



Infectious diseases and football – lessons not only from COVID-19

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To cite this article: Monica Duarte Muñoz & Tim Meyer (2020) Infectious diseases and football – lessons not only from COVID-19, *Science and Medicine in Football*, 4:2, 85-86, DOI: [10.1080/24733938.2020.1749422](https://doi.org/10.1080/24733938.2020.1749422)

To link to this article: <https://doi.org/10.1080/24733938.2020.1749422>



Accepted author version posted online: 28 Mar 2020.
Published online: 14 Apr 2020.



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EDITORIAL

Infectious diseases and football – lessons not only from COVID-19

The past few weeks have seen us make numerous and increasing adjustments to our regular schedules as the Corona virus (COVID-19) outbreak turned from an epidemic to a pandemic. Virtually every aspect of daily life has been influenced by preventive measures, the most notable of which is social distancing, and sporting events have not been an exception. In the case of football, this ended in the postponement of the EURO 2020, one of the largest tournaments world-wide. However, this is not the first time that an outbreak occurs at an ‘inconvenient’ time for football. In 2007 and 2008 a measles outbreak was noticed in Switzerland shortly before the 2008 European Football Championship (Richard et al. 2008). A similar measles outbreak took place in 2009 in South Africa, before the start of the 2010 FIFA World Cup (Blumberg et al. 2010; Sartorius et al. 2013). In 2011, there was an endemic EHEC (enterohemorrhagic *E. coli*) outbreak in Germany before the start of the Women’s World Cup. The 2014 FIFA World Cup in Brazil posed the risk of vector-transmitted diseases. During the tournament, Dengue risk was close to its peak when matches were played in at least three cities: Fortaleza, Natal, and Salvador (Hay 2013). In this particular tournament, there were other mosquito-transmitted diseases, such as Zika and Yellow Fever, for which attendants and players had to take special precautions.

None of these events was cancelled or postponed because preventive measures were able to either confine the outbreak or sufficiently reduce the risk of transmission. Moreover, every year sports events take place during the flu season. Although it may seem like previous experience with respiratory diseases should teach us how to cope with the current situation, there are very important differences in the case of COVID-19: There is no vaccine available, the virus is very contagious and its lethality is considerable. In both measles outbreaks, attendants, participants, and staff were strongly encouraged to vaccinate against measles beforehand, and such vaccination provides high safety against the disease. The same is true in the case of influenza although vaccination is a bit less effective. This, however, is clearly not a possibility at the moment and evidently necessitates different management.

Given that social distancing has been identified as a key factor in the prevention of COVID-19 spread, matches were initially carried out without fans. However, the increasing number of COVID-19 cases forced sporting associations to postpone and even cancel competitions. The 2020 UEFA European Football Championship, UEFA Champions League, and major national leagues, to name only a few, have now been deferred and it is unclear when the pending matches will take place. Rescheduling events without clear dates foreshadows a period of financial uncertainty for football. The loss of income could soon even force clubs to shut down. However, the immediate priority for our society is to control the COVID-

19 pandemic. Therefore, clubs will have to abide regulations from health authorities and attempt to recover afterwards, which will probably involve tight schedules.

Prevention of infectious diseases

The scientific literature does not contain much documentation of infectious outbreaks within football teams. Most of the reported infections among teams affected the skin (Turbeville et al. 2006; Collins and O’Connell 2012; Grosset-Janin et al. 2012), followed by the fecal-oral (Repp and Keene 2012) and even the parenteral transmission route (Tobe et al. 2000). This may indicate that the likelihood of respiratory disease transmission among members of a football team is not particularly large. An analysis of typical training and match behaviour may substantiate that view. However, one must not forget all the situations around training and competition which happen in dressing rooms, during social activities or during medical care. They definitely include a substantial potential for virus spread and, thus, for preventive measures.

Although there are indications for only a minor contribution of infectious diseases to time loss in football (Bjørneboe et al. 2016) the current developments remind us that prevention of infectious diseases remains a sensitive topic. In controlling the COVID-19 pandemic, basic preventive measures are of utmost importance – also among football players, coaches and staff members. Adequate hand hygiene – given that COVID-19 is not only sensitive to disinfectants but also to soap – and ‘coughing etiquette’, as well as abstaining from social gatherings, especially when symptomatic, are key. Among athletes it is also important to avoid sharing personal objects, such as towels and water bottles. Whenever feasible, organisational measures should be taken to increase distance between dressing and showering athletes (e. g. use of more dressing rooms than usual). Although the use of hand sanitizers in sports has not been widely investigated, it has been recommended as a means of preventing the spread of pathogens (Schwellnus et al. 2016; ; Hanstad et al. 2011). Medical personnel needs to be particularly aware that due to their extensive contact with team members, they are candidates to spread the disease when they do not follow hygiene measures meticulously. In this sense, it should be avoided by all means that players are treated together in one room as it has been common in pre-COVID-19 times.

In a more general sense of infection prevention, food and water quality should also be supervised and possibly even controlled, especially during travel. Vaccination guidelines should be strictly met to avoid vaccine-preventable diseases. Special vaccination guidelines for elite athletes have been suggested in order to adjust to specific needs, for example, before travelling to endemic areas (Gärtner and Meyer 2014). And it

has been shown recently that there is neither some kind of 'immunosuppression' from long-term elite training nor an acute influence from training sessions on vaccination effectiveness (Ledo et al. 2020; Stenger et al. *Forthcoming*). Albeit without experimental evidence, it is plausible to assume that professional football training, as it is commonly performed in these days, does not impair immune function relevantly, either. Finally, other factors such as a well-balanced diet, adequate sleep, reduction of stress (Nieman 1993) as well as a correct application of most recent return-to-play strategies (Scharhag and Meyer 2014) also contribute to decrease the risk of infectious illnesses.

Future perspectives

Returning to regular football training and match play will be a slow and complex process in the current situation. However, the key strategies that have become vital right now in preventing the spread of COVID-19, should not be forgotten and must continue to be seen as routine precautions, not only for football players, but also for the general public. There is a big gap in the scientific literature with regard to infection prevention and management in team sports such as football.

References

- Bjørneboe J, Kristenson K, Waldén M, Bengtsson H, Ekstrand J, Hägglund M, Rønsen O, Andersen TE. 2016. Role of illness in male professional football: not a major contributor to time loss. *Br J Sports Med.* 50 (11):699–702. doi:10.1136/bjsports-2015-095921.
- Blumberg L, de Frey A, Freaux J, Mendelson M. 2010. The 2010 FIFA World Cup: communicable disease risks and advice for visitors to South Africa. *J Travel Med.* 17(3):150–152. doi:10.1111/j.1708-8305.2010.00413.x.
- Collins CJ, O'Connell B. 2012. Infectious disease outbreaks in competitive sports, 2005–2010. *J Athl Training.* 47(5):516–518. doi:10.4085/1062-6050-47.5.02.
- Gärtner B, Meyer T. 2014. Vaccination in elite athletes. *Sports Med.* 44 (10):1361–1376. doi:10.1007/s40279-014-0217-3.
- Grosset-Janin A, Nicolas X, Saraux A. 2012. Sport and infectious risk: a systematic review of the literature over 20 years. *Med Mal Infect.* 42 (11):533–544. doi:10.1016/j.medmal.2012.10.002.
- Hanstad DV, Rønsen O, Andersen SS, Steffen K, Engebretsen L. 2011. Fit for the fight? Illnesses in the Norwegian team in the Vancouver Olympic Games. *Br J Sports Med.* 45(7):571–575. doi:10.1136/bjism.2010.081364.
- Hay S. 2013. Football fever could be a dose of dengue. *Nature.* 503 (7477):439. doi:10.1038/503439a.
- Ledo A, Schub D, Ziller C, Enders M, Stenger T, Gärtner BC, Schmidt T, Meyer T, Sester M. 2020. (Shared senior authorship): elite athletes on regular training show more pronounced induction of vaccine-specific T-cells and antibodies after tetravalent influenza vaccination than controls. *Brain Behav Immun.* 83:135–145. doi:10.1016/j.bbi.2019.09.024.
- Nieman D. 1993. Exercise, upper respiratory tract infection, and the immune system. *Med Sci Sports Exerc.* 26(2):128–139. doi:10.1249/00005768-199402000-00002.
- Repp KK, Keene WE. 2012. A point-source Noro virus outbreak caused by exposure to fomites. *J Infect Dis.* 205(11):1639–1641. doi:10.1093/infdis/jis250.
- Richard JL, Masserey-Spicher V, Santibanez S, Mankertz A. 2008. Measles outbreak in Switzerland - an update relevant for the European football championship (EURO 2008). *Euro Surveill.* 13(8):pii=8043.
- Sartorius B, Cohen C, Chirwa T, Ntshoe G, Puren A, Hofman K. 2013. Identifying high-risk areas for sporadic measles outbreaks: lessons from South Africa. *Bull World Health Organ.* 91(3):174–183. doi:10.2471/BLT.12.110726.
- Scharhag J, Meyer T. 2014. Return to play after acute infectious disease in football players. *J Sports Sci.* 32(13):1237–1242. doi:10.1080/02640414.2014.898861.
- Schwellnus M, Soligard T, Alonso J-M, Bahr R, Clarsen B, Dijkstra HP, Gabbett TJ, Gleeson M, Hägglund M, Hutchinson MR, et al. 2016. How much is too much? (Part 2) International Olympic Committee consensus statement on load in sport and risk of illness. *Br J Sports Med.* 50 (17):809–815. doi:10.1136/bjsports-2016-096572.
- Stenger T, Ledo A, Ziller C, Schub D, Schmidt T, Enders M, Gärtner BC, Sester M, Meyer T. *Forthcoming*. (Shared senior authorship): timing of vaccination after training: immune response and side effects in athletes. *Med Sci Sports Exerc.* doi:10.1249/MSS.0000000000002278.
- Tobe K, Matsuura K, Ogura T, Tsuo Y, Iwasaki Y, Mizuno M, Yamamoto K, Higashi T, Tsuji T. 2000. Horizontal transmission of hepatitis B virus among players of an American football team. *Arch Intern Med.* 160 (16):2541–2545. doi:10.1001/archinte.160.16.2541.
- Turbeville SD, Cowan RD, Greenfield RA. 2006. Infectious disease outbreaks in competitive sports – a review of the literature. *Am J Sports Med.* 34 (11):1860–1865. doi:10.1177/0363546505285385.

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