

Athletes, like astronauts, undergo strenuous physical training to endure the harshest of conditions. To celebrate the launch of the adidas Ultraboost 20 and a new partnership with the **ISS U.S. National Lab**, adidas has created a high-intensity total body workout that aims to help runners build stability and efficiency, while also boosting their overall mental and physical resilience to reach peak running performance. Developed in collaboration with EXOS, the **Train Like An Astronaut** program combines a series of single session components – Pillar Prep, Movement Prep, Strength & Power, Energy Systems Development and Regeneration – as part of a comprehensive training regime that is specially designed to help runners push the boundaries of their performance anywhere on earth.

## PROTOCOL

Following appropriate pillar prep, movement prep and movement skill development, the Train Like An Astronaut program will enable runners to boost their strength and power through the neuromuscular challenges of HIIT. Each exercise is made up of 4-6 repetitions of 30-60 seconds, performed at an all-out intensity followed by a sufficient recovery time in between intervals of approximately 4 minutes.

The session duration of HIIT exercises is approximately 30 minutes. Energy Systems Development is focused on sprint interval training (SIT), comprised of periods of supramaximal efforts lasting 20-30 seconds, followed by a rest period of double the work interval.

The program is targeted at intermediate and advanced runners.

## PILLAR PREP + MOVEMENT PREP

These exercises are designed to help improve a runner's posture, performance and resilience, while also preparing the nervous system for the physical demands of the upcoming session.

1

### FOAM ROLL CALF

1 SET - 30 SECONDS



1. Sit on the ground with your legs straight, with one leg crossed over the other, and a foam roll under the calf of the bottom leg.
2. Lift your hips off the ground, so that your weight is supported by your hands and the foam roll.
3. Keeping your hands still, move your body back and forth, rolling your lower leg over the foam roll.
4. Spend more time rolling on any sore spots you find. Complete the sets on one side before repeating with the opposite leg.

2

### FOAM ROLL GLUTE

1 SET - 30 SECONDS

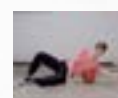


1. Sit on a foam roll with your weight shifted to one side and your hands and feet on the floor for support.
2. Roll from the top of the back of your thigh to your lower back.
3. Spend more time rolling on any sore spots you find.
4. Complete the set on one side before repeating on the other side.

3

### FOAM ROLL LAT

1 SET - 30 SECONDS



1. Lie on your side with a foam roll under your armpit.
2. Roll along your side to your lower back and back up to your armpit.
3. Spend more time rolling on any sore spots you find.
4. Complete the set on one side before repeating on the opposite side.

5

### MINI BAND - STRAIGHT LEG WALK (ANKLES)

1 SET - 30 SECONDS



1. Loop a mini band around your ankles. Stand tall with your feet slightly wider than shoulder-width apart and your toes pointing forward.
2. Keeping your legs straight, walk forward with small steps as you drive your elbows back with each step.
3. Reverse direction. Repeat the movement, walking backwards to the starting point.

6

### HANDWALK

1 SET - 10 METERS



1. Stand with your legs straight and your hands on the ground in front of you.
2. Keeping your legs straight and abdominals tight, walk your hands forward.
3. Still keeping your legs straight, walk your feet back up to your hands.
4. Continue for the remainder of the sets.

7

### FORWARD LUNGE, ELBOW TO INSTEP WITH ROTATION - ALTERNATING

1 SET - 10 METERS

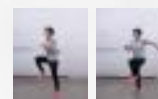


1. Stand tall with your arms at your sides. Step forward into a lunge with your right foot.
2. Place your left hand on the ground and your right elbow to the inside of your right foot. Hold this stretch for 1-2 seconds.
3. Rotate your right arm and chest to the sky. Hold again for 1-2 seconds.
4. Bring your right arm down and drop back down into a lunge and repeat the movement.
5. Complete the sets on one side before repeating on the other side.

9

### PILLAR MARCH - LINEAR

1 SET - 10 METERS

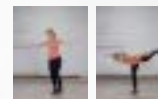


1. Stand with your arms at your sides, elbows bent 90 degrees.
2. March forward by lifting one knee up as you pull the arm of the same leg back and drive the opposite arm forward.
3. Drive your foot down to the ground and repeat the movement, lifting your opposite knee and exchanging arm positions.
4. Continue marching for 10 meters to complete 1 repetition. Continue for the full set.

11

### INVERTED HAMSTRING - IN PLACE

1 SET - 10 METERS



1. Stand tall on one leg with your arms out to your sides and shoulder blades back and down.
2. Keeping a straight line from your ear to ankle, bend forward at the waist and raise your non-standing leg behind you.
3. When you feel a stretch in the back of your thigh, return to standing by contracting the glutes and hamstrings of your standing leg.
4. Repeat the movement with your opposite leg. Continue alternating to complete the sets.

8

### REVERSE LUNGE WITH ROTATION

1 SET - 10 METERS



1. Stand tall with your chest up, shoulders relaxed, and arms at your sides.
2. Step back into a lunge, bending your knees and contracting the glute of your back leg.
3. Twist your torso over your front leg, place the opposite arm on the outside of your knee and reach your other arm behind.
4. Return to a standing position by reversing the twist and then pushing up through your hip. Repeat with your opposite leg.

10

### LATERAL SQUAT - ALTERNATING

1 SET - 10 METERS

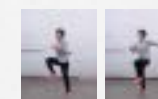


1. Stand with your feet wider than shoulder-width apart.
2. Keeping your chest up and back flat, shift your hips down and to the side by bending one knee and straightening the opposite leg.
3. Return to the starting position by pushing through your hip. Repeat the move in the opposite direction.
4. Continue alternating to complete the set.

12

### PILLAR SKIP - LINEAR

1 SET - 10 METERS



1. Lift one knee up while you bring the opposite arm forward and the same side elbow back.
2. Drive your foot to the ground, generating double foot contact, as your opposite foot and knee lift and arms exchange.
3. Repeat the movement on the opposite side.
4. Continue skipping for 10 meters to complete 1 repetition.

## DID YOU KNOW?

Movement and pillar preparation are a crucial part of any pre-workout warm-up, helping kick-start muscle activation and prep the body for what's to come. Surprisingly, a significant number of runners do not incorporate these into their pre-exercise routine, putting them at increased risk of injury.

## STRENGTH AND POWER

Achieved through HIIT principles, full-body strength and power development will help further boost a runner's level of performance.

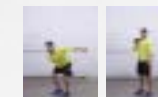
## CIRCUIT 1

Complete each exercise in this circuit for 30 seconds with 10 seconds of rest in between exercises. Repeat for 5 total sets.

1

### CLEAN - 1 ARM KB (LEFT)

5 SETS - 30S WORK - 10S REST

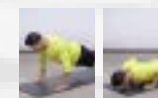


1. Stand holding a kettlebell in one hand in front of your body with your feet shoulder-width apart.
2. Keeping your back flat and chest up, push your hips back letting the kettlebell swing between your legs.
3. In one explosive motion, extend your hips as quickly as possible and shrug your shoulder, pulling the weight straight up.
4. Allow the kettlebell to float upward. When the weight reaches its maximum height, drop your body underneath and catch it at shoulder height. Lower the weight back to the starting position and continue for the remainder of the sets.

3

### (PUSH-UP)

5 SETS - 30S WORK - 10S REST

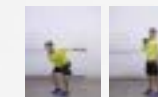


1. Start in the classic push-up position with your hands beneath your shoulders and your legs straight behind you.
2. Keeping your torso stable and hips square to the ground, bend your elbows to lower your body toward the ground.
3. Without touching the ground, push yourself back up.
4. Continue for the full set.

2

### CLEAN - 1 ARM KB (RIGHT)

5 SETS - 30S WORK - 10S REST



1. Stand holding a kettlebell in one hand in front of your body with your feet shoulder-width apart.
2. Keeping your back flat and chest up, push your hips back letting the kettlebell swing between your legs.
3. In one explosive motion, extend your hips as quickly as possible and shrug your shoulder, pulling the weight straight up.
4. Allow the kettlebell to float upward. When the weight reaches its maximum height, drop your body underneath and catch it at shoulder height. Lower the weight back to the starting position and continue for the remainder of the sets.

4

### REACH ROLL AND LIFT - ALTERNATING

5 SETS - 30S WORK - 10S REST



1. Sit on your heels with your arms in front of you and the palms of your hands on the ground.
2. Reach one arm forward while keeping your hips back and your chest down toward the ground.
3. Rotate your palm toward the sky. Then lift your arm off the ground slightly and hold for 2 seconds.
4. Return to the starting position and repeat with the other arm.
5. Continue alternating to complete the set.

## WEEKLY SCHEDULE

DAY 1 – High Intensity	DAY 2 – Moderate Intensity	DAY 3 – Regen	DAY 4 – Moderate Intensity
DAY 5 – High Intensity	DAY 6 – Low Intensity	DAY 7 – Rest	

## DID YOU KNOW?

A lot of an astronaut's pre-mission training is focused on mitigating the physiological effects of prolonged exposure to microgravity, which include a decrease in maximal oxygen uptake and a loss of bone mineral density. They therefore need to be in absolute peak physical condition before they go to ensure they can cope with the demands of these intense conditions.



## CIRCUIT 2

Complete each exercise in this circuit for 30 seconds with 10 seconds of rest in between exercises. Repeat for 4 total sets.

1

### SWING - 1 ARM KB ALTERNATING

4 SETS - 30S WORK - 10S REST



1. Stand in front of a kettlebell and bend at the hips and knees to grab the kettlebell just between your knees.
2. Keeping your back flat, squeeze your glutes and stand up, swinging the kettlebell up creating momentum.
3. At the top of the swing, switch hand that is holding the kettlebell and reverse the motion to return the bell to the ground.
4. Hinge at your hips with your back flat lowering the kettlebell between your legs. Continue alternating for the remainder of the sets.

3

### LATERAL LUNGE - KB ALTERNATING

4 SETS - 30S WORK - 10S REST

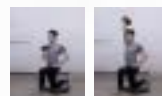


1. Stand with your feet shoulder-width apart.
2. Step to one side and lower your hips to the floor by squatting back and down with the stepping leg, keeping the other leg straight and holding the kettlebell with the hand on the same side as the straight leg.
3. Keeping your back flat, squeeze your glutes and stand up to return to the starting position.
4. Switch directions and repeat the movement for the complete sets.

2

### HALF KNEELING OVERHEAD PRESS - KB (LEFT)

4 SETS - 30S WORK - 10S REST

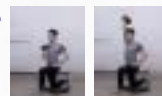


1. With one knee on a soft pad or mat and the opposite foot flat on the ground in front of you, hold a kettlebell in one arm at your shoulders.
2. Keeping your legs and torso stable, press the weight overhead.
3. Lower the weight back to the starting position.
4. Continue for the remainder of the set.

4

### HALF KNEELING OVERHEAD PRESS - KB (RIGHT)

4 SETS - 30S WORK - 10S REST



1. With one knee on a soft pad or mat and the opposite foot flat on the ground in front of you, hold a kettlebell in one arm at your shoulders.
2. Keeping your legs and torso stable, press the weight overhead.
3. Lower the weight back to the starting position.
4. Continue for the remainder of the set.



## DID YOU KNOW?

Runners should add variety to their training routine, rather than consistently stressing their body through the same type of exercise. This will also help them stay motivated and engaged in pursuit of their goals. HIIT-style training for example is just as effective and efficient in improving an athlete's aerobic capacity as long steady-state runs.

## DID YOU KNOW?

Incorporating short duration all-out sprints at the end of a workout will help improve a runner's endurance at the end of a session when their body and mind are drained of energy. This will give them the ability to find that extra level when approaching the finish line for real.

## KETTLEBELL FLOW

Through this kettlebell flow, complete one rep of each exercise in order and then repeat on the other side. Continue alternating for the duration of the working time (40s) followed by 20 seconds of rest. Repeat for 4 sets in total.

1

### DEADLIFT - 1 ARM KB

4 SETS - 40S WORK - 20S REST



1. Stand with your feet about hip-width apart, holding a kettlebell in one hand with an overhand grip.
2. Keeping your knees soft and the weight close to your body, push your hips back and lower the dumbbell as far as you can while maintaining a natural arch in your back.
3. Contract your hamstrings and glutes to return to a standing position. Flow into the KB clean.

3

### SQUAT - 1 ARM KB

4 SETS - 40S WORK - 20S REST



1. Stand holding a kettlebell in the racked position, initiate the move with your hips, squat back and down until your thighs are as close to parallel to the floor as possible.
2. Return to a standing position by pushing through your hips.

2

### CLEAN - 1 ARM KB

4 SETS - 40S WORK - 20S REST

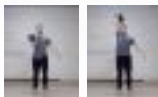


1. Stand holding a kettlebell in one hand in front of your body with your feet shoulder-width apart.
2. Keeping your back flat and chest up, push your hips back letting the kettlebell swing between your legs.
3. In one explosive motion, extend your hips as quickly as possible and shrug your shoulder, pulling the weight straight up.
4. Allow the kettlebell to float upward. When the weights reach their maximum height, drop your body underneath and catch them at shoulder height.

4

### OVERHEAD PRESS - 1 ARM KB

4 SETS - 40S WORK - 20S REST



1. Beginning with the kettlebell in the racked position, keep your legs and torso stable, press the weight overhead.
2. Lower the weight back to the starting position and to the floor.
3. Repeat the KB flow on the other side and continue to alternate for the prescribed time and number of sets.

## DID YOU KNOW?

Upper body workouts are a commonly overlooked element of running training. This type of exercise can be hugely important in improving running mechanics and efficiency. Kettlebell workouts for example help inspire more effective energy transfer, allowing a runner to become more efficient in their training and boost their overall 'running economy'.

## ENERGY SYSTEMS DEVELOPMENT + REGENERATION

With the aerobic and anaerobic systems already tested through the HIIT, the efficiency of sprint interval training will allow the runner to push themselves even further, prior to the regeneration and recovery process beginning so they're prepared for the next workout.

### INCLINE SPRINT

1 SET - 30 SECONDS



1. Find a hill or set your treadmill to a 10 percent incline.
2. Sprint for 5 seconds at an all-out pace and recover for 30 seconds in between sprints.
3. Repeat for 5 sets.

### REGENERATION

Foam roll muscle tissue that has been stressed throughout the session or that is tender from previous workouts. Kick-start the recovery process with hydrotherapy alternating between hot (38 to 40 degrees Celsius) and cold tub (10 to 12 degrees Celsius) every 3 to 5 minutes.



# TRAIN LIKE AN ASTRONAUT

AN EXERCISE PROGRAM TO HELP RUNNERS REACH PEAK PERFORMANCE



EXOS