



Game-based conditioning:

Constraint-based games allow coaches to emphasise specific outcomes, such as quick ball movement, defensive pressure, or rapid transitions. These activities challenge athletes both physically and cognitively, closely replicating the demands of match play.

Physical conditioning can also be developed by manipulating work-to-rest ratios within drills. Shorter rest periods increase cardiovascular demand, while longer, high-intensity efforts develop power and repeated sprint ability. Scrimmage-based activities provide an opportunity to apply skills under fatigue, helping athletes maintain technical quality during game-like conditions.

By integrating conditioning into skill-based training, coaches can maximise training efficiency, improve game realism, and develop athletes who are physically prepared for the demands of competition which improves buy-in and commitment from their players.

Examples of Game-based constraints:

- Change the shot clock to speed up or slow down the game
- Alter the timebound rules of the game (I.E., 8 seconds to bounce the ball, or 12 seconds to cross the half).
- Alter the number of players on court
- Alter the court size.

In the table below you can see how some of the game constraints listed above alter the physical demands (such as speed and intensity ratio) placed on players in low point and high point classifications:

Table 3 Descriptive Statistics (Mean $\pm$ SD) of Modified Drills for Players of Different Classification Compared With Regular Game-Simulation Drills

	Drills							
	3 vs 3		30-s shot clock		15-s shot clock		Regular	
	LP	HP	LP	HP	LP	HP	LP	HP
Speed profiles								
Mean speed (m/s)	1.19 $\pm$ 0.13	1.38 $\pm$ 0.07	1.20 $\pm$ 0.03	1.30 $\pm$ 0.08	1.43 $\pm$ 0.07	1.38 $\pm$ 0.12	1.19 $\pm$ 0.15	1.26 $\pm$ 0.08
Peak speed (m/s)	3.50 $\pm$ 0.27	3.97 $\pm$ 0.23	3.39 $\pm$ 0.09	3.90 $\pm$ 0.18	3.86 $\pm$ 0.32	4.09 $\pm$ 0.12	3.45 $\pm$ 0.07	3.81 $\pm$ 0.27
Exercise intensity ratio (H:L)	1:2.9	1:3.1	1:3.2	1:4.1	1:2.2	1:3.5	1:3.1	1:3.8
High-speed activities								
Time spent (%)	5.3 $\pm$ 0.8	3.4 $\pm$ 1.1	2.4 $\pm$ 0.5	2.8 $\pm$ 0.8	4.4 $\pm$ 1.2	2.8 $\pm$ 1.1	3.1 $\pm$ 0.5	2.7 $\pm$ 0.8
Relative number (n/min)	1.2 $\pm$ 0.5	0.8 $\pm$ 0.2	0.8 $\pm$ 0.1	0.7 $\pm$ 0.1	1.3 $\pm$ 0.5	0.9 $\pm$ 0.3	0.8 $\pm$ 0.1	0.6 $\pm$ 0.2
Mean distance (m)	6.8 $\pm$ 1.5	7.3 $\pm$ 0.9	4.9 $\pm$ 0.9	7.6 $\pm$ 1.8	6.8 $\pm$ 1.3	6.9 $\pm$ 0.5	6.2 $\pm$ 1.4	7.6 $\pm$ 1.6
Mean duration (s)	2.2 $\pm$ 0.4	2.2 $\pm$ 0.3	1.6 $\pm$ 0.3	2.2 $\pm$ 0.5	1.7 $\pm$ 0.4	1.6 $\pm$ 0.2	2.0 $\pm$ 0.4	2.2 $\pm$ 0.3

Abbreviations: HP, high-point; LP, low-point; H:L, the ratio of high-speed activities to low-speed activities performed.

Rhodes, J. M., Mason, B. S., Paulson, T. A. W., & Goosey-Tolfrey, V. L. (2018). Altering the Speed Profiles of Wheelchair Rugby Players with Game-Simulation Drill Design. *International Journal of Sports Physiology and Performance*, 13(1), 37–43. <https://doi.org/10.1123/ijspp.2016-0700>

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