



Home training: Formula 1 route to success!

How can home gym users avoid the 'boredom trap', which so often scuppers even the best training intentions? **Andrew Hamilton**, just back from Lotus Renault GP racing team's headquarters, explains...

By **Andrew Hamilton BSc Hons MRSC ACSM**

Buried in the heart of the rolling Oxfordshire countryside is the headquarters of the Lotus Renault GP racing team. But this is no cottage industry; the technology and engineering used to develop the fastest circuit cars on the planet is so advanced that even Boeing aviation are interested in sharing ideas on a number of subjects with various engineering departments.

I was at Lotus Renault GP to talk to some very lucky competition winners about home fitness training; especially how to get the most from your home equipment and help prevent boredom from setting in. What's the

connection you might ask? Well, it just so happens that those very nice people from Matrix Fitness who make a whole range of top-notch cardio and strength equipment and equip Lotus Renault GP's 'fantastic Human Performance Centre' or HPC for short (see box overleaf) also offer a range of home fitness equipment under the 'Horizon Fitness' brand.

F1 demands

The physical demands on a Formula 1 racing driver are well documented: sky-high heart rates, sauna-like cockpit temperatures, G-forces through bends, acceleration and

braking that would render most human beings very sore! But of course, while that lot's going on, the driver also needs superb hand-eye coordination, razor sharp reactions and information processing abilities that easily surpass the best fighter pilots.

Hardly surprising then that Formula 1 drivers need to develop and maintain the highest levels of physical fitness and agility and that's exactly what the Lotus Renault GP's HPC is designed to do. Lotus Renault GP's philosophy, however, is very much a team one – all of the 500 or so employees (mechanics, engineers, design and technology, support staff etc) are seen as

playing a part in getting its F1 car around that track as quickly as possible – so all are encouraged to become members of and use the HPC regularly.

Very few of us are lucky enough to be able to train using state of the art fitness facilities such as those at Lotus Renault GP. The good news however, is that even modest home gym users can still make great progress with their fitness. Fantastically equipped hi-tech gyms are great of course, but if you don't have access to such a facility, don't worry - it's surprising how far a bit of thought and planning can take you. As part of my day at Lotus Renault GP, I met some lucky Matrix Fitness competition winners, who had been invited along to the team's headquarters courtesy of Matrix to learn the secrets of how to install and use home CV fitness equipment for maximum benefit and enjoyment – secrets that are shared below!

Basics of home training

Before discussing how to use your home CV equipment, let's start with some basic rules of home training. These are:

- * **Choose equipment that's enjoyable to train on even if it costs a bit more (because if it doesn't feel good to use, you'll eventually end up not using it!);**
- * **Create a pleasant training environment (see box below);**
- * **Understand the basics of exercise and set some achievable goals;**

The training environment

Your training environment is important. No matter how fancy the equipment, if you try and train in a dingy, smelly garage, it's going to be far less enjoyable than in a light, airy, fresh training room! Here are some guidelines that you should at least think about implementing in your own home training environment: Try to avoid cluttered or cramped spaces where you risk tripping over objects or just feel very confined. If possible try to create a dedicated fitness room; Place your equipment near a window, which will provide you with views, natural light and good ventilation; Exercising indoors inevitably makes you get very hot very quickly – use a large cooling fan during training! Music, music, music! Study after study has shown that you can train harder and longer for less perceived effort when listening to music. Whether it's an MP3 player, or dedicated room hi-fi system, don't forget your tunes! Make your training easier by placing handy shelf/hooks for drinks/towels near to your CV equipment. TV/reading racks can also help and lots of green plants can help create a more natural 'outdoor feeling' when training indoors.



Inside the Lotus Renault GP Human Performance Centre

The HPC is housed in a light and airy purpose-built gym, which stands separate from the rest of the facilities at Lotus Renault GP. Matrix Fitness has equipped the HPC to the very highest standards. The strength equipment includes the Matrix G7 single station machines, which use converging and diverging motions to closely replicate the body's natural movement, a unique incremental weight system and electronic counters that automatically track repetitions, activity time and rest time. Cardio-wise, Matrix has fitted CV machines from its '7xe' range. Not only are these built to the highest standards, they also offer dazzling 15-inch integrated touch-screen LCD consoles plus FitLinxx wireless transmitters, which enable users to electronically track and store all their activity on both the 7xe and G7 equipment. Other facilities include new 'My Ride' stations used in conjunction with LIVESTRONG S-series Indoor Cycles, Krankcycles for upper body endurance, a range of free weights and mats and (very importantly), the expertise and skills of the HPC's training manager Daryl Coombes, who is on hand to offer personal advice to all those seeking to build their fitness and well being!

- * **Use different training workouts for variety and effectiveness;**

Okay, assuming you already own some CV equipment (for example, treadmill, bike, stepper, rower and so on), how can you make the best use of it?

Understand exercise basics

If you understand the basics of what you're doing and why, you'll be more motivated and make more progress. Crucial to this is the use of a heart rate monitor (HRM). HRMs can tell you how hard/easy you should be training, are useful for structuring your workouts (for example, interval training) and allow you to monitor your fitness gains and provide valuable motivational feedback. To use a HRM successfully, you also need to understand the basics of aerobic training (see box on opposite page), which is something we've often discussed here in ultra-FIT.

Types of aerobic workout

All too often, home fitness users just climb aboard and work away at a single pace. Not only can this be boring, it will soon lead you onto a 'fitness plateau', where you just don't make any more progress. Steady state workouts - a constant effort in one of the zones above for a given amount of time – have their place but there are other alternatives, including:

- Intervals** – a regular variation between harder and easier efforts during which the heart rate fluctuates between zones;
- Fartlek** – random bursts of harder effort within a steady state workout, leading to a fluctuating heart rate;

Pyramid – an overall rise in effort followed by an overall decline. In these, your heart rate rises from easy into hard or very hard/intense zones then returns to 'easy zone'

Combination – one or more of these types combined into a single workout!

The key to successful home training is not to rely just on one type of workout but to vary your workouts for mental stimulation and physical progress.

Workout examples

So what kind of workouts can these principles produce? Well, the options are quite literally limitless, especially when you start combining different training modes in the same workout. However, if you're stuck for ideas, here are a few to get you started:

1. Interval training workout (using heart rate)

- * Warm up then spend 10min at your aerobic pace as above.
- * Up your pace/resistance to increase your heart rate by 15-20bpm for 2min (do not allow your heart rate to exceed 85% MHR).
- * Drop your pace/resistance to drop your heart rate 15bpm below your aerobic pace for 1-2min to allow recovery.
- * Repeat steps ii and iii 4-8 times.
- * Warm down with 5-10min of easy aerobic activity and perform held stretches (up to 30sec for major body parts)
- * **Variations** – try altering the ratio of work to recovery periods; try longer intervals at less intensity or shorter, more intense intervals.

Basics of successful heart rate training

If you're going to use your CV equipment in a way that's motivational and builds fitness, you should at the very least understand the following facts: Your resting heart rate can be anything from 40-80 beats per minute (bpm). However, your maximum heart rate (MHR – more important during exercise) is approximately given by the formula: **'220 minus your age in years'**. This leads to the following (approximate) aerobic training zones:

Warm-up/cool-down = 55-60% MHR

Easy = 60-70% MHR (ideal for beginners)

Moderate = 70-80% MHR

Hard = 75-85% MHR

Intense/anaerobic (for advanced trainers only) = 85-90% MHR

2. Interval Training (using speed or watts)

- i. Warm-up as above. Set monitor to workload for example, watts or speed.
- ii. Spend 10min at 65-70%MHR (aerobic zone).
- iii. Increase workload by 15-20% for 2min making sure that you don't exceed 85%MHR (90%MHR for advanced trainers).
- iv. Decrease workload to 20% below aerobic zone (ii) for 1-2min until your heart rate drops back to 65-70% MHR.
- v. Repeat steps iii and iv between 4 and 8 times, depending on your fitness level.
- vi. Warm down for 5-10min until your heart rate is back to around 55% of MHR.

* **Variations** – Try different combinations of increased workloads and ratios of work to recovery periods. For example, 30% above your aerobic zone for only 1min, with longer recovery intervals. OR: Convert to a pyramid workout; increase workload by working out 10% above your aerobic zone level for 6min on the first interval. Then after your recovery of 1-2min, try 4min at 15% extra, 2min at 20% and 1min at 30%, not forgetting to insert 1-2min recovery between each step up. Reverse the sequence by coming 'back down the pyramid'.

3. Mixed hill and pace intervals on treadmill (excellent for developing power, strength and running speed)

- i. Warm up as above.
- ii. Spend at least 10min in your aerobic zone.
- iii. Increase speed by 10% for 2min.
- iv. Recover until heart rate is back below 70% MHR.
- v. Now increase gradient (not speed) by 2% for 2 min.
- vi. Recover as in step iv.
- vii. Now increase both gradient and speed for 1min (ensuring that your heart rate does not exceed 90% MHR).
- viii. Recover as in step iv.

- ix. Now repeat steps iii to viii but using 20% for 1min in place of iii, 4% for 1min minute in place of v and combining the two for just 30sec in place of vii.
- x. Repeat steps iii to viii at original settings.
- xi. Warm down as workout 1.

4. Music workout (for bike, stepper or cross-trainer)

For this you'll need a 30-40min compilation of some of your favourite funky tunes. Try to make up a compilation that alternates several faster mixes with slower ones.

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- i. Warm up as above
 - ii. Spend 5min at around 65-70% MHR – adjust the resistance so that your pedalling/stepping cadence is at about 60rpm.
 - iii. Start the music and pedal/step in rhythm to the music (NB – many upbeat songs have a tempo of 120-140beats per minute – to keep pace your cadence will be half this tempo (because you have 2 legs!).
 - iv. Keep an eye on your heart rate – if it looks to be exceeding 85% MHR, back off on the resistance.
 - v. At the end of the sequence warm down as above.
- * **Variations** – make this harder using the same mix by adjusting your resistance setting in step ii upwards so that your starting level is 70-75%MHR.



For more information on Horizon/Johnson/Matrix go to:

www.horizonfitness.co.uk www.matrixfitness.co.uk www.johnsonfitness.co.uk