On-Ice Load Monitoring in Elite Female Ice Hockey
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Paper One:

On-Ice Physical Demands of Elite Women’s Ice Hockey: From Training to Competition

Purpose: To compare the on-ice external and internal training loads in elite women’s ice hockey during training and competition sessions. Method: On-ice training load data (PlayerLoad, PlayerLoad·Min\(^{-1}\), Explosive Efforts, TRIMP, TRIMP·Min\(^{-1}\)) were collected over a three-year span from 71 International-level ice hockey players via MinimaaX™ unit and Polar Heart Rate monitor. A total of 3283 on-ice events were recorded, with an average training events of 26.1 ± 23.8 for defence, and 28.7 ± 23.6 for forwards and average competition events 17.9 ± 14.3 for defence, and 19.6 ± 15 for forwards. Paired and unpaired t-tests compared training and competition data between and across skating positions. Results: For training data, there was a significant difference between positions for PlayerLoad (p = 0.01), PlayerLoad·Min\(^{-1}\), Explosive Efforts, TRIMP, and TRIMP·Min\(^{-1}\) (p < 0.001). For competition data, there were significant differences between positions for PlayerLoad (p = 0.047), PlayerLoad·Min\(^{-1}\), Explosive Efforts, TRIMP, and TRIMP·Min\(^{-1}\) (p < 0.001). Similar results were found when positions were viewed independently, competition had significantly greater load and intensity across both positions in all metrics (p < 0.001). Conclusions: There are clear differences in the volume and intensity of external and internal workloads between training and competition sessions, with athletes experiencing lower intensities and loads across all measures in training sessions. These differences were also evident when comparing the skating positions, with defense having lower outputs compared to forwards. These initial results can be used to design position-specific drills that replicate match demands for ice hockey athletes.