Mental Fitness

Lone Rider Brewery
Monday, May 7th, 2018
7:00 pm

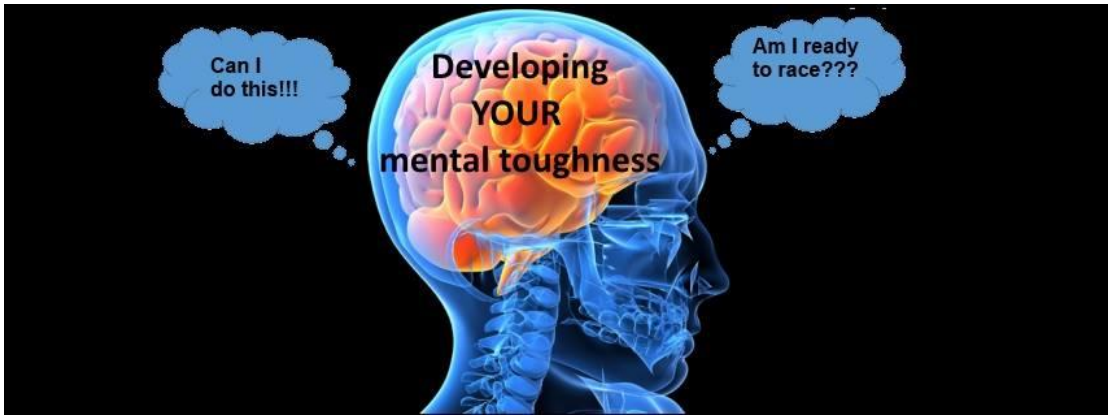
"The good Lord gave you a body that can stand most anything. It's your mind that you have to convince."

Vincent Lombardi

Austin Tri-n-Run Coaching

TRIANGLE TRIATHLON CLUB

Mental Fitness



Triathletes spend hours and hours each week training their bodies for the physical demands of triathlon. But how much time do we spend preparing our mind for the rigors of training and racing?

What are the differences between athletes that consistently perform at or even above their perceived capability and athletes that routinely fall short of their expectations?

How does mental fitness limit physical performance?

How can I develop mental skills and apply mental tools to perform consistently near my physical limits?

John Austin

- Coaching Triathletes & Runners for 4 Years
  - Individual Athletes
  - Granite Falls Run & Tri Clubs
- Certifications – IRONMAN, USA Triathlon, RRCA, ACE Personal Trainer
- Experienced Age Group Athlete
  - 238 Running Races since 1989 including 43 Marathons
  - 144 Triathlons since 2002 including 7 IRONMAN's
  - 11 Boston Marathons
  - Triathlon World Championships - 5 ITU, 3 Ironman 70.3's, 2 Kona Ironman
  - USAT All American, IRONMAN All World Athlete
  - 2017 USAT Long Course Duathlon Age Group Champion

Fill in the Blank

Racing is _____% Mental

Objectives

- Understand the concept of mental fitness
- Convince you that your brain limits your performance. Physiology (genetics and training) limit your maximum performance but actual performance usually falls short.
- Understand the concept of “perceived effort” – how it is influenced and how it limits performance
- Understand the concept of “coping” and how “sensation” can be managed.
- Present tools that you can use to consistently perform closer to physiological limits
    - In planning and training
    - Pre-race
    - Racing

Mental Fitness

- Not to be confused with Mental Health which is clinical in nature
- Mental Fitness is a sports related term.
- Mental Health is a prerequisite for Mental Fitness

Performance = Physical Fitness - Mental Limiters

Mental fitness is the ability to consistently perform close to physical fitness limits regardless of the setting and competition.

Mental Fitness Characteristics

Strong

- Consistent performance - rarely have bad races
- No fear of failure during activity
- Narrow focus on the current activity
- Not thinking about performance (outcomes)
- A sense of personal control on race day despite what “happens”

Weak

- Occasionally have good performances but many/most races performances fall short of expected outcomes
- Sidetracked when things “happen” :
  - *Weather*
  - *Schedule problems*
  - *Forgot a piece of equipment*
- Focus on outcome
- Pre-race anxiety affects performance
- Easily distracted during a race – inability to stay on a plan (e.g. forget nutrition)
- Prone to negative thoughts
- Frequently have “bad luck”

Understanding Performance Limits - History

Pre 1990's Sports Science :

Endurance limits are set by delivery of oxygen to the muscles, muscular acidification due to lactate accumulation, and depletion of glycogen stores.

But this fails to explain :

- Athletes' beliefs that races are won in the mind
  - Paavo Nurmi – "Mind is everything. Muscle – pieces of rubber. All that I am , I am because of my mind"
  - Roger Bannister "The man who can drive himself further once the effort gets painful is the man who will win."
- Numerous studies and tests showing muscles' capability to continue when athletes are "unable" to continue

More recent models recognize the contribution of the brain :

- Central Governor Model – Tim Noakes : late 1990's.
- Inhibitory Feedback Model – Markus Amann : 2008
- Psychobiological Model - Samuele Marcoa : 2008-2012

Central Governor Model – Tim Noakes, M.D.

- Power output by the muscles during exercise is continuously adjusted by the brain to maintain a “safe” level of exertion.
- Safe level ensures protection of the heart with a reserve margin.
- Sub-conscious process.
- Neural calculations factor in :
  - Previous experience with strenuous exercise
  - Current metabolic state of the body
  - Planned duration of the exercise
- Adjusts the number of activated skeletal muscle motor units

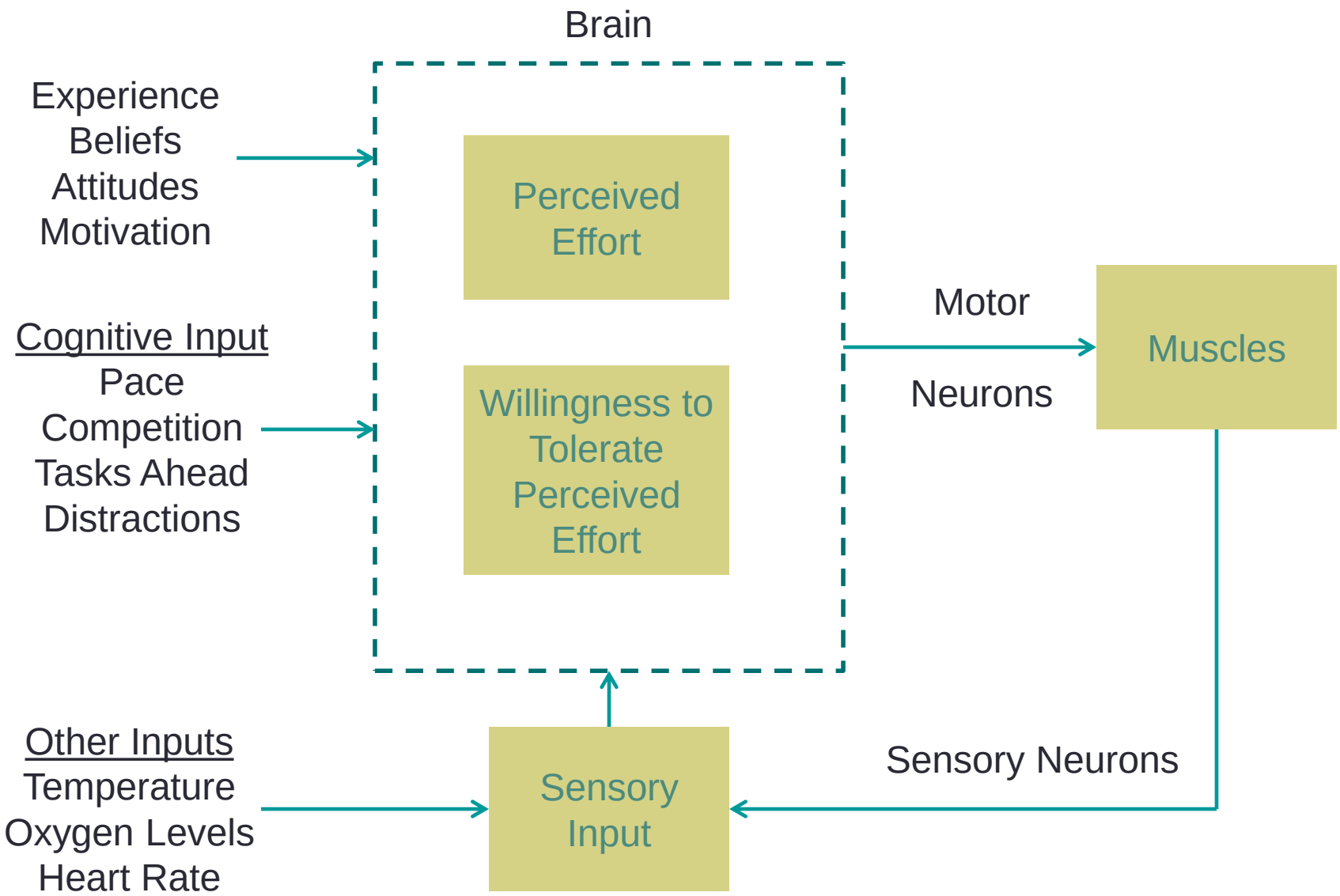
Fatigue occurs in the brain not the muscles.

Psychobiological Model – Samuele Marcoa

- Fatigue results from Perceived Effort
- Endurance performance is directly determined by psychological factors
  - Perception of effort
  - Motivation
- Physiological factors, including training, only have indirect effects – by affecting perception of effort or motivation

We can't go on because we feel we can't.

My Graphical Interpretation of the Psychobiological Model of Endurance Exercise



Perception of Effort

Definition – The conscious sensation of how hard, heavy, and strenuous a physical task is.

Linked with increased activity in areas of the brain that causes muscles to contract. Can be seen in a short uphill sprint or in the latter stages of a marathon. Very little activity early in a marathon.

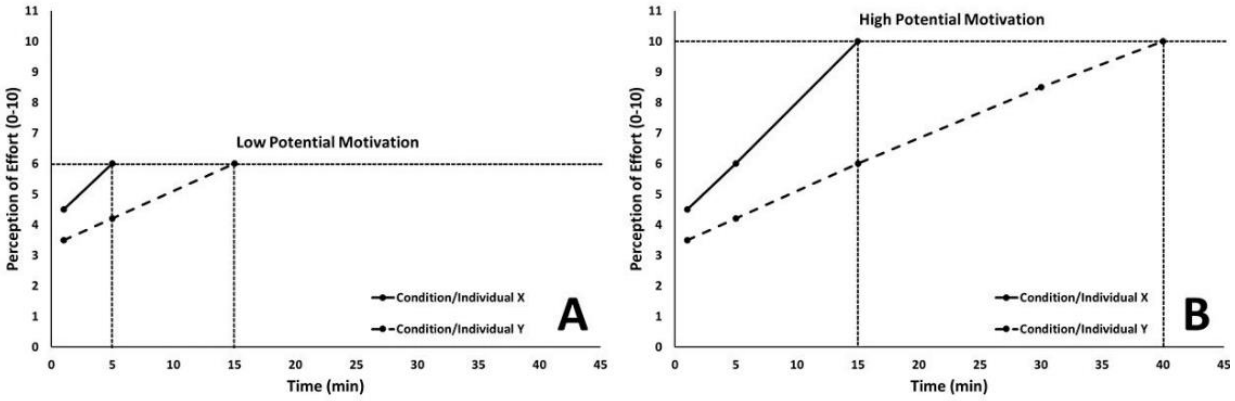
Two levels : How you feel, and how you feel about how you feel

Influenced by many physical and psychological factors.

- Expectations
- Mental Fatigue

Toleration of Perceived Effort

Motivation – Intrinsic and extrinsic



Coping Skills – Behavioral, emotional, and cognitive responses to discomfort and stress.

When perceived effort becomes greater than the brain is willing to tolerate, the brain tells the body to stop or slow down.

Traits and Tools

Traits

- Confidence
- Composure
- Patience
- Resilience

Tools

- Training and Race Preparation
  - Goals & Targets
  - Strategy
- Pre-race
  - Planning
  - Managing Arousal
- Racing
  - Pacing
  - Motivation
  - Bracing
  - Self Talk
  - Breaking Down the Race
  - Visualization
- Post-race
  - Analysis and improvement

Confidence

- Self-belief in themselves, skills, and ability to master the challenges of competition.
- Tied to self efficacy
- Perceived pressure promotes self-conciousness which has been shown to reduce endurance performance
- Confidence reduces anxiety / negative thoughts / impact of distractions
- Developing confidence
  - Self-worth
  - Training and trust in training
  - Recall prior positive experiences
  - Projecting confidence

Composure

- Ability to control emotions in the face of stress.
- Ability to manage your response to what happens outside of your control and put yourself back in control
- With lack of composure, the response is emotional anxiety leading to worry about outcomes and negative thinking
- Developing composure
  - Experience
  - Competition simulations
  - Pre-performance routines
  - Relaxation techniques

Resilience

- Ability to respond to adversity
- Resilience keeps an athlete in the game long enough to develop coping skills to overcome increasingly challenging situations
- Studies have shown it is correlated with pain tolerance
- Resilient individuals get stronger with setbacks and failures.
- Nearly all athletes have experienced significant setbacks and failures on the road to ultimate success
- Resilience can be developed in athletic or non-athletic situations.

Patience

- The capacity to accept or tolerate delay, setback, or injury without getting angry or upset.
- Lack of patience creates anxiety and frustration.
- Triathletes frequently confronted with an injury that affects short term plans.
- Focus on the long term
- Use the situation to advantage – can't run, now I have the time to really improve my swimming.
- Patience is also an important skill in endurance racing.

Patience, persistence, and perspiration make an unbeatable combination for success.

Goals and Targets

Process Goals – Things you have 100% control over

- I'm not going to give up no matter how hard things get
- I'm going to follow my pacing plan.
- I'm going to follow my fueling plan.

Targets – Things that are relatively predictable from training

- I'm going to average 190 watts on the bike
- I'm going to run 7:45 pace on the run.

Outcome Goals – Results of goals, targets, and things over which you have little or no control (e.g competition, weather)

- I'm going to win my age group
- I'm going to set a PR
- I'm going to qualify for Kona

Set goals and targets to be challenging but attainable. Perceived effort is increased and motivation decreased if goal is perceived as not likely to be attained.

Focus only on what you can control and task relevant items while racing.

Time Based Goals / Targets

- Time based goals can be helpful to provide motivation and calibrate pacing if supported by appropriate training
- Study at U. of California found that finish times in marathons tend to cluster around round numbers, e.g. 3:30 or 4:00. Runners in the cluster tend to slow down less than other runners.
- The amount of effort an athlete will put in is influenced by perception of attainability. Once viewed as unattainable, the athlete will slow down.

Strategy

- Know the course – surprises create anxiety and spikes of perceived effort.
- Segment each discipline of a race into manageable pieces - promotes task relevant thinking
- Develop a pacing plan.
- Plan for the unexpected – promotes a composed response.
- Strategy will vary depending on the goal :
  - Speed / Time Goal
  - Time vs. competitors
  - Process Goal – Internal Effort

Pre-race Planning

Objective : Minimize anxiety

- Develop a detailed pre-race schedule and checklist of what you will do when - travel, registration, race morning from time you awaken to swim start.
- Contingency plan for weather.
- Apply mental energy only to those things that go differently than planned. Don’t start the race already mentally fatigued.

Arousal Control

Nervousness before a race is normal. The more difficult the task ahead is relative to perceived capability, the greater the arousal and anxiety

Optimum arousal level varies with each athlete

- Too little – Lack of motivation
- Too much – Anxiety, Negative thoughts
- Will also influence perceived effort and proper pacing

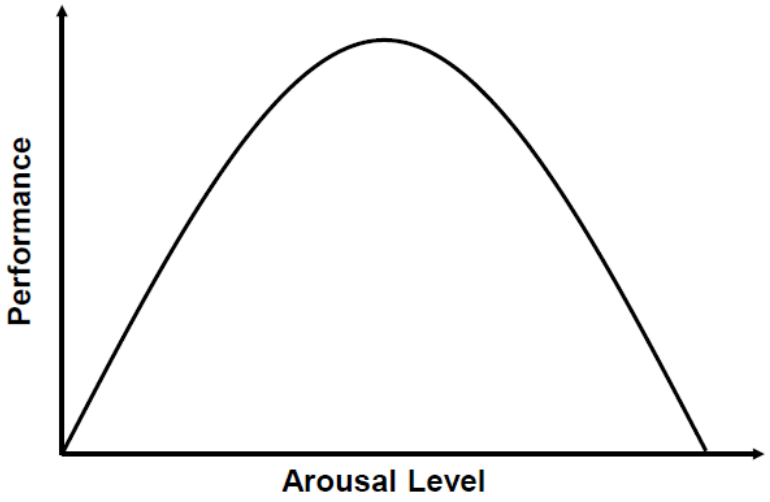
Tools that may work (very individual)

<u>Overarousal</u>

- For big races that require registration several days before the race, consider getting away from the race the day before and focus on a different activity.
- Listen to music and don't think about the race until shortly before the race.
- Positive interpretation of the nervousness
- Have confidence in what has worked before and focus on the current task.
- Project confidence, control, and calmness

<u>Underarousal</u>

- Caffeine
- Think about successful, previous races and how you felt afterwards
- Think about your longer term goals and how this race contributes to it.

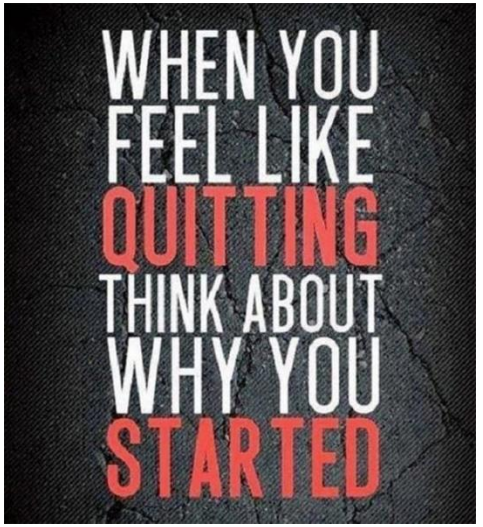


Pacing

- Anything longer than 30 seconds requires pacing
- Anticipatory regulation
  - Perception of effort
  - Motivation
  - Knowledge of distance left to be covered
  - Past experience
  - External feedback – splits, other racers but largely intuitive
- Best to race by how your body feels vs. the clock
  - Some training should be by perceived effort alone
  - Track duration or distance but not both

Motivation

- Intrinsic vs Extrinsic
- Tied to why you do triathlon
- Maximized when the challenge is appropriate for the skill level
- Group and audience effects
- Motivation is very individual.



Bracing – Preparation for intense Perceived Effort

- Anticipatory attitudes : Suppression vs. Acceptance
- Acceptance has been found to be a more effective coping skill.
- Also found in at least one study to reduce perceived effort.
- Learn to accept unpleasant sensations as unavoidable features of an experience.
- See the sensation as positive rather than negative – signs of performance and success
- Expect the worst
- Compare to previous times racing or training
- Deal with the sensation as problem solving

Self Talk

What do you think about as a race progresses and perceived effort increases?

- Associative thought focuses on the race.
- Dissociated thought is on subjects unrelated to running.
- One study found that elite marathoners thoughts are almost always associative and average marathoners disocciate increasingly as they become overwhelmed with discomfort.
- Effective associative self talk
  - Focused on the task at hand
  - Performance vs. race strategy
  - Maintaining Pace
  - Positive thoughts and encouragement
  - Monitoring of physical feeling and efficiency
  - Problem solving, decision making
- Segmenting the effort becomes increasingly important as perceived effort increases
  - Think about holding pace the next mile
  - Think about catching up to the competitor ahead
  - Again task relevant thoughts

Breaking Down the Race

- Break the race into manageable chunks in each discipline
- For example :
  - Swim – To the first buoy, to each of the turn buoys
  - Bike – To the first aid station, top of the massive hill, 10 miles to go
  - Run – First loop, Last 30% - aid station by aid station or mile by mile
- Keeps focus on task at hand
- Reduces perceived effort as it reduces time spent thinking about how much farther to go. One mile is attainable – 10 more less so.

Visualization

- Thinking about a task can activate the same areas of the brain that will be activated when you actually do it.
- Particularly the end of the race, where the greatest mental energy is required.
- Imagery may involve multiple senses – e.g. visual, auditory, tactile, olfactory
- Imagery must be positive but realistic – imagining you are feeling great and 20 minutes ahead of your goal at 20 miles into a marathon doesn't help. Should include the intense nature of pushing hard at the end of a race.
- Needs to be habituated. More frequent as goal race approaches.
- Segment the imagery as you plan to segment the race

Post Race

- Analyze your race
  - What went according to plan, what didn't and why?
  - How did you react to unexpected situations?
  - What decisions did you make?
  - How did you respond when it got very hard?
- Learn from mistakes – what can you do differently next time?

"Each race is an experiment" – Roger Bannister

Summary

- Performance = Physical Fitness - Mental Limiters
- When perceived effort becomes greater than the brain is willing to tolerate, the brain tells the body to stop or slow down.
- Learn appropriate pacing.
- Break races down into manageable chunks.
- Focus on the task at hand.
- Develop coping skills that work and use them.
- Learn what motivates you to keep pushing and use it.

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