

TCS/26/19 - Bridging the sex gap in breast cancer

Men can get breast cancer, but it is much less common than in women and is not as well studied. In Scotland, the number of men diagnosed with breast cancer has risen from 12 in 1999 to 44 in 2022. Research shows that male breast cancer often contains high levels of hormone receptors - molecules that act like switches, affecting how the cancer grows and responds to treatment. Yet we still don't fully understand how these molecules influence the tumour microenvironment. This project aims to change that. It will investigate exactly where these hormone receptors are found in male breast cancer tissue using advanced imaging techniques. We will focus on cancer-associated fibroblasts (CAFs), which are support cells around the tumour. Although not cancerous themselves, CAFs influence how tumours behave. By comparing CAFs from men and women with breast cancer, we will explore how they respond to hormones like oestrogen and androgens and whether their behaviour and activity differ. We will also study how CAFs use energy and nutrients, and whether these patterns are affected by hormone receptors. By mapping the cells, signals, and metabolic processes in male breast cancer, this study this research will fill a major gap in our understanding. Understanding these differences could pave the way for more precise, personalised treatments for men and ensure they are no longer left behind in breast cancer research.