

An Overview and Practical Applications

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# The 400m Dash



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## So, Who Are We?



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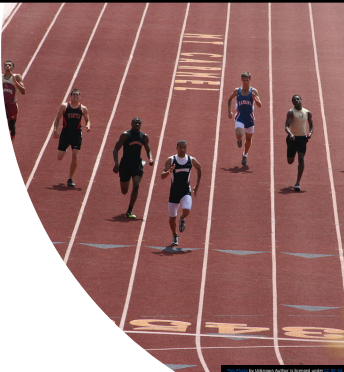
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## GOALS

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- Review Base Knowledge
- Affirm
- Stimulate



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Resources

- Clyde Hart
- Jurgen Shiffer
- John Smith
- Vern Gambetta
- Loren Seagrave
- Gary Winckler
- USATF Coaching Education

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MAGIC?



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How & What

- Individualize Appropriately
- Understand the Race
- Foundations
- Pillars
- Fine-Tuning



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400m Dash

The diagram shows an oval track with a 100-meter straight section. Key points include: 'Start/Finish 1 lap around the track' at the end of the 100m straight; '100 meters One Lap = 400 meters' for the full lap; 'Where Race is run' indicated by a blue line; '1st Turn', 'Back Straight', 'THE Turn', and 'Home Stretch' labeled on the track; and 'Long/Track Jump' and 'Short Put' also labeled. To the right is a technical drawing of a building with the text 'UNIVERSITY OF THE GOVC SA'.

Blueprint

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ZONES  
1st Turn  
Back Straight  
THE Turn  
Home Stretch

400m Dash

The diagram shows an oval track with a 100-meter straight section. Key points include: 'Start/Finish 1 lap around the track' at the end of the 100m straight; '100 meters One Lap = 400 meters' for the full lap; 'Where Race is run' indicated by a blue line; '1st Turn', 'Back Straight', 'THE Turn', and 'Home Stretch' labeled on the track; and 'Long/Track Jump' and 'Short Put' also labeled.

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Lactic Acidosis

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**Size, Timing, and Effect**

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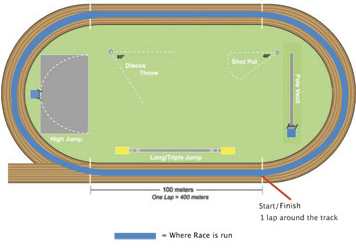
**First Turn**  
Accelerate 30-50m  
Maximize ATP-CP

Begin Float  
(max speed with minimum effort)

Keep Momentum coming off the Turn  
Curve Running

**92% of Best 100m**

**400m Dash**



100 meters  
One Lap = 400 meters  
Start/Finish 1 lap around the track  
= Where Race is run

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**Back Straight**  
Curve Running  
Keep Momentum

Slow Deceleration  
Efficiency and Effort

Slight Discomfort

Split Goal

Prepare Mentally for THE Turn  
**95-97% of 100m PR**

**400m Dash**



100 meters  
One Lap = 400 meters  
Start/Finish 1 lap around the track  
= Where Race is run

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*THE Turn*

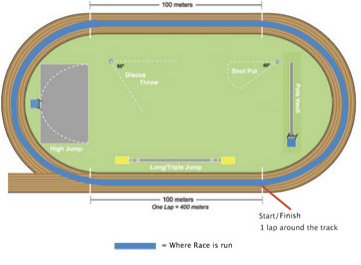
Attack Mode  
Huge Effort to Slow  
Rate of Deceleration

Entering = Uphill  
Effort & Momentum

Exiting = Downhill  
Frequency  
Tick – Tick – Tick!

90% of Best 100m

400m Dash



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*Home Stretch*

Posture

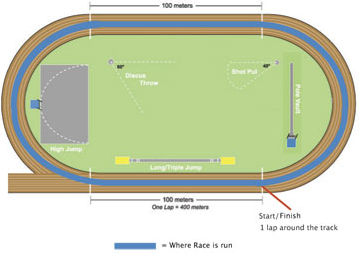
Increase Frequency  
Lessen GCT

Avoid Over-striding  
Avoid Long GCT

Split Goal

80-82% of 100m PR

400m Dash



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Foundation

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- Posture & Posterior Pelvic Tilt
- Single Leg Stability
- Efficient Running Form



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Posture, Pelvic Tilt, & the Psoas Connection



Good Posture  
Hollow Back  
Flat Pelvis  
Slumping Posture  
Military Posture  
Rounded Shoulders

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Stability & Optimal Use of GRFs

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Efficient Running: Plantarflexion v. Dorsiflexion



3d502003 www.fotosearch.com

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Posture & Stability in Action



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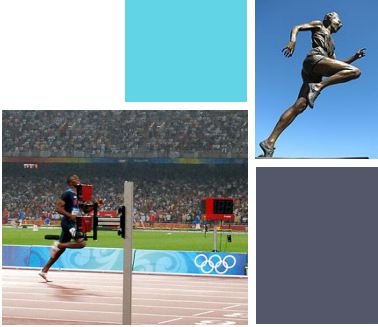
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Frontside & Backside Mechanics

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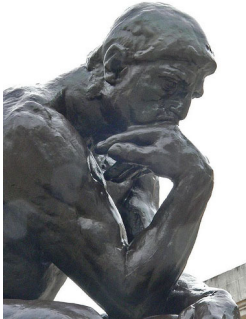
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Warm Up  
Cool Down  
Recovery Days



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Energy Systems



A photograph of two large, white, cylindrical cooling towers of a nuclear power plant. They are emitting thick plumes of white steam that rise into a clear blue sky. The towers are set against a dark horizon line.

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ATP – CP Alactic Energy System



A composite image. The top half shows a bright, multi-colored explosion with rays of light radiating outwards. The bottom half shows a close-up of a wooden barrel with the words "GUN POWDER" written on it in white, bold letters.

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A composite image. On the left, a hand holds a silver stopwatch. In the center, a speedometer with a rainbow-colored arc and the word "MODERATE" at the top. On the right, a demolition site with a worker in a red shirt and a large pile of rubble.

Anaerobic Glycolitic Energy System

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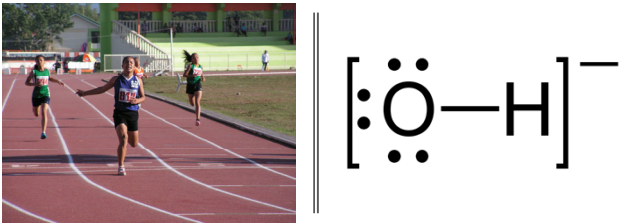
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The Culprit

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PILLARS

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Speed  
Strength  
Energy System Training



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Mitigating Effects of Lactic Acidosis through Speed

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- First 100m = 92% of Best 100m
- Second 100m = 95-97% of Best 100m
- Third 100m = 90% of Best 100m
- Fourth 100m = 80-82% of Best 100m

*As 100m Time Decreases, So the 400m Time Also Decreases*



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Mitigating Effects of Lactic Acidosis through Strength

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*Ability to Accelerate Directly Affects Maximum Velocity Speed*

*Gain Strength - Limit Hypertrophy*



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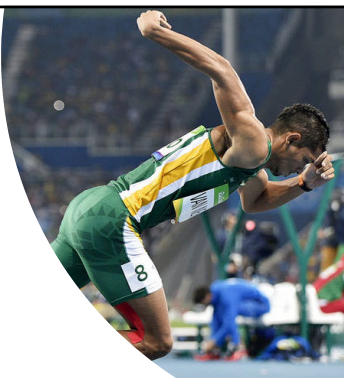
Mitigating Effects of Lactic Acidosis through Energy System Training

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**Runs of 30-45s @ Incomplete Recovery**  
 Enhance Ability to Produce Energy without Oxygen or Creatine Phosphate

**Runs of 45-90s @ Complete Recovery**  
 Enhance Anaerobic Power Production  
 Enhance Ability to Tolerate Lactic Acid

BEGIN GRADUALLY  
 SPEED EARLY & ALWAYS  
 LACTATE LATER



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**Fine Tuning – Race Model Segments**


**Pacing is the Best Guide**

**First Turn Repeats & Longer**  
 (80-120-150) @ Race Pace  
 Push-Push-Push & Dial Back

**THE Turn Repeats @ Race Pace in Fatigued State**  
 2 x 4 @ walk back rest and 4-5 minutes btwn sets.

**200m Repeats for the Turn (2 x 2-3)**  
 Freewheel Back Straight, Work the Turn, Walk around rest.

**Finish Kick**  
 300 @ 75%, 1' RI, 100m  
 Or – practice in early meets...



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