

## **THE MASTER KEY TO DOMINANCE IN HANDBALL**

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The relevance of this study is due to the need to develop a comprehensive and scientifically based training system for handball players, capable of improving both the individual performance of players and the performance of the team as a whole.

Handball in Australia may not occupy a leading position in the hierarchy of national sporting preferences, but its unique position and trajectory of the development on the continent serves as an inspiring example of sustained will and deep dedication to the game [6, p. 2]. On the one hand, cricket, Australian football and rugby dominates in this country but, on the other hand, handball has managed to carve out a niche of its own and gradually expands its popularity among enthusiasts and athletes seeking new sporting challenges. This sport is fascinating in its ability to show how a relatively small sporting community can have a significant impact on the development of a discipline on the international stage. Participation of “Sydney Uni Handball Club” in international competitions such as the “Europe tour 2024” highlights their determination and ambition to promote handball in an environment where the sport does not receive the same level of attention and support as the country's more traditional sports disciplines.

Analyzing the performance of the team, it is possible to identify several fundamental factors that influenced the final results, as well as to identify potential gaps, filling which could contribute to achieving victories.

Each of the points we have identified has had a significant impact on the performance of the sports team, and can serve as a key to understand how to improve its performance.

Insufficient preparation and adaptation to conditions. Flights across several time zones and the accompanying jet lag reduces significantly the physical readiness and concentration of the athletes, causes dissonance between the internal biological clock and the new local time, disrupting the

usual sleep and wakefulness patterns [4, p. 76]. This leads to decreased sleep quality, which in turn impairs the recovery of the body and reduces cognitive function. Also, the internal clock regulates not only sleep, but also digestion, hormone production and overall metabolism. Disturbances in these processes can lead to deterioration of nutritional status and energy balance, affecting physical fitness. The imbalance in circadian rhythms can also temporarily weaken the immune system, increasing the risk of disease, which further compromises fitness and concentration.

These factors together can significantly impact an athlete's performance, especially within the first days after a flight when the effects of jet lag are most pronounced. Therefore, it is extremely important to take adaptation time into account when planning international competitions and training.

A lack of tactical flexibility can significantly reduce the performance of athletes and teams by limiting their ability to adapt to dynamic changes during the game. Handball is characterized by rapid and unpredictable changes. Teams and athletes that cannot quickly adapt to their opponent's tactics, find themselves in a vulnerable position. Tactical flexibility allows you to rethink quickly and adjust your own strategy to meet effectively new challenges. During the game, moments arise that require an immediate and adequate response, for example, sudden spatial and temporal advantages. The lack of tactical flexibility can cause these moments to go unnoticed or unexploited. In situations where a team is behind the score or facing increased pressure, the ability to adapt quickly tactically can help to find effective solutions to change the game. The lack of such flexibility limits the variability of actions, making the game predictable for the opponent. Thus, the lack of tactical flexibility reduces not only the current performance of a team or individual athlete, but also limits their potential for growth and development, making it more difficult to overcome new and unexpected challenges in the sporting environment.

Psychophysiological stress is a condition that occurs as a result of the body being exposed to various stressors that cause both psychological and physiological reactions, and has a significant impact on athletic performance and recovery for several key reasons [5, p. 43]. Intense training and competition, especially when combined with long flights and jet lag, can lead to fatigue, reduce motivation and increase the risk of injury. This fatigue is not only physical, but also mental, reducing the ability to concentrate and make quick decisions [3, p. 19554].

Under the influence of stress, the hypothalamic-pituitary-adrenal axis is activated, which leads to the release of adrenaline and cortisol. These hormones prepare the body to respond quickly to a threat (“fight or flight”), but under prolonged stress, such activation can disrupt the normal functioning of the central nervous system, reducing the ability to concentrate, make decisions and coordinate movements. Cortisol, a stress hormone, in large

quantities can promote catabolism – the breakdown of muscle tissue, which affects negatively the strength and endurance of an athlete. Stress can also cause muscle tension and a decrease in the efficiency of muscle contractions. Prolonged exposure to stress suppresses immune system function, increasing susceptibility to infections and slowing recovery after training and competition [2, p. 10251].

Accuracy and efficiency in finishing moves can determine the outcome of the game. In sport where decisions are often made within a fraction of a second, the ability to complete an attack or defensive action accurately and effectively minimizes the likelihood of errors, which reduces the opponent's chances of success and increases the likelihood of victory. Accurate and effective actions in attack or defense put psychological pressure on the opponent, causing him stress and uncertainty in his actions. This can lead to a decrease in the quality of the opponent's play and an increase in his mistakes. Accuracy and efficiency allows for more efficient use of the team's physical and time resources. This is especially important in high-level sports, where every second and every movement can be crucial. Precision in the execution of tactical tasks gives the team a strategic advantage, which allows them to control the course of the game, dictate their terms and adapt to changes with minimal losses. In the context of a highly competitive sporting environment, where the smallest details can determine the outcome of a match, precision and efficiency in finishing are not just desirable qualities, but necessary conditions for achieving victories [Brandão, p. 3440].

To improve their chances of winning future competitions, the team may want to focus on improving adaptation and recovery, tactical flexibility, fatigue management, attack accuracy, mental toughness and optimization of the use of the team.

Participation of the “Sydney Uni Handball Club” in the Europe Tour 2024 is not just a sporting competition for Australian handball players; it is a showcase for the world to see and appreciate the development and passion for handball in Australia. This is a chance to show the world that, despite all the difficulties and the lack of widespread popularity within the country, handball in Australia is alive, developing and ready to challenge international standards.

Every match, every goal, every moment on the sports field away from home carries much more than just the game score. They are a testament to the tenacity, passion and unwavering will of Australian handball players to push their sport beyond the norm, giving handball in Australia a voice that will be heard throughout the world. Thus, participation in an international tournament is not just an opportunity to perform; it is a mission to promote and establish handball on the international sports map, making it a part of the global sports community.

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