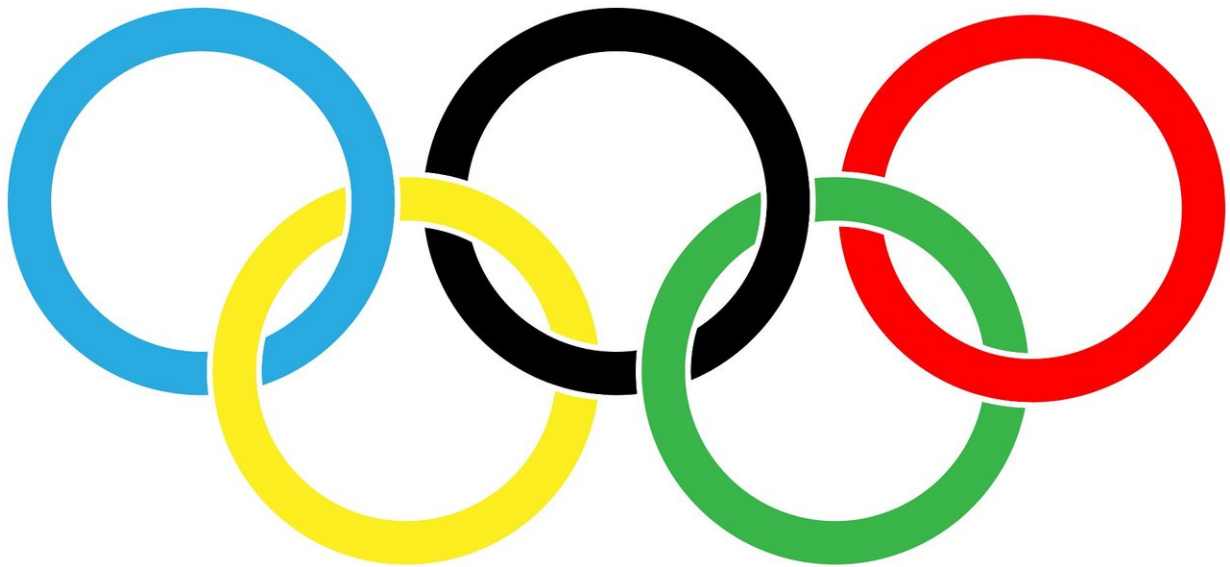


# Newly introduced sports linked to highest athlete injury rates at 2020 Tokyo Olympics

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Several new sports and disciplines introduced at the 2020 Tokyo Olympics, such as BMX freestyle, karate, and skateboarding, were associated with some of the highest injury rates for competitors, finds research published online in the *British Journal of Sports Medicine*.

But the overall injury rate across all sports and disciplines was comparable with that of previous Olympics, while the illness rate was

lower, the findings show.

Several new sports and disciplines were introduced for the first time at the Tokyo 2020 Summer Olympics: baseball/softball; karate; skateboarding; sport climbing; surfing; 3×3 basketball; and BMX freestyle.

The International Olympic Committee (IOC) has audited [sports injuries](#) and illnesses in every Olympic Games since Beijing 2008, with the aim of safeguarding athlete health. The IOC researchers recorded the daily number of [athlete](#) injuries and illnesses reported by national medical teams and medical staff in the designated health clinics during the Tokyo Olympic Games, which ran from July 23 to August 8, 2021.

Some 11,315 athletes (5,423 women and 5,892 men) from 206 national teams were actively monitored for injury and illness.

In all, national medical team and health clinic clinicians reported a total of 1,035 injuries and 438 illnesses among these competitors—equivalent to around 9 injuries and 4 illnesses per 100 athletes across all sports and disciplines over the 17-day period.

Altogether, nearly 1 in 10 (9%) of the athletes sustained at least one injury and nearly 1 in 20 (4%) across all sports and disciplines had at least one illness. But rates of injury and sickness varied considerably among sports.

Boxers and BMX racers sustained the highest number of injuries (27%), while the lowest numbers occurred in diving, road cycling, rowing, marathon swimming, and shooting (1-2%).

Meanwhile, some of the highest injury rates were in newly introduced sports and disciplines: BMX freestyle (22%); skateboarding (21%); and

karate (19%). Handball, an existing sport, was also associated with a relatively high number of injuries (18%).

The equivalent figures for the other newly introduced sports were 15% for sport climbing, 13% for surfing, 11% for 3×3 basketball, and 8% for baseball/softball.

Over half of all injuries (58%) were sustained in competition, a third (34%) during training, and 7% during warm up or cool down. Cuts and bruises, muscle and ligament strains were the most common types of injury.

When taking into consideration sport, age, and team size, there was no difference in overall injury rate between women and men, although women in artistic gymnastics were more than 3 times as likely to be injured as men.

As for illness, the highest rates occurred among marathon and artistic swimmers (both 8%), followed by skateboarding and karate (both 7%).

During the 17 days of the Games, 18 athletes—less than 0.2% of the total—caught COVID-19, accounting for 4% of all illness.

Exertional heat stroke affected 78 athletes, accounting for 18% of all illness and nearly 1% of all athletes, but most (88%) of these [illness](#) bouts didn't involve time off from competition/training.

The [injury](#) rate in the Tokyo Olympics (9%) was comparable with those of the Summer Games of Beijing 2008 (10%), London 2012 (11%), and Rio 2016 (8%), but the sickness rate was lower.

"This might largely be attributed to the extensive countermeasures put in place to mitigate COVID-19, effectively reducing transmission of

COVID-19 and all respiratory infections," suggest the researchers.

The combination of the heat, humidity, and COVID-19 posed a considerable challenge for competitors, support staff, and organizers. But comprehensive measures, including infection control, cooling and hydration strategies helped minimize the impact on health, they add.

**More information:** New sports, COVID-19 and the heat: sports injuries and illnesses in the Tokyo 2020 Summer Olympics, *British Journal of Sports Medicine* (2022). [DOI: 10.1136/bjsports-2022-106155](https://doi.org/10.1136/bjsports-2022-106155)

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