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Resumo	Although the link between sleep and hematological parameters is well-described, it is unclear how this integration affects the swimmer's performance. The parameters derived from the non-invasive critical velocity protocol have been extensively used to evaluate these athletes, especially the aerobic capacity (critical velocity—CV) and the anaerobic work capacity (AWC). Thus, this study applied the complex network model to verify the influence of sleep and hematological variables on the CV and AWC of young swimmers. Thirty-eight swimmers (male, n = 20; female, n = 18) completed five experimental evaluations. Initially, the athletes attended the laboratory facilities for venous blood collection, anthropometric measurements, and application of sleep questionnaires. Over the 4 subsequent days, athletes performed randomized maximal efforts on distances of 100, 200, 400, and 800-m. The aerobic and anerobic parameters were determined by linear function between distance vs. time, where CV relates to the slope of regression and AWC to y-intercept. Weighted but untargeted networks were generated based on significant ($p < 0.05$) correlations among variables regardless of the correlation coefficient. Betweenness and eigenvector metrics were used to highlight the more important nodes inside the complex network. Regardless of the centrality metric, basophils and red blood cells appeared as influential nodes in the networks with AWC or CV as targets. The role of other hematologic components was also

	revealed in these metrics, along with sleep total time. Overall, these results trigger new discussion on the influence of sleep and hematologic profile on the swimmer's performance, and the relationships presented by this targeted complex network can be an important tool throughout the athlete's development.
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