Triathlon 101 #5 - Health, Fitness, and Performance

Measuring Health

1. Physical Health -

MD - Annual Medical Physical

- Personal and Family History
- Blood work (see note pages for list of tests)
- Visual exam
    - head, eyes, chest, abdomen, musculoskeletal system, such as your hands and wrists
    - nervous system functions, such as speech and walking
- Physical exams
    - ears, nose, throat, heart, and lungs (possibly resting ECG)
    - touching, or “palpating,” parts of your body (like your abdomen) to feel for abnormalities
    - possibly examining your genitalia and rectum (take care down there!)
    - testing your motor functions and reflexes

Blood Tests To Request:

A complete blood count (CBC) evaluates your overall health and detects a wide range of disorders. This test looks at levels of:

- Red blood cells, which carry oxygen;
- White blood cells, which fight infection;
- Hemoglobin, the oxygen-carrying protein in red blood cells;
- Hematocrit, the percentage of red blood cells in the blood;
- Platelets, which help with blood clotting;
- Sodium, an essential electrolyte that helps maintain the balance of water in and around your cells;
- Potassium, which plays an important role in regulating your heartbeat, muscle function, and nerve impulses;
- Iron, which your body needs to make hemoglobin-rich red blood cells, which carry oxygen from your lungs to your muscles; and
- Calcium, which strengthens bones, contracts your muscles, sends and receives nerve signals and releases hormones.
- Cortisol: steroid hormone that is released when the body is under stress. Anxiety, a restricted diet, or over-training can all cause cortisol levels to rise.

Other important tests:

- Follicle-stimulating hormone (female): regulates the functions of the reproductive system.
- Luteinizing hormone (female): plays a vital role in the human reproductive system.
- Prolactin (female): a hormone produced by the pituitary gland. Slight increases can occur as part of a stress reaction.
- Testosterone: a hormone that affects the brain, bone and muscle mass, fat distribution, the vascular system, energy levels, sexual functioning, and fertility.

- Thyroid stimulated hormone: plays a vital role in regulating the production of hormones by the thyroid gland.
- Thyroxine (T4): a test used to check that the thyroid is performing correctly.
- A Triiodothyronine (T3): test can indicate if the thyroid is performing correctly.
- Vitamin B12: like folate, it has a vital role in the production of healthy red blood cells and has a function in nerve health.
- Ferritin: the amount of ferritin in the blood reflects the total level of iron stored within your body.
- Vitamin D: plays an essential role in health, including in the development and preservation of healthy bones, boosting our immune system, muscle function, energy levels, and helping to reduce inflammation.

When to test:

- Get tested early in the season before starting any high-volume training to provide a good baseline panel.
- The next time to test is after ramping up in training, to see how that influenced physiology and also compare results to previous years.
- It is a good idea to test after all big training blocks and before all the key races to make sure you're going into the race with the right taper and your nutritional plan is well optimized. For example, 4-6 weeks before the race.

General testing recommendations:

- For an athlete training 5-8 hours per week: 1 pre-race test before a big race
- For an athlete training 8-12 hours per week: 1 pre-season test and a test prior to each major race
- For an athlete training 12+ hours per week: 1 pre-season test, a pre-race test following the first big training block or "B" race, and a test prior to any "A" race.

Reference: Ironman University

Social Health

Question: Do I have social support from others for my commitment to fitness and performance?

- Your ability to build healthy relationships.
- The quality of those relationships.

Ways to develop your social health - get involved!

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3. Emotional Health -
Develop a growth mindset rather than a fixed one. Carol Dweck writes, “In the fixed mindset, everything is about the outcome. If you fail—or if you're not the best—it's all been wasted. The growth mindset allows people to value what they're doing regardless of the outcome.

Rather than you suck at something you are improving…embrace learning what happens during the journey to the destination rather than just focusing on the outcome.

Dr. Carol Dweck - Growth Mindset explanation

- Instead of thinking “I suck”, say I’m improving
- Instead of thinking “I can’t”, say “I’m not able to do it yet”

4. Mental Health: History & Quality/Clarity of: Thought, Productivity of Decisions, Ability to Manage Stress

5 Mental Health Check Points

- **Evaluate your current mental health status**
  - seek help if needed.
- **Manage your expectations**
  - Are you proving, searching, or escaping?
- **Consider the impact on your social life**
  - This will require time and will impact your relationships.
- **Develop a support system**
  - Who is on your team vs an energy vampire.
- **Stay mindful of your mental health during training**

- Practice self care, deep breathing practice, stress reduction through planning (time management) and communication, and managing expectations of your time and performance

2. Measuring Fitness

1. Endurance Cardio (Swim, Bike, Run) and Muscular (planking/pushup)

2. Strength and Power (lifting/pushing/pulling/squatting/stepping/carry/lunging/hoping/jumping/bounding)

3. Flexibility - movements that increase your range of motion around a joint

4. Balance and Stability - balance is your body's ability to control movements and maintain position. Stability, on the other hand, refers to the ability to resist external forces or disturbances and maintain a stable position.
5. Body composition -Body composition refers to the proportion of different tissues that make up the body, including fat, muscle, bone, and other organs. The amount and distribution of these tissues can have a significant impact on a person's overall health and physical performance.

Endurance Cardio and Muscular Assessments:

- Perform repeated movement without getting fatigued.
- Use zones and repeated easy to moderate efforts in similar conditions (same weather, time of day, etc) to assess cardio fitness.

Assessment:

- Go longer at the same intensity, speed, pace (effort, heart rate, power) over the same course and environmental conditions
- Go faster over the same distance at the same effort, heart rate, power) over the same course and environmental conditions

Strength and Power assessment:

Strength - generate force
Power - do it explosively
Assessment:

- Strength - Lifting heavier for same reps over time
- Power - Improving ability to accelerate or generate explosive power in shorts bursts (20sec or less)

Flexibility Assessment:
A.k.a mobility/range of motion - shoulder range for swimming, bike aero position, run stride length
Assessment:

- Can you perform a movement more efficiently and smoothly with less resistance from your tissues?
- >Durability and resilience
- Movement assessment by physio/coach

Balance Assessment:

Balance - body's ability to control movements and maintain position.
Stability - the ability to resist external forces or disturbances and maintain a stable position.
Assessment:

- Single leg
- Walking one narrow and unstable surfaces
- Turning the head or catching/throwing and object

Body Composition Assessment:
Why? Effects buoyancy in swimming, power to weight ratio in cycling and running, frontal resistance, fat+muscle distribution in body

Assessment:

- Measuring tape (waist, hip, thighs, chest, arms, calves)
- skinfold measurements
- bioelectrical impedance analysis
- dual-energy x-ray absorptiometry (DEXA)
- magnetic resonance imaging (MRI)Movement

Measuring Performance

You versus You - how to accurately measure performance

- same course
- same conditions (i.e., temp, wind, humidity, road/surface conditions)
- same preparation?

3. Adjusting

Identifying feedback that indicates its time to adjust. Consistent training over time is the key to your fitness and performance results

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Red Flags that tell you it's time to adjust:

- Poor Sleep (Quality or Length)
- Low motivation to train
- Poor Mood
- Unusual or persistent soreness
- Higher than usual stress
- Changes in appetite (increase or decrease)
- Above normal range of resting heart rate
- Slower recovery between training sessions or intervals
- Signs of illness (upset stomach, sore throat, cough, congestion, fever, achiness)

Track Recovery Metrics for the following to establish your normal recovery ranges:

- sleep
- stress
- mood
- motivation to train
- resting heart rate
- recovery after/between training sessions

so you know your range and typical response

*Dr. Stacy Simms - Specific training and racing adjustments for women during the menstrual cycle and during menopause.

Recovery Step Test - using stairs to assess your recovery

How to do it:

- Walk up a flight of stairs two-at-a-time
- Pause at the top
- Notice how you feel

It won't take long to assess your readiness, especially if you combine it with your other metrics (like resting heart rate, sleep quality, stress, mood, etc).

Three states:

- Fresh - I'm ready for a key loading day
- Normal - Not quite fresh, but OK to load
- Fatigued - A breathless sensation that tells me I've done enough. Easy day, or two.

*From Training For The Uphill Athlete by House, Johnston and Jornet via Gordo Byrn.

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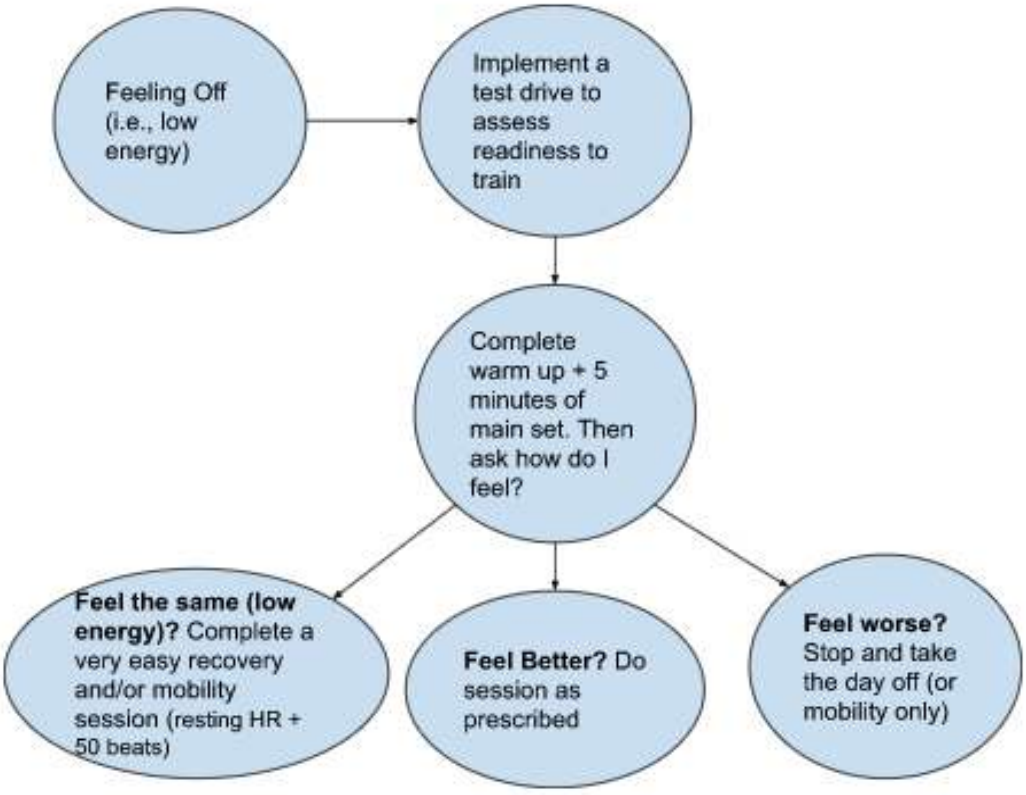
How to adjust your training:

Feeling Off



Symptoms of Illness (upset stomach, sore throat, cough, congestion, fever, achiness)