



SARACENS
Club Partnership Programme 2004/5

Coaches E-mail

**NEXT HOME GAME is this weekend:
Saracens v Leeds - Sunday 26th September - kick off 3pm.**

CLUB PARTNERSHIP NEWS

Coach Development (DATES FOR YOUR DIARY)

The first ***Coaches Open Day*** of the new season will be held on Thursday 14th October 2004. The day is an opportunity for Partner Club Coaches to attend Saracens Training, meet and chat with the coaches and pick up some tips from the sessions being run. If you would like to attend the day it will run from 9.00am until training finishes, which is usually from 1.30-2.30pm depending on the schedule. To book your place please email davehesketh@saracens.net with your name, club and telephone number. Don't forget to book the day off work and we'll send confirmation and further details once the training schedule has been finalised.

In addition to this open day we also have some further details of forthcoming ***Coach the Coaches*** sessions. These will be run in a similar way to last year with sessions run on a Tuesday evening from 7.00pm – 8.30pm, meet from 6.30 onwards for buffet snacks for those coming straight from work.

The sessions are free to Partner Club Coaches (and possibly players interested in learning more about the game) and will be made up of a theory session indoors and a practical session outdoors observing Saracens coaches working with academy players.

The dates for the first two sessions are as follows (BOOK THEM IN YOUR DIARY NOW!):

1. Tuesday 9th November – Herts Sports Village – 7.00-8.30pm – TURNOVER BALL
2. Tuesday 25th January – Herts Sports Village – 7.00-8.30pm – CONTINUITY
3. The third session will be held in March – but a final date & topic is still to be confirmed.

To book your place onto one, or both, of these sessions please email davehesketh@saracens.net with your name and which partner club you are linked to.

Saracens Masterclass – 26th – 28th October 2004 (Half Term Week)

The next Masterclass coaching course, to develop young players, aged U7-U16, in the local area. It is being held for three days during the October Half Term holiday (26th – 28th) and will be based at Fullarians RFC, running from 9.00am – 4.00pm each day. The focus of the training will be on basic individual, unit and team skills, with input from our professional players on each day.

If you could please promote the course to your teams it would be greatly appreciated, as this is a unique opportunity for young players to develop their skills during an intensive course during their holidays. There are only a limited number of places available, and previous courses have sold out within weeks, so please mention this to your players as soon as possible. If they are interested please tell them to check out the Community section on www.saracens.com, email davehesketh@saracens.net or call me on 01923 475231.

Sarrie's Squad (<http://www.saracens.com/sarries/news.php>)

Has your age group signed up?

As an exclusive offer to partner Club members only – Saracens are offering FREE membership to all U6-U12 members. Each member will receive an official Sarrie's Squad Membership Card - The chance to be a Saracens Mascot (U12s only), and lead out the team at Vicarage Road - A 2004/05 Saracens Squad poster - A free child's ticket to a Saracens matchday - Birthday E-Card and your name on the Sarrie's Squad page on the Saracens Official Website - Regular competitions with exciting prizes - An invite to meet the players at an exclusive Sarrie's Squad event - Fortnightly e-mailed Newsletters (to your own or a family e-mail address) - A Domino's Pizza Voucher Booklet. In addition to all this, each member is entitled to a discounted 'Sarries Squad' Gilbert Rugby Ball for just £5.

For more details, or for an application form, call Kate on 01923 204611 or e-mail sarriessquad@saracens.net. Alternatively pick up an application form from your club.

Coaches Needed

- Are you a Level 1 or Level 2 RFU qualified coach?
- Would you be interested in working with the Saracens Community Team during school holidays?

Saracens Community are looking to broaden their coaching resources, particularly for Masterclass Coaching courses during the school holidays. If you're interested in getting involved please send a Coaching CV with details of your experience to Dave Hesketh at Rigby House, 34 The Parade, High Street, Watford, Herts WD17 1EA

Be Part of the Squad – Great New opportunities from Saracens

This year we are offering a NEW special ticketing offer to our partner clubs' members which will help raise money for your own club through CashBack, allow you to sit in other areas of the stadium other than the South Stand and attend more Saracens games.

If you are unable to attend every game, this season we are launching our **BRAND NEW 'Six Pack' offer**. This offer entitles you to pick SIX games which you would like to attend over the season, and order all of them at the same time for a discounted price. Why not pick the same four games that your club is targeting plus two big games that you can't bear to miss? These tickets are available in all stands and as with the STs, if you miss one of the games you pick, Saracens can exchange the ticket for another match.

For more details speak to the Saracens co-ordinator at your club, email davehesketh@saracens.net for an application form or alternatively call **Clare on 01923 204606**.

Remember for every Six Pack or Season Ticket bought by a member of your club, Saracens will pay Cashback to the club to spend on new equipment or even next Easter's tour.

Pre-Season Training Advice

Below is a publication which highlights the different fitness training needed for different playing positions on the pitch. The Saracens Strength and Conditioning Team have to take into consideration the different requirements of the individuals in each area of the pitch and research such as this is vital to make sure that their planning and conditioning programmes are up-to-date and relevant to the individual players. There is a little bit of science in here but it does make some useful points and suggestions.

Rugby training: how rugby training should reflect the varying energy demands of players field positions

Sports scientists classify team sports like rugby as 'intermittent sprint sports' because, in the course of a match, players will alternate between fast running or sprinting, walking, jogging and standing. Rugby matches are a bit like random interval workouts – except that they also involve non-running activities, such as rucking, mauling and scrummaging. These are game-specific tasks, during which groups of players push against the opposition; and, like fast running and sprinting, they are high-intensity activities.

When rugby players perform these high-intensity activities, their anaerobic systems provide the required energy, while the aerobic system predominates during the low-intensity activities.

If the high-intensity periods are short (less than 10 seconds) and recovery times between efforts are relatively long (60 seconds-plus), then the phosphocreatine (PCr) system will be the key source of anaerobic energy. This is the simplest and most rapid means of energy production, in which phosphate (donated by phosphocreatine) and ADP combine to make ATP – the body's primary energy currency and supplier to all cells. During the low-intensity periods, the aerobic system will replenish PCr stores, ready for the next high-intensity effort.

However, PCr stores can provide energy for only about 10 seconds of activity. So, if the high intensity periods are of intermediate length (10-45 seconds) or the recovery times are relatively short (20-40 seconds), then the glycolytic system of anaerobic energy production, involving the breakdown of carbohydrate within muscle cells to release energy, comes into play. Similarly, short periods of high-intensity work, interspersed with recovery times that are too brief for complete replenishment of PCr stores, also bring the glycolytic system into play.

From the physiological point of view, there are two interesting questions about rugby:

1. What is the ratio of high-intensity to low-intensity activity?
2. Does the work/rest ratio vary with player position?

The answers to these questions should help us to understand the key physiological demands on the players so that we can help them train for top performance.

Early research on rugby suggested that players spend only 5-10% of match time involved in high-intensity activity and the researchers concluded that the PCr energy system would be the most important ⁽¹⁾. However, this study did not analyse the ratio of high-intensity to low-intensity activity, which makes this conclusion unsound. Another study of under 19s matches analysed individual players, focusing on time spent in various activities and work/rest ratios ⁽²⁾. An interesting finding of this study was that forwards performed three times more high-intensity work than backs – 11.2 minutes per match versus 3.6 minutes per match. This suggests that forwards may make more use of the glycolytic system and backs more use of the PCr system.

The research drawn on for this article is an unpublished study which analysed the time and motion of 29 top-class professional rugby union players, who were filmed during the course of eight professional 'Super 12' matches in New Zealand ⁽³⁾.

Players were placed into one of four positional groups:

1. Front row forwards (props and locks, or numbers 1,3, 4 & 5);
2. Back row forwards (hooker, flankers and no 8, or numbers 2, 6, 7 & 8);
3. Inside backs (fly half and centres, or numbers 10, 12 & 13);
4. Outside backs (wingers and full back, or numbers 11, 14 & 15).

The hooker was placed in the back row group as they have a roving role at line-outs and do not push as much in the scrum as other front row forwards. The scrum half position was not analysed. One or two players from each positional group were analysed during each match.

	Front row forwards	Back row forwards	Inside backs	Outside backs
Average high-intensity efforts per match	128.5	113.5	51.5	41.6
Average duration of high-intensity effort	5.0s	5.2s	4.2s	5.2s
Average duration of low-intensity effort	35s	37s	88s	115s

The researchers broke down player movements as follows:

- standing still, walking, jogging, side/backwards stepping – all classified as low-intensity activity;
- running, sprinting, rucking/mauling, scrummaging and tackling – all classified as high-intensity activity.

They then analysed the amount of time spent in each category of movement and the frequency and average time of each individual activity. The key data are summarised in the table above.

As you can see, both front row and back row forwards complete many more high-intensity efforts per match than backs, with front row forwards performing over three times more than outside backs. While the average duration of high-intensity efforts are similar, at around five seconds, across all four positional groups, the average rest periods for the forwards are significantly shorter. Since both sets of forwards only get to enjoy around 35 seconds of recovery, their PCr stores will not be replenished and so the glycolytic energy system will be very important for maintaining the work rate required.

Backs, by contrast, get plenty of recovery time between high-intensity efforts (88-115 seconds), which is easily enough time to replenish PCr stores. The PCr system will, therefore, be most important for backs.

The researchers also found that the type of high-intensity activity varied between positional groups. Of the different types of high-intensity activity, front row forwards performed fewer sprints, while backs performed more high-intensity runs and sprints. Back row forwards and inside backs completed an average of seven sprints per match and outside backs an average of 11.

By contrast, forwards were involved in many more rucks, mauls and scrums than backs. Front row forwards, for example, were involved in an average of 75 rucks/mauls and back row forwards in 57, while inside and outside backs were involved in only 11 and seven respectively.

This research data leads to the following conclusions about the key differences between forwards and backs:

- Forwards have to complete more high-intensity activity than backs, with shorter periods of low-intensity activity between them, which means the anaerobic glycolytic system is of prime importance for them;
- The type of high-intensity activity forwards perform tends to be 'physical work', eg pushing;
- Backs perform less high-intensity activity than forwards, with sufficient rest between efforts for the PCr system to predominate;
- Running and sprinting are the commonest high-intensity activities for backs.

Interval training for anaerobic fitness

Clearly, forwards need to develop good anaerobic fitness, specifically targeting the glycolytic system. The best way to train this system is through interval training, making sure that work periods are sufficiently long (20-40 seconds) and rest periods long enough to allow athletes to repeat the work but not recover completely (40-90s). A good example would be 10 x 200m fast running, with 60s rest.

However, as forwards tend to perform more high-intensity 'physical work' than running, performing intervals on a rowing machine might be a better – ie more sport-specific – choice; for example, 5 sets of 4 x 200m fast rowing, with 30s rest between reps and 2 minutes between sets.

Even more specific to the demands of match play would be interval workouts that combine 'physical work' with running. This would prepare players to work intensively and make appropriate transitions between upper body/trunk strength tasks and running. Players could work in pairs to push or wrestle with each other and then run a fixed distance, with the combination of push/wrestle and run counting as one interval rep; for example, 20 x 5s of push/wrestle + 50m shuttle run, with 30s rest between reps. This kind of workout would provide a close match of both the energy system and physical task demands of forwards' match play.

Backs, by contrast, need high anaerobic power, targeting the PCr energy system. Interval training is also a very effective route to PCr fitness, but the work intensity must be higher and the rest periods longer than with intervals targeting the glycolytic energy system; 5-8s reps and rest periods lasting a minimum of 60s would be highly appropriate, eg 10 x 50m sprints with 90s recovery. For backs, this sprinting workout would be highly sport-specific, reflecting the amount of high-intensity running they perform in matches.

Aerobic fitness is important for both backs and forwards, since the aerobic system will provide most of the energy for movement and replenishment of PCr stores during all low-intensity activities. In addition, research has demonstrated that players with high aerobic fitness are able to perform more high-intensity efforts during a match than those with lower levels of this type of fitness because of the aerobic system's influence on recovery. Forwards will also use their aerobic systems to provide energy for the longer high-intensity or shorter recovery periods, providing valuable back-up for the anaerobic glycolytic system.

As far as aerobic endurance training is concerned, the rowing machine may still be the best activity choice for forwards, with running best for backs. A combination of continuous steady state training

and interval workouts would be an effective approach: for example, 20 minutes running or rowing at 75% of max heart rate, or 10 x 400m running with 60s rest, or 6 x 500m rowing with 2mins rest. More specific workouts could be developed by performing shuttle runs instead of straight runs as intervals to increase the agility running component for backs. In addition, sessions incorporating circuit exercises to develop pushing and wrestling strength would be useful for forward players.

To summarise, this time-and-motion analysis of professional rugby union play sheds some interesting light on both the physiological demands of the game and the differences between individual positions. Training programmes for rugby should reflect these different physiological demands and activity profiles, with the example workouts recommended in this article being good starting points.

References

- Journal of Human Movement Studies 14(6), 269-277, 1988
- Journal of Sports Sciences, 16, 561-570, 1998
- Time Motion Analysis of Professional Rugby Union Players during Match Play. Unpublished study