



## Exercise Biochemistry Review

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### Application of Data Mining Technology in Analysis of Biochemical Indicators of Competitive Sports

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**Objective** Training monitoring is an important part of scientific training, and also accumulated a large amount of data, but the analysis and evaluation of biochemical indicators are mostly concentrated on the level of experience and the general, phased and individualized research application of statistical methods. The data mining technology is applied to the analysis and evaluation of the biochemical indexes of competitive sports, the analysis of the data is carried out in the deep level, the potential, new and useful information and knowledge are extracted, and the new exploration ideas are carried out for the analysis of the biochemical indexes of competitive sports, and a more reliable and more powerful data branch is provided for the scientific and efficient training support.

**Methods** Using the literature data method, logic analysis method and expert interview method, the application of the current data mining technology in the analysis of biochemical indicators is summarized.

**Results** The scientific analysis and evaluation of athletes' physical function status has been the focus of domestic and foreign coaches and sports researchers. The application of data mining technology in sports biochemical indicators is also becoming more and more extensive. For example, Mao Jie and others applied the gray ART clustering model analysis method to the monitoring of competitive sports biochemical indicators. Through this data mining model, the coach can easily judge the athlete's competitive physical condition, and can provide a scientific basis for correct training according to the different competitive conditions of each athlete, using different training guidance programs and training methods. Ma Jing et al. explored the feasibility of applying decision tree algorithm and association rules in volleyball biochemical analysis. It was found that C5.0 decision tree and Apriori association rule algorithm can be used to predict and analyze the technical level of women's volleyball players. Li Guangjun and others successfully applied the association rule data mining to the biochemical data analysis of canoeists, and provided a basis for scientific decision-making and analysis of sports training and athlete selection. Zhang Hui designed a data mining system for sports biochemical index based on association rules. The results show that the system has fast data mining rate, short time consuming and high reliability. It provides a more scientific evaluation standard for the data mining of sports biochemical index, and also provides a basis for the future training program.

**Conclusions** With the development of competitive sports, in order to achieve new heights, the application of data mining technology to vast biochemical data is of great significance for the establishment of scientific training evaluation methods and standards, and is also the inevitable development of future sports scientific research.