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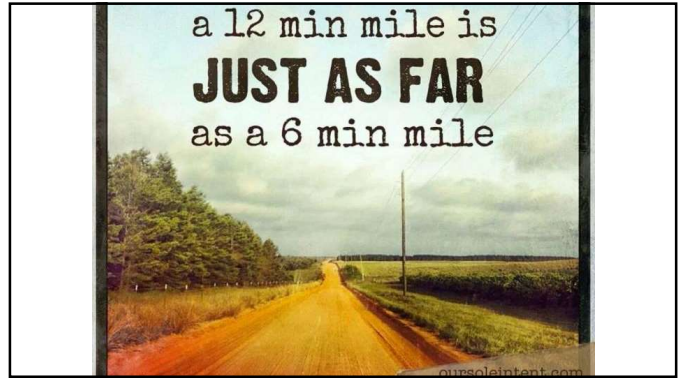
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## Running

As a kid you just ran

When you go through puberty asymmetries and muscle imbalances develop

As you age your body goes through many changes

Yet, Unlike many other activities, people rarely get instruction how to run

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## Running

- Large force generation with good muscle recruitment
- Propulsion is differentiating factor between walking and running created by elastic recoil of energy in your tendons
- Need good neuromuscular control between your feet and core

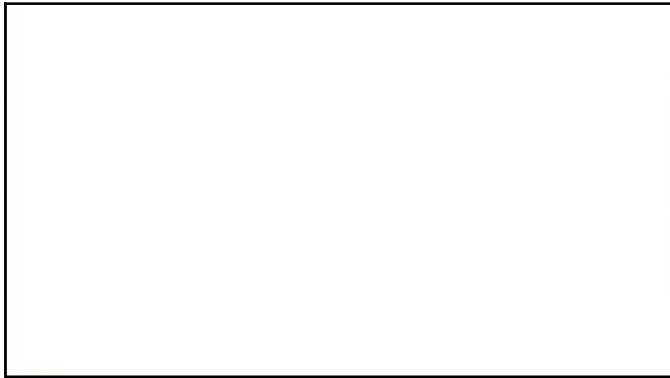
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I had recurring back and knee issues and thought I wouldn't be able to race triathlons again. Denise gave me exercises and encouraged me to sign up to compete. I was able to complete the triathlon and had my fastest run split in years.



I threw out my back three weeks prior to a major triathlon. Denise responded to my message immediately and took the time – on her day off! – to call and counsel me on how to handle the situation that day. She gave me exercises and activities to manage the situation and we agreed to meet first thing the next morning. With three weeks of PT, I was able to travel to Miami and race my planned race. I attribute my success in Miami to Denise and her ability to successfully work with patients, provide them with the therapy and exercises they need to succeed.

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### Run Analysis


- Posterior – whole body
- Posterior – just feet
- Anterior
- Lateral




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### Running Phases



- Right Foot strike
- Right Mid-stance
- Right toe off
- Float
- Right swing phase




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### Running Mechanics

- *We know that everyone's running form is unique to that individual and running is a natural movement, so should we even mess with it?*



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### Running Mechanics

- Run tall – posture, look straight ahead
- Engage core
- Arm swing
- Foot lands close to body – or how quickly body moves over foot
- Hips
- Knees – straight ahead
- Feet/ankles – lean
- Cadence – 170-185 steps/minute



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## Gazelle vs Glider

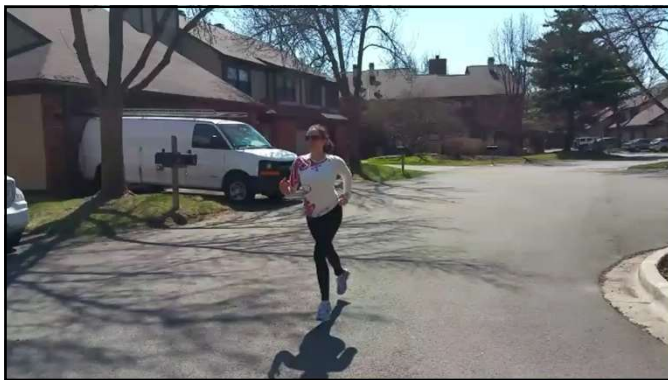
- <https://www.themanualtouch.com/proud-to-be-a-glider/>



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## Lateral view

Vertical Movement

Hips: knee drive, extension

Ankle Lean

Cadence: ideal 170-185 steps/minute

Foot Strike



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## Lateral View – Foot Strike

Forefoot, midfoot, or heel strike

Landing close to center of mass will have greater ability to have elastic recoil

How fast you move over the foot

Overstriding –landing far from center of body increases loading rate and causes a braking action



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## Overstriding



- Overstriding: cadence under 170
- Braking action
- Injury prone



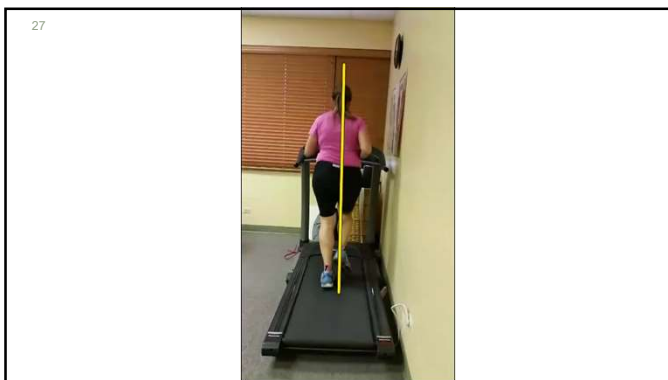
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### Form Recommendations

- Look straight ahead
- Drive elbows back
- Keep knees straight ahead like headlights
- Crossing midline – run on either side of traffic line
- Paw back – push ground away at toe off





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### Cadence

- Assess in lateral view on treadmill; norm 170-185 steps/minute
- Count every right or left step for 15 sec, multiply by 8 = steps/minute





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### Form Recommendations –to increase Cadence

- Up the cadence
- Use metronome
- Adjust slowly 2-6 beats at a time
- Homework – practice running at new cadence for 1-5 min, run or walk at regular pace 1-5 min, repeat new cadence



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Good Ankle Lean

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### 12 Visualization Cues to Help You Run More Efficiently

The image displays 12 visualization cues arranged in a 3x4 grid. Each cue consists of a small icon and a label:
 

- Lean: A stick figure leaning forward.
- Head Balloon: A stick figure with a balloon on its head.
- Eyes: A stick figure with a triangle representing the eyes.
- Arms: A stick figure with arrows pointing forward from its arms.
- Winch: A stick figure with a wheel on its back.
- Belly Balloon: A stick figure with a balloon on its belly.
- Knees/Legs: A stick figure with arrows pointing up from its knees.
- Mid Foot: A stick figure with an arrow pointing down from its mid-foot.
- Hot Coats: A stick figure with a fire flame below it.
- Banana Peel: A stick figure with a banana peel on the ground.
- Heel Balloon: A stick figure with a balloon on its heel.
- Wheels: A stick figure with a wheel on its back.

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### Women Runners

- Hip and core weakness
- Menopause
- Young women – postural weakness

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### Women – post childbirth

- Could be years later
- Diastasis (a splitting of the rectus abdominus/6 pak muscle because of connective tissue thinning and widening)
- Core weakness
- Pelvic floor weakness

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### 40

A few years ago I had plantar fasciitis and shortly after that, a left foot fracture. I rested for two months and went back to running as usual. Two years later I, again, had another stress fracture in the same place in the same foot. It was time to see Denise. First, we videotaped me running and turns out it wasn't my foot or feet that were the problem, it was my very weak core (after having 4 babies) that was the culprit! Denise and I worked for a few months on strength and form and now I am free to hit the pavement again

While training for a 70.3 Ironman this year, I developed some debilitating hip and leg pains that made me question whether I would be able to race. Denise quickly identified the problems and treated me over several sessions, which included going over exercises until I really understood what to do. Her patient, intuitive and knowledgeable style made a huge difference in my training. I'm sure I would not have finished the race if it were not for her effective treatments.

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### Women Runner Tips

- <https://themanualtouch.com/why-women-have-hip-pain-and-exercises-that-help/>
- <https://themanualtouch.com/tips-for-running-through-menopause/>
- <https://themanualtouch.com/4-tips-for-managing-hip-pain/>

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### Age related changes

- Decreased muscle mass and bone
- Decreased joint mobility – spine, hips, ankles
- Decreased Balance
- Decreased speed
- Decreased reflexes


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### Injuries - Why do runners get them?

**OVERUSE!!!!** – too much syndrome – too much intensity, too much speed, too soon

- Biomechanics
- Muscle imbalances
- Soft tissue restrictions
- Form
- Shoes




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### What's The biggest mistake runners in pain make?

*They Ignore it!*



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### Choices


Ignore	Ignore it – continue to run or just rest
Alter	Alter it - medications, injections, surgery
Handle	Handle it



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### Physical Therapy


- Manual (hands on) therapy:** balance joints, reduce soft tissue restrictions, non-traditional and traditional
- Education:** posture, function, movement, ADLs
- Exercises:** Strengthening, mobility and stability exercises for your core, hips, feet
- Neuromuscular Reeducation:** feet/core, whole body integration, running analysis



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### PT for Runners

<b>Mobility</b> joints, move forward	<b>Stability</b> body in proper alignment, core, balance, neuromuscular control	<b>Power</b> generate enough force, 2.5 x body wt
<b>Recovery</b> rest	<b>Form</b> gait analysis to improve efficiency, shoes	




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### Physical Therapy Functional Education

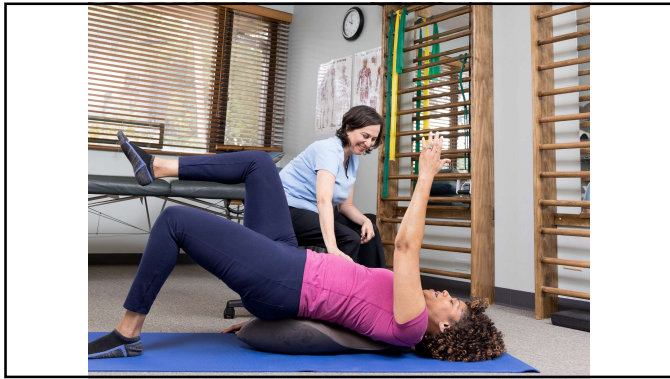
- How to sit
- How to stand
- How to walk
- How to move through transition
- How to sleep
- How to lift
- Posture
- Specific movements: activities, job, housework



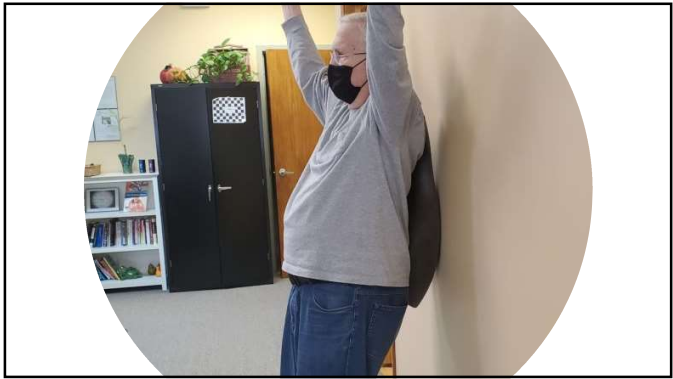
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MINDFUL TIPS  
for  
PAIN-FREE  
DAILY MOVEMENTS

Mindful Tips  
for Pain-Free  
Daily Movements

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### Injuries – Can I still run?

- Pain is guide - <5/10 while running but is gone by the next day
- Try a run/walk program
- No speed work – cross train for speed work

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### Injuries – When to stop running

- Constant Pain
- Pain with running, sleeping
- Form breakdown
- Persistent pain after running for greater than a day

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### Injuries – “I can’t run” now what?

Cross Train	PT	Enjoy
elliptical, spin bike, aquajog, biking, swimming	Plenty of exercises/manual therapy; Discover why you got injured in the first place	Enjoy life

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### Injuries - rest

Rest	Rest	Rest
Rest doesn't change mechanics	Rest doesn't change why you got injured	Rest will <b>heal</b> tissues but not why you got injured

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Being an avid road cyclist, gravel rider, cyclocross racer and a marathon runner turned into a recent triathlete, I train all year round and race all year round. In 2016, May in Terre Haute Sprint triathlon run, I tore some fascia connecting my lowest abdominal and my leg right in the groin area. The condition was diagnosed as Sports Hernia.

Denise started me off with couple of sessions in a week. The exercises focused on building mobility and strength in my glutes and hips and slowly worked towards the injured groin. Step by step we addressed the issue and Denise provided me with must-do exercises before every run. I started a modified training schedule and we worked on proper gait and resolved one issue after another as they arose.

As a result of the efforts and great physical therapy and planned exercises, I was able to pull off Chicago Marathon in astonishing 3:35:13, a PR by over 8 minutes! And after the marathon, I had a strong cyclocross season racing Category 4. Had it not been Denise's therapy, my Marathon and cyclocross racing would have not been possible. I strongly recommend working with extremely knowledgeable and experienced Denise Schwartz at The Manual Touch facility and you will never take a step back from your athletic goals!

Addendum: Raj is now a sub 3 hour marathoner and has completed the Grand Canyon RtoRtoR 33.

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## 8 Ways to Injury Proof Your Running

PHYSICAL THERAPY

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## Running Portal

- High quality exercise videos
- Running information all in one place
- Running tips
- Leave email in chatbox to receive a 1 time discount code for the portal
- <https://themanualtouch.com/portal-access/>

PHYSICAL THERAPY

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# Thank You!

- Email:* [Denise@TheManualTouch.com](mailto:Denise@TheManualTouch.com)
- Call:* [847-541-7600](tel:847-541-7600)
- Visit:* [www.TheManualTouch.com](http://www.TheManualTouch.com)

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