



# Arch to Arc

Marble Arch to the Arc de Triomphe

[www.jameswhalefund.org](http://www.jameswhalefund.org)

*The UK's leading specialist kidney cancer charity*



[www.archtoarc.com](http://www.archtoarc.com)

## EXPLANATION OF TRAINING ZONES

### Benefits of Training at Different Intensities

Speed is a simple concept. The only way to cycle faster is... to cycle faster! What that means in practice, is moving from a single-speed easy cycling speed to variable paced training. This is initially difficult because it requires you to push yourself harder for periods of your cycle, which is uncomfortable, even hard! However you will quickly become a stronger faster cyclist if you do vary your speeds/effort rather than stick to one paced training.

Most of the rides in the Cycle Plan are described as EASY or STEADY with short sections BRISK. Confused?!

#### **EASY** (Heart rate 60-70% MHR)

- A pace suitable for Beginners, Long Distance cycling, and recovery sessions. Always use it for Warming Up and Cooling Down at the end of your ride.
- Builds up your aerobic fitness over time.
- Allows the body to become more efficient at converting fat into energy, so protecting precious carbohydrate stores which are needed at more intense efforts but which run out relatively quickly.
- Increases your body's ability to store carbohydrates as glycogen especially in the muscles.
- Strengthens the heart, enabling it to pump more blood.
- Promotes adaptation of joints and connective tissues.
- Increases cycling efficiency and endurance.

#### **STEADY** (Heart rate 70-80% MHR)

You've warmed up, HR should be a little higher in this zone, push harder up the hills and out of corners on a rolling route rather than trying to maintain a constant effort everywhere.

- Benefits are as above but to a greater extent.
- Particularly good for developing your muscles ability to store carbohydrates as glycogen.
- Harder to sustain than Easy, so you may need to concentrate!
- You will need to refuel during and after your ride.



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## **BRISK** (Heart rate 80-85% MHR)

Otherwise known as 'Tempo' or 'Lactate Threshold' Training

- Cycling just under your lactic acid threshold (the point when Lactic Acid\* builds up uncomfortably) teaches the body to deal with Lactic Acid more effectively so that eventually you will cycle faster for longer. It should feel '**comfortably hard**'. Lactic threshold could be anywhere between 70-88% MHR but is usually 80-85% MHR (\*\*see explanation on Heart Rates below)
- Improves aerobic energy production
- Increases blood supply within muscles
- Increases blood volume and the oxygenation of blood
- Improves stamina. You should feel a big improvement in many aspects of your overall fitness in this zone.

## **Speed Interval Sessions** (usually 90-100% MHR)

Speed intervals are when you push your effort as hard as possible for a short duration and then recover with some Easy effort for a fixed time before working hard again.

- Allows greater volume of high intensity work because it allows for recovery between the 'efforts'.
- Different elements of aerobic intensity can be targeted.
- Pushes your cardiovascular system to the limit.
- Improves your heart's stroke volume (amount of blood pushed with each heartbeat) to the muscles.
- Increased fat burning potential.
- Improved Lactic Acid Tolerance \*
- Usually done at 90-100% MHR

Note: after Brisk or Hard Interval sessions, cycle Easy for a while to help drain out the build up of Lactic Acid and promote faster recovery.

\***Lactic acid** is used as fuel (when the body can't get enough Oxygen to break down food into energy) but if too much Lactic Acid builds up you will have that 'heavy burning' feeling in your legs which makes you want to slow down or stop.

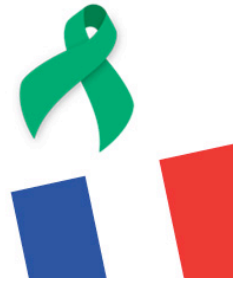


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## Rest Days:

The most important part of the training programme!

This is the time when your body adapts to the stress of training, and makes the repairs to your muscles that will improve your performance.

**Don't Overtrain! The plan follows a gentle build up of distance which is designed to keep injury risk to a minimum. However, always listen to your body and treat a plan as a guideline only.**

## \*\*Heart Rate Training:

Maximum Heart Rate (MHR) is the highest number of beats per minute you can push your heart to. *Do not test it unless you are fit. If you are fit*, cycling or running at your maximal effort should produce a HR close to your maximum and is probably the most accurate method to work it out.

A *very rough* guide if you are 'not fit' is to subtract your age from 220. This will give an approximate MHR (Maximum Heart Rate), eg: if you are 40, your MHR will be  $220-40=180$ . However, the fitter you are, the higher it could be... up to 20 beats per minute (bpm) higher than this formula's result!

If you are fit already, this formula is a better guide:

Fit Female =  $211 - \text{half your age}$ . Fit Male =  $205 - \text{half your age}$ .

OR

$210 - (50\% \text{ age}) - (5\% \text{ body weight, lbs})$ . Then add 4 if you are male, but nothing if you are female.

**Here is a summary of Heart Rate Zones** and what it means to your body to work within them:

- 50-60% - this will increase your overall health and fitness level. Ideal for Beginners. The main fuel used is fat.
- 60-70% - you will benefit your heart. It is considered the main weight management zone (fuel is taken from stored body fat) and a perfect zone to increase your long slow distance endurance
- 70-80% - this is the most effective zone for overall cardiovascular fitness & muscle strength. Fuel is used from Carbs and Fat.
- 80-90% - Good for increasing performance levels. Increases body's ability to tolerate lactic acid. It should feel quite hard!
- 90-100% - Good for interval training or sprinting work to increase performance/speed. Very hard!