

### Article of the Week (AoW) Directions

1. Mark up your confusion – either highlighting or underlining
2. Mark up the text. Annotate the article with comments, questions, inferences, etc. You can use a variety of sentences, phrases, or symbols to show your thinking.
3. Write a developed paragraph response to one of the prompts below.

## Hard Evidence: are we beating cancer?

Source: Peter Johnson, PhD./theconversation.com/March 26, 2014

More and more people are beating cancer – over the past 20 years the proportion of people surviving the disease for more than ten years has increased **by a third**, from 34% to 45%. But as the population ages, and with more of us at risk from lifestyle factors such as smoking and obesity, the number of people being diagnosed with cancer keeps rising.

The good news is that survival for many cancers is improving steadily and there have been some clear success stories in a number of cancers including breast, testicular and one of the cancers I treat, lymphoma. The way we diagnose and treat patients has changed phenomenally since I first started working in oncology 25 years ago, and today I have the real hope of curing many of my patients.

Behind these good stories is research and this is more vital than ever as more of us are being diagnosed with cancer.

### *Lifestyle choices*

Among the main reasons for this is our increasing life expectancy. Age is the biggest risk factor for cancer and as we are all living longer more of us will develop cancer at some point in our lives.

However, even after taking out the effect of our increasing age by looking at cancer rates rather than cases, it's clear that the disease is becoming increasingly common.

Cancer incidence rates have risen by 13% over the last two decades, and the forecast is that although the increase has slowed down it will continue into the coming years. Much of this rise is down to our lifestyle choices.

Research has shown that more than four in 10 cancers could be prevented, largely making changes in our lives such as not smoking, eating healthier diets, drinking less alcohol and keeping a healthy weight. Among these, smoking is undoubtedly the most important linked to cancer – it causes 23% of cancers in men and over 16% in women.

### ***Ten types of breast cancer***

Breast cancer rates in women have increased by 19% over the last two decades. Factors such as alcohol intake, increasing body weight, the effects of hormone levels from having fewer children and having them later in life, and increased detection of cancers by screening may all be playing a role in this rise.

But the survival rate for women with breast cancer has also risen by about a quarter since the early 1990s. There are a number of advances that have greatly improved the outlook for people with breast cancer. One trial, for example, found women with the most common form of breast cancer who took Tamoxifen for 10 years halved their risk of dying from the disease.

Our knowledge of the biology and causes of cancer has also increased phenomenally over the last few years, leading to better ways to prevent, diagnose and treat the disease. Just last year we discovered that breast cancer could be broken down into at least ten separate diseases. This will make a huge difference to our understanding of breast cancer and how clinicians can best treat each of the different types of the disease.

One of the core components of cancer treatment is high-tech radiotherapy and we estimate that it contributes to around 40% of cancer “cures”. And it certainly plays a major role in breast cancer. Going back to the 1970s, our research showed that radiotherapy could prevent breast cancer from coming back after removal of the primary tumour. And 30 years later, we know that it significantly increases survival from the disease in the long term.

### ***Majority survive testicular cancer***

Today almost all men with testicular cancer can be cured of the disease, whether it is a small lump in the testicle or has spread to other parts of the body. It was the development of a drug called cisplatin that revolutionised treatment, and careful clinical research over many years has now brought the survival rate up to more than 95%.

Another success story has been in one of the cancers I treat – Hodgkin lymphoma. Today nearly 80% of the patients I see will be successfully treated. Cancer specialists have spent many years finding out how best to use radiotherapy and chemotherapy drugs to maximise the chances of a cure but also avoid long-term side effects such as infertility, lung and heart muscle damage – so important for people who will go on to live for many years to come.

### ***Cancers are intricate things***

The complexity of cancer has been the dominant theme in research over the last few years. One of the most exciting but challenging areas is how intricate an individual cancer is and how it evolves over time. In the early stages of the disease there are key mutations that are at the heart of the cancer, but over time cells in different parts of the tumour evolve separately creating unique genetic “branches”.

This probably explains why some very specific targeted treatments have not had the predicted impact, as they only work against one branch of the tumour and allow the rest to grow unimpeded. It is work like this that will offer new opportunities to treat cancer more effectively in the future, as well as tackle the ways that cancers escape treatment.

### ***Not all good news***

But this good news doesn't apply across all cancers, and too many people still die from the disease. Among the hardest to treat cancers are oesophageal and pancreatic cancers, where survival remains far too low.

Late diagnosis is a key problem with these two cancers. For almost all patients their first symptoms only appear after the cancer has already become more aggressive and has started to spread around the body. We urgently need better treatments and ways to spot them earlier.

This need for understanding is beginning to take shape in lung cancer, where survival rates had previously remained stubbornly low. A major study was launched this year to unlock lung cancer's secrets, and tracked how they developed and evolved as patients receive treatment.

By taking biopsies from different parts of each tumour and analysing them with the latest sequencing techniques the hope is that doctors may be able to stay one step ahead of a cancer that is constantly evolving.

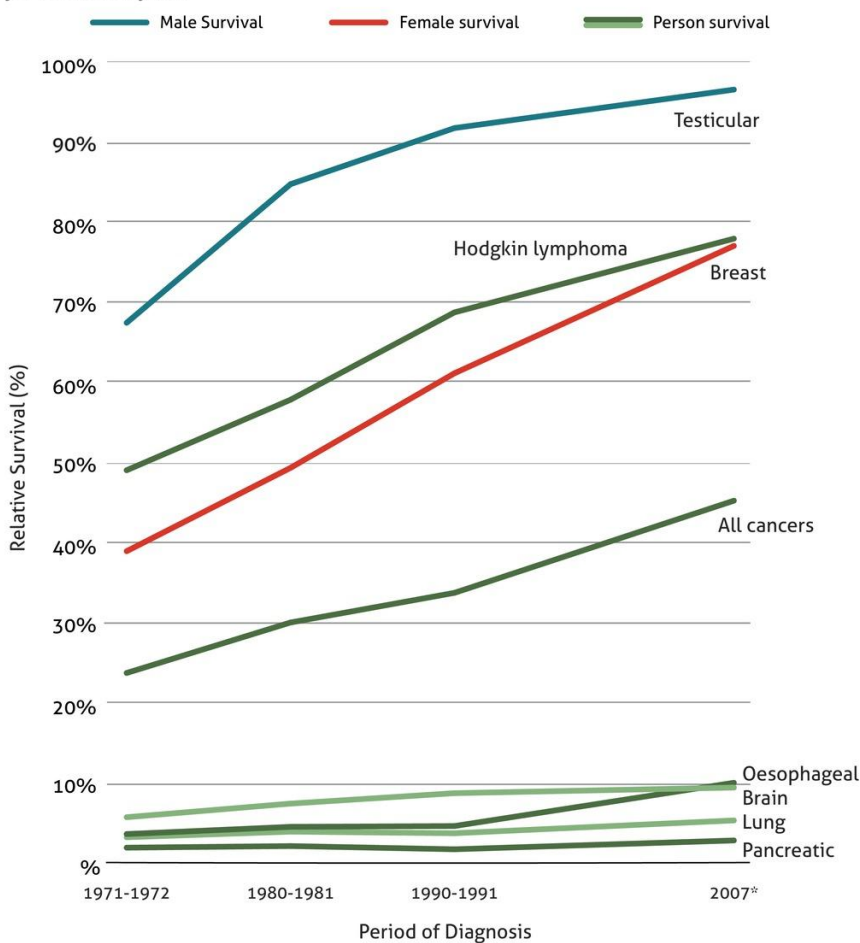
By understanding more about cancer risk we can try and predict an individual's chances of developing certain cancers and find ways to prevent them. A major study last year revealed that there are genetic flags that increase an individual's risk of developing prostate, breast or ovarian cancers. And researchers are now using this information to develop tests that can guide decisions

about who should be offered screening or preventative treatments to reduce the risk of developing certain cancers.

It's all this research coming together that leaves me more hopeful than I have ever been in my career about the treatments we can offer our patients today and what the future holds. Research has already helped save nearly 520,000 lives since the 1980s, and over the next 20 years mortality rates are projected to fall by 17%.

### Survival Trends for Selected Cancers: 1971-2007

Percentage of cancer patients (adults 15-99 Years, England and Wales) surviving for at least ten years



\*Note: Ten year survival rates have been predicted for patients diagnosed in 2007 (using the hybrid approach)



**Respond to one of the following prompts. Use the back of this paper.**

1. Reflect on the effect cancer has had on your friends and/or family.
2. Comment on the chart (left). What does it say? What does it not say? What questions does it raise?
3. Choose a passage from this article and respond to it.