400m HURDLE TRAINING

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Key Qualities of a 400 Hurdler

- Above Average Speed
- Great Endurance Capability
- Great Mental and Physical Toughness
- Willingness to Train Hard
- NO FEAR!
- Ability to Hurdle
  - Both Legs Efficiently
400 Hurdle Training Philosophy

- Train the Athlete – Not Just the Event
  - Know athlete’s strengths/weaknesses

- 400m Training Year Round - PLUS
  - Slightly more volume
  - More endurance capacity work
  - More technical work

- Train Race Rhythm Over Hurdles - KEY
  - No hurdle training at less than race pace
400 Hurdle Training Philosophy

- Developmental Athletes
  - M: 37-38/300H, 53.5-55/400H  ///  W: 43-45, 61-63

- Train Toughness - #1 Key
  - 300-400m Hills / Special Endurance / Compete Multiple Races

- Speed Development is Critical
  - Everyone is a Sprinter

- Ends to Middle Training Concept
400 Hurdle Training Philosophy

- Train Quality over Quantity - Train to Race
  - Ex: 500-400-300 @ 90-95% / 10:00RI
    versus
  - 4 x 500m @ 80-85% @ 5:00 RI
    More Volume / Less Quality Reps
- Train Strength & Power Development Year Round
- Train Specific Speed/Race Tempo
Great 400 Hurdlers = Great Sprinters

Sprint PR’s from 400m hurdle athletes on the all-time list:

**Women**
- 52.34 (1) Yuliya Pechonkina, 2003: 400m - 51.00 (I)
- 52.42 (2) Melaine Walker, 2009: 100H - 12.75 /, 400m - 51.61
- 52.61 (3) Kim Batten, 1995: 200m - 400m - 50.61
- 52.63 (5) Lashinda Demus, 2009: 100H - 13.08, 400m - 51.09
- 52.74 (6) Sally Gunnell, 1993: 100H - 12.82, 400m - 51.45
- 52.82 (9) Deon Hemmings, 1996: 100m - 11.58/11.29w, 200m - 22.64, 400m - 50.63
Great 400 Hurdlers = Great Sprinters

Men

- 46.78 (1) Kevin Young, 1992: 200m - 20.72w, 400m - 45.11
- 47.02 (2) Edwin Moses, 1983: 400m – 45.60
- 47.10 (3) Samuel Matete, 1991: 400m – 44.88
- 47.19 (4) Andre Phillips, 1988: 200m – 20.51, 400m – 44.71
- 47.24 (6) Kerron Clement, 2005: 100m – 10.23, 200m – 20.40(l), 400m - 44.48 / 44.57 (l) WR, 300H – 35.42
- 47.25 (7) Angelo Taylor, 2008: 200m – 20.23, 400m - 44.05
- 47.25 (7) Felix Sanchez, 2003: 400m – 44.90, 800m – 1:49.36
- 47.30 (8) Bershawn Jackson, 2005: 200m – 20.46w, 400m – 45.06
- 47.97 (34) Joey Woody, 1998: 110HH – 13.63, 200m – 21.21, 400m – 46.04, 800m – 1:47.75, Split 44.7
Speed Development is #1 Key

- YEAR ROUND SPEED DEVELOPMENT
- Every Race has an Acceleration
  - Train Acceleration Component to Overcome Inertia
- Increased Max Velocity = Higher Tolerance for Faster Paces – Steve Dudley MSU
  - Train to Improve Vmax
  - 20m segments with varying build-in distances
  - Ins/Outs to challenge Vmax
  - Assisted sprinting
Speed Development for 400 hurdles

- Pre-Season General Prep.
  - Train Acceleration 1 day/Week and Vmax 1 day/week

- Pre-Season Specific Prep.
  - Combine Acceleration and Vmax training 1 day/week
  - Train Speed Endurance 1 day/week

- Pre-Competition
  - Combine Acceleration / Speed Endurance
400 Hurdle Training Progression

- **Pre-Season General Prep. (6-8 Weeks)**
  - Train Speed/Pwr Qualities
    - Short Hills, Stairs, Plyos, Short Jumps, Accel. Lines, Vmax Drill (Vince Anderson, Texas A&M)
  - Train General Endurance
    - Short Rest Tempo Ext./Long Hill Runs/Circuits

- **Pre-Season Specific Prep (6-8 Weeks)**
  - Advance Speed/Pwr Qualities
    - Long Jumps, H-Hops, Extend Lines, Vmax Training,
  - Train Specific Endurance
    - Med. Rest Tempo Intensive / Longer Hills
400 Hurdle Training Progression

- Pre-Competition (6-8 Weeks)
  - Extend Speed/Pwr Qualities // More Event Specific
    - Speed Endurance, Long Stairs, Speed Bounds, SL Bounds, Extend Vmax Runs, Completion Runs
  - Train Race Rhythm
    - Special Endurance I & II, Race Modeling

- Competition (6-8 Weeks)
  - Maintain Speed/Pwr Qualities
  - Train Race Rhythm
  - REST
400m Workout Examples

- Race Pace Simulation Short (SE I / Speed End)
  - 2 sets (2 x 200) @ 90-97% 400 pace
    - Goal 400 = 48.5” (2 x 200 @ 25-25.5” – 1’ Rest Interval
  - 2 sets (4 x 100) @ 90-100% 400 pace
    - Goal 400 = 48.5” (4 x 100 @ 12-12.5” – 30”-1’ Rep Interval / 5-8’ Set Interval

- Race Pace Simulation Medium (SE I)
  - 3 x 300 or 4 x 250 @ 90-97% 400 pace – 8-20’ Rep Interval

- Race Pace Simulation Long (SE II)
  - 2 x 450 or 2 x 500 or 500-400-300 @ 85-95% 400 pace - 10-20’ Rep Interval
400 Hurdle Training Progression

- Indoor Season
  - Race Multiple Events (400/4x4/60H/200m)
  - Race the 500/600/800m
  - Uneven Spaced Hurdles - Alternate

- Early Outdoor Season (3-5 Weeks)
  - Specific Prep/Pre-Comp Phase
  - Increase Special Endurance Volume

- Early Season 400H Training - (Feb/March)
  - 5 block starts over 3-5H (Indoors)
  - Pre-fatigue the system / Work over last 5H
400 Hurdle Training Progression

- Early Season 400H Training - (Feb/March)
  - 5 block starts over 3-5H (Indoors)
  - Pre-fatigue the system / Work over last 5H

- Mid Season 400H Training (March-April)
  - 3-4 x Block starts to 6-7 Hurdles – begin transition
  - Transition over # 5-8 Hurdles (1-200 flat/hurdle #4-8)
  - Increase focus over last 5H (100 flat/hurdle #6-10)
400 Hurdle Training Progression

- Late Season 400H Training (April-June)
  - 2-3 x Block starts to #7-8 Hurdles
  - 2-3 x 300’s over last 3-5 Hurdles
  - 2 x Starts over 6H / rest 1:00 / fly over last 4H
  - 300 @ 95% / rest 1-2:00 / 3 x last 5H / walk back
  - 2 x 400 over last 3-5H / 15-20:00 Rest
400 Hurdle Training Concepts

- Move the Hurdles in to Keep Stride Pattern
- Master Your Race Rhythm... Then Challenge It
- Add More Volume to the 400 Hurdler (500m vs. 450m)
- Better to Over Stride Than to Stutter
  - Steering Drills – Blind Drill
- Focus on Power Exercises/Drills to Increase Stride Length (Hills/Stairs/Bounds/Plyos)
- Hurdle Drills with Alternate Leg
Train Athlete / Not Just Event

- Strength & Power Training
- Multi-Directional Training
- Multi-Directional Strength Exercises
- Prehab Exercises
- Cross Training
- Core Development & Conditioning
- Multi-Jumps/Multi-Throws
  - STJ/SLJ/3 and 5 DL Hop/Bounding
  - Med Ball and Shot Throws
    - Overhead Back/Between the Knees Forward
Strength and Power Development

- Three components of Faster Running*
  - How often you contact the ground
  - How much muscular force you can apply during ground contact
  - How much ground contact time is available to deliver that force
- Stride Length and Stride Rate are **EFFECTS** of the three components
- Our Enemy = Gravity
  - Sprinting is a Vertical movement – Not horizontal

*“Underground Secrets to Faster Running” - Barry Ross
Strength and Power Development

- Mass Specific Force - Increase Muscular Strength without Increasing Mass
  - Bigger does not = Stronger
  - High Intensity (85+%)  
  - Short Duration
    - Less than 8 seconds total Set time-phosphagen energy depletion / No Lactic Acid
  - Long Rest Intervals
    - Regenerate phosphagen pool
  - Conversion
    - Complex high force resistance exercises with high speed plyometric exercises
Strength and Power Development

- General Prep
  - Strength Endurance Cycle (4 Weeks)
  - Max Strength Cycle (4 Weeks)
- Specific Prep
  - Max Power Cycle (4-6 Weeks)
- Pre-Competition
  - Power/Speed Conversion Cycle (4-6 Weeks)
- Competition
  - Maintenance
Conversion to the Track

- Stride Length Increases from More Applied Force
- Stride Rate Increases from Less Ground Contact Time
  - AT is virtually equal > elite vs non-elite
  - Complex resistance training with high speed plyometric exercises
- Benefits
  - Running speed increases > Increased SL & SF
  - Running efficiency increases > Less effort per Stride
  - Increased coordination, balance, stability
Early Season Weekly plan

- Mon – 3-4 x Fly-In 30’ s / Starts over Hurdles (5 x 5H / 4-5:00 RI)
- Tues – Special Endurance II (500 – 300 / 15:00 Rest)
- Wed – Smooth/Easy Tempo (5 sets 100+200+100 @ 75% pace / 1:00 Rep Rest – 3:00 Set Rest) // or 6-8 x 150m Hills – smooth
- Thurs – 2 x 1st 5H / 3 x last 5H / Walk 200 Rest or 300 Fast / Walk 1 lap / 3 x last 3-4H
- Fri – Compete or Premeet
Summary

- Train Athleticism
- Train Speed/Power Year Round
- Train Mental Toughness Through Physically Tough Workouts
  - Jan. 1, 8:00 am – 5 x 300 Hills / -10 Below Zero
  - 4x1, 110HH, 400m, 400H, 4x400 Relay
- No Fear & No Limits
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