

Florida State
University



DXA Improves Athletes' Performance and Health

The Department of Athletics at Florida State University (FSU) uses body composition measurements to help student athletes improve their speed, power, and performance, while remaining healthy. But, it hasn't been easy to measure body composition in a consistent and accurate manner. So, last year, three departments within the FSU Athletic Department – Strength and Conditioning, Nutrition, and Sports Medicine – joined together to add the Hologic Horizon™ DXA system to their programs. DXA enables the departments to measure athletes' bone mineral density and body composition on a regular and consistent basis.



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“The Horizon DXA system is a three component system, providing more information on bone density, lean mass, and fat mass,” states Daniel Schaefer, Director of Strength and Conditioning at FSU. “We’re developing premier athletes at Florida State University. DXA scans provide a bigger picture, and allow us to bring the athlete into the conversation about their body and how it relates to their performance.”

Each year, FSU has more than 400 student athletes participating in 20 sports programs within the National Collegiate Athletic Association (NCAA) Division I Atlantic Coast Conference. The Department’s goal is to maximize the potential of each student athlete through comprehensive programs including strength and conditioning, sports nutrition, and sports medicine.

DXA Scans Help Inform Training Programs

Using the DXA system, the athletic department will perform whole body scans on each athlete about four times a year. “We are using the DXA as a litmus test to make sure we are providing the right individualized nutrition and training plans to make sure our athletes are on progress for the season as well as their four-year career at Florida State,” explains Schaefer. “Our ultimate goal is to improve performance and reduce the athlete’s risk of injury.”

“The DXA system is a major purchase; but, we share the data among all three departments,” adds Katy Meassick, Director of Sports Nutrition. “There are very few instruments all our departments can invest in and utilize.”

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To date, the FSU Athletic Department has performed more than 600 exams. "DXA is helping us start in-depth conversations with our student athletes, helping them understand this is your body, this is what you need for optimum performance," says Meassick. "We talk about creating positive habits, such as eating correctly, sleeping more, and doing more recovery measures from training. We want to be sure we are increasing bone mineral density and lean mass. If not, we need to determine how we tackle that with nutrition as well as with strength and conditioning."

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FSU's sports medicine department uses the DXA data as a preventive measure to identify red flags before athletes start competition. They also use DXA for student athletes who have undergone surgery for injuries, such as ACL tears, to track whether they are losing or retaining muscle throughout the surgery and rehab process. For athletes in a power sport like football or soccer, the department takes DXA scans of their lower legs to make sure they're symmetrical and the muscle is back to where it needs to be before the athlete goes out on the field.

For overhand athletes, DXA scans identify any differences in muscle mass or bone density between their right and left limbs. "We use the DXA scans to talk with athletes about their dominant arm and shoulder strength and show the differences between the two limbs," explains Schaefer.

Symmetry is important to ensure shoulder and back health. They'll never be completely symmetrical, but we can do an intervention to gain more symmetry and use DXA to monitor if it is successful."

If we are providing a nutritional or training intervention, we want to make sure we can objectively quantify we met our goal. The DXA is our test to determine that.

Previously, the athletic department used Bod Pod to measure body composition. But to be effective, the exam could only be given under certain conditions which hindered when the athletic department could measure athletes, so they couldn't scan athletes as often as they wanted. With DXA, the athletic directors can fit the test into the athlete's schedule.

FSU has begun to measure all new athletes coming into the program to get baseline measurements. "With DXA we can see where they are now, and what interventions we can employ to help them get to where they want to be," explains Schaefer. "Some athletes need to maintain muscle mass and some need to gain muscle mass. If we are providing them with a nutritional or training intervention, we want to make sure we can objectively quantify we met our goal. The DXA is our test to determine that."

"Ultimately, we want to be able to sit down with athletes and say this is where you're at, and if you want to be excellent, this is where you need to get to," states Schaefer. "We want to develop the athlete's roadmap and demonstrate through the accumulation of data what it takes to be good at a certain level. We can show how an increase in lean mass will help increase power output."

Visual Reports Empower and Motivate Athletes

FSU's athletic directors use the color reports available on the Hologic Horizon system to visually show athletes the percentages of fat, lean mass, and bone in their body and where it is located. "The athletes love to see the coloring of the relationship of fat and lean muscle to bone from the DXA scan," states Meassick. "It is a real eye-opener, especially for the younger athletes. The picture of their body composition and the hard numbers of their change in body composition validates what they're doing and motivates them to keep going. It makes them feel as involved in their conditioning as we are."



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DXA also provides the data to show coaches and the administration the effectiveness of our programs to improve the performance of our athletes and to keep them healthy,” adds Meassick.

“DXA has met expectations and is well worth the investment,” concludes Schaefer. “Everyone can be involved in it; strength conditioning, nutrition, and sports medicine. We want to create the premiere athlete and keep the entire health of the athlete intact and in the forefront of our minds, and DXA helps with that.”

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