



## NEWS RELEASE

*For immediate release*

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### **Madonna's new camera system focuses on movement problems**

*Lincoln, NE* – Ever have the feeling you were being watched? Imagine having your every move tracked by 12 infrared cameras taking images from multiple perspectives at up to 10,000 frames per second. This is the type of futuristic analysis that has just been acquired by the Madonna Research Institute, Movement Sciences Center of Excellence.

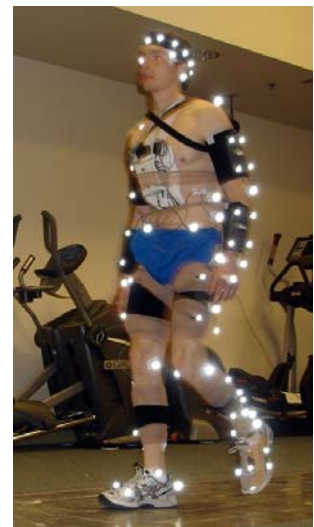


Madonna is the first rehabilitation hospital and gait lab in the country to have the Oqus 3000 camera system by Qualisys. The system will be used to identify, analyze, and develop new treatment programs for gait and movement problems.

“This system will allow us to have much better data when analyzing a person’s movements,” said Judith Burnfield, PhD, director of the Madonna Research Institute. “The information will be used to enhance rehabilitation programs to meet the unique needs of patients served at Madonna, as well as develop new and innovative treatments through research.”

The new system was acquired to assist with current research and future collaborations on a national level. The 12 cameras are strategically placed around the walls of the Madonna Gait and Motion Lab. The person involved in the study has a minimum of four reflective markers attached to each body segment. The person then walks a path or performs the activity being analyzed, such as using an elliptical exercise device or climbing steps. The cameras take rapid-fire images, producing technically sophisticated mapping information. Each marker must be seen by at least two cameras to capture data.

“The cameras are incredible tools. However, we still need human involvement to reconstruct the data and interpret the results to identify gait and movement issues,” added Dr. Burnfield. “The cameras



provide excellent flexibility so that movement can be tracked precisely regardless of whether a person is walking or doing some other activity. The camera system can also be subdivided and moved, so we can perform analysis at different locations, such as at Madonna ProActive. This will help us learn how a person moves in different scenarios and what challenges they may face when returning to the community.”



After analysis, the image data is processed through 3D software that reproduces the participant’s movements using a model skeleton. The software is similar to motion software used in movies to create computer generated characters. “Except, these are actual people with real movement problems,” added Dr. Burnfield.

Ultimately, the data produced by the motion capture system will be used to enhance rehabilitation programs, equipment devices and therapies, producing better results and outcomes for people.

“It’s all about making life better, not only for our patients, but also for our nurses and therapists,” Dr. Burnfield said. “We want to ensure that patients have the best rehabilitation programs available to them while they’re in the hospital and that once back in the community they have opportunities to pursue the activities that are important to them. From a clinical perspective, back injuries are a concern for all hospitals. Using the cameras in research studies will help us develop more effective patient moving techniques to ensure zero lift policies can be applied and maintained.”

“The new camera system represents a significant step in advancing gait and motion research. With this technology, we can collaborate and share information with researchers around the country and internationally, as well,” Dr. Burnfield added.

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**This year, Madonna Rehabilitation Hospital celebrates 50 years of providing hope and healing to thousands of people whose lives had been interrupted by traumatic events or illness.** Madonna’s approach to rehabilitation is much more than just therapy, it’s rebuilding lives and families; and putting hopes and dreams back together. Through highly specialized programs and services, Madonna offers individualized rehabilitation treatment to help every patient heal in mind, body and spirit – and ultimately live life to the fullest. Madonna Rehabilitation Hospital is located at 5401 South Street in Lincoln, Nebraska, 68506; 402-489-7102; [www.Madonna.org](http://www.Madonna.org).