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## 'These kids are ticking time bombs': The threat of youth basketball

By Baxter Holmes  
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**STAPLES CENTER FALLS** graveyard silent and still, a sellout crowd staring at the rookie beneath the basket, surrounded by medical personnel. His eyes are wet with tears. His head coach tells him to stay strong. It's Oct. 28, 2014, the Lakers' regular-season opener and the NBA debut for [Julius Randle](#), a 6-foot-9 forward and the Lakers' first first-round pick in seven years, a foundation of their post-Kobe Bryant future.

Midway through the fourth quarter, the 19-year-old had driven to the hoop, leaped ... and collapsed. Now, seconds stretch into eternity before his right leg is stabilized in an air cast and teammates load him onto a stretcher, which disappears into a tunnel. Randle's leg is broken. His rookie season is over, 14 NBA minutes after it began.

As Randle is wheeled away on that October night, Lakers head strength and conditioning coach Tim DiFrancesco sits at a high-top table inside the players' lounge adjoining the Lakers' locker room, studying the replay on a large flat-screen television. DiFrancesco notices that Randle's takeoff and landing appear normal, that he suffered no mid-air collision in between. There is no clear culprit. No explanation. Randle's leg simply snapped.

Before he joined the Lakers, DiFrancesco worked at an outpatient physical therapy clinic outside Boston. While there, he saw scores of young athletes who had suffered serious injuries -- back, knee, hip -- that one might expect to find in those who worked for decades in hard-labor jobs. Later, at NBA pre-draft combines and individual workouts, he evaluated high-level college players who consistently couldn't perform basic movements, such as squats, lunges or balancing on one leg. There were players he'd evaluated who moved so poorly that he says he "absolutely" expected them to suffer injury. In every instance, DiFrancesco thought of time: Did he have enough before that player's first NBA game to potentially repair the issues that he had noticed? He'd calculate potential weight-room hours and hope there were enough to build up a tolerance to prevent an injury.

An X-ray would later find that Randle had suffered a "stress reaction," a precursor to a stress fracture but without the break. Repetitive impacts to that bone had led its structure to break down, and a team spokesman later said that the stress reaction is "likely what contributed to the break."

Back in the players' lounge, DiFrancesco studies the replay again and again, stopping, rewinding and playing again.

*These kids, he thinks to himself, are ticking time bombs.*

"**AND, AGAIN, I** understand I shouldn't use a broad brush to criticize the entire AAU system, because parts of it are excellent. But also parts of it are very broken, especially [as it] relates to injuries in the league. What we're seeing is a rash of injuries among young players."

NBA commissioner Adam Silver is standing before a lectern prior to Game 1 of the 2017 NBA Finals between the Warriors and Cavaliers. He's upholding a Finals tradition for the commissioner to field questions on issues facing the league. The seventh question, at first, sounds boilerplate: It focuses on the NBA's newly branded G League and whether Silver believes it might become a pipeline for NBA hopefuls to skip college. Silver says it's

an issue the league is looking into. But then he takes a detour and begins addressing something else: youth basketball and injuries -- almost as if he has something he wants to get off his chest. "What our orthopedics are telling us," Silver says, "is they're seeing wear-and-tear issues in young players that they didn't used to see until players were much older."

What Silver could not have known was just how steeply injuries -- and especially injuries to young players -- would impact the NBA the very next season. In 2017-18, the number of NBA games lost to injury or illness surpassed the 5,000 mark for the first time since the league stopped using the injured reserve list prior to the 2005-06 campaign, per certified athletic trainer Jeff Stotts, who has cataloged the careers of more than 1,100 players since that point and is considered the most authoritative public resource for tracking injuries in the NBA. This past season, in 2018-19, the league topped the 5,000 mark again.

In 2017-18, players who had been named to multiple All-Star teams missed an average of 14.63 games due to injury, the second-highest such figure that Stotts had recorded. That figure jumped this past season to 17.02.

And according to Stotts' database, the four highest tallies of games missed by young players in their first two seasons have occurred in the past four seasons. Players picked in the 2014 first round missed 838 games to injury during their first two seasons, the highest figure Stotts has ever recorded; in 2015, 637, the third-highest tally; in 2016, there were 548 missed games; and in 2017, 751 games, the second-highest.

The question is why.

Through dozens of interviews over the past two years with NBA team and league officials, current and former players, AAU coaches, parents, youth players, researchers, medical and athletic training officials in and around the NBA, as well as those intimately involved with youth basketball, one possible answer repeatedly emerged: Players, they say, are physically broken down by the time they reach the NBA.

"It is grave," says one NBA general manager, who says his team's injury databases on players entering the draft, dating back decades, leave "no question" that there are more orthopedic issues among young players in recent years. "It's very sad, where a kid has an NBA body, he's got NBA talent, he's got even an NBA mentality, but he doesn't have a body that can withstand the rigors of the training and the actual games, whether it's to get to the NBA or just to hold up. It's a tough deal."

Silver, in an interview with ESPN, calls the issue "the highest priority for the league -- and I think both in terms of the health and wellness of the players in the NBA, but also the larger category of millions of players, boys and girls, not just in the United States, but globally."

"It's an epidemic," says Leo Papile, who founded and has coached the Boston Amateur Basketball Club on Nike's Elite Youth Basketball League circuit -- arguably the most prestigious grassroots circuit -- for four decades.

"I have many kids who are going to go play in college next year," says Dr. Neeru Jayanthi, the Director of Sports Medicine Research and Education at Emory Healthcare in the Atlanta area and one of the leading researchers on youth sports, "and this whole year has just been about trying to get healthy so they can step on that doorstep as a freshman and actually have a chance to participate."

Says Jayanthi: "Kids are broken by the time they get to *college*."

**THE MOST COMMON** explanation is as lazy as it is popular: Players today just aren't as tough as their NBA forefathers. They're *soft*. Chip Schaefer, the Bulls' director of performance health, refers to this trope as "millennial bashing" -- and this from the man who served as the head athletic trainer during the Bulls' 1990-98 heyday, when they were led by the standard-bearer for NBA toughness: [Michael Jordan](#).

In his career, Jordan battled the hard-hitting "Bad Boys" Pistons and legendarily played through most any injury. In Jordan's day, the gold standard for durability was simple: start all 82 NBA regular-season games, which he did

in eight of his 13 seasons in Chicago.

But it's not as if Jordan was a relentless baller all year long.

"When the season ended, Michael left and played golf and didn't pick up a basketball again until probably a little bit before training camp [in September]," says Wally Blase, a Bulls athletic trainer from 1993-2000. "He might have played pickup ball with some friends, but he wasn't working eight hours a day at some gym with some shooting coach." (And in contrast to the myth that has grown around him, Jordan, Blase notes, didn't treat every practice as if it were Game 7: "There were days when Michael would show up, put ice on his knees, go smoke a cigar and then go play 18 holes of golf.")

Jordan wasn't unique in this regard. Former Lakers head athletic trainer Gary Vitti, who spent 32 years with the team, says the Showtime Lakers "hardly played any basketball" when the season ended: "As soon as the season was over, everybody would take at least minimum two weeks, two to three weeks off, give their bodies a rest, let them recover, and then slowly we would do either some jogging or biking and some strength training."

As the [Orlando Magic](#)'s strength and conditioning coach from 2006-12, Joe Rogowski saw young players struggle with simple movement patterns. So to help, he'd have players participate in different sports during the summers, like boxing, swimming and beach volleyball. It broke up the monotony, but also cross-trained them after years of hyperfocus on basketball.

What Rogowski was attempting to counteract was specialization -- the growing tendency for parents and kids to focus on one sport, year-round, to the exclusion of all others.

In a series of studies in 2017 and 2018, a team of researchers working with the University of Wisconsin's David Bell, a professor in its Department of Kinesiology's Athletic Training Program and the director of the Wisconsin Injury in Sport Laboratory, found that while most youth athletes today believe specialization increases their performance and chances of making a college team, the majority of those who reached Division I level didn't classify as highly specialized at the high school level. Jayanthi and a team of fellow researchers had reached a similar conclusion in a separate 2013 study. (The classification of "highly specialized" was granted to athletes who answered "yes" to the following three questions: *Can you identify your primary sport? Do you play or train in that sport for more than eight months of the year? Have you ever quit one sport to focus on a primary sport?*)

But while the upsides of specialization are unclear, there are few doubts about the downsides.

A separate 2016 study from Bell and his team found that 36% of high school athletes classified as highly specialized, training in one sport for more than eight months a year -- and that those athletes were two to three times more likely to suffer a hip or knee injury.

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**PLAYERS KEPT DROPPING** out -- that's all Jayanthi knew for sure. It was happening at four prestigious national tournaments for elite tennis players ages 12-18. There, players who played more than four matches -- often at least one per day over a span of four consecutive days -- were more than twice as likely to pull out of the tournament before their fifth match for medical reasons than those who didn't advance that far.

Soon thereafter, they examined about 530 high-level tennis players aged 12 to 18 in the Midwest. One of the first findings was the majority of these athletes -- about 70% -- had specialized in tennis, and the average age that they'd begun doing so was 10 years old. They also found that those who had begun specializing in tennis at a young age were 1.5 times more likely to report an injury than those who hadn't specialized. One year later, they began what would become the largest clinical study of its kind, following about 1,200 young athletes -- the average age was 13 and a half -- across all sports in the Chicago area for up to three years. Roughly two-thirds of that group had visited local sports medicine clinics with injuries; the other third were uninjured and attended primary care clinics, largely for annual sports physicals. The goal: compare the injured to the uninjured, over a period of three years, and see what the numbers revealed.

Their conclusion: Those who were highly specialized in one sport (at the exclusion of other sports) and played it year-round were at a significantly higher risk for serious overuse injuries, such as bone and cartilage injuries and ligament injuries. How much higher of a risk? About 125%.

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Kids are broken by the time they get to *college*.

”- *Dr. Neeru Jayanthi, the director of sports medicine research and education at Emory*

That figure would establish one of the first strong and independent links between injuries and sports specialization. It would spark headlines. And that issue would become among the highest priorities for two leading sports medicine organizations -- the American Medical Society for Sports Medicine, which held a research summit on this topic with leaders from around the country; and the American Orthopedic Society for Sports Medicine.

Meanwhile, key institutions in the sports science community would begin to see the effects. It was noticed in Santa Barbara, California, where teenagers now head into the P3 Applied Sports Science Lab, a training center that specializes in advanced athlete assessment, and P3 officials are alarmed by what they see. P3 founder Dr. Marcus Elliott calls basketball "the hardest sport on the human body, where issues -- biomechanical problems -- manifest as injuries, manifest as shortened careers, more so than any other the other sports that we work in." It is so taxing that when discussing today's youth basketball culture, Elliott calls some of the players who emerge from it "survivors." He adds, "What they put their bodies through is so rigorous. It's so extreme. And a lot of them don't make it out to the other side." It was noticed in Los Angeles, where teenagers now make up the majority of the injured population that files into the Movement Performance Institute, a sports science laboratory focused on injury prevention and recovery.

"They just march in here and out -- knee pain, ankle pain, head pain, back pain," says Dr. Chris Powers, a USC professor and the director of its biokinesiology program. "We see kids all the time that are 10, 11 years old with really bad tendinitis and overuse injuries all the time. I've seen ACL tears in 11-year-olds."

It was noticed in the Atlanta-based offices of Dr. Mike Clark, who founded a program widely used across the NBA that focuses on movement efficiency and injury recovery/prevention: Fusionetics. But, as is the case with P3, Fusionetics officials are working more with high school athletes to help stem issues that Clark saw during his 14 seasons as a team physical therapist for the [Phoenix Suns](#). "It's getting significantly worse," Clark says, "because kids are specializing at such a young age and they're not recovering."

And still, despite these collective efforts, the NBA continues to receive players who are broken down by the time they get there.

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**IN 1984, AT** the age of 21, Jordan joined the Bulls after spending three years in college, typical of players at that time. A decade later, in 1995, Kevin Garnett would make the leap straight from high school, at the age of 19, setting off what would be a wave of others on the prep-to-pro path. In 2005, Andrew Bynum would make the same jump, to the Lakers, at the age of 17.

Though that gap in ages -- from 17 or 19 to, say, 21 -- might not seem large, Schaefer, the Bulls' director of performance health, calls it critical for the development of musculoskeletal and support systems that help young players withstand an NBA workload. And that transition is a steep one: In his first NBA season, a rookie might play in as many as 100 games, including exhibition, regular-season and postseason, after playing a third of that in a college or high school season. "You throw in the travel and all the other things that are involved, it is a lot of demand as opposed to allowing your body to mature in your early 20s," Schaefer says.

Taken together, these factors are cited by specialists who describe what they refer to as the start of "The Shift" -- and several say they started noticing it in the early 2000s.

At that point, prep players were declaring for the draft in droves, and the NBA's allure -- its riches and fame -- helped fuel the rise of single-sport specialization, as players (and their parents) began to focus on the one sport they sought for a lucrative career. This, in turn, helped fuel the surge of club basketball; if teenagers needed more repetitions to make that leap to the NBA, and more exposure to gain the attention of NBA talent-evaluators, they would need more places to get those repetitions. They would need more exposure to have access to those opportunities earlier, and as young as possible, as many times as possible, with no time to recover, because there's no time to fall behind.

"It's a vicious cycle," Vitti says.

Basketball is now the most popular youth team sport in America, with more than 10 million boys and girls aged 6 to 17 playing it in 2017, according to the latest figures from the Sports Fitness Industry Association. There is a seemingly endless number of organized youth leagues, even though many commonly refer to just one of them: the Amateur Athletic Union. Today, "AAU" is a catch-all term for grassroots leagues and also the largest multisports organization in the country, with more than 700,000 members. Basketball is its biggest sport, with thousands of leagues, tournaments and showcases.

And just as there is a new basketball culture, there is a new type of basketball player. Ask Clark to describe what that player looks like, biomechanically, and he offers an analogy: Imagine a car with a powerful engine, one carefully engineered and maintained for years. But as powerful as that engine has become, the car's brakes and suspension are equally poor. So the car can't handle the stress that its engine puts upon it -- all akin to placing Ferrari's top racing motor inside a hybrid while making no adjustments to the car's frame.

Simply put: Today's players are faster, stronger and more athletic, the product of years of weight training, speed training, vertical jump training, skills training. But the brakes, the suspension -- their ankles, hips and core -- while often neglected, remain tasked with enduring the brunt of the body's force. "We would joke that half of these athletes are so good that they could almost out-jump their ability to land," says Blase, who is now Fusionetics' director of professional and collegiate team services. Says Clark, "All the specialization is helping the player become more skillful and more powerful and more athletic, but at the same time they're not working on the things that prevent injuries and help them recover."

Clark calls it "the performance paradox."

"Think about it as the tip of the iceberg. What you see on the top of the water is really skillful, very athletic kids, especially now even in high school. You get a sophomore that can do a 360-degree dunk whereas 20 years ago you never saw that. You see kind of the good outcome, which is improved skill, improved athleticism. But down below, their movement quality is suffering, and a lot of these kids just move absolutely terrible. You're like, 'How can a kid jump 38 inches when they can't even stand on one leg?'"

**ADAM SILVER** IS quick to note that what orthopedics and other medical professionals have informed him regarding injuries and youth basketball remains largely anecdotal.

But even that anecdotal information is alarming enough that the NBA and USA Basketball, in October 2016, unveiled its first-ever guidelines for youth basketball, which recommend, among other strictures, delaying specialization for young players in basketball until they're 14 or older; limiting high-density scheduling based on age-appropriate guidelines through high school; and ensuring rest from organized basketball at least one day a week and extended time away each year. For example: that 7- to 8-year-olds play only one game a week (length: 20-28 minutes), one practice per week (30-60 minutes), and no more than three hours per week of organized basketball. For grades 9 through 12, the recommendations are two to three games per week; 90-120 minutes per practice; and three to four practices per week. These guidelines were influenced by a group led by Dr. John DiFiori, chief of the Primary Care Sports Medicine Service and attending physician at New York City's Hospital for Special Surgery. The NBA brought DiFiori aboard in 2015 as its director of sports medicine; he'd been studying youth sports and overuse injuries for more than 25 years and was the lead author and led the working group that published *Overuse Injuries and Burnout in Youth Sports: A Position Statement from the American Medical Society for Sports Medicine*.

The issues, DiFiori says, have only grown more pervasive in the age of specialization. In basketball, as well as volleyball (both jumping sports, he notes), overuse can lead to chronic ankle injuries, development of joint and cartilage problems, even spine problems. "I don't think people realize how common back problems are, among NBA athletes," he says. "That sort of accumulation of the injuries, or the development of asymmetries, muscle tendon dysfunction, etc. That certainly can shorten a career span."

Still, one issue remains: there are no means of enforcement for even the most well-intentioned of NBA guidelines. The lack of a national governing body for youth basketball makes a uniform system of rules all but impossible, says David Krichavsky, the NBA's vice president of youth basketball development: "Because the youth landscape has been so fragmented, you have other actors coming in and gobbling up the space that exists. A lot of them are profit-driven, and you end up with an ecosystem that has kids playing way too much basketball way too early."

Speaking for AAU, Rod Seaford, a longtime AAU coach and Boys Basketball Executive Committee member and AAU Board member, says, "The NCAA and the NBA loves to lay fault for their ills at the feet of youth sports or AAU. That's a pretty common thing. We've approached the NCAA and NBA with various proposals [only] to get lip service. We don't get much serious conversation. I don't doubt that it's a legitimate concern. But it's really easy to lay all those faults of the youth coach."

Silver says that the NBA and NCAA need to join together to help ensure that the guidelines DiFiori has helped outline are uniformly enforced so "young athletes and their parents and coaches don't think that we're putting them at a disadvantage by requiring them to adhere to proper health guidelines." It remains to be seen how and when such guidelines can be enforced. While there are pitch counts in Little League, there is no equivalent in AAU.

"We recognize that we're not going to be able to change the culture of youth basketball overnight," Silver says. But, he adds, "We are cautiously optimistic."

Seaford, who notes that millions of boys and girls play youth basketball in non-AAU leagues, cautions that the solutions are far from simple: "I don't think the NBA has the power, nor do I think they should have the power to declare what organization can play basketball or when they can play it. It's impossible to enforce. USA Basketball has no control. AAU has no control. I don't know what can be done."

In the meantime, what might Silver say to a parent who believes that less isn't more -- that less basketball and more playing of other sports might hinder their child's chances of reaching the NBA or WNBA?

"I would say that we understand your concern," Silver says, "because you're in essence responding to the system as it's been ... but you're jeopardizing your long-term career by not adhering to these guidelines." When asked what he'd tell a parent who wanted to their young child to hyperfocus on basketball in the pursuit of a scholarship or an NBA career, one NBA general manager puts his message in blunt terms:

"The chase for that is real," he says, "but at what cost? Do you really want to have your kid limping around the rest of his life?"

**DR. DARIN PADUA**, chairman of the Department of Exercise and Sport Science at the University of North Carolina, has been studying sports-related injuries and athletic biomechanics for more than 15 years. And he, too, uses car analogies to describe today's young NBA players, referencing mileage. "They're 18, 19 years old when they get to the NBA," Padua says, "but they're starting their careers playing 90-plus games a year that much sooner. They have more miles at a younger age and then, when they get to the NBA, they're less mature structurally and physically. Even though they look like giants, they just can't tolerate as much."

It's difficult to tally how many hours of basketball today's athlete might play before he reaches the NBA. But consider that a parent could sign their child up for organized youth basketball as young as 7 years old -- and continue on that path all the way through high school. How many games might that equate to? Officials from one of the most prestigious teams on the Nike EYBL circuit estimate that someone who played consistently



between 7 and 19 -- over a span of 13 years -- could easily play more than 1,000 organized games (which doesn't include club-team practices, or pickup games, or workouts with trainers).

Or, to put it another way: enough games to encompass more than 12 NBA seasons.

Regardless, it is unquestionably higher than at any point in history.

Now consider Kobe Bryant.

Think of Bryant, and you likely envision a man devoting countless hours honing his game from an early age, a living exemplar of specialization made good.

In truth, it wasn't until Bryant was about 15 or 16 -- a few years after having moved back to the U.S. from Italy, where his father had played professionally -- that the Lakers icon says he started playing AAU. Bryant estimates he played in maybe five tournaments in all, plus a handful of high school all-star games. "That was it," he says.

And if Bryant's path had been more typical, more mainstream, filled with basketball-packed summers, would he still have played for 20 NBA seasons, the most ever for an NBA guard? "Hmmm ... I'm not sure," he says. "I'd like to think I'd be able to figure something out, but the reality is, I'd *have* to figure something out, because I put so much on my body."

Now, at 40, Bryant is weighing these same questions with his own children: *How much is too much? How young is too young?*

Take his second daughter, Gianna, who's 13 and playing basketball all the time: "She's looking around at different stuff and you see there's a lot. They could literally play every single weekend in club organized basketball at 10 years old. It's like, why? I had to be like, 'No.'"

Bryant looks back on what he did at that age. "It wasn't like I was playing 10 games every week or some s--- like that," he says. "I didn't play any games. You shoot a little bit every day, and then, by the time you're 15 or something like that, you start kicking it up a little bit and that's when you start training harder. But before that, it's just skill s---. Can you dribble with your left? Can you shoot properly?"

"Keep in mind," he adds, "I grew up playing, like, no games. We just played a game once every two weeks before I came back to the States."

Throughout his career, Bryant has railed against American youth basketball for failing to develop players' skills, often noting that overseas players were far more advanced on the fundamentals. But for as much as he advocates skill development, Bryant preaches patience.

"You try to overload these kids and get them to be the best in one year," Bryant says. "It's just absolutely ridiculous."

*Coming Friday: part two of our two-part series on youth basketball and how its cycle of constant competition threatens the NBA.*

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