

SPEED DYNAMICS

1. Warm-up Exercises

Prisoner Squats

Stance: Feet wider than shoulders.

Arms: Extended in front of body (or hands on hips). Sit back by bending knees, shins remain vertical, knee does not shift forward.

Side Straddle Hops (Jumping Jacks)

Stance: Feet together.

Arms: At your side. Jump feet apart in frontal plane wider than overhead, return to starting position.

Long Straddle Hops

Stance: Feet together.

Arms: Elevated to Shoulder height. Jump feet apart in sagittal plane, swing arms across in front of the body.

Marlboro Highland Flings

Stance: Feet apart wider than shoulders.

Arms: Elevated to Shoulder height. Jump feet so that right leg crosses in front of left leg while arms swing downward and cross midline, then reverse right over left.

Wide-Outs

Stance: Deep squat with knees together. While maintaining deep squat position, jump and open the legs so that the knees and toes point to the sides, then return. Stay low!

Thrust

Stance: Push-up position. Jump the knees between the elbows then jump the knees outside the elbows. Keep the Hips low!

(Double Leg)

Wave Squats

Stance: Squat down over one leg with the other fully extended yet in contact with the floor for balance. Extend the support leg, squat back down, shift weight over other leg, extend other leg and repeat.

Stance: Feet together.

Stand Split Squat

Arms: at your side. Jump to a front lunge position then return to start position, alternate legs forward.

Stance: Feet together.

In Place Pogo Jumps

Arms: at your side. Maintaining dorsiflexed ankles and stabilized knee joints, make small in-place repeat vertical jumps.

Side to Side Pogo

Stance: Feet together.

Arms: at your side. Perform pogo jumps side to side, when jumping to the left raise the left arm over head and vice versa.

2. Muscle Activation Series

Supine SL Raises

Lying supine (on back face upward) with head off the floor, legs straight and ankle dorsiflexed, lift the leg through full range of motion returning to the start position, but do not touch the floor.

Outside SL Raises

Lying on one side, legs straight, ankles dorsiflexed, abduct thigh through full range of motion with out hip rotation. Foot points forward and the side of the foot is facing down toward the ground.

Inside SL Raises

Lying on one side with the foot of the top leg placed flat on the floor and the other leg straight and dorsiflexed at the ankle, adduct the bottom thigh, thus lifting the leg again without rotation.

Prone Leg / Arm Raises

In a prone position with the arms extended overhead, legs straight and ankles dorsiflexed, lift one leg and the opposite arm, then change.

Sky Divers

In a prone position with the arms extended overhead, legs straight and ankles dorsiflexed, lift both legs and both arms, keeping them straight. Hold the position momentarily.

Fire Hydrants

Kneeling with hands on the floor and both ankles dorsiflexed, fold the leg so that the calf is touching the hamstring. Keeping tightly folded abduct and extend the thigh so that it points 45 degrees backward. Shoulders & hip axis remain parallel to the floor.

Forward Knee Circles

Kneeling with hands on the floor and both ankles dorsiflexed, fold the leg so that the calf is touching the hamstring. Circumduct the thigh so that the knee scribes a large circle forward. Shoulder and hip axis remain parallel to the floor.

Backward Knee Circles	Kneeling with hands on the floor and both ankles dorsiflexed, fold the leg so that the calf is touching the hamstring. Circumduct the thigh so that the knee scribes a large circle backward. Shoulder and hip axis remain parallel to the floor.
Kneeling Scorpion	Kneeling with hands on the floor and both ankles dorsiflexed, fold the leg so that the calf is touching the hamstring, flex the thigh and the neck bringing the knee to the chest then extend the thigh, back and neck with the leg remaining flexed and ankle dorsiflexed trying to touch the heel to the head.
Lateral Ham Reach	Kneeling with hands on the floor and both ankles dorsiflexed, one leg is fully extended. Lift the straight leg upward and forward such that the foot is above the level of the shoulder
Double Leg Russian Hamstring Pops	In a supine push-up position, legs fully extended and ankles dorsiflexed, touch the butt to the ground then lift the hips so that the body is hyperextended.
Double Leg Hip Thrusts	In a supine position with the arms folded across the chest, the thighs flexed at 90 degrees, the knees flexed at 90 degrees and dorsiflexed ankles, the partner squats and supports the legs by holding under the heels. The athlete lifts the hips so that the body is hyperextended, without pushing against the partner.
Single Leg Hip Thrusts	In a supine position with the arms folded across the chest, the thighs flexed at 90 degrees, the knees flexed at 90 degrees and dorsiflexed ankles, the partner squats and supports one leg by holding under the heels. The other leg is held in the air. The athlete lifts the hips so that the body is hyperextended, without pushing against the partner.
Single Leg Russian Hamstring Pop	In a seated position, legs fully extended, the hands pointing forward are placed next to the hips. One leg is elevated off the ground and by pushing against the ground with the other leg, the athlete lifts the hips over the shoulder level into body hyperextension.

3. Technical Acceleration Build-ups

Low Skip & Scoop

While slowly skipping, the athlete lunges forward maintaining the body in a squat position and scoops the arms toward the ground. The hips move through low as the athlete explodes from the deep position in a continuous motion, projecting the hips upward and forward. Two more skips followed by a lunge with the other leg completes the movement.

4. Dynamic Mobility Circuit

Head Circles

Stance: Feet wider than the shoulders, feet forward. "Circumduct" the neck slowly through full range of flexion, lateral flexion, extension and contralateral flexion.

Trunk Circles

Stance: Feet wider than the shoulders, hands on the hips maintaining the pelvis position. "Circumduct" the trunk with ever increasing speed through full range of flexion, lateral flexion, extension and contralateral flexion.

Hip Circles

Stance: Feet wider than the shoulders, hands on the shoulders maintaining the trunk position. "Circumduct" the hips with ever increasing speed through full range of flexion, lateral flexion, extension and contralateral flexion.

Lead Leg Pick-ups

Stance: Hurdle Seat Position with both ankles dorsiflexed and 90 degree intra-thigh angle, hand on the floor in front of the body, shoulders in front of the hips. Lift the straight lead leg while maintaining forward leaning body position.

Trail Leg Pick-ups

Stance: Hurdle Seat Position with both ankles dorsiflexed and 90 degree intra-thigh angle, Lift the trail (back) leg while reaching forward with the hand at trunk with the hand toward opposite foot.

Iron Cross

Stance: Supine position with arms extended at shoulder level and shoulders maintaining contact with the ground sweep the straight right leg long and low to the floor, with the ankle dorsiflexed, up so that the foot touches the opposite hand, then change in a rhythmical rolling motion.

Prone Scorpion	Stance: Prone position with arms extended at shoulder level and shoulders maintaining contact with the ground reach back with a tightly folded right leg so that, while maintaining a dorsiflexed ankle, the heel touches the opposite hand, then change in a rhythmical rolling motion.
Groiners	Stance: Push-up position, ankles dorsiflexed with the body position maintained straight and the hips low, the athlete brings the knee outside the elbow by flexing at the hip and knee. The foot lands flat outside the hand, then hop rhythmically to a change.
Inverted Bicycle	Stance: Shoulder Stand with hands supporting under the hips. With both legs extended and ankles dorsiflexed, alternately flex the hip and knee simultaneously followed by extension that should resemble a bicycle action.
Inverted Cut the Grass	Stance: Shoulder Stand with hands supporting under the hips, flex at the hips so that the feet are close to the ground. Scissors the legs first right over left then left over right through full range of motion.
Inverted Long Scissors	Stance: Shoulder Stand with hands supporting under the hips. While keeping the legs straight and ankles dorsiflexed, the legs should be in a vertical position. Split one leg forward and the other backward. Avoid flutter kicking.
Rockers to Inside Hurdle Seat	Stance: Seated on the floor with legs fully extended in front of the body and the ankles dorsiflexed, rock back and touch the toes to the floor then rock forward externally rotating a flexed thigh with a flexed knee, positioning the sole of the foot next to the knee on the opposite leg. Kick back again and change legs with the inside hurdle seat.
Side Leg Swings	Stance: Facing a wall in double hand support with the legs straight and ankle dorsiflexed execute pure abduction of the thigh and the pure adduction facilitated by gravity so that the leg crosses in front of the supporting leg. Hips and shoulders remain square with the wall. Toe points at the wall.

Front Leg Swings

Stance: Facing perpendicular to a wall in single hand support, with the leg straight and ankle dorsiflexed. The thigh is flexed through full range of motion and, facilitated by gravity, swing the thigh into hips extension. While extending the hip, carefully flex the knee while maintaining stable body position and a dorsiflexed ankle.

Trail Leg Windmill Forward

Stance: Facing the wall in double hand support balanced on one straight leg and the other ankle dorsiflexed, flex the knee and circumduct the thigh simultaneously so that the knee scribes a large circle forward. Shoulder and hip axis remain parallel to the floor. Heel fold rapidly to the butt.

Trail Leg Windmill Backward

Stance: Facing the wall in double hand support balanced on one straight leg and the other ankle dorsiflexed, flex the knee and circumduct the thigh simultaneously so that the knee scribes a large circle backward. Shoulder and hip axis remain parallel to the floor.

Hurdle Seat Change

Stance: Hurdle seat position. Roll in the direction of the side of the lead leg. Place the hands on the ground and roll. Bring both feet together and perform a prone scorpion movement with the former lead leg at the same time as you do a push up. The other leg should now be the lead leg with a 90 degree intra-thigh angle in the trail leg.

5. Technical Acceleration Build-ups

Groucho Lunges

Stance: Deep squat position. Bring the heel, with a dorsiflexed ankle, quickly to the butt and reach the foot forward as if to spike the heel into the ground in front of the body. Keeping the hips low, pull the body over the foot so that the hips shoot forward. The ankle remains dorsiflexed at toe off.

6. Single Leg Balance Series

Side Scale

Stance: Weight supported on one leg with the arm on the same side extended overhead, opposite arm next to the body. Abduct non-support leg and tip body laterally toward side of support leg such that the extended leg, the body and the arm overhead form a straight line parallel with the ground. Ankle is dorsiflexed. Hold for five seconds, minimum. Repeat other side.

Front Scale

Stance: Weight supported on one leg with both arm extended overhead. With ankle dorsiflexed lift the non-support leg off the ground while bending forward at the waist such that the extended leg, the body and the arms overhead form a straight line parallel with the ground. Hold for five seconds, minimum.

Back Scale

Stance: Weight supported on one leg with the arm on the same side extended overhead, opposite arm next to the body. Lift the straight non-support leg forward while leaning the body backward such that the straight leg, the body and the arm overhead form a straight line parallel with the ground. Hold for five seconds, minimum.

Relevers

Stance: Balanced on one leg, arms extended from the shoulders laterally or hands placed on the hips, plantar flex on support leg through full range of motion and pause in fully plantar flexed position.

Speed Skater

Squat on one leg so that the nose, the knee and the big toe are in vertical alignment. The hip is outside the knee. The other leg is extended and abducted such that the side of the foot is resting on the ground and the ankle is dorsiflexed. Hop and change support legs while maintaining a low hip height. Nose-Knee-Toe alignment must be maintained.

Single Leg Quarter Squat

With non-support leg straight and flexed at the hip and both arms straight and flexed at the shoulder, squat down to a quarter squat position, weight back on the heel. Try to keep shin vertical.

Single Leg Half Squat	With non-support leg straight and flexed at the hip and both arms straight and flexed at the shoulder, squat down to knee 90 degree squat position, weight back on the heel. Try to keep shin vertical.
Quarter Eagles	In a double leg squat position the athlete jumps so that the shoulder and hip axis turns 90 degrees to the right back to the neutral, then 90 degrees to the left.
Half Eagles	In a double leg squat position the athlete jumps so that the shoulder and hip axis turns 180 degrees to the right, back to neutral, then 180 degrees to the left.
In Place Crow Hops	In a single leg squat position the athlete executes a small hop with no horizontal displacement lands flat footed and stabilizes on landing, pauses and hops again.
Single Leg Quarter Eagles	In a single leg squat position the athlete hops so that the shoulder and hip axis turns 90 degrees to the right back to neutral, then 90 degrees to the left.
Single Leg Turn-Ins	In a single leg squat position the athlete hops so that the shoulder axis remains fixed and hip axis turns 90 degrees in the direction opposite the support leg, then hops back to neutral. Always a full footed landing. The foot and knee will point a 3 O'clock or 9 O'clock. Execute all reps in one direction then change legs.
Single Leg Turn-Outs	In a single leg squat position the athlete hops so that the shoulder axis remains fixed and hip axis turns 90 degrees in the same direction as the support leg, then hops back to neutral. Always a full footed landing. The foot and knee will point a 3 O'clock or 9 O'clock. Execute all reps in one direction then change legs.
Single Leg Thrusts	Push-up position with single leg support. Hop the knee between the elbows keeping the hips low.
Side to Side Bounds	In a single leg squat position push off so that the hips are displaced a small amount upward and sideways. Execute full footed landing, stabilize and bound back.
Single Leg Forward-Backward Hops	In a single leg squat position, hop forward then hop backwards, always landing on the same leg, stabilizing after each full footed landing.

Single Leg Side to Side Hops

In a single leg squat position, hop sideways then hop sideways back, landing on the same leg, stabilizing after each full footed landing.

7. Wall March and Wall Sprint Series

Wall Accelerations

Stance: Facing a wall, feet well away from the wall so that when in double hand support the body angle is 45 degrees, exhibiting a powerline.

Wall March

Athlete flexes thigh (knee drives forward) and flexes knee so that the shin angle with the ground is the same as the powerline angle. The ankle is dorsiflexed. The athlete then extends the hip, while maintaining the shin angle and ankle dorsiflexion. At impact the other leg is flexed at the thigh, while maintaining the shin angle and dorsiflexion.

Two Count Wall Sprint

On command, the athlete rapidly drives knee of the support leg forward while simultaneously driving the thigh of the other leg backward. Upon landing on a preloaded ankle, another change is executed, yielding a two count action.

Three Count Wall Sprint

On command, the athlete executes a three count response which end with the opposite knee forward.

Rapid Fire Wall Sprint

On command, the athlete executes a continuous rapid change, alternating from driving the knee forward with driving the thigh backward.

One Hand Wall Sprint

This drill can be used with two count, three count or rapid fire Wall Sprints. Instead of a double hand support only one hand is place on the wall.

8. "A" - Acceleration Drills

"A" - March	With proper body position and ankle dorsiflexed, punch the knee forward, maintaining proper positive shin angle. Block the thigh with the toe behind the knee in vertical alignment. Drive the thigh actively back from the hip while maintaining the shin angle. Ankle remains dorsiflexed. The contact point of the ball of the foot is two - three inches in front of the support foot.
"A" - Skip	Same as "A" March, but using a skipping rhythm.
"A" - Run	Same as "A" March, but running.
Double "A" March and "A" Skip	Same as "A" March, however the knee is punched forward not just once, but twice The first movement is identical to the "A"- March, however the second movement with that leg is a knee punch directly to the side, in the frontal plane. The shin angle remains constant and the toe stays behind the knee.
"A" & "C" March & Skip	The first movement is identical to the "A"- March, however the second movement with that leg is a knee punch directly to the side, in the frontal plane. The shin angle remains constant and the toe stays behind the knee.

9. Partner Resisted Acceleration Drills

Face to Face	Starting position with resisting partner has the hands on the shoulders of the action partner. The arms of the action partner are free for arm drive. The action partner initiates the movement with a vigorous knee punch and uses a rhythm and action the same as Rapid Fire Wall Sprint. The resisting partner applies optimal resistance and allows the action partner to gradually move forward, only if the powerline position is maintained.
Face to Face with Release	The starting position and the action is the same as Face to Face. When a speed has been reached when the resistance partner can no longer safely apply resistance the resisting partner quickly step aside allowing the action partner to continue to accelerate using proper pure acceleration mechanics.

Face then Chase

The starting position and the action is the same as Face to Face. At the moment of release, the resisting partner pivots, accelerates and is chased to a designated finishline, a distance of 10 - 20 meters from the release point.

Face, Chase, Race

At the moment of release, the resisting partner pivots, accelerates and is chased toward designated finishline, a distance of 10 - 20 meters from the release point. If the action partner can tag the resistance partner, both abruptly decelerate and stop and re-accelerate in the opposite direction racing toward the starting point.

Power Line Acceleration Ladder

As the athlete's levels of specific power increases, the athlete is allowed to initiate the drills from the second then the third and finally the fourth rung on the ladder. The athlete still strives to project the hip past the next and all subsequent rungs while actively driving back into the face of each upcoming rung.

Hip Hold & Release

The resisting partner is positioned behind the action partner. The resisting partner grasps the action partner in front of the hips on the anterior superior iliac spine. The starting position is realized when the action partner leans forward from the ankles into a position of greater dorsiflexion. The hips are forward so that the body forms a powerline. The action partner initiates the movement with a vigorous knee punch and uses a rhythm and action the same as Rapid Fire Wall Sprint. The resisting partner applies optimal resistance and allows the action partner to gradually move forward if the powerline position is maintained. When a critical speed is reached, if the resistance partner can no longer maintain the hand hold position, the action partner is released and continues to accelerate maximally using pure Acceleration mechanics.

Quick Step Acceleration Ladder

Set out a ladder with the dimensions of 50cm between the first two rungs, increasing the distance between the subsequent rungs by 15 cm.(65, 80, 95, 110 cm, etc.). Place the front foot in front of the first rung so that the ball of the foot is just barely touching the face of the first rung. The front knee is bent such that the knee is positioned in front of the toe. The Athlete initiated the movement with hip extension attempting to project the hip past the second rung. The rear leg is recovered by violently punching the knee forward, maintaining the shin angle and ankle dorsiflexion. The foot stays close to the ground. The shin is driven back with active hip extension so that the foot lands with the ball of the foot in front of the face on the next rung. The action is repeated and acceleration is continued 10 meter after the final rung.

11. Drills for Balance and Single Leg Power Development

Groucho Bounding or Low Slow Bounding

From the same starting position as Groucho Walks, the athlete project the hips slightly upward and forward. The athlete lands in a full foot landing position with the base of support under the center of mass. The athlete again applies force, but at no time comes out of the Groucho position.

Crow Hops Forward

The athlete starts from a single leg quarter or half squat position. The athlete then makes a mini hop forward and lands in a full footed landing position and momentarily stabilizes before executing the next hop.

Crow Hops Backward

The athlete starts from a single leg quarter or half squat position. The athlete then makes a mini hop backward and lands in a full footed landing position and momentarily stabilizes before executing the next hop.

Crow Hops Side to Side

The athlete starts from a single leg quarter or half squat position. The athlete then makes a mini hop sideways and lands in a full footed landing position on the same leg and momentarily stabilize before executing another mini hop back the other direction.

Crow Hops Complex

The athlete complexes forward and sideways Crow hops and Bounds in a pre-specified pattern

Speed Bounding

The athlete begins standing upright. With the proper body position and ankle in dorsiflexion, the athlete projects the hips forward and punches the knee forward, maintaining a positive shin angle. The thigh is abruptly decelerated and the thigh is driven actively back so that the shin lands at a positive angle, on a dorsiflexed ankle, on the ball of the foot under the body. Flight time and distance increases with increased force and range of motion.

Resisted Speed bounding

Speed Bounds are resisted by a partner using an elastic cable and a harness or a waist belt. Minimal resistance should be used.

12. Increasing Explosive Power for the Start

Standing Long Jump

Stance: Body position is stabilized and the arms are extended fully overhead. The athlete is in full plantar flexion. The movement is initiated by throwing the arms down and behind the body at the same time the athlete drops into a squat position, rapidly dropping the heels to the ground. The athlete quickly changes direction and explodes upward and forward with a minimal pause in the squat position.

Toe-Heel Standing Long Jump

Stance: The same as standing long jump, but the feet are positioned so that the toe of the rear foot is level with the heel of the front foot. The emphasis is to load the rear heel as the athlete drops into the squat position. Force application comes simultaneously from both legs.

Bow Standing Long Jump

Stance: The same as standing long jump, with the exception of the feet flat on the ground. The legs are straight. The athlete initiates the movement by slowly bowing forward at the waist. The abdominal muscles remain contracted and the body position stabilized. At the low bow position the athlete rapidly extends, using the back extensors and jumps upward and forward with minimal preparatory knee flexion.

SLJ to Single Leg Stand (Right & Left)	From a standing long jump the athlete explodes upward and forward and makes a full footed landing on one foot and stabilizes.
Standing Triple Jump	From a standing long jump the athlete explodes upward and forward and makes a full footed landing on one foot and immediately projects the hips forward and upward again bounding to the other foot.
SLJ to Speed Bound	From a standing long jump the athlete explodes upward and forward and makes a full footed landing on one foot then immediately projects the hips forward and upward again bounding to the other foot.
Deep Start to Speed Bounds	The athlete begins in a deep crouch position with the feet in a toe-heel relationship. The athlete is sitting back on the haunches such that the gluteus on the side of the rear leg is touching the heel. From this position the athlete initiates a standing Long jump followed by a Speed Bound.

13. Simulate the Start

Mountain Climber Hop-Hop Start	In a four point start position with the feet in a toe heel relationship, the athlete hops the feet into a positional change and then hops back to the starting position. At impact of the return hop, the athlete splits the arms and explodes extending from both legs and lower back simultaneously. The Athlete then executes a perfect acceleration pattern.
Vertical Hop-Hop Start	In a four point start with the feet in a toe heel relationship, the athlete executes two vertical mini hops. On the landing from the third mini hop the athlete splits the arms and explodes extending from both legs and lower back simultaneously. The athlete then executes a perfect acceleration pattern.

Push-up Start

From a modified push-up position, the feet closer to the hand with a toe-heel relationship, the athlete uses the arms to push the shoulders up off the ground while rocking back placing more weight on the feet. The athlete immediately claps the hands with both feet remaining in contact with the ground. Only after the hand clap does the athlete split the arms and explodes extending from both legs and back simultaneously. The athlete then executes a perfect acceleration pattern.

Lunge Hand Touch Start

The athlete executes a mini lunge and touches the hand to the ground. At the instant of touching the ground the athlete explodes with proper starting mechanics and acceleration pattern.

Sitting on Haunches Split the Arms

In a position where the athlete is sitting on the haunches, gluteus on the side of the rear foot is touching the heel. The athlete places both hands on the ground in the starting position. The athlete drives the "quickside" arm backward in shoulder extension and the "power side" arm drives upward and forward so that the arm is high and across the front of the eyes.

Double Knee Down Split the Arms

The same starting position as above except both knees are in contact with the ground and the gluteus is off the heel. Split the arms as described above and return them quickly, catching the body as it falls to the ground.

Set Position Split the Arms

From the set position, split the arms as described above and return them quickly catching the body as it falls to the ground.

Explode on to Mat Split the Arms

From the set position, split the arms as described above. Simultaneously explode with the hip extensors and back extensors to project the hips upward and forward. Land on the high jump mat in the arms split position on the chest and stomach.

15. Multi-Throw Explosive Series

Over the Head Backward

Using a shot or medicine ball, squat the ball down, arms long and fully extended so that the ball is between the knees. Explode with the hip extension and back extension while keeping the arms long, throwing the ball with an arching trajectory over the head backwards.

Between the Legs Forward

Using a shot or medicine ball, squat the ball down, arms long and fully extended so that the ball is between the knees. Explode with the hip extension and back extension while keeping the arms long, throwing the ball with an arching trajectory over the head forwards.

Squat Chest Toss

Holding the ball with both hands as if to make a chest pass, squat down exploding out of the deep position pushing the ball upward and forward.

Lunge Chest Toss

Holding the ball with both hands as if to make a chest pass, lunge forward exploding out of a deep position with the forward leg, pushing the ball upward and forward.

Lunge Throws

Using a shot or medicine ball, squat the ball down, arms long and fully extended so that the ball is slightly to the side of the body. Lunge forward exploding out of a deep position with the forward leg, throwing the ball upward and forward. Hold the ball to either side of the lunge leg for balance of muscle activity. Alternate legs.

Hammer Hip Throw

With the back facing the throwing direction, hold the ball with the arms long and fully extended so that the ball is slightly to the side of the body. Twist the trunk to the side of the ball and bend the knees slightly. Uncoil the body throwing the ball over the opposite shoulder.

Drop Over the Head Backwards

Same as Over the Head Backward, but drop off a small box landing in a knees bent position. Initiate the throw backward at the instant of landing.

Drop Between the Legs Forward

Same as Between the Legs Forward, but drop off a small box landing in a knees bent position. Initiate the throw forward at the instant of landing.

Hop-Hop-Throw Over Head Backward

Same as Over the Head Backward, execute three small standing long jumps in succession initiating the throw backward at the instant of the third landing.

Lunge Forward Over Head Backward

Using a shot or medicine ball, squat the ball down, arms long and fully extended, so the ball is slightly to the side of the body. Lunge forward exploding out of a deep position with the forward leg, throwing the ball upward and backward over the head. Hold the ball to either side of the lunge leg for balance of muscle activity. Alternate legs.

Kneeling Over Head

Kneeling on both knees with ankles dorsiflexed, however not sitting on the heels, the partner throws the medicine ball into the hands outstretched overhead. Athlete catches the ball, achieves full stretch across abdominals and throws the medicine ball back.

Straddle Seat Over Head

Sitting in a straddle seat position, partner throws medicine ball into hands outstretched overhead. Athlete catches the ball, achieves full stretch across abdominals and throws the medicine ball back.

V-Sit Chest Pass

With feet and low back off the ground in a V-sit position, partner drops medicine ball from varied heights to the hands waiting in a chest pass position. The athlete accepts the ball and immediately turns the direction of the ball to throw upwards. The partner moves the location of the drop from right to left and high to low randomly.

Standing Twist Toss

In a stand straddle position, partners have their left shoulders pointed toward each other standing about 2-3 meters apart. They are facing opposite directions. One partner throws the ball into the out stretched hands of the other partner. The other partner receive the ball, maintains eye contact on the ball and allows the ball to twist the trunk and shoulders into a torque position. The recoil action then allows the athlete to throw the ball back.

Abdominal Pike-ups

Standing with the feet together and legs straight, the partner accepts the medicine ball which has been rolled along the floor and allows the ball to roll up onto the feet. Using the abdominal muscles the athlete pikes the body, tossing the ball up into the waiting hands of the server.

Hamstring Flicks

In a prone position with the knees together and the ankles in dorsiflexion, the athlete accepts the ball rolled down the back of the legs onto the heels. Very quickly the athlete flicks the ball with rapid knee flexion into the waiting hands of the partner who is standing straddling the body at waist level.

Rainbow Toss

Two athletes assume a V-sit position facing the same direction. The ball is served in an easy arching toss so that the ball is accepted while maintaining eye contact and moved toward the floor next to the hip. Before the ball touches the floor it is served back to the other partner in the same fashion.

Yogi Chest Pass

Kneeling on both knees with the ankles dorsiflexed, the athlete awaits the served medicine ball. The partner kneels behind the athlete straddling the legs and sits on the dorsiflexed ankles. The server, positioned in front of the athlete, tosses the ball as for a chest pass, falls forward, while maintaining a straight body, catches themselves in a push up position and initiates knee flexion, with a small push with the arms, which returns the body to vertical. The majority of the force is produced by contraction of the hamstrings and gastrocs to right the body again.

17. Abdominal Exercises

Abdominal Curls

Supine with arms folded across the chest, thigh and knee flexed with feet flat on the ground. Lift shoulder blades off the ground to commence exercise. Shoulder blades do not touch ground again until exercise is completed. Curl the body up by contracting abdominal muscles until low back is off the ground.

Side-ups

Lying on one side with body aligned, legs straight and ankles dorsiflexed, partner kneels straddling the legs of the athlete and sits on the feet of the athlete. With the arms folded across the chest, or over the head, the athlete lifts the shoulder from the ground by executing a lateral bend. The shoulder does not touch on the return.

Low Back Extension

In a prone position, with a partner sitting on the ankles keep ankles dorsiflexed and the abdominals contracted Lift the body as a unit with a minimum of hyperextension of the lumbar spine.

Fish Flops

In a prone position, with a partner sitting on the ankles keep ankles dorsiflexed and the abdominals contracted Lift the body as a unit from the knee joint so that the thighs come off the ground. It is permissible to have the arms at the sides to slightly assist the hamstrings and gastrocs

Legs up & Reach

Lying on the back with the legs extended straight up into the air, the partner holds and slightly lifts the feet. The shoulder blades begin off the ground and the athlete attempts to touch the soles of the feet with both hands without allowing the shoulder blades to return to the ground.

L-Overs

Lying on the back with the legs extended straight up into the air, the arms extended out to the side at shoulder level. The athlete then rotates the trunk so that the feet touch one hand and return to the neutral position. The next movement is then execute touching the opposite hand with the feet.

Whippers

Lying on the back with the legs extended straight up into the air, the partner stands in a slightly straddle position above the athlete's head. The athlete holds the partner at the base of the heels. The partner throws the feet forward and side to side, randomly. The athlete catches the feet before hitting the ground and returns them to the starting position. The low back must remain flat on the ground during the forward movement!

Chinnies

In a supine position, the athlete elevates the feet and the shoulder blades with the hands on the trapezius muscles. Alternately touch the right knee to the left elbow, lifting the low back off the ground. Then touch the left knee to the right elbow. Always return to the neutral starting position between touches.

Double Chinies

In a supine position, the athlete elevates the feet and the shoulder blades with the hands on the trapezius muscles. Touch both knee to the respective elbows and then return to the neutral starting position.

V-Sits

In a supine position, the athlete elevates the feet and the shoulder blades with the arms extended over the head. Simultaneously fold the arms and legs up so that they touch together high over the body. Control the return movement back to the neutral starting position.

Crunches

In a supine position flex the hip and knee to a 90° position. With the hands touching the trapezius muscles, alternately touch the elbow to the opposite knee.

Negative Abdominals

In a supine position flex the hip so that the knees almost touch the chest and knees in a 90° position, the partner pulls the knees down against the resistance of the athlete. As the movement progresses, the athlete gradually extends the legs to allow full range of motion at the hip. The low back must remain flat on the ground during the forward movement!

18. Acceleration Games

Hounds and Hares

Divide the group into two lines and position them so they are facing the same direction. One group is the hounds and the other the hares. When hounds group is called, the hounds chase the hares to a predetermined spot, about 15-20 meters away. When hares group is called, the hares chase the hounds. Vary the starting position

Crab Walk Relays

From a seated position with feet flat on the ground and hands on the ground wider than shoulder width, lift the hips off the ground. Athletes can be directed to walk forward, backwards or sideways in the crab position.

Groucho Walk Relays

Groucho walks can be used in shuttle relay format.

20m The Hard Way

Select teams of five persons. Using two acceleration ladders, position one at a start line and the other 20 meters away coming back in and adjacent lane. Three members line up at the start. The other two members line up at the other end. On the command, the athlete blasts through the acceleration ladder and continues to accelerate through the remaining 20 meters. Upon arrival at the other end, the other athlete blast through the ladder set up in the other direction. A continuous shuttle is run until ten repetitions each have been achieved. 30 or 40 meter distances may also be used.

19. Static Stretching / Warm-down Routine

Supine Single Leg-Knee to Chest

Lying supine, grasp the right fore foot and pull the knee to the chest while fully flexing the neck and maintaining muscle contraction of the abdominals. Change legs after holding for at least 15 seconds.

Supine Double Leg-Knee to Chest

Lying supine, grasp the bottoms of both feet and pull both knees to the chest while fully flexing the neck and maintaining muscle contraction of the abdominals.

Straddle Stretch

Seated with the legs straddled as wide as possible, maintain the shoulder axis parallel to the ground and reach down the fully extended leg while the ankle remains in dorsiflexion, change legs, then reach down the middle.

Over-Under Straddle Stretch

Seated with the legs straddled as wide as possible, cross the right arm across the chest and while side bending to the right, reach over toward the fully extended right leg with the left arm. The ankle remains in dorsiflexion, change legs.

Butterfly

Seated with the thighs flexed and externally rotated, pull both heels tightly to the butt. Use the forearms to apply pressure to stretch the thighs.

Inverted Butterfly

Seated with the thighs flexed and the knees flexed so that the feet are close to the butt, flat on the ground. Medially rotate one thigh and press the hip forward and upward to contribute to a greater stretch.

Chair Stretch

Seated with the legs fully extended in front, the ankle dorsiflexed. Flex forward by contracting the abdominal muscles in an attempt to stretch the back. Put the chin on the chest and protract the shoulder to stretch the upper back.

Pretzel Stretch

Seated with the legs fully extended in front, place the right foot flat on the floor outside the left knee. Grasp the flexed knee with both arms and pull it toward the opposite shoulder while maintaining the position of the shoulder.

Hurdle Seat Lead Leg

Seated with one leg fully extended in front and the other abducted and medially rotated with the knee flexed such that the leg lays flat on the ground. Both ankles are dorsiflexed. Bend forward from the waist in an attempt to place the abdomen flat on the front of the thigh.

Hurdle Seat Trail Leg

Seated with one leg fully extended in front and the other abducted and medially rotated with the knee flexed such that the leg lays flat on the ground. Both ankles are dorsiflexed. Lay back and press the hip upward and forward. It is not necessary to touch the knee to the ground.

Figure Four Stretch

Seated with both legs fully extended in front, place the right ankle above the left knee such that the axis of the shin is parallel with the shoulders. Maintaining the shin-shoulder relationship, flex the hip and the knee of the left leg so that the heel of the left foot comes closer to the butt.

Sit on Your Heels

Seated with the thighs flexed and the knees flexed so that the feet are close to the butt, flat on the ground, position the hands on the ground well behind the body wider than shoulder width. Now lift the hips upward and forward so that the knees will move forward and closer to the floor.

Cradle the Baby

Seated, cradle your right arm around the outside of your right knee. Now grasp the left ankle with your left hand. While slightly lifting with your right arm, pull your left foot toward your left shoulder.

Stand Straddle Stretch

Standing with the feet significantly wider than the shoulders, bent forward down the right leg. Alternate.

Reach between the Feet

Standing with the feet significantly wider than the shoulders, reach with both arms back between your feet as far as possible.

Tip Over Forward

Standing with the feet significantly wider than the shoulder, interlace your fingers behind your back and bend forward as far as possible.

Lateral Squat Toe Down

Standing with the feet significantly wider than the shoulders, squat down over one foot keeping the entire foot on the ground. The other leg is fully extended to the side, ankle dorsiflexed with the side of the foot in contact with the ground.

Lateral Squat Toe Up

Standing with the feet significantly wider than the shoulders, squat down over one foot keeping the entire foot on the ground. The other leg is fully extended to the side, the ankle dorsiflexed and the foot pointing straight upwards.

Sprinter Stretch

In a lunge position with the front shin vertical and the foot flat on the ground, push the body downward so as to achieve a straight line from the hamstring of the front leg through the quadriceps of the rear leg.

The Plough

In a seated position with the legs fully extended in front and the ankles dorsiflexed, rock back and try to touch the toes on the ground behind you, while keeping the legs straight. Once the position is achieved, apply pressure against the ball of the feet so that the ankles increase dorsiflexion.