Rugby Training Programs for Performance Enhancement & Injury Prevention

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PREPARE FASTER

PERFORM BETTER

RECOVER QUICKER

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Rugby Programming Templates Overview

The Power Plate integrated programs are intended for the performance coach working to maximize training results for rugby players of all levels. The performance coach can manipulate the volume and intensity of the *Power Plate Prepare, Perform, and Recover* programs contained in this manual according to the season and individual needs of the athlete. For example, elite level rugby amateur and professional players may require a high volume of *Prepare & Recover* programs, and a lower volume of *Perform* programming in season. In contrast, a recreational player playing one match per week or a novice junior player should benefit from a higher volume of *Perform* programs in addition to *Prepare & Recover* programs.

Coaches should use their professional discretion, education, and experience when integrating *Power Plate* training into the runner's program. These programs are meant to provide guidelines based on the latest research and application of integrated *Power Plate* training.

Power Plate Training Injury Prevention/Performance Research:

https://powerplate.com/education-training/research

1. **Mobility**
2. **Knee Stabilization**
3. **Ankle Stabilization**
4. **Core Stabilization**
5. **Circulation**
6. **Pain Dampening**
7. **Improved Sprint Speed**
8. **Increase in Countermovement Jump Height**

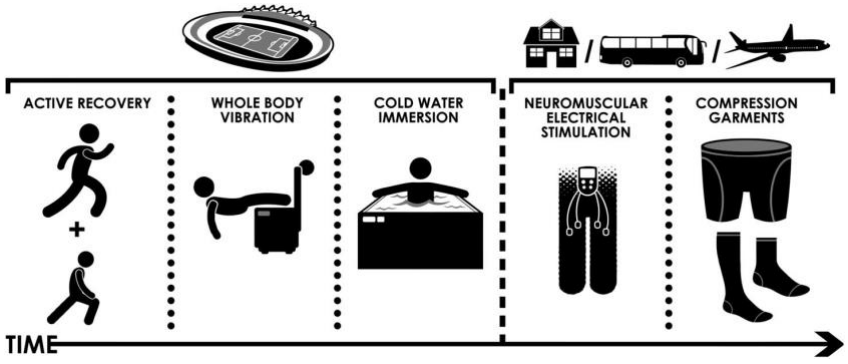

Figure 1: Suggested time line for recovery methods in soccer. Active recovery, whole-body vibration, and cold water immersion should be implemented progressively immediately after the match or training, and due to the needs of space and resources, these recovery strategies should be performed in the sports facility itself. Neuromuscular electrical stimulation and compression garments could be applied during the trip back home after the game or training or at the player's home (Rey, Padron-Cabo, Barcala-Furelos, Casamichana, & Romo-Perez, 2016)

Needs Analysis for Rugby

- **Rugby Overview** (Yeomans, et al., 2018)**:** Rugby has become one of the most played and watched collision sports in the world, with approximately 8.5 million registered players in over 121 countries worldwide. Two of the major variants are *rugby union* (15 players) and *rugby league* (13 players) which have slightly different rules & pitch sizes that are beyond the scope of this manual. *Rugby Sevens* is another variant, with seven players per side playing shortened seven-minute halves. All forms of rugby require high-intensity, intermittent bouts of multi-directional movements which include tackling and avoidance of being tackled, along with carrying, passing, and kicking. In addition, there are a number of complex sport-specific activities involved in rugby, such as scrums, mauls, rucks, and line-outs (Mills, Smith, & McMaster, 2018).

- **Common Injuries** (Yeomans, et al., 2018)**:** Contact related injuries account for the majority of rugby injuries, with the tackler more at risk than the player being tackled (4% higher). It is estimated that between 5-25% of contact injuries in rugby are to the head. Contusions, sprains, and strains were most common (40% of all injuries) with the knee being the most reported site injured, followed by the shoulder and ankle. Fractures and lacerations are also commonly seen in rugby players of all ages and levels.

- **Multi-directional Agility & Quickness Demands:** Efficient, repeated maximal changes of direction either anticipated (agility) or reactive (quickness) are arguably the most important movement skills needed for success at all rugby positions and should be included to some degree at all points in a year-round periodized training program.

- **Linear Acceleration Demands:** Both forwards and backs will need to intermittently sprint/accelerate for short distances during matches and practice, with backs generally covering more total meters and number of sprints in both *Sevens* and *Union* play (Misseldine, Blagrove, & Goodwin, 2018).

- **Absolute Speed Demands:** Longer distance linear sprinting (> 20 yards) is more prevalent for backs than forward but should be trained to some degree with all players with sprinting, vertical plyometrics, and strength/power movements (Misseldine, Blagrove, & Goodwin, 2018). Power Plate training has been shown to improve countermovement jump (a predictor of absolute speed) height by 3.3% over a period of six weeks (Paradisis & Zacharogiannis, 2007).

- **Flexibility Demands:** Emphasis on ankles, hips, and thoracic spine mobility in 3 planes of motion to meet movement demands listed above and reduce risk of injury, since an estimated 40% of all rugby injuries have been shown to be sprains or strains (Yeomans, et al., 2018).

- **Stabilization Demands:** Lower extremity stabilization movements should be programmed into each phase of training with an emphasis on multi-planar horizontal and vertical deceleration (jump, hop, bound) to reduce knee and ankle injury risk. Power Plate has been shown to increase rate of torque development in the quadriceps post ACL injury, which is an important marker for return to play (Pamukoff, et al., 2017). Upper extremity (core, shoulder girdle, & neck) stabilization is needed to reduce injury risk for contact (tackling, rucks, scrums, & mauls).

- **Power Demands:** Development of lower body horizontal power is a priority for short distance acceleration (sprints) and contact (scrums). Total body rotational power is needed for tackling, kicking, and passing. Lower body vertical power for jumping & longer sprinting is needed along with upper body power for various skills (especially from prone position for "rucks").

- **Strength Demands:** Development of total body strength is critical for efficient force transfer in linear sprinting, multi-planar cutting, delivering and absorbing contact when tackling and in rucks, mauls, and scrums (Mills, Smith, & McMaster, 2018). A periodized strength training program with varying strength movements, volume, and intensity based on time of year and position is recommended.

- **Core Strength/Power Demands:** Core strength is needed for efficient force production to efficiently absorb and deliver contact for rugby. Power is needed in the core for efficient force transfer in multi-directional cutting, linear sprinting, tackling, kicking, etc.

- **Energy System Demands** (Yeomans, et al., 2018)**:** *Rugby Union & Rugby League* matches consist of two 40-minute halves, on fields approximately 120-m in length & 58-68-m in width *Rugby Sevens* matches are much shorter in duration (7 min. halves) but play on the same size pitch with less players. In general, rugby players will need a good balance of metabolic training across all energy systems. The ATP-PC system will be important for short-burst maximal power and speed. The glycolytic and aerobic systems also need to be trained for submaximal repeat movements and recovery between these efforts for the entire match. The energy system demands will vary among positions, with backs generally covering more total distance and short sprints during a match than forwards.

- **Common Rugby Performance/Athletic Profiling Tests:** Testing for elite level players will often include field based anaerobic threshold and VO2 max testing such as the *Yo-Yo Intermittent Recovery Test, 30-15 Fitness Test,* and the *Beep Test.* Elite and recreational players will also commonly assess maximal lower extremity strength (squat or deadlift), power (Olympic lifts), & agility (T-Test or similar). It is also recommended that a general movement screen that can identify unilateral asymmetries in mobility, stability, and/or strength in all planes of motion be used to aid in development of individualized Prehabilitation programs.

Prepare: Rugby Movement Preparation (Full)

Prepare: **Soft-Tissue***	**Sets**	**Frequency & Amplitude**	**Duration**	**Load**	**Rest**
Stick Massage: IT/TFL	1	40 Hz/High	1:00 each	BW	0
Stick Massage: Gastroc & Soleus	1	40 Hz/High	1:00 each	BW	0
Foam Roll: Quadriceps	1	40 Hz/High	1:00 each	BW	0
Foam Roll: Adductor	1	40 Hz/High	1:00 each	BW	0
Foam Roll: Chest	1	40 Hz/High	1:00 each	BW	0
***Prepare:* Mobility**	**Sets**	**Frequency & Amplitude**	**Duration**	**Load**	**Rest**
Prone Kneeling Thoracic Extension	1	35-40 Hz/Low	:30-:60	BW	0
Prone Kneeling Adductor	1	35-40 Hz/Low	:30-:60 ea.	BW	0
Standing Hamstring	1	35-40 Hz/Low	:30-:60	BW	0
Standing Gastroc w/Rotational Hip Drive	1	35-40 Hz/Low	:30-:60 ea.	BW	0
½ Kneeling Anterior Hip w/Rotation & Lateral Flexion	1	35-40 Hz/Low	:30-:60 ea.	BW	0
***Prepare:* Activation**	**Sets**	**Frequency & Amplitude**	**Duration**	**Load**	**Rest**
Supine Hip Extension Single Leg	1-2	35-40 Hz/Low	:30-:60 ea.	BW	0
Prone Plank to Side Lying Plank Alternating**	1-2	35-40 Hz/Low	:45-:60	BW	0
Single Leg Balance & Lateral Foot Reach	1-2	35-40 Hz/Low	:30-:45 ea.	BW	0
Deadlift Single Leg Holds w/Hip Rotation	1-2	35-40 Hz/Low	:30-:45 ea.	BW	0
Step Up Lateral	1-2	35-40 Hz/Low	:30-:45 ea.	BW	0
Hip Swings Rotational	1-2	35-40 Hz/Low	:30-:45 ea.	BW	0

Notes:

- **Total body rugby movement preparation for athletes with more time/plates available**
- **All soft-tissue movements can be done with Power Plate only or with varying types of foam rollers, balls, etc. for more localized pressure**
- ***Foot or foam roller on Power Plate**
- ****Hold each plank for 3 seconds then transition to next one for :45-:60 total time**

Prepare: Rugby Express Movement Preparation (9:00)

Prepare: Soft-Tissue	Sets	Frequency & Amplitude	Duration	Load	Rest
Ball Roll: Lateral Glutes	1	40 Hz/High	:45 each	BW	0
Stick Massage: Gastroc & Soleus*	1	40 Hz/High	:45 each	BW	0
***Prepare:* Mobility**	**Sets**	**Frequency & Amplitude**	**Duration**	**Load**	**Rest**
Anterior Lunge Elbow to Instep w/Rotational Reach*	1	35-40 Hz/Low	:30 ea.	BW	0
Standing Adductor w/Overhead Reach	1	35-40 Hz/Low	:30 ea.	BW	0
Pushup Hold w/ Flexion & Extension (Inchworm)	1	35-40 Hz/Low	:60	BW	0
***Prepare:* Activation**	**Sets**	**Frequency & Amplitude**	**Duration**	**Load**	**Rest**
Step Up Lateral to Leg Cradle	1	35-40 Hz/Low	:30 ea.	BW	0
Prone Plank to Pushup w/1 Arm Holds Alternating	1	35-40 Hz/Low	:60	BW	0
Step Up Anterior to Hip Hug	1	35-40 Hz/Low	:30 ea.	BW	0

Notes:

- **Designed to hit key areas and maximize efficiency for rugby players short on time, at half time, or for teams with limited *Power Plates***
- **All soft-tissue movements can be done with Power Plate only or with varying types of foam rollers, balls, etc. for more localized pressure**
- ***Foot on Power Plate**

Recover: Inter-Session Active Recovery (Full)

Recover: Soft-Tissue	Sets	Frequency & Amplitude	Duration	Load	Rest
Ball Roll: Thoracic Spine (Posterior)	1	40 Hz/High	1:00 each	BW	0
Ball Roll: Latissimus Dorsi	1	40 Hz/High	1:00 each	BW	0
Stick Massage: Gastroc & Soleus*	1	40 Hz/High	1:00 each	BW	0
Foam Roll: Glutes (Posterior)	1	40 Hz/High	1:00 each	BW	0
Foam Roll: Adductors	1	40 Hz/High	1:00 each	BW	0
Foam Roll: Quadriceps	1	40 Hz/High	1:00 each	BW	0
***Recover:* Mobility**	**Sets**	**Frequency & Amplitude**	**Duration**	**Load**	**Rest**
½ Kneeling Anterior Hip/Quadriceps (RLE)**	1	35-40 Hz/Low	:30-:60 ea.	BW	0
Prone Kneeling Chest w/Thoracic Rotation	1	35-40 Hz/Low	:30-:60 ea.	BW	0
Standing Hamstring w/Posterior Reach	1	35-40 Hz/Low	:30-:60 ea.	BW	0
Prone Kneeling Thoracic Extension	1	35-40 Hz/Low	:30-:60	BW	0
Seated Lateral/Posterior Hip	1	35-40 Hz/Low	:30-:60 ea.	BW	0
Prone Kneeling Adductor w/Anterior-Posterior Drive	1	35-40 Hz/Low	:30-:60 ea.	BW	0
***Recover:* Activation**	**Sets**	**Frequency & Amplitude**	**Duration**	**Load**	**Rest**
Supine Hip Extension (Bench)	1-2	35-40 Hz/Low	:30-:60	BW	0
Prone Plank w/Scapular Protraction/Retraction	1-2	35-40 Hz/Low	:30-:45 ea.	BW	0
Squat Lateral (Trail Leg on Box)	1-2	35-40 Hz/Low	:30-:45 ea.	BW	0
Step Up Rotational to Hip Hug	1-2	35-40 Hz/Low	:30-:45 ea.	BW	0

For the full programming, feel free to contact us!

-the Power Plate Team