5K Training Program

A Sensible and Educational Approach

by Chris Morin

Outline

Who is the program for: Anyone who is in good health who have always wanted to be able to fitness walk or run injury and pain free.

Program: 3 days a week of walking with spurts of fast pace walking or slow jogging initially, building to 30 minutes of fast paced walking and/or running by the end of the program. Total commitment is 3 days per week of walking and running other days you can do supporting exercises.

Outline

Combination of Walk and/or Run at different weekly ratios.

Progressive Program

Known as Interval Training or HIIT-High Intensity Interval Training

If you ever wanted to start a running program this is the best place to start!!!!!

Mostly everyone can do it.

Going from the couch to finishing a first 5K has never been easier.

Goals

Just to have you **finish** a 5K race (walk/run).

It is not about training the best time right now; it is **about health and fitness**.

No injuries throughout your training is key as well.

Long term exercise **compliance** should be your major goal.

Key Point-High Impact

Running is high impact and strenuous.

Ground reaction forces experienced running well exceed 2-3 times a person's body weight.

Compounded on this is that these forces are placed on one leg.

Running is also an intense form of exercise.

You can clearly understand this when looking a oxygen requirements during different running speeds. 1 MET is the amount of oxygen you need at rest. Running a slow mile is 9 METS; so you are doing 9x the work as compared to a resting state.

Running can be dangerous

ACTIVITIES METS
REST1.0
BILLIARDS2.5
FISHING 2-4
BOWLING2-4
TABLE TENNIS3-5
WALKING 3-6
EXERCISE BIKE (LOW LEVELS) 3-6
VOLLEYBALL3-6
LIGHT CONDITIONING EXERCISE 4-6
HANDBALL3-7
DANCING (SOCIAL)4-7
SKIING (WATER)5-7
SKIING (DOWNHILL)5-8
BASKETBALL (NON GAME)3-9
TENNIS4-9
STAIR CLIMBING4-8
SWIMMING 4-8
AEROBIC DANCE6-9
CLIMBING HILLS5-10
HEAVY CONDITIONING EXERCISE 6-8
EXERCISE BIKE 6-12
SOCCER6-12
SKIING (CROSS COUNTRY)6-12
BASKETBALL (GAME)7-12
SQUASH/RACQUETBALL 8-12
SNOW SHOEING8-14
ROPE JUMPING (60-80 SKIPS/MIN) 9
RUNNING (12 MIN MILE)8.7
RUNNING (11 MIN MILE)9.4
RUNNING (10 MIN MILE)10.2
RUNNING (9 MIN MILE)11.2
RUNNING (8 MIN MILE)12.5
RUNNING (7 MIN MILE)14.1

Difference Between Walking, Jogging, and Running

Running is typically defined is a forward motion where both feet leave the ground for an instant during each stride. While walking one foot is always on the ground. Jogging is simply running slowly and leisurely. *Running a mile in eight to nine minutes or less is considered running while taking longer than that to run a mile is defined as jogging.*

Walking Can Lower Risk of Heart-Related Conditions as Much as Running

Walking briskly can lower your risk of high blood pressure, high cholesterol and diabetes as much as running can, according to surprising findings reported in the American Heart Association journal *Arteriosclerosis, Thrombosis and Vascular Biology*. Researchers analyzed 33,060 runners in the National Runners' Health Study and 15,045 walkers in the National Walkers' Health Study. They found that the same energy used for moderate intensity walking and vigorous intensity running resulted in similar reductions in risk for high blood pressure, high cholesterol, diabetes, and possibly coronary heart disease over the study's six years.

Difference between Walking and Running

Calories Expended through Walking and Running

The relative Net Calories Burnt of running a mile in 9:30 versus walking the same mile in 19:00. Male subjects burned 105 calories running, 52 walking; the women, 91 and 43. That is, running burns twice as many net calories per mile as walking. And since you can run two miles in the time it takes to walk one mile, running burns four times as many net calories per hour as walking.

Running burn twice the amount of calories than walking the same distance.

The walking formulas apply to speeds of 3 to 4 mph.

At 5 mph and faster, walking burns more calories than running at the same speed.

Difference between Walking and Running

You can make walking the same intensity as running if you use a treadmill with an incline.
Running Starts at 8 METS
Walking at 2.5 mph at 12-15 grade is 7.4 METS
Walking at 3.4 mph 12-15 grade is 8-10 METS
Which means you can burn the same amount of calories as running when walking on a high incline

See more at https://drmasley.com/fitness-testing/

Therefore walking fast (briskly-4-5 mph or on a high incline) can be just as good or even better for you than running.

Key Point-Staying within yourself

Find and own your own pace and own it.
Don’t care what anyone else is doing.
Partner with someone who has the same pace.
Walking or Running at abnormal pace can actually create low back pain.

Running is not for everyone.

Not everyone is born to be a fast and pain free runner.

There are many **physical attributes** that are found in a good runner, but that being said most people can start a modified running program or what some call jogging.

Key: I do recommend that if you have a **BMI > 25** (overweight) that you try to bring your body weight down to avoid injury.

Quality Runner Attributes

Need to have the right physiological make up to be a high quality runner (genetics matter).

Feet

Knees

Look

at your feet and knees

Body type - lean and linear

Muscle type - red versus white or slow versus fast
or aeobic versus anerobic
and **Aerobic capacity**; which is key.

FACTORS WHICH INFLUENCE AEROBIC CAPACITY

There are many qualities that make up a great runner; aerobic capacity is key. Some fitness professionals consider aerobic capacity to be the most important predictor of fitness.

Genetics

Up to 50-90% of one's aerobic capacity is influenced by genetics. Simply put some people are just born to run long distances fast.

Heart Related

Aerobic capacity= Maximum Cardiac output= Maximum stroke volume x Maximum heart rate. Your maximum heart rate is a genetic trait: in other words you can not increase it.

Aging causes a decrease in max heart rate, which leads to a decline in aerobic capacity.

Athletes like Lance Armstrong have higher than usual maximum heart rates. Lances maximum heart rate is well over 200 beats per minute; similar age people would be 175 beats per minute. Lances stroke volume is also double that of an average persons.

Tissue Relationships

Muscle fiber type - Slow twitch fibers are the best for aerobic performance. Can not change your fiber type.

Aerobic capacity

correlated to

Speed/Time

People are limited by genetics

Aerobic endurance

correlated to

Distance

People are not limited by genetics as much when it comes to aerobic endurance; you can improve endurance immensely.

Self Body Analysis

Know your Body

Before you go out and start running you need to find out if you need to address some physical issues by doing a Self Body Analysis.

Self Body Analysis

1. Determine your BMI; it should be below 25 before you start a serious running program. That being said you can start a run program but be very cautious and listen to your body. **http://www.nhlbisupport.com/bmi/bminojs.htm**

Self Body Analysis
2. Examine your feet

<u>Lets look at your Feet</u>

<u>Standing</u>

Lets look at your feet first while standing and then while running.

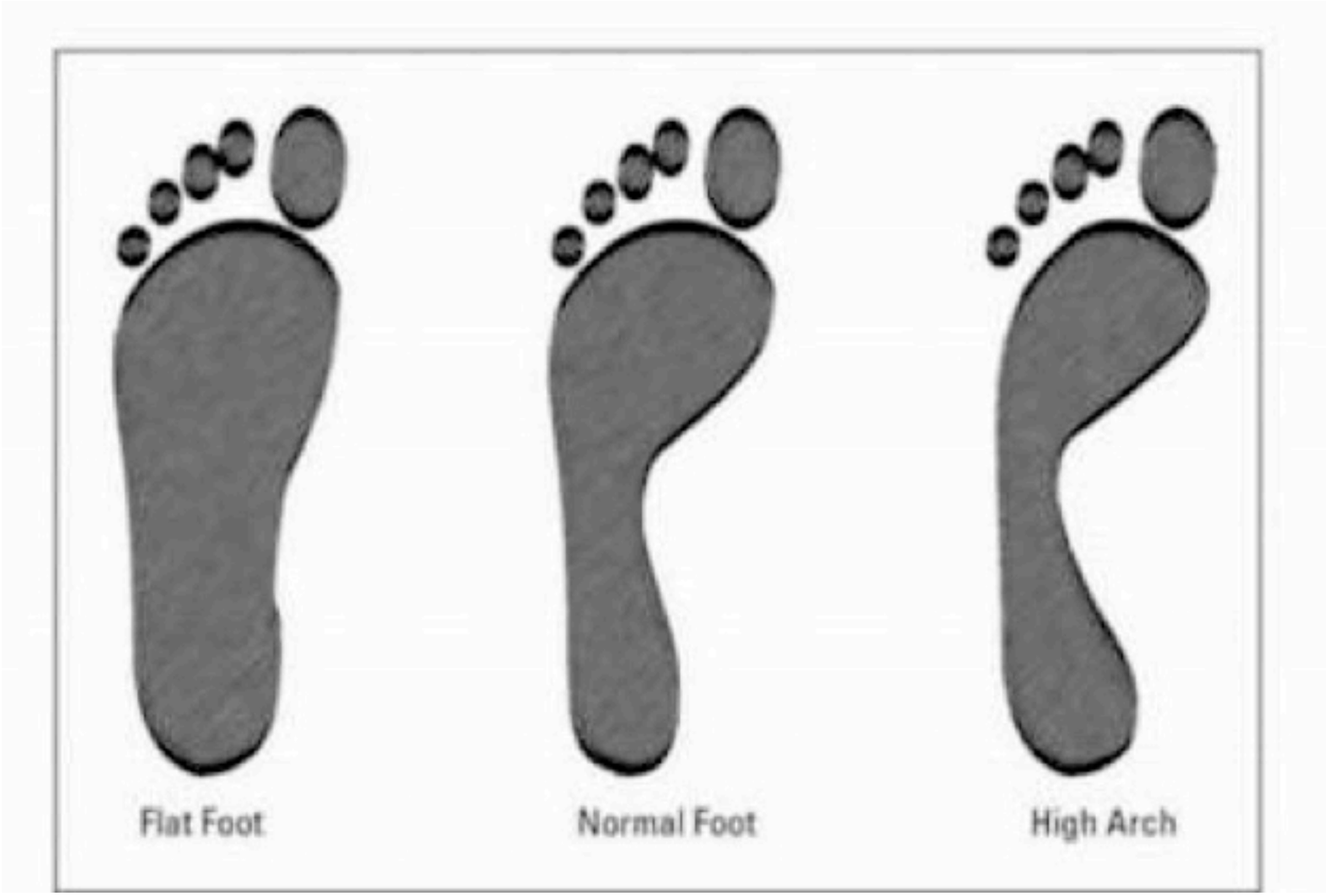
Standing shoulder width apart and look down at your feet. Does there seem to be an equal size arch on each foot and does the second toe line up with the knee cap; this is considered normal. If the arch drops and where it is flat to the ground then you may have flat feet (pes planus).

Opposite to this is where there is a high arch; where you feel the weight of your body on the outer aspect of the foot (pes cavus).

Both conditions make you more susceptible to injury. Look at your arch while you run.

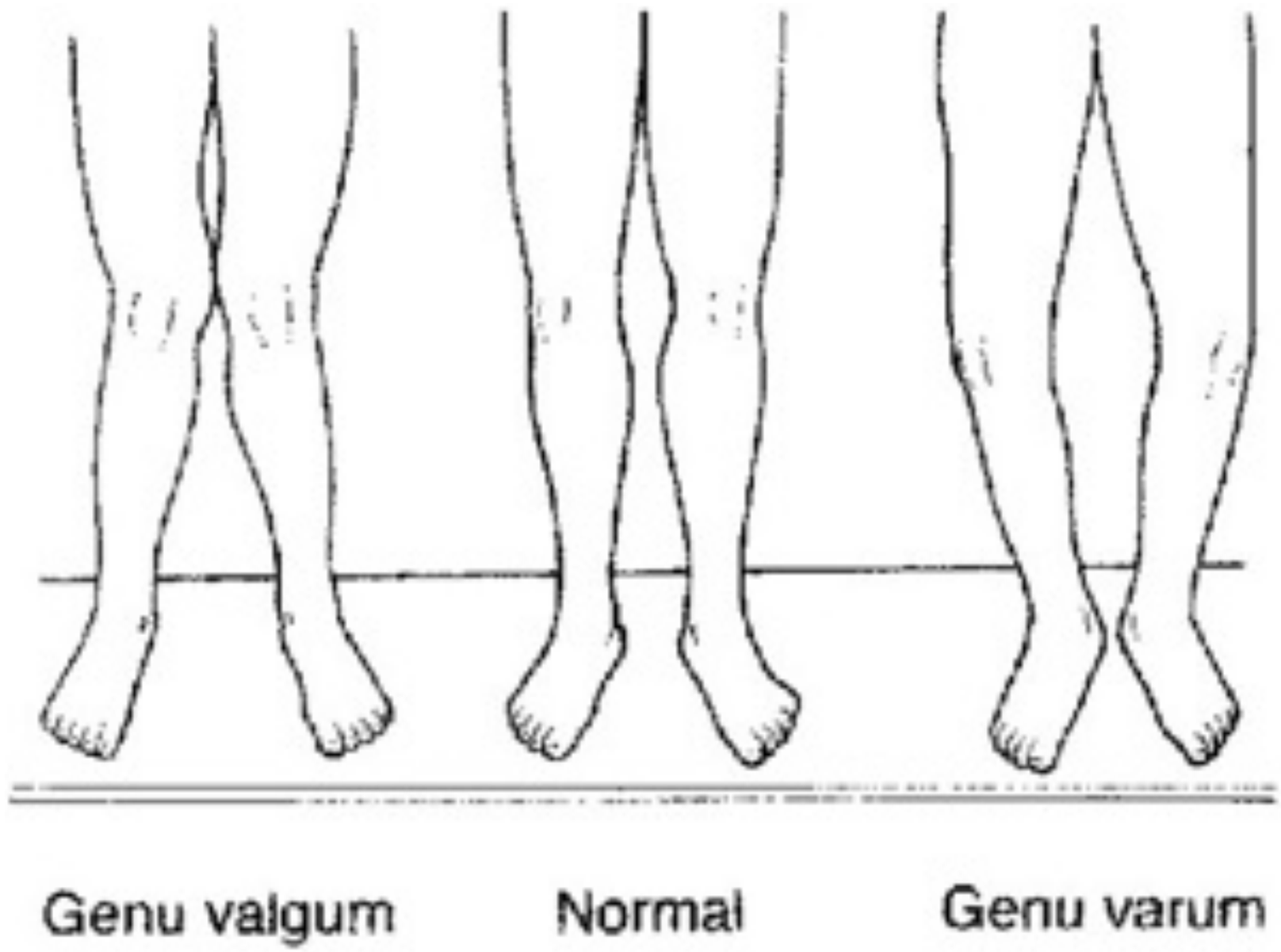
Wet Test

Another easy way to understand your feet is to wet the bottom of one foot and then step onto a flat surface. A flat foot will leave a fat, almost complete footprint. A normal foot will show about half of the arch. You can use the same technique while walking and running to see if the problem exists moving



Self Body Analysis

3. Examine your knees



Knocked Knee

Bowed Legged

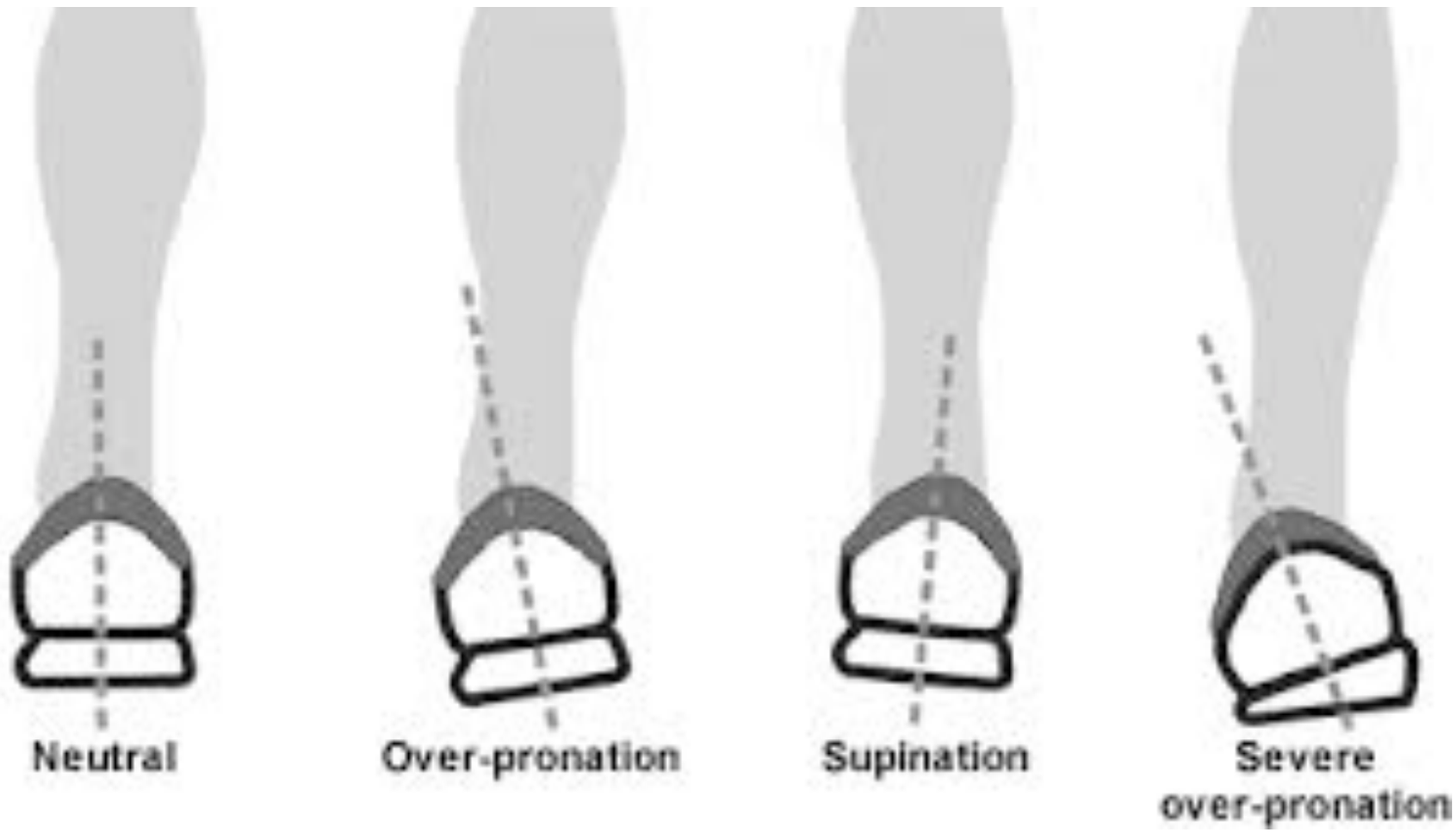
Self Body Analysis
3. Examine your knees

Knees

Use a mirror, it is a good tool.

Unfortunately if you have bow legs or knock knees you may be at higher risk for injuries during high-impact exercise like aerobic dance and running type sports. Knees that deviate from the norm (either in or out) can put added strain on the joints of the entire lower body and even the upper body, especially the hips, knees, lower legs, ankles, and feet. The norm is where the when standing shoulder width apart the knee sits over your feet. Someone who has knock knees will often pronate (the ankles and feet roll inward too much), while if bow legged person is more likely to supinate (the ankles and feet roll out).

If you have either condition you may be a good candidate for an orthotic. A physical therapist or podiatrist may prescribe inserts or a modified exercise program. If you have pain while running you should try a lower impact sport, such as swimming or cycling or modify your running program. **Make sure you have good shoes. If you have foot or knee issues get the right shoes - motion control shoes.**


Neutral
Over-pronation
Supination
Severe
over-pronation

Self Body Analysis
4. Examine your hips

Having large hips and a large Q-angle can cause problems as well.

Q angle-the angle formed by lines representing the pull of the quadriceps muscle and the axis of the patellar tendon.

*There has been studies suggesting an association between a large q-angle and patellofemoral pain and hip pain.**

Self Body Analysis 5. Examine your ROM

Flexibility Self Tests
Lets test some muscles to see if we are balanced and not overly tight.
Common areas of muscle tightness in runners are in the calves, hamstrings, gluteus, and low back.
Difference between sides can cause imbalance and problems.

• Calves
Stand with toe 4 inches from wall. Keeping foot flat you should be able to touch knee to wall. If not work on stretching the calf with this and other stretches. Both sides should be the same.

• Hamstrings
On floor raise a single straight leg up. You should be able to get to 70 degree with it straight. If not work on stretching the hamstring with this and other stretches. Both sides should be the same.

• Glutes
Seated with ankle on top of knee the shin should be parallel to floor. Try bending forward as much as you can; you should be able to touch chest to shin or be with a few inches. If not work on stretching the glutes with this and other stretches. Both sides should be the same.

• Hip Flexors
While prone on floor pull one knee into chest. The opposite leg or knee should not raise up. If not work on stretching the hip flexors with this and other stretches. Both sides should be the same.

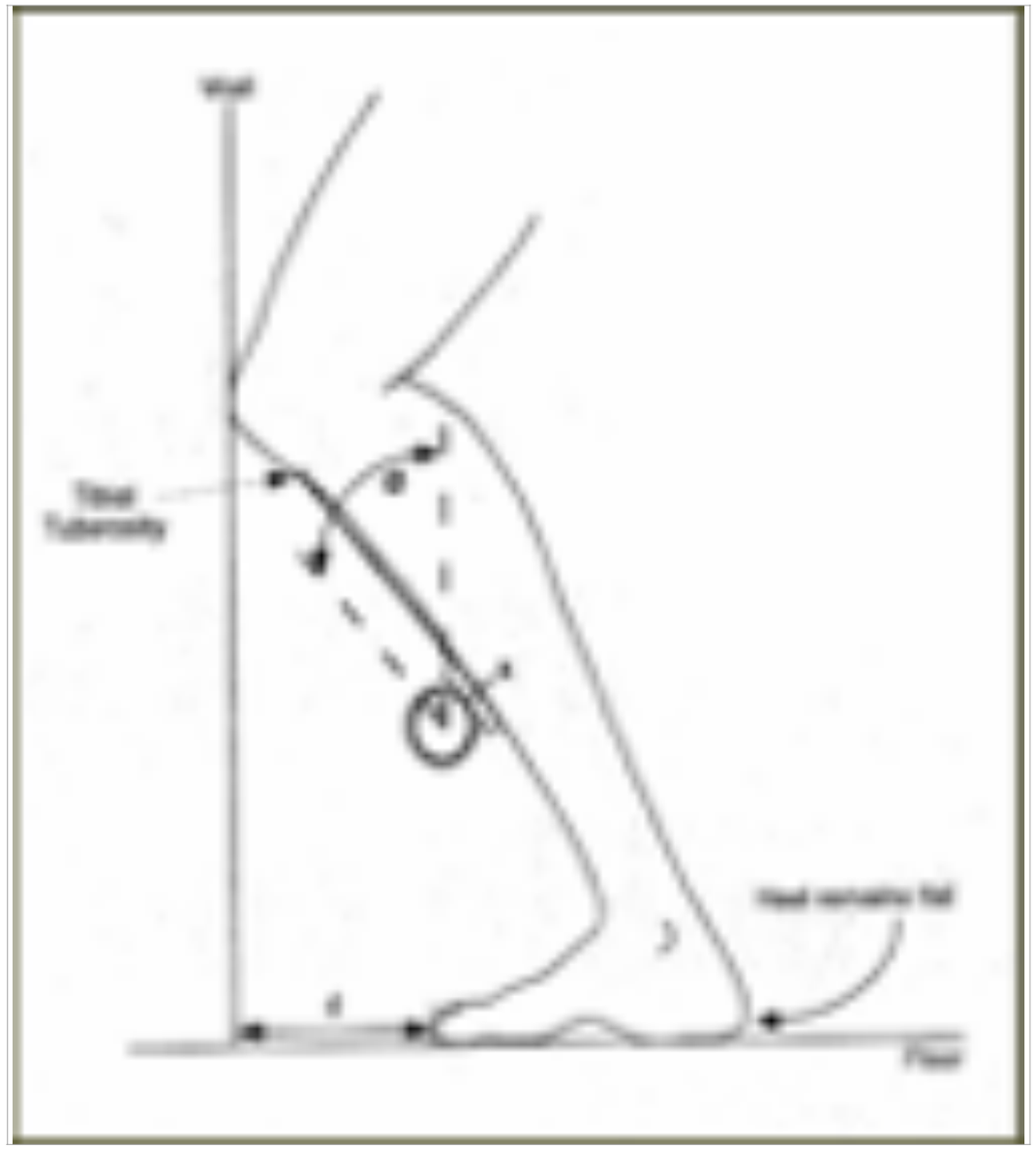
• Low back
Lean back as much as you can. This should not cause pain.

• Quadriceps
Standing bring ankle up to buttocks. Should be almost able to touch. Both sides should be equal. If not work on stretching the quads with this and other stretches.

Flexibility Self Tests

• Calves

Stand with toe 6 inches from wall. Keeping foot flat you should be able to touch knee to wall. If not work on stretching the calf with this and other stretches. Both sides should be the same.



Flexibility Self Tests

• Hamstrings

On floor raise a single straight leg up. You should be able to get to 70 degree with it straight. If not work on stretching the hamstring with this and other stretches. Both sides should be the same.

SPARKPEOPLE

Flexibility Self Tests

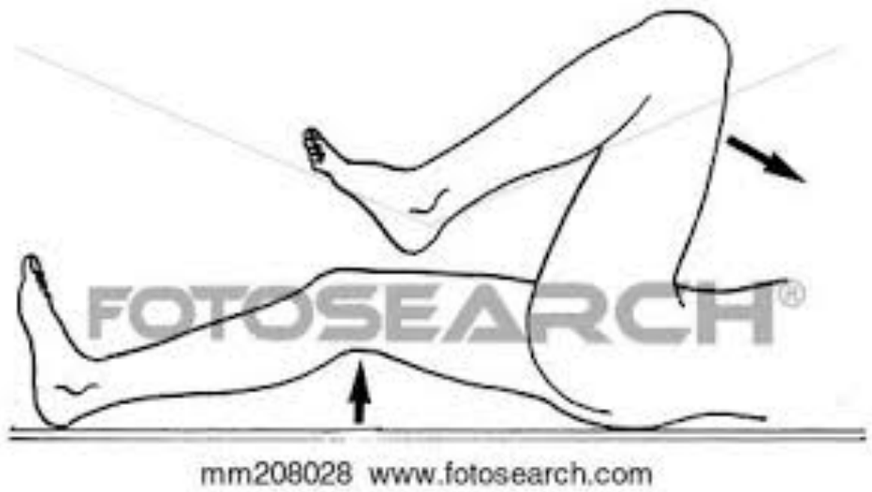
• Glutes

Seated with ankle on top of knee the shin should be parallel to floor. Try bending forward as much as you can; you should be able to touch chest to shin or be with a few inches. If not work on stretching the glutes with this and other stretches. Both sides should be the same.

Flexibility Self Tests

• Hip Flexors

While prone on floor pull one knee into chest. The opposite leg or knee should not raise up. If not work on stretching the hip flexors with this and other stretches. Both sides should be the same.



Two of my favorite stretches

Flexibility Self Tests

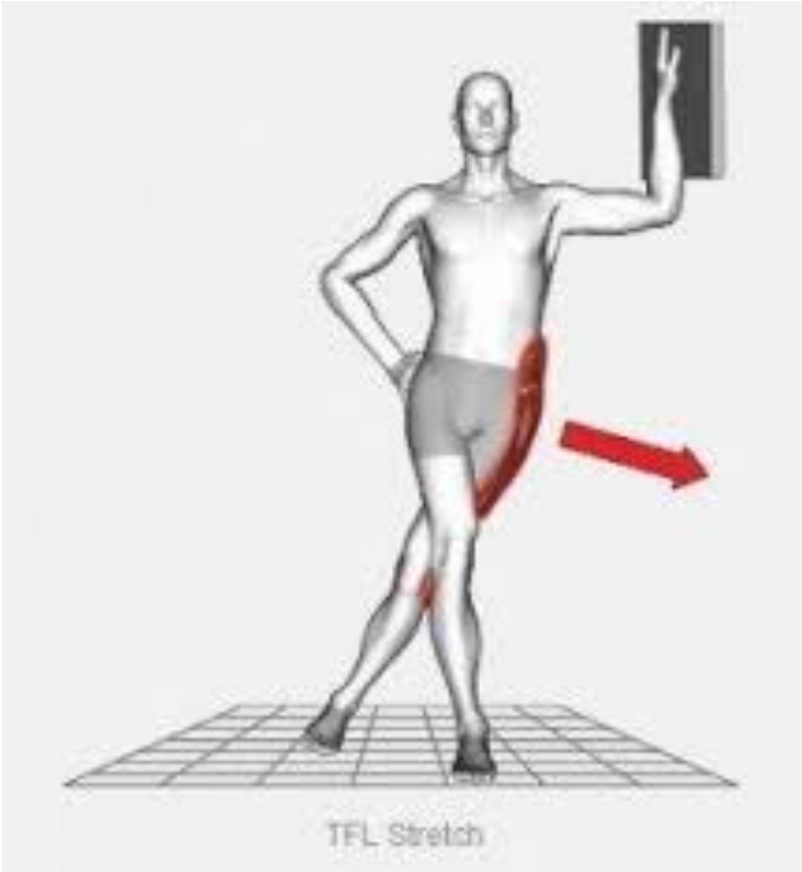
• Low back

Lean back as much as you can. This should not cause pain. IF IT DOES SEEK OUT MEDICAL ATTENTION.

Flexibility Self Tests

• Quadriceps

Standing bring ankle up to buttocks. Should be almost able to touch or come within a few inches. Both sides should be equal. If not work on stretching the quads with this and other stretches.



My Favorite Here is how you do it:

1. Sit with your legs extended out in front of you.
2. Cross the involved (hurting) leg over your other leg, bending your knee and placing your foot flat on the floor.
3. Rotate your body to look over the shoulder on the involved side until you feel a stretch.
4. Hold for 30 seconds.
5. Repeat four more times.

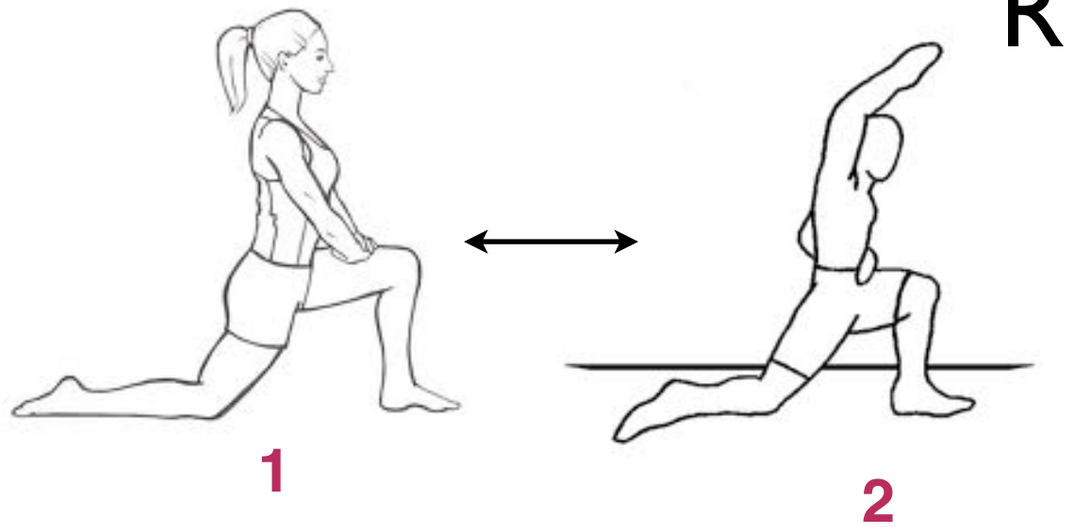
IT Band Stretches-if you have pain doing these you need to work on stretching them out

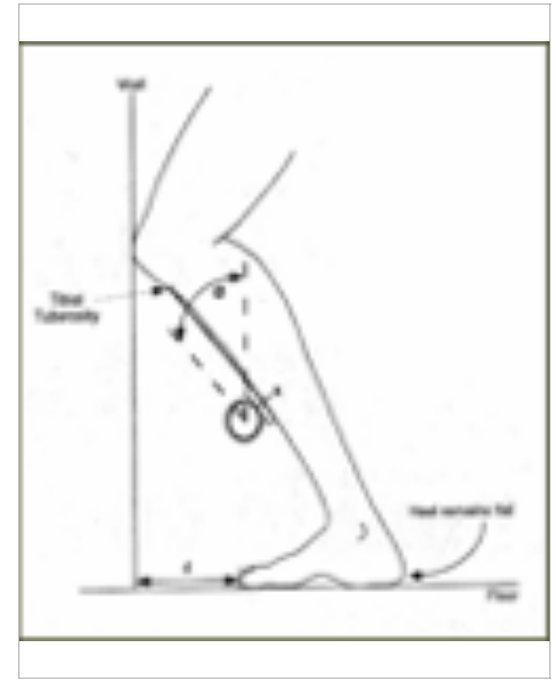
Runners tend to have tightness along the side of the leg. Try this stretch. Sideways to wall or or other support hold and push rear legs hip towards wall. Should feel stretch along entire leg, Hold for 30 seconds. If you have pain or limitation you need to resolve this before starting a running program.

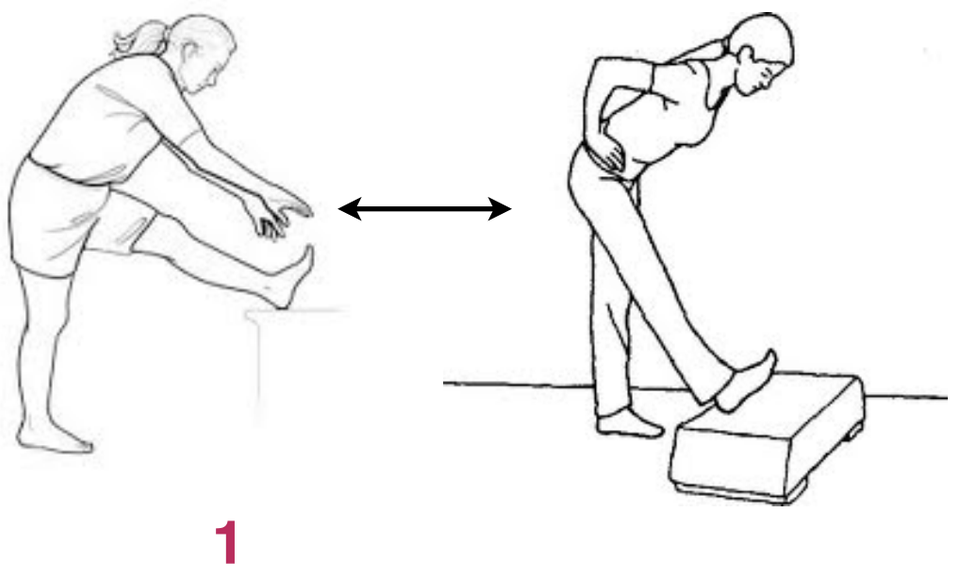
Stretch before running (to determine if there is a problem) and stretch after (to prevent problems).

Remember to warm up before and cool down as well.

Running Stretches



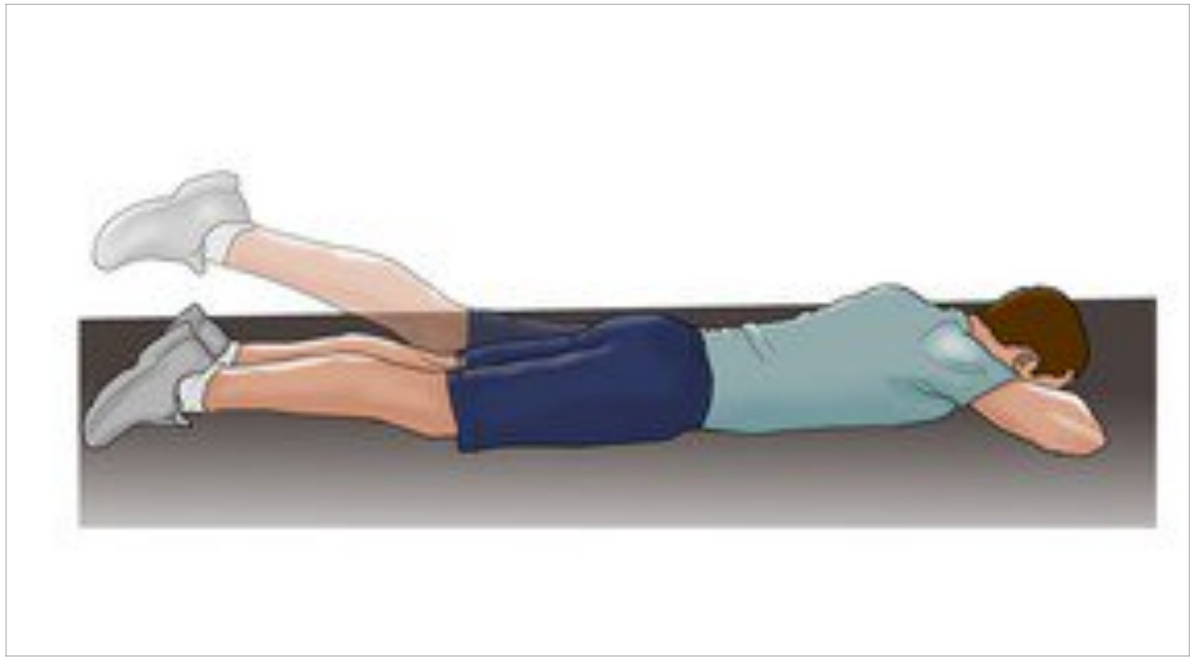




Hold 15 to 45 seconds
1-3 sets

Self Body Analysis
6. Glute and Core Strength

Prone Hip Extension Test. Lying prone lift one leg up. You should be able to lift it up 10 or more degrees. Note the muscles engaged. Proper movement should come first and primarily from the gluteals with minor low back and hamstring involvement in that order. If not you may have weak glutes. You can use this test as an exercise. Daily 3 sets of 10 reps -make sure the glutes do the work. Also try doing body weight posture squats and lunges for 1-3 sets of 10 reps. See form for squats at https://www.acefitness.org/education-and-resources/lifestyle/exercise-library/135/bodyweight-squat/. See lunges at https://www.acefitness.org/education-and-resources/lifestyle/exercise-library/94/forward-lunge/



Many runners get knee pain from weak glutes

Glutes are important because they provide both strength and stability around your hips, and are the most powerful source of propulsion as we run. You need to learn how to engage your glutes (buttocks) when you run. Glute engagement happen right after foot strike and all the way through hip extension to toe off.

STRONG GLUTES PROTECT THE KNEES

Another way to test your Glutes (side glutes) is by doing a side laying leg lift test. Being perfectly straight you should be able to perform 20 side leg lifts up to 35 degrees without stopping. If not you need to strengthen your side glutes with this exercise 1-3 sets of 10-20 reps

Self Body Analysis
6. Core Strength

See the below listed Core Exercises. You should be able to hold each for 30 or more seconds and both sides should be equal. If not work on these core exercise most days of he week by doing 1-3 sets of each per side for 5 to 10 second hold for 5 to 10 reps or 30 second holds for 1 to 3 reps. If plank or side bridge is too much try on knees. If the single leg bridge is to much try standard bridge both feet on floor.

Plank

Side bridge

Single leg bridge

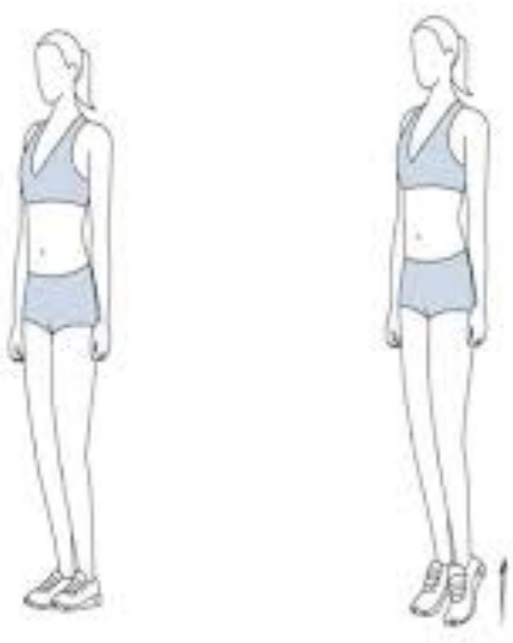
BirdDog

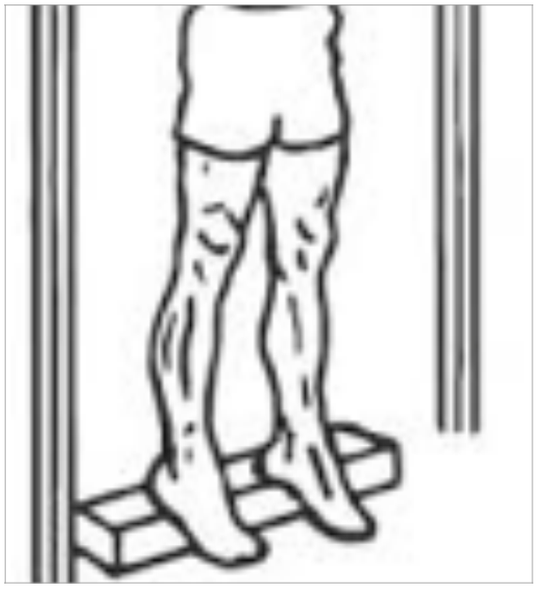
Many runners get back, knee, and hip pain from a weak core

Self Body Analysis
7. Calf and Dorsiflexor Endurance

If you have calf or dorsiflexor weakness it will affect your running ability and hasten an injury from running.

Test yourself: A good level of calf and dorsiflexor endurance is being able to do 15-20 reps of single leg calf and dorsiflexor lifts.





Try to do 1-3 sets of 15-20 reps 3 or more days a week of these exercises.

Self Body Analysis
8. Understand pain

Pain is a sign of dysfunction.
It is a sign that something is wrong.

Working through it will cause more problems and more pain.

Fatigue is not the same as pain.

When you exercise and you have pain stop and examine.

Running Form

This is a great YouTube Video
https://m.youtube.com/watch?v=brFHyOtTwH4

Running Form

There is **no perfect form, everyone looks different**, but certain key features do exist.

Ground Contact

The most important running phases is contact with the ground. There are several different ways that people land; **toes, ball of the foot, mid footed, or heel first.**

Toe-Running on Toes

Landing toes first is another case of inefficiency. Running this way creates too much up and down motion and stresses the calf muscles. Toe running is typical of sprinters. Runners that bounce or hop waste of energy. Excessive stress is place on the knees, hip and back.

Heel-Overreaching

Reaching out in front of their body and landing heel first is common and is inefficient and can cause injuries, because the combination of a straight leg and a hard heel landing transfers tremendous impact through your heel and up to the knee and hip. **Shin splints** (pain above the shin) and runners/jumpers knee are examples of a common running injuries that may be caused by heel striking and over striding. When you land heel first it is like you are putting on the brakes with each step.

Good Foot Position

Over Stride

Proper form Foot plant

Your most efficient foot plant is one in which your foot lands directly under your hips or your center of gravity. You may land on the ball of your foot or flat footed. The ideal landing position is slightly toward the outside edge of your foot, just behind your little toe, between the heel and mid foot. Your foot should then naturally roll slightly inward and forward bringing you to the to the point you are pushing off your big toe. The slight inward roll of your foot is called pronation and provides some cushioning during the running stride (too much is called overpronation). As you roll onto your toes, try to spring off the ground. You should feel your calf muscles propelling you forward on each step. Your feet should not slap loudly as they hit the ground. Good running is springy and quiet.

What I recommend, but not for everyone.

Land with feet under hips is key.

The best foot placement is the one that feels right to you. Simple answer, but it's true. There's a lot of information out there about running form, but coaches generally agree that there is no single solution for all runners.

Proper Form

• Glide

A good cue is to run thinking you have a bear. bag on your head; efficient running would allow the bean bag to stay put. Another good cue is to listen to your feet as they make contact; it should be quick and light. Not much up and down.

• Knee lift

Your knee lift should not be too high unless your sprinting to the finish. It should be enough to get your leg underneath for the next stride.

To reiterate

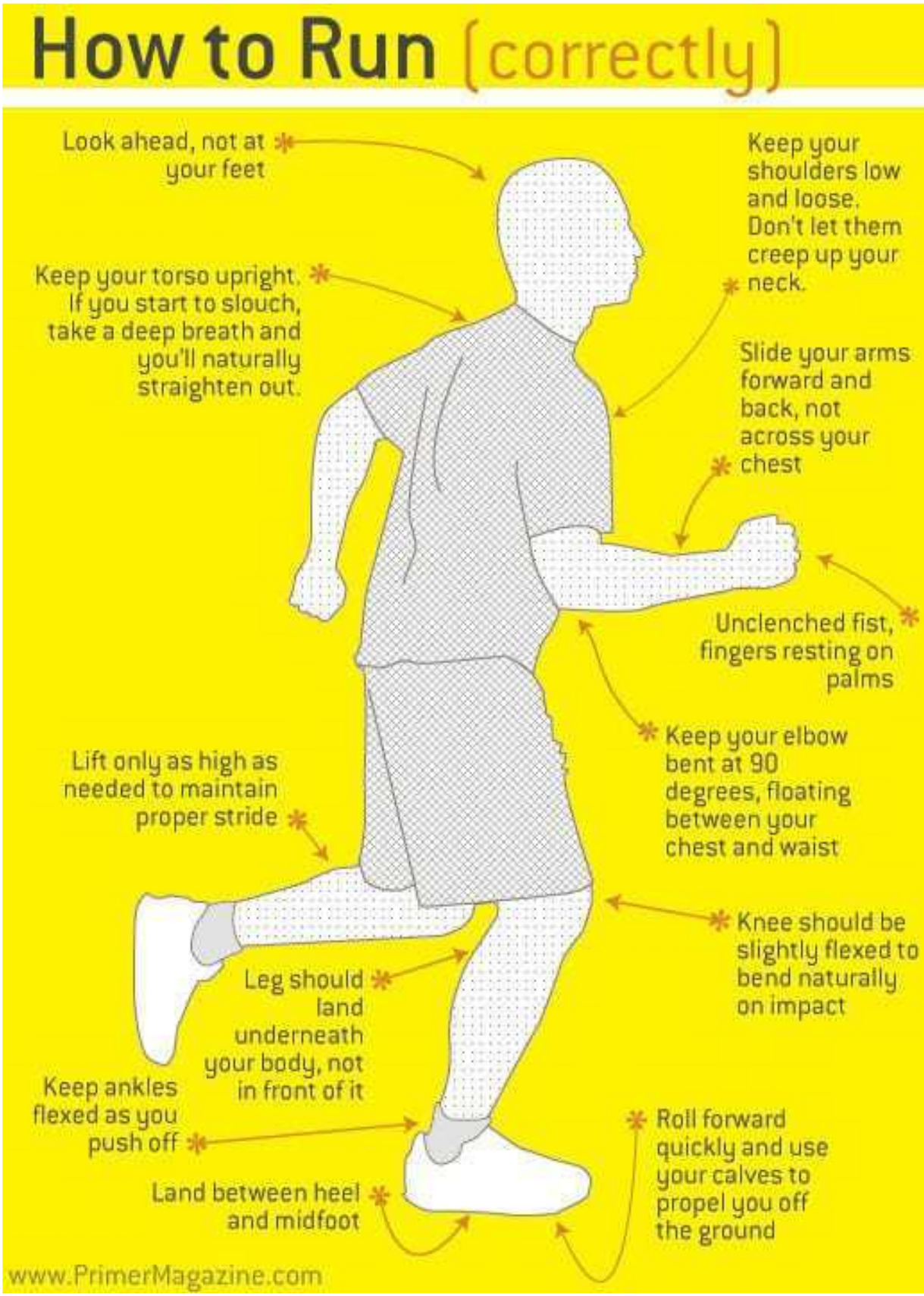
In a proper stride, your foot should land directly under your body with every step; these steps should be ***even.*** *Concentrate on running with a* ***quick and light stride****. As your foot strikes the ground, your knee should be* ***slightly flexed*** *so that it can bend naturally on impact. Do not overstride. If your lower leg (below the knee) extends out in front of your body, your stride is too long.*

Upper body during Running

- It should be relaxed with a slight forward lean.
- Balanced over the lower torso.
- Eyes forward, looking straight ahead, not down at your feet, and scan the horizon. A bent neck (looking at the ground) can lead to a host of both neck and low back problems.
- Arms should be bent and moving freely in a even fashion. Straight arms on long runs lead to problems with swelling, tingling, and numbness of the fingers or hands. Too much motion can be wasted energy. Avoid excessive pumping motion. **Good runners move with little wasted energy.** The arms should not go above the chest. Forward arm movement should be minimal (prevents over striding), while backward arm swing should be more forceful. Arm swing should be compact with elbows at about a 90 degree angle.
- Hands should be loose, not clenched with very little tension in shoulders.

Keep your body as relaxed as possible. Tense muscles will slow you down and force you to work harder. Concentrate on keeping your shoulders, jaw, torso and legs nice and loose.

Running Form List



- *Foot should land directly under your body with every step*
- *Steps quick, light, and even*
- *Knee should be slightly flexed so that it can bend naturally on impact.*
- *Do not over stride*
- *Do not heel strike*
- *Ground contact should be mid foot toward ball of foot*
- *Lift your knee high enough to get in front*
- *If your lower leg (below the knee) extends out in front of your body, your stride is too long. Do not heel strike*
- *Drive right from ground contact to toe off using glutes. Think of your glutes as the prime muscle.*
- *Look straight ahead, upper body loose, with arms bent swinging back strong, with fist not benched*
- *Move straight ahead not much up and down*

5K - 9 Week Program

Traditional Couch to 5K Running Program

Weekly Schedule (9 Week Program)

Week 1

Brisk five-minute warmup walk. Then alternate 60 seconds of
Running and 90 seconds of walking for a total of 20 minutes.

Week 2

Brisk five-minute warmup walk. Then alternate 90 seconds of
Running and two minutes of walking for a total of 20 minutes.

Week 3

Brisk five-minute warmup walk, then do two repetitions of the following:

- Run 200 yards (or 90 seconds)
- Walk 200 yards (or 90 seconds)
- Run 400 yards (or 3 minutes)
- Walk 400 yards (or three minutes)

Week 4

Brisk five-minute warmup walk, then:

- Run 1/4 mile (or 3 minutes)
- Walk 1/8 mile (or 90 seconds)
- Run 1/2 mile (or 5 minutes)
- Walk 1/4 mile (or 2-1/2 minutes)
- Run 1/4 mile (or 3 minutes)
- Walk 1/8 mile (or 90 seconds)
- Run 1/2 mile (or 5 minutes)

Gets much harder.
May need to repeat previous week.

Continued

Week 5

Brisk five-minute warmup walk, then:

- Run 1/2 mile (or 5 minutes)
- Walk 1/4 mile (or 3 minutes)
- Run 1/2 mile (or 5 minutes)
- Walk 1/4 mile (or 3 minutes)
- Run 1/2 mile (or 5 minutes)

Week 6

Brisk five-minute warmup walk, then:

- Run 1 mile (or 10 minutes)
- Walk 1/4 mile (or 3 minutes)
- Run 1 mile (or 10 minutes)

Week 7

Brisk five-minute warmup walk, then Run 2.5 miles (or 25 minutes).

Week 8

Brisk five-minute warmup walk, then Run 2.75 miles (or 28 minutes).

Week 9

Brisk five-minute warmup walk, then Run 3 miles (or 30 minutes).

Find your ability and work from there!

FitTec 5K Program Levels Training

FIND YOUR LEVEL AND THEN TRAIN FROM THAT LEVEL THREE 3X A WEEK.

*Levels Determined through a Test Run.

THE TEST: Run for as long as you can without stopping, use that time to determine your 5K Level below. EXAMPLES: if you can run for 2 1/2 minutes start training at Level 6, if you can run for 8 minutes level 10

FitTec 5K Program Levels Training

I FEEL THIS IS A SUPERIOR PROGRAM

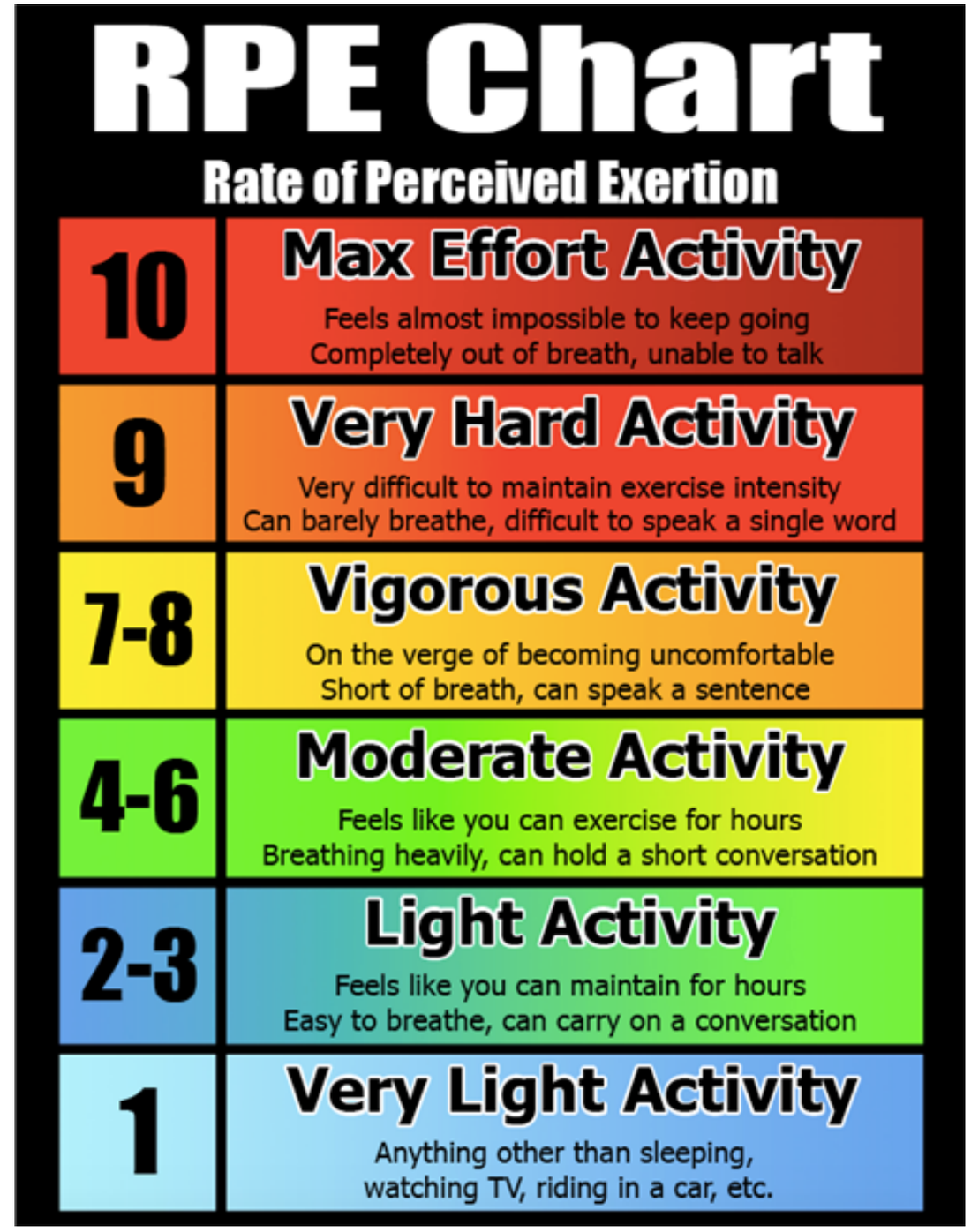
- TAKES YOUR ABILITY INTO CONSIDERATION
- NOT DISTANCE DIRECTED
- GREATER FLEXIBILITY

Levels	ALWAYS WARM UP AND COOL DOWN FOR A FEW MINUTES WITH EITHER FAST WALKING OR JOGGING
1	Warm up and then 30 seconds running, then > 2 minutes walking, repeat for 20 minutes
2	Warm up and then 45 seconds running, then > 2 minutes walking, repeat for 20 minutes
3	Warm up and then 60 seconds running, then > 2 minutes walking, repeat for 22.5 minutes
4	Warm up and then 90 seconds running, then > 2 minutes walking, repeat for 22.5 minutes
5	Warm up and then 2 minutes running, then > 2 minutes walking, repeat for 22.5 minutes
6	Warm up and then 2.5 minutes running, then > 2 minutes walking, repeat for 22.5 minutes
7	Warm up and then 3 minutes running, then > 1.5 minutes walking, repeat for 22.5 minutes
8	Warm up and then 4 minutes running, then > 1.5 minutes walking, repeat for 22.5 minutes
9	Warm up and then 5 minutes running, then > 1 minute walking, repeat for 22.5 minutes
10	Warm up and then 7 minutes running, then > 1 minute walking, repeat for 25 minutes
11	Warm up and then 9 minutes running, then > 1 minute walking, repeat for 25 minutes
12	Warm up and then 11 minutes running, then > 30 seconds walking, repeat for 25 minutes
13	Warm up and then 13 minutes running, then > 30 seconds walking, 7 minutes on for 25 or more minutes
14	Warm up and then 15 minutes running, then > 30 seconds walking, 8 minutes on for 25 or more minutes
15	Warm up and then 18 minutes running, then > 30 seconds walking, 7 minutes on for 25 or more minutes
16	Warm up and then 20 minutes running, then > 30 seconds walking, 5-7 minutes on for 25 or more minutes
17	Warm up and then 25 minutes on
18	Warm up and then 30 minutes on = 5 K

INTENSITY

So How Hard should you work? A simple way is to use RPE and Talk Test. A lot of people use heart rate which is great but everyones maximum heart rate is different so it is hard to give someone a range to work in if I am not working with them directly and have tested them.

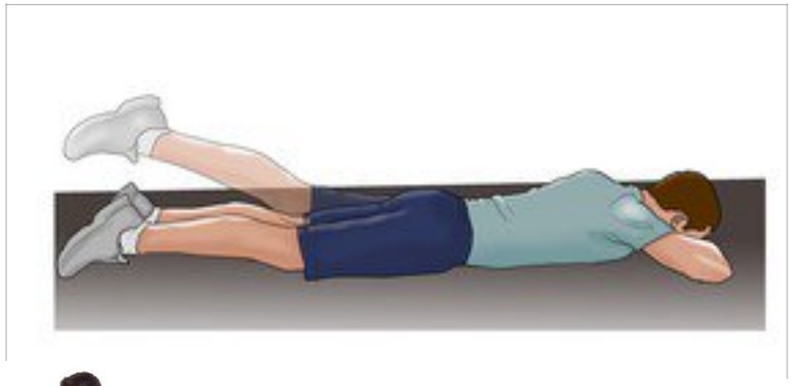
I suggest using RPE (rating of perceived exertion) and the talk test instead of heart rate. When running you should work at an intensity of moderate to somewhat hard level (RPE of 4-6). That is where you can still talk but it is somewhat difficult. See what you heart rate is within the 4-6 RPE range and use that also to monitor yourself.



Program

- 3 days a week follow the running weekly program
- Off days (2-3 days) do alternate cardio - walking, bike, swim, elliptical.
- Do stretches most days, especially the areas that are very tight
- Incorporate calf and dorsiflexor lifts, core (bridges, sidebridges, birddogs, and planks) and glute (lunge, squats, prone leg lifts, side lying leg lifts) exercises 3 or more days a week

Appendix: Additional Exercises 3-5 x a week



Glute Exercise: Daily 3 sets of 10 reps - make sure the glutes do the work. Also try doing body weight posture squats, lunges, and side leg lifts for 1-3 sets of 10-20 reps. See form for squats at https://www.acefitness.org/education-and-resources/lifestyle/exercise-library/135/bodyweight-squat/. See lunges at https://www.acefitness.org/education-and-resources/lifestyle/exercise-library/94/forward-lunge/ see Side Lying Hip Abduction https://www.acefitness.org/education-and-resources/lifestyle/exercise-library/38/side-lying-hip-abduction/

Plank

Side bridge

Single leg bridge

BirdDog

Core Exercises: 1-3 sets of each per side for 5 to 10 second hold for 5 to 10 reps or 30 second holds for 1 to 3 reps. If plank or side bridge is too much try on knees. If the single leg bridge is to much try standard bridge both feet on floor.