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THE FUTURE OF ELITE ATHLETE CLASSIFICATION



SPORT NEW ZEALAND IHI AOTEAROA

Te Kāwanatanga o Aotearoa New Zealand Government



New technologies and shifting value systems are transforming competition in elite sport, including challenging the sacrosanct principle that athletes compete on a level playing field. Central to elite sport, this principle has been fiercely protected, notably against the threat of performance enhancing drugs, and more recently the categorisation of intersex athletes.

While the fight against doping continues, governing bodies of sport are now also exploring different options for gender categories, sparking a public debate about human rights, fairness and privacy.

Adding to this complexity, athletes can now turn to technological means such as gene editing and cyborg technologies to amplify their athleticism, and events are emerging that are interested in maximising human endeavour, whether artificially enhanced or not. The <u>Enhanced Games</u> where drug taking is encouraged is currently the most prominent of these.

Why we as a sector must act

- These developments represent a fundamental challenge for the integrity of elite sport and its regulation which, until now, has focused primarily on performance enhancement.
- Given these dynamics, the future of elite athlete classification is uncertain. Will the broad status quo prevail, or will new classifications emerge? Will detection of performance enhancement become so difficult that public confidence in fair competition declines, or the principle of a level playing field is dropped? Will this and public interest in performance enhanced athletes lead to natural ability athletes becoming obsolete? Or will the use of performance enhancement lead to a fracturing of elite global competition?

Building our understanding

Through stories (scenarios) of possible futures for elite athlete classification, we can build understanding and explore actions that National Sport Organisations (NSOs) and governing bodies for sport might usefully consider. This report considers four such stories:

- The level playing field for natural athletes is maintained.
- Competition is divided into four categories: Open and female with natural abilities, drug enhanced, and technologically enhanced.
- Natural ability athletes become obsolete.
- Performance enhancements are politicised and corrupted leading to a fracturing of global elite competition.

Background

Categorisation of intersex athletes and performance enhancement through doping are currently unsolved issues for elite sport as it seeks to ensure a level playing field for all athletes.

Categorisation of intersex athletes

Up until the 1990s, intersex athletes were often subjected to invasive testing and discriminatory practices, with their eligibility based on rigid binary notions of sex. As awareness of intersex variations and their complex biological, social and ethical dimensions has grown, governing bodies for sport have adapted their policies. This has seen a shift towards a more nuanced and rights-based approach, including recognising the spectrum of biological sex and gender identities.

However, striking the appropriate balance between two underpinning principles of sport – fair competition and accessibility – remains. This is illustrated by the case of South African runner Caster Semenya. Semenya gained international attention when her win in the women's 800 metres at the 2009 Berlin World Championships sparked controversy over her eligibility due to her naturally high levels of testosterone.

Following this, World Athletics introduced hyperandrogenism regulations in 2011 to limit the testosterone levels of female athletes in certain events. However, in 2015 the Court of Arbitration for Sport (CAS) suspended the regulation, stating that the associated discrimination was unjustified. In 2018 World Athletics introduced new regulations regarding testosterone levels in female athletes with differences of sex development (DSD). This policy required athletes with certain DSD conditions to lower their testosterone levels below a specified threshold to compete in certain women's events.

The CAS ruled in favour of the regulations in 2019, following an unsuccessful challenge from Semenya, allowing them to be implemented, and preventing her from competing at the 2021 Olympics.

In 2022, <u>British Triathlon</u> announced a change of categories for athletes, with a 'female' category for those who are born female, and 'open' category for men and transgender and nonbinary individuals who were born male. This was based on the idea that a person born male will have a physiological advantage over a person born female.

While Triathlon and Athletics have taken steps that may encourage other sports to shift their approaches; and noting there will be much to learn from Golf's handicap system and classifications within Paralympics; exploring options for categorisation remains a difficult and sensitive issue.



Performance enhancement through doping

Athletes exploiting performance-enhancing drugs to give them an advantage is an ongoing controversy, with gene doping potentially adding to the issue.

Anti-doping gained traction in the late 1990s with the establishment of the World Anti-Doping Agency (WADA) and the formation of national anti-doping agencies. WADA derives its legitimacy and authority from the International Convention Against Doping in Sport, ratified by almost 200 nations. Historically, the three major justifications it uses for banning substances have been performance enhancement, the protection of athletes and their health, and securing fair competition by levelling the playing field. These justifications are underpinned by public interest in naturalness, fairness, health, and the spirit of sport.

WADA has invested NZ\$135 million in developing more advanced drug-testing capabilities since 2001, and NZ\$5.8 million on <u>doping prevention research</u> since 2005. However, despite advances in detection methods, including biological passports, longitudinal testing, and preserving samples for up to 10 years, challenges persist with emerging substances and doping techniques, notably 'gene doping' – gene editing to modify DNA in existing genes.



Gene doping was banned by WADA in 2003 but is hard to detect and WADA has no effective means of enforcing its ban. The potential application of gene doping is now a real threat to the integrity of sport. Indeed, technology is now being developed that will enable the genetic traits of athletes to be manipulated, chosen and designed through selective geneediting technologies such as <u>CRISPR</u> and <u>TALEN</u> to amplify athleticism and gain an unprecedented advantage.



Furthermore, the use of technology for sport enhancement purposes could extend to the realm of cyborg technology, which can be attached to or implanted in the human body. Cyborg technology is already widely used in healthcare for patients. Examples include pacemakers and thoughtcontrolled wheelchairs or wearables for people who have had a stroke.

One means of addressing the issue of performance enhanced athletes is to allow it. This is the approach taken by the Enhanced Games. Backed by venture capitalists including Peter Thiel, the Enhanced Games claims it is pushing back "against the anti-science dogma purported by the incumbent sporting leagues" after "years of oppression". It claims drug use in sport should be called a "demonstration of science" instead of "cheating".

While anti-doping agencies including <u>Drug Free Sport NZ</u> are vehemently opposed to such events, the idea of a drug-friendly sporting competition appears to be gaining traction. Organisers of the Enhanced Games claim hundreds of athletes have been drawn to the base salary and historically high prize money.

Given humanity now possesses the capacity and technology to pursue human enhancement, anti-doping agencies will be required to regulate not only performance enhancement, but also human enhancement. Maintaining a level playing field will be challenging, and the future of elite athlete classification will be increasingly uncertain.

Plausible futures for elite athlete classification

Scenarios are plausible versions of the future that inspire creativity and non-traditional thinking. They are stories that help us consider different possibilities we should prepare for and envision a different path forward. They are constructed by exploring how drivers of change may cause the future to evolve in different ways.

The following seven drivers of change will impact the future of elite athlete classification and have been used to craft the scenarios:

- Development of gene editing technology
- Development of cyborg technology
- Politicisation of sport
- Public support for new athlete categories in sport
- Ban on the use of technology or drugs in sport
- Development of gene doping detection
- Market for elite sport
- Public acceptance of performance-enhanced athletes

The degree to which a driver will impact elite athlete classification varies between scenarios and will be identified as either minimum, modest, large, or maximum. For example, societies response to a driver may be influenced by a desire to retain elite sport more or less as it is, or conversely, a drive toward new forms and meaning of sporting expression and performance.

It should be noted these scenarios will likely not happen exactly as described. Rather, they provide an opportunity to explore a plausible future that could be encountered. The aim is to use them as prompts to highlight what may need to be considered over the coming period.



Maintenance of level playing field

2025 - 2035

A natural elite sport landscape continues to thrive due to the strict measures of the governing bodies of sport, the rapid advancement of gene-doping detection technologies, and enhanced development opportunities for athletes. The sense of individual and national pride and inspiration that comes from achieving success through hard work and dedication becomes ever more meaningful in the world of sport.

Drivers

Public acceptance of performance-enhanced athletes Market for elite sport Development of gene doping detection Ban on the use of technology or drugs in sport Public support for new athlete categories in sport Politicisation of sport Development of cyborg technology Development of gene editing technology



A growing elite sports market leads to increased competition, heightened prize money, commercial endorsement and government support, and greater athlete prestige. The intensified competition and the potential financial rewards associated with victory create strong incentives for athletes to explore any means to gain an unfair advantage over competitors. This is despite health authorities and the increasingly powerful athlete representative bodies promoting the enhancement and the US introducing extra-jurisdiction criminal liability.

Furthermore, as the field of gene editing and cyborg technologies undergoes continuous evolution and innovation, athletes face new frontiers of possibility, adding another layer of complexity to the quest for athletic excellence. Gene editing has become elite athletes' most popular form of performance enhancement.

In response, international sports authorities take the proactive approach of requiring elite athletes to submit copies of their full genetic code before gene modification becomes accessible to athletes and gene doping detection technologies become sufficiently advanced. While this generates privacy concerns, it sufficiently deters gene doping before advances in gene doping detection technologies. Moreover, a harsher zero-tolerance policy is adopted, with lifetime bans imposed on athletes found guilty of using any performance-enhancing technologies or drugs.

Detection technologies are accelerated through improved collaboration between sports science, medicine, and other disciplines, such as biology and engineering.

While deterrence is the main tactic employed, governing bodies also increase their emphasis on educational and developmental opportunities for athletes, such as using sport as a vehicle for personal growth, leadership, and community engagement.

This is complemented by the powerful athlete representative bodies encouraging athletes to use their digital platforms to promote fairness, sustainability, and well-being, and to pressure sporting regulators to address unfairness.

These efforts combined with more stringent measures create an environment where athletes can compete on a level playing field and with confidence that their competitors are not using artificial means to gain an unfair advantage. The sense of competition and genuine achievement remains strong as athletes strive to perform better based on their natural abilities. Public confidence in fair competition is retained, and governments continue to invest in the national identity and inspiration elite achievement delivers.

- **2025** Increased player power, and improvements in the fan experience leads to heightened competition prize money.
- **2026** Gene editing makes significant advancements, opening new possibilities in the realm of sportsperformance enhancement.
- **2027** Powerful athlete bodies reject calls for athletes to submit copies of their full genetic code on privacy grounds.
- **2028** A "do no harm" ethical foundation of medicine is strengthened.
- **2029** Gene enhanced performances influence a shift in position from athlete bodies who now support athletes being required to submit copies of their full genetic code before entering competitions, and immediate disqualified and sanctioning of athletes found to be gene doping.
- **2030** There is a strengthened investment and commitment to international sports regulation through WADA, CAS, and international treaty enforcement.
- **2031** An effective gene doping detection method is developed to keep up with the advancing gene editing technology.
- **2033** A zero-tolerance policy is implemented, with lifetime bans imposed on athletes found guilty of using any performance-enhancing technologies or drugs, including gene doping and cyborg technologies.
- **2035** With stringent measures against doping and performance-enhancing technologies in place, a cleaner, more honest form of sporting competition is maintained.

Critical questions

- What are the consequences of using performanceenhancing technologies regarding personal ethics and public perception?
- How can athletes keep their genetic data private and secure?
- What role can sport and parents play to ensure children are not exposed to harmful performance-enhancing technologies?
- How can sport and the wider community ensure athletes are not pressured into using performance-enhancing technologies?
- What are the societal implications of a sports landscape that values natural ability over artificial enhancements?
- Do we understand and want to protect the spirit of sport?
- Are we protecting or harming elite sport by seeking to maintain the status quo?
- Is the societal cost of developing and enforcing regulations justifiable?
- How do we rebalance the power and money between the IOC and some federations and athletes?

How might NSOs and governing bodies of sport respond?

- Adopting a systemic perspective recognising complex interactions between athletes, parents, coaches, and the broader sporting environment.
- Ensure effective partnerships between governing bodies and community organisations to promote collaboration and engagement with athletes and their families as innovations emerge.
- Reflect on the intent of "spirit of sport" and where required bring it into line with changing social attitudes and values (recognising the status of Olympic amateurism during the 20th century as an example of its evolving meaning).
- Having a stronger voice on international federations.
- Keeping pace with changing societal values and attitudes.

Level playing field expanded

2025 - 2040

New laws are introduced to make sport more inclusive, fair, and equitable and to respond to rapid technological change. This includes the creation of categories for transgender and intersex, genetically modified, and technologically enhanced athletes. With the right laws and regulations in place, a new classification system in sport opens opportunities for a wide range of athletes from different genders, backgrounds, and capabilities, gaining an improved balance between accessibility and a level playing field for all athletes.

Drivers

Public acceptance of performance-enhanced athletes Market for elite sport Development of gene doping detection Ban on the use of technology or drugs in sport

Public support for new athlete categories in sport

Politicisation of sport

Development of cyborg technology

Development of gene editing technology

In the fast techno-evolving world, gene editing and cyborg technologies are constantly developing and becoming increasingly accessible and affordable to the public. The landscape of sport is evolving to include a wider range of activities that challenge conventional norms and introduce new skills and concepts.

To keep up with the impacts on society resulting from technological development and ensure that all athletes compete on a level playing field, governing bodies of sport events allow the use of such technologies rather than banning them.

Different classification categories of genetically and technologically enhanced athletes are created based on the degree of gene manipulation or technological enhancement. This adds to the open and female classification for natural athletes, that became the norm in the late-2020s to address transgender and intersex issues. The initial uptake across the globe is variable, with smaller regions struggling to attract sufficient athletes across the increased categories, disrupting traditional pathways to international elite events.

Technology driven classifications are also driven, in part, by the politicisation of sport, where showcasing cuttingedge technologies becomes a means of asserting national superiority and political influence.



This has resulted in educational institutions developing specialised programmes in sport technology, biomechanics, and bioengineering, preparing students for careers in the sport industry.

The slow growth of the elite sport market, with no new world records being set, also plays a crucial role in accelerating the use of advanced technologies in sport. This is because the sluggish market growth provides a significant economic incentive to push the boundaries of human performance through technological methods to gain more attention. In parallel, the sport landscape is evolving as a growing segment of the population seeks alternatives to traditional sports. These people are interested in sport that challenges conventional norms and introduces new skills and concepts.

As a result, technologically enhanced sport super-athletes capture their attention, leading to a surge in viewership and sponsorship as fans are drawn to the spectacle and excitement of these new competitions.

While there is a certain level of concern from some who view such sport as unethical, most of the public accepts them as a legitimate form of competition with the new classification put in place. The chances of any athlete having an unfair advantage over others are significantly reduced, and athletes of all backgrounds have an environment in which they have the same opportunity to succeed in their respective categories.

- **2025** The market for elite sport experiences slow due to multiple factors, such as the limited supply of talented elite athletes and the rise of alternative online activities, such as esports and online gaming.
- **2026** The Olympic eSports Series Games in Bangkok follows on from the modest introduction of the Enhanced Games to compete alongside traditional sport events. Both raise awareness and interest in alternatives to traditional sport.
- **2027** The Enhanced Games attracts its first current elite athlete, adding to the public's curiosity.
- **2028** The Olympic Games in Los Angeles features the first-ever "Tech Olympics," which includes various sports showcasing the latest technological advancements in sports equipment and training methods. This event helps raise awareness of technology's potential to enhance sports performance and engagement.
- **2029** Non-binary gender classifications are normalised, and the ethical foundation of medicine is revisited, enabling the practice of non-therapeutic interventions.
- **2030** Gene-editing and cyborg technologies start to proliferate across society, ushering in a new era of human enhancement. The Enhanced Games and its competing event providers include categories for athletes benefitting from these enhancements.
- 2034 A global standard for the use of gene editing and cyborg technologies is developed. This includes a framework for the ethical use of such technologies and a universal set of regulations for all countries. Additionally, there is a system where genetic and technological enhancement is medically supervised to ensure the safety and health of athletes employing such technologies.
- **2036** Several of the most notable sport governing bodies approve the participation of enhanced athletes in sporting events on the condition that they compete in their own categories.
- **2038** A sufficient method to detect gene editing is developed. Thus, genetically enhanced athletes cannot cheat and compete in the "natural ability" categories of open and female.
- **2040** The public generally accepts the introduction of enhanced athletes in sport, given that laws, regulations, a new classification system, and gene doping detection measures are put in place to protect the rights of all athletes.

Critical questions

- How will integrating gene editing and cyborg technologies impact the definition of "natural abilities" in sport?
- What are the potential long-term health implications of using advanced technologies to enhance athletic performance?
- How can regulators ensure fair and transparent treatment in a new classification system, especially regarding gene manipulation and technological enhancement?
- What measures are in place to ensure the safety and wellbeing of young athletes who may be exposed to or influenced by the use of advanced technologies in sport?
- How can sport organisations support young people in making informed decisions about the ethical and practical implications of participating in sport that allow gene editing and technological enhancement?
- How can sport organisations and the wider community work together to ensure that using advanced technologies in sport does not compromise the values of inclusivity, fairness, and ethical competition?
- How can a wider societal dialogue be stimulated to promote awareness and understanding of the potential impacts of gene editing and technological enhancement on the future of sport?
- Are attitudes on permitting performance-enhancing drugs and human-enhancing technologies in sport changing?

How might governing bodies of sport respond?

- Develop and implement new classification systems that account for the use of advanced technologies in sport, including gene editing and cyborg technologies.
- Establish guidelines and regulations to ensure that the use of advanced technologies in sport aligns with principles of fairness, integrity, and transparency.
- Provide risk management assistance and resources to sport organisations and facilities to ensure the safety and wellbeing of athletes and participants.
- Facilitate discussion on changes in social attitudes and value to ensure the meaning of 'spirit of sport' remains current.

End of era for natural athletes

2025 - 2070

In the wake of new and sophisticated gene-manipulating techniques and advanced cyborg technologies, the public views genetically and technologically enhanced athletes positively. The idea of applying gene-editing and cyborg technologies to a completely healthy human body becomes the norm, and any athlete who does not use enhancement technologies is seen as outdated and left to the margins of elite sport. Natural-ability athletes become progressively obsolete.

Drivers

Public acceptance of performance-enhanced athletes Market for elite sport Development of gene doping detection Ban on the use of technology or drugs in sport Public support for new athlete categories in sport Politicisation of sport Development of cyborg technology Development of gene editing technology

Gene-editing and cyborg technologies have rapidly become more powerful and sophisticated with huge investments in their development. As humans have more experiences with them, their attitudes towards using those technologies in their bodies evolve. The increasingly prevailing idea is that people should actively use the most cutting-edge technology to get ahead. Thus, gene-editing technology like CRISPR is increasingly used to create "designer" babies that are preprogrammed to receive biological enhancement, avoid diseases, or grow into "better" athletes. Cyborg technologies are also used to augment the physical and mental capacities of the human body.

In a world where such technologies are widely used and available to the masses, athletes also use this technology to stay competitive. With many elite athletes undergoing gene manipulation or upgrading their bodies with the latest cyborg technologies (just as they currently get knee replacements or use performance-enhancing running shoes), the concept of "natural" and "normal" athletes becomes increasingly difficult to define. As a result, classifications such as male, female, and athletes with a range of physical disabilities, gradually become a thing of the past.

Initially, the increasing use of gene editing and cyborg technologies in sport leads to complex ethical dilemmas, sparking global debates on what constitutes naturalness,



fairness, health, and the spirit of sport. This extends into a broader societal conversation on what it means to be human.

The conversation includes concern about the longterm health consequences of gene editing and cyborg technologies, leading to calls for comprehensive research and regulation to safeguard the well-being of athletes and preserve the integrity of sport.

Ultimately, the value fans and sponsors place on recordbreaking and extraordinary performances results in technological and genetic enhancement becoming the norm for an elite athlete. This means that organic, unenhanced humans are seen as outliers, and lose the opportunity to be elite athletes.

The enhancement technologies push the boundaries of human performances and are justified in part, as they reduce the number of athletes who suffer from serious injuries due to overtraining and excessive strain on their bodies.

While unlimited performance enhancement was hoped to ensure a level playing field, the accessibility of gene editing and cyborg technologies creates a divide between affluent and less privileged athletes.

- **2025** The inaugural Enhanced Games, while small, raises considerable interest among athletes, fans and sponsors and is the forerunner to other such competitions.
- **2026** There is societal pushback against excessive conditioning and technical training, given ongoing concerns for athlete wellbeing.
- **2027** Gene-editing research and research on commingling human and machine begin to advance more rapidly.
- **2029** New forms of CRISPR start to be used to treat patients with serious genetic disorders. The new techniques also tremendously broaden the scope of gene editing in humans.
- **2032** Genome modification becomes the new primary mode of doping athletes.
- **2033** Fan and commercial interest in all-round super athletes increases at the expense of natural athletes, leading more athletes to choose money over dating ethics.
- **2040** Genome modification in healthy humans becomes widespread among the general masses in high-income countries.
- **2040** Natural athletes not using enhancement technologies are seen as outdated and left at the margins of elite sports, becoming a dwindling minority of participants
- **2045** Cyborg technologies start to blur the lines between humans and robots in ways that have never happened before.
- 2050 Many parents engineer their baby to be born with some biological enhancements by making genetic changes to their embryos (in vitro gametogenesis (IVG)). A generation of gene-edited babies arrives.
- **2055** Gene-editing and cyborg technologies forever disrupt the competitive balance in sport and sport itself becomes much less accessible to those who are unable to afford the new gene-editing and cyborg technologies.
- **2070** The use of gene-editing and cyborg technologies become a status symbol and creates a growing gap between the "enhanced" and "unenhanced", resulting in the creation of an underclass composed of "unenhanced" people.

Critical questions

- Should athletes be allowed to use gene-editing and cyborg technologies to enhance their performance?
- How will using these technologies affect the integrity of sport and fair competition?
- How will 'natural' athletes manage their consequent disadvantage?
- Should parents be allowed to use gene-editing technologies to enhance their children's athletic abilities?
- How will the use of these technologies affect the development of young people's physical and mental health?
- Will using these technologies create unrealistic expectations and pressure for young people to perform at a high level?
- How will using gene-editing and cyborg technologies in sport impact the public's perception of sport and fair competition?
- Will these technologies lead to a more diverse and inclusive sport landscape or exacerbate existing inequalities?
- How will the opportunities and risks of using these technologies be balanced alongside societal expectations?
- Will financial gain play a greater role than ethics and morals in athlete decision-making?
- What is the personal identity of an athlete who substantially enhance themselves physically or cognitively, and at what point do they transition from a natural to an enhanced athlete?

How might governing bodies of sport respond?

- Establish testing protocols to detect the use of gene-editing and cyborg technologies in athletes. These protocols should be regularly updated to keep pace with new technological developments.
- Educate athletes and coaches about the risks and benefits of gene-editing and cyborg technologies. This education should include information about the potential health risks and ethical considerations associated with these technologies.
- Collaborate with scientists and ethicists to develop guidelines and regulations based on the latest scientific and ethical knowledge.
- Engage in public dialogue about using gene-editing and cyborg technologies in sport to promote transparency and understanding about the potential impacts of these technologies on sport.
- Monitor technological advancements in gene-editing and cyborg technologies to stay up-to-date with new developments and to ensure that regulations remain relevant and effective.

Politicised performance enhancement fractures elite competition

2025 - 2035

The global sporting world is increasingly divided between democratic and authoritarian countries due to multiple factors, such as the advent of highly sophisticated gene-editing and cyborg technologies, the politicisation of sport, and corruption within international sporting event organisers.

Drivers

Public acceptance of performance-enhanced athletes Market for elite sport Development of gene doping detection Ban on the use of technology or drugs in sport Public support for new athlete categories in sport Politicisation of sport Development of cyborg technology Development of gene editing technology



While the governing bodies of elite sports technically ban gene doping and other technological enhancements, there are leaders of international sporting bodies and events who take bribes offered by authoritarian countries, allowing their athletes to use the latest gene doping and other technological enhancements at the state level with little to no oversight. The inability for international sporting authorities to take meaningful action results in many democratic countries to initially boycott events and then to create their own events.

As a result, sport events become fragmented between democratic and authoritarian countries, with the Summer and Winter Olympic and Paralympic Games and the FIFA World Cups, being held only among democratic countries. Russia, China, Brazil and Saudia Arabia lead the development of alternative competitions, building off the friendship Games. This fragmentation leads to diplomatic and political fallout and heightens international tensions.

The fragmentation also of sport events leads to a decrease in overall fan support and sponsorship.

Further fragmentation occurs through the rise of underground, unsanctioned sporting events where athletes can use performance-enhancing technologies without fear of repercussions. This emergence of a black market for performance-enhancing technologies increases organised crime involvement in sport and leads to a rise in injuries and deaths due to lack of oversight and regulation.

On the upside, the politicisation of sport also brings about a positive change by bringing issues to the forefront of public conversation which may not have been recognised or discussed before. This includes topics such as the creation of more inclusive environments for transgender and intersex athletes and a recognition of their rights and capabilities.

Although the global sports landscape has changed significantly, sporting events held among democratic countries create a fairer playing field for all athletes, regardless of their background or identity.

- **2025** Russia's hosting of the first Friendly Games angers the IOC and has some countries calling for the expulsion of Russia from the Olympic and Paralympic Games.
- **2027** International sporting events are riddled with corruption without noticeable improvements in increasing the level of oversight.
- **2028** Tensions continue to increase between the US and China.
- **2030** New, sophisticated gene-editing and cyborg technologies start being illegally and covertly used among elite athletes.
- **2031** Success in new forms of elite sport is valued by existing and emerging geopolitical superpowers.
- **2032** Stronger regional economic areas, one led by the US and the other led by China, emerge due to the intensifying geopolitical divisions. Such geopolitical fragmentation also has a significant impact on the global sporting world.
- **2035** International sporting events become increasingly polarised between democratic and authoritarian countries.

Critical questions

- How can athletes be protected from the influence of corrupt actors and ensure fair competition?
- How can regulators better deal with state sponsored issues and better protect individuals against such power?
- How can athletes be empowered to report corruption and maintain their integrity?
- How can sport organisations support young people's efforts to maintain integrity and fairness in sport?
- How can the wider community support athletes in maintaining integrity and fairness in sport?
- How might society challenge governing bodies to be accountable for their actions and ensure transparency and fairness?

How might governing bodies of sport respond?

- Establish a body or bodies that have clear responsibility for preventing, detecting, investigating, and sanctioning corruption in sport (as it relates to new technologies), ensuring that they have the independence, training, and resources required to carry out their functions effectively.
- Encourage the development of a global sports integrity framework that all stakeholders, including governments, international organisations, and sports bodies can adopt.
- Embrace and strengthen the use of sport for diplomacy purposes.

How to use this report

The report encourages conversations about the future by identifying emerging disruptions and transformations. It uses these to illustrate alternative futures to promote consideration of a wider range of contexts in which elite sport may be operating, with the intention of generating new insights into possible future developments.

In considering the scenarios, participants should consider:

- How would their strategy fare if the scenario eventuated?
- What implications the scenario has for their participants, volunteers, and stakeholders?
- What steps they will take to develop greater resilience to the challenges?
- How can they work to support the development of the more positive outcomes?
- What strengths they would need to be successful in the scenario?
- What actions they will take to ensure their plans are effective across multiple scenarios and not predicated on one?
- What scenario they would prefer, and the actions they can take to align with that scenario and avoid less desirable scenarios.

Answering these questions will give you greater confidence you are taking the right actions today – fit for a future you want, and adaptive to the changes and disruptions you will experience in the coming decade.

Taking it further, you can play with the drivers from this report to create your own scenarios, or use Sport NZ's wider set of drivers <u>drivers of change</u> to create alternative futures connected to another topic.

Alternatively, you can facilitate discussion using other <u>sport and recreation scenarios</u> that cover a range of contexts using different drivers of change.

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