Health Promotion and Physical Activity
ISSN 2544-9117 ▪ 2024; 29 (4): 37-39
doi: 10.55225/hppa.642

HPPA • 2024; 29 (4): 37-39

Review: Zbigniew Dąbrowski, Anna Marchewka, Aneta Teległów (eds.), *Hematologia sportowa* [*Sports Haematology*], Wydawnictwo Lekarskie PZWL, Warszawa 2022

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Book recomendation

The academic textbook entitled *Hematologia sportowa* [*Sports Haematology*] was published by Wydawnictwo Lekarskie PZWL in Warsaw. It had its premiere on November 23, 2021 and was released in printed form (paperback, 244 pages, ISBN number: 978-83-200-6573-2). The publication was co-financed under the programme of the Minister of Science and Higher Education entitled 'Regional Initiative of Excellence' in years 2019–2022, project number 022/RID/2018/19.

The handbook is a result or a collaborative effort under the scientific editorship by Prof. Zbigniew Dąbrowski, Prof. Anna Marchewka, and Assoc. Prof. Aneta Teległów (University of Physical Culture in Krakow). The author contributors include 10 academics from the University of Physical Culture in Krakow and 13 academics or physicians representing other research institutions:

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Article info

Article history

- Received: 2024-12-10
- Accepted: 2024-12-20
- Published: 2025-05-12

Publisher

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Conflict of interest

None declared.

Financing

This work did not receive any grants from public, commercial or non-profit organizations.

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Hematologia sportowa [*Sports Haematology*], published by Wydawnictwo Lekarskie PZWL, is the first study in the Polish and foreign literature in the field of sports haematology devoted to blood composition changes in athletes of various disciplines. The textbook presents the latest facts based on worldwide literature on blood and its particular components, at different levels of sports effort or after the application of physiotherapeutic procedures. The editors, authors, and contributors for individual chapters were invited from among Polish specialists. The authors of this academic handbook aim to draw the reader's attention to the highly diverse processes that occur after physical effort in the morphological, rheological, and biochemical indicators of blood.

The publication consists of 16 chapters. The individual chapters of the handbook cover the following areas:

1. Introduction to the basics of haematology
2. Blood circulation in athletes as a fundamental physiological process during rest, training, and competition
3. Classification of physical effort
4. Effect of physical exertion on erythrocyte properties
5. Rheological properties of blood in athletes
6. Blood cells and sports effort
7. Physical exertion and monocytes
8. Lymphocytes and physical exertion
9. Effort-related biochemical changes in blood
10. Impact of physical effort on blood parameters in women
11. Peripheral blood parameters immediately following open fractures

12. Anaemia in athletes: facts and myths
13. Effect of selected doping agents and methods on blood
14. Impact of physical effort on blood viscosity
15. Influence of physiotherapeutic intervention on the improvement of blood parameters in athletes
16. Peripheral blood morphologic indicators in adult patients with haematological neoplasms receiving physical therapy

The objective was to provide up-to-date knowledge in the following areas: classification of physical effort, the influence of training on the morphological components of blood in men and women, anaemia, blood viscosity and rheology, and biochemical changes during physical exertion. The harmful effects of doping agents and methods used by athletes and the impact of these interventions on health and test results were also addressed. The significance of physiotherapeutic procedures for improving blood parameters, as well as the issue of physical therapy in individuals with haematological neoplasms were discussed.

The classification of physical effort comprehensively familiarizes readers (mainly athletes) with the different types of physical effort that an athlete can undertake. This makes it much easier to read the subsequent chapters, which describe changes in the blood caused by different types of physical exertion. It also helps trainers, physicians, and physiotherapists to apply various forms of physical effort in training or competitions in order to bring about beneficial changes in an individual or to prevent undesirable reactions of the body to a given physical effort.

On the basis of the results obtained, one can assess training-induced adaptive changes, the response of the body to a single physical effort, changes that occur during the effort, as well as the rate of post-exercise recovery. However, this requires sound knowledge of the biochemical processes that take place in working muscles. The abovementioned academic handbook emphasises that one of the essential conditions for the proper cell function is maintaining the pro-oxidant-antioxidant balance, which is significantly influenced by muscle work.

The phenomenon of anaemia in athletes has been known for a long time, and the term 'sports anaemia' was first used in scientific literature by Yoshimura in 1959 with the aim of emphasizing the relationship between the occurrence of anaemia and athletic training. For many decades, however, this problem remained unexplained, although the appearance of anaemia in high-performance athletes and even in members of Olympic teams was often reported in scientific literature.

The authors also provide valuable warnings against the effects of doping in sport, which constitutes an issue of utmost importance for both athletes and coaches.

The use of wellness is an essential component of training, whereas the selection of appropriate methods should be strictly tailored to the individual needs of each athlete. The most common physiotherapy treatments applied in the wellness programmes for athletes include kinesiotherapy, physical therapy, and massage. The book analyses the effects of such popular wellness methods as physical exercise, laser therapy, and magnetic fields. Systemic cryotherapy, hydrotherapy, and massage are also presented as popular and safe methods, with no adverse effects.

Owing to the introduction of many new medical treatments in recent years and the resulting increase in the survival rate of individuals with haematological malignancies, there is a growing need to keep patients physically fit. Research indicates that in cancer patients, immobilization can lead to a poorer response to therapy and even a reduction in survival rates. It is now assumed that patients can undergo exercise therapy at any stage of oncological treatment, provided that the rules mentioned in the relevant chapter of this book are observed. What is worth emphasizing is that in this specific group of patients, appropriately selected physical activity is safe and yields beneficial effects, which can translate into a faster return to the activities they were engaged in before the disease.

For the abovementioned reasons, the academic textbook *Hematologia sportowa* [*Sports Haematology*] demonstrates an innovative approach because, in the authors' opinion, every sporting achievement leading to success offers extraordinary satisfaction to the athletes, but requires blood tests in order to protect their health. The book deals with most current issues and is designed to be both educational and practical for athletes and sports physicians.