

# Dr. Matthew J. Ellis: strategy and challenges in estrogen receptor positive breast cancer treatment

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## Expert's introduction

Dr. Matthew James Ellis completed his medical degree at Queens' College & School of Clinical Medicine at the University of Cambridge in England, postgraduate clinical training at the Royal College of Physicians in London and gained a Ph.D. at the Royal Postgraduate Medical School and Imperial Cancer Research Fund at the University of London. After a medical oncology fellowship at the Lombardi Cancer Center, Georgetown University, Washington DC, he was an Assistant Professor there until moving to Duke University in 2000 and subsequently to Washington University in St Louis where he served as professor of medicine and section head of breast oncology until 2014. Ellis was recently recruited to Baylor College of Medicine to serve as the Director of the Lester and Sue Smith Breast Center and to hold the C. Kent Osborne Chair of Breast Oncology. Both the McNair Foundation and the Cancer Prevention Research Institute of Texas recently awarded him scholarships.

He has been instrumental in developing a Genome Atlas and Therapeutic Road Map for ER positive breast cancer by applying genomic techniques to samples accrued through a series of neoadjuvant endocrine therapy trials. Most recently, he has found that metastatic breast tumors harbor mutations and translocations in the ER gene that render the tumor resistant to therapies used to block ER function. He also pioneered research into the clinical relevance of activating mutations in HER2 and in the deployment of patient-derived xenografts for the pharmacological annotation of breast cancer genomes.

## Editor's notes

On October 21st, 2017, the 12th Shanghai International Breast Cancer Symposium (SIBCS) successfully ended with wide-range scientific content and different categories. The Symposium started in 2005 and is aimed at providing a



**Figure 1** Dr. Matthew J. Ellis.

nationwide academic platform for breast cancer experts to have further communication and brainstorming.

During the meeting, we were honored to have an interview with Dr. Matthew J. Ellis, Director of the Lester and Sue Smith Breast Center at Baylor College of Medicine (*Figure 1*). Dr. Ellis has dedicated his career to translation and clinical research. As an invited speaker at the 12th SIBCS, he gave an excellent presentation on the topic "Strategy and challenges in ER positive Breast cancer treatment".

During the interview, Dr. Ellis mentioned estrogen receptor (ER) positive and negative breast cancers are really different diseases. ER negative breast cancers are more aggressive, they don't respond to endocrine therapy, are associated with early relapse, are sensitive to chemotherapy and some of them are HER2 positive and treated with anti-HER2 therapy as well. The cellular origins of these tumors are still controversial. The ER positive tumors are mostly hormone dependent, although frustratingly not completely hormone dependent, and mostly respond to endocrine



**Figure 2** Dr. Matthew J. Ellis: strategy and challenges in estrogen receptor positive breast cancer treatment (1).

Available online: <http://www.asvide.com/articles/1885>

therapy. Unfortunately, ER+ disease have a very prolonged risk of relapse, often with late relapses after 10 or every 20 years. In high risk disease, prolonged periods (a decade or perhaps even more) endocrine therapy is therefore becoming the norm.

When it comes to applications of breast cancer gene signatures, Dr. Ellis told us that gene signatures currently are focused on prognosis. In the setting of a given period of endocrine treatment, typically 5 years, they estimate of relapse risk over ten or more years after diagnosis. In a patient predicted to have a 10-year relapse risk (less than 10%) it is safe to avoid chemotherapy because the incremental benefit of chemotherapy would be very small even if the tumor is minimally node positive. In high risk patients, omitting chemotherapy is still a research question that is the subject of many ongoing randomized clinical trials.

Regarding future trends in breast surgery, Dr. Ellis said there are two directions. One direction is less surgery after patients developed invasive breast cancer in a setting where there's no hereditary breast cancer gene causing the disease. The opposite trend is in patients whom are diagnosed with gene abnormalities that elevated the bilateral risk of breast cancer. Here the trend in surgery is towards bilateral mastectomy with elegant reconstructions to give the appearance intact breasts which provide considerable psychological benefits for the patient.

Let's enjoy the interview video (*Figure 2*): <https://youtu.be/GfmabztUEVE>.

## Interview questions

- ❖ Today your speech is about the strategies and challenges in treatment of ER positive breast cancer, would you please give us a brief introduction about the differences between ER positive and ER negative breast cancers? And what are the challenges?
- ❖ What are the applications of breast cancer gene signature in breast cancer diagnosis?
- ❖ Looking through the topics this year in Shanghai International Breast Cancer Symposium, which one impresses you most and why?
- ❖ In your opinion, what are the future trends of Breast Surgery?

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1. Zhang K. Dr. Matthew J. Ellis: strategy and challenges in estrogen receptor positive breast cancer treatment. *Asvide* 2017;4:566. Available online: <http://www.asvide.com/>

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