Building High Hurdlers From the Ground Up

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Coaches: YOU must become a student of the hurdles event and encourage your athletes to become students of the hurdles as well!
What is hurdling?

Hurdling is a rhythmic sprint over barriers

Our focus, first, last and always must be establishing and maintaining SPEED between and over the hurdles!

Hurdle Specifics - “The Rules”

<table>
<thead>
<tr>
<th>BOYS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>height:</td>
<td>39 inches</td>
</tr>
<tr>
<td>blocks to 1st hurdle:</td>
<td>13.72 m</td>
</tr>
<tr>
<td>between hurdles:</td>
<td>9.14 m</td>
</tr>
<tr>
<td>hurdle 10 to finish:</td>
<td>14.02 m</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GIRLS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>height:</td>
<td>33 inches</td>
</tr>
<tr>
<td>blocks to 1st hurdle:</td>
<td>13.0 m</td>
</tr>
<tr>
<td>between hurdles:</td>
<td>8.5 m</td>
</tr>
<tr>
<td>hurdle 10 to finish:</td>
<td>10.5 m</td>
</tr>
</tbody>
</table>

- Intentionally knocking down a hurdle results in disqualification
- Trailing the leg or foot alongside the hurdle results in disqualification
Athlete Comparison

<table>
<thead>
<tr>
<th></th>
<th>16.9 High School Boy</th>
<th>12.9 Elite Man</th>
<th>16.9 High School Girl</th>
<th>12.9 Elite Woman</th>
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</thead>
<tbody>
<tr>
<td>110m Distance</td>
<td>110m Distance</td>
<td>100m Distance</td>
<td>100m Distance</td>
<td></td>
</tr>
<tr>
<td>39” Hurdle Height</td>
<td>42” Hurdle Height</td>
<td>33” Hurdle Height</td>
<td>33” Hurdle Height</td>
<td></td>
</tr>
<tr>
<td>10 Hurdles</td>
<td>10 Hurdles</td>
<td>10 Hurdles</td>
<td>10 Hurdles</td>
<td></td>
</tr>
<tr>
<td>8 Strides to Hurdle 1</td>
<td>8 Strides to Hurdle 1</td>
<td>8 Strides to Hurdle 1</td>
<td>8 Strides to Hurdle 1</td>
<td></td>
</tr>
<tr>
<td>3 Strides Between</td>
<td>3 Strides Between</td>
<td>3 Strides Between</td>
<td>3 Strides Between</td>
<td></td>
</tr>
<tr>
<td>6 Strides to Finish</td>
<td>6 Strides to Finish</td>
<td>5 Strides to Finish</td>
<td>5 Strides to Finish</td>
<td></td>
</tr>
<tr>
<td>51 Total Strides</td>
<td>51 Total Strides</td>
<td>50 Total Strides</td>
<td>50 Total Strides</td>
<td></td>
</tr>
</tbody>
</table>

Why Stride Frequency is the Limiting Factor!!!!

IS THAT ALL THERE IS TO KNOW?
Well, since you asked...

Clearance
Block
Pattern
Frequency
Starting
Strength
Getaway
Confidence
Step
Hurdle
Trail
Arm
Rhythm
Speed
Velocity
Force
Power
Lead
Stride
Ground
Leg
Endurance
Acceleration

Do I need to know all of that?

Where do I start?

What should I focus on?
LET’S FIGURE OUT WHAT WE CAN ACTUALLY COACH

Understand the Limiting Factors in Hurdling

Unalterable - I’m GOOD but not THIS GOOD!!!!
• Genetic Potentials
• Body Type
• Physical Laws (Newton’s Laws, Gravity - Einstein’s Relativity)
• Rules (Distance, Interval, Hurdle Height)

Maybe Alterable - OK, Maybe a Little???
• Weather (Wind)
• Equipment (Spikes, etc.)
• Running Surface (Ground Contact Factors, Friction)

Eureka!!!! Highly Alterable Factors
Training of Biomotor Abilities

I CAN DO THIS!

Highly Alterable Trainable Factors
Biomotor Abilities

Adapted from Ralph Mann, Ph.D. and Brent McFarlane
Wow, I'm starting to feel better about this.

Can you break it down even more?

Yes! Let's focus on what's most important.

So, what's most important?

The holy grail of sprint hurdle training

This is where sprint hurdlers live
**The Holy Grail of Sprint Hurdle Training**

This is where sprint hurdlers live

- Speed - Acceleration
- Speed - Max Velocity – Hurdle Rhythm
- Speed Endurance – Hurdle Rhythm Endurance
- Force Development
- Power – ability to apply force!
- Technical Model – Skills – Specific Hurdle Drills

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**Pairing Complementary and Compatible Biomotor Abilities**

<table>
<thead>
<tr>
<th>Neuro-Muscular (Neural) Theme</th>
<th>Fitness (Metabolic) Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coordination</td>
<td>Body Circuits</td>
</tr>
<tr>
<td>Acceleration</td>
<td>Med Ball Circuits</td>
</tr>
<tr>
<td>Max Velocity – Hurdle Rhythm</td>
<td>Abdominal Circuits</td>
</tr>
<tr>
<td>Plyometrics</td>
<td>General Strength Exercises</td>
</tr>
<tr>
<td>Olympic Lifts</td>
<td>Extensive Tempo</td>
</tr>
<tr>
<td>Specific Strength</td>
<td>Fartlek</td>
</tr>
<tr>
<td>Speed Endurance</td>
<td>Aerobic Training</td>
</tr>
<tr>
<td>Hurdle Rhythm Maintenance</td>
<td></td>
</tr>
<tr>
<td>Intensive Tempo</td>
<td></td>
</tr>
</tbody>
</table>

**IMPORTANT:** You must allow 48-72 hours between workouts of high neuromuscular demand
Complementary and Compatible
Pairing the Trainable Biomotor Abilities

High Intensity (Neural) Days
- Coordination / skill:
  - Sprint drills
  - Hurdle mobility
  - Technical training
- Flexibility: dynamic flexibility
- Strength:
  - Maximal strength
  - Olympic lifts
- Speed:
  - Acceleration development
  - Maximum velocity
  - Speed endurance
- Endurance:
  - Addressed indirectly or through speed endurance

Low Intensity (Metabolic) Days
- Coordination / skill:
  - Sprint drills
  - Hurdle mobility
  - Technical training
- Flexibility: static flexibility
- Strength:
  - Maximal strength
  - Olympic lifts
- Speed:
  - Acceleration development
  - Maximum velocity
  - Speed endurance
- Endurance:
  - Addressed indirectly or through speed endurance

Thanks to Mike Young for these Suggestions!

Complementary and Compatible
Trainable Biomotor Abilities

- Training elements for a given session should be paired to be both 
  complementary and compatible.

- Complementary = when used together create a stimulus greater 
  than the sum of the parts.

- Compatible = elements are ones which are similar in nature.

- Each biomotor capacity should be addressed in every single 
  training session. The amount of exposure to each ability depends 
  on the athlete and where they are at in their development and 
  training:

  - Each element of training should generally follow the same theme.
### Complementary and Compatible Training Example

<table>
<thead>
<tr>
<th>Day</th>
<th>General Prep</th>
<th>Specific Prep</th>
<th>Pre-Competition</th>
<th>Competition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon</td>
<td>Neural</td>
<td>Neural</td>
<td>Metabolic</td>
<td>Metabolic</td>
</tr>
<tr>
<td>Tue</td>
<td>Metabolic</td>
<td>Metabolic</td>
<td>Metabolic</td>
<td>Metabolic</td>
</tr>
<tr>
<td>Wed</td>
<td>Neural</td>
<td>Neural</td>
<td>Neural</td>
<td>Metabolic</td>
</tr>
<tr>
<td>Thu</td>
<td>Metabolic</td>
<td>Metabolic</td>
<td>Metabolic</td>
<td>Neural</td>
</tr>
<tr>
<td>Fri</td>
<td>Neural or Met</td>
<td>Met or Neural</td>
<td>Neural or Met</td>
<td>Metabolic</td>
</tr>
<tr>
<td>Sat</td>
<td>Met or Neural</td>
<td>Met or Neural</td>
<td>Met or Neural</td>
<td>Neural</td>
</tr>
<tr>
<td>Sun</td>
<td>Rest</td>
<td>Rest</td>
<td>Rest</td>
<td>Rest</td>
</tr>
</tbody>
</table>

### Training Emphasis Example

<table>
<thead>
<tr>
<th>Pre-Season</th>
<th>Early Season</th>
<th>Mid Season</th>
<th>Late Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Endurance</td>
<td>Sprinting Skills</td>
<td>Sprint Stamina</td>
<td>Technique</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Low volume</td>
</tr>
<tr>
<td>Increasing Strength</td>
<td>Hurdling Skills</td>
<td>Hurdle Stamina</td>
<td>Recovery</td>
</tr>
<tr>
<td>Enhancing Rhythmic skills</td>
<td>Drills a full speed</td>
<td>Racing and race pace</td>
<td></td>
</tr>
</tbody>
</table>
1/13/2014

OK, GREAT. BUT, WHAT HAPPENED TO THE OTHER THREE?
Nothing happened to them. They are still very important and we need to address them daily in our training.

They are just not the main focus.

Sprint hurdlers don’t live here all the time, but they visit frequently.

Highly Alterable Trainable Factors
Trainable Biomotor Abilities

Endurance = Ability to maintain a desired workload
- Aerobic Conditioning (Assists Recovery)
  - Interference effect? (Where do they live?)
- Work Capacity
  
  Energy System Focus
  - Speed Endurance (Hurdlers DO Live Here!)
  - Tempo Running
    - Intensive
    - Extensive
  - Continuous (Circuits)
    - General strength circuits
    - Med-ball circuits
    - Jumping circuits
    - Weight lifting circuits
Highly Alterable Trainable Factors
Trainable Biomotor Abilities

The Coach should help their Athletes:

• Establish and Monitor Goals
• Practice Mental Rehearsal
• Learn Relaxation Techniques
• Develop a Positive Attitude
• Be Driven in Practice
• Strive for Excellence
• Develop Confidence
• Accept the Risk of Failure
• Be a Team Player – Contribute to Something Larger than Themselves
• Focus on the Present
• Be a Good Person

Mobility: The ability to move a joint actively through a range of motion.

Flexibility: Flexibility is the range of motion in a joint or group of joints, or, the ability to move joints effectively.

Dynamic Mobility Exercises
– Continuous Dynamic Warm-Up Routine Prior to Practice
– Hurdle Mobility Drills/Circuits
– Fence Drills
– Joint Flexibility Drills
– Scissors, Side Scissors, Cycling
– Skipping/Mach Drills
– Hip Mobility Circuits
– Range of motion exercises
– Static Flexibility (Stretch) at end of workout

Athletes who ignore this component of their training will produce less power, have shorter stride lengths and lesser stride frequency that an opponent of equal skill.

Often the most overlooked component of speed and hurdle training!
Limiting Factors “Trainable Aspects”

Short Hurdles

“The maximal horizontal velocity that a hurdler can produce is dependent upon the amount of effective vertical force that the athlete can apply during ground contact. If this force can be increased through either strength gain or efficiency improvement, the overall performance will improve.”

“It is evident that the Specific Performance Descriptors point to the fact that success in the short hurdles is determined by the ability of the athlete to generate great amounts of explosive strength at the proper time. Generally the proper mechanical application of this strength results in an elite performance that is characterized by a brief hurdle clearance, small hurdle stride length and superior body position coming off the hurdle.”

Ralph Mann, Ph.D.
Our Main Challenge as High Hurdle Coaches?

Apply consistent foundational training to our athletes that will specifically address the important biomotor abilities necessary for High Hurdle Success.

Important Note: This does not mean that we will ignore the other four biomotor abilities in our training!

Highly Alterable Trainable Factors
Trainable Biomotor Abilities

Speed: The ability to move the body or parts of the body through a given range of motion in the least time.

Speed is a motor quality that demands a high degree of coordination; therefore it must be developed and cultivated early in an athlete’s development and emphasized in the training program.

- Acceleration (0 – 30m)
- Max Velocity (30 – 60m)
- 90-100% Effort
- Neural/Technical/Power Emphasis

Am I Training the Athlete Where They Live?
They HAVE to Live HERE!!!!

In order to develop faster acceleration and top speeds, one must practice running at top speed!
**Acceleration Development**
- Distances: 10-40m
- Low volumes: <400m
- Full recovery: 1’ for each 10m run
- Maximal effort: 95-100%

**Sample Speed (Acceleration) Workouts**

**Without Hurdles**
- 4 x (15m, 25m, 35m) from blocks w/ 1’ per 10m run recovery
- 2 x 30m tire pull w/ 3’ recovery
- 16 x 20m hill sprints w/ 2’ recovery
- Other ideas: Falling Starts, Starts from Back, Med Ball Starts, Combine Starts, Other Resisted

**Push Mechanics Development using Prowler Type Sleds**

**Towing “Powerpull” Sled (or other device) from Start Position**

**With Hurdles**
- 8/10 Step Starts

<table>
<thead>
<tr>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 steps</td>
<td>12.5 m</td>
</tr>
<tr>
<td>10 steps</td>
<td>16 m</td>
</tr>
<tr>
<td>Ex). Girls blocks to H1 30”</td>
<td>12m, H2 30’ 8.0m</td>
</tr>
</tbody>
</table>

**Hurdle Acceleration Pattern Development**

**Maximum Velocity Speed Development**
- Distances: varies depending on means
- Low volumes: <400m
- Full recovery: 1’ for each 10m run
- Maximal effort

**Sample Speed (Maximum Velocity) Workouts**

**Without Hurdles**
- 8 x (10m flys w/ 30m sub-max run-in) w/ 3-4’ rest
- 4 x 75m Sprint-float-sprint (30m, 20m, 25m)
- 4 x (55m, 45m) w/ 5’ / 7’ rest
- 12 x Stadium runs with vertical push emphasis
- Broken Hurdles (ex. Sprints over H1,H3,H5,H7)
  - Spacing: Women- 11-12.5 meters, Men- 12-13.5 meters

**With Hurdles**

**Flying Runs – Ins and Outs – Assisted Runs**

**Rhythmic Unit Development Work**
Sample Speed (Max Velocity) Workouts

**Without Hurdles**

**Flying 30’s**
3 Sets X 3 Reps @ 95-100% 3/6’ Rest

**Ins and Outs**
3 Sets X 3 Reps @ 95-100% 3/6’ Rest
Variations: (A/10/20/10/D), (A/15/15/15/D), (A/20/20/20/D), (A/20/10/20/D)

**Assisted Sprints**
Late Season: 30-50m assisted sprints 4 Sets X 3 Reps @ 95-100% 3/6”

**With Hurdles**
**Rhythmic Unit Training**

**Sample Speed (Max Velocity) Workouts**

**With Hurdles**

**5 Step Hurdles**

10 strides to 1st hurdle and 5 between hurdles:

- **College Men:** 16.5m to 1st hurdle, 13m between
- **HS Boys:** 16m to 1st hurdle, 12.5m between
- **College Women:** 16m to 1st hurdle, 11.5m between
- **HS Girls:** 15.5m to 1st hurdle, 11m between

**NOTE:** reduce hurdle height by 3” (combined w/above)
Speed Endurance

- Speed Endurance: defined as the ability to maintain absolute speed.

- Once the body reaches its maximal velocity, deceleration inevitably occurs within a few seconds.

- Speed endurance refers to the ability to resist this deceleration. This deceleration is seldom associated with energy system fitness, but with loss of coordination, probably due to nervous system fatigue.

- Therefore, speed endurance should be considered as a specific type of coordination training.

- Speed endurance training activities involve attempting to maintain maximal velocities for extended periods of time

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Speed Endurance Development

- Anaerobic Glycolytic
- 60-150 meters
- 90%+
- 7 to 20 seconds
- 2-3 Sets of 2-5 Reps (2’-5’)(8’-10’) Recovery

Sample Speed Endurance Workouts

With Hurdles

- Runs over 12 hurdles from blocks with proper spacing (discount height)
- Runs over 13 hurdles using 7.5 meters between each hurdle (discount ht.)
- 100 meters hurdles with hurdles 5, 6, 7 removed
- Down and Backs using the spacing and hurdle heights below.
Sample Speed Endurance Workout
With Hurdles

Up and Backs  (Mangiacotti Model)
12 Hurdles (6 Up and 6 Back) at spacing and heights below.
Try to retain form and speed at 90%+.  Enough rest to maintain form.

<table>
<thead>
<tr>
<th></th>
<th>To Hurdle 1</th>
<th>Hurdle 2</th>
<th>Hurdle 3</th>
<th>Hurdle 4</th>
<th>Hurdle 5</th>
<th>Hurdle 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Girls Up</td>
<td>33” Height 11.5-12.5m</td>
<td>33” Height 8.3m</td>
<td>33” Height 8.3m</td>
<td>33” Height 8.3m</td>
<td>33” Height 8.3m</td>
<td>30” Height 8.3m</td>
</tr>
<tr>
<td>Girls Back</td>
<td>30” Height 11.5m</td>
<td>30” Height 8.0m</td>
<td>27” Height 8.0m</td>
<td>27” Height 7.8m</td>
<td>24” Height 7.8m</td>
<td>24” Height 7.8m</td>
</tr>
<tr>
<td>Boys Up</td>
<td>39” Height 12.5-13.5m</td>
<td>39” Height 8.5m</td>
<td>39” Height 8.5m</td>
<td>39” Height 8.5m</td>
<td>39” Height 8.5m</td>
<td>39” Height 8.5m</td>
</tr>
<tr>
<td>Boys Back</td>
<td>39” Height 12.5m</td>
<td>39” Height 8.3m</td>
<td>39” Height 8.3m</td>
<td>36” Height 8.0m</td>
<td>36” Height 8.0m</td>
<td>36” Height 8.0m</td>
</tr>
</tbody>
</table>

Highly Alterable Trainable Factors
Trainable Biomotor Abilities

POWER: The ability to exert a maximal force in as short a time as possible, as in accelerating, jumping and throwing implements.

A powerful athlete can apply his/her strength quicker, generating more acceleration.

To increase running speed an athlete must apply more force in a shorter period of time!

- Increases stride length and frequency
- Minimize horizontal braking forces
- Increase vertical propulsive forces
- Critical for Maximum Velocity – Hurdle Rhythm!

Forces applied to the ground are the most important determinant of running speed. POWER DEVELOPMENT should be the MOST EMPHASIZED area of training!
Highly Alterable Trainable Factors
Trainable Biomotor Abilities

Power is Fast Force!
P = Fast Force!
• Force = Mass x Acceleration (F = M*A)
• Work = Force x Distance (W = M*A x D) or (W = F*D)
• Velocity = Distance / Time (V = D/T)
• Power = Work / Time (P = F*D/Time – i.e. F x V!)

Power Development
– Olympic Lifts (Cleans, Snatch, Jerks), Quick Triple Extension, ROM
– Quick Pushes (Bench, Presses)
  Pushes are not generally considered power exercises, but by emphasizing speed of movement you can develop good upper body power with these exercises
– 4-6 Reps with speed emphasis, 80-90% intensity
– Plyometric Activities
– Multi-throws with med balls, shot puts

Bounding is GREAT for building explosive strength necessary for optimal stride length in hurdling (helps young athletes to 3 step!).
Bounding also promotes development of a FAST LEAD KNEE!

Highly Alterable Trainable Factors
Trainable Biomotor Abilities

Strength: The ability to apply force

• General Strength (Body weight exercises, Core work, Stability Work, Calisthetics, Hill Running, Steps)
• Maximum Strength (Static Lifts, High Weight, Low Rep, Large Muscle Groups)
• Power (Olympic Lifts, Jerk Movements, Lower Weight Faster Movement, Triple Extension, Med Ball, Weighted Jumps, Pushing Drills)
• Reactive (Elastic) Strength (Multi-Jumps, Plyometrics, Joint Stiffness and Stabilization)
• Strength Endurance (Hills, Pushing Drills, Circuits: Strength, Jump, Throw)

Work a Continuum Beginning with General Strength – Be very Cautious
Coaches and Really get to know the Strength Abilities of your Athletes!

That Said, this area is a GOLD MINE for Improvement and CRITICAL!!!!
Highly Alterable Trainable Factors
Trainable Biomotor Abilities

<table>
<thead>
<tr>
<th>Variable</th>
<th>Training goal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Max Strength</td>
</tr>
<tr>
<td>Load (% of 1RM)</td>
<td>80-90</td>
</tr>
<tr>
<td>Reps per set</td>
<td>1-5</td>
</tr>
<tr>
<td>Sets per exercise</td>
<td>4-7</td>
</tr>
<tr>
<td>Rest between sets (mins)</td>
<td>2-6</td>
</tr>
<tr>
<td>Duration (seconds per set)</td>
<td>5-10</td>
</tr>
<tr>
<td>Speed per rep (% of max)</td>
<td>60-100</td>
</tr>
<tr>
<td>Training sessions per week</td>
<td>3-6</td>
</tr>
</tbody>
</table>

Table reproduced from Siff, 2003

Combine Knowledge of Biomotor Abilities, Energy Systems and Compatible and Comparable Training to make a GREAT PLAN!
Teaching Progression and Philosophy

• **Understand the Fear** that your new hurdlers are experiencing and work to remove that fear – Be understanding and set them up for success

• **Simple to difficult**
  - Make sure your athletes are prepared to train

• **Emphasize Strength, Power, Speed and Coordination** in Training
  - Take the time to get them ready before adding intensity
  - Early on **Intensity** low, **Volume** can be High (if ready), **Technique** is Constant

• **Introduce drills by walking** through
  - Help athletes “Feel” the correct postures needed

• **Always Finish** Speed Related Drills with a “Finish Cone”

• **Drill at lower speeds until technique is mastered**

• **Once mastered...increase drill speed** to mirror actual speeds

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Teaching Progression and Philosophy

• The **Dynamic Warm-up** is part of the “Workout.” **Demand perfect Form “Posture”** and attention

• **Investigate ALL athletes** that come into your program for hurdle ability

• **Communicate with your athletes** what you are trying to do in drills/training

• **Start with Mach and bounding type drills** over no barrier

• **Add a very low barrier** and proceed to teach hurdle drills

• **Use a scissor hurdle** to raise the hurdle as the athlete masters drills

• **Work to develop Speed first before introducing Speed Endurance**

• **Preserve Hurdle Rhythm** at all costs

• **Do not allow a hurdler to compete in a meet on hurdles until ready**

• **Utilize a Biomotor Approach** to training

• **Utilize an Energy System Approach** to Training. Know what you are training.

• **Design workout plans to be Complementary and Compatible**
Teaching Progression and Philosophy

- Adequate Dynamic Warm-Up and Cooldown
- Set a Routine for your Hurdle practice Warm-Up that translates to meet Warm-up timing.
- Introduce Half-Hurdling on regulation hurdles prior to going over the top
- Master hurdle Acceleration Pattern and hurdle rhythm on scissor or foam hurdles first
- When ready for real hurdles utilize “Discount Hurdling” in training
- Employ Racing Strategies in your training. (Varied Heights, Advantage Hurdling, Sprinter vs. Hurdler, Rookies vs. Vets
- Utilize Gun Starts in Practice
- Be a Touchdown Time Fanatic in Meets and Practice.
- Always help the athlete formulate a Pre-Meet Race Plan

Identification of Hurdle Prospects

- Testing (Speed, Jumps, Throws, Endurance, Strength)
- “Freshman Circus” – Try them all!
- Video Analysis
- Other Coaches/Other Sports
- Phy-Ed Classes
- Sprinters (Don’t just take what’s left!)
- Jumpers/Vaulters
- Coachable Athlete
- Hard Worker
- Open to Trying Hurdles
- Good Sprinting Speed
- Explosive Strength
- Flexible
- Power Indications (Dunk?)
- Adequate Height
- Coordinated
- Tunnel Vision
- Ability to Focus
- Aggressive out of the Blocks
- High Self Image
- Confident
- Can Handle Adversity
Identification of Hurdle Prospects – Freshman Olympics

Identification of Hurdle Prospects – Freshman Olympics
Highly Alterable Trainable Factors
Trainable Biomotor Abilities

Coordination: The ability to move parts of the body in harmonious function with precision and accuracy toward a specific objective.

Posture - Watch Form AT ALL TIMES (even Dynamic Warm-Up to Cool down)
Symmetry, Range of Motion, Elasticity and Reflexivity

Technique/Skill
- Sprint drills
- Hurdles
- Acceleration Patterns/Ladders
- Block Start Progressions
- Agility
- Balance
- Hurdle Mobility
- Games
- Block starts
- Technical running
- Video analysis and correction

“It takes 21-28 days for adaptation to take affect. That means that you need 3-4 weeks of doing a specific technique/drill/exercise before your body learns the neuromuscular pathways to do it again and again without a cognitive thought effort.” - Boo Schexnayder

Phases of the Sprint Hurdle Race

1. Start and Acceleration through H3
2. Maximum Velocity (Hurdle Rhythm) H4-H7
3. Managed Deceleration (Hurdle Rhythm Endurance) H8-finish

Technical Factors
- Starting Mechanics
- Block Clearance
- Acceleration to H1
- Take off Mechanics
- Flight phase (Clearance)
- Landing phase (Touchdown)
- Getaway Step and Re-Acceleration
- Inter hurdle run
- Run to the Finish

Study Posture and Technique using Observation, Video and Photos
Technique Study – Key “Postures”

Coaches must train their athletes to naturally assume these postures through constant re-enforcement of correct posture in drill work and competition!

Tony Veney

Imagine putting together a puzzle without any idea what the finished product is supposed to look like.

Technique Study

Start Mechanics – Starting Block Setting

Lead leg Should be in the Back Block

General Guideline

Two steps from the block-side starting line to the front block and Three steps to the back block.

Specific Guideline

Leg length from Trochanter X 0.55 = distance to the front block from the start line.

Leg length from Trochanter X 0.43 = distance from the front block to the back block.
Technique Study – Start “Set Posture”

A Strong Balanced Base Promotes an Optimal Acceleration Pattern!

Technique Study – Start “Bang Posture”

- Full Extension
- Straight line from head to heel promotes maximum power.
- Trajectory angle is approx. 35-45 degrees.
- Both horizontal and vertical force vectors are used to overcome inertia
Technique Study - Start

- 1st four steps are driving similar to the start of the flat sprint race.
- Last 4 steps prepare for the take-off by getting quick (*not shorter rather quicker*)
- **You run on your feet but with your hips (Project the hips!!!) Veney**
- The “cut-step” (8th step) or take-off before the hurdle is 4-6 inches shorter than the 7th step.
- This forces the hurdler to **get the foot under the hips and speeds up the hurdle attack, limits breaking forces and preserves Horizontal Velocity.**
- The *shin bone* of the take-off leg is perpendicular (*vertical*) to the track at the cut step.
- Foot position at take-off should be under the hips and the knees of both legs should be side by side.
- Any loss of speed going into the hurdle makes each successive hurdle slower and the hurdler abandons their rhythm and they go to a technique that makes them go even slower.
- Use a Patterened Approach to Acceleration. Mark the Ground with Tape or Cones and practice the athlete projecting through the pattern until mastered.
Technique Study - Start

• 1st four steps are driving similar to the start of the flat sprint race.
• Last 4 steps prepare for the take-off by getting quick (not shorter rather quicker)
• You run on your feet but with your hips (Project the hips!!!) Veney
• The “cut-step” (8th step) or take-off before the hurdle is 4-6 inches shorter than the 7th step.
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• The shin bone of the take-off leg is perpendicular (vertical) to the track at the cut step.
• Foot position at take-off should be under the hips and the knees of both legs should be side by side.
• Any loss of speed going into the hurdle makes each successive hurdle slower and the hurdler abandons their rhythm and they go to a technique that makes them go even slower.
• Use a Patterned Approach to Acceleration. Mark the Ground with Tape or Cones and practice the athlete projecting through the pattern until mastered.

Acceleration Pattern – Men’s 110m HH
Acceleration Pattern – Women’s 100m HH

Kellie Wells (Thanks to Andy Farrara – USATF)

High Hurdle Acceleration Pattern - Boys

Distances from starting line
1. 60 cm
2. 1.80 m +1.20 m
3. 3.15 m +1.35 m +.15
4. 4.65 m +1.50 m +.15
5. 6.30 m +1.65 m +.15
6. 8.05 m +1.75 m +.10
7. 9.90 m +1.85 m +.10
8. 11.65m +1.80 m -.05 take off
H1. 13.72m +2.07 m
### High Hurdle Acceleration Pattern - Girls

Distances from starting line

1. 50 cm
2. 1.60 m +1.10 m
3. 2.90 m +1.30 m +.20
4. 4.35 m +1.45 m +.15
5. 5.90 m +1.55 m +.10
6. 7.55 m +1.65 m +.10
7. 9.30 m +1.75 m +.10
8. 11.00m +1.70 m -.05 take off
9. 13.00m +2.00 m -

### Developing Start Push Mechanics

Cusano Hurdle Push Drill

Courtesy of: Coach Dave Cusano – Wheaton College  
http://completetrackandfield.com/
Technique Study – Developing Start Push Mechanics

Resistance Towing – “Powerpull”

Technique Study – Developing Start Push Mechanics

Resistance – Weighted Pushing
Technique Study - Takeoff Mechanics

- Lead with the Knee!
- Lead Arm Rises Actively!
- Shoulders/Hips Square to the Hurdle.
- Lead with the Elbow (Push the Elbow)!
- Hips High and Projecting Forward
- Lead Knee Lifts Quickly and Actively Above the Hips (Essential to maintain Horizontal velocity)
- Keep the Lead Ankle Back as Long as Possible
- Lead Knee Lifts Quickly and Actively Above the Hips (Essential to maintain Horizontal velocity)
- Keep the Lead Ankle Back as Long as Possible
- Lead Hand to Forehead Extended (Avoid Crossing the Midline)
- Compact Arms Elbows Bent! (Long Lever Slow Lever) "Boxer"
- Trail Arm Knuckles to the Ground
- Trail Hand does not Pass the Hip
- Shoulders Rounded
- Eyes focused Foreward and Under Eyebrows
- Full Extension of the Trail Foot (Elastic Stretch Essential to Timing of Hurdle Clearance and Proper Front Side Trail Leg Mechanics)

Technique Study – Take-Off Preparation

Preparation for Takeoff is CRITICAL!

- **Distance from the hurdle at takeoff is most important factor in clearance height**
- The distance affects the angle of travel. The distance affects the angle of travel (parabola)
- The angle of travel (parabola), which is set at takeoff, determines distance at touchdown.
- Distance at touchdown affects speed and timing into the next takeoff.
- Takeoff too far, you increase air time and likely hit the hurdle. Takeoff too close and you increase air time and must jump or vault to clear the hurdle killing horizontal velocity.
- Drive the lead knee linearly (no lateral deviation) towards the hurdle. Keep the Dorsiflexed Ankle of the Lead Leg Back BEHIND THE KNEE as long as possible!
- **DO NOT Lead with the Foot by swinging it up on Take-Off.** This lifts the hurdler off the track reducing ground time, increasing Air Time and reducing Horizontal Velocity.
- Lead knee must be driven above hip level providing optimal lift for hurdle clearance.
- A fast lead knee is critical to hurdling efficiently.
- Lead Foot reaches its Apex PRIOR to Crossing the Hurdle.
Technique Study - Takeoff Mechanics
Technique Study - Takeoff Mechanics

- Immediately after take-off, the foot actively “tucks in” or “folds up” behind the hip and follows the knee over the hurdle.
- The hips precede the Trail knee over the hurdle.
- The Lead Elbow/Hand and Head leads the upper body over the hurdle. This results in the lean of the upper body.
- The Lead Hand Does Not cross the midline of the body.

Technique Study – Hurdle Clearance
Technique Study – Hurdle Clearance

- The lean of the upper body makes it possible to raise the center of mass for effective hurdle clearance. Shorter hurdlers have to lean more (Allen Johnson). Hold the Lean through clearance.

- The Lead Arm Sweeps back in a wide arc, widening just enough to clear the Trail Leg the elbow is bent and the hand works to stay close to the hip.

- Trail hand is relaxed and near the hip of the Lead Leg. Its motion is linear (forward and back).

- The Trail Leg after maximizing elastic response by delaying toe off and extending fully will now start to move the knee through, up and forward.
Technique Study – Hurdle Clearance

Technique Study - Touchdown and Getaway

- The Foot of the Lead Leg lands under center of mass. DO NOT SNAP DOWN!
- Fast "getaway" stride is the result of high and effective trail leg technique.
- If off balance, look for causes
- in take-off or hurdle clearance (ie., arm action).
- High Trail Knee Projected Foreword and Upward to Facilitate Ground Force Delivery by the Trail foot on Ground Contact.
  - SHOW YOUR TRAIL FOOT TO THE GROUND AND DRIVE THE TRAIL KNEE UP AND THROUGH THE ARMPIT!
- Lead Arm swings back close to the body in line with the hip, elbow bent. Try not to allow the hand to move too much past the hip behind the body.
Technique Study - Touchdown and Getaway

Technique Study - Touchdown and Getaway
Technique Study - Touchdown and Getaway Step

Takeoff-Clearance-Getaway – Men’s 110m HH
Takeoff-Clearance-Getaway – Women’s 100m HH

Coming Off the Hurdle

- “Active lead leg”
  - As soon as the front foot crossed the hurdle it should move toward the ground (Active but NOT Snapped to the Ground)
  - A correctly executed Trail Leg Projection Up and Forward will bring the Lead Leg down in the correct position for touchdown.
  - The back arm waits at the hip and races the lead leg through the hurdle.
- “Sweep the arm back to the hip KNUCKLES TO THE GROUND and SHOULDERS ROUNDED– Bent Elbow Hand close to hip”
  - The trail leg will be tight to the body moving into the arm pit.
  - SHOW YOUR TRAIL FOOT TO THE GROUND!!!
  - Trail Knee must be PROJECTED forward and upward above the hips to provide for vertical velocity when the trail foot hits the ground (GROUND FORCE)
  - Max Velocity between hurdles is promoted with good vertical force production.
  - The arm needs to sweep back accordingly to make room for the trail leg.
  - Do not swing wide!!!
- “Push your shoulders up”
  - Don’t stand up too early.
  - Wait until the trail leg goes through the hurdle.
Finish Technique

• Five steps and dip – *like Swimming*

• You must **push through** the dip - Avoid a passive lean or head drop over the line in place of active push.

• Run finishes at practice with every drill at practice.

• Incorporate finish goal touchdown times from H10 to Finish and work it as/with Speed Endurance to replicate fatigue.

Technique Study – Putting it all Together

Technique Translates to Championship Hurdling
GMC Championship 110 HH Final – Adam Pischke 14.44 FAT

Discount Hurdle Training Philosophy
Critical to Max. Velocity Hurdling (Hurdle Rhythm)

- Run the times you want to run, not the distance you have to run

- Coaches need to reduce the height of the hurdles and/or the spacing between the hurdles in most practice situations.

- Discount hurdling allows coaches to address stride length patterns and stride frequency rhythms that replicate competition goals.

- Coaches should place the hurdles as low and close as necessary to fully incorporate the desired rhythm necessary to replicate competition goals.

- Understand the “Adrenaline Factor” of Competition Hurdling will compensate for reduced training heights, distances and touchdown times. Research by hurdle experts Tony Veney and Dennis Shaver place that factor at .04 for hand timings and .12 for automatic or video times. This translates into roughly .2 seconds (hand time) on a 300 hurdle rhythmic unit or .05 seconds (hand time) on a 110 HH rhythmic unit.

- Another way to look at this “Competition Factor” is to use it to predict athlete race potential using touch down times in practice. Example: If you are running touchdown times (alone in practice) in the 300 IH that match up with a time of 41.2, the athlete should be able to run 39.6 in competition (39.6 x .04 = 1.6; 39.6 + 1.6 = 41.2)
Why Are Strength, Power, Speed and Coordination So Important???

Because if you can’t apply adequate **FORCE** in the correct **TECHNICAL POSTURES**
you cannot run (or hurdle) fast and speed will not be maximized!!!!!

**Ground Force Application**

“Force applied at ground contact is most important determinant of running speed!”

Michael Young

**Importance of Posture**

“The First most important aspect of speed is Posture!”

Tom Tellez

**Stride Frequency vs. Stride Length**

Stride Frequency Increases as Ground Force Application Increases!

**Stride Frequency** \(\times\) **Stride Length** (Fixed Value in Hurdles)

Stride Frequency = Rhythm

**Maintenance of Rhythm is Paramount!**

Thus we must improve stride frequency through improved ground force application and posture

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**Stride Frequency Management (Rhythm)**

- **Adapt the hurdle spacing** to the stride length yielding the desired frequency first
- **Use rhythmic unit goals as a guide**
- **Maintain constant takeoff distance**
- **Adapt new frequency increases** and rhythm to the required stride lengths to progress towards a goal time by adding 10 cm in each Phase of Rhythmic Unit work.
- Gradually work toward running with greater stride lengths while maintaining desired frequency
Manage Stride Frequency- General Rules

To increase stride frequency between hurdles:
Do repetitions over hurdles with reduced spacing from a standing start:

**HS Boys:** 12.5 m to 1st hurdle, 8.3-8.5m between
*Or use Regulation Distance to the 1st H to really force frequency*

**HS Girls:** 12 m to 1st hurdle, 7.8-8.0m between
*Or use Regulation Distance to the 1st H to really force frequency*

Reduce hurdle height by 3” (combined w/above)

Stride Length Management – Takeoff and Touchdown Points

Most male high hurdlers will be in the air for 11 to 12 feet, and most female hurdlers will be in the air for 9 to 10 feet. It is the distribution of these distances before and after the hurdle that determines how fast the hurdler can run the race!
**Take-Off and Touchdown Ratios**

<table>
<thead>
<tr>
<th>Hurdler Clearances</th>
<th>Take-off Stride</th>
<th>Landing Stride</th>
<th>Per Cent Before Hurdle</th>
<th>Per Cent Beyond Hurdle</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Elite” Hurdler</td>
<td>3.50m 11’6”</td>
<td>2.22m 7’4”</td>
<td>1.28m 4’2”</td>
<td>63.5% 36.5%</td>
</tr>
<tr>
<td>“Average” Hurdler</td>
<td>4.02m 13’2”</td>
<td>2.44m 8’0”</td>
<td>1.58m 5’2”</td>
<td>60.6% 39.4%</td>
</tr>
<tr>
<td>“Poor” Hurdler</td>
<td>4.54m 14’11”</td>
<td>2.65m 8’8”</td>
<td>1.89m 6’2”</td>
<td>58.4% 41.6%</td>
</tr>
</tbody>
</table>

Effective hurdlers will:
- Have a greater percentage of flight path in front of the hurdle.
- Take-off closer to the hurdle

---

**The Proper Take-off Distance is Really Important!**

*If the hurdler takes off too close to the hurdle, the result will be excessive height over the hurdle and loss of horizontal momentum!*
# Take Off & Landing Distances

<table>
<thead>
<tr>
<th>Men's Height</th>
<th>Take Off</th>
<th>Landing</th>
<th>Women's Height</th>
<th>Take Off</th>
<th>Landing</th>
</tr>
</thead>
<tbody>
<tr>
<td>5'3&quot;</td>
<td>7'5&quot;-7'9&quot;</td>
<td>2'9&quot;-3'3&quot;</td>
<td>5'3&quot;</td>
<td>6'5&quot;-6'9&quot;</td>
<td>2'9&quot;-3'3&quot;</td>
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<td>5'5&quot;</td>
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</tr>
<tr>
<td>5'7&quot;</td>
<td>7'3&quot;-7'7&quot;</td>
<td>3'3&quot;-3'9&quot;</td>
<td>5'7&quot;</td>
<td>6'3&quot;-6'7&quot;</td>
<td>3'3&quot;-3'9&quot;</td>
</tr>
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<td>5'9&quot;</td>
<td>7'2&quot;-7'6&quot;</td>
<td>3'6&quot;-4'3&quot;</td>
<td>5'9&quot;</td>
<td>6'2&quot;-6'6&quot;</td>
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</tr>
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<td>7'1&quot;-7'5&quot;</td>
<td>3'9&quot;-4'9&quot;</td>
<td>5'11&quot;</td>
<td>6'0&quot;-6'5&quot;</td>
<td>3'9&quot;-4'5&quot;</td>
</tr>
<tr>
<td>6'1&quot;</td>
<td>7'0&quot;-7'4&quot;</td>
<td>4'0&quot;-4'10&quot;</td>
<td>6'1&quot;</td>
<td>5'10&quot;-6'3&quot;</td>
<td>4'0&quot;-4'6&quot;</td>
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<tr>
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<td>6'10&quot;-7'2&quot;</td>
<td>4'6&quot;-5'3&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

# Establishing Take Off & Landing Distances

6'1"    7'0"-7'4"  4'0"-4'10"
Establishing Take Off & Landing Distances

Managing Stride Length – Take-Off and Touch-Down
Technique Study – Stride Length Management

SL Pattern Between Hurdles - Girls

Touch down 1.05 cm
Stride 1 1.50 m
Stride 2 2.00 m
Stride 3 1.90 m take off
Distance to Hurdle 2.05 m

SL Pattern Between Hurdles - Boys

Touch down 1.40 m
Stride 1 1.55 m
Stride 2 2.10 m
Stride 3 2.00 m take off
Distance to Hurdle 2.09 m
Rhythm Development Spacing

<table>
<thead>
<tr>
<th>Rhythm</th>
<th>Boys</th>
<th>Girls</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 steps</td>
<td>8.3-8.5m</td>
<td>7.80-8.0m</td>
<td>8.5-8.8m</td>
<td>8.0-8.3m</td>
</tr>
<tr>
<td>5 steps</td>
<td>12.5</td>
<td>11m</td>
<td>13m</td>
<td>11.5m</td>
</tr>
</tbody>
</table>

Technique Between the Hurdles

- Active vertical ground force generated by trail leg on getaway step to help preserve horizontal velocity.
- Low heel recovery
- Shuffle Stride
- *Musical Rhythm to the steps (Clap-Clap-Clap) last two Quicker*
- Stride length considerations
- Use Shuffle motion stride or Sub-Optimal Stride Length in Sprints without hurdles.
- Take Off and Touchdown Points
Manage Stride Frequency- Rhythmic Unit

Use **General goal rhythms** for Touch Down times
To Run 15 seconds = 1.2 rhythmic unit
To Run 14 seconds = 1.1 rhythmic unit
To Run 13 seconds = 1.0 rhythmic unit

- Decrease hurdle heights/distances in training to achieve goal rhythmic units
- Use take off and touch down marks

**Stride Frequency**
**Rhythmic Unit Calculation – 110 H Boy**

- Use Hurdle Goal 14.6 (Boy)
  - Time to 1st hurdle = 2.6
  - H 10 to finish= 1.6
  - \(14.6 - (2.6 + 1.6) = 10.4\) hurdle race minus blocks to 1st hurdle and H10 to finish
  - 9 hurdles @ 9.14 m = 82.3 m
    - 82.3 m/10.4s=7.90 m/s average rhythmic unit
- **Run over hurdles @ 7.90 m in 1.0 sec RU**
- Increase by 10 cm while still running 1.0 sec RU
  - Use take off and touchdown marks
    - Phase 1 = 7.90
    - Phase 2 = 8.00
    - Phase 3 = 8.10
    - Phase 4 = 8.20
Stride Frequency
Training Hurdle Rhythm – Rhythmic Unit Training

Stride Frequency
Rhythmic Unit Calculation – 100 H Girl

• Use Hurdle PR 15.0 (girl)
  • Time to 1st hurdle = 2.6
  • H 10 to finish = 1.6
  • $15.0 - (2.6 + 1.6) = 10.8$ hurdle race minus blocks to 1st hurdle and H10 to finish
  • 9 hurdles @ 8.5 m = 76.5 m
    • $76.5 m / 10.8 s = 7.08$ m/s average rhythmic unit
  • Run over hurdles @ 7.08 m in 1.0 sec RU
• Increase by 10 cm while still running 1.0 sec RU
  • Use take off and touchdown marks
Rhythmic Unit Phase Progression – 100 H Girl

<table>
<thead>
<tr>
<th>Rhythmic Unit</th>
<th>Time to H1</th>
<th>Run off to finish</th>
<th>Ave. RU for 9 hurdle units</th>
<th>Ave. Velocity for RU</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.70 sec.</td>
<td>1.15 sec.</td>
<td>1.13 sec.</td>
<td>7.54 m/sec.</td>
</tr>
</tbody>
</table>

| Time H1-H10 | 10.15 sec. |

| Hurdle PR | 14.00 sec. |

- Set drill with hurdle spacing at 7.54 meters
- Increase Distance each step by 10 cm
- Goal is to run 1.00 seconds for RU

### Manage Stride Frequency - Touchdown Times

#### Women - 30m Hurdles

<table>
<thead>
<tr>
<th>Hurdles</th>
<th>H1</th>
<th>H2</th>
<th>H3</th>
<th>H4</th>
<th>H5</th>
<th>H6</th>
<th>H7</th>
<th>H8</th>
<th>H9</th>
<th>H10</th>
<th>Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>RU 1</td>
<td>2.2</td>
<td>3.2</td>
<td>4.3</td>
<td>5.4</td>
<td>6.5</td>
<td>7.6</td>
<td>8.7</td>
<td>9.8</td>
<td>10.0</td>
<td>10.0</td>
<td>118</td>
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<tr>
<td>RU 2</td>
<td>2.8</td>
<td>3.8</td>
<td>4.8</td>
<td>5.8</td>
<td>6.8</td>
<td>7.8</td>
<td>8.8</td>
<td>9.8</td>
<td>10.0</td>
<td>10.0</td>
<td>120</td>
</tr>
<tr>
<td>RU 3</td>
<td>2.5</td>
<td>3.5</td>
<td>4.5</td>
<td>5.5</td>
<td>6.5</td>
<td>7.5</td>
<td>8.5</td>
<td>9.5</td>
<td>10.0</td>
<td>10.0</td>
<td>125</td>
</tr>
<tr>
<td>RU 4</td>
<td>2.4</td>
<td>3.4</td>
<td>4.4</td>
<td>5.4</td>
<td>6.4</td>
<td>7.4</td>
<td>8.4</td>
<td>9.4</td>
<td>10.0</td>
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<td>128</td>
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<tr>
<td>RU 5</td>
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<td>3.4</td>
<td>4.4</td>
<td>5.4</td>
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<td>10.0</td>
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<tr>
<td>RU 6</td>
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<td>3.6</td>
<td>4.6</td>
<td>5.6</td>
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<td>7.6</td>
<td>8.6</td>
<td>9.6</td>
<td>10.0</td>
<td>10.0</td>
<td>130</td>
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<td>RU 7</td>
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<td>4.6</td>
<td>5.6</td>
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<td>9.6</td>
<td>10.0</td>
<td>10.0</td>
<td>130</td>
</tr>
</tbody>
</table>

#### Men - 30m Hurdles

<table>
<thead>
<tr>
<th>Hurdles</th>
<th>H1</th>
<th>H2</th>
<th>H3</th>
<th>H4</th>
<th>H5</th>
<th>H6</th>
<th>H7</th>
<th>H8</th>
<th>H9</th>
<th>H10</th>
<th>Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>RU 1</td>
<td>2.4</td>
<td>3.4</td>
<td>4.4</td>
<td>5.4</td>
<td>6.4</td>
<td>7.4</td>
<td>8.4</td>
<td>9.4</td>
<td>10.0</td>
<td>10.0</td>
<td>118</td>
</tr>
<tr>
<td>RU 2</td>
<td>2.4</td>
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### Notes

- Manage Stride Frequency
- Touchdown Times
Differences in the Girls 100HH vs. Boys 110HH

- The lead action leg is the same
- Lean is not as pronounced because center of mass does not have to raise as much.
- Trail leg crosses hurdle in lower plane, but then drives upward and after the hurdle clearance
- Too much leaning will cause the hurdler to lose balance
- Sweeping action of the Lead arm is at a lower angle for the women vs. the men because trail leg action is closer to the hurdler’s midline (not as wide)

Common Errors in Hurdling

**The Approach**
*Too high over hurdle*
Over-striding to hurdle putting the athlete too close. Cut step?
Not Leading with the Knee and rather Swinging the Foot Up to the Hurdle

**Take Off**
*No forward lean*
Not attacking with the knee. Probably leading with their foot.

**Clearance**
*Hitting the hurdle with the trail foot.*
Foot is not inverted.

**Landing Off balance**
Excessive Rotation and Twisting over the hurdle or jerking trail arm back rather than sweeping.

**Inability to 3 Step**
Lack of Strength, Technical Issues, Passive Trail Leg, Incorrect Take-Off Point
HURDLE DRILLS

THAT PROMOTE POSTURE, POWER, HURDLING ABILITY AND SPEED

That Do Not Require Hurdles!

Hurdling Drills without Hurdles - Stair Runs
Hurdling Drills without Hurdles - Hill Runs

Hurdling Drills without Hurdles - Step Ups
HURDLE DRILLS

THAT PROMOTE POSTURE, POWER, HURDLING ABILITY AND SPEED

Essential Gear!!!!

Blazer X-Trainer, Collapsible Training Hurdle

Quickly adjusts from 16" to 39" high.

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M-F Athletic Foam Hurdle

$140

http://www.everythingtrackandfield.com
Lead Leg Walkover

Trail Leg Walkover
Hurdle Walkover

One Step Lead Leg
One Step Trail Leg

One Step Runover
Lead Leg A Skip

Trail Leg A Skip
Hurdle A Skip

Lateral Step Over
Straight Leg Quick Lead

Straight Leg Quick Trail
3 Step Rhythm Hurdles

High Knee Lead Leg
High Knee Trail Leg

3 Step Lead Leg
3 Step Trail Leg

Trail Leg Step Through
Lead Leg Step Through

Ross Drill
Switch Drill

Trail Leg Slide