Sprint hurdle

Body position & technique
About Me

2015 Division I All American 60mh (Arkansas, Fayetteville) (8th)
2016 Division I 2nd team all American (Eugene, Oregon) (14th)
2016 Jamaica Olympic trial (6th)
Run for 15 years
hurdle focus 6 years
PRs, 7.77 indoor & 13.59 outdoor.
Assistant Sprint/hurdle coach, University of South Dakota
Approach to hurdle #1
Stride pattern to H1
Hurdle Take Off
Lead leg
Lead arm
Trail leg
Trail arm
Stride Pattern between hurdles
Running off the last hurdle
Block Start

- Front pedal (2 steps)
- Back pedal (3 steps)
- Trail leg should be in front block (unless doing 7 steps)
- Block test
  - Mark position
    - foot Placement on pedal
    - arms under shoulders not sitting back
    - back leg do not have to be on the pedal)
  - Set position
    - both foot flush,
    - hip slightly higher than shoulder,
    - legs parallel,
    - load the blocks
- push
  - front leg becomes straight 1st 3-4 pushes,
  - big arms 3-4 step,
Approach to H1

- Loading the front blocks
- Split arms
- Stepping over ankle for first 3-4 steps
- Cheating the acceleration phase
- Gradual transition phase
- Hips are in line with the hurdle
- Chest slightly ahead of hips
- Breaking to the hurdle
Stride Pattern to H1

- Stride pattern to Hurdle #1 (most use 8 steps)
- Measure from starting line in meters
- These are only an estimate
- 100 Meter Hurdles
  Start Line | .60 | 1.65 | 2.95 | 4.40 | 5.95 | 7.60 | 9.35 | 11.05 | T.O. | H1

110 Meter Hurdles
Start Line | .60 | 1.70 | 3.05 | 4.55 | 6.20 | 8.00 | 9.90 | 11.70 | T.O. | H1

110 Meter Hurdles (7 steps)
Start Line | .75 | 2.15 | 3.85 | 5.60 | 7.50 | 9.60 | 11.58 | T.O. | H1
Hurdle Take Off

- Think in terms of a “Cut Step”
- Very active landing with heel leading back and towards runner
- Shorter stride length
- Allow hip velocity to move athlete through the hurdle
- Improvement in this skill will lead to better trail leg
Lead leg

- Movement starts at Hip and not foot
- Once foot leaves ground looking for flexion at knee, hip and ankle
- Knee drive upward into chest
- Heel drive immediately under the runner
- Arms must move in concert with legs
Lead Arm

- Different for women
- Blocking motion
- Should not pass the center of chest
- Moves under the knee
- Elbows going straight back
- Punching arm forward after clearing hurdle
Trail leg

- Active cut step produces quicker trail leg
- Major difference between male and female hurdlers
- Arms and legs are very connected in timing and balance issues
- Trail foot should be pulled off of the ground by the hip and continue moving into a folded position with toe dorsiflexed
Trail Arm

- Locked at 45 degrees after the acceleration phase
- No alteration should be done
- Responsible for lead leg and leg arm speed
- Correct the wrist movement
  - Thumbs up
  - Close fist
  - Punch through
Stride Pattern between hurdles

- 3 quick shuffle step
- Strides are usually shorter than normal.
- Foot dorsiflex the whole time
- Stepping over the ankle
- Shorter arms allow feet to move quicker
Running off the last hurdle

- Stay relax
- Technique perseveres over fatigue
- Dipping too early
- Growing to the finish line
Questions?
Drills & Hurdle Progression
Sprint hurdle Part 2
Content

- Training the bio-motor abilities
- Preparation period
- Season progression/modification
- Develop a training plan
- Race modeling
- Hurdle progression
- Develop hurdle warm up
- Sprint drills specific to hurdles
- Hurdle drills
- Lead leg drill
- Trail leg drill
- 3 step drill
- Combination drill
- Touch down times
- Training variation for sprint hurdles
- Coaching tips
Training of the Bio-motor Abilities

- **Speed**
  - Accel->Absolute->Speed
  - Endurance

- **Strength**
  - General strength and strength endurance-> power development-
  - > absolute strength -> reactive strength
  
  (but all are used throughout macrocycle)

- **Work Capacity**
  - Progressively increase in specificity & acidity to race modeling

- **Flexibility-**
  - Consistently throughout marcocycle

- **Skill-**
  - General to specific
Preparation period

- General prep – Getting prepared to train
  - Teaching drills
  - Body position
  - Working on flexibility
- General strength
  - Core
  - Endurance
- Power development
  - Weight room training
- Overhead med-ball walk overs
  - Posture
  - 6-8 hurdles
- Walking drills
  - Picking front and back Knee up
  - Arm movement
Season progression/modification

- **Preparation period**
  - General prep – first 4 weeks (getting prepared to train) moving around
  - Special prep – absolute speed absolute strength, speed endurance, power development,
  - major changes of the skill

- **Mass practice**
  - More volume less intensity

- **Competition period**
  - Pre - competition phase
  - Synthesis - (bring everything together) speed and strength combine together to refine skill)

- **Comp phase**
  - Peaking

- **Distribution practice**
  - less volume, high intensity
Develop a training plan

- Developing a motor program that involves moving faster than race pace
- Training plan should include progressional training
- Hurdles are placed closer and lower than competition distances
- Places an emphasis on stride frequency and hurdle technique
Race modeling

- 10 step to first hurdle
- 3 step and 5 step run
- In the later part of hurdling the hurdles get closer
- Hurdles are always closer than regular distance
- Hurdles are usually lower than regular height
- Running more hurdles than regular race
- running less hurdles than regular race.
Hurdle Progression

WOMEN
- Start between 7m - 7.50m depending on the athlete
- Try to keep H1 close to regular distance
- Always keep the hurdle lower than competition height
- 30”/flex hurdle
- Increase each hurdle by 5-10 cm/week

MEN
- Start 7.80m – 8.30m
- Try to keep H1 close to regular distance
- Always keep the hurdle lower than competition height
- 39” hurdle
- Increase each hurdle by 5-10 cm/week
Develop a Hurdle Warm-up

- To be used at most hurdle sessions
- Variation of Warm-up to be done at meet
  - Walk-overs
    - Walking, single leg, other leg, skipping, lateral, B-skip on end of hurdles
  - Wall drill/trail leg
  - Sprint Drills
  - Lead/Trail/Over The Top
    - 1 skipping step *(4 feet apart)*
    - 3 short quick steps (5m apart, with run in of 5m for men, 8 for women) Lead Trail & over the Top
    - 3 running steps *(7-8m apart, run in with 13m)*
      - Alternate drill

Use drills as an opportunity to teach & correct movements!
Sprint Drills specific to hurdles

- A skip (hip and foot position)
- B skip (foot extension, while driving heel under the body)
- Straight leg shuffles (mimic shuffle steps) (Combination of A,B skip and straight leg shuffle)
- C-Skip (trail leg without hurdles)
- Alternate A-C Skip (combination of lead and trail leg)
Hurdle Drills

- Skipping over the side with lead
- Skipping over the side with trail
- Skipping over the top with both
  - Right leg lead
  - Left leg lead
- Lateral skips

Space hurdles
- One step drill
- Three step drill
- Three quick steps over top
Lead Leg Drill

- A-skip
- B-skip
- Walk-overs
- Skip-overs
- Hurdle taps
- Wall drill
- 5m apart, 8m run in
  - Knee drive
  - Quick arms
Trail Leg Drill

- C-skip
- Wall Drill
- Walking trail
- Skipping trail
- Hop-overs
- Trail-overs
- 5m apart, 5m run in for men 8m for women
  - Toes turn out
  - Arm under knee
3 step drill

- Low hurdles
- Quick movement
- Focus on the black mark
Combination drills

- Split drill
  - Lead
  - Trail
- Place hurdle on a straight line
- Lead leg on the inside of hurdle
- 7m apart 12m run in for men
  13 for women
- Used for 400m hurdlers
### Touch Down Times

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### Touchdown Times for Various Hurdle Races

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### 400-Meter Intermediate Hurdles

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## Training Variations for Sprint Hurdles

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<td>12 strides to H1</td>
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<td>3 strides between Hurdles</td>
<td>7-8.4 meters/height lower</td>
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<td>5 strides between Hurdles</td>
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<td>Combine 5 and 3 step patterns</td>
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<td>Reduce each hurdle by 10 cm</td>
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<td>Incline Hurdling</td>
<td></td>
<td>1-3% uphill or downhill</td>
</tr>
</tbody>
</table>
Coaching Tips

- Know your athletes strengths & weaknesses
- Understand the athletes body movement
- Do not give too many coaching ques
- Pay attention to how your athletes develop
- Teach in parts before whole
- Almost every technical problem starts before the actual problem
- Try not to over achieve your athletes capability
QUESTIONS?