

## **Serena Williams Treated for Blood Clot in Lung, People Reports** **By Eben Novy-Williams and Elizabeth Lopatto**

*March 2 (Bloomberg)* — Serena Williams was treated for a blood clot in her lung, the latest setback after injuries that have kept the 13-time Grand Slam singles winner off the court since last July, People magazine said.

Williams, 29, was treated at Cedars-Sinai Medical Center in Los Angeles for the clot found last week, the magazine quoted the player's representative Nicole Chabot as saying. The former No. 1-ranked player on the WTA women's tennis tour also received emergency care two days ago for a bruise sustained as a result of "treatment for a more critical situation," Chabot told the magazine. Williams, who hasn't played a competitive match in more than seven months, may miss up to six months as she recovers from the condition, according to Jonathan Orens, associate director and clinical chief of pulmonary care at Johns Hopkins University School of Medicine. Chabot and Jill Smoller, who also represents Williams, didn't immediately return voicemail messages seeking comment.

Williams last played in July, when she won her fourth Wimbledon title. She cut her foot on a shard of glass in Germany following the victory and had surgery that month. Williams had a second operation in October after re-tearing a tendon in her right foot. Raed Dweik, director of the pulmonary vascular program in the department of pulmonology and critical care medicine at Cleveland Clinic, said Williams's clot could be a result of the foot injury.

### **Common Causes**

"This commonly happens after surgery, or if you have a cut or injury to the foot, that's immobilizing, so you're not moving," Dweik said in a telephone interview. "A cast can be high risk, since the blood in the vein doesn't get pumped as regularly."

A blood clot that starts elsewhere in the body can easily get caught in the lungs, which act as a filter, Dweik said. Symptoms, experienced by roughly half of those with the condition, may include shortness of breath, chest pain or coughing up blood, according to the National Institutes of Health. The goals of treatment are to keep the clot from growing, as well as new clots from forming, according to the National Heart, Lung and Blood Institute. Blood thinners, which block the body's ability to create clots, are usually prescribed and the body will dissolve most clots with time, according to the institute.

Blood clot risks include long periods without movement, such as during plane and car rides. According to People, Williams discovered the clot after returning to California on a flight from New York, where she was meeting with doctors about her foot.

### **Risk Factors**

"Immobility is also a risk factor because that allows the blood to pool instead of circulating," Samuel Goldhaber, director of the venous thromboembolism research group at Brigham & Women's Hospital in Boston, said in a telephone interview.

"That's why you read on travel brochures to take precautions during long plane rides." Pulmonary embolism, the third-most common cardiovascular disease after heart attack and stroke, can also be a result of genetic traits, Goldhaber said.

Williams has 37 career WTA victories and has earned more than \$32 million in prize money. The American has won 12 Grand Slam doubles titles and two Olympic gold medals in doubles, all with her sister Venus Williams.

Williams may be advised to stay off the court for as long as six months to allow the blood thinners to work, according to Orens, of Johns Hopkins in Baltimore. Most physicians would suggest bed rest for a few days, then to avoid aggressive physical activities for four to six weeks in a conservative recovery program, he added.

### **Clot Movement**

"Most of these clots come from the leg, and there may be a residual clot," Orens said. "Aggressive activity could break that clot off, allowing it to also move to the lung, so that's the concern."

If Williams is sidelined for six months, she will miss the U.S. Open, which starts on Aug. 29, for the second consecutive year. She has won the season's final Grand Slam event in New York three times, most recently in 2008.

Williams lost her No. 1 ranking to Denmark's Caroline Wozniacki on Oct. 11 and is now ranked No. 11. She was scheduled to play in an exhibition event next week with Rafael Nadal, Roger Federer and Maria Sharapova in Eugene, Oregon, according to the event's website.