



University of Pretoria Yearbook 2017

Theory of nuclear medicine 710 (TKG 710)

Qualification	Postgraduate
Faculty	Faculty of Health Sciences
Module credits	25.00
Programmes	BRadHons Nuclear Medicine
Prerequisites	No prerequisites.
Contact time	1 lecture per week
Language of tuition	Module is presented in English
Academic organisation	Radiography
Period of presentation	Year

Module content

Revision of relevant anatomy, physiology and pathology. Procedures of musculoskeletal, endocrine, respiratory, genito-urinary, gastro-intestinal, hepatobiliary, cardiovascular, central nervous systems. Infection and SPECT imaging. Procedures including lymphatics, venograms, ciliary clearance, dacryoscintigraphy. Non-imaging procedures. Radio-immunoassays: History, basic principles, antibody production. Monoclonal antibodies. Radioimmunoscintigraphy. Radiation safety. Tumour imaging and therapeutic procedures. Paediatric techniques. PET and PET/CT. Indications and contra-indications. Effects of medication on procedures. Drug intervention. Radiopharmaceuticals: methods of administration, choice, physiological pathways, patient dose, quality control. Instrumentation, collimation, settings, quality control. Patient treatment: patient preparation, instructions, route and technique of radiopharmaceutical administration. Procedures: choice of examination, patient positioning, field of view, orientation, routine views, static and dynamic imaging, SPECT imaging, modified views. Radiation effects: physical, biological and effective $T_{1/2}$, target organs, excretory pathways, protection. Quality control. Pattern recognition and interpretation of procedures. Problems and pitfalls. Emerging and hybrid technology and applications.

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