
SPORTFIT LAB



SCIENTIFIC TRAINING

The Science of Triathlon:

Running in Triathlon

Improving Running

- **Running Success = speed X endurance**
- **Speed** = stride length X stride rate (a.k.a. “turnover” or “cadence”)
- Ideal stride rate = approx. 180/min. [90 per leg]...how to count
- Most amateurs too slow
- **Endurance** = economy X VO2max.
- Improve VO2max. through endurance training (distance and interval)
- Improve economy through better biomechanics (posture and form) – see next page

Running Mechanics & Form

- **The Forward Lean** (sometimes called “Chi running”)
 - “Straight” line from ankle to ear, chest & pelvis aligned
 - Leaning slightly forward, focus on forward momentum
 - Lifting versus pushing
 - Minimize vertical oscillation (feels a little like “shuffling” or gliding forward)
 - Forward not up
- **Midfoot strike**
 - Dynamically balanced fore foot/mid foot strike
 - Minimal braking: heel striking brakes forward motion
 - Use whole foot

Arm & Shoulder Usage

- Bent 90° or less
- Head & eyes level
- Hands inside elbows
- Emphasis on rearward pull of elbow

HABITUATION STEPS

Move from:

- Unconscious Incompetence to
- Conscious Incompetence to
- Conscious Competence to
- Unconscious Competence!

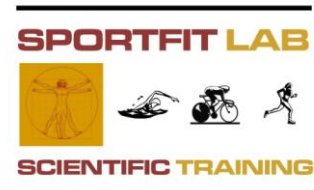
Triathlon Considerations

- Running “off the bike”
 - Much more difficult due to fatigue
 - Triathlon pace will be slower than usual run pace
 - Poor bike position causes excessive fatigue in running muscles: consider professional bike fitting
 - Hamstring flexibility VERY important to avoid injury
 - Good running mechanics reduces fatigue
 - Practice with occasional “brick” workouts: but keep distances short to avoid injury



Running Flexibility & Strength

- Stretch for flexibility after every run/workout:
 - Calves
 - Quads
 - Glutes and outer hips
 - Pecs
 - Hip flexors
 - Hamstrings
- Strengthen core (abdominal and hip) muscles for:
 - Pelvic alignment
 - Swing phase support
 - Support phase support
 - Fatigue resistance
 - Stride length
- Strength exercises:
 - Abdominal curls
 - Lying single leg extension (pelvic stabilization)
 - Step-ups with knee raise
 - Side leg raises (inner and outer thigh)
 - Slow toe raises on step (full range of motion)



Running Gear

- Shoes should support your stride:
 - High/stiff arches: go for cushioning shoes
 - Low/flexible arches: go for motion control or stability (anti pronation) shoes
- Practice transition from bike:
 - Socks vs. no socks (comfort vs. speed)
 - One-pull or elastic laces
- For longer runs, practice hydrating while running
 - Camelbak
 - Hip flask belt
 - Hand bottle

