



Visit VirtualScopics in the Windy City

VirtualScopics will be attending and exhibiting at 2 important conferences in Chicago next month:

[North American Spine Society](#)
Booth # 2620—exhibiting
Chicago, IL
Nov. 2-5, 2011

Chief Technical Officer Jon Riek will be on hand at the [North American Spine Society Annual Meeting](#) to discuss VirtualScopics' work in the study of Degenerative Disc Disease. For those studying Intervertebral Disc Repair or Spinal Fusion, we invite you to visit Booth 2620 and ask Dr. Riek how imaging can best be implemented to benefit your trial.

Further reading:
[Assessing the Spine using MRI, CT, and X-Ray](#)

[American College of Rheumatology](#)
Booth # 865—exhibiting
Chicago, IL
Nov. 5-9, 2011

Vice President of Clinical Affairs, Mark Tengowski, DVM, MS, Ph.D., will be attending the [American College of Rheumatology Annual Meeting](#) and be available to discuss VirtualScopics' imaging work in the study of Rheumatoid Arthritis.

Further reading:
[Imaging Assessment of Rheumatoid Arthritis](#)

If you will be attending any of these conferences, we invite you to stop by our booth. Or, for your convenience, schedule time with us for an on-site meeting using the below link:

[Contact VirtualScopics](#)

Ask Ed: Quantitative MR in Multi-center Clinical Trials

Below is a link to an article written by VirtualScopics' Chief Scientific Officer Ed Ashton and published in the Journal of Magnetic Resonance Imaging. This is an important article and one of great benefit to those currently conducting or considering using imaging in a multi-center trial. Ed discusses the challenges inherent in such trials and how to reap the benefits of quantitative MR by paying meticulous attention to each stage of the image acquisition and analysis chain.

While the article abstract is rewritten below, we invite you to read the entire article by following [this link](#). If you have any questions regarding the article or using imaging in multi-center trials, contact us at ask_ed@virtualscopics.com



Ed Ashton, PhD
Chief Scientific Officer
VirtualScopics, Inc.

MRI has a wide variety of applications in the clinical trials process. MR has shown particular utility in the early phases of clinical development, when trial sponsors are interested in demonstrating proof of concept and must make decisions about allocation of resources to a particular compound based on the results from a small number of experimental subjects. This utility is largely due to the many different imaging endpoints that can be measured using MR, ranging from structural (tumor burden, hippocampal volume) to functional (blood flow, vascular permeability) to molecular (hepatic fat fraction, glycosaminoglycan content).

The unique flexibility of these systems has proven to be both a blessing and a curse to those attempting to deploy MR in multi-center clinical trials, however, as differences among scanner manufacturers and models in pulse sequence implementation, hardware capabilities, and even terminology make it increasingly difficult to ensure that results obtained at one center are comparable to those at another. These problems are compounded by the differences between the procedures used in clinical trials and those used in routine clinical practice, which make trial-specific training for site technologists and radiologists a necessity in many cases.

This article will briefly review the benefits of including quantitative MR imaging in clinical trials, then explore in detail the challenges presented by the need to develop and deploy a detailed MR protocol that is both effective and implementable across many different MR systems and software versions. [Full article](#)

Journal of Magnetic Resonance Imaging 31:279-288 (2010)

Educational Webinar Series continues

As we move into mid-October we are almost halfway through our 2nd half educational webinar schedule.

Our next webinar is tomorrow, Wednesday October 19 at 9AM EDT/ 3PM CEST and 2PM EDT/ 8PM CEST. The topic will be "Measurement of Fat & Muscle Using CT and MRI" and will be presented by Chief Technical Officer Jon Riek.

One of the topics Jon will cover is the measurement of Hepatic Fat Fraction. Please see the article on page 2 of this newsletter.

Follow [this link](#) to register on our website.

The complete webinar schedule can be found [here](#).



Reproducibility: A key to your study's success

When implementing image analysis in your studies a key factor in determining a drug's effectiveness is the ability to consistently reproduce measurements throughout the trial lifecycle. Whereas current methods of image analysis can be highly variable, and thus inaccurate, **VirtualScopics uses patented systems to greatly minimize variability and provide highly reproducible measurements.**

VirtualScopics' methods provide several benefits:

- High level of reproducibility that can lead to reduced patient sample sizes
- Greater precision leading to more confident decisions (i.e. go/no go, adaptive trials)
- Higher throughput leading to increased efficiency and lower costs
- Real-time reads

Contact us to learn how your trial can benefit from VirtualScopics' portfolio of image analysis services.

For more information on **VirtualScopics'** technology or services, please contact us at +1 585-249-6231 x203 or chris_gilman@virtualscopics.com.

Ask Jon: What is the most 'IDEAL' technique for measuring Hepatic Fat Fraction?



Jon Riek, PhD.
Chief Technical Officer

Nonalcoholic fatty liver disease (NAFLD) is the most common cause of abnormal liver test results in adults in the United States. The disease is common in patients with type 2 diabetes mellitus, hyperlipidemia and obesity. As the prevalence of obesity increases, NAFLD may become the most common form of chronic liver disease.

Hepatic fat fraction can be used to quantify fatty infiltration of the liver. There are several techniques that can be used to measure hepatic fat fraction including biopsy, ultrasound, CT, MRS and MRI. Many of these techniques have distinct disadvantages or limitations. Biopsies are invasive, carry the risk of infection and biliary leakage, and are subject to sampling errors. Ultrasound is highly operator dependent. CT involves ionizing radiation. MRS does not provide spatial information and, although available on most magnets, is still used as a research tool.

In MRI, in-phase/out-of-phase imaging and Dixon techniques do not account for the effect of iron in the liver. More recent chemical shift imaging techniques account for variations in T2* and provide more accurate hepatic fat fraction maps. One technique, T2*-IDEAL provides accurate fat and water images, but is only available on GE machines with research agreements. To calculate the values off the magnet raw data is required, although it is difficult to obtain reliably. Multiple-echo, in-phase/out-of-phase techniques can be calculated off the magnet, only requiring magnitude images, but are generally limited to 50% fat fractions. This makes them useful for calculating hepatic fat fractions, but not for general fat quantification.

Commitment to Customer Satisfaction

Our commitment to our customers is "to provide accessible, accurate, and reliable analysis in a way that facilitates and adapts to our clients' needs to progress their clinical trials at the fastest possible pace."

To effectively achieve that commitment we need to maintain open communications with our clients to ensure we are meeting their needs, assess where we can improve and determine if needs are changing. To that end we recently conducted a customer satisfaction survey aimed at gathering specific feedback to help us answer the above questions.

While we were pleased with the overall high marks we received, there are areas in our service offering where we can improve to better meet our clients' needs. Any feedback we receive from clients is taken very seriously and we received some very insightful comments from survey respondents. We have already begun developing plans that will help us better meet our clients' expectations and will be implementing those plans over the upcoming weeks. As we progress we will continue to provide updates.

With our goal to provide our clients with the best service in the industry, we welcome any and all comments from our clients. These comments help us serve you better and ultimately help us create a stronger business partnership.

If you would like to participate in this anonymous survey, please click on the following link: https://www.surveymonkey.com/s/vs_satisfaction