



Introducing a new era
in diagnostic imaging
in Queensland...

64-slice PET/CT

the gold standard in
diagnosing, staging,
planning and monitoring
treatment of cancer.

radiology update

radiology
update

Patient Case Study: Showing multiple tumours following a primary colorectal cancer.

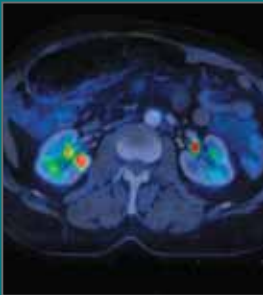


Figure 1: Fused PET/CT axial

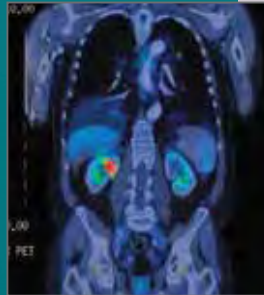


Figure 2: Fused PET/CT coronal



Figure 3, 4, 5, 6: PET MIP coronal images (anterior, right lateral, posterior, left lateral)

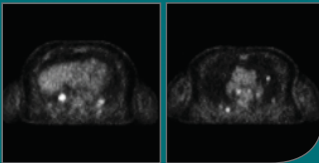


Figure 7 and 8: Axial CT image showing tumours in mid torso

Key benefits

of GE Discovery 690 PET/CT over other units

- Fused 3D PET/CT image with multi-planar reconstruction
- One examination and one report combining PET and contrast-enhanced 64-slice CT findings
- Faster image acquisition and shorter average scan time (15 minutes versus 40-60 minutes with standard PET)
- Superior lesion detection, localisation and characterisation due to near-perfect anatomical/functional registration
- Improved distinction between physiological and pathological uptake
- Variable image data set options defining treatment contour maps for radiation therapy planning
- Time of Flight technology: a superior method of image acquisition resulting in increased detection sensitivity and reduced patient dose



Queensland's first 64-slice PET/CT now operational

The installation of breakthrough PET/CT technology at Brisbane's Mater Medical Centre is revolutionising diagnosis and treatment by offering dramatic improvements in clinically relevant information.

64-slice PET/CT is an exciting new hybrid form of imaging in which the superior anatomical imaging of high-resolution contrast-enhanced CT is fused with physiologic and metabolic diagnostic information of nuclear medicine.

The capabilities of this scanner as a diagnostic tool are exceeding expectations. PET/CT is emerging as the gold standard in oncology for diagnosis, staging, planning and monitoring disease. The images produced on Queensland X-Ray's new unit are vastly superior to anything else currently available.

- First GE Discovery 690 PET/CT to be installed in the southern hemisphere
- One of only five being used clinically world-wide
- Other sites using this technology are Miami Baptist Hospital in Florida, University Hospital of Bichat in Paris, Duke University Medical Center in North Carolina, and Mayo Clinic in Minnesota

How PET/CT works

PET imaging uses small molecules (tracers), such as sugars or amino acids, labelled with a positron-emitting radionuclide. Most clinical PET studies utilise an analog of glucose, 18F-2-fluoro-2-deoxy-D-glucose (FDG). FDG is administered intravenously and allowed to circulate through the body for 60 to 90 minutes before imaging is begun. FDG is taken up by the same cellular membrane transporters that take up glucose and is metabolically trapped inside the cell. These positron-emitting tracers undergo radioactive decay emitting two diametrically opposed gamma rays. When the gamma rays are detected by the PET/CT crystal their site of origin can be determined, effectively creating a physiologic map of distribution of these molecules within the body.

A CT acquisition is performed immediately following the PET scan. Both sets of images (PET and CT) are co-registered to give a combined physiologic and anatomic image. In the case of most malignant neoplasms, sites of active tumour are identified as foci of hypermetabolism, or "hot spots" on the subsequent PET/CT images.

For more information about the scanner please contact 07 3840 6222 to speak to one of our Nuclear Medicine specialists. For detailed information on PET/CT please visit www.qldxray.com.au

Key applications

of 64-slice PET/CT

ONCOLOGY

- Optimal sensitivity to detect malignancy before gross anatomical changes become apparent
- Improved tumour detection in regions where normal anatomy is distorted as a result of necrosis or scarring after treatment
- Whole body imaging to assist in staging
- Advanced monitoring of tumour response to treatment

NEUROLOGY

- Determine the extent and severity of Alzheimer's disease including early detection before clinical signs progress and structural changes are present
- Differentiate dementia types
- Detect seizure foci in epilepsy

"...the capabilities of this scanner as a diagnostic tool are exceeding expectations."



QUEENSLAND X-RAY PET/CT ACCREDITED RADIOLOGISTS



DR DENIS GRIBBIN
MBBS, D(OBST) RCOG, FRACGP, FRANZCR, Mem. ANZAPNM

Graduate of the University of NSW. Trained in Radiology and Nuclear Medicine at Royal Brisbane Hospital. PET/CT training at the Peter MacCallum Centre Victoria in 2008. Joined Queensland X-Ray in 1993.

Areas of special interest: Nuclear Medicine, Oncology Imaging and Nuclear Cardiology.



DR JOHN EVANS (CAIRNS)
B. MED. SCI., MBBS, FRANZCR

Graduate of the University of Tasmania. Trained in Radiology at Royal Canberra and Brisbane Hospitals and in Edinburgh (UK). Trained in Nuclear Medicine at PA Hospital and Cambridge (UK). Joined Queensland X-Ray in 1998. PET accreditation from Guys and St Thomas' Hospital, London and Addenbrookes Hospital, Cambridge.

Areas of special interest: Nuclear Medicine and MRI.



DR ROBERT ANDERSON
MBChB, FRANZCR

Graduated from Otago University, New Zealand. Trained in Radiology at Auckland Hospital. Specialist in Diagnostic Radiology and Nuclear Medicine with the Queensland Medical Board in 1994. PET accreditation at Wesley PET Centre in 2006. Joined Queensland X-Ray in 2009.

Areas of special interest: Paediatric Radiology, MRI and Correlative Imaging.

QUEENSLAND X-RAY PET ACCREDITED NUCLEAR MEDICINE PHYSICIANS



DR EMLYN JONES (TOOWOOMBA)
MBBS, FRACP

Graduate of the University of Queensland. Consultant Physician, Nuclear Medicine training at Royal Brisbane, Royal Prince Alfred and Sir Charles Gairdner Hospitals. Joined Queensland X-Ray in 1997. Trained in Nephrology at PA Hospital, University of Newcastle (UK) and University of Western Ontario (Canada).

Areas of special interest: Nuclear Cardiology and Renal Nuclear Medicine.



DR STUART RAMSAY (TOWNSVILLE)
MBBS (UNSW) MD (UNSW) FRACP DDU

Graduate of the University of NSW. PET training: 1991-92 PET Research Fellow, Medical Research Council Cyclotron unit, UK. 2002 PET Clinical Fellowship, University of Washington, Seattle. 2004 PET Sabbatical, Addenbrooke's Hospital, Cambridge. PET credentialled since 2002. Joined Queensland X-Ray in 1997.

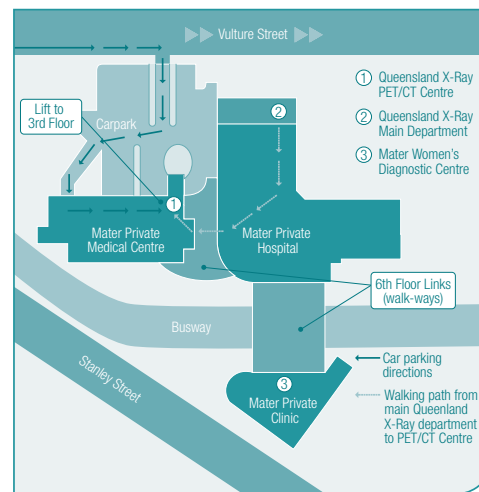
Areas of special interest: Nuclear Medicine and PET.



DR MYLES WEBB
MBBS, FRACP

Graduate of the University of Queensland in 1993. Medical Registrar training and advanced physician training in Nuclear Medicine at Royal Brisbane and Women's Hospital. PET credentialled and full accreditation with RACP JSAC Nuclear Medicine. Joined Queensland X-Ray in 2008.

Areas of special interest: PET and Nuclear Cardiology.



QUEENSLAND X-RAY MATER MANAGING RADIOLOGIST



DR ROBERT CLARKE
MBBS, FRANZCR

Graduate of the University of Queensland. Trained in radiology at the Princess Alexandra Hospital, Brisbane. Radiologist at Royal Brisbane Hospital before joining Queensland X-Ray in 1999.

Areas of special interest: Neuroradiology, MRI, Oncologic Imaging and Multi-slice CT.

Queensland X-Ray PET/CT Centre
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Patient Information can be found on
our website at www.qldxray.com.au

Dedicated patient parking is available within
metres from the PET/CT Centre entrance.