

Sports Medical Health Research in Elite Sports – An Actual State

Sportmedizinische Gesundheitsforschung im Leistungssport – Wo stehen wir?

Sports-medical research in Germany is a regular topic of editorials in this journal. For the cross-sectional discipline Sports Medicine, a not-inconsiderable number of topic areas is apparent. Thus, a current editorial by W. Bloch (3) justifiably points out the “Chances and Perspectives” which arise from the thematic breadth of the specialty, even if this has only been used in part to date. A central research theme, which is of high clinical relevance, is health research in elite sports.

The need for research in this area is incontestable and is also supported by looking beyond sports medicine itself. It has a social background, when one considers a quotation from Bertold Brecht: “Great sports begin where they have long since ceased to be healthy.” Tracing the results of the sports-scientific/sports-sociologically directed GOAL study (8), the way pain and illness are handled even in junior elite sports substantiates the need for scientific reappraisal. At the same time, there is a clinical dimension at the core for sports medicine which arises directly from the daily practice of sports doctors who treat athletes.

The clinical settings and access to athletes essentially is comprised of consultation in acute or chronic health problems, sports-medical fitness examinations like especially the annual major examinations by the Deutschen Olympischen Sportbundes (DOSB) and the Landes-sportverbände (LSV) and finally on-site presence during competitions and training sessions. These tasks make broad access to health-relevant data and findings available to sports medicine in Germany. They thus offer excellent conditions for addressing relevant scientific queries in elite sports.

Current Topics and Projects

The clinical topics requiring research are many and diverse. The useable instruments for processing these topics range from simple case observations to clinical trials and registry studies. Cardiac risk, infections, health-relevant effects of difficult environmental conditions like heat, cold or high-altitude, energy deficits or eating disorders are examples of internal medical/general practice topics. Current or completed projects like the registry for

sudden cardiac death, the myocarditis registry for athletes or the ECG project supported by the Bundesinstitut für Sportwissenschaft are cited here as examples (4,5) and give witness to the activity in the discipline for performing clinic-relevant research. Beyond that, topics which are practice-relevant for elite sports, such as the analysis of validated regeneration measures, are addressed and followed prospectively (1).

As for musculoskeletal topics, injuries and overexertion complaints among junior and elite athletes are recorded in the cross section and longitudinally and have been scientifically evaluated for several years in larger cooperative projects (7). Nonetheless, there are gaps in scientific dealing with topics relevant for elite sports, such as sports-associated concussion (2), the analysis of registry data for example in knee injuries or the sport-specific development of evident return-to-play strategies.

What Remains to Be Done?

Even when it can be seen from the projects cited as examples how health research in elite sports can be promoted, there are still other perspectives, as well as tasks, like the actual clinical transfer to day-to-day practice and care in elite sports. In the end, sports-medical research will be evaluated on the extent to which it is successful in implementing the knowledge gained into clinical care in elite sports. At that point at the latest, we then find ourselves at the transition to care research, in which there is presently a clear need for development.

The care system of sports-medical fitness examinations, which is well-organized beyond all doubt, every year delivers a number of health data of squad athletes – an unrecorded treasure. In addition there are more-or-less complete interim health findings, including those in direct care. Coupled with training, competition and stress data at the individual level, there is great chance to contribute to athletes’ health, especially with respect to prevention. That such approaches can be implemented is seen in the example of a system established in Norway to record health data in elite sports. The system is now also available in a German-language version (6). In addition to using primary medical findings, it is in our opinion also necessary to bring these data together in a more interdisciplinary >

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approach with data on health behavior of the athletes and the environment affecting them, especially in the setting of elite sports.

It is self-evident that adequate research funding in accordance with scientific standards is required in order to work with a sufficient number of cases in the projects. Moreover, rules for data protection requirements are needed, whereby similar research concepts in other disciplines show this to be feasible. Here, both the contents and the methods require a high measure of interdisciplinary cooperation, extending beyond sports medicine, when topics such as imaging, IT or qualitative assessments are involved. The current hype that artificial intelligence will solve the problem in the future can only materialize when we can offer a sufficient data base. ■

References

- (1) **BARTH, V, KÄSBAUER H, FERRAUTI A, KELLMANN M, PFEIFFER M, MEYER T.** Individualized Monitoring of Muscle Recovery in Elite Badminton. *Front Physiol.* 2019; 10: 778. doi: 10.3389/fphys.2019.00778
- (2) **BEAUDOUIN F, AUS DER FÜNTE K, TRÖSS T, REINSBERGER C, MEYER T.** Head injuries in professional male football (soccer) over 13 years: 29% lower incidence rates after a rule change (red card). *Br J Sports Med.* 2019; 53: 948-952. doi:10.1136/bjsports-2016-097217
- (3) **BLOCH W.** Forschung in der Sportmedizin – Neue Perspektiven und Chancen. *Dtsch Z Sportmed.* 2019; 70: 87-88. doi:10.5960/dzsm.2019.375
- (4) **BOHM P, SCHARHAG J, MEYER T.** Data from a nationwide registry on sports-related sudden cardiac deaths in Germany. *Eur J Prev Cardiol.* 2016; 23: 649-656. doi:10.1177/2047487315594087
- (5) **HANSEL J, BURGSTALLER C, NIESS AM.** Diagnostische und therapeutische Pfade bei Sportlern mit Verdacht auf Myokarditis – eine Registerstudie. *Dtsch Z Sportmed.* 2014; 65: 50-54. doi:10.5960/dzsm.2012.046
- (6) **HIRSCHMÜLLER A, STEFFEN K, FASSBENDER K, CLARSEN B, LEONHARD R, KONSTANTINIDIS L, SÜDKAMP NP, KUBOSCH EJ.** German translation and content validation of the OSTRC Questionnaire on overuse injuries and health problems. *Br J Sports Med.* 2017; 51: 260-263. doi:10.1136/bjsports-2016-096669
- (7) **MAYER F, ARAMPATZIS A, BANZER W, BECK H, BRÜGGEMANN G-P, HASENBRING M, KELLMANN M, KLEINERT J, SCHILTENWOLF M, SCHMIDT H, SCHNEIDER C, STENGEL D, WIPPERT P-M, PLATEN P.** Medicine in Spine Exercise [MiSpEx] – a national research network to evaluate back pain. *Dtsch Z Sportmed.* 2018; 69: 229-235. doi:10.5960/dzsm.2018.340
- (8) **THIEL A, DIEHL K, GIEL KE, SCHNELL A, SCHUBRING A, MAYER J, ZIPFEL S, SCHNEIDER S.** The German Young Olympic Athletes' Lifestyle and Health Management Study (GOAL Study): design of a mixed-method study. *BMC Public Health.* 2011; 11: 410. doi:10.1186/1471-2458-11-410