

## ***ABOUT BIATHLON SPORTS AND ITS DEVELOPMENT***

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***Annotation:*** *this article aims to increase the popularity of sports, increase their competitiveness and develop comprehensively. This article explores the various reforms currently implemented in the biathlon world.*

***Keywords:*** *physiology, shooting, training, speed, high performance.*

***Аннотация:*** *эта статья посвящена повышению популярности, конкурентоспособности и всестороннему развитию спорта. В этой статье рассматриваются различные реформы, которые в настоящее время проводятся в мире биатлона.*

***Ключевые слова:*** *физиология, гравитация, тренировки, скорость, высокая производительность.*

To achieve success in biathlon, it is necessary to shoot accurately and quickly, while simultaneously recovering from high-intensity skiing. Many different factors, including body vibration, motion-triggering behavior, and even psychology, affect the effectiveness of gravity. Thus, the complexity of the biathlon deserves more attention to areas such as racing tactics, skating techniques or the shooting process.

Biathlon, an Olympic sport combining rifle shooting and skating techniques with rifle carrying, involves serious physiological requirements similar to those associated

with competitive skiing, and also requires fine motor control for rapid and precise shooting under mental pressure. In addition, this difficult endurance sport involves alternating between different small techniques that require the relative work of the upper and or lower part of the body while skiing on different terrain.

While the duration of biathlon races varies from 20 minutes (sprint) to 50 minutes (individual race), seven of the 11 Olympic events (including Relay) involve mass starts, which increases the importance of tactics and the result is often decided. the last stage of shooting and / or the final ski run.

The overall biathlon performance is complex, and skiing is determined by several components such as speed of flight, distance time (time spent on the shooting ramp), shooting time, and accuracy of shooting. Usually, elite biathletes and shooting distances and times in different competitions are similar to each other and therefore have little effect on the final result. On the contrary, the speed of ski flying and the accuracy of shooting are the most important factors that determine the final result.

Top biathletes practice 700-900 hours of physical education each year, including 80% low, 4-5% moderate, and 5-6% high intensity, with 10% strength and Speed Training (Table 2; personal contact with Swedish biathlon coaches). This training size is slightly less than previously stated for XC skiers, probably due to the time spent on training shooting. Low intensity training has been proposed to improve overall ability and exercise efficiency, as well as "tolerance" to higher training loads by accelerating recovery.

While most low-intensity training is designed to develop aerobic ability and/or specific motor skills, the inclusion of some semi-or non-specific training (e.g. cross-training) allows for general training. Moderate intensity training (e.g., directly below the anaerobic threshold) can be extended while providing sufficient aerobic energy. Such training usually involves a short recovery period or a long exercise interval, surrounded by continuous exercise for 30-60 minutes. Such training for intensity control is carried out on relatively stable terrain.

Moderate intensity training takes place once or twice a week during the preparation period, and less frequently during the competition season. Although the best athletes focus on extensive low-intensity training, the beneficial effects of high-intensity training have been proven several times.

Improved competition format: in recent years, biathlon has made changes to the competition format to make it more interesting and more spectator friendly. This includes the introduction of mass start races, pursuit races and mixed relay events that add excitement and variety to the sport.

Expanded television coverage: an attempt was made to improve television coverage of key events to increase Biathlon's visibility. This includes the use of multiple camera angles, the inclusion of athlete profiles, and in-depth analysis of races. Improved broadcasting will help to attract more audiences and generate more interest in sports.

Technological advances: ongoing technological changes have had a significant impact on biathlon. Advanced rifle designs, electronic sights, and tracking systems have improved accuracy, fairness, and real-time data analysis. The integration of technology increases the overall experience for participants and viewers.

Youth development programs: several initiatives have been established to promote youth participation to ensure the future of biathlon. These programs offer training and development opportunities to aspiring athletes, allowing them to traverse different levels and improve their skills. Ensuring the strong development of youth ensures the continuous development of sports.

Anti-doping measures: strict anti-doping measures have been implemented to maintain the integrity of biathlon. Athletes are regularly tested to prevent the use of effectiveness enhancers, ensure fair play and an equal playing field. These measures are aimed at maintaining the prestige of the sport and protecting the health and well-being of athletes.

Sustainability initiatives: biathlon also recognized the importance of environmental responsibility. Work is underway to minimize the environmental impact of the sport, such as reducing emissions, introducing environmentally friendly infrastructure, and promoting sustainable practice in competition venues. These actions are in line with global sustainability goals and demonstrate the sport's commitment to environmental protection.

Strengthening international cooperation: collaborative efforts between biathlon associations and federations from different countries have played an important role in the development of the sport. The exchange of advanced experience, the organization of joint training meetings and the holding of international competitions will help to strengthen friendship, exchange knowledge and experience. By implementing these reforms, biathlon sports seeks to continuously improve its quality, global attractiveness and sustainable growth. These efforts ensure that the sport is fun, fair and open to participants and fans.

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