



Strength & Conditioning

University of Notre Dame Olympic Sports
Spring 2016

Featured Exercise: Nordic Hamstring

Benefits:

- The Nordic Hamstring focuses specifically on eccentric hamstring and calf strength.
 - These two segments of the larger posterior chain are critical for injury prevention in sports.
 - The eccentric motion refers to the absorbing of force—(think deceleration or stopping power)
- Since many non-contact injuries occur during the eccentric phase of movement, the Nordic Hamstring is a staple in many strength and conditioning programs

What is it? How to Train:

- The Nordic Hamstring Exercise involves an individual slowly lowering themselves while their ankles are held down by a partner.
- This action creates a significant amount of stress on the hamstring and calf which in turn strengthens the involved muscle groups.
 - The result is improved **muscle restructuring** and **improved ability to resist forces acting on the ankle, knee and hip** during sports.
- To perform, an athlete will have a teammate hold their ankles down.
- Then, keeping a rigid torso from knee to shoulder, they will slowly lower themselves to the ground (5-8 second count).
- Assisting themselves back to the start position with their arms, they will perform several sets and reps.

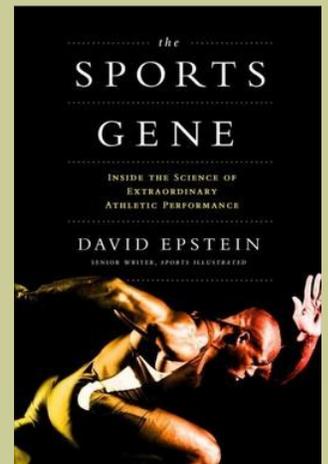


Suggested Reading:

The Sports Gene

David Epstein

- Fun to read explanation of Sports and Genetics
- 10,000 Hour Rule—is it really that straight forward?
- Opinionated account of what does and does not make an athlete elite.



FACEBOOK: [HTTP://WWW.FACEBOOK.COM/NDPERFORMANCE](http://www.facebook.com/NDPerformance)

YOUTUBE: [HTTP://WWW.YOUTUBE.COM/USER/NOTREDAMESTRENGTH](http://www.youtube.com/user/NOTREDAMESTRENGTH)

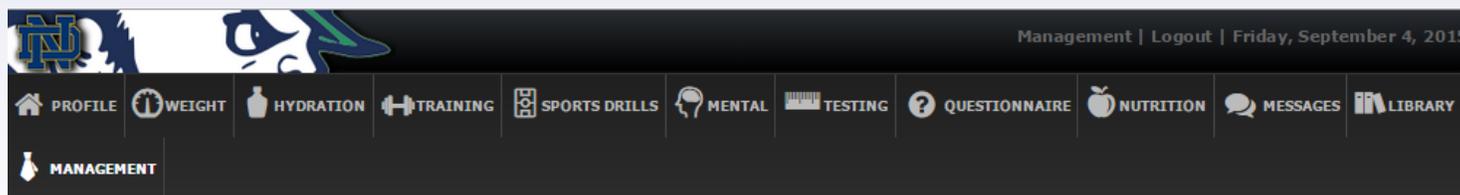
INTERNET: [HTTP://WWW.PERFORMANCE.ND.EDU](http://www.performance.nd.edu)

What's New In Strength & Conditioning: CoachMePlus

COACHMEPLUS

NOTRE DAME uses CoachMePlus to build a complete profile of our athletes.

- Every interaction is tracked through a timeline of notes
- This helps build a biography that includes:
 - Anthropomorphic info (height, weight, age, etc.)
 - Integrated Heart Rate data from practice and games
 - Integrated Catapult data from practice and games
 - Force Plate Vertical Jump Information from bioanalysis screen
 - Wellness Q&A tracking, Hydration, and sleep



“There may be people that have more talent than you, but there’s no excuse for anyone to work harder than you do.”

~ Derek Jeter.

Did You Know:

Math is Fun!

Strength and Conditioning Coaches use several Principles of Physics to train ND Student-Athletes at an elite level.

Newton’s Second Law:

The acceleration of an object as produced by a net force is directly proportional to the magnitude of the net force, in the same direction as the net force, and inversely proportional to the mass of the object.

$F=M*A$ (Force = Mass * Acceleration)

Equation of Power:

$P=F*V$ (Power = Force * Velocity)

By manipulating training variables, Strength coaches can determine whether an athlete needs to train for improved Force (strength) or Velocity (speed) to improve an athletes power output.

*** It’s not just about lifting more weight. Its about training smarter to achieve better results!

*** Peak power output can also be used to determine an athletes readiness to perform and estimate fatigue.



PERFORMANCE

Ask our staff:

Craig Cheek

Assistant Director of Strength & Conditioning

Craig Cheek is in his ninth year at the University of Notre Dame, and fifth as Assistant Director of Strength and Conditioning, having been elevated to his current role in February 2011. He is responsible for designing the strength and conditioning programs for the Fighting Irish women's basketball, baseball and jumps/multi event athletes.

Before arriving at Notre Dame, Cheek served as the Head Strength and Conditioning Coach at Nicholls State (La.) University for two years. There, he oversaw all varsity athletic programs and supervised the strength & conditioning staff.

A 1997 graduate of Bluffton (Ohio) University with a Bachelor's degree in Health and Physical Education, Cheek went on to earn his Master's degree in Developmental Kinesiology from Bowling Green State University in 2004. Cheek is also SCCC certified by the Collegiate Strength and Conditioning Coaches Association, Level 1 Club Coach certified by USA Weightlifting and Level 1 by USA Track and Field.



Q. How does your approach to training differ between freshman and senior athletes?

A. Freshman are viewed as a blank canvas while the seniors need the finishing touches.

Q. What is your favorite exercise and why?

A. Deadlift. Primal movements will always have a place in my programs.

Q. In your opinion, what impact does Strength and Conditioning have on athletic performance?

A. Strength and Conditioning has a huge impact on improving athlete durability and movement efficiency. The more efficiently an athlete can move and express the gains in strength, the better performance outcomes can be achieved.