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100M/110M HURDLES

100M(33”)/ 110M(39”) HURDLES
Finding Your Hurdlers

LET THEM ALL TRY IT!

- **Safely evaluate all of your athletes as potential hurdlers; let everyone try it early in your season.**

1. Have everyone, try the hurdles. Set hurdles on the lowest setting(30”) and space the girls’ hurdles at 8.5 meters and the boys at 10 yards (Grass or turf is best: avoid using the track).
2. Without instruction, have any athlete willing to try it, jump over the hurdles. When you get to evaluate those willing to try, break of into a competitive activity of 1-on-1 “races,” over 3 hurdles. Nothing exposes the strengths and/or weaknesses of potential hurdlers more than racing over them.
3. After you have finished the activity, ask if any of them would like to try the hurdles and encourage those with natural ability to work a bit more with the hurdlers in subsequent training sessions. *Be honest with those who aren’t necessarily right for the hurdle events.

Notes: Potential hurdlers do not always see their own potential in the event. EVERYONE is a sprinter until they’re a hurdler.

Physics/Physiology/Psychology

"The 3 P's of Hurdle Success"

- **PHYSICS:** When searching for the optimal hurdler, remember the physics of the male and female hurdle heights present different opportunities and obstacles.
- **Center of Mass:** With the height of the hurdles being drastically different(Boys 39"/ Girls 33") in the short hurdles, center of mass is a critical component to successful hurdling.
  - **Girls:** SPEED SPEED SPEED! Leg speed, power, and coordination are the greatest determiners of how successful a girl hurdler can be. Center of mass changes should be minimal at the 33" height, allowing girls to negotiate the barriers with less interruption in their natural sprint posture, when compared to the boys.
  - **Boys:** The center of mass is displaced to a much higher degree with the 39" barriers. Though speed, power, and coordination are important to be a successful hurdler, hip height is crucial component to most successful boy high hurdlers.

Physics/Physiology/Psychology

"The 3 P's of Hurdle Success"

- **PHYSIOLOGY:** Hurdlers must have specific Physiological capabilities in order to be successful.
- **Skeletal Muscle Fibers:** Athletes possessing more substantial "Fast Twitch" (Type II) muscle fibers are best suited for the hurdles. With the continued quick bursts of speed and power and the ability to lose and regain balance, Type II muscle fibers are critical to being a successful hurdler.
  - **Speed:** Negotiating hurdles efficiently requires very fast muscle fibers. Decisions and adjustments are made instantaneously when clearing the barriers, with there being no equalizer to speed.
  - **Power:** The action of leaving the ground and the subsequent landings while negotiating barriers requires an immense amount of power. Successful hurdlers have the ability to maintain speed and power for the duration of the race. Type II muscle systems fatigue much faster than their Type I slow twitch siblings. The ability to maintain speed and power while clearing 10 barriers at full speed is a necessity for the short hurdle events.

Physics/Physiology/Psychology

"The 3 P's of Hurdle Success"

- **PSYCHOLOGY:**

- **Scientist or Daredevil?**
  - **The Scientist:** The repetitive motions, 90 degree angles, and sequential order of the short hurdle events often seduce the scientifically inclined athletes. These are the athletes that tend to be meticulous preparers and regimented thinkers; they like patterns and rhythms and the "science" of hurdling.
  - **The Daredevil:** Risk, speed, danger and adrenaline rules these athletes. Obviously, throwing yourself over barriers at full speed for "fun" is very appealing to risk takers and daredevils. If you want to find potential hurdlers, look no further than the vault pits. If you want to find vaulters, go visit the hurdlers. The pole vault and high hurdle events are a very good combination for the athletes that don't necessarily have time to train for aerobic endurance.

BEGINNING HURDLE DRILLS

YOU HAVE ONE CHANCE TO GET IT RIGHT!

HURDLE DRILL STAPLES "DAILY"

- **100M/110M High Hurdle Drills**
- **Trail Leg:**
  - **Fence Drills**
  - **Trail Leg Slide Drill**
  - **Step Overs**
  - **5-Step Rhythm Drills**
- **Lead Leg:**
  - **Step Overs**
  - **Hurdle Lead Leg Catch Drill (Drive into wall or hurdle against fence)**
  - **5-Step Rhythm Drills**

***Correct arm movement and torso posture are critical during daily drills**

-THE START
-ACCELERATION
-MAINTAINING VELOCITY

THE START

- **8-Stride Pattern to the 1st Hurdle is Ideal**
- **Drive Phase for hurdles is nearly identical to sprints for the first 5 steps out of the blocks. However, hurdlers must be standing tall on steps 6-7-8 in order to begin preparation for clearance of the first barrier.**
  - **Takeoff/Touch Down Distances:**

    Girls: 1.80m-2.00m takeoff; .80m to 1.00m touchdown

    Boys: 2.00m-2.20m takeoff; 1.50m-1.60m touchdown.
  - **Try to Reduce Negative Forces at Takeoff**: Takeoff to the first hurdle can often define the rest of the race for a hurdler. Taking off too-close or too far from the first barrier creates a chain reaction of adjustments for the next 2-4 hurdles. "Cheating" the first hurdle up closer to the blocks is a good way to establish a quick, stable takeoff. Practicing this drill in controlled conditions in practice can be instrumental in establishing proper stride pattern to the first hurdle.
  - **Competitive Starts:** Add a competitive element to starts once a comfortable step pattern to the 1st hurdle is established. Competition often changes the dynamics of start mechanics and can be problematic if not prepared for.

ACCELERATION

- **Acceleration continues past the first hurdle and extends to hurdles 4 and 5. Hurdlers take a bit longer to get to full speed because the barriers interrupt acceleration.**
- **Understanding that takeoff and touchdown points vary depending on the speed at which the athlete is approaching the barriers is critical.**
- **Repetition out of blocks, under controlled conditions, is essential for the short hurdle races. RACE TIME IS NOT THE TIME TO LEARN!**
- **Competition is important in practice more so in the short hurdles than any other track event. Since rhythm and cadence is such a necessary part of successful hurdling, athletes must get used to doing this in competitive conditions.**

MAINTAINING VELOCITY

- **HURDLE RACES ARE WON FROM HURDLES 6-10!**
- **Rhythm is a hurdler's greatest asset:** Maintaining a consistent, familiar step pattern is crucial to maintain velocity after the acceleration phase has ended.
- **Successful Hurdlers DO NOT RACE the final 4 barriers:** Short hurdles are not a test of aerobic ability or mental toughness. Hurdlers who start competing against the runner in the next lane during short hurdle race is doomed to fail. Rhythm is fluid, consistent, controlled. The athletes that can resist that temptation to "hit another gear" and instead, maintain sound hurdle mechanics and a consistent rhythmic stride pattern, is the athlete that wins the race.
- **Training focused on sprint endurance is critical when preparing high hurdles.**

GET RHYTHM

HOW TO INCREASE DISTANCE /SECOND FOR THE HIGH HURDLES, WHILE MAINTAINING NATURAL RHYTHM.

DEVELOPING RHYTHM

INDIVIDUALIZED RYHTHM GOALS:

Hurdler PR: 15.00

Time to First Hurdle: 2.80 Seconds

Run-In Off the Last Hurdle: 1.25 Seconds

Calculation 1 (PR Minus Time to First Hurdle): 15.00 - 2.80 = 12.20

Calculation 2: (PR – Time to First Hurdle and Time for Run-In: 12.20 – 1.25 = 10.95

Calculation 3: 9 Hurdle Units (The number of runs between hurdles) x Distance Between Hurdles: 9 Hurdle Units x 8.5m(Girls Distance) = 76.5 Meters

Calculation 4: 76.5/10.95 = 6.99m/Sec (8.5m/6.99mSec = 1.22 RU)

GOAL: To run 6.99m between hurdles in 1.00 seconds

ONCE THIS GOAL IS ACHIEVED ADD MORE HURDLE SPACING TO DISTANCE CORRESPONDING TO 1.19 FOR "RU."

8.5m/1.19 Seconds for Goal RU = 7.14m/Second

Set Hurdles 7.14m and work to run 1.00 seconds between hurdles. When achieved this would correspond to a time of : 9 x 1.19 = 10.71

Final Calculation: 10.71 + 2.80(time to first hurdle) + 1.25 (time from last hurdle to finish) = 14.76

***ONE MUST DECREASE THE DISTANCE BETWEEN HURDLES TO SIMULATE RACE RHYTHM WHILE INCEASING THE DISTANCE COVERED ON THAT SAME CADENCE.**

SUCCESSFUL TRAINING PHILOSOPHY

100/110M HIGH HURDLES

DRILLS DRILLS DRILLS

- *The most successful way to make better hurdlers is to give them every opportunity to hurdle that you can. Hurdlers need thousands of reps of various types to get them proficient at negotiating the barriers.*
- **Non-Impact Drills Should Be Done EVERYDAY:** Basic non-impact drills should be done prior to any other workouts, whether those workouts are over hurdles or non-hurdling workouts. Maintaining event specific flexibility and strength is especially important for hurdlers. (Fence Trail Drill, Catches, Trail Leg Slide (Using Hurdle Crossbar), Step-Overs, Hurdle Mobility)
- **Beginners:** Beginning hurdlers should focus on intense repetition of proper hurdle technique. Proper foot and knee positon for trail legs(Fence Drill, Walk Overs, Trail Leg Slide). *It is more important to develop proper technique under controlled conditions, rather than just throwing the athlete into the event. BAD HABITS IN TECHNIQUE IS THE GREATEST HINDRANCE TO IMPROVING IN THE HIGH HURDLE EVENTS!*
- **Advanced:** Even advanced hurdlers need the repetition of the basic hurdle drills. Repetition on the basics helps keep bad habits at a minimum if they are reinforced every day. A hurdler can create a destructive habit in one bad day of intense hurdling, basic drills defend against those bad habits becoming permanent.

WHEN IN DOUBT: "CHEAT"

- **As hurdlers advance in technique and fitness, improving becomes exponentially more difficult to achieve. Race day is not the day to try to improve technique and speed. It is imperative that coaches replicate the likely issues that WILL HAPPEN to an improving hurdle under controlled conditions in practice.**
- **Cheating in the HH's:** Cheating in this particular case, refers to the shortening of the distance or reducing the height of the hurdles for workouts.
- **Reducing Spacing:** You decrease the distance between hurdles in order to allow the athlete to clear the barrier with the correct form and effort. These can be drastic reductions in spacing for developing rhythm(See Calculation), or 12" reductions to replicate race conditions. This technique also reinforces keeping a bent knee for the lead leg, full rotation of trail leg and active plant on take-off. When athletes struggle to negotiate the true distance spacing for racing, they often develop destructive habits in the process. Mitigate these issues, by changing the physical demands for the athlete under controlled conditions.
- **Reducing Height:** Often, the greatest challenge to a high hurdlers improvement is take-off distance and/or touchdown. Reducing the height of the hurdles can acclimate the proper take-off and touchdown distances for beginners and elite hurdlers. With beginners, gaining the confidence to take off almost two meters from a hurdle is much easier to accommodate when the hurdle is reduced in height.

SPEED DEVELOPMENT

- **The greatest assets to hurdlers are speed and power. Explosive response and speed between hurdles are building blocks to successful hurdling. Never sacrifice speed development in favor of technique; both can be done simultaneously.**
- **Early Season(Deposit the Money Into the Bank):** Experienced hurdlers should spend less time hurdling and more time developing speed endurance in the early season. Try to limit intense high hurdle workouts in favor of developing hurdle specific speed endurance. One to two days of high hurdle work per week is plenty before the competitive season starts. As meets begin, be sure to account for the physical demands of competition when planning workouts.
- **Mid-Season(Speed Endurance Over the Barriers):** Full speed hurdle sessions with PLENTY OF REST in following days. Full speed high hurdle work is significantly taxing to your hurdlers' bodies. Make sure you follow intense hurdling days with recovery workouts, preferably on soft surfaces.
- **Late Season(Fine Tune):** Almost exclusively dedicate work to race specific scenarios; I.E. Block starts over first 3-5 hurdles, short sprints. Work hard, rest hard!

Q & A
OPEN SESSION