

What does the pathologist do?

Pathologists have been making diagnoses using a microscope for the last 250 years. It can be challenging and we are constantly endeavouring to improve how we do our job. As pathologists for the London Sarcoma Service, we are given small amounts of tissue from a swelling or an area of abnormality seen on an x-ray or scan and asked to say what the abnormal tissue is. We have to decide if the tissue is a tumour, and if a tumour, is it a benign tumour (the tumour does not spread to other parts of the body), or a malignant tumour (cancer). The tissue may also be from an area of infection (an abscess or tuberculosis). Today, different tumour types can be treated differently, so making the correct diagnosis is important.

What is a tumour?

Tumours are caused by cells in our body growing too fast: if they are malignant the cancer cells may spread to other parts of the body. We now know that tumours are caused by genetic alterations (mutations) in parts of our body. For example, if a patient has a lung cancer the genetic alterations (changes in the DNA/mutations) occur in the cells in the lung. Cancer of muscle, bone, and fat, are known as sarcoma. This is a rare form of cancer accounting for no more than 2% of all cancers diagnosed. The genetic alterations can act as biomarkers and help in making a diagnosis of a particular cancer type. More recently it is also recognised that specially designed drugs can interfere with the genetic alterations and block tumour cells growing. An example of this is the treatment of Gastrointestinal Stromal Tumour (GIST) being treated with Imatinib/Gleevec. However, for most sarcomas the mainstay of treatment is surgery but some sarcomas are treated with chemotherapy and or radiotherapy before or after surgery.

Because different diseases require different treatments, the role of the pathologist is important in the overall management of a patient.

How do you know that we are doing a good job?

The RNOH Cell and Molecular Pathology Department is an **Accredited Laboratory CPA Ltd.** This means that the laboratory is inspected every 2 years by an external group of laboratory scientists.

Each week, we send out a case to other specialists pathologists and receive 2 cases from them. We compare notes to make sure that we all agree on the diagnoses. If there are disagreements, we talk about the cases and learn from each other.

Publishing

We review and audit our diagnoses and publish our results. This allows others around the world to see how we make our diagnoses. See [Histopathology research](#).

Teaching

We train junior pathologists in our department. This keeps us 'on our toes' as the trainees ask us to explain why we make diagnoses. We also teach the Trainees in London in musculoskeletal pathology, and give lectures at national and international conferences.

Visitors

We have visitors to the Department from all over the world. This keeps us 'on our toes', as they ask us questions and reviewing our previous diagnoses. If there were errors it would become clear quickly that we were making mistakes.