

## Should I use Power or Heart Rate to train?

When out training, the most important thing from a fitness development point of view is the intensity of effort as, along with duration, this is what dictates the nature and speed of desirable physiological changes. That's why as coaches we provide plans that prescribe training in terms of intensity (and duration of course). It might be a general level of intensity and/or include specific intensities during a part of a ride (e.g. intervals).

To help us with that, we look for ways to provide guidance on how to get the intensity/effort at the intended level. There are many ways to measure or indicate intensity, e.g. O<sub>2</sub> utilisation, speed, power, blood lactate levels, heart rate response, rating of perceived exertion.

Some are direct (speed, power, O<sub>2</sub> utilisation), some are response indicators (HR, blood lactate) and some subjective (perceived exertion). Some are highly variable depending on conditions (speed) and some are not all that practical outside of a laboratory setting (O<sub>2</sub> utilisation, blood lactate levels).

Hence we are left with measures that are available to most of us when out riding a bike, i.e. RPE, HR & power.

The best is an objective and direct measure that is practical - and the only tool that fits that description is a power meter. It is, by far, the best tool for this purpose.

Power is also a direct measure of fitness (sustainable power over given durations). Coupled with RPE, it is a valuable guide to form.

Where power measurement is not available, then HR can be a useful guide, particularly for general aerobic level riding (which is the bulk of what endurance cyclists do). All that is needed is a reasonable understanding of the limitations of HR when used in this manner. Some of the limitations of HR include:

- impact of cardiac drift
- lag time with HR response
- utility declines as intensity rises, especially at supra-threshold levels
- utility declines when effort level is highly variable
- subject to daily fluctuations due to many factors other than how hard one is pedaling
- it is not a measure of fitness

However when you have power meter then, at best, HR is redundant.