

# Science in Sports Medicine during the Corona Pandemic

*Wissenschaft in der Sportmedizin in Zeiten der Corona-Pandemie*

**The currently ongoing Corona pandemic has a firm grip on the world, and its medium- and long-term effects are still largely unclear. At the same time, the pandemic is also affecting numerous scientific disciplines in a variety of ways. On the one hand, there are great opportunities for sports medicine research to contribute to the management of the pandemic and its consequences. On the other hand, however, risks must not be disregarded that are also emerging for our discipline resulting from the influence of the pandemic.**

## Early Activities

In the initial phase of the pandemic, clinical sports medicine was early confronted with the question of how athletes infected by the virus could be returned to their sport safely. The variety of covid-19 related symptoms and complications already known at that time combined with an only insufficiently understood clinical picture represented one of the first challenges (9). In addition, there were questions about the risk of infection during sports and the unfavorable effects of the lockdown on physical inactivity, especially in target groups vulnerable to this. Accordingly, the development of position papers based on expert opinions by the scientific council of the Germany Society of Sports Medicine and Prevention (DGSP) and the medical commission of the German Olympic Federation (DOSB) were among the first important steps to meet the challenge of the pandemic in our field (6, 8).

At the same time, through cooperation of twelve university sports medical centers, it was possible to initiate a Germany-wide multicenter cohort study (CoSmo-S) dealing with the consequences of a Covid-19 infection in competitive athletes (7). Started in October 2020, in the first 15 months of this project, almost 1000 infected athletes could be recruited successfully. Further projects deal with the vaccination of athletes against SARS-CoV-2 and the functional effects of a Covid-19 infection on organ systems such as the lung or the nervous system up to the investigation of performance-relevant pathophysiological consequences of this disease (1).

## A Chance for Interdisciplinarity

The acute, but in some patients also persistent symptoms of Covid-19 disease include a number of

exercise-related complaints such as dyspnea, myopathy, and fatigue, as well as other symptoms that limit exercise tolerance and performance. In clarifying the question, which mechanisms underlie these symptoms and play also a role in Long-Covid, sports medicine can contribute with its spectrum of methods and expertise. Undoubtedly, this is an opportunity offering points of cooperation beyond our field in an interdisciplinary approach. As an example, all four university sports medical centers in Baden-Württemberg are important contributors in the study consortium of the recently launched EPILOC study on long-covid, which is funded by the government of this federal state. Further research topics involve the development and evaluation of individualized training concepts in patients suffering from Long Covid. Moreover, research on the indirect consequences of the pandemic is a further important field. As the lockdown exacerbated physical inactivity especially among vulnerable target groups such as children, the elderly, and patients with diseases, concepts that help to solve this problem have to be developed and evaluated.

Taken together, the described spectrum of scientific topics relevant to sports medicine concerning Covid-19 is broad. It should be noted that this circumstance should not lead to a neglect of other research topics in our field. Also, the primary drive for a Covid-19 project should not result from a supposedly easier acquisition of third-party funding.

## Scientific Work

Especially in the early phase of the pandemic, research projects of many disciplines including sports medicine suffered from the restrictions. Laboratories were closed, access of study participants to the research facilities were denied or at least complicated. As a result, ongoing studies had to be cancelled or interrupted. The statement of the German Rectors' Conference of January 2021 (2) points out that especially research funding and the perspectives of researchers suffer from the negative consequences of the pandemic and that especially scientists in their qualification phase are affected. A recent survey from the U.S. shows a previously little noticed phenomenon of a significant decrease in the number of newly initiated scientific projects among scientists, who were not working on Covid-19 projects (4).

It can be observed that the attention for research topics in the publicity has actually a very strong focus on Covid-19. In this context, the scien- ➤

ACCEPTED: February 2022

PUBLISHED ONLINE: March 2022

Niess AM. Science in sports medicine during the Corona pandemic. *Dtsch Z Sportmed.* 2022; 73: 51-52. doi:10.5960/dzsm.2021.523



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tific community is confronted with the expectation to deliver research data rapidly and to produce knowledge with a high translational potential. Early in the pandemic, the authors London & Kimmelman (5) cautioned against yielding to the pressure to produce scientific knowledge rapidly at the expense of quality.

### Publication and Public Communication

To some extent, this also applies to the early communication of obtained research results with the public, often prior completion of the usual review process. In the Corona pandemic, the publication of preliminary research results via the preprint servers has increased significantly. Research data that have not yet been conclusively reviewed are thus accessible to the public via a platform, which was originally intended for internal scientific exchange and discourse. This requires scientists acting responsibly, which is also reflected in an early statement by ENRIO (The European Network of Research Integrity Offices): „Researchers should communicate their work on social and other media responsibly, with professionalism and transparency. Subjective or unfounded interpretations must be avoided. Eroding the integrity of research undermines the trust of our colleagues, the public and policymakers.“ (3).

In summary, the pandemic has changed our scientific work in several ways. Let's take advantage of the opportunities it presents and take care to keep the negative effects to a minimum. ■

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