



Prepare to Perform: Enduro MTB

Duration: 20 + weeks

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A deeper look at the physiological demands of Enduro

Not to go too wild but just to give you a little deeper, but brief look at what really makes up the demands Enduro places on your body (purely physiologically). This helps form the rationale behind much of the training design in this e-book and as such may be of interest to some of you!

The Physiological demands can be split up into two main categories. **1) Non-Peddalling based demands** or what I sometimes call **"Riding Dynamics"** and **2) Pedalling capabilities** or your ability to repeat the characteristic efforts on the pedals Enduro demands, both during your stages and during liaisons or transfers!

1. Non – Pedalling based Physiological Demands

The list of physiological demand placed on you just from riding and controlling your bike is huge in Enduro and very terrain/stage specific. But Aerobic Fitness and Strength are the two foundation qualities. The rest is built upon them. Strength demands are varied, but being able to express strength quickly or explosively as power, maintain posture as things get wild using a mix of isometric, concentric and eccentric muscular contractions is key to not fatiguing! Again this is built in the gym, and then transferred to the trail.

Mobility and joint stability are used in abundance to help you transfer your strength & power to the trail. Think cornering, bunny-hop, pre-hop or riding a rut. Strength, mobility and stability of joints and skeletal-muscle structures provide injury prevention and allow the correct application of technique! Fuelling these types of efforts from a metabolic perspective comes from all of your energy systems. Some internet gurus will claim the Anaerobic

systems are the only ones that matter, but the reality is that refuelling and supporting your anaerobic or "high energy" fuel production is carried out by the aerobic energy system, so developing the full "spectrum" of aerobic endurance will lead to far more productive time hammering roots, rocks and sending jumps on the trail! That's not to say that anaerobic energy production and endurance isn't important. But focusing solely on that metabolic quality is truly a case of putting the horse before the cart!

Upper and lower body parts, limbs and the hip/torso junction are all interconnected to the highest degree when riding your MTB, Longer Enduro stages or more "technical" demanding stages will really highlight any weaknesses you have in the supporting physiology behind your riding and posture maintenance on the bike



2. Pedalling based Physiological Demands

This is what you probably think of first when you think of training for Enduro! Hammering the pedals, while it's hugely important and often a definer of performance outcomes only makes up about 45% of your overall stage time. Beyond the actual timed stages however, at least for the Gravity Enduro races this program is focused on, you have to get yourself and the bike plus your kit to the stage starts and all of that is powered via the pedals! So that requires the ability to resist fatigue at moderate intensities over multiple days of practice and racing. In total contrast to that the timed stages require high intensity efforts of varying force and pedal speed, repeated over multiple minutes, repeat multiple times through-out a day and weekend!

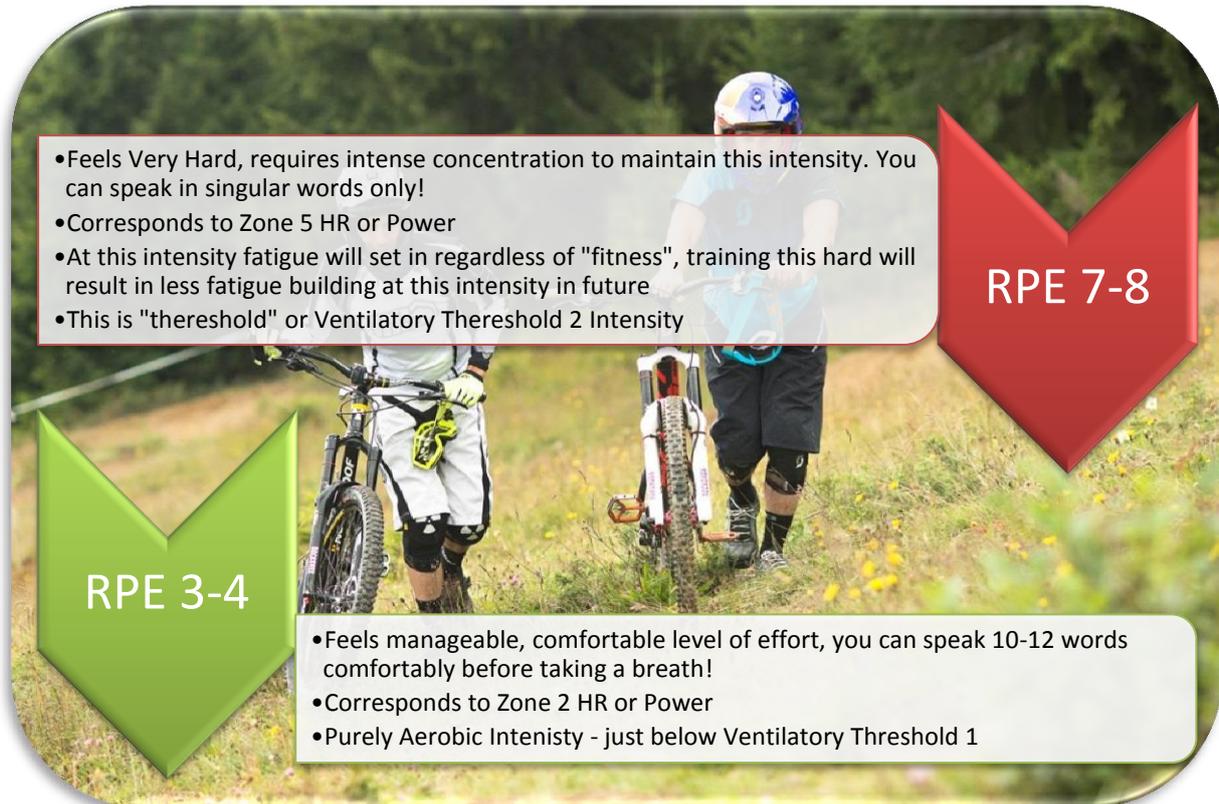
These qualities require an interesting mix of fast and slow twitch muscle fibre recruitment in the pedalling muscles as well as well-planned and chosen training methods that develop your power and repeat power to its full potential without negatively affecting your endurance capabilities. You see we don't want to be a track cycling sprinter, nor do we want to be an Ironman triathlete...what we want is deep in the dark black hole that exists between those two extremes! So that is how we attack things in this training program, both mechanically and metabolically we aim to develop your potential to hammer the pedals hard, then repeatedly display this ability, then finally repeatable, day in day out, repeat sprint efforts on demand! That's a lot of repeating!



Other tips to help you get it right

As outlined above being mindful of the feelings in your body when trying to gauge intensity using RPE is crucial! When the opportunity arises while training, riding or for other reasons try to correlate your subjective feelings of effort (RPE) with other measures of effort like your HR, breathing rate, ability to speak etc...

Give it the time it deserves to help get it right, as fitter or less fit friends what their RPE is while climbing together. Take the opportunity to use a gym with a WattBike or similar tool. Even simple things like trying to open an energy-bar, gel or drink bottle will be considerable easier at RPE 3 than at RPE 6! – Try chewing an energy bar, breathing and concentrating at RPE 7 – HR Z5 – you'll soon get accustomed to the different feelings working at that intensity in comparison to RPE 3 or below! **Some more tips below for two key intensities!**



Above: Figuring out your RPE with friends, solo or using other tools? It's all about being aware and mindful

Whether you use HR, RPE, Power, time or speed to help you gauge the intensity of training sessions, intervals and overall work-load, the keys to success lie in being mindful, honest and consistent! Some trial and error is needed at times, mistakes should be made to help you learn, but above all hard work smartly executed wins races!

Key Sessions

Important

A cool, if I do say so myself, feature in your weekly training plans is the **K** Symbol. This symbol is to signify a "key" session or the sessions each week **of primary focus** which should be completed with total intent and preceded and followed with quality nutritional strategies. These are the sessions that should be focused on if you're "time-crunched" or for whatever reason (family, work, friends, illness etc...) you can't complete all prescribed sessions each week. Completing the **K sessions** will likely give you the minimum required training effect from that week by at least achieving some of the planned overload! That's not to say that the other sessions aren't important, especially the "easier" intensity training...but the **K sessions** are there for you riders who may struggle with the time needed to train!

Phase 2: Creating Potential

Hard and smart is the motto for this Phase – Train smart, Rest hard, Train Harder; Rest Smarter

- Phase Focus:**
- 1) **Maximal Aerobic Power** ability to express max power at highest aerobic intensity
 - 2) **Mechanical Potential** on and off bike power production

Goals of this Phase: Primary aim of this phase is to lay a “full-spectrum” aerobic foundation, the platform for all other on the bike training to come and the cornerstone of robustness. With that we will also develop in unison your movement efficiency and lay a large a potent strength foundation. The final goal of this phase is “self-led” and that is to full ownership of and application to the process of training! Consistency is the key to success.

Recommended Testing Pre-Phase: Re-Test your Long XC Benchmark before you start Phase 1 to see overall aerobic fitness improvements. 60m On-the-bike testing can be carried out before this Phase also and then again after.

Strength Training Loading: 4 sets X 3-6 reps; 2-4 sessions per week.

Week	Type	Days	Details
1	Adjustment	2	Adaptation to new exercises, movement quality. Each exercise completed with 2 reps left in the tank!
2	Adjustment	2	Diligent progression on weights, continuing improvements in movement quality, application to technique! Increase weight
3	Impact	3	Perfect execution of each session, enjoyment of process, increase in load each session. POWERFUL – THINK FAST BE FAST!
4	Load	2	Enjoy! - Work hard, rest harder!

Total Training Volume: 8 + hrs per week for 4 weeks

Weekly Plan

Week 1

A.M. and P.M Session Times are for guideline purposes only – Adjust Plan as you need to!

Time	Mon	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
A.M.	Rest		Rest	Rest	Rest	Method 2	Method 3 Prime Physical Practice K
P.M.	Method 1 K	Phase 3 Strength Day 1 K	Method 4 K	Phase 3 Strength Day 2 K	Optional Method 3 Or Rest		

Weekly Plan

Week 2

A.M. and P.M Session Times are for guideline purposes only – Adjust Plan as you need to! A.M. / P.M. Split with gym work in P.M. can be flipped around on Tues & Thur. if ride in evening is possible. The main focus of this Phase is Methods 2 and 3! So they take preference!

Time	Mon	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
A.M.	Rest	Optional Method 2	Rest	Optional Method 2	Rest	Method 2 K	Method 3 Prime Physical Practice K
P.M.	Method 1	Phase 3 Strength Day 1 K	Method 4	Phase 3 Strength Day 2 K	Optional Method 4 Or Rest/Recovery Ride		

Strength Training Phase 2 Day 1

EXERCISE	SETS X REPS	WEIGHT	EFFORT	REST	TEMPO	NOTES	Progression			
							WK1	WK2	WK3	WK4
				SEC						
Weighted Dead-Bug	2 X 10 es		MHE		4-1-4	Slam diaphragm. Back flat				
DB Snatch A1	2 X 4-6 es		Exp.	90	EXP	Break @ hips + EXPLODE				
Split Stance DB Push Press A2	2 X 6		HE	120	EXP	Weights should "glide" up. SNAP!				
Dead Lift B1	4 X 3		HE	180	2-2-2	Chin tucked. Grip even. Eyes forward. Create tension – set shoulders – Dive feet to ground				
Uni - DB Bench Press B2	4 X 4-5 es		HE	90	1-1-2	Back flat on bench – Maintain smooth movement				
1arm DB Farmers Walk C1	2 X 20m +		MHE	90	NA	Lock Core and chest down. Walk smooth! <u>Suitcase DL to start</u>				
Later Lunge (front squat loaded) C2	2 X 8 es		MHE	90	2-1-exp	Chin tucked chest up.				
Plank Complex (front, sides, contralateral) D	2 X 30 sec each		HE	30	NA	Stay solid – Bum squeeze – belly button tucked				

Warming-Up

A warm-up is NOT stretching and vice-versa!

I thought we'd just clear that one up right off the bat! You may have noticed in your daily training that there were no warm-ups listed. Other than simple guidelines like a "full" or thorough warm-up! This section of your e-book is going to cover just that. What exactly is a full and complete warm-up? Well it is individual to each individual. So the following examples and thoughts will just give you the ammo needed to load up your own warm-up for each type of session we have in this training program, both on and off the bike training.

The desired effect of your warm-up regardless if the session is to create the best possible potential and physiological and psychological conditions to start your training session! It may sound like a cop-out but warm-ups are totally individual. So taking a guideline warm-up like the ones listed below and playing with the exact order, intensity and duration of the contents to see what truly works best for you is the only way to optimise the WU. Even as an individual you will likely notice that the same warm-up on different days will have different effects.

Frequently for the more aerobically fit rider a longer "easy" period at the beginning of the warm-up is needed to increase heat in muscle tissue and blood. So be stoked to learn and embrace some trial and error as that is the only way to truly optimise the warm-up for you as an individual.

The table on the right shows some of the possible benefits we are looking to obtain from using a well-designed Warm-Up

Temperature related
Decreased resistance of muscles and joints
Greater release of oxygen from hemoglobin and myoglobin
Speeding of metabolic reactions
Increased nerve conduction rate
Increased thermoregulatory strain
Non-temperature related
Increased blood flow to muscles
Elevation of baseline oxygen consumption
Post-activation potentiation
Psychological effects and increased preparedness

Table 1. Possible effects of a warm up (Bishop, Warm Up I, 2003)

The Warm – Up should usually follow a few simple guidelines.

- 1) Start low intensity, build heat and gradually build intensity
- 2) The warm-up should focus on preparing the specific movement patterns and muscle groups used during the task
- 3) The warm-up duration and intensity should reflect the task that follows
- 4) The Warm-up should always finish with a task specific portion regardless of what came before. So if you are riding bikes, then the warm-up should finish on the bike. If you are lifting a barbell then the warm-up should finish by lifting a bar-bell!
- 5) The gap between end of war-up and start of the main session should be as brief as possible. But trial and error will let you see what works best for you. For example a short gap between the end of WU & start of intense intervals is best; it will allow you to achieve the greatest % of maximal oxygen consumption possible quicker. A longer gap between end of WU and start of activities that require skill or short explosive efforts may be better as you'll be less fatigued and more likely to display the fine motor control needed for those types of activities!

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