

Speed and Acceleration Training

Goal: Focus on proper running form through speed and acceleration training and drills

45 Degrees and Triple Extension:

- It is important to get used to the 45 degree angle needed to maximize acceleration
- Try to maintain this angle as long as possible during acceleration
- Triple extension of the ankle, knee and hips is paramount
- Practice the 45 degree acceleration angle by simulating a start into a wall
- Practice extending the ankle, knee and hip of the drive leg and driving the knee of the recovery leg



Arm Action:

- The arm action in sprinting and acceleration is very important
- It is a powerful movement that can determine the cadence of the feet
- The elbow should be locked in at 90 degree angle at all times
- Driving the arm with the shoulder, the arm tracks from the hip (pocket) to chin high through the mid-line of the body
- Perform arm cadence drills standing and in a seated position



High Knees / Running A's:

- With weight forward on the front 2/3's of the feet, drive the knee up and down in a quick, explosive movement
- Perform in a marching cadence as well as a skipping cadence
- Perform flat foot and on toes
- Be sure to utilize proper arm action



Straight Leg / Running B's:

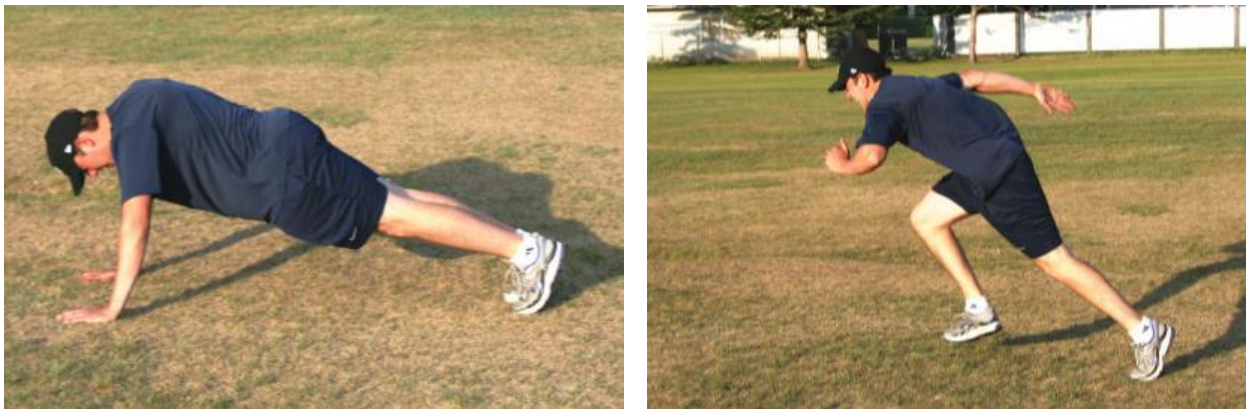
- With weight forward on the front 2/3's of the feet drive the knee up into the "A" position
- Whip the leg back in a pawing motion making contact with the ground right under or slightly behind the center of gravity
- Movement should be quick and explosive
- Perform in a marching cadence as well as a skipping cadence
- Perform flat foot and on toes

- Be sure to utilize proper arm action



Push Up and Sprint:

- Start in a push up position
- Sprint out of the push up, concentrating on triple extension, arm action and quick feet



Jump & Go:

- Jump up as high as possible
- Sprint out of the landing upon first contact with the ground
- Remember: 45 degree angle, arm action, triple extension



4 Bounds into Sprint:

- Perform 4 forward, double leg bounds gaining as much momentum as possible
- Upon ground contact of the fourth bound, sprint out of the landing

- Remember: 45 degree angle, arm action, triple extension



Fall and Catch / Catch and Go: Partner Drills

- From standing position, fall into your partner
- Stopping at the 45 degree angle
- Hold at 45 degrees for 3-5 seconds and release partner without warning
- Partner sprints out of hold working on proper acceleration mechanics



Frequency Grid: 5-7 flat sticks

12'	12'	18'	24'	30'	36'	42'
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- Using flat sticks, place the first two 12 inches apart, increase 6 inches for every stick up to 42 inches
- Be sure that you are not blocking with your feet! (When your foot hits the ground going forward, kicking the ground). It is important to make sure that every foot strike is accelerating into the ground

Walking Accelerations:

- Simply walk through the grid stepping in the middle of each space
- Increase speed until you are running through the grid for 5-10 yards

Falling Accelerations:

- Start with feet together, right against the first stick
- Fall forward getting as close to the 45 degree acceleration angle as possible
- Sprint through the grid as fast as possible without missing a space

Fall and Catch / Catch and Go: Partner Drills

- As above, Remember: 45 degree angle, arm action, triple extension



Resisted Push and Pull Drills: Partner

- Holding your partner at the 45 degree angle, move slowly and provide light resistance for a 5 to 10 yard distance
- Running partner simulates sprint against the resistance, move feet and arms as fast as possible, lightly push against resistance
- Release running partner without warning
- Running partner accelerates out, sprinting for another 10-20 yards
- Partner sprints out of hold, working on proper acceleration mechanics
- Provide resistance from the front and from behind using your hands or a rope