

Shoebox-sized machine holds key to keeping athletes Covid clear

Sue Dunlevy, July 25, 2022 7:00PM Kids News

SPORT

Reading level: Green

It's our Commonwealth Games athletes' secret weapon in Birmingham – a machine the size of a shoebox to keep them infection-free and able to compete.

The Biofire machine, first used at the Tokyo Olympics, can do a PCR test for 45 infectious* diseases including Covid, the flu, the common cold and gastro*.

And it can return results within 45 minutes, which means any athlete exposed to infection can be isolated, tested and either cleared or quarantined* within an hour.

While isolated, competitors can be treated with antivirals* or antibiotics* – and other team members are not exposed. But, more importantly, if they are found to be infection-free they can continue training and compete.

“Keeping people infection-free can be the difference between no medal and a gold medal,” Australian Institute of Sport chief medical officer David Hughes said.

At the 2016 Rio Olympics, 94 Australian athletes contracted* respiratory* illnesses, 35 had gastro and some ended up in hospital, Dr Hughes said.

In Tokyo, the new rapid-testing machines and strict infection protocols* on mask-wearing and handwashing kept Australia's Olympic teams almost infection free.

Other clever infection control measures in Tokyo were outdoor barista* stations and barbecues, which acted as a magnet that drew Aussie competitors into the open air to socialise, reducing the risk of infection.

Athletes were also sent home to Australia once they finished competing so they didn't go out partying and return to the Olympic village infected.

“We were able to take in a team of 1000 people, which was one of the largest teams in Tokyo, and no one missed a training session, no one failed to compete,” Dr Hughes said.

“We got them in and out of Tokyo without a single Covid case.”

With two highly infectious Covid sub-variants* currently sweeping the world, athletes are scared of becoming infected and being unable to compete in the West Midlands city in England. Unlike the Tokyo Olympics, which went ahead with empty stadiums to control infection, these Commonwealth Games will be open house, with no restrictions on people going in and out of pubs and cafes.

Australia's access to the rapid testing machines was a lucky coincidence that turned into a huge advantage on the sporting field.

The AIS purchased the machines well before the arrival of Covid to support qualified medical doctor and PhD candidate Dr Mathew Mooney's research into how infectious diseases affect athletes' performance.

When Covid struck, the machines shifted from being an academic resource to a vital part of Australia's game plan at the Tokyo Olympics.

Dr Mooney and his machines joined Australia's Games team in Birmingham this week.

The machines are worth \$35,000, with each testing pouch, which can assess up to eight people at once, costing \$150.

"I've heard figures thrown around that a gold medal often takes about a million dollars of investment over four to eight years, so I think it was worth every cent," said Dr Hughes.

Do you think the Biofire machine will help keep Australia's Commonwealth Games team Covid free?

Yes

No

I don't know - but I hope so!

Cast your vote

GLOSSARY

- **infectious:** able to be passed from one person, animal, or plant to another
- **gastro:** gastroenteritis, stomach and intestinal illness causing vomiting and diarrhoea
- **quarantined:** staying away from others when you have a disease to avoid spreading it
- **antivirals:** drugs used to treat infections caused by viruses
- **antibiotics:** drugs used to treat infections caused by bacteria and other microorganisms
- **contracted:** caught, became sick with
- **respiratory:** involving organs used for breathing, including the nose, throat and lungs.
- **protocols:** official or formal system of rules for correct behaviour
- **barista:** someone who makes and sells coffee
- **sub-variants:** set of viruses with the same or similar patterns of mutations

EXTRA READING

Eleanor Patterson claims historic high jump gold(<https://www.kidsnews.com.au/sport/aussie-eleanor-patterson-claims-historic-high-jump-gold/news-story/c3fac554f575aea2b0991bc2dcab9c91>).

Victoria set to host 2026 Comm Games(<https://www.kidsnews.com.au/sport/victoria-set-to-host-2026-commonwealth-games-with-regional-feel/news-story/9b93ee3bb26acdc031cf81336192dcdbd>).

Girls surfing new wave of sports(<https://www.kidsnews.com.au/sport/females-behind-big-boost-to-aussies-skateboarding-and-surfing/news-story/63166875b1d41adca4e15049604b676c>).

QUICK QUIZ

1. Which West Midlands city is hosting the Commonwealth Games and in which country?
2. Why did the AIS originally purchase the Biofire machines?
3. How many infectious diseases can be tested for with the machine?
4. How many Australian athletes contracted a respiratory infection at the 2016 Rio Olympics?
5. How quickly can the machine return test results for Covid?

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CLASSROOM ACTIVITIES

1. Healthy athletes

The Australian Institute of Sport's chief medical officer said, "Keeping people infection-free can be the difference between no medal and a gold medal".

What other suggestions do you have for our Commonwealth Games athletes and team staff to help them remain fit and healthy while at the athletes' village in Birmingham, England?

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Time: allow 15 minutes to complete this activity

Curriculum Links: English; Personal and Social; Critical and Creative Thinking



2. Extension

The AIS chief medical officer also said, “I’ve heard figures thrown around that a gold medal often takes about a million dollars of investment over four to eight years.”

What do you think this money would be spent on to get an athlete to gold medal standard?

Time: allow 10 minutes to complete this activity

Curriculum Links: English; Health and Physical Education; Critical and Creative Thinking

VCOP ACTIVITY

VCOP dodgeball

The normal rules of dodgeball apply. Two teams throw soft balls at each other and if you get hit, you have to sit out. The team who knocks out all the players on the other team wins.

VCOP challenge: when you get eliminated, collect a mini-whiteboard and a basic clause from the sidelines. Up-level the sentence (make it better) by adding VCOP. When you show the teacher your completed sentence, you can return to the game.

Play for a set amount of time and the team with the most players left on the court wins.

