

RUNNING FORM REPORT



prepared for Thomas

2024-07-31

This report analyzes the key components of your running form. Easily track your running form progress with quantifiable run form parameters and visualizations.

For most running form parameters we have 3 "grades". "Check" means that the parameter is outside of what is usually considered good form. Check with your coach or physio if a change of this running form element makes sense given your individual circumstances, such as goals, running & medical history.

"Workable" means that this parameter is not a major issue in your run form.

For the ultimate in efficiency you can improve this parameters from "workable" to "ideal" when appropriate for your goals.

It is not uncommon for metrics to have different values for the left and right side of your body. Large differences can indicate imbalances requiring strength or flexibility work or treatment by a professional.

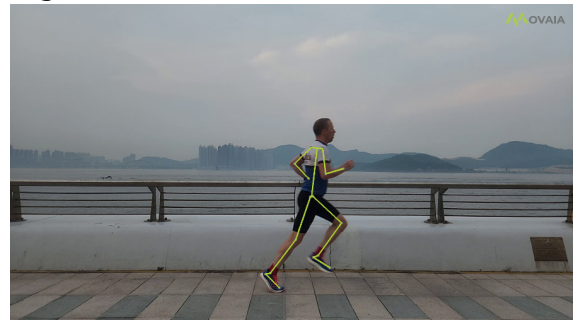


In addition to the video stills in your report you may find it useful to look at your videos.

Left Side View - click to download



Right Side View - click to download



At Movaia we have 3 levels

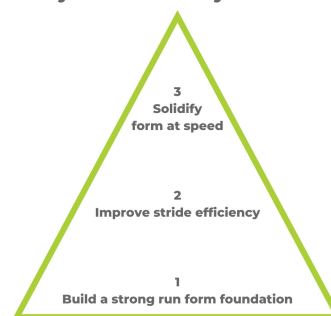
- Most runners place in **Level 1** initially. In Level 1 you will build a strong foundation to run with good, solid form.

- In **Level 2**, you will learn how to sweep effectively and land with your feet in the proper position relative to your body.

- **Level 3** will combine your form development with advanced exercises that will make you a stronger, faster runner, with a lower risk of injury.

3 Levels

Build your run form systematically



It is best to get the basics right before moving to more advanced concepts. That is why we suggest you move to the next level of form training after reaching form goals of your current level.

This is the most-reliable way to run faster and longer with great form - and with reduced risk of injury.

Your current level is Level 1.

At the end of this report you will find the right exercises to help you move on to the next level.

When you upload new videos you will see any changes in your run form in our progress tracker.

The running form analysis and content provided is for entertainment purposes only and not intended to be professional or medical advice. Consult your physician or other professional before making any changes to your running form or any exercise regime. This report uses experimental technology and accuracy depends on a number of factors including the characteristics of video input. No implicit or explicit warranties are made as to the accuracy of results.

The report provides users with general guidance and information on how to improve their running form. YOU SHOULD NOT RELY ON THIS GUIDANCE AND INFORMATION AS A SUBSTITUTE FOR, NOR DOES IT REPLACE, PROFESSIONAL MEDICAL ADVICE, DIAGNOSIS, OR TREATMENT. YOU SHOULD CONSULT A PHYSICIAN BEFORE BEGINNING A NEW FITNESS PROGRAM OR MAKING CHANGES TO YOUR EXERCISE ROUTINE INCLUDING RUNNING FORM. Our recommended exercises, even if they are tailored to individual users, should not be misconstrued as medical advice, diagnosis or treatment. IF YOU HAVE ANY CONCERNS OR QUESTIONS ABOUT YOUR HEALTH, YOU SHOULD ALWAYS CONSULT WITH A PHYSICIAN OR OTHER HEALTHCARE PROFESSIONAL. THE USE OF ANY INFORMATION OR PROGRAMS PROVIDED IN THE REPORT IS SOLELY AT YOUR OWN RISK.

The report is only intended for use by individuals healthy enough to perform strenuous exercises. In becoming a user of the report, you affirm that a physician has specifically approved your use of the report.

In cases where you experience pain or severe discomfort while performing any exercise provided by the report, you should immediately discontinue and consult with a medical expert. In such cases, you should not return to exercising without consulting with a medical expert.

You should be aware that there are inherent physical and mental health risks to exercise, including risk of injury or illness. By accessing and using the report, you acknowledge and agree that your performance of any and all exercises or activities recommended by the report is wholly at YOUR OWN RISK. Movaia Limited will not be liable for any physical or mental injury or illness that may result, whether directly or indirectly, from any of our recommended workout plans or exercises. While the report or our running form reports may provide guidelines such as written descriptions, pictures, or videos describing how to perform specific exercises or activities, you assume sole responsibility for performing those exercises or activities with proper form, as risk of injury or illness increases with improper form.

YOUR PERSONAL FOCUS AREAS



Hello Thomas,

You have good run form elements to build on. You might want to experiment with some of these areas to further improve your running form. Focus on one element at a time.

- Aim for a slightly stronger forward lean. Instead of a conscious effort to lean forward our running form drills will naturally build awareness and strength to adjust the lean. Also visualizing 'A rubber band attached to the top of your head pulling you upwards' as a mental cue helps some runners
 - Flex your arms more for a more efficient run
 - Control the forward / backward swing of your arms. Make sure your wrist goes back but not beyond the center of your torso on the way back and your elbow does not go beyond the center of your torso during the forward swing.
 - Try to decrease your Vertical Oscillation or 'Bounce' to improve your efficiency
 - Your step may be too narrow, indicating a cross over gait.
- You will find further details including related drills inside the report.

Other than running form there are other key factors to consider when dealing with running injuries, such as a gradual increase in training volume, nutrition, strength & flexibility, and sufficient rest and recovery. You might also find this information useful:

This post covers symptoms, causes, prevention and therapy of plantar fasciitis: <https://movaia.com/the-ultimate-guide-to-plantar-fasciitis-for-runners/>

Movaia running form observations are based on general run form insights, this is not medical advice. Always consult with a medical professional on your specific situation before making any changes to your training or when experiencing pain. Keep in mind that any change in running form should be gradual to avoid injuries associated with too-sudden changes in your running mechanics. Only gradually introduce new form into your normal running mileage.

As a general rule, introduce new running form in no more than 10 percent of your regular running distance. For example, on a 3-mile (5K) run, about 500 meters would be accomplished with an intense focus on good form and the rest would be 'normal running'. After a week without any niggles this distance could be increased to 20 percent, and so on. Focus on one running form element at a time, introducing too many changes at once quickly becomes overwhelming.

We recommend another analysis in 4 weeks to track your progress.

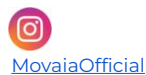
Thank you and happy running!

Thomas

Leave us a review on Google



See how your form compares to elite runners and more: #Movaia



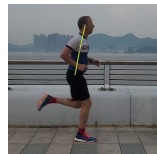
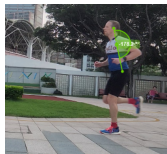
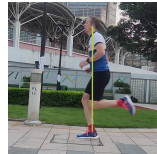
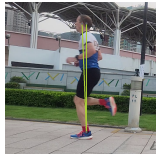
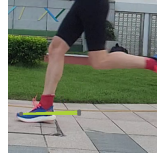
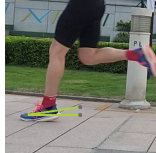
[Click to download image](#)

[Click to download video](#)

SUMMARY

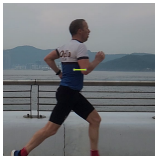
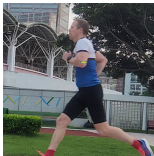
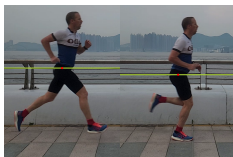
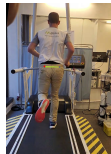
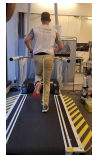
Level 1

Form goal		Foot	Score	Grade	Level 1
Step Rate	This shows how quickly you take steps as you run. (Steps / minute)	Both	185	Ideal	
Foot Angle	The foot strike pattern (heel first, mid-foot, forefoot) you use.	Left	-8	Workable	
		Right	-2	Ideal	
Lean	The lean, measured mid-stance, from your mid-foot to your head	Left	2	Workable	
		Right	0	Check	
Posture	The alignment of head, neck, trunk, and hips	Left	-2	Ideal	
		Right	2	Ideal	



Level 2

Form goal		Foot	Score	Grade
"Swing" (MSA)	The maximum forward extension of your leg (Maximum shank angle)	Left	19	Workable
		Right	20	Workable
Strike Angle	The angle between your shin and the ground when your foot makes contact with the ground	Left	8	Workable
		Right	9	Workable
Sweep	The backward movement of the shank from its maximum extension (MSA) to ground contact (Strike Angle)	Left	11	Workable
		Right	11	Workable
Arms				
- Angle	The angle at your elbow	Left	93	Check
		Right	85	Workable
- Back Swing	How far you swing your arm back	Left	-1.0	Workable
		Right	-2.3	Check

- Forward Swing	How far you swing your arm forward	Left	0.8	Workable
		Right	1.8	Workable
				
Level 3				
Form goal		Foot	Score	Grade
Ground Contact Time (GCT)	The time your foot spends on the ground between touch down and toe off	Left	0.21	Workable
		Right	0.21	Workable
				
Vertical Oscillation (VOP)	The amount of up and down movement (bounce) while you run	Left	8.3%	Check
		Right	5.3%	Workable
				
Contralateral Pelvic Drop	The amount the opposite hip drops when the leg is on the ground during the midstance phase	Left	4.04	Workable
		Right	2.54	Ideal
				
Step Width / Crossover	Where each foot lands in relation to your body's centerline	Left	0.44	Workable
		Right	0.14	Check
				

Level 3

Now let's take a look at each form goal in detail.

LEVEL 1

In Level 1, you will accomplish four key running-form goals: Optimizing your step rate, foot angle, lean and posture.

STEP RATE

Description

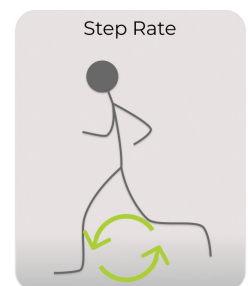
Step rate is the number of steps taken during each minute of running. It determines how fast you can run and also has a big effect on the angle of your foot when it hits the ground (foot angle).

A slow step rate can decrease your running velocity and increases the likelihood that you will be a heel-striker. An overly fast step rate can decrease step length and thus slow you down as well. If you are dealing with pain, increasing your step rate/cadence by 5-10% above your preferred or natural cadence may help alleviate symptoms.

"Check" range Below 170 and above 200

Workable Range 170 to 180

Ideal range 180 to 200



YOUR STEP RATE SCORE

Your step rate (Cadence) falls into the optimal range for distance runners, and will affect your step length and the angle of your foot when it hits the ground (strike angle) in a good way.

Step rate: 184.6 steps / minute Ideal

HOW TO IMPROVE

Great job, your step rate is spot on! To keep a check on your step rate, periodically check it with Movaia or use a running metronome app on your phone.



[Running in place drill](#)

Description

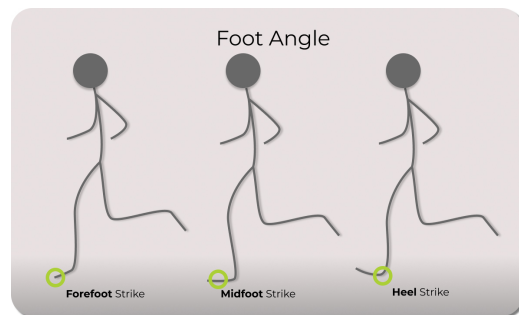
Foot Angle is the angle the foot makes with the ground when it first makes ground contact.

How your foot lands on the ground affects how forces are distributed as you run.

- A negative foot angle may indicate rearfoot striking, which is where you land closer to the heel region. By doing so, this may redistribute forces to be more in the knee region, but less on the foot and ankle region.
- A positive foot angle may indicate forefoot striking, which is where you land closer to the toe region. By doing so, this may redistribute forces to be more in the foot and ankle region, but less on the knee region.
- An angle close to zero indicates a mid-foot strike.

You can use this knowledge to your advantage. For example, if you have increased pain or irritability in the knee, adopting a forefoot strike may help you continue running. Forefoot runners experiencing Achilles tendon pain or Plantar fasciitis may see improvement from moving to more of a mid-foot landing pattern.

Check	Below -15° and above 15°
Workable	-5° to -15° and 5° to 15°
Ideal	-5° to 5°



Below -5 degrees: Landing too far on forefoot
From -5 to 5 degrees: Midfoot strike
Above 5 degrees: Heel-strike

YOUR FOOT ANGLE SCORE

Left Foot

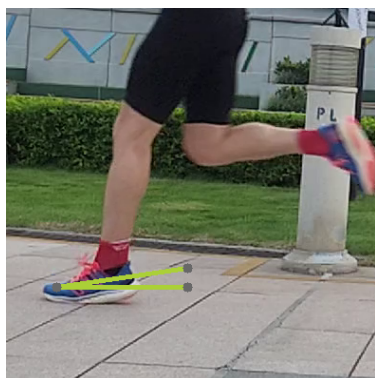
Your foot landing is workable with a slight bias towards a pronounced forefoot strike. While there is no solid evidence of any foot strike pattern being overall superior you may benefit from moving towards a mid-foot landing pattern if you experience pain in your ankles, achilles or feet. This may also improve your endurance. The exercises below, which will gradually move your foot strike toward a mid-foot landing pattern.

Left foot

-8

Workable

Moderate
forefoot strike



Right Foot

You are landing on your mid foot, which is associated with positive effects such as decreased braking and ground-contact forces and shorter ground contact time, e.g. a reduced stance duration. Keep it up if you are not currently experiencing injuries.

Right foot

-2

Ideal

Mid-foot strike



HOW TO IMPROVE

Left Foot

Drills for transitioning your point of impact toward a mid-foot landing pattern:

- 1) Running in place with cadence set by metronome while taking video to ensure that landings are not taking place too far forward on your feet.
- 2) Running in place with yoga belt to allow forward lean and mid-foot strikes and with cadence set by metronome (captured on video)
- 3) Running forward with "baby steps" and mid-foot landings, and with step rate set by metronome (also with video). Keep track with Movaia to ensure your foot angle is adjusting as desired.



Running in place drill



Running in place with belt



Baby Steps

Right Foot

No need to change your foot angle, but why not try these for fun and as a way of maintaining your great form.

- 1) Running in place with cadence set by a metronome,
- 2) Running in place with a yoga belt taut with cadence set by a metronome in order to reinforce optimal cadence and enhance forward lead and mid-foot strike pattern.
- 3) Running forward with "baby steps" and mid-foot landings and with step rate set by metronome.

LEAN

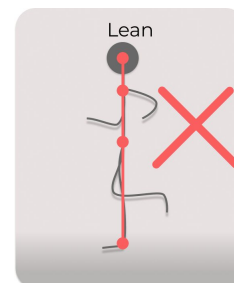
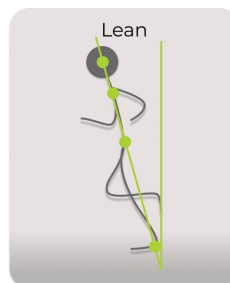
Description

Lean determines whether propulsive forces will primarily be directed up and forward, straight up, or up and backward. An overly forward lean decreases the amount of critical vertical propulsive force and actually shortens step length. A too-small or negative lean means that your body is too straight or tilted backward and thus that not enough forward propulsive force is being created.

Check Below 2° and above 9°

Workable 2° to 4° and 7° to 9°

Ideal 4° to 7°



YOUR LEAN SCORE

Left Foot

Your lean is good. To make it even better try to lean forward slightly more from your ankles to get within the optimal range.

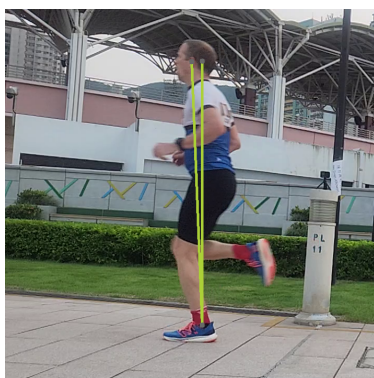
Right Foot

You are not leaning forward far enough from your ankles when your foot is on the ground. This means your body is too straight-up, and not enough forward-directed propulsive force is being created.

Left foot

2.3°

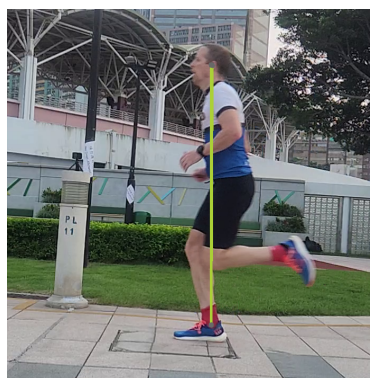
Workable



Right foot

-0.2°

Check



HOW TO IMPROVE

Left Foot

Drills for increasing lean from your ankles include

- 1) "Posture sets" prior to running with a 5-degree forward lean from the ankles as the final step before beginning to run, and
- 2) Running in place with a yoga belt to develop the correct feeling for 5-degree forward lean during running.
- 3) Superman exercise (lifting your extended hands and feet while in a prone position)



[Running in place with belt](#)



[Posture resets](#)

Right Foot

Drills for increasing lean from your ankles include

- 1) "Posture sets" prior to running with a 5-degree forward lean from the ankles as the final step before beginning to run, and
- 2) Running in place with a yoga belt to develop the correct feeling for 5-degree forward lean during running.
- 3) Superman exercise (lifting your extended hands and feet while in a prone position)

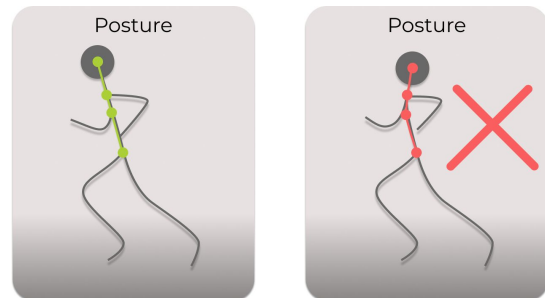
Description

Posture is simply the alignment of your head, neck, thorax, and hips with respect to each other. Good posture reduces fatigue and helps to make you a more economical runner.

One way to assess posture is to check that in a side view the "4 posture markers" (your head, neck, thorax and hip) fall in a straight line while running. The closer your score is to 0 the better is your posture.

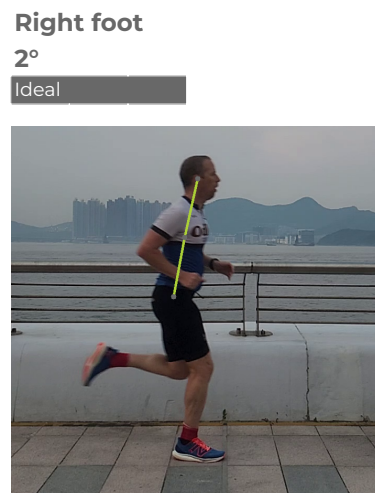
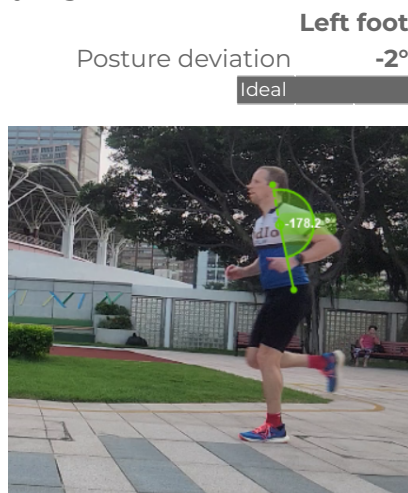
Mental cues will allow you to adjust your posture towards that ideal.

Check	FWD deviation 25° to 180° BWD deviation -15° to -180°
Workable	Between -15° to -2° and 10° to 25° deviation
Ideal	Between -2° and 10° deviation



YOUR POSTURE SCORE

You are running with good posture. While you exhibit a slight bend your head, neck, thorax and hips are relatively closely aligned.



HOW TO IMPROVE

The "Posture reset" exercise will help you to find good posture before your run. Should you find it hard to maintain or get into this position then you may benefit from additional strengthening or stretching exercises as well as adjusting your daily posture habits (e.g. ergonomic work station set up, avoid sitting for too long).



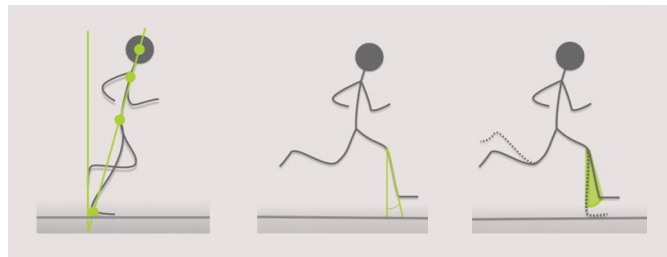
[Posture resets](#)

TOWARDS A STRONGER SWEEP

In Level 2 you will develop a much more effective and powerful sweep. As you learn to sweep more effectively, your foot will land in a better position in relation to your body, and thus there will be less braking force at impact with the ground. In addition, better sweeps help you apply more propulsive force to the ground, increasing your step length.

Once you swing your foot forward during running, you must sweep it down and backwards to make contact with the ground. If you sweep too little, you will land on your heel and create large braking forces. If you sweep too far, you will reduce the amount of propulsive force you place on the ground. We'll show you exactly how far to sweep - and how to sweep with great power.

Last but not least you will also look into your arm movement, which has great impact on what your feet are doing.



The illustration above shows how good forward lean sets us up to lift the knee and achieve good maximum shank angle before sweeping the foot back for touch down, resulting in a strong "sweep". The runner then "coils up" and with good form stores maximum energy before releasing it again during the "spring" phase.

SWEEP AND ITS COMPONENTS

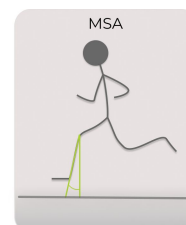
SWING & MAXIMUM SHANK ANGLE (MSA)

Swing is the forward swing of the leg from lift off until it reaches the most forward position during gait. At that stage we can measure the maximum shank angle (MSA), which is the maximum angle attained by the shank (the region of the leg between the knee and ankle) during the forward swing of the leg.

MSA is a crucial element of running form because it sets the stage for the subsequent sweep of the leg and foot back to the ground and the resulting application of propulsive force to the running surface.

Check Below 8° or above 30°

Workable 8° to 30°



YOUR MSA SCORE

Left Foot

Your MSA (Maximum Shank Angle) is within a workable range.

Left foot

19

Workable



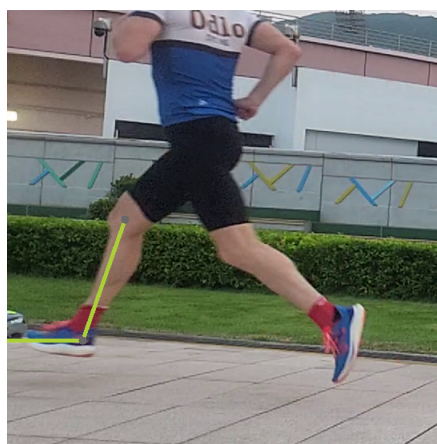
Right foot

Your MSA (Maximum Shank Angle) is within a workable range.

Right foot

20

Workable



HOW TO IMPROVE

Great work, keep it up! To maintain or further optimize your MSA you may want to try

- 1) Sweeps
- 2) Sweeps with a resistance cord focusing on a slightly increased swing / MSA
- 3) A-Skips
- 4) B-Skips

STRIKE ANGLE

Strike Angle, a.k.a. "Shank Angle", is the angle between the shank and a line drawn perpendicular to the ground at the point of impact between the foot and ground. This is a practical way to quantify where your foot is landing in relation to the body.

Greater shank angles may indicate overstriding, which basically means you are taking too big of a step in front of you. Doing so may make you work harder and decrease running efficiency.

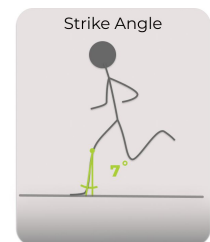
On the other side of the spectrum, significant negative values may indicate under striding, which may also cause you to work harder and affect running efficiency.

The strike angle also determines the amount of "sweep", since "sweep" is the movement from maximum forward extension of the foot to the strike angle at touch down.

Check Below 0° or above 10°

Workable 0° to 1° and 7° to 10°

Ideal 1° to 7°



YOUR STRIKE ANGLE SCORE

Left Foot

Your strike angle is within a workable range.

You can finetune further by trying to land your foot just a little closer to your body.

This will get you into the professional race to further minimizing braking forces and putting you in a good position to create propulsive force.

Right Foot

Your strike angle is within a workable range.

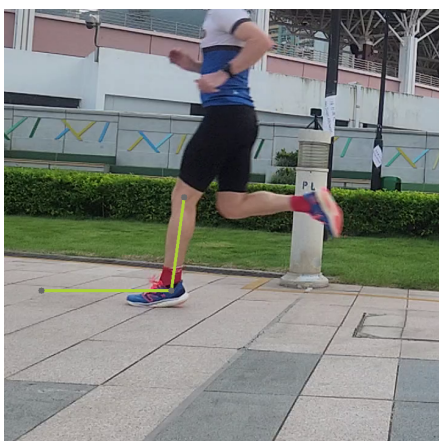
You can finetune further by trying to land your foot just a little closer to your body.

This will get you into the professional race to further minimizing braking forces and putting you in a good position to create propulsive force.

Left foot

7.8

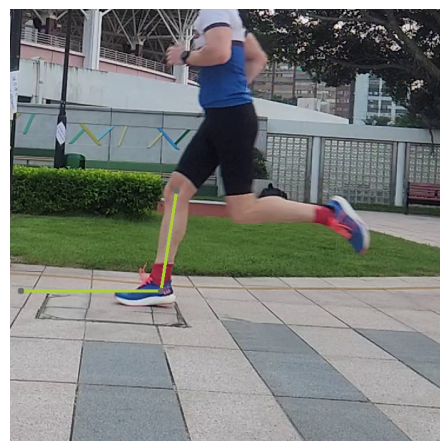
Workable



Right foot

8.9

Workable



HOW TO IMPROVE

Exercises to help you decrease your strike angle and land closer to your body are

- 1) Sweeps
- 2) Sweeps with a resistance cord, and
- 3) Push-downs on a lat machine.
- 4) A-Skips
- 5) B-Skips



[Sweeps](#)



[Sweeps with resistance](#)



[Push downs on lat machine](#)

SWEEP

"Sweep" is the backward movement of the shank from its most-forward position to the point at which it makes initial contact with the ground. Sweep determines whether the foot will touch the ground too far ahead, just right or too far back.

It also determines how much kinetic energy can be applied by the leg to the ground after the foot/ground collision (fast, ample sweeps supply more kinetic energy and improve running velocity). If you are interested in the math behind your running form then $\text{Sweep} = \text{MSA} - \text{Strike Angle}$.

Check Below 4° or above 25°

Workable 4° to 25°

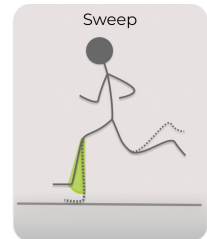
YOUR SWEEP SCORE

Left Foot

Your sweep is within a workable range.

Right Foot

Your sweep is within a workable range.



Left foot

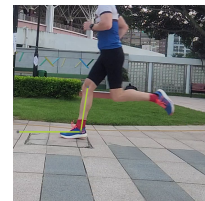
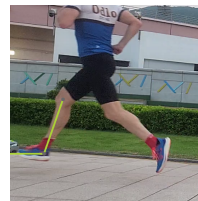
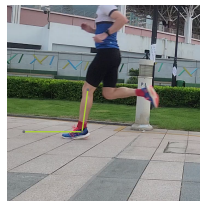
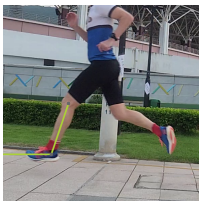
11

Workable

Right foot

11

Workable



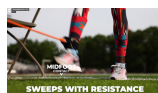
The difference between maximum shank angle (MSA) and strike angle defines your sweep.

HOW TO IMPROVE

Great work, keep it up! To maintain or further optimize your Sweep value you may want to try exercises under "Strike Angle" and "Swing".



[Sweeps](#)



[Sweeps with resistance](#)



[Push downs on lat machine](#)

ARMS



ARM ANGLE

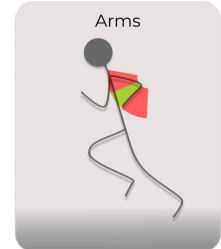
The angle at which you bend your arms at your elbows impacts your running performance significantly. Arms that are not adequately flexed at the elbows tend to slow cadence, while arms that are properly flexed at the elbows reinforce high cadence.

Note that ranges here are for endurance running and angles may be larger for faster, shorter efforts.

Check Below 40° and above 90°

Workable 40° to 45° and 80° to 90°

Ideal 45° to 80°



YOUR ARM ANGLE SCORE

Left Arm

Your arm is extended too much, increasing its "pendulum effect" and slowing down your arm swing and impacting step rate negatively.

Left arm
93

Check

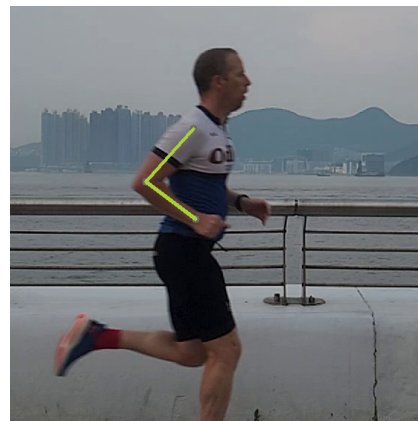


Right Arm

Your arm angle is in a workable range but you may benefit from bending your arms slightly more at your elbows, especially if your cadence is low.

Right arm
85

Workable



How to improve?

Keep your elbows at an angle of between 45 to 80 degrees. As a mental cue brush your bottom ribs or hips with your finger tips as your hand passes back and forth. Practice on your runs and periodically do a Movaia running form analysis until you got it dialed in.

ARM SWING



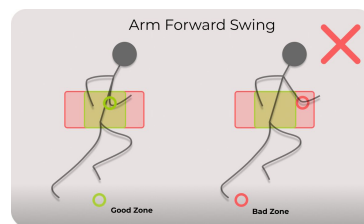
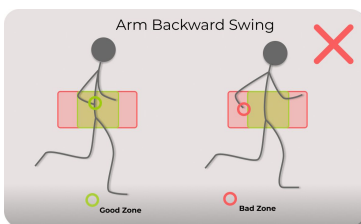
As you run, your arms should move in alternating fashion - straight forward and then straight back. Cross-over movements of the arms, in which the hands approach the midline of the body, harm your running economy by reinforcing wash-tub-like movements of your trunk. During the arms' forward and backward movements, the elbow should come forward to hip level, and the hand should then come back to hip level as the arm swings backward.

Note that unlike for endurance running arm movements may be more pronounced for very short, fast efforts.

To indicate whether you move your arm too far or not enough we measure the distance between center of torso and wrist (back swing) or elbow (forward movement). 1 = the length of your palm.

Check Wrist does not come within 2 palms lengths of the torso's center line

Workable Wrist is within two palms lengths of the torso's center line



YOUR ARM BACK SWING SCORE

Back swing left

Your arm backswing is good, your wrist travels back to the hips centerline.

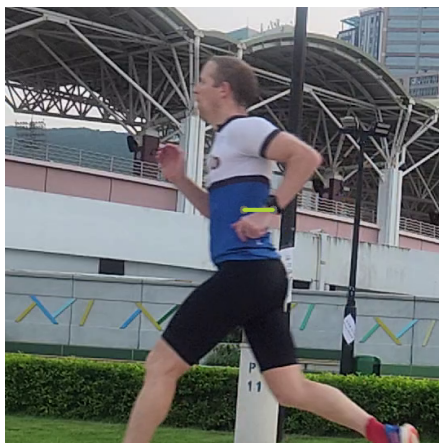
Backswing right

You are pulling back your ellbow too far beyond the centerline of the hip. Your hand should travel to - but not past - a vertical line through your hips.

Left arm

-0.97

Workable

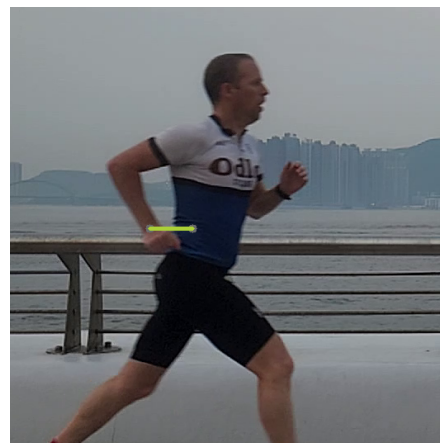


The line measures the distance from mid-torso to wrist

Right arm

-2.3

Check



HOW TO IMPROVE

Great Job! You might want to check your elbow pull from time to time by brushing your torso's centerline while pulling back your arm.

You are pulling back your ellbow too far beyond the centerline of the hip. Your hand should travel to - but not past - a vertical line through your hips.

YOUR ARM FORWARD SWING SCORE

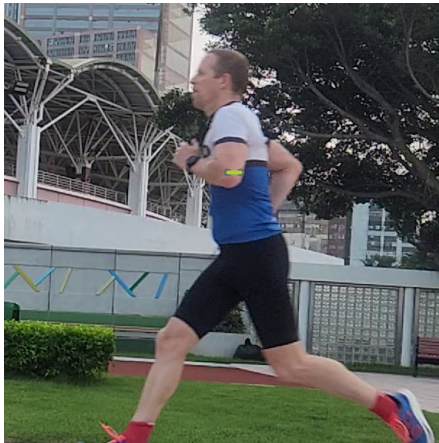
Forward swing left

Your arm forward swing is good, your elbow travels forward far enough to reach the hips centerline.

Left arm

0.77

Workable



The line measures the distance from mid-torso to elbow

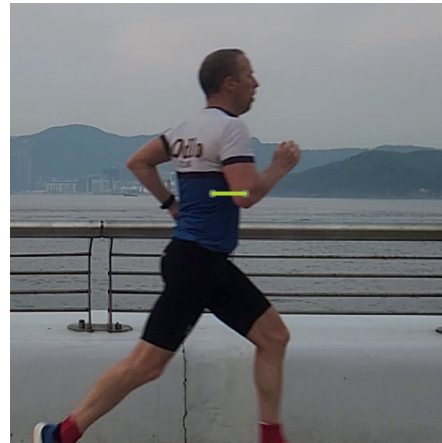
Forward swing right

Your arm forward swing is good, your elbow travels forward far enough to reach the hips centerline.

Right arm

1.77

Workable



HOW TO IMPROVE

Your forward swing is good, keep it up!

LEVEL 3



Reaching this level means that you have good fundamental running form.

Congratulations on reaching Level 3 - which puts you among the very best runners with regard to running form! Level 3 is dedicated to performance and speed. You will advance your performance and speed by carrying out the advanced drills in this level.

As you do this, you will be re-visiting the parameters from Level 1 (optimizing Cadence, Foot Angle, Posture and Lean) and Level 2 (Strike Angle) that are not graded "ideal". Your goal will be to choose the parameter most important for your running goals and move them from a "workable" or "good" grade to the "professional" range.

If in doubt start with parameters first introduced in Level 1, then move on to those introduced in Level 2.

You will also enhance your consistency of form for all metrics so that you can preserve excellent running form at higher speeds and thus reach your true potential as a runner.

In this level we also introduce two advanced metrics: Ground Contact Time (GCT) and Vertical Oscillation of Pelvis (VOP).

These metrics require high quality video input (120 frames per second, high resolution, stable camera etc) to be reliable.

Ground Contact Time (GCT)



Description

Ground contact time measures how long each leg is on the ground, from touch down to toe off. Faster runners typically have lower GCT. GCT decreases with more strength, high leg stiffness and good running form (strong heel strikers tend to have longer GCT). Values are indicative.

A significant difference in ground contact time between left and right foot may correlate with decreased running efficiency and increased injury risk.

Check	Above 0.3 sec
Workable	Between 0.2 and 0.3 sec
Ideal	Less than 0.2 sec

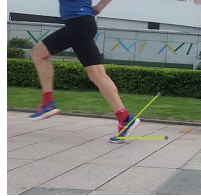
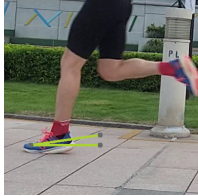
YOUR GCT SCORE

Your ground contact time is workable

Left Leg

0.21

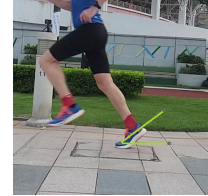
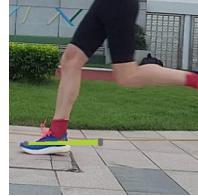
Workable



Right Leg

0.21

Workable



Ground Contact Time is the time between touch down and toe off.

HOW TO IMPROVE

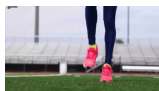
- Run 400m intervals while synching step rate with the beeps of a pre-set smart-phone metronome app. Start with a cadence 5% higher than your current one. This will both reduce GCT and help to even out potential imbalances in GCT between your left and right foot.

The exercises below increase strength and stiffness - critical factors in reducing GCT. Working on both left and right leg will support the weaker leg and address asymmetries.

- High knee explosions
- In place accelerations
- Hurdle hops
- Explosive one leg hops
- Integrate short speed intervals in your runs.



[Running in place drill](#)



[In-place accelerations](#)



[High knee explosions](#)



[Hurdle hops](#)



[Explosive one leg hops](#)

Vertical Oscillation of Pelvis (VOP)



Description

Vertical Oscillation of the Pelvis measures the amount of up and down movement ('bounce') that occurs while you run. Increased up and down movement may indicate increased braking occurring as you run. A reduction in this may indicate a smoother transition through the running cycle and correlates with improved running performance. Increased cadence and forward lean can mitigate excessive vertical oscillation.

Too little vertical oscillation may indicate a lack of power in the stride, resulting in reduced flight time and pace. Work to increase strength and endurance will typically improve too-low vertical oscillation.

Check More than 6%, or less than 2.5% of body height

Workable Between 2.5% and 6% of body height

YOUR VERTICAL OSCILLATION SCORE

Your vertical oscillation is on the high side. Increased up and down movement may indicate increased braking occurring as you run. A reduction in this may indicate a smoother transition through the running cycle and correlates with improved running performance.

Left foot

8.3%

Check



Right foot

5.3%

Workable



Vertical oscillation is the difference between maximum and minimum vertical position of the pelvis during the gait cycle

HOW TO IMPROVE

Drills to lower Vertical Oscillation focus on contributing form elements such as leg drive, lean, cadence and excessive knee and ankle extension:

- 1) Running IN PLACE with a yoga belt, leaning forward, while synching step rate with the beeps of a pre-set smart-phone metronome
- 2) Running in place transitioning to running forward
- 3) Baby steps
- 4) In-place accelerations
- 5) High knee explosions



Running in place with belt



Transition to forward running



Baby steps



In place accelerations



High knee explosions



Hurdle Hops

Contralateral Pelvic Drop



Description

Contralateral pelvic drop, also known as "hip drop" or "Trendelenburg Gait", is the amount the opposite hip drops when the leg on the ground is in the midstance phase. Excessive or limited contralateral hip drop can contribute to injuries, e.g. knee injuries. Limited pelvic drop may indicate excessive protective stabilization by runners experiencing pain.

Check Below $<2^{\circ}$ or above $>6^{\circ}$

Workable Between 4° - 6°

Ideal Between 2° and 4°

YOUR HIP DROP SCORE

Left Leg

Your hip drop is workable. For performance improvements you may consider exercises that strengthen your hips and improve neuromuscular pathways.

Left foot
4.04

Workable

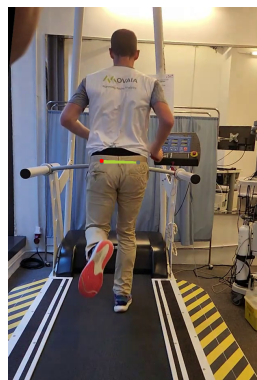


Right Leg

Your Contralateral Hip Drop is in an ideal range and does not require improvement. Keep it up!

Right foot
2.54

Ideal



HOW TO IMPROVE

Left Leg

o 5 min run intervals focused on level hips at easy, moderate and tempo pace. Focus on this mental cue "knee pointing straight to the front and keep the knee window wide apart from your hip", and "keep both sides of the hip at the same level".

Focus on "Bending the knee with the knee pointing forward while keeping both hips level", and "coming up with the knee still pointing forward with both hips remaining level".

Start with heel taps and then progress to squats and hurdle hops as you build strength.

- o Lateral heel taps
- o Single leg squats.
- o Hip Airplane
- o Single leg hurdle hops



[Lateral toe taps](#)



[Farmer's March](#)



[Heel Tap](#)



[Explosive one leg hops](#)

Step Width



Description

Step width measure the deviation of each foot print from a line running straight down through the center of your body. A too narrow step can increase loading on the outer knee, where it may cause for example IT band pain. Having too wide of a step decreases running efficiency.

We are measuring the lateral distance from the center of your foot to a vertical line passing through the center of your body in foot-widths. A score of less than .5 indicates that you are crossing the center line with a part of your foot, a score above one indicates that the mid-line of your foot lands more than a foot-width away from the vertical line through your body's center.

Check Below 0.4 or above 1 foot-widths

Workable Between 0.4 and 1 foot-widths

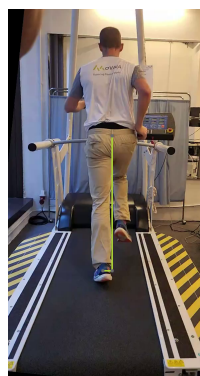
YOUR STEP WIDTH SCORE

Left Leg

Your Step Width is workable and does not require improvement.

Left foot
0.44

Workable



Right Leg

Your step is too narrow, indicating a cross over gait.

Right foot
0.14

Check



Step width is the distance of the center of the foot when on the ground from the torso's vertical center line measured in foot-widths

HOW TO IMPROVE

Left Leg

Well done! No exercises are required to modify your step width.

Right Leg

Building muscle memory and awareness:
During these drills think about your feet not crossing a real or imaginary line in front of you.

- o Swings and sweeps
- o 3 min run intervals on a track focused on straddling the line at easy, moderate and tempo pace.

Build strength with One Leg Squats with lateral hops, Monster Walks, Lateral Toe Taps and Farmer's March



[One leg squats with lateral hops](#)



[Monster Walk](#)



[Lateral toe taps](#)



[Farmer's March](#)

YOUR LEVEL 1 TRAINING PROGRAM

Below is your Level 1 running form Training Program. Aim to build these exercises into the warm up of your usual runs. Video links and exercise descriptions are on the next page.

DAY	WEEK 1	WEEK 2	WEEK 3	WEEK 4
Set-Up	Posture re-set	Posture re-set	Posture re-set	Posture re-set
		Lean from the ankles using yoga belt	Lean from the ankles using yoga belt	Lean from the ankles using yoga belt
Day 1	Jog in place at easy cadence	Run in place @ 185 steps per minute with forward lean from ankles	Run in place @ 190 steps per minute with forward lean from ankles	Baby step run moving ahead @ 190 steps per minute with forward lean from ankles
	5 X (1 min on, 1 min off) 2 times per day if possible	5 X (1-1) 2 times per day if possible	5 X (1-1) 2 times per day if possible	Lean/Fall Each exercise: 5 X (1-1) 2 times per day if possible
Day 2	Jog in place at easy cadence	Run in place @ 185 steps per minute with forward lean from ankles	Run in place @ 190 steps per minute with forward lean from ankles	Baby step run moving ahead @ 190 steps per minute with forward lean from ankles
	5 X (1 min on, 1 min off) 2 times per day if possible	5 X (1-1) 2 times per day if possible	1 X (1-1) 2 X (2-1) 2 times per day if possible	Lean/Fall Each exercise: 5 X (1-1) 2 times per day if possible
Day 3	Run in place @ 180 steps per minute	Run in place @ 185 steps per minute with forward lean from ankles	Run in place @ 190 steps per minute with forward lean from ankles	Baby step run moving ahead @ 190 steps per minute with forward lean from ankles
	1 X (1 min on/1 min off) 2 X (2 min on/1 min off) 2 times per day if possible	1 X (1-1) 2 X (2-1) 2 times per day if possible	1 X (2-1) 1 X 3 2 times per day if possible	Lean/Fall 1 X (1-1) 2 X (2-1) 2 times per day if possible
Day 4	Run in place @ 180 steps per minute	Run in place @ 185 steps per minute with forward lean from ankles	Run in place @ 190 steps per minute with forward lean from ankles	REST DAY
	1 X (2 min on/1 min off) 1 X 3 min 2 times per day if possible	1 X (2-1) 1 X 3 2 times per day if possible	1 X 5 min 2 times per day if possible	
Day 5	Run in place @ 180 steps per minute	Run in place @ 185 steps per minute with forward lean from ankles	Run in place @ 190 steps per minute with forward lean from ankles 1 X (2-1)	Baby step run moving ahead @ 190 steps per minute with forward lean from ankles

1 X 5 min
2 times per day if
possible

1 X 5 min
2 times per day if
possible

[Baby step running
MOVING AHEAD @
190 steps per
minute with forward
lean from ankles 3 X
\(1-1\)](#)

2 times per day if
possible

[Lean/Fall](#)

1 X (2-1)
1 X 3 min
2 times per day if
possible

YOUR LEVEL 2 TRAINING PROGRAM



Below is your Level 2 running form training program. Aim to build these exercises into the warm up of your usual runs. Video links and exercise descriptions are on the next page.

DAY	Introduction – Week 1	Week 2	Week 3	Week 4
Set Up	Posture re-set Start each workout with this exercise.	Posture re-set Start each workout with this exercise.	Posture re-set Start each workout with this exercise. Use cord with greater resistance.	Posture re-set Move up to cord with even higher resistance.
1	Swings and sweeps with no resistance cord 2 X 20 on each leg 2 times per day if possible	Swings with resistance cord Sweeps with resistance cord For each exercise: 2 X 10 per leg	Swings with resistance cord Sweeps with resistance cord For each exercise: 2 X 30 per leg	Swings with resistance cord Sweeps with resistance cord For each exercise: 2 X 50 per leg
2	Swings and sweeps with no resistance cord 2 X 25 on each leg 2 times per day if possible	Swings with resistance cord Sweeps with resistance cord For each exercise: 2 X 15 per leg	Swings with resistance cord Sweeps with resistance cord For each exercise: 2 X 35 per leg	Swings with resistance cord Sweeps with resistance cord For each exercise: 2 X 55 per leg
3	Baby step jog in place @ 190 steps per minute with forward lean from ankles 1 X (2 min with 1 min recovery) 1 X 3 mins 2 times per day if possible	Lean/Fall plus small-step run moving ahead @ 190 steps per minute with forward lean from ankles 5 X (1 min with 1 min recovery)	Lean/Fall and then small-step, good-sweep running moving ahead @ 190 steps per minute 1 X (3 min with 1 min recovery) 1 X 3 min	Lean/Fall and then small-step, good-sweep running moving ahead @ 190 steps per minute 6 X (1 min with 1 min recovery)
4	Swings and sweeps with no resistance cord 2 X 30 repetitions on each leg 2 times per day if possible	Swings with resistance cord Sweeps with resistance cord For each exercise: 2 X 20 repetitions per leg	Swings with resistance cord Sweeps with resistance cord For each exercise: 2 X 40 repetitions per leg	Swings with resistance cord Sweeps with resistance cord For each exercise: 2 X 60 repetitions per leg
5	Baby step jog in place @ 190 steps per minute with forward lean from ankles	Lean/Fall plus small-step run moving ahead @ 190 steps per minute with forward lean from ankles	Lean/Fall and then small-step, good-sweep running moving ahead @ 190 steps per minute	Lean/Fall and then small-step, good-sweep running moving ahead @ 190 steps per minute

	1 X (2 min with 1 min recovery) 3 X (1 min with 1 min recovery) 2 times per day if possible	1 X (2 min with 1 min recovery) 1 X (3 min with 1 min recovery)	1 X (3 min with 1 min recovery) 1 X 4 min	1 X 8 (1 min with 1 min recovery)
6	Swings and sweeps with no resistance cord 2 X 40 repetitions on each leg 2 times per day if possible	Swings with resistance cord Sweeps with resistance cord For each exercise: 2 X 25 repetitions per leg	Swings with resistance cord Sweeps with resistance cord For each exercise: 2 X 45 repetitions per leg	Swings with resistance cord Sweeps with resistance cord For each exercise: 2 X 60 repetitions per leg
7	REST	REST	REST	REST

YOUR LEVEL 3 TRAINING PROGRAM



You can complete the training program below in one go as it's own workout or make it part of your warm up routine.

Make sure to complete all activities on a "forgiving" surface (soft dirt, grass, cushioned artificial turf, compliant track, or wooden gym floor).

You will find detailed descriptions for each exercise in the exercise library. Supplement these exercises with those mentioned for any running form parameters where you have not yet achieved "Workable" or "Ideal" grade.

DAY	Introduction – Week 1	Week 2	Week 3	Week 4
Set Up	Select one running form goal not yet "Workable" or "Ideal" and do the "how to improve" - exercises for this goal before your normal training as part of the warm up or cool down. Check every 3-4 weeks and move on to another goal once this one is accomplished.	Same as in Week 1. Check progress with a run form analysis at the end of week 2.	Select a new running form goal or continue with the current one if not yet "Great" or "Professional".	Continue with Week 3 goal and exercises. Check progress with a run form analysis at the end of week 4.
1	Normal training	Normal training	Normal training	Normal training
DAY	Introduction – Week 1	Week 2	Week 3	Week 4
2	10 mins of easy running Run 1 min counting steps: do not count both feet. If the number is less than 95, rest for a moment and repeat two more times, attempting to increase stride rate to at least 95 on each occasion. Be certain to use a mid-foot strike pattern at all times. If the number is 95 or greater, move on to the next drill below. Skip on the balls of your feet for 30 seconds, with quick leg action (keep your feet on the ground for a minimal amount of time). Rest for a moment, and repeat. 4 X 8 double-leg hurdle hops 2 X 30 secs one leg hope in place on each leg 2 X 10 one-leg squats with jumps on each leg 6 X greyhound runs	10 mins of easy running Run 1 min counting steps. Skip 40 secs 5 X 8 double-leg hurdle hops 2 X 40 secs one leg hope in place on each leg 2 X 12 one-leg squats with jumps on each leg 8 X greyhound runs	10 mins of easy running Run 1 min counting steps Skip 50 secs 4 X 8 double-leg hurdle hops 2 X 50 secs one leg hope in place on each leg 2 X 15 one-leg squats with jumps on each leg 9 X greyhound runs	10 mins of easy running Run 1 min counting steps Skip 60 secs 5 X 8 double-leg hurdle hops 2 X 60 secs one leg hope in place on each leg 2 X 18 one-leg squats with jumps on each leg 10 X greyhound runs

	2 X 8 one-leg squats with lateral hops on each leg 2 X 12 high-knee explosions with both legs 2 X 20 secs of in-place accelerations 2 X 20 meters downhill hops on each leg 3 X 70 meters downhill running 10 min cool-down	2 X 10 one-leg squats with lateral hops on each leg 2 X 15 high-knee explosions with both legs 3 X 20 secs of in-place accelerations 3 X 20 meters downhill hops on each leg 4 X 70 meters downhill running 10 min cool-down	2 X 12 one-leg squats with lateral hops on each leg 2 X 18 high-knee explosions with both legs 4 X 20 secs of in-place accelerations 4 X 20 meters downhill hops on each leg 5 X 70 meters downhill running 10 min cool-down	2 X 15 one-leg squats with lateral hops on each leg 2 X 10 high-knee explosions using ONE leg at a time 4 X 20 secs of in-place accelerations 5 X 20 meters downhill hops on each leg 6 X 70 meters downhill running 10 min cool-down
3	Normal training	Normal training	Normal training	Normal training
4	Repeat day 2	Repeat day 2	Repeat day 2	Repeat day 2
5	Normal training	Normal training	Normal training	Normal training
6	Normal training	Normal training	Normal training	Normal training
7	Rest day	Rest day	Rest day	Rest day

Running in place transitioning to running forward



Run in place for 1 minute to the sound of a metronome app. Set the metronome to 180 at first (over a number of workouts you will progress to 190), and strike the ground with a foot on each beep of the metronome. Make sure that the foot hits the ground with the middle portion of your foot first, with the heel striking the ground shortly after this mid-foot strike. Yes, the heel hits the ground on each step, but only AFTER the midfoot region has "touched down". Follow the instructions of your workout plan regarding how much running in place to complete.

Do these exercises before your main running workout. If you were not a mid-foot striker previously, do not apply your upgraded form to your full main workout (abrupt changes in form can cause injury, even when the transition is being made from poor to good form). Gradually introduce the mid-foot strike, starting with short intervals totaling no more than 10% of your total run to ever longer intervals.

<https://reports.movaia.com/RunningInPlaceTransition>

Running in place with a yoga belt



Follow the instructions for "Running in place" but use a yoga belt tied to a fixed object to keep you in place while you lean forward. In addition to your foot strike and cadence focus on a slight lean of approximately 5 degrees.

<https://reports.movaia.com/RunningInPlaceWithBelt>

"Posture re-sets" before running with a 5-degree forward lean from the ankles



Use these mental cues to remind yourself about good running posture and set yourself into good posture before your run:

FEET: Place your feet directly under your shoulders, pointing straight forward.
KNEES: Avoid stiff, straight knees and have a slight, comfortable bend in your knees.
HIPS: Hips should be centered and not be tilted forward or backward.
ARMS & SHOULDERS: Arms & shoulders should be relaxed and elbows should be flexed at an angle between 45 and 80 degrees.
CHIN & EYES: The chin should be level, with the eyes looking straight ahead, looking approx 15 meters / 50 feet ahead (not down).

With these cues in mind raise your arms as high overhead as you can and vertically stretch your body. Relax your arms and drop them gently to your sides, and finally flex your elbows to 90 degrees - and then a bit more to 45 to 80 degrees.

Lean forward 5 degrees from the ankles and begin running. Use the form cues above from time to time to check your form as you are out on a run.

Check your posture from time to time with a Movaia running analysis to make sure that your head, neck, thorax, and hips are properly aligned.

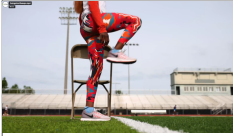
<https://reports.movaia.com/PostureResets>

Baby steps



Running with baby steps means moving forward while running with very short steps, 190 cadence, mid-foot landings, and forward lean

<https://reports.movaia.com/BabySteps>

Swings and sweeps with no resistance

Swings and sweeps with no resistance reinforces the two key movements of the gait cycle – swinging and sweeping.

To execute swing/sweep alternations, stand with weight on one leg only and move the other leg through the alternating pattern of swinging and sweeping. Initially, a chair, fence, or other object may be used for balance. With your active foot, at the end of sweep, strike the ground a little in front of the body and “paw” the foot along the ground until you achieve hip extension. Then flex the knee of the moving leg and begin swinging the leg forward.

<https://reports.movaia.com/SwingsAndSweeps>

Sweeps with resistance

This exercise is performed like the "Swings and Sweeps with no resistance" but using an elastic band for resistance while facing the mounting point of the elastic band.

This movement is a complete swing and sweep cycle with the sweep portion completed against the resistance of the elastic band.

<https://reports.movaia.com/SweepsWithResistance>

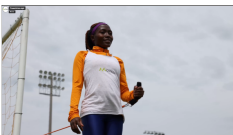
Swings with resistance

This exercise is performed like the "swings and Sweeps with no resistance" but using an elastic band for resistance while facing AWAY from the mounting point of the elastic band. This movement is a complete swing and sweep cycle with the swing portion against the resistance of the elastic band.

<https://reports.movaia.com/SwingsWithResistance>

Hand drill

While running, check that as your flexed arm moves forward your elbow moves forward to about hip level, and as your flexed arm moves backward your hand moves back to hip level.

Power Arms

Stand on your left foot only, with your left knee slightly flexed and your left foot directly under your left shoulder. Hold the handle of a medium resistance cord in your left hand, with your left hand positioned next to your left hip; the other end of the cord should be attached at hip height to a solid post or other firm structure behind you. Your right knee should be flexed so that the right foot is off the ground - and positioned behind you. This is the beginning position for the exercise.

Initiate the first rep by aggressively pushing the handle of the resistance cord straight forward, against the resistance of the cord, straightening your arm as you do so. Stop pushing forward when your left elbow reaches your left hip. Then, return the left hand to the left hip, smoothly and under control.

As you push the handle of the resistance cord forward with your left arm, the right leg should swing forward, reaching its maximum forward position simultaneously with the left elbow reaching the left hip. As the left hand is drawn back to the left hip, the right leg sweeps back, so that as the left hand reaches the left hip the right knee is flexed and positioned behind the body. This completes one repetition of the Power Arms exercise.

After completing the required number of reps on the left foot, complete the Power Arms movements while standing on your right foot (as you do this, your right arm and left leg will move forward synchronously).

<https://reports.movaia.com/PowerArms>

Arm angle check

Keep your elbows at an angle of just below 90-degrees by brushing your bottom ribs with your finger tips as your hand passes back and forth. Practice on your runs and regular check via video until you got your arm swing dialed in

A-Skips

A-Skips build hamstrings, quads, glutes and calves, ankles and feet. They promote knee lift, and an efficient foot strike.

Skip forward, lifting your knee and driving it towards your chest, while lifting your feet so the toes point slightly upwards. This drill adds a small skip to the "High knee's" drill, and you will be moving forward. Keep your arm movements in mind with the arm opposite of the raised leg driving forward. Should this be initially to challenging place your hands on your hips and add your arms back in once you have practiced leg movements.

B-Skips

B-Skips develop ankle stability, coordination and an efficient foot strike.

Skip forward, as in A-Skips. Allow your leg to extend as you lift the knee and quickly "snap it back" in a "pawing" motion, landing mid-foot, close to your body. Continue to also monitor your arm movement.

Exercise Library - Level 3



Greyhound runs



Carry these out in an area which has at least 100 meters or 330 feet of unobstructed surface. Simply accelerate for 20 meters / 60 feet and hold close-to-max pace for 80 meters / 240 feet. Rest for 20-30 seconds (by walking around), and repeat your high-speed running in the opposite direction. You are finished with this drill when you have completed four 100-meter sprints in each direction. Be sure to use great mid-foot strikes and powerful sweeps for each greyhound run.

<https://reports.movaia.com/GreyhoundRuns>

One-leg squats with lateral hops



Do a lunge with your rear foot ideally resting on a step or low bench. Bend your front leg at approximately 90 degrees then hop about 25 cm (10 inches) right with that forward foot, before hopping back to center, then left and back to center. Push up into a straight leg position before doing another lunge / hop repeat. Do 2 sets of 12 reps on each leg.

<https://reports.movaia.com/OneLegSquatsWLLateralHops>

High-knee explosions



Stand in a relaxed, straight posture and begin jumping softly in place. While remaining in that straight posture jump while bringing both knees towards your chest. Try to land softly on your feet and repeat the jump 10-15x. Repeat this set once more for a total of two sets.

Do not hunch your upper body forward to meet your knees, keep your upper body vertical, the key to reap the benefits of this exercise is the rapid acceleration of the knees towards your chest.

Modification: Once skilled, you can move on to explosive one leg jumps, completing the movement on one leg at a time.

<https://reports.movaia.com/HighKneeExplosions>

In-place accelerations



Jog in place before you start accelerating to the maximum step rate you can hold for 20 seconds. Repeat this set three times.

The goal of this exercise is to increase cadence and minimize ground contact time. Keep your feet close to the ground, there's no need to lift your knees high for this drill. Lean very slightly forward while doing this drill but stay in place.

<https://reports.movaia.com/InPlaceAccelerations>

Downhill hops



Find a slope with slight (3-5 percent) decline. Hop 3x20 meters (65 feet) downhill on one foot. Rest and hop back up on your other foot. Repeat this 3 times for each leg. This exercise will help you to coordinate your foot strike at higher speeds and shorten stance time.

<https://reports.movaia.com/DownhillHops>

Fast downhill running



Run fast downhill on a slight decline (3-5 percent) for ~ 80-100 meters (~300 feet). Focus on a mid-foot landing. Jog back up easily for recovery and repeat 3 more times for a total of four runs. This exercise will minimize stance time, increase power and optimize cadence.

<https://reports.movaia.com/DownhillRuns>

Push-downs on a lat machine



Push-downs on the knee platform of a lat machine are exceptional for upgrading ROS and SAT because they boost the power of the sweeping action of the leg.

To carry out push-downs on the knee platform of a lat machine, stand with your left foot on the bottom railing of the lat machine, and place your right foot on the knee bench of the machine. Adjust the resistance so that pushing the knee platform downward is quite difficult.

Stand tall and raise your arms to hold onto the upper bars of the machine. Then, push down aggressively on the knee platform with your right foot and leg, driving the platform downward as far as you can make it go. Allow the platform to ascend under control, and then repeat the action for the indicated number of reps.

Change feet, so that the right foot is on the bottom railing of the machine and the left foot is placed on the knee platform, and complete the indicated number of reps with your left leg.

<https://reports.movaia.com/PushDownsOnLatMachine>

Monster Walk



The Monster Walk exercise is great to stabilize hips and knees, by strengthening your glutes and Tensor Fasciae Latae (or TFL).

For this exercise place a looped resistance band just below your knees. The lower you place the band the harder the exercise will become

Stand on both legs and bend your knee to about 30 degrees. Lean slightly forward. Move your feet wide apart until you feel the resistance from the band. Step forward with one foot at a time always maintaining resistance. Be mindful to not let your knees cave in.

Start with three sets of 20 steps or until you feel your outer glutes burn. Try walking in various directions to challenge your muscles in different ways.

<https://reports.movaia.com/MonsterWalk>

Farmer's March



The Farmers March exercise is a whole body exercise that also targets your lumbar pelvic hip complex, ankles and foot stabilizers, all of which are important for running.

Hold a heavy kettlebell or dumbbell in each hand with your arms by your sides. Stand tall and lift your knee towards your chest, just above waist level. Draw your toes up towards your shin so the foot is parallel to the ground or points slightly upwards. Step forward and repeat with the other leg.

Always maintain an upright posture. Avoid side to side motion and maintain your hips centered underneath your shoulders.
Walk about 60 to 100 feet / 20 to 35 meters for one set.

<https://reports.movaia.com/FarmersMarch>

Lateral Toe Tap



Lateral toe taps are excellent to stabilize hips and knees by strengthening the Gluteus medius.

Try this exercise without a resistance band first, then loop a resistance band just above your knees if you want to make it harder.

Stand on one leg, then bend your knee and lean slightly forward as you would when running..

Move your other leg in a controlled motion sideways and tap it gently on the ground.
Then return to the center. This is one rep.

Aim to keep your shoulders and hips level. Aim to not move the hip above the leg you are standing on and do not let your knees cave in.

Complete reps on one side and repeat on the other side.

Single leg squats

Start in a standing position. Lift your straight left leg and hold it out front. Lower yourself into a squat position by bending your knee and pushing your hips back.

Push into the heel of the right foot to get back up, aiming to generate power from the glutes.

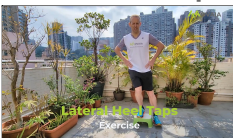
Keep your upper body as vertical as possible throughout the movement. Hold your arms extended in front of you for balance. Keep your knees pointing forward and hips level.

To make this exercise harder hold kettlebells or dumbbells or extend the arms in a locked position overhead to engage more of your back muscles. To make it easier hold on to a fixed object for stability or sit back into a chair.

Start with sets of 5 reps and increase from there. Complete reps on one side and repeat on the other side.

<https://reports.movaia.com/ToeTaps>

Lateral Heel Taps



Lateral heel taps strengthen your gluteus medius and quads to stabilize your hips and knees.

Stand on the edge of a step about 6 inches / 15cm high. Raise your left leg off the surface. Slowly bend your right knee until your left heel touches the ground. If needed stretch your hands out in front of you for balance. Pause shortly and lift yourself back up by straightening your knee.

Repeat repetitions on one side, then switch legs.

Aim to keep hips and shoulders level and do not let your knees cave in.

<https://reports.movaia.com/HeelTaps>

Hip Airplane

Hold on to a wall or other stable object and lower your trunk toward the floor while raising the right leg off the ground. Then rotate your hips outwards as far as you can, you will be looking "sideways". Hold for 3-5 seconds before you return to the starting position.

Finish repetitions on one leg before switching legs.

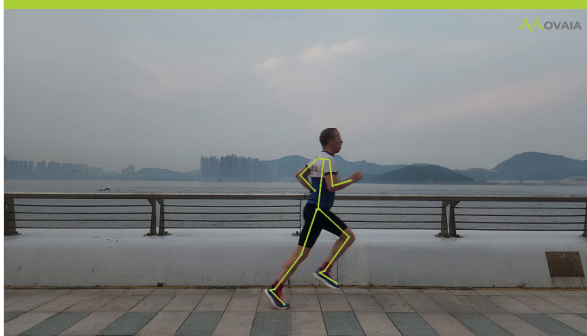
Progress this exercise by not holding on to a stable object.

WHAT'S NEXT?

Before implementing changes to your run use the reports illustrations and videos to visualize your current running form. Compare the video and photos of your run to the illustrations of good running form and visualize adjustments to your form.

Keep in mind that any change in running form should be gradual to avoid injuries associated with too-sudden changes in your running mechanics. Follow our training program and only gradually introduce new form into your normal running mileage.

[Click to download video](#)



[Click to download video](#)

As a general rule begin introducing new running form in no more than 10 percent of your regular running distance - for example on a 3-mile (5K) run, about 500 meters would be accomplished with an intense focus on good form and the rest would be "normal running". After a week without any niggles this distance could be increased to 20 percent, and so on. Ideally split this distance into several focused intervals throughout your run.

Focus on one running form element at a time, introducing too many changes at once quickly becomes overwhelming.

We recommend these next steps to bring your running form to the next level:

Print out your training plan or have a copy on your phone.

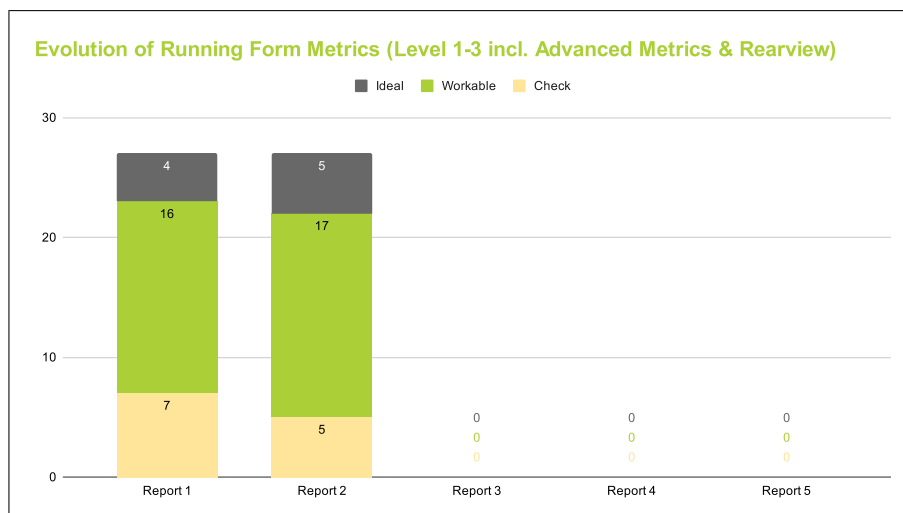
Watch the video for each exercise to help you complete the exercise with good form.

Make the exercises in your training plan part of your warm up or do them as a stand alone exercise.

Repeat your Movaia running form analysis every four weeks to monitor your progress with our progress tracker.

PROGRESS TRACKER

See how many of your running form metrics are labeled "Check", "Workable" and "Ideal" over time, then check the trackers below for details.



Metric

Step Rate
Foot Angle Left
Foot Angle Right
Lean Left
Lean Right
Posture Left
Posture Right
MSA Left
MSA Right
Shank Angle Left
Shank Angle Right
Sweep Left
Sweep Right
Arm Angle Left
Arm Angle Right
Back Swing Left
Back Swing Right
Forward Swing Left
Forward Swing Right
GCT Left
GCT Right
VOP Left
VOP Right
Pelvic Drop Left
Pelvic Drop Right
Step Width Left
Step Width Right

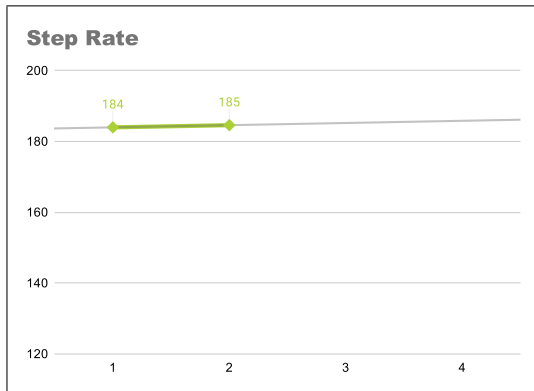
Report 1

Ideal	Ideal
Workable	Workable
Workable	Ideal
Workable	Workable
Check	Check
Ideal	Ideal
Ideal	Ideal
Workable	Workable
Workable	Workable
Workable	Workable
Workable	Workable
Workable	Workable
Check	Check
Check	Workable
Workable	Workable
Workable	Check
Workable	Workable
Workable	Workable
Workable	Workable
Check	Check
Check	Workable
Workable	Workable
Ideal	Ideal
Check	Workable
Check	Check

Report 3

Report 4

Report 5



Check Below 170 and above 200

Workable 170 to 180

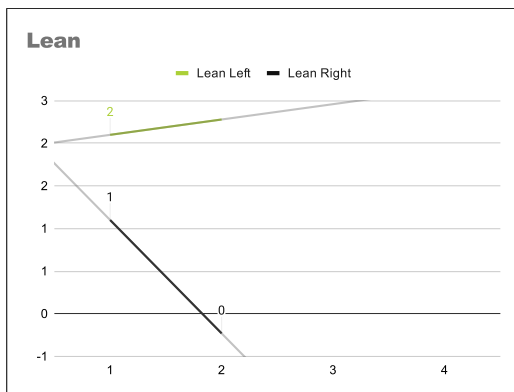
Ideal 180 to 200



Check Below -15° and above 15°

Workable -5° to -15° and 5° to 15°

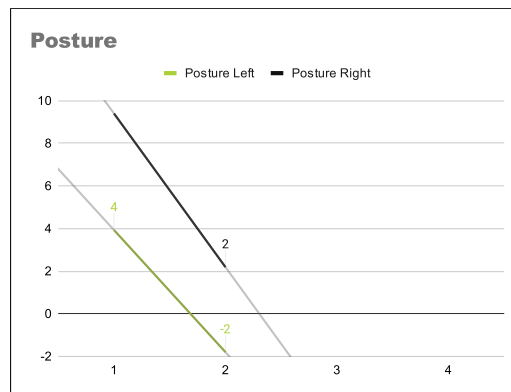
Ideal -5° to 5°



Check Below 2° and above 9°

Workable 2° to 4° and 7° to 9°

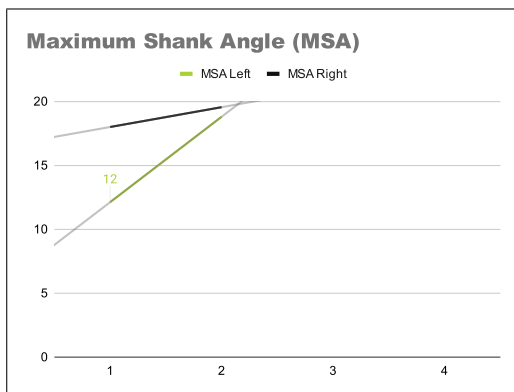
Ideal 4° to 7°



Check FWD deviation 25° to 180°
BWD deviation -15° to -180°

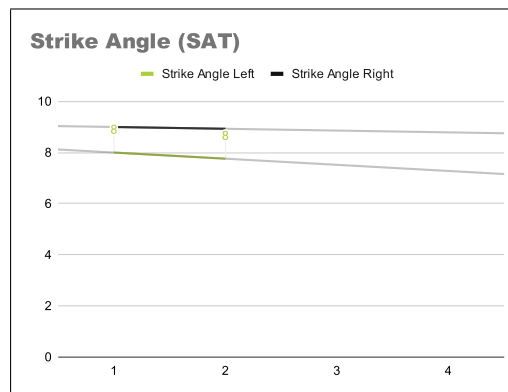
Workable Between -15° to -2° and 10° to 25° deviation

Ideal Between -2° and 10° deviation



Check Below 8° or above 30°

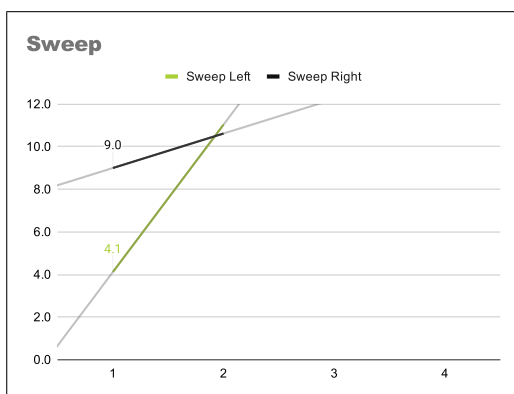
Workable 8° to 30°



Check Below 0° or above 10°

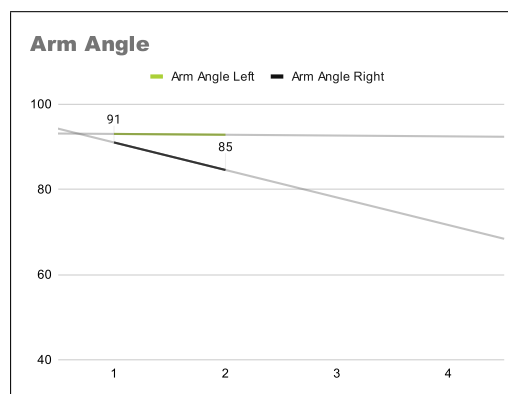
Workable 0° to 1° and 7° to 10°

Ideal 1° to 7°



Check Below 4° or above 25°

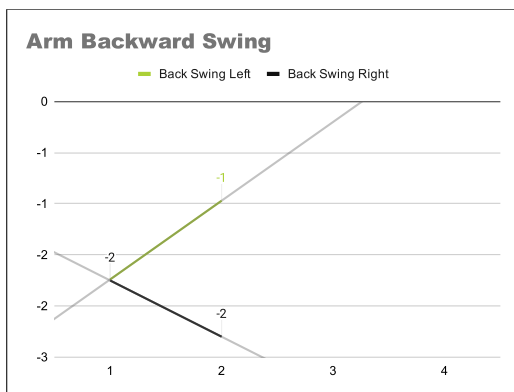
Workable 4° to 25°



Check Below 40° and above 90°

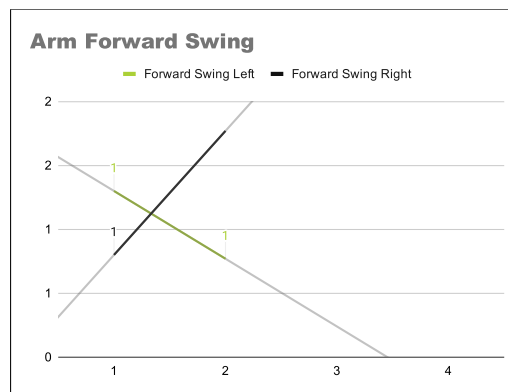
Workable 40° to 45° and 80° to 90°

Ideal 45° to 80°



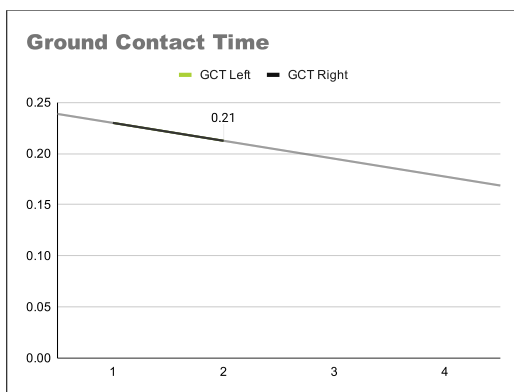
Check Wrist does not come within 2 palms lengths of the torso's center line

Workable Wrist is within two palms lengths of the torso's center line



Check Wrist does not come within 2 palms lengths of the torso's center line

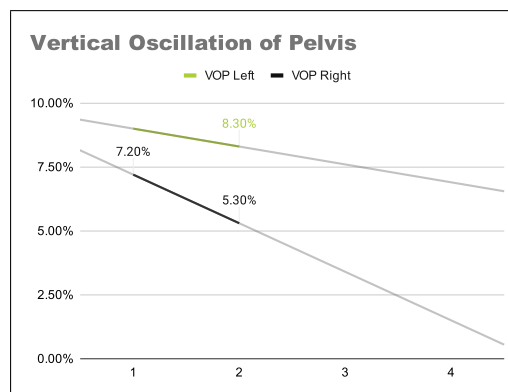
Workable Wrist is within two palms lengths of the torso's center line



Check Above 0.3 sec

Workable Between 0.2 and 0.3 sec

Ideal Less than 0.2 sec



Check More than 6%, or less than 2.5% of body height

Workable Between 2.5% and 6% of body height



Like what we do? Help us share movaia.com with your friends!

Follow us for running form tips, news & the latest research

 Movaia.Com/Blog

 MovaiaOfficial

 Movaia

 Movaia

 [Leave a Google review](#)

© 2024 Movaia Tech Ltd.