

A day in the life of a **Medical Physicist**

It's only 8:00am but in one hour patients will be arriving for their Nuclear Medicine scans, so need to get those injections prepared. This is my first task of the day, combining pharmaceuticals with radioactive tracers to make up all the different patient injections.

When injected, this radiopharmaceutical will travel to certain parts of the patients' anatomy. Then we can use a Gamma Camera to image that part of the anatomy. The images are used for diagnostic information and to help make clinical decisions.

I work at a specially designed cabinet in the Radiopharmacy. The cabinet is shielded with lead, which will attenuate almost all the radiation that I'm working with. I have to manipulate vials and syringes of radioactive material but it is all contained in lead pots and lead syringe shields so I am very well protected from the radiation. Some of the radioactive material needed for today's clinic comes ready-prepared in capsules from the manufacturer, in which case I don't have to prepare the injection. Instead, I measure the activity of each capsule in a dose calibrator and make sure it is the correct dose for the patient. I know it has decayed since the manufacturer measured it, so I calculate the expected activity and this matches well to what I measured in the dose calibrator, so I'm happy with my results.

I'm finished in time for a 9.30am meeting with a consultant dermatologist to review our progress on a research project we're undertaking in Ultraviolet Phototherapy. UV radiation is used very successfully in hospitals to treat skin conditions, but the dose has to be very carefully controlled. We are investigating the different methods for testing the patients' skin before treatment starts – there's always room for improvement and new devices coming on the market all the time. The project is progressing well so we decide to submit our results for presentation at an upcoming scientific conference.... it will be good to share the results from our study and hopefully get some feedback from other physicists.

After lunch, it's over to the university part of the hospital to give a lecture to a group of doctors and nurses about laser safety and the hazards they might encounter in the course of their work. The group is full of questions and we have a good discussion afterwards about their practical experiences with lasers. I drop into the library after the lecture to download a new report on X-ray image quality as I'm testing a new digital X-ray room next week - no more films! Will have a read of it for any new recommendations, but I'll have to leave that task until tomorrow.

Una O'Connor

'My first task of the day is combining pharmaceuticals with radioactive tracers to make up all the different patient injections.'



Una O'Connor at work in St. James's Hospital Dublin processing Nuclear Medicine images taken with a Gamma Camera. Una graduated with a BSc in Applied Science and then gained an MSc in Medical Physics.