Rugby Union Specific Training

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This training protocol is designed to provide you with a series of exercises and ideas on how to get the most out of your POWERbreathe, specifically focussing on the demands of Rugby Union. All the techniques and exercises within this training protocol are intended as a guide and can be adapted and tailored to suit the abilities and requirements of the user.

Establish your correct training load/level: Before commencing POWERbreathe® training it is essential that you establish the correct training load/level on your unit. Comprehensive guidance can be found in the User Manual, and also the POWERbreathe® instructional DVD. As is the case with your normal POWERbreathe training you will be working towards completing 30 breaths. However in order to reach your 30 breaths, the exercises in this training programme will often be broken down into undertaking 3 sets of 10 breaths throughout the exercise.

If you find that completing 30 breaths is easy whilst doing the exercises, increase the training load/level and resistance by one turn. If you find the exercises too hard to complete, reduce the training load/level and resistance by one turn.

1) Using POWERbreathe® as part of your warm up and recovery

Pre-Training Warm-up:
Working on a load/level 1 ½ levels below your current training load/level, take 30 controlled breaths no more than 10 minutes before you begin your training.

Pre-Game Warm-up:
Working on a load/level 1 ½ levels below your current training load/level, take 30 controlled breaths immediately before you begin your warm-up prior to your game.

Current Training Load/Level	Ideal Warm Up Load/Level
Level 9	Level 7
Level 8	Level 6
Level 7	Level 5.5
Level 6	Level 4.5
Level 5	Level 4
Level 4	Level 3
Level 3	Level 2
Level 2	Level 1.5
Level 1	Level 0.5
Level 0	Level 0

POWERbreathe & Recovery[1]:

After intense exercise, there is an accumulation of a metabolite called lactate in the blood. Lactate is produced by muscles when they work intensely, and it has been linked to fatigue. For many years, athletes have used active recoveries to get rid of lactate more quickly (when working at low intensities, muscles can consume lactate).

Breathing against a small inspiratory load immediately after exercise reduces lactate by 16%. What's more, unlike a normal active recovery which takes around five minutes to speed-up lactate clearance, inspiratory loading reduces lactate as soon as exercise stops. Furthermore, when using the inspiratory load, lactate

[1] A recent study has shown that the metabolite lactate is cleared from the blood more quickly if athletes breathe against a low inspiratory load during recovery[1].

concentration after just 5 minutes is equivalent to that achieved in 15 minutes during passive recovery.

This means that POWERbreathe® can be used as a recovery tool for any situation in which you want to get rid of lactate as quickly as possible to speed recovery.

Recovery set:
Adjust the load/level on the POWERbreathe® to 2 levels below your training load/level and breathe deeply and slowly against the load continuously for 5 minutes, or for as long as you have available.

2) POWERbreathe Body Conditioning Programme

The following exercises are to be introduced into a conditioning and training programme along side your other Rugby specific training. These exercises are designed as a training guide and can be adapted to suit the performers needs requirements.

The Rugby specific POWERbreathe training protocol aims at improving leg strength and power as well as developing various upper body and core muscles. Areas of the upper body, including the abdominal muscles, are an integral part of Rugby.

Table X in section 4 provides an example of how these exercises can be integrated into a daily programme. These exercises are designed as a guide and can be adapted to suit the performers' needs and requirements:

(i) POWERbreathe Back Squats

Main Muscles Worked: Quadriceps, Inspiratory Muscles
Secondary Muscles Worked: Hamstrings, Calves, Lower back, Core
POWERbreathe Impact: Whilst developing leg strength and power POWERbreathe engages the core muscles further as you stabilize the upper body in order to lift the weight further strengthening the inspiratory muscles and enhancing breathing control.
Equipment: Barbell, POWERbreathe
Mechanics Type: Compound

Programme: 3 sets of 10 reps and breaths. Allow 30 seconds recovery between sets.

Coaching points: Set your POWERbreathe® to your training load. Inhale through the PB as you descend into the squat, then exhale as you explode up developing leg strength and power. Use this breathing pattern for one set, and then switch the inhale and exhale phases during the next set, i.e., Exhale through the PB as you descend into the squat, then inhale as you explode up.

By introducing the PB into this exercise it will engage important core and torso stabilising muscles to a greater extent, aiding in core stabilisation, as well as regulating your breathing control and development of inspiratory power. To make this exercise harder try introducing an unstable platform such as a Bosu ball, or stability cushion such as a Togu Dynair cushion (36cm) or XXL Sports cushion.

(ii) POWERbreathe Dead Lift

Main Muscles Worked: Lower Back, Inspiratory Muscles
Secondary Muscles Worked: Hamstrings, Calves
The POWERbreathe Impact: Enhances the engagement of core and torso stabilising muscles as you inhale through the POWERbreathe®. Whilst this lifts develops lower back and hamstring strength the use of POWERbreathe engages the diaphragm and rib cage muscles developing core and torso strength, improving control and increasing inspiratory power.
Equipment: Barbell, POWERbreathe
Mechanics: Compound

Programme: 3 sets of 10 reps and breaths. Allow 30 second recovery between sets.

Coaching points: Flex forward at the hip and place PB in your mouth, keeping your eyes facing forward (not down). Extend at the hip and straighten your legs lifting the weight. Breathe in hard through the PB filling the lungs right up as you do this, expanding your chest engaging all the inspiratory muscles fully and contracting the diaphragm (remember push your chest out). As you lower the weight breathe out, always keeping your eyes facing forward; don't allow your chin to drop onto your chest and keep your back flat. Use this breathing pattern for one set, and then switch the inhale and exhale phases during the next set, i.e., Exhale through the PB as you lift the weight, then inhale as you lower it.

iii) POWERbreathe Press

Main muscles worked: Pectorals, Inspiratory Muscles
Secondary Muscles worked: Triceps, Shoulders
The POWERbreathe impact: The POWERbreathe Press requires the muscles of the pectorals, triceps and the shoulders to push the weight of the chest. The stabilizer muscles and inspiratory muscles including the intercostals and diaphragm also come into play to help you balance the weight. By adding POWERbreathe® to the Bench press you add an extra challenge to these stabilising muscles, as well as forcing your inspiratory muscles to work even harder against the stiffened rib cage as you contract.
Equipment: Barbell, POWERbreathe

Mechanics Type: Compound

Programme: 3 sets of 10 reps and breaths. Allow 30 seconds recovery between sets.

Coaching points: Lie flat on the bench and place the PB in your mouth, look straight and ahead lift the weight of its supports. Breathe in hard as you lower the weight towards your chest, fill lungs right up. Exhale as you explode upwards with the weight As you lower the weight back to your chest back into the start position breathe in again hard and fill the lungs up engaging the diaphragm and intercostals muscles developing breathing control and power. Use this breathing pattern for one set, and then switch the inhale and exhale phases during the next set, i.e., Exhale through the PB as you lower the weight, then inhale as you explode upwards.

(iv) Kneel Balance and Breathe

Main muscles worked: Abdominals, Obloquies, Inspiratory Muscles

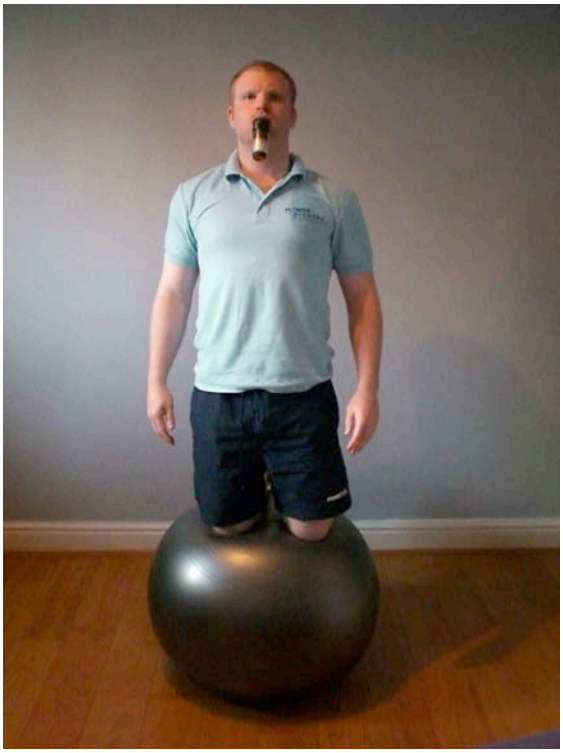
Secondary Muscles worked: Quadriceps

The POWERbreathe impact: This exercise develops core strength, balance, coordination and stability. By engaging the inspiratory muscles whilst in an unstable position you force the diaphragm and intercostals muscles to work hard as both breathing muscles, and core stabilising muscles.. This will build their ability to function effectively in both of these vital roles.

Equipment: Balance Ball, POWERbreathe

Mechanics Type: Compound

Programme: Hold the balance and complete 10 breaths this is 1 set, undertake 3 sets. Allow 30 seconds recovery between sets.



Coaching points: Start off by getting onto the Balance Ball as the picture indicates. As you rise up, force your knees into the ball and straighten the back (sometimes it is best to work with a partner in order to get you into this position alternatively use a wall to help steady your self). When you have found your balance point, place the PB in you mouth and complete 10 breaths. Complete this 3 times.

(v) POWERbreathe Super Crunch

Main muscles worked: Abdominals, Obliquies, IMT Muscles
Secondary Muscles worked: None
The POWERbreathe impact: By breathing against the POWERbreathe® whilst holding the crunch, you engage more core muscles, including the diaphragm and the intercostals as well as the obloquies, transverse abdominus and rectus abdominus. This provides an intense and more holistic core development exercise whilst improving your breathing power, strength and endurance.
Equipment: Balance Ball, POWERbreathe
Mechanics Type: Compound

Programme: 3 sets of 10 crunches and breaths

Coaching points: Lie on a balance ball (Togu Abs Ball). Make sure that the roundness of the ball fits into the curve at the bottom of your back and spine. Keeping legs shoulder width apart and flat on the floor at all times. When comfortable move your upper body forward into a crunch position as in the picture. Place your PB in your mouth and hold the crunch position then undertake 10 controlled breaths. When complete remove PB from your mouth and return to a flat position. Repeat process 3 times.

3) POWERbreathe® additional Training Applications

(i) POWERbreathe Circuits:

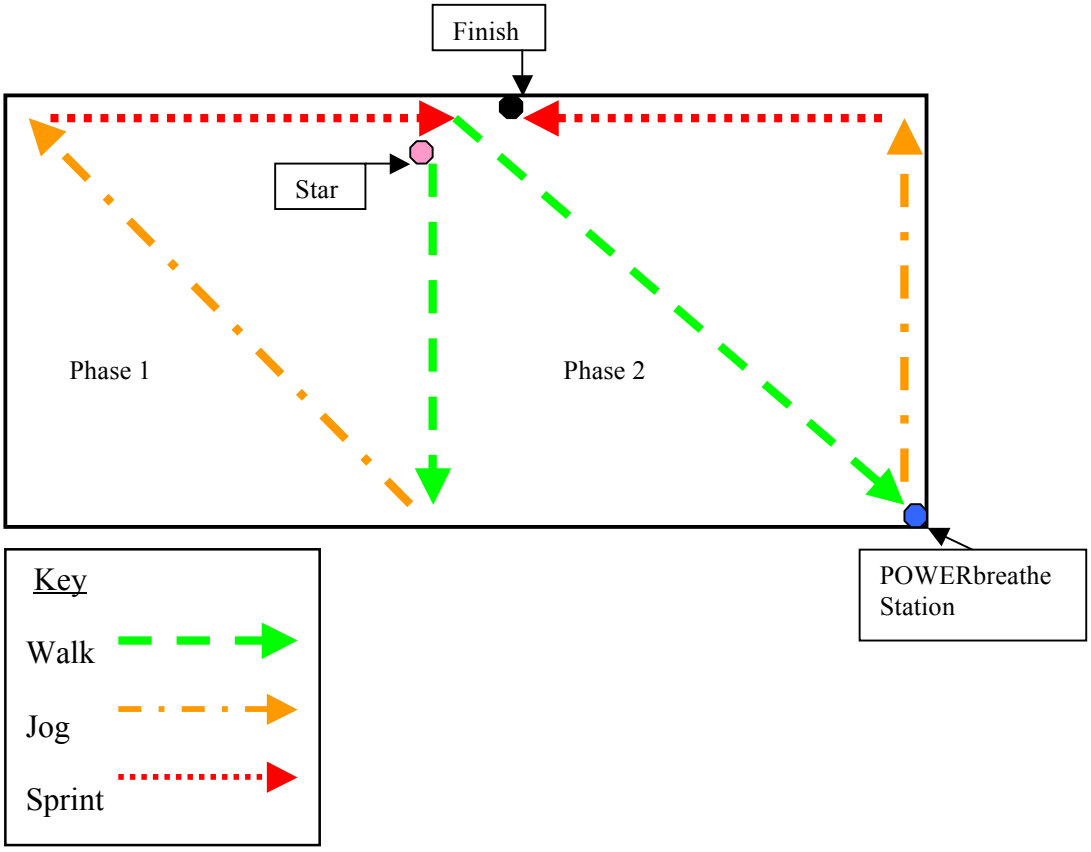
Rugby requires short bouts of intense physical activity and power. Therefore this programme focuses on rapid bursts of exercise with short recovery times. This is an example of a circuit that POWERbreathe could be integrated into. This circuit becomes progressively harder over a 6-week period. Allow only 1-minute recovery between exercises and repeat 3 circuits.

Use weights that are about 20% - 30% lighter than you would normally lift. During the POWERbreathe® stations undertake 10 breaths on your current training load/level and adjust the resistance load/level throughout the 6-week programme as indicated.

	Week 1	**Week 2**	**Week 3**	**Week 4**	**Week 5**	**Week 6**
Intensity	Low	Med	High	Low	Med	High
Stations						
Squat Throws	30 sec	30 sec	45 sec	30sec	30 sec	45 sec
Abs Crunches	20	25	30	20	30	30
Dumbbell Lunges	30 sec	30 sec	45 sec	30 sec	30 sec	45 sec
Push Ups	31 sec	31 sec	46 sec	31 sec	31 sec	46 sec
PB Training	10 breaths	10 breaths	10 breaths (+1/2 a turn)	10breaths	10breaths	10breaths (+1/2 turn)
Side Throws	30 sec	30 sec	45 sec	30 sec	30 sec	45 sec
Triceps Dips	30 sec	30 sec	45 sec	30 sec	30 sec	45 sec
No of Circuits	3	3	3	3	3	3

(ii) POWERbreathe Intervals

The interval training session below is intended to build cardiorespiratory endurance and recovery for a multi sprint sport such as Rugby. It incorporates a sharp turn when moving from a jog to a sprint in order to develop explosive power when changing direction. Built into the second half of the drill there is a PB station. After a short recovery walk undertake 10 breaths then move into the second jogging phase. This PB station is intended to further exercise the inspiratory muscles and also aid in the recovery process after the first phase of the circuit.



(4) Integrating POWERbreathe into an overall fitness programme

Table X: An example of how to fit the exercises discussed in this protocol into a daily training regime:

	Exercise 1	**Exercise 2**
Sunday	Rest Day	Rest Day
Monday	POWERbreathe Back Squats	POWERbreathe Dead Lift
Tuesday	POWERbreathe Bench Press	POWERbreathe Circuits
Wednesday	POWERbreathe Balance and Breathe	POWERbreathe Super Crunch
Thursday	POWERbreathe Intervals	
Friday	Kneel Balance and Breathe	POWERbreathe Super Crunch
Saturday	Match Day Warm-Up	Match Day Cool-Down

References

1. Chiappa GR, Roseguini BT, Alves CN, Ferlin EL, Neder JA, Ribeiro JP. Blood lactate during recovery from intense exercise: impact of inspiratory loading. Med Sci Sports Exerc 2008;40(1):111-6.