Text links (full texts are below)

1 working as a radiologist – Andrýsková, Březinová, Bukovská, Čaháková

http://www.insideradiology.com.au/pages/view.php?T_id=9#.VPgVc_mG-1c

2 training in radiography – Hrůzová, Izsófová, Kočárová, Kubín

http://www.nhscareers.nhs.uk/explore-by-career/allied-health-professions/careers-in-the-allied-health-professions/radiographer/entry-and-training/

3 dangers of radiology – Makúchová, Melichárková, Polášková, Punčochářová

http://www.radiology-technician.com/working-x-ray-technology-dangers/#.VPgZYfmG-1c

4 nurses as radiologists – Royik, Sidorová, Stojan, Sychra

http://news.bbc.co.uk/2/hi/uk_news/england/tyne/3632133.stm

5 radiology and migraine – Šíma, Štiglicová, Vrána, Zeman

http://www.onmedica.com/NewsArticle.aspx?id=1960c2b4-4b4d-4d13-8057-12657daac928

Text 1

The Radiographer (Medical Imaging Technologist)

1. What is a radiographer?

A radiographer or medical imaging technologist is a trained health professional who performs medical imaging by producing high quality X-ray pictures or images used to diagnose and treat injury or disease. It is an important part of medicine and a patient's diagnosis and treatment is often dependent on the X-ray images produced.

2. What does a radiographer do?

A radiographer is an important member of the diagnostic health care team. They are responsible for producing high quality medical images that assist medical specialists and doctors to diagnose or monitor a patient's injury or illness.

They operate extremely technologically advanced equipment such as CT (Computed Tomography), MRI (Magnetic Resonance Imaging) and mobile X-ray machines. Their roles are diverse and challenging, as radiographers are often trained in several specialist areas such as:

- *Trauma radiography* - challenging examinations on injured individuals.
- *Mobile radiography* - for patients too sick to travel to the X-ray department.
- *Computed tomography* - three dimensional X-ray imaging test.
- *Magnetic resonance imaging* - three dimensional imaging test powered by a large magnet.
- *Fluoroscopy* – X-ray test that examines the internal body and shows moving images on a screen like a movie.
- *Angiography* - imaging of blood vessels and the heart.
- *Operating theatre* - assisting surgeons during operations with special X-ray equipment.

Radiographers need to show care, compassion and empathy to their patients. Whilst the role is highly technical, radiographers focus their efforts on patient care and welfare to ensure positive patient experiences. The radiographer works in a highly advanced technical profession that also requires excellent people skills. It is an exciting and rewarding profession to be a part of.

Radiographers have an extremely thorough understanding of the structure of the body, how the body can be affected by injury, and causes and effects of disease when taking X-ray images. However, they are not responsible for interpreting the images they produce. This is the role of a radiologist, who is a specialist doctor with a medical degree, and who has also completed clinical training and then specialised in interpreting images and writing a diagnostic report for referring doctors. Radiologists rely on the input of radiographers and there is a very close working relationship.

Radiographers work in a variety of situations including radiography/medical imaging departments of large public hospitals with busy emergency departments, private hospitals and large and small private radiology practices, sometimes with only a couple of rooms and a few staff.

Radiology or medical imaging departments are extremely safe places to work and to spend time in. There are state and federal regulations governing safe work practices and radiation safety within all X-ray departments and private imaging clinics. See Radiation Risk of Medical Imaging in Adults and Children for more information.

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3. Why become a radiographer?

A radiographer's role is challenging, rewarding and highly skilled. Radiographers become part of a vital group of medical professionals with specialist training and highly developed skills. There is significant patient contact and a radiographer plays an important part in improving patient outcomes and experiences. The profession offers excellent career prospects with qualified staff in high demand. There are many benefits in becoming a radiographer such as:

- Excellent job prospects in a highly skilled and rewarding job.
- The opportunity to work in a diverse range of specialist areas, e.g. CT, MRI, etc.
- Using cutting edge technology.
- On-going training (radiographers are constantly improving their knowledge and skills).
- Great travelling opportunities (radiographers are in high demand both nationally and internationally).
- A financially rewarding career.
- Flexible working arrangements (full-time, part-time and locum work is available).

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4. How do you become a radiographer?

A radiographer must become a graduate of a Medical Imaging Degree program. There are several courses throughout Australia available to prospective radiography students. The admission requirements vary between universities. Generally there are options available for school leavers, non-school leavers, mature students and overseas students.

All courses demand a high degree of academic study, as well as clinical expertise in routine and advanced medical imaging procedures. Most courses are three years in duration with a graduate needing to undertake one year of mentored clinical experience to complement their university studies (called an intern year). This intern year may vary in duration, structure and name depending on the State and university.

The Australian Institute of Radiography website has more information about radiographers.

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Text 2

Entry requirements and training in radiography

Training

To practice as a radiographer, you must be registered with the Health and Care Professions Council (HCPC). To register you must have successfully completed an approved training programme in diagnostic or therapeutic radiography.

These are offered at undergraduate degree (full-time and part-time) and at postgraduate degree/diploma level at a number of universities across the UK.

You can find a list of all approved programmes on our coursefinder.

Diagnostic radiography training

Diagnostic radiography training is composed of study and clinical placement (approximately 50% of each) and the majority of courses are three years, however some can be four.

A typical course will usually consist of two years of studying the majority of the scientific content (anatomy and physiology, physics etc) followed by further training in the fields of sociology, management and ethics, and the practice and science of imaging.

A small number of universities provide accelerated courses at postgraduate master/diploma level for suitably qualified graduates enabling them to train to become diagnostic radiographers. These are usually 2 years in length

The courses integrate theory and practice.

Therapeutic radiography training

Therapeutic radiography training is composed of study and clinical placement (approximately 50% of each) and the majority of courses are three years in duration, however some can be four.

A typical course will usually consist of one year of studying the majority of the scientific content (anatomy and physiology, radiation science etc) followed by further training in the fields of oncology, psycho-social studies, and further extensive modules.

A small number of universities provide accelerated courses for suitably qualified graduates enabling them to train to become therapeutic radiographers.

The course aims to encourage the development of an enquiring, reflective, critical and innovative approach to therapeutic radiography within the context of the rapid changes occurring in the health service. It enables the student to develop professionally by providing the opportunity for students to integrate theory and practice, in order that they might acquire knowledge, skills and attitudes identified as appropriate for safe, effective and caring practice.

Entry requirements

The minimum academic entry requirements for degree courses in radiography are several A-C grade GCSEs and usually three GCE A/A2 levels (including a science) at grade C or above. Alternatives to A levels are also considered, such as an approved Access course, OCR Cambridge Technical Level 3 Extended Diploma in Health & Social Care, VCE and Scottish qualifications.

A small number of universities run two-year accelerated programmes at masters/postgraduate diploma level for graduates with a relevant first degree such as biology or a health-related subject.

However it is essential that intending applicants check directly with the universities they are considering before applying. Find university providers on our course finder.

Although there are no specific health requirements, educational centres usually require an occupational health examination prior to acceptance on a course.

Financial support for students on radiography courses

Information on financial support while taking a radiography degree.

Applying for a degree in radiography

Applications for full-time degree and accelerated programmes are administered by the Universities and Colleges Admissions Service (UCAS).

Text 3

Working With X Ray Technology: The Dangers

Radiology is a tempting career for many looking for stable long term work that pays well. One thing that often scares people away from a career in Radiology is studies that show an increased risk for certain cancers in those who work with X-ray technology. While eliminating the risk associated with radiation exposure entirely isn't possible, current safety measures make the field safer than it appears to be. Understanding the actual risks associated with a career in Radiology makes making a good personal decision easier.Is A Radiology Career Dangerous?

When X-ray technology started to see widespread use in the 1920s, there was no regulation in place for those who used X-ray equipment. During this time and leading into the 1950s, radiology workers were exposed to enough radiation to lead to significant increases in skin cancer, breast cancer, and cervical cancer. As the technology advanced, regulations were slowly put into place to limit radiation exposure for both technicians and patients.

Most studies about radiology danger cite increased risk for certain cancers. These studies were generally conducted over many decades, some of which had little to no regulation or concept of the cancer danger that radiation presented. Modern X-ray technicians participate in a heavily regulated industry where the danger is kept to a minimum through protection, tracking, and strict rules.

How Do Modern Regulations Help?

Modern regulations in the radiology industry make it much less likely that X-ray technicians will be exposed to unhealthy levels of radiation over time. Here are some of the things the industry does to regulate radiation exposure and protect those in the industry:

• Monitor short and long term exposure levels – Modern radiation tracking for people in the Radiology field includes both short term exposure monitoring and long term low-level exposure monitoring. Current medical understanding of how long term low-level radiation exposure works makes keeping cancer risk low a much simpler process.

• Check protective equipment – Protective equipment used to limit radiation exposure is both more complete and more widely used than it was in the early days of X-ray technology. Modern protective equipment is designed to provide complete protection to all areas of the body where cancer risk is significant. Modern regulations make changing equipment regularly and checking equipment for problems mandatory.

• Track records through job changes – Unlike the early days of X-ray technology, modern regulations recognize the need for long term radiation exposure for radiology workers through multiple job changes. Workers in the radiology industry are required to keep tracking sheets through job changes in order to make sure exposure stays within required limits for safety.

There is still some small risk that a career in radiology will eventually lead to cancer, but the risk is easily manageable through the use of safe workplace practices that encourage minimal exposure and heavy protection. At this point, working with X-ray technology is no more dangerous than most other career options in medicine. For people interested in a career in radiology, the potential risks are relatively minor.

Text 4

Nurses to take on radiology roles

Nurses in Gateshead are being given new responsibilities in an effort to cope with a shortage of radiology staff.

The nurses at the Queen Elizabeth Hospital are being trained to perform angiograms which investigate the blood supply to the legs.

They will also be taught how to carry out infertility checks on women.

The Gateshead Health Trust said it is giving nurses greater responsibilities in a bid to give more support to its radiology teams.

The changes come as the trust invests more than £2m in an initiative to modernise radiology services and equip departmental staff with new skills.

This has included investing in Computerised Tomography (CT) and Magnetic Resonance Imaging (MRI) scanners, and a new ultrasound machine is also on its way.

More flexibility

Peter Bartholomew, clinical director at the hospital's radiology department, said: "We're determined to make the best possible use of staff expertise and our departmental resources by reviewing and developing roles and responsibilities.

"As well as investing in new equipment, we're putting a strong emphasis on study for further qualifications to encourage staff development and extend roles and responsibilities with high-quality training.

"A greater skills mix throughout the department means we can face the future with a higher degree of confidence."

The hospital is also setting up a call centre operation within the radiology unit to centralise and streamline its appointments process.

This will give patients more flexibility to choose appointment times.

Text 5

New radiology treatment can tackle migraine pain

An innovative interventional radiology treatment may offer chronic migraine sufferers sustained relief of their headaches, according to new research.

The treatment called image-guided, intranasal sphenopalatine ganglion (SPG) blocks is being presented at the Society of Interventional Radiology's Annual Scientific Meeting in the USA.

Clinicians at Albany Medical Center and the State University New York Empire State College in Saratoga Springs found that by using the treatment patients received enough ongoing relief that they required less medication to relieve migraine pain.

"Migraine headaches are one of the most common, debilitating diseases in the Unites States, and the cost and side effects of medicine to address migraines can be overwhelming," said Kenneth Mandato, the study's lead researcher and an interventional radiologist at Albany Medical Center.

"Intranasal sphenopalatine ganglion blocks are image-guide, targeted, breakthrough treatments. They offer a patient-centred therapy that has the potential to break the migraine cycle and quickly improve patients' quality of life," he added.

Mandato and his team conducted a retrospective analysis of 112 patients suffering migraine or cluster headaches. During the minimally invasive treatment, researchers inserted a spaghetti-sized catheter through the nasal passages and administered 4 percent lidocaine to the sphenopalatine ganglion, a nerve bundle just behind the nose associated with migraines.

Before treatment, patients reported an average visual analogue scale (VAS) score of 8.25, with scores greater than 4 at least 15 days per month. The day after the SPG block patients' VAS scores were cut in half, to an average of 4.10. Thirty days after the procedure, patients reported an average score of 5.25, a 36% decrease from pre-treatment. Additionally, 88% of patients indicated that they required less or no migraine medication for ongoing relief.

"Administration of lidocaine to the sphenopalatine ganglion acts as a 'reset button' for the brain's migraine circuitry," noted Mandato. "When the initial numbing of the lidocaine wears off, the migraine trigger seems to no longer have the maximum effect that it once did. Some patients have reported immediate relief and are making fewer trips to the hospital for emergency headache medicine," he said.

However, while patients reported relief from their migraines, Mandato added that SPG blocks are not a cure for migraines; they are a temporary solution. Because of the minimally invasive nature of the treatment and the medication's safety profile, Mandato believes patients can have the SPG block repeated, if needed.

Mandato is considering conducting a double-blind, prospective study to more rigorously evaluate the effectiveness of SPG blocks in treating chronic migraines.