

Radiography: More than Just Pushing Buttons

A radiography student spills the real tea about the profession

by Yeung Wing Chung



Despite prejudice, radiographers treat their patients without bias.

“Radiation therapist is an overpaid job. Patient comes in, you push buttons, patient goes out, you get off work. The only risk is you might go bald after long-term irradiation.”

As a radiography student, these words have attacked my eardrums millions of times. I am qualified to tell you none of these statements is correct. If being a radiographer is such an easy job, why is a Bachelor’s degree necessary? Maybe the 2000 hard-working radiographers in Hong Kong are too busy helping patients to respond, as they are the essential nutrients keeping the medical system functioning. To save my bleeding ears, I am here to bust all the myths about this underrated profession.

The Twins of Radiation Therapy

Here in Hong Kong, many people tend to refer to all radiographers as “radiation therapists”. In fact, there are two types: diagnostic radiographers and radiation therapists. The former one utilises both ionizing and non-ionizing radiation to produce medical images, while the latter

provides patients with ionizing radiation treatment. They are like fraternal twins: both their jobs involve radiation, but the ways they use it are different.

Beyond Pushing Buttons

If even kids know how to push a button, then why don't the hospitals employ kids to do the job? It's not only due to the problem of child labour, but also the professionalism required. The Radiographers Board website lists the registrable qualifications as follows: To register as a Part II (Section II) Radiographer, not fewer than 1,300 hours of radiography-related clinical practicum, and at least 785 contact hours in compulsory subjects, e.g. anatomy and radiation protection, are required at university. Don't think they spend too much time learning how to "push buttons", because their duties are much more complicated.

Diagnostic radiographers are like photographers. Before taking the "photo", they would position the patient. After the scan, the image might be adjusted. It is similar to Photoshop, but instead of tuning the skin tone, they manipulate the contrast to facilitate the examination of bones and soft tissues. Sometimes they work in the operating room or ward using mobile scanning machines for immobile patients.



What? She's a radiography student? Why isn't she learning how to push buttons?

To produce a medical image with high-quality diagnostic value, radiographers must give clear instructions to patients and ensure that they followed. For example, all metal objects must be removed during an X-ray scan, or else the artefacts created by the metal might be mistaken as tumours. No one wants to be falsely informed that they could have a serious medical condition. Then after sweating and crying every drop of water out of your body, the suspicious shadow on the image turns out to be the iron buckle on your bra. Radiographers are responsible for avoiding this situation from happening. Also, a rescan might be carried out if the image is not clear. The amount of ionizing radiation received by the patient would be doubled, thus raising the related health risks. Therefore, radiographers need to practice every procedure carefully, and at the same time, not treat patients as just another procedure.



Obtaining a good X-ray image isn't easy as pie.

As for the therapeutic field, radiation therapists don't take "photos". Their tasks are more like a designer's. They plan the radiotherapy with oncologists and implement the procedures. With complicated calculations, they minimize the radiation exposure to normal cells while maximizing it to abnormal ones. Thanks to the development of helpful computer software, much of the manual calculation can be done quickly. More time can be saved to serve more people in need, and more importantly, to get off work sooner. During radiotherapy, apart from positioning, practitioners help the client to wear radioprotective and fixing equipment. For instance, they would give a customized mask to a patient who undergoes brain therapy. It holds the head and neck still, assuring the patient won't suddenly lose some IQ points because the radiation takes a wrong path and zaps normal brain tissues.

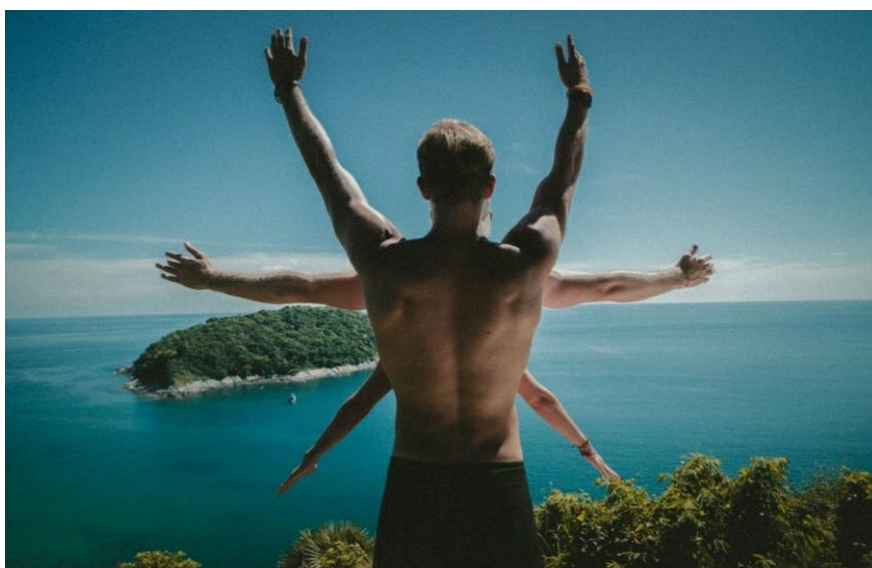
Most clients of therapists are cancer patients. It is common for healthcare professionals to see a patient consecutively for weeks to months. They would develop bonds with each other, so the mental capacity and communication skills of therapists have to be strong enough to provide emotional support to the patients, as well as to themselves. It's never easy to say

“forever goodbye” to a person who has been treated for months. However, if that is said to a cured patient, they do want to say “forever goodbye”: Don’t come back and ever suffer again.

Nah, We Don’t Go Bald Because of Radiation

Now let’s address the issue of hair loss. I think it’s a bit unfair to say this job comes with a higher risk of baldness. The occupational radiation exposure of radiographers is too low to destroy the hair follicles. Research has shown that the dose threshold for slower hair growth and reduced hair diameter is 0.75-2 Gy, delivered to the scalp in one single radiotherapy session, which is usually finished within 10 to 30 minutes. For permanent baldness, 7 Gy is required. Taking a look at a report published by the Department of Health in 2018, the vast majority of radiographers received whole body doses of less than 0.75 Gy annually, accumulated in a year rather than in 30 minutes. If you see a hairless radiographer, it is probably due to other factors like genetics and stress. But which job has no stress? Kindly tell me, and I might consider transferring my major.

Other mistaken health risks of this profession include infertility, or even becoming *Captain America* or a member of the *Fantastic 4*. Again those small doses can barely sterilise people or give you a superpower. You won’t become invisible or super strong no matter how much or what kind of radiation you receive. What’s more, there are X-rays and gamma rays, but no Vita-rays (those fictitious forces that transformed the weak Steve Rogers into Captain America).



Usually mutation can only give you cancer, but not additional limbs.

Dispelling the rumours

I'm appreciative of my friends who worry about the health issues related to my future job. But no need to worry too much. There are strict regulations and sufficient radiation protection to save us from potential hazards. Moreover, accidental irradiation is rare. In case it happens, immediate body check and treatment will be given.

So that's pretty much all the incorrect and hilarious rumours about radiographers. These common misconceptions have become inside jokes among radiography students: "Say bye in advance to your hair." "Am I training to be a professional button-pusher?"

Wait, so you understand them too? Alright then, my mission is accomplished: they've become outside jokes. Finally, I can sit down and sip my tea after wiping off the tea that others have spilled. Now you know, radiographers do more than just push buttons!