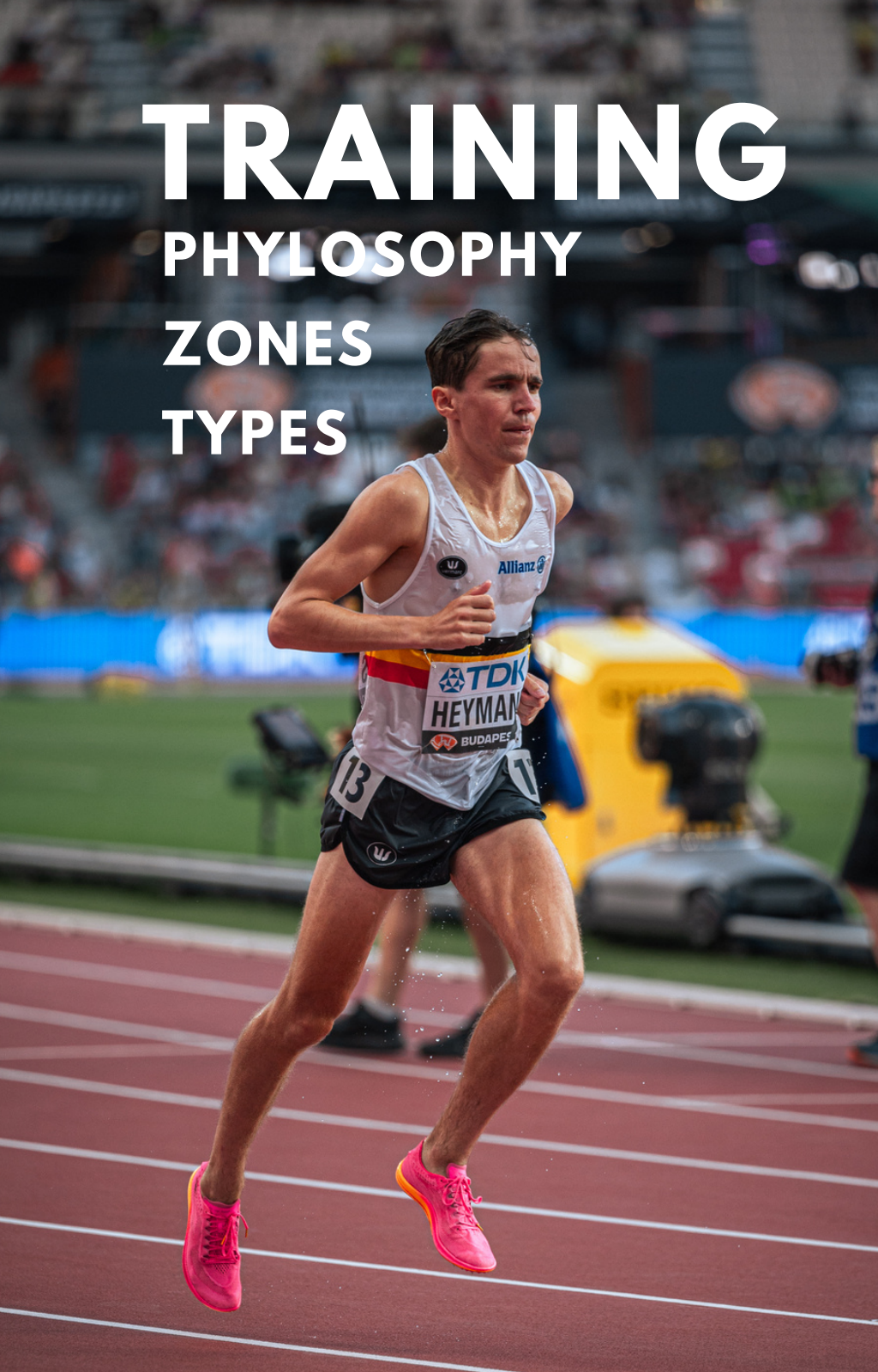
TRAINING

PHYLOSOPHY

ZONES

TYPES



	5KM	10KM	HALF-MARATHON	MARATHON
AEROBIC	85%	90%	97%	98%
ANAEROBIC	15%	10%	3%	2%

DISCOVER THE PHILOSOPHY BEHIND A TRAINING PLAN !

FUNDAMENTAL PRINCIPLES OF PERFORMANCE: ENERGY PRODUCTION

During an enduring effort, two energy systems form the basis of your performance; your aerobic and anaerobic systems. During physical activity, your body uses the aerobic system as long as it receives enough oxygen. At the end of an intense effort, when you are out of breath and your heart rate is very high, your body has no choice but to resort to an energy production system that does not require oxygen; your anaerobic system. The ratio between the use of your aerobic system versus your anaerobic system is 85%/15% for a 5km and 98%/2% for a marathon. The longer the effort, the more aerobic it becomes.

Aerobic energy system



- When sufficient breath
- Energy production with oxygen
- No lactate production

Anaerobic energy system



- When out of breath
- Energy production without oxygen
- Lactate is produced as by-product

A training plan aims to maximize the progression of these two energy systems. Your aerobic system (your "endurance") is trained by running at an easy to moderately hard pace, with a low to mid-range heart rate, while your anaerobic system is trained at a high pace, and at a high heart rate. And as the latter will only be useful for a small part of a race ranging from 5km to the marathon, a training plan mainly focuses on the aerobic system.



1500M	2min22/Km	25.3 km/h
5000M	2min33/Km	23.5 km/h
10 000M	2min40/Km	22.4 km/h
MARATHON	2min52/Km	20.9 km/h

IMPROVE YOUR RUNNING SPEED

It's not your speed that is the limiting factor to improve your time on a 5km/10km/marathon, but your endurance. For example, improving a 10km time from 1h10 to 1h involves maintaining a slightly faster pace for a longer period while getting out of breath less quickly. In other words, you will need to aim for a greater aerobic capacity/endurance. For instance, Eliud Kipchoge (picture above), the former world record holder for the marathon and four-time Olympic medalist, maintains a running speed of 20.9 km/h for 42.2km. If we know that Eliud can run 25.3km/h for a 1500m (and even faster at shorter distances), he does not need to develop his speed to run a marathon at 20.9km/h, but needs to build up exceptional endurance to maintain that pace for a very long time. He does that by running +200 km a week, most of them at an easy pace.

THE 2 PHASES OF A TRAINING PLAN

A training plan for distances ranging from 5km to a half-marathon often includes a 'general' phase and a 'specific' phase. The general phase is mainly focused on training your endurance and will last for the biggest part of your training program, as this is what your body will need most during 5km/10km/marathon (85% for a 5km to 98% for a marathon). During this phase, the emphasis is on increasing the weekly mileage and kilometres at threshold pace, rather than speed/interval workouts. During the last couple of weeks, the specific phase aims to train your anaerobic system, which you need at the end of a race when you're out of breath. During this period, interval workouts are implemented which focus on training at a high heart rate.

TRAINING ZONES

Different training zones correspond to various stimuli that can be applied to your body during training. Different training groups try to segment these zones based on different parameters, such as heart rate zones, perceived intensity, running power, pace, lactate values, and so on. Some utilize three zones, while others use up to six training zones. Essentially, the underlying philosophy is the same in all cases, which is to deliver the right training stimulus at the right time to optimize progress and minimize the risk of injury.

Different ways to define training zones

- Heart rate
- Perceived intensity
- Running power
- Lactate
- Pace
- Etc.

How I define my training zones

- Heart rate
- Perceived intensity (mainly)
- Pace

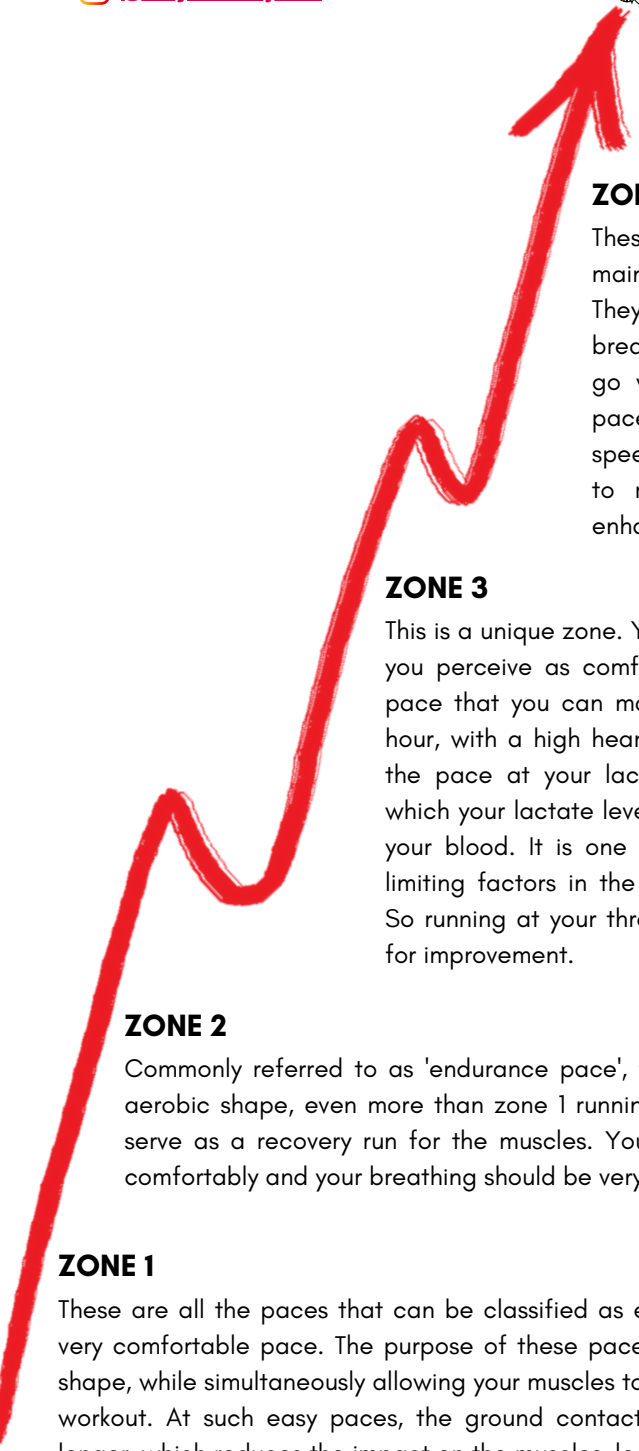
Personally, I employ a combination of heart rate, pace and perceived intensity. The perceived exertion is my main guide during training, and I use the pace as an upper limit to prevent running too quickly. For instance, I can perform a threshold workout at a range of different paces, depending on how my body feels that day (while the pace may vary, the perceived exertion must always be the same). And additionaly, I also know the pace I shouldn't exceed as it would be the pace for interval training.

This method of perceived exertion will also be used in this training plan. It has the advantage of helping you understand your body much better over time. The workouts are divided into four zones, each with a different intended training stimulus.

Advantages of relying on perceived exertion

- Prevent that you'll limit yourself on race day/hard workouts by the pace on your running watch. The mind can sometimes bring you a lot further than you think you were capable.
- Getting to know your own body better. Paying attention to how you feel during running helps you to gain the body awareness necessary to monitor the level of effort that you can produce to maximize your performance.

	 **Perceived intensity**	 **Ability to conversate**	 **Heart rate**
ZONE 1	• Easy	• Conversating without catching your breath	• <70% max. heart rate
ZONE 2	• Moderately easy	• Conversating while catching breath	• 70%-80% max. heart rate
ZONE 3	• Moderately hard	• Say a few words, no real conversation	• 80%-90% max. heart rate
ZONE 4	• Hard	• Not able to talk	• >90% max. heart rate



ZONE 4

These are paces that can only be maintained for shorter periods. They make you quickly out of breath, and your heart rate can go very high. Running at these paces is aimed at improving your speed endurance and your ability to run in oxygen deficit, i.e., enhancing your anaerobic shape.

ZONE 3

This is a unique zone. You should run at a pace that you perceive as comfortably hard. It should be a pace that you can maintain for 50 minutes to an hour, with a high heart rate. Physiologically, this is the pace at your lactate threshold, the point at which your lactate levels will start to accumulate in your blood. It is one of the biggest physiological limiting factors in the 5K, 10K, and half-marathon. So running at your threshold pace is very effective for improvement.

ZONE 2

Commonly referred to as 'endurance pace', this pace also enhances the aerobic shape, even more than zone 1 running. However, it's too quick to serve as a recovery run for the muscles. You should still be able to talk comfortably and your breathing should be very controlled.

ZONE 1

These are all the paces that can be classified as easy running, performed at a very comfortable pace. The purpose of these paces is to improve your aerobic shape, while simultaneously allowing your muscles to recover from a more intense workout. At such easy paces, the ground contact time at each foot strike is longer, which reduces the impact on the muscles, leading to less wear and tear.

TRAINING TYPES

EASY RUN



30min, zone 1

Pace
Easy pace, zone 1: low heart rate

Description
Run a certain distance at an easy pace, for example 30min at zone 1 (see example above).

Although this is the most common type of training, it is the most important for improving the aerobic base while avoiding too much physical load (low impact at each ground contact). You should have enough breath to chat with a partner throughout the workout and feel at the end that you are capable of doing the same workout a second time.



PROGRESSIVE RUN



15min, zone 1 → 15min, zone 2 → 5min, zone 1

Pace	Combination of easy and steady pace, zone 2: mid-range heart rate
Description	Run the mid-section of your run at a more steady, but still very comfortable, pace. For example, run 15min at zone 1, then 15min at zone 2, and finish with 5min at zone 1 (see example above).

A progressive run, similar to an easy run, primarily aims to enhance your aerobic fitness. However, while an easy run also serves to facilitate muscle recovery from a more intense workout, a progressive run is solely dedicated to improving the aerobic base.

THRESHOLD



3km, zone 3 → 2min rest → 3km, zone 3 → 2min rest → 3km, zone 3

Pace	Fast but controlled pace, zone 3: relatively high but controlled heart rate
Description	Run for a certain time or a number of longer intervals at the pace you estimate you can maintain for about 50min to 1 hour. For example, 3x (3km at zone 3), with 2min rest in between.

The aim is to enhance a specific aspect of the aerobic base, known as the lactate threshold. This is the point at which lactate in your body transitions from stable levels to exponential accumulation. Therefore, you should aim to run in your 'orange' zone, without slipping into the red.

FARTLEK



3min, zone 3 | 1min, zone 1 | 2min, zone 3 | 1min, zone 1 | 3min, zone 3 | 1min, zone 1 | 2min, zone 3

Pace	Mix of fast and easy pace, zone 3: relatively high but controlled heart rate
Description	A run with an alternation between two paces: an easy pace and a fast pace, faster than your threshold pace but slower than your interval pace. For example 2x (3min,2min), with each time 1 min jogging in between at zone 1.

Fartlek training is comparable to threshold training, but instead of measuring the faster pace repeats in distance (kilometers), they are timed in minutes, and the recovery periods involve running at a zone 1 pace rather than not running at all. Furthermore, the blocks are shorter, enabling you to sustain a slightly higher pace than in threshold training. However, the fast pace in fartlek training is still slower compared to interval training, and the heart rate remains controlled. The primary objective of fartlek, like threshold training, is to enhance your aerobic base and improve the lactate threshold.

LONG RUN

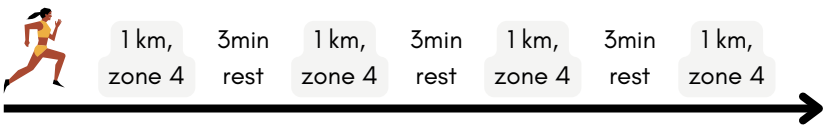


1h10min, zone 1

Pace	Easy pace, zones 1-2: low heart rate
Description	Run a longer distance than usual, at an easy or steady pace. For example, a 1h10min run at zone 1.

Running more kilometers than usual allows the body to store more energy (in the form of glycogen) in the muscles and use it more efficiently. The long run also trains the aerobic base.

INTERVAL



Pace	Fast pace, zone 4: high to very high heart rate
Description	Run a certain number of intervals, for example 4x1km at zone 4, with 3min rest in between.

By running the intervals at a fast pace and exposing the body to more extreme fatigue, interval training aims to train the anaerobic system. It is possible to play with the distance of the intervals, the number of intervals, and the recovery time. Unlike a fartlek, there is a real recovery between the faster blocks, without running. As it is the most difficult training, it will help you develop your mental strength, which can be a great help on race day.

HILL TRAINING



Pace	Fast pace, zone 4: high to very high heart rate
Description	Run a certain number of hill repeats, mostly shorter than interval repeats. For example 4x200m uphill at zone 4, and rest by jogging back down.

A hill workout shares the same objective as an interval workout, with the added benefit of strengthening the legs while minimizing the impact on the ground. In fact, when running uphill, each footfall is less impactful, reducing the stress on the body.