

What experts say



Dr. Richard O'Sullivan
Director MRI at Symbion Imaging
Melbourne, Australia

I have been an MRI Radiologist for almost 20 years and have used all 3 major vendors, initially Siemens, then GE and later Philips. We have recently installed a 3T Siemens Verio system into our almost 500 bed Private Hospital in Melbourne, Australia.

What I really like about the Verio is that it does the hard things really well, for example

- 1. Claustrophobic patients**
Our sedation rate has dramatically reduced
- 2. Obese patients**
We can now scan all patients and have scanned patients in excess of 150 kg. We have been able to transfer patients that did not fit in our non Siemens 60 cm bore MRI into the Verio and scan them easily. Indeed we have had patients sent to our site from other 3T sites who were unable to scan large women for Breast MRI (the breast coil significantly narrows the bore).
- 3. Large Field of View Imaging**
We have a large orthopaedic imaging referral base with patients who play Australian football. In this sport, hamstring tears are common. Typically the player can localize where they are sore and we scan at that location, but on occasion, particularly in the elderly and in high grade injuries the patient may not be able to localise the exact location and we scan the entire hamstring from the Ischial spine to the knee with high resolution imaging , with multiple small FoV coronal scans stitched together. We have also found this useful in the evaluation of long bone tumours where the referring doctor needs to see not only the mass but the joint above and below to adequately plan the treatment and in the assessment of sciatica where there is a normal MRI Lumbar spine and we need to look at the Sciatic nerve from the sacrum to the knee.
- 4. Spinal MRA**
Using post contrast MRA we are now able to see the entire extent of a spinal dural fistula - the feeding artery, the site of fistula and the dilated veins. This has now become our practise prior to definitive endovascular treatment to allow the Interventional Radiologist to concentrate on the appropriate level rather than searching for the correct feeding artery over multiple levels.

5. Superb Articular Cartilage Imaging

We are now able to evaluate articular cartilage in all joints, not just the knee. I no longer use intra-articular contrast in the hip to evaluate labral and chondral injury in Femoro Acetabular Impingement.

6. High Resolution Pelvic Imaging

We can now diagnose extracapsular spread of carcinoma of the prostate using T2 weighted and Diffusion sequences without the use of an Endorectal coil using a combination of the Cardiac coil and spine coil. We also use this combination in the assessment of Rectal cancer and for the extent and site of anal fistulae. The fat suppression is homogenous making the display of the fistula excellent.

7. Neurovascular Imaging

With a large Neurosurgical and Neurological referral base we commonly get asked to scan the entire brain and spinal cord for demyelination and tumour. This may require IV contrast. Being able to scan both areas without moving the patient or coils is fantastic. We were used to using the Neurovascular coil in our previous MRI system. In general this coil had less signal to noise than the head coil and less signal to noise than the spine coil. Now if we need to do a neck post contrast MRA we just add the anterior neck coil which allows us to use our 12 channel head coil without any loss in signal to noise! One of the hardest things I have had to learn is that at 3T T1 weighted Spin Echo imaging is very poor – the grey white differentiation is suboptimal. One of our major brain sequences was much worse than at 1.5T. We have now switched to 3D MP RAGE acquired sagittally with 3 plane reconstruction – this gives superb grey white differentiation and we get the sagittal for Free! This can be very useful – we recently had a patient with an infected nasal encephalocele following sinusitis that was only well visualised on Sagittal imaging. The only disadvantage of this sequence is white flowing blood that makes the assessment of meningeal lesions suboptimal.

There has been a significant learning curve for our technologists to maximise image quality and throughput. Tim helped throughput straight away however the user interface is slightly more complicated than some of the other vendors. The “Set and Go” protocols for stitched large field of View images is difficult to transfer to other body parts and we have to be more diligent in correcting for geometric distortion. We have had no significant issues with SAR and only minor problems with dielectric effects in our athletic population looking at muscle injuries in the thigh.

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