

Old School – New School

Training and Athletic Performance

IF YOU CAN'T CHANGE YOUR MIND, YOU CAN'T CHANGE ANYTHING

PROGRESS IS IMPOSSIBLE WITHOUT CHANGE.....

GEORGE BERNARD SHAW

Old School

- Philosophy: "More is better." The hallmark was immense yardage—routinely logging 100+ kilometers a week.
- Focus: Extreme aerobic conditioning, mental toughness, and survival-of-the-fittest selection.
- Performance: Built incredible aerobic engines for those physically resilient enough to survive. However, it resulted in chronic overtraining, rampant shoulder tendonitis, and athletes burning out and retiring by their early 20s.

New School

- Philosophy: "Quality over quantity." Modern coaching uses sports science to design race-specific, high-intensity workouts rather than just accumulating yardage.
- Focus: Heavily emphasizes biomechanics, hydrodynamics(reducing drag), and periodization(training in blocks). It also integrates out-of-the-water **dryland strength and training** to improve power for starts, turns, and explosive sprints.
- Performance: Swimmers reach peak performance faster, maintain technical skills under fatigue, and enjoy longer athletic lifespans due to proactive injury prevention and optimized nutrition.

Quick Summary

Old School

- More is better - grind it out

New School

- Quality & Efficiency
- Heart rate
- Stroke technique
- Better turns (use your glide)

Shrink the pool... make the pool shorter. Distance per cycle.

Training techniques have evolved

- The statement that New School training represents a major leap forward is broadly accurate. Older training methods built immense endurance but often did so at the expense of technique and joint health.
- The modern synthesis of high-intensity interval training (HIIT), dry-land resistance training, and individualized stroke mechanics allows modern swimmers to be more efficient, powerful, and durable.
- Instead of always feeling like “I’m doing something wrong.....”
- What can I learn and improve from what “I’m doing right?”

Training & Competition is your chance to flex your meaning of life...

Any sport, such as **swimming**, offers a direct quantifiable way to measure progress

- You are either improving or you are not (you can become more human or less human)
- Not about winning only, but transforming your potential into realized gains
- Responding to stimuli by trying different things
- Adapting to continual change with the capacity for growth and evolution

One of the greatest assets to your “Meaning of Life” is the use and development of your **muscles**

Challenging your body is our meaning of life. Competitions encourage us to see what our bodies can do. Doing it with your friends and teammates is also the fun part!!

Muscle Use, Development, and Recovery

Swimming is more cardio than strength. The better you become the net results go down. If you want to continue to improve you need to make a few additions to your routine, such as resistance training, breathwork, and proper recovery with adequate sleep.

“Dryland” & Resistance training help build durability, power, strength, and speed

Top 5 exercises include: (which mimic swimming muscles used the most)

- Pull-ups (regular or assisted)
- Push-ups
- Triceps extension
- Dips (regular or assisted)
- Squats Leg-day squats will help you shrink the pool by extending the distance from the wall before your first stroke. (If you swim 4,000 yards, you're essentially doing 160 reps of squats while pushing off the wall).
- Flexibility – incorporate yoga, Pilates, and stretching routines
- Many sites offer advice to help swimmers. Example: SwimStrong Dryland*

Breathwork for red blood cell development...

Practice this breathing exercise

- Exhale your entire breath and hold for 10 seconds
- Exhale your entire breath and hold for 15 seconds
- Exhale your entire breath and hold for 20 seconds

You want to increase your red blood cell production to carry more oxygen from your lungs to your muscles. It also triggers mitochondria production and increases the release of muscle stem cells.

Sleep starts at Lunchtime

- Tryptophan-based foods provide the essential amino acid that builds serotonin. At sunset, the body converts Lunchtime serotonin directly into melatonin. Melatonin helps you fall asleep and stay asleep.
- Sleep is when you gain your greatest benefits for recovery and growth. This is when your body produces your own human growth hormone.

This could be its own 2-hour class!

Preparing for your big meet

3-Step Process

Step 1: Recovery from training is the process of resting to heal and repair the body after intense training, often leaving an athlete feeling sluggish as the body deals with inflammation and pro-inflammation.

Preparing for your big meet

3-step Process

Step 2: Open Window theory states that you may go through an overly sluggish time frame that may last 1-3 days, which can feel like the flu as your body shifts from healing to the building up phase of taper time.

Preparing for your big meet 3-step Process

- Step 3: Taper is a strategic, short-term reduction in training load (volume) before a competition, while building and stockpiling performance resources for peak performance, such as super healthy mitochondria, increased ATP muscle energy storage, red blood cells production triggered by stem cells activity in the bone marrow, and glycogen muscle loading. (the energy in your muscle cells)
- We challenge our mitochondria (the powerhouse of your cell) during intense training. We also deplete and replenish of our ATP muscle energy storage during intense training. During our taper, our mitochondria increases and our ATP muscle storage is replenishing and replenishing.

Preparing for your big meet

(Step 3 continued)

- Breathwork can also help improve the results during taper time.
- Race pace type 25's and 50's during taper and that's it. Maybe broken 200's. Shut down sprints and high intensity efforts 2 days before the meet.
- Clean eating during this process, cutting out sugar and alcohol (the #1 killer of your mitochondria and red blood cells)
- Sleep during taper is extremely important (SwimSwam just posted an article this week about this)

(today's lecture should trigger your curiosity, which is one of your strongest emotions!)

Resources

- *“Meta-Analysis of the heritability of human traits based on 50 years of twin studies”* (Journal of Nature Genetics)
- *“AMPK and the Biochemistry of Exercise”* (Journal of Biochemistry)
- *“Muscle Memory and a New Cellular Model for Muscle Atrophy and Hypertrophy”* (Journal of Experimental Biology)
- *“The open window of susceptibility to infection after acute exercise in healthy young male elite athletes.”* (Journal of Exercise Immunology Review)
- *“Cardiac, Skeletal, and Smooth Muscle Mitochondrial Respiration: Are all mitochondria created equal?”* (Journal of Physiology)
- *“Skeletal Muscle Energy Metabolism During Exercise”* (Journal of Nature Metabolism)
- *“Meaning in life of elite athletes: A person-oriented study”* (Journal of Psychology of Sports and Exercise)
- ***Athletically Driven... by Nature to become more Human*** (Author Jerry Frentzos)