BURWOOD NUCLEAR MEDICINE

Suite 8 Ground Level 1-17 Elsie St Burwood NSW 2134
Enter via Victoria Street
Ph: 02 9744 0699
Fax: 02 9744 0125
Dr A. F. McLaughlin MB BS FRACP
Dr R Arulventhan MB BS FRACP
Hours: 8.00am - 5.00pm

HOW NUCLEAR MEDICINE STUDIES HELP SOLVE THESE CLINICAL PROBLEMS

CLINICAL CIRCUMSTANCES	POSSIBLE CAUSE	COMMON SITES/FINDINGS
BONE SCANS	PREPARATION: **Nil.** BRING: **X-Rays**	
Persisting acute or chronic pain following injury, overuse sporting or otherwise, with normal or equivocal X-rays.	*Stress fracture or Occult fracture*	*Feet/ankle, shin, spine, Wrists/scaphoid Pelvis/sacrum Hips, sternum, ribs*
Bone pain in a patient with known cancer, especially: breast, prostate, lung. Normal X-rays.	*Metastases*	*Anywhere*
Pain - hips, shoulders, knees on steroids X-rays unhelpful	*Avascular necrosis*	*Hips, knees, shoulders, anywhere*
Suspected osteomyelitis, septic arthritis, especially childhood	*Infection*	*Any site Any joint*
Childhood - hip or knee pain	*Perthe's, slipped capital femoral epiphysis, physeal arrest synovitis - irritable hip*	*Hips, knees*
Suspected child abuse	*Occult fractures*	*Any bone*
BONE MINERAL DENSITY – DEXA	PREPARATION: **Nil** (Conditions apply for rebate)	
Screening for Osteoporosis	*Low Bone Mineral Density*	*Spine, Femoral Neck*
STRESS SESTAMIBI MYOCARDIAL PERFUSION	PREPARATION**: Fast from midnight. No caffeine 48 Hrs. No viagra 48 Hrs**	
Risk Factors: **Diabetes, Hypertension, Hyperlipidaemia, Strong Family History, Smoking** **Typical chest pain with a negative exercise ECG** **Atypical chest pain with a positive exercise ECG** **Equivocal exercise ECG** **Uninterpretable exercise ECG due to conduction defects or left ventricular hypertrophy, Pacemaker** **After coronary artery graft surgery or angioplasty/stent**	*Coronary artery disease* *Evaluate recurrence of chest pain for graft or vessel restenosis and for severity and extent of ischaemia.*	*Diagnosis of ischaemia, Infarction, Graft patency Stent patency*
CARDIAC GATED BLOOD POOL STUDY	PREPARATION: **Nil**	
Recent onset of dyspnoea on exertion in known cardiac patient. ?cardiac ?respiratory origin Monitor cardiac function following myocardial infarction	*Worsening of cardiac function.*	*Ejection fraction <50% - cardiac cause* *Ejection fraction >50% - non-cardiac cause.* *Clear distinction of cardiac vs respiratory cause*

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THYROID SCAN	PREPARATION: **No thyroxine/Oroxine 3 weeks. No CT contrast for 2 weeks** BRING: **Ultrasound**	
Thyroid nodule +/- pain **Thyrotoxic with elevated TFT's** **Elevated or Suppressed TSH** **or Painful goitre**	*Adenoma or multinodular goitre* *Grave's Autonomous adenoma Plummer's* *Thyroiditis*	*Solitary "cold" focus or multiple "warm" & "cold" foci,* *Diffuse, avid uptake or solitary "hot" nodule with suppression gland or multinodular* *Depressed uptake (acute/sub-acute). Increased in early Hashimoto's.*

BILIARY/GALL BLADDER/HIDA STUDY	PREPARATION: **Fast Overnight**	
Biliary type pain, normal ultrasound (No stones)	*Chronic acalculus cholecystitis*	*Reduced gall bladder ejection fraction <35%.*
Biliary dyskinesia syndromes causing biliary symptoms: **Cystic duct syndrome** **Sphincter of Oddi dysfunction**	*Non-calculous partial cystic duct obstruction* *Paradoxical response to endogenous CCK Structural stenosis.*	*Reduced G.B. ejection fraction.* *Prolonged liver to bowel transit time >75 min.*

VENTILATION/PERFUSION LUNG STUDY	PREPARATION: **Nil .** BRING: **Chest X-rays**	
Pleuritic chest pain, Dyspnoea ***Risk Factors:*** recent surgery, post-partum, bedrest, cardiac failure, cancer, long air travel, ± DVT	*Pulmonary embolism*	*Ventilation/perfusion mismatch.*

RENAL STUDY +/- CAPTOPRIL +/- LASIX	PREPARATION: **Well Hydrated. Omit medication for Captopril study**	
Difficult to control hypertension or sudden unstable/paroxysmal hypertension **Dilated renal pelvis on U/sound or IVP**	*Renal artery stenosis* *Atony or pelvi-ureteric junction obstruction (PUJ)*	*Significant difference in flow and function on affected side.* *Normal lasix washout or hold up if obstructed*

LIVER/SPLEEN STUDY	PREPARATION: **Nil.** BRING: **Ultrasound or CT**	
Liver/spleen size, position and function in alcohol excess, viral hepatitis, focal nodular hyperplasia	*Cirrhosis, any cause*	*Typical findings acute or chronic liver disease.* *Diagnostic of Budd-Chiari and focal nodular hyperplasia*

HEPATIC BLOOD POOL	PREPARATION: **Nil.** BRING: **CT / Ultrasound**	
Single or multiple focal lesions in liver on CT or ultrasound simulating metastases.	*Hepatic cavernous haemangiomas - commonest benign tumour liver- 10% multiple* *Affects 1-7% population.* *Must not be biopsied.*	*Focal, increasing blood pool in lesion/s with time –* *specific for haemangiomas.*

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GALLIUM STUDY	PREPARATION: **Nil** **Scan on day 3. May need more views thereafter.**	
Infection/inflammation focus detection in spine and elsewhere. **Lymphoma - staging, restaging, recurrence, response to therapy prediction.**	*Infected discitis/spinal abscess* *Hodgkin's disease* *Non-Hodgkin's disease*	*Focus gallium at site infection/abscess/inflammation.* *Nodal or extra nodal foci disease activity.*

LABELLED AUTOLOGOUS WHITE BLOOD CELL/BONE MARROW STUDY	PREPARATION: **Nil** **Whole day procedure.**	
Joint prosthesis infection, acute/chronic bone/soft tissue infection, diabetic foot **Inflammatory bowel disease activity** **Focal infections.**	*Osteomyelitis* *Abscess*	*Focal accumulation* *White cells*

DO NOT HESITATE TO CALL THE PHYSICIAN FOR ADVICE CONCERNING YOUR PATIENT'S INVESTIGATION ON 9744 0699

DEXA BONE DENSITOMETRY
is now available on **MEDICARE** for patients 70 years and over without the current restricted clinical indications.

*Go to **www.nucmedburwood.com.au** for detailed information on our studies*