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How to join and stay in the Olympic COVID-free “bubble”?

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ABSTRACT

The Beijing, 2022 Olympics will be the second Games held amid the COVID-19 pandemic. Due to the unique circumstances the 2022 Games face—the Omicron spread, high virus transmissibility in winters, and uncertainties about vaccine efficacy and future variants of concern, safety measures amid the Beijing, 2022 Games will be one of the most intricate among large international events held during the pandemic. To ensure athletes' health, safety, and ability to participate in the Games, the organizers have introduced the Olympic COVID-free “bubble” protection ecosystem, in which COVID-free athletes could stay and be protected from potential infections that could upend their Games plans, if not their career as well. However, while staying in the “bubble” is key for athletes' health and success, there is a lack of insights on factors that might prevent athletes from continuing their scheduled Olympic journey as scheduled. To shed light on the issue, based on Beijing, 2022 Olympic Playbooks and most up-to-date guidance issued, this article and its accompanying infographic were developed to illustrate factors that could influence athletes' ability to join and stay in the “bubble”, participate in the Games, and further build their career. Furthermore, we also adapted and integrated easy-to-adopt mental health de-stress techniques recommended by the World Health Organization to help athletes better thrive amid the Beijing, 2022 Winter Olympics, in or outside of the “bubble”.

The Beijing, 2022 Olympics will be the second Games held amid the COVID-19 pandemic ([International Paralympic Committee, 2021](https://www.olympic.org/paralympic)). Due to the unique circumstances the 2022 Games face—the Omicron spread, high virus transmissibility in winters, uncertainties about vaccine efficacy, and future variants of concerns ([Torjesen, 2021](https://www.who.int/news-room/feature-stories/2022-01-11-torjesen)), safety measures amid the Beijing, 2022 Games will likely be one of the most intricate among large international events held during the pandemic ([International Olympic Committee, 2021](https://www.olympic.org/paralympic)). To ensure athletes' health, safety, and ability to compete, the organizers have introduced the “closed-loop management system” or the COVID-free “bubble”, in which COVID-free athletes could stay and be protected from potential infections that

could upend their Games plans ([International Olympic Committee, 2021](https://www.olympic.org/paralympic)), if not their career as well.

However, there is a lack of insights on factors that might prevent athletes from joining or staying in the “bubble”.

For instance, many of the current recommendations are predominantly focusing on the quarantine differences between vaccinated and unvaccinated athletes, as opposed to a connected evaluation of how athletes' positive COVID-19 tests might influence their “bubble” status—whether athletes could participate in the Games and advance their career as planned. In light of the high prevalence of breakthrough cases—COVID-19 infections in vaccinated people— amid Omicron spread ([Torjesen, 2021](https://www.who.int/news-room/feature-stories/2022-01-11-torjesen)),

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it is important to give equal weight to all safety measures that could protect athletes' safety during the Games. It might be particularly relevant considering that the health and wellbeing of the approximately 11,000 athletes, supporting personnel, and media professionals are critical to whether or not the rest of the world can witness the history of the 2022 Winter Olympics being made. Not to mention that, for many athletes, being able to successfully participate in the Olympic Games is probably one of the most important steps for them to achieve their career goals. Furthermore, as a result of the Beijing 2022 Olympics being the first

Winter Games post-COVID, the first Omicron Games, and Beijing being the first city holding both the Summer and the Winter Olympics, the intensity of media reports on the Games may cause stress among athletes (Su et al., 2021, 2022). In light of the ever-present differing voices when it comes to the Olympics, let alone the unprecedented geopolitical tensions that have been brewing across the pandemic continuum, the situation might be further deepened as a result of the possible negativity of these reports (The Economist, 2022; Graham-Harrison & Ni, 2022). These insights combined, in turn, highlight the mental health stressors athletes could face

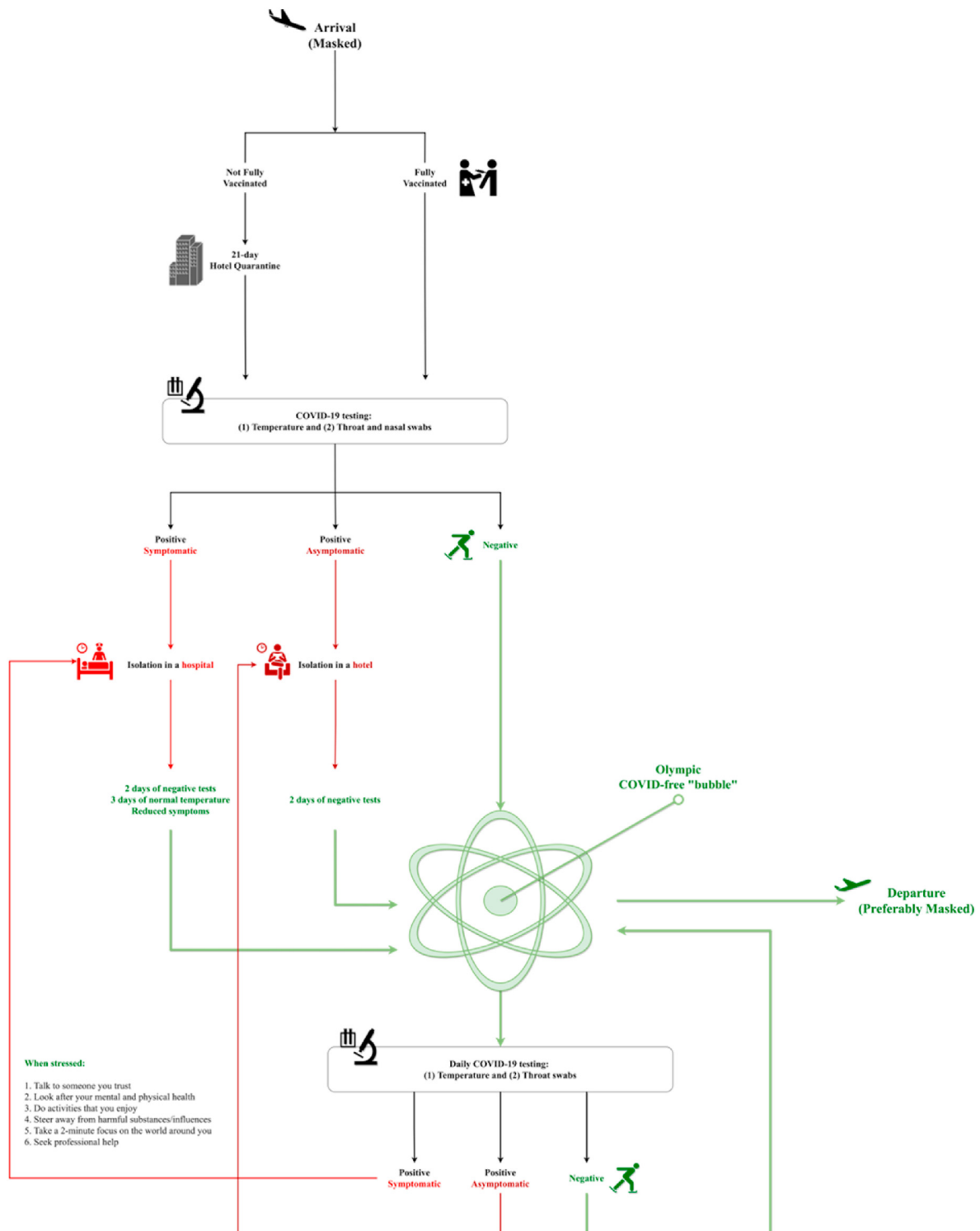


Fig. 1. An infographic on how Olympic athletes can join or stay in the COVID-free “bubble”.

throughout the Games. However, there is a dearth of research on how athletes should cope with the range of mental health concerns and challenges they encounter across the Olympic events.

For instance, recent positive cases identified within the “bubble”—6 new COVID-19 infections identified on January 23, 2022 alone (Reuters, 2022), may make athletes have heightened fear, along with other negative emotions, while participating in the Olympics. Thus, to shed light on the issue, based on Beijing, 2022 Olympic Games Playbooks and most up-to-date guidance issued (International Paralympic Committee, 2021; International Olympic Committee, 2021), we developed an infographic to illustrate factors that could influence athletes' ability to join or stay in the COVID-free “bubble”. Furthermore, in light of the mental health consequences the pandemic has already induced and the additional burden athletes might face amid the Games (Santomauro et al., 2021), mental health de-stress techniques (World Health Organization, 2021), which are developed by the World Health Organization and easy-to-adopt, are also adapted and integrated into the infographic to help athletes better thrive amid the Beijing, 2022 Winter Olympics, in or outside of the “bubble” (see Fig. 1).

Abbreviations

NA.

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Authors' contributions

ZS conceived the work, reviewed the literature, drafted, and edited the manuscript. DMD, AC, JA, SS, CPDV, & YTX reviewed the literature and edited the manuscript.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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References

- Graham-Harrison, E., Ni, V., 2022. Sport, politics and Covid collide at the Beijing Winter Olympics. Retrieved from. <https://www.theguardian.com/world/2022/jan/30/sport-politics-and-covid-collide-at-the-beijing-winter-olympics>.
- International Olympic Committee, 2021. Beijing 2022 Playbooks. Retrieved from. <https://olympics.com/ioc/beijing-2022-playbooks>.
- International Paralympic Committee, 2021. Beijing 2022. Retrieved from. <https://www.paralympic.org/beijing-2022>.
- Reuters, 2022. Beijing 2022 says 6 new positive cases detected among Games-related personnel on Jan. 23. Retrieved from. <https://www.reuters.com/world/china/beijing-2022-says-6-new-positive-cases-detected-among-games-related-personnel-2022-01-24/>.
- Santomauro, D.F., Mantilla Herrera, A.M., Shadid, J., et al., 2021. Global prevalence and burden of depressive and anxiety disorders in 204 countries and territories in 2020 due to the COVID-19 pandemic. *Lancet* 398 (10312), 1700–1712. [https://doi.org/10.1016/S0140-6736\(21\)02143-7](https://doi.org/10.1016/S0140-6736(21)02143-7).
- Su, Z., McDonnell, D., Ahmad, J., Cheshmehzangi, A., Xiang, Y.-T., 2022. Mind the “worry fatigue” amid Omicron scares. *Brain Behav. Immun.* 101, 60–61. <https://doi.org/10.1016/j.bbi.2021.12.023>.
- Su, Z., McDonnell, D., Wen, J., et al., 2021. Mental health consequences of COVID-19 media coverage: the need for effective crisis communication practices. *Glob. Health* 17 (1), 4. <https://doi.org/10.1186/s12992-020-00654-4>.
- The Economist, 2022. China is determined to make the Winter Olympics go smoothly. Retrieved from. <https://www.economist.com/china/china-is-determined-to-make-the-winter-olympics-go-smoothly/21807403>.
- Torjesen, I., 2021. Covid-19: Omicron may be more transmissible than other variants and partly resistant to existing vaccines, scientists fear. *BMJ* 375, n2943. <https://doi.org/10.1136/bmj.n2943>.
- World Health Organization, 2021. 6 ways to take care of your mental health and well-being this World Mental Health Day. Retrieved from. <https://www.who.int/westernpacific/about/how-we-work/pacific-support/news/detail/07-10-2021-6-ways-to-take-care-of-your-mental-health-and-well-being-this-world-mental-health-day>.