

News in brief

- SPECT-CT imaging in Canterbury has taken a step forward with xSPECT technology.
- Thyroid scans - the health pathway has been updated.
- ERMS forms are transferred direct to our Radiology Information System (Comrad)
cdhb.healthpathways.org.nz

Nuclear Medicine Department
Christchurch Hospital
Private Bag 4710
Christchurch 8140
Phone: 03 364 0867
Fax: 03 364 0869
www.cdhb.health.nz/nuclear-medicine



Nuclear Medicine
Christchurch Hospital
a service of the
Canterbury District Health Board

Stronger Building; Stronger Imaging

Nuclear Medicine is located on the 2nd floor of the Clinical Services building, Christchurch Hospital. After nine months of earthquake repairs, seismic strengthening, renovation and

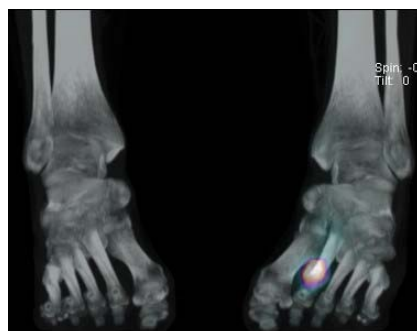


installation of a new SPECT-CT, it feels like a new Department.

Services were impacted as we had only one camera operating for 5 months in 2019 but we are now catching up and there is significant improvement to patient services, privacy and comfort. It is expected the Department will stay at the current site until the next hospital stage is built, at which point we will expand to include PET/CT imaging.

A step forward for Bone Imaging

The new Siemens Intevo Bold SPECT-CT camera has a higher performance (16-slice)



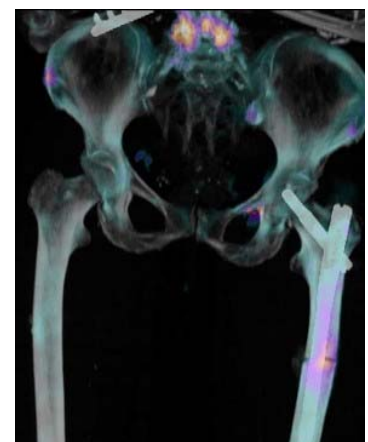
CT, with metal artefact reduction and xSPECT Bone™ reconstruction. xSPECT Bone makes clever use of the CT scan data to achieve sharper bone scan SPECT images. The visual improvement in imaging has the potential for improved lesion detection, characterization and localization.

Some Clinical Indications for Bone Imaging:

Fractures

Insufficiency fractures: SPECT-CT is especially helpful in the elderly when there is a lot of osteoarthritic degenerative change and it is hard to tease out this from fracture.

Compression fractures: The SPECT-CT can differentiate between active, healing and healed compression fractures.

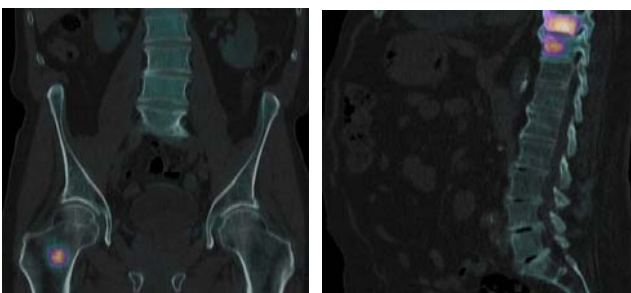


Stress fractures: Where there is equivocal plain film or CT findings.

Canterbury
District Health Board
Te Poari Hauora o Waitaha

Oncology

Metastatic bone disease is common in breast, prostate, renal, thyroid and lung cancer. As these tumors are usually sclerotic, they are easily detected on bone scans. The vertebral column and pelvis are the most frequent sites of metastatic bone disease and, consequently, accurate detection of metastases at these sites is of critical clinical importance in staging of cancer patients. The detection of metastases in the spine may be complicated by the presence of coexisting pathological conditions, such as severe degenerative disease and compression fractures, which can make firm diagnosis of malignant disease at this site difficult.



Above images show metastatic deposits

Image on right shows benign degenerative changes in the spine.

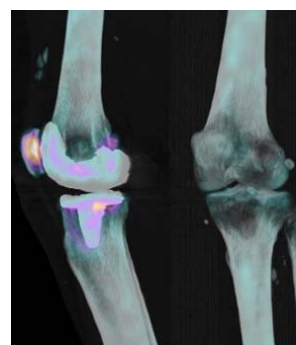


Nuclear medicine bone scans perform poorly with predominantly lytic processes such as multiple myeloma or lymphoma. PET-CT is better in this situation.

Canterbury
District Health Board
Te Poari Hauora o Waitaha

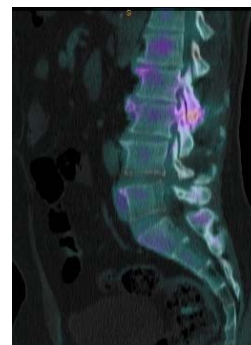
Pain around prosthetic joint replacements

Three phase bone scans - arterial, venous and delayed images including SPECT-CT - are used to distinguish loosening from infection around prosthetic joints. This is a challenging diagnostic area. Deep seated infection can often have a low / negative microbial yield and missing the diagnosis or making false positive diagnosis can be devastating for the patient. SPECT-CT optimizes the diagnosis of clinically suspected MSK infections and localisation of known processes. This is useful in cases when bone involvement has to be proven or excluded in the presence of soft tissue infection or for assessing the extent of osteomyelitis in a complicated anatomical region such as in post-surgical alterations or close to implanted medical devices.



Treatment Planning

Bone SPECT-CT contributes to identifying the pain generator in degenerative facet joint disease in the lumbar spine and is used to guide facet joint injections



Hyperthyroidism Healthpathway updated

Graves' disease is now being diagnosed with a new antibody test, called a **TSH Receptor antibody (TRAb)**. Note this is not the traditional thyroid antibody tests which are for anti-TPO & anti-Tg. **The TRAb blood test replaces the need for a nuclear medicine thyroid scan for many people.**

The pathway now reads:

If TSH is low, arrange free T3, FT4, and TSH receptor antibody (TRAb). If TRAb is negative or there is clinically a nodular goitre (and the patient is not pregnant or breast-feeding), request a nuclear medicine scan to help determine the cause of hyperthyroidism.