Either you ran today or you didn’t - the need for rest

I used to have a quote on my bulletin board: “Either you ran today or you didn’t.” The message was simple - no excuses, no explanations - just run. There was another quote I often referred to by Juma Ikangas “The will to win means nothing without the will to prepare.”

You may have read this one too: “Every Morning in Africa, a Gazelle wakes up. It knows it must run faster than the fastest lion or it will be killed….Every morning a Lion wakes up. It knows it must outrun the slowest Gazelle or it will starve to death. It doesn't matter whether you are a Gazelle or a Lion….when the sun comes up, you'd better be running.”

The difference between an athlete and the average person may be the willingness to train, to do the difficult under difficult conditions. But, the difference between the athlete and the champion is the ability to rest and recover.

We get fitter, stronger and faster through physical stress, and rest and recovery. Physiologically, psychologically and metabolically we need to adapt to the stress of our sport, but more importantly we need to rest to allow those stresses to effect a change.

Some Definitions

Periodization / Phases - training for specific physiological benefits - cardiovascular endurance, strength, speed.

Macro Periodization - the overall phases of your training plan. Focusing on each of the five phases.

Micro Periodization - the variations in your training plan from day to day and week to week, i.e. hard day, recovery day, distance building week, long run week. The changes in training focus from day to day and week to week.

Principles of Exercise Physiology - training involves preparing your body for optimal performance. In order to improve we must follow six principles:

- **Stress** - In order to build endurance, strength and speed, you need to stress each of these physiological systems. The response to physical stress is growth in each of these areas.
- **Adaptation** - An athlete’s body will adapt to the physiological stresses presented it. That is how we get fitter, stronger and faster. Adaptation is the response to physical stress.
- **Progression** - In order to continue to improve, you must increase the stresses. Working with the same weights will not cause an increase in strength.
- **Specificity** - Training is specific. The best way to improve your running is to run! You need to consider the distance and terrain of your goal race. There is no substitute for specific training.
- **Individualization** - Each of us responds differently to training. Learn how you respond to each aspect of training and pay attention to what you learn. Adapt your training to the your specific needs and responses.
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- **Reversibility** - All the gains from training will begin to disappear when training stops. Do not take this to mean you should not take time off. Rest is critical to successful training.

We have three physiological energy systems to produce energy. Understanding them and the way they provide energy is important to understanding how to train effectively.

- **ATP-PC system** or phosphagen system: available immediately, no oxygen is required, but can provide energy only for 8 to 10 seconds.
- **Glycolysis** system: starts in about 8 to 10 seconds, breakdown of glucose or glycogen to pyruvic acid or lactic acid, no oxygen is required, can last about 120 seconds. Sometimes referred to as anaerobic system.
- **Aerobic system** starts after about 2 minutes, requires oxygen and last as long as oxygen can be supplied. Limited by your maxVO₂.

We need to build three behavioral components for optimal performance:

- **Endurance** - the ability to run for long periods of time at a comfortable to moderate effort. This is also know as cardiovascular fitness or aerobic fitness.
- **Strength** - the ability to apply large amounts of force in a very brief period of time.
- **Speed** - the application of endurance and strength and the neuromuscular coordination required to move fast.

The result is our ability to perform at an optimal level. This is how we reach our goal of racing well.

The final component is **Recovery**. Allowing our body to rebuild after many months of hard work. In fact, the recovery phase is when you gain endurance, strength and speed. The building phases are actually the time we stress our systems so that they will adapt and improve. However, without the recovery period, our systems will not be able to adapt and improve. If we continually stress our body, our performance will plateau and eventually breakdown.

**Training Zones:**

- **Zone 0** - no training effect, very comfortable effort, below 65% of Anaerobic Threshold Heart Rate, Active Recovery, fat burning.
- **Zone I** - Comfortable effort, between 65% and 80% of Anaerobic Threshold Heart Rate, warm-up, cool-down, long workouts 2+ hours, mostly fat burning.
- **Zone II** - Moderate effort, between 85% and 95% of Anaerobic Threshold Heart Rate, aerobic workouts, shorter workouts 30 minutes to 2 hours, fat and carbohydrate burning.
- **Zone III** - Hard effort, between 100% and 105% of Anaerobic Threshold Heart Rate, anaerobic workouts, strength and speed workouts, time trials, 30 to 60 minutes, carbohydrate burning only.
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**Zone IV** - Very Hard effort, from 105% of Anaerobic Threshold Heart Rate to maximum heart rate, max efforts, use only for peaking, 30 to 40 seconds.

**Training Phases / Macro Periodization:**

Periodization is used to schedule specific types of workouts during each phase of training. These workouts are designed to meet the physiological requirements during each phase of training. Macro Periodization is planning for the training phases. Physiologically, there are five phases to training - **Recovery, Base, Strength, Speed,** and **Maintenance.** You can think of these phases as pyramid.

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1. **Recovery** - time "off" from serious training, Zones 0 and I. Should last 2 to 4 weeks.
2. **Base Building** - focus is on aerobic endurance and building mileage - both weekly total and long workout. Effort level is comfortable to moderate, mostly Zone I with some Zone II. Should last at least 12 weeks, the longer the better.
3. **Strength Building** - focus is on building muscular strength - making muscles strong so they can go fast, Zones II and III. Should last 6 to 8 weeks.
4. **Speed Building** - focus is on neuromuscular movement - moving fast, Zone II, III and during peaking Zone IV. Should last 6 to 8 weeks.
5. **Racing & Maintenance** - this includes any necessary taper and the focus is on rest and race, Zones I, II and IV. May last 4 to 8 weeks.
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The advantages of **Macro Periodization** are – you cannot be fast if you aren't strong and you can't be strong if you aren't fit. And you can't be fit if you aren't rested. So, start your training cycle or program with a recovery phase. Then, build the cardiovascular engine first, the muscular engine next and then work on neuromuscular coordination.

This is simplified a bit, since an experienced athlete (running for 3 years or more) can begin to build strength after 2 to 4 weeks of Base Building. It is critical however, not to attempt to
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Increase speed until after strength has been developed. Otherwise, injury will be your reward for doing speed work too early in your training program.

In addition, speed work for adults - those over the age of 35 (not that those under the age of 35 are not adults), that have NOT trained continuously since high school or college, should only be Tempo or Pace work, Pick-ups, Time Trials and races.

I strongly believe that traditional speed work - track based intervals - are counter productive for most adult athletes and the same and greater speed can be developed using other training methods and racing (the exception is if your goal race is a track race).

**Micro Periodization**

The Four Week Training Cycle emphasize a different aspect of training each week, i.e. when increasing weekly mileage and distance of long runs:

1. **Base Week** - "normal" or "average" weekly total and long workout distance. Total distance is 30 miles, long workout is 10 miles.
2. **Increased Weekly Mileage** - increase weekly total, but not distance of the long workout. Total distance increases to 34 miles, long workout remains 10 miles.
3. **Increased Long Workout** - increase long workout distance, but not the weekly total. Total distance remains 34 miles, long workout increases to 12 miles.
4. **Recovery Week** - back to Base Week totals. Total distance drops back to 30 miles, long workout also drops back to 10 miles.

The Four Week Cycle (**Micro Periodization**) plan allows for two benefits - a recovery week every four weeks and increasing only one aspect of training per week - weekly mileage OR long workout distance. For most athletes this plan is idea, providing optimal training and minimal risk of injury and burnout (direct burnout - athlete loses focus and indirect burnout - family or work loses tolerance!). The increases are gradual enough to allow adaptation and recovery. Some athletes can increase the intensity and distances by doing a Middle Distance run in the middle of the week on weeks 2 and 3.

**Supplemental strength work** - which I believe is critical to success and injury avoidance - should be started after 4 to 6 weeks of Base Building. Strength building with weights and Plyometrics are my preferred workouts.

Fall and winter are the times to rest and recover. Racing season is over. You’ve trained hard and long all year, give your body and mind a break. Allow your body to rest and recharge for next year’s goals and racing.

After your fall marathon, if you a doing one, take 2 to 4 weeks easy. This does not mean you have to stop all activity, just lessen the distances and intensity greatly. All workouts should be in Zones 0 and I. None of your recovery workouts should last more than 60 minutes, most should be 30 minutes. Stay active, but give yourself the freedom to take time off, rest and catch-up on other things in your life.