



TRAINING DAYS

How do the hours spent pushing weights and holding planks translate to success? Accomplished college athletes and their coaches explain the workouts that have helped them reach the top – and what lessons athletes young and old can learn from their methods.

By Brian Burnsed

Illustrations by Cheryl Reynon

Games and meets and matches – those are the fun part. Those are fleeting. Those are the rewards for all of the work: the hours spent pushing and pulling iron, battering abdominal muscles with endless repetitions or bounding onto boxes, then back down to earth. The common thread among successful athletes of all sports, shapes and sizes?

Progress is painful.

While some movements are essential no matter the sport – think squats, presses and cleans – most require exercise routines specifically tailored to maximize performance in a given skill. Every sport places unique demands on the human body. Divers must have taut cores. Defensive ends, powerful hips. Hockey players, thick thighs that churn like pistons. That means each carefully crafted workout is laden with nuances unfamiliar to most casual gymgoers. (Alternate jacks or hollow-body holds, anyone? Be prepared to consult Google as you read on.)

Whether you're an athlete looking for an edge, a young coach looking for advice or merely a couch potato who aspires to a Phelpsian physique, take note as some of the NCAA's best dive into the weeds of working out.



Maura Sticco-Ivins

Wellesley College • Diving • Major: Biochemistry

ACCOMPLISHMENTS

- 2015 Division III women's 3-meter diving national champion.
- 2016 Division III women's 3-meter diving national runner-up.
- 2015 Division III women's 1-meter diving national runner-up.

WHY SHE TRAINS: Diving demands that Sticco-Ivins has a strong core. Once her legs have catapulted her off the board, it's up to her abdominal muscles to control her limbs during the fall. "It looks like you're throwing your shoulders back and flipping backward," she says, "but really what you're doing is almost jumping straight up and using your abs to pull your legs up over your head."

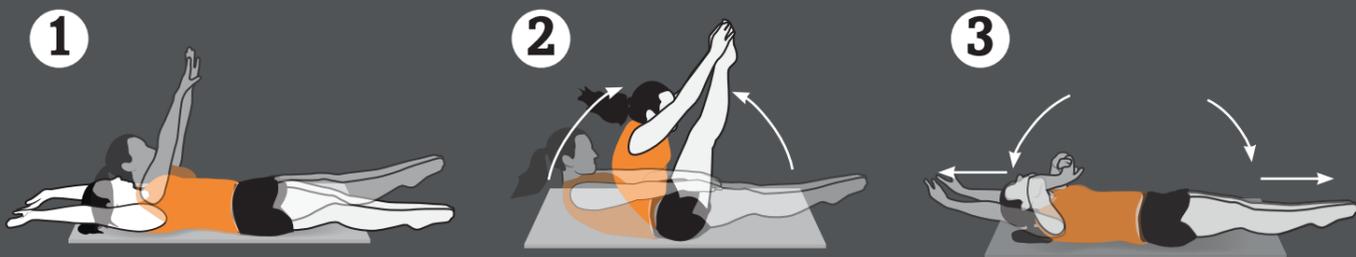
HOW SHE TRAINS: In addition to regular core work and trampoline training – usually about a half-hour of exercises before every practice – Sticco-Ivins follows a regimented three-day-per-week strength-training program for about two months in the fall.

COACH KNOWS BEST: Becky Kimball, director of sports performance and fitness at Wellesley, focuses on building explosive leg strength to help divers launch off the board. Sticco-Ivins says the litany of preseason squats have enabled her to spring higher, providing her the time to pull off maneuvers in the air. Kimball has divers rely on front squats – the bar is placed across the clavicle rather than the back of the neck – which forces the athletes' core muscles to balance the weight and maintain posture.

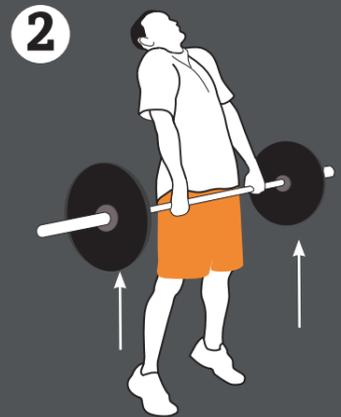
THE BIG PICTURE: No matter the sport, core strength is key for balance and stability through any type of movement. Kimball may prescribe extra core work for divers, but each athlete she trains tackles rigorous abdominal exercises.

KENNETH CHUNG PHOTO

KEY ABILITY: Core strength | **KEY WORKOUT:** Pike outs (v-ups in tandem with hollow-body holds)



KEY ABILITY: Hip explosiveness
KEY WORKOUT: Power cleans



Keionta Davis

University of Tennessee at Chattanooga • Football (defensive end) • Major: Business

ACCOMPLISHMENTS

- Tied for third in Football Championship Subdivision in 2015 with 13.5 sacks.
- 2015 second-team Associated Press All-American.

WHY HE TRAINS: To stockpile the sacks he covets, Davis has to use immense hip strength to fire off the line as the football's snapped, propelling him either through or around the often taller and heavier offensive tackles who stand in his way. Power cleans mimic that movement. "You're using your hips to explode the weight up, and that usually translates to the field," he says. "It's like getting out of your stance. You're starting off at the bottom, and you're exploding."

HOW HE TRAINS: In three seasons at Chattanooga, Davis has added roughly 30 pounds while cutting his body fat percentage. To ensure his defensive ends don't bloat and sacrifice speed while adding weight and strength, Chattanooga Director of Athletic Performance Scott Brincks mixes heavy work – Davis can squat 600 pounds and clean 365 – with explosive plyometrics and intense cardio, such as hill runs.

COACH KNOWS BEST: To ensure he's strong enough to wres-

tle with linemen but fast enough to hunt down players in the backfield, Davis' 6-foot-4, 270-pound frame must remain lean and agile even as he packs on muscle. What is vital for adding the right type of weight? Smart nutrition. Davis may have to eat heaps of food to bulk up, but he sticks to grilled chicken and fish, and couples them with rice or potatoes for energy. "We try to give them as many calories as you can and try to get quality calories in their bodies," Brincks says. "To be successful you have to do the right things when the coaches aren't around, and he does a great job with that."

THE BIG PICTURE: Ultimately, not everyone will be able to cut body fat while simultaneously adding slabs of muscle. But doing cleans and eating smart can help any athlete make strides. To reach Davis' level, though, genetics matter. "The secret," Brincks says, "is probably what you've been blessed with."



FRANK MATTIA PHOTO

Dajsha Avery

Grand Valley State University • Throws • Major: Computer science and arts for teaching

ACCOMPLISHMENTS

- Seventh-place finish in discus at the 2016 Division II Women's Outdoor Track and Field Championships.
- Eighth-place finish in shot put at the 2016 Division II Women's Outdoor Track and Field Championships.

WHY SHE TRAINS: While upper-body strength is important, elite throwers must use their entire bodies to generate distance. No movement in the weight room mimics the forces applied during a throw quite like the snatch, which demands that the legs, core and upper body work in concert to move the bar overhead in one motion. "You feel it throughout the throw," Avery says. "I can hit it at the finish a lot harder than I could before. It makes it feel easier."

HOW SHE TRAINS: Avery has a powerful lower body. She is a rare student-athlete who relishes squat day. But she admits she needs to improve

on upper-body strength and loathes pullups.

COACH KNOWS BEST: Avery doesn't simply need to be able to push and pull relatively heavy weights. She must move those weights quickly. The speed that the bar moves on a snatch or a press is equally important to how much weight she is moving, says Sean Denard, an assistant track and field coach who oversees throws at Grand Valley State. "I think obviously how much weight you do helps, but the speed of it, the tempo (matters)," Denard says. "Especially in throwing, because the thing is, you've got to be strong to throw. Everyone's throwing the same thing, so it's about how well you move that 4(-kilogram) shot put."

THE BIG PICTURE: To build enough power to hurl a shot nearly 15 meters requires low-repetition, full-body training that builds size and strength even if it comes at the expense of endurance.



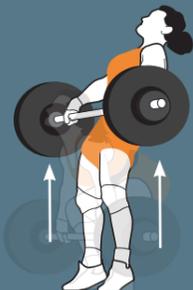
GRAND VALLEY STATE UNIVERSITY PHOTO

KEY ABILITY: Full-body power
KEY WORKOUT: Snatch

1



2

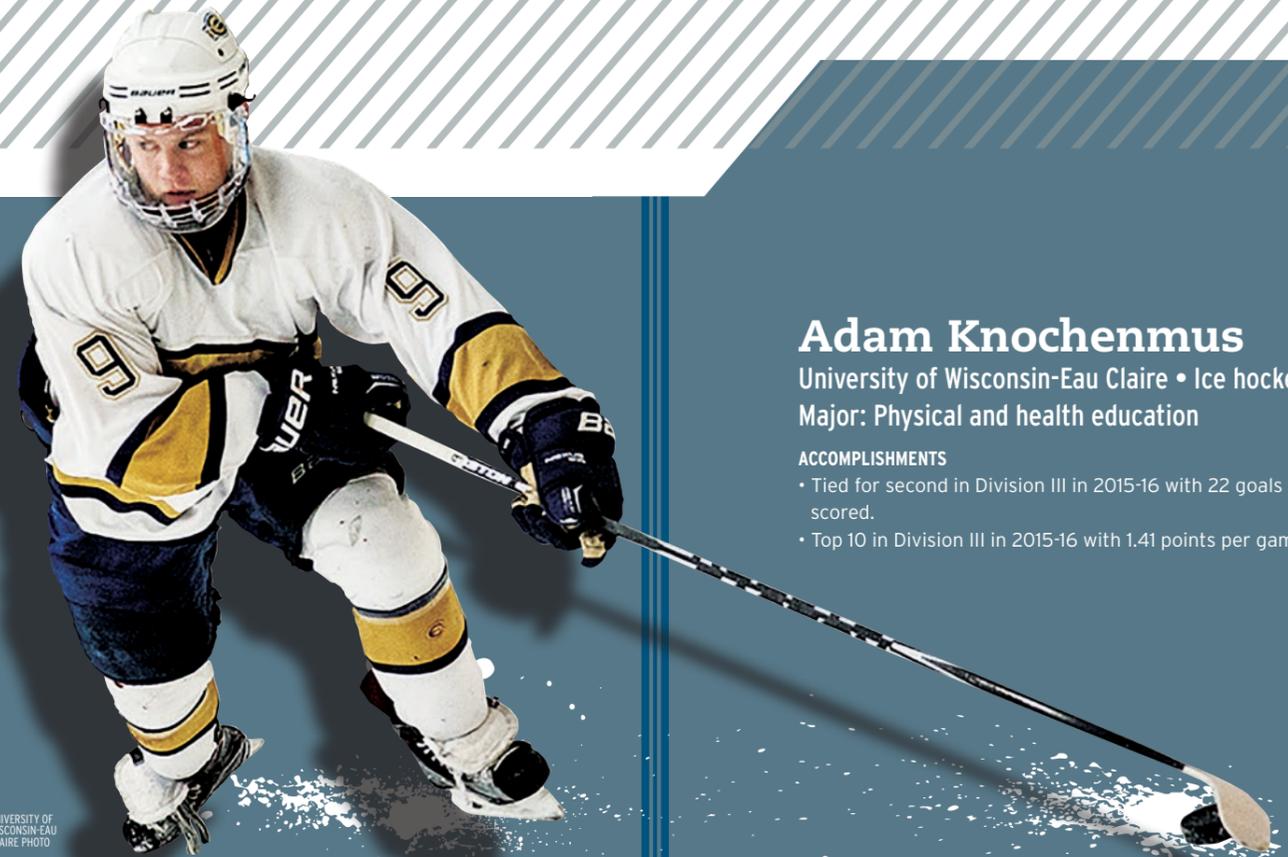
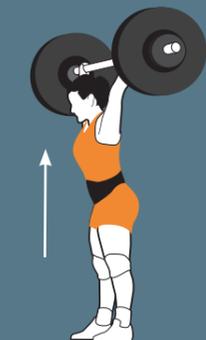


3



All one motion

4



UNIVERSITY OF WISCONSIN-EAU CLAIRE PHOTO

Adam Knochenmus

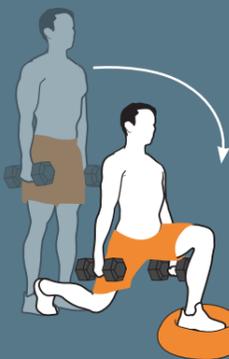
University of Wisconsin-Eau Claire • Ice hockey • Major: Physical and health education

ACCOMPLISHMENTS

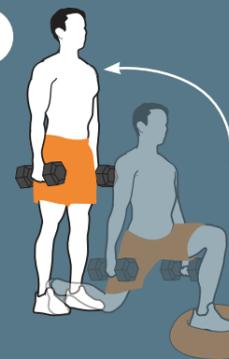
- Tied for second in Division III in 2015-16 with 22 goals scored.
- Top 10 in Division III in 2015-16 with 1.41 points per game.

KEY ABILITY: Leg strength | **KEY WORKOUT:** Lunges

1



2



Step forward

1



2



Step to the side

WHY HE TRAINS: Standing only 5 feet 8 inches, Knochenmus relies on speed to weave through larger defenders and score goals, and moving quickly in skates requires considerable leg strength. Knochenmus hones his through squats and a variety of lunges, which simulate his legs' motion as he skates forward or cuts hard from side to side. "We need all those movements when it comes to hockey," he says. "You condition yourself to doing workouts explosively, too, which triggers some fast-twitch muscles in your legs that we need to have to be faster and be more explosive and have more power when we skate."

HOW HE TRAINS: While he focuses on strengthening his legs, Knochenmus prepares his entire body for the pounding it will take during games. "There's a lot of big boys out there," he says. "I just pride myself on being good at just staying on my feet and being as tough as possible, not letting these guys knock me around."

COACH KNOWS BEST: While a typical shift for Knochenmus may last only 30 to 45 seconds because legs and lungs burn out so quickly on the ice, Wisconsin-Eau Claire head coach Matt Loen relies on his top scorer for minutes at a time late in close games. Knochenmus can stay on the ice and remain effective because of how much time he spends strengthening his legs for a game's most important moments. "You want your horses to be horses," Loen says. "If they're ponies in the end, they're not going to be able to play."

THE BIG PICTURE: Skating alone won't improve speed and strength on the ice. Squats and lunges burn, but the sport's best players embrace them.

Tristan Duran

University of Minnesota, Twin Cities • Gymnastics • Major: Business

ACCOMPLISHMENTS

- Ninth place, 2016 National Collegiate Men's Gymnastics Championships all-around event.
- 2016 all-Big Ten first team.

WHY HE TRAINS: Duran, one of the top all-around gymnasts in the country, is strong throughout his frame, but he excels at events that place a particular strain on his upper body. Think of the parallel bars, high bar and pommel horse – each demands immense grip, wrist and shoulder strength, which he forges through a litany of complex body-weight presses and holds and a handful of weight training exercises. The most daunting is a parallel bar handstand workout that requires 10 dips, walking on his hands for three lengths of the bar, then holding a handstand for a minute. "I dread it every time," he says.

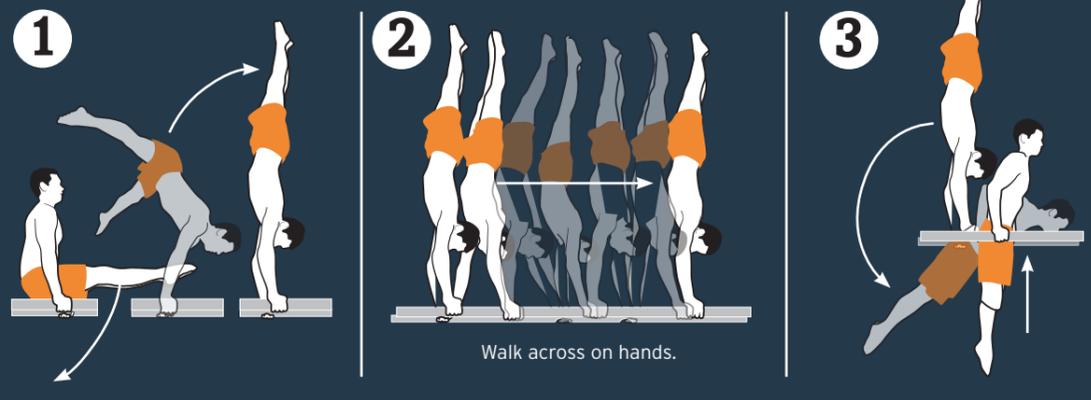
HOW HE TRAINS: Gymnasts design their workouts to prepare their muscles for the range of strenuous positions they may face as gravity or centrifugal force pulls them out of alignment during a routine. This means using the apparatus not only to practice their maneuvers, but also as workout equipment to knock out

reps of various presses, pulls and holds. "The key is: Can you handle your body when you're in an awkward-type position?" Minnesota men's gymnastics head coach Mike Burns says. "You need to make sure that you train to the full range of the exercise so that if you do ever get caught up in a situation, you've been there before, and you know what to do to get out of it."

COACH KNOWS BEST: A strong core – not just abdominals, but lower back, obliques and glutes – is necessary for any gymnast's specialty. And adding strength without adding weight is also imperative. "You want to increase the strength-to-weight ratio as best you can because everything we do is about moving body weight around," Burns says.

THE BIG PICTURE: Gymnastics is a true test of functional strength. While weight training can help gymnasts gain power, strenuous body-weight workouts prepare them for the movements they must execute during routines.

KEY ABILITY: Functional upper-body strength and flexibility
KEY WORKOUT: Parallel bar handstand walk and one-minute hold



UNIVERSITY OF MINNESOTA, TWIN CITIES, PHOTO



Brittany Hernandez

University of Colorado, Colorado Springs • Basketball • Major: Criminal justice

ACCOMPLISHMENTS

- Seventh in Division II in scoring in 2015-16 (20.8 points per game).
- 2015-16 Rocky Mountain Athletic Conference Player of the Year.

WHY SHE TRAINS: The 6-foot-1 forward was one of the nation's top scorers last season and her conference's defensive player of the year. Finishing strong at the rim and then protecting it at the other end requires serious hops. Hernandez says plyometric exercises have improved her ability to play near the rim. "During the offseason I play against guys," she says. "When I can get a rebound over a guy and just take the ball from him, or I'm jumping higher than a guy, then I'm noticing it's translating."

HOW SHE TRAINS: As part of a well-rounded program that includes cardio and weight training, Robin Conroy, a Colorado-Colorado Springs strength and conditioning coach, puts players through a series of

plyometric and agility drills designed to ensure fluid movement on the court. Hernandez tackles traditional box jumps along with a litany of variations, including lateral step-ups and squat jumps. She also relishes upper-body workouts that she says help her hold off opponents while boxing out.

COACH KNOWS BEST: Plyometric exercises are more than just jumping. Learning the correct way to land is key to keeping ankles and knees healthy. Conroy has taught Hernandez and her teammates how to land safely on two feet during drills so muscle memory guides their return to earth after a layup or rebound. "You're really looking at someone's landing mechanics. You're able to see if they've got a knee collapse," Conroy says. "That's extremely important for injury prevention."

THE BIG PICTURE: Building strength and stamina through presses, cleans, sprints and more is essential, but so is mastering fluid leaping, landing and lateral movement to dodge significant injuries.

KEY ABILITY: Leaping and landing safely

KEY WORKOUT: Box jumps/plyometrics



KEY ABILITY: Cardiovascular endurance

KEY WORKOUT: Medicine ball toss while treading water



Giorgio Cico

Johns Hopkins University • Water Polo • Major: Undeclared

ACCOMPLISHMENTS

- 2015 second-team All-American
- 2015 Collegiate Water Polo Association Southern Division Rookie of the Year

WHY HE TRAINS: Cico wouldn't be a prolific offensive threat without the leg strength to propel his upper body above the water's surface when he needs to fire a shot, and the stamina to keep doing it.

HOW HE TRAINS: Cico's routine is a mix of leg, core and shoulder work out of the pool and endurance and strength exercises in it. Cico swims 3,000 to 4,000 yards at various speeds every practice to build stamina and performs drills designed to build core stability and leg strength. Some example

exercises: treading water while either tossing a medicine ball to a teammate or holding a full water cooler jug above his head.

COACH KNOWS BEST: Johns Hopkins coach Ted Bresnahan pushes his athletes through repeated sets of 100-yard sprints in the pool during the preseason, hoping to prepare them for the shorter dashes they'll have to make in games. "We'll swim a couple thousand yards a day," he says, "with intensity."

THE BIG PICTURE: In short, the sport is exhausting. "One of the keys to our training is getting used to playing tired," Cico says. "No matter how much you train ... water polo will make you tired no matter what." **A**



JOHNS HOPKINS UNIVERSITY PHOTO