headache or memory loss.



In its advice, the Netherlands Sports Council covers 10 different sports.

Sports whereby head impacts are a goal	Sports whereby head impacts are a component	Sports with an elevated risk of brain injury after a fall
<ul style="list-style-type: none"> ▪ Kickboxing/Muay Thai/MMA ▪ Boxing ▪ Taekwondo 	<ul style="list-style-type: none"> ▪ Rugby ▪ Field football 	<ul style="list-style-type: none"> ▪ Field hockey ▪ Equestrian sport ▪ Cycling ▪ Skiing/snowboarding ▪ Speedskating/in-line skating

The state of science

Before the Netherlands Sports Council issued its advice, the Health Council studied the scientific literature on the long-term consequences of repeated head impacts in football, martial arts and rugby.¹ The Health Council concluded that repeated head impacts increase the risk of chronic brain injury, particularly dementia. The Health Council's conclusion relied on the literature available, which is based mainly on research conducted among male professional athletes. Consequently, the Health Council has called for attention to be paid to groups for which fewer or no data are available, including women, children and the disabled. The scientific literature describes various measures that can be taken to lower both the frequency and intensity of head impacts. However, little is known about the long-term effects of these measures.

Social context of sports-related risks

For many children and adults, playing sports is one of the few activities that allows them to consciously seek out and explore boundaries and risks within the relevant rules. The Netherlands Sports Council believes this aspect of playing sports is important. At the same time, the Council acknowledges an increasing tendency in society to eliminate risk, due to increased risk awareness among other things. This has created an area of tension: a risk that is acceptable to one person may not be acceptable to another. When it comes to protecting public health, additional attention is needed for the position of children. Under the Children's Rights Convention, the government has an obligation to use best endeavours in this regard towards children and young people up to the age of 18.

Current sports practice

Focus is on traumatic brain injury

There are significant differences between sports associations in terms of their approach to the risks of repeated head impacts and traumatic brain injury. Their focus is mainly on prevention and diagnosis of one-off traumatic brain injury. Sports associations are less conscious of the risks of repeated non-concussive head impacts, whether accompanied by one-off or repeated traumatic brain injury or not. The Netherlands Sports Council has little information about specific adaptations for women and the disabled, but there are several protective measures in place for children, depending on their age. These include the use of lighter balls, adapted rules and protective headgear (the latter of which can be mandatory). However, the level of implementation varies per sport.

Talented and sub-elite athletes are most at risk

Because of their intensity of practice, the risks of repeated head impacts are greater in commercial elite sports than in recreational competitive sports. In elite sports, there is growing attention for protocol-based diagnosis, guidelines for recovery and return to play following traumatic brain injury. However, budgetary restrictions have created significant differences in terms of medical supervision – both between and within the various sports. Even in elite sports, very little attention is paid to the risks of repeated head impacts. The Netherlands Sports Council observes that talented and sub-elite athletes appear to be running relatively high risks. This is due to the intensity of their practice, their drive to perform and – in quite a few cases – the lack of medical supervision. At the same time, young talented athletes are particularly at risk because their brains are not yet fully developed.

¹ <https://www.healthcouncil.nl/documents/advisory-reports/2025/06/05/contact-sports-and-long-term-brain-disease>

Significant differences between recreational competitive sports in terms of attention to prevention and diagnosis

There are significant differences between recreational competitive sports as regards the introduction of protective measures. The Netherlands Sports Council finds that people who play sports often depend on the personal awareness and knowledge of trainers, referees, medical attendants or spectators. Further education and training on the risks of brain injury are the exception rather than the rule.

- The sports associations for martial arts and rugby, where the risks are greater, pay more attention to information provision, implementation and compliance with preventive measures than other sports associations.
- As for football, associations in various other countries have taken measures to discourage or even ban heading for children and young people. The Dutch football association has taken no such measures. Another question is whether the available knowledge on the risks of heading and traumatic brain injury are passed on effectively to trainers and other attendants.
- Wearing a helmet during training and competition for sports like cycling, skating or equestrian sport is increasingly compulsory and commonplace. Although people who participate in these sports on a recreational level are advised to wear a helmet, this is usually not supervised.

In some sports, conditions imposed by insurers and independent certification bodies for sports providers have led to the introduction and enforcement of preventive measures like wearing a helmet.

No knowledge chain for research into repeated head impacts

There are still many gaps in the knowledge on prevention, recognition, diagnoses and treatment of repeated head impacts and traumatic brain injury. Sports associations have expressed a desire for greater insight to take targeted measures. Yet, there is no centre of expertise to supervise structural data collection and registration. This means that brain injury expertise cannot be combined. On top of that, there is no management or coordination in terms of research and the application of new and existing knowledge.

No coordination between sports and care providers on unequivocal guidelines for recovery from brain injury

Some sports offer adequate medical supervision for elite athletes. This makes it possible to offer customised programmes for recovery and return to play after injury. For people who play sports recreationally (and their parents and trainers), it is unclear when they can return to sports and compete again after a head injury. This decision is mainly left to general practitioners. However, there are no unequivocal guidelines for sports and care providers. Countries like Canada and Scotland have plenty of experience with similar guidelines. Yet, even in those countries, no attention is paid to recognising and treating repeated traumatic brain injury (whether accompanied by non-concussive head impacts or not).

Advice

The Netherlands Sports Council advises taking measures to protect people who play sports against the risks of repeated head impacts, including traumatic brain injury. It is important that all parties communicate the same, consistent message. People who play sports must be given unequivocal guidance to prevent, recognise and recover from brain injury. Improvements are also needed in the area where sports and care provision overlap. The Netherlands Sports Council observes that the roles and responsibilities of the various parties about sports-related brain injury are currently unclear.

To achieve this, the Netherlands Sports Council has prepared three recommendations, which are elaborated in the report into specific perspectives for action for the parties involved at the micro, meso and macro levels.



1. Reduce the risk of repeated head impacts and traumatic brain injury

A. Make plans that are specific to each sport

Reducing sports-related repeated head impacts and traumatic brain injury requires a shared effort by the entire sports chain, from people who play sports to sports associations. The specific measures taken for each sport may vary, from changes to the rules to further education and training for trainers. As the government has an additional duty of care towards children and young people, the Netherlands Sports Council advises the Minister for Youth, Prevention and Sport to take responsibility and not leave the issue of protection for sports providers to solve on their own.

B. Take age-related measures to prevent repeated head impacts for children and young people in martial arts, football and rugby

The Netherlands Sports Council advises taking additional measures for children and young people who practice martial arts, rugby and football. This advice is based on a consideration of three perspectives:

- Medical: the growing body of knowledge on the risks of repeated head impacts and the development of the brains of young adults provides a convincing argument that head impacts for all young people under the age of 20 who play sports should be banned.
- Legal: the government has an obligation to use best endeavours to protect the health of children and young people up to the age of 18. Children from the age of 12 have the right to have a say about issues that involve them, including medical issues.
- Organisation of sports: the way various sports are organised also plays a role. As an example, some have age categories for competitions, use specific rules for specific age groups or offer dedicated training to talented athletes. Common age limits in this regard are 12 and 18.

While acknowledging that each age limit can be substantiated in several ways and is therefore open to argument, the Netherlands Sports Council advises the following about martial arts, football and rugby:

	Sports whereby head impacts are a goal (martial arts)	Sports whereby head impacts are a component (football, rugby)
Under 12	Ban on repeated blows and bumps to the head	Ban on repeated bumps to the head (headers, tackles)
12-18	Strong discouragement of repeated blows and bumps to the head	Strong discouragement of repeated bumps to the head (headers, tackles)
18 and over	Reduction of repeated blows and bumps to the head	Reduction of repeated bumps to the head (headers, tackles)

The Netherlands Sports Council advises giving sports associations the time and opportunity to work out their own measures for young people aged 12 and over who play sports, following the guidance in the table above. In this context, sports associations and organisations may well adopt higher age limits and/or stricter rules if they deem this necessary. Clear communication to all parties involved on the introduction of measures is key.

C. Give adults who practice martial arts, football and rugby recreationally the opportunity to opt out

In formal competition and elite sports, the international rules are guiding. Recreational sports (and recreational competitions) leave more room for adaptation of the rules. The Netherlands Sports Council advises encouraging adults who play sports to make agreements among themselves on reducing or avoiding head impacts – in other words, to opt out.

D. Make wearing a helmet compulsory in equestrian sport, cycling, skiing and snowboarding, ice skating and in-line skating

For sports whereby falls or bumps to the head can lead to head or brain injury, it is relatively easy to introduce the wearing of helmets as a precautionary measure, alongside information provision and education. Various sports have already taken measures to this effect. The Netherlands Sports Council advises making the wearing of helmets compulsory in organised events and to encourage the wearing of helmets during unorganised practice.



2. Promote the development of further knowledge and adjust measures where necessary

When it comes to people other than male professional athletes, there are still various gaps in the knowledge on the risks of repeated head impacts for chronic brain injury. There is also a lack of data on the frequency, impact and circumstances of repeated head impacts and traumatic brain injury. New research insights are essential for any adjustments to measures that need to be made. The Netherlands Sports Council advises providing a boost to the dynamic process of data collection, knowledge development, adjustment of measures and implementation in the following ways:

A. Appoint a centre of expertise to coordinate knowledge development and implementation

VeiligheidNL (the Dutch knowledge centre for injury prevention) could play this role, in cooperation with parties like university hospitals, the Netherlands Institute for Sports Medicine (Sportgeneeskunde Nederland), umbrella organisations of sports and care providers, and sports associations.

B. Encourage registration of sports-related brain injury and support research into innovations

Technological developments and practical, accessible measures require coordination in terms of organisation and funding.



3. Improve the coordination between sports and care providers

Sports providers are increasingly attentive to the prevention, diagnosis and treatment of one-off traumatic brain injury. Dutch sports and care providers can look to the example of other countries to draw up a harmonised step-by-step plan.

A. Standardise brain injury protocols for sports and care providers

Sports and care providers lack unequivocal guidelines for recovery and return from brain injury. They can agree these among themselves, taking their cue from the example set by countries like Canada and Scotland.

B. Pay additional attention to the medical supervision of talented and elite athletes

The Netherlands Sports Council calls on sports providers to be aware of the pressure on young people who play sports to perform. The Netherlands Sports Council advises sports associations and the Netherlands Institute for Sports Medicine to coordinate and set criteria for the expert medical supervision of talented and elite athletes. It also advises appointing an independent medical body to oversee this medical supervision.

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Sport Council

The Netherlands Sports Council (NLsportraad) is an independent advisory body and advises the Dutch government and parliament on sport and physical-activity policy and associated social issues. The Council does this in response to requests from the government or parliament or on its own initiative.

The Netherlands Sports Council sets people and policy in motion.

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