



Artificial intelligence – information for patients and carers

brainstrust information sheet

Know Hows are published by *brainstrust* to help people living with a brain tumour to understand current topics. They are produced with input from relevant scientific and clinical experts and are written in a way that should help you to understand often complicated topics.

If you have an idea for a Know How, then please let us know.

If you have any queries, don't forget you can talk to one of our support specialists on **01983 292 405**, or email **hello@brainstrust.org.uk**.

Why do we need this Know How?

Artificial intelligence, or AI, already plays a key role in brain tumour diagnosis and treatment. The government has provided funding to increase the use of AI in the NHS. People have lots of hopes, concerns, and uncertainties about AI. These questions need to be addressed to make sure everyone is on the same page. This Know How presents the benefits and limitations of AI, and how it might fit into your care.

What is artificial intelligence?

Artificial intelligence is a broad term. AI pioneer Marvin Minsky explained it as 'the science of making machines do things that would require intelligence if done by [humans]'. When we talk about AI today, we often mean machine learning. This is when we teach a computer to solve problems by training it with similar examples. Therefore, the AI does not need step-by-step instructions every time. It has worked out its own steps. AI, then, is just a kind of computer software that has learned how to solve a problem.

What AI is not

In films and media, artificial intelligence is often portrayed as mastermind robots that want to take over the world. This is not what AI is like, nor is it how it will be any time soon. AI is not currently self-aware or conscious. Instead, good AI software usually does a narrow task very well and very quickly. How good it is depends on how well it has been trained by its creators.

Where is AI already used today?

Artificial intelligence is all around us. It is in our phones, our homes, our cars, and it is used across the internet. One example is speech recognition, on phones and smart home devices. It must work out which sounds are speech and what those sounds mean. AI is also used to rank search engine results. It shows you the most popular posts on social media. It tailors adverts to your shopping habits. You might be happier with some of these uses than others. It is important that organisations use AI responsibly.

How is AI used in healthcare?

AI is used widely in health and social care. The NHS has lots of useful data about patients. This information can be used to improve your healthcare experience. AI may help with your care administration, such as by scheduling appointments or managing your call to 111. AI can help with imaging: it might adjust for your movements during a scan, and it can align images from different types of scanners. Treatment planning is also supported by AI: it may outline structures around a brain tumour, and it can calculate how much radiation and medicine parts of your body can take.

How does AI improve my care?

Artificial intelligence might result in better outcomes in several ways. An AI program will have seen thousands of past examples. This means it can support a doctor's decision-making with more breadth. AI will give the same result anywhere and at any time. This way, it keeps things consistent. AI speeds up treatment planning. This gives doctors more time to spend on other aspects of your care. AI can look at lots of things about you all at once. Therefore, it can tailor your care to better suit you.

Is the NHS using my data safely?

Personal information is valuable in the modern world. It is natural to be concerned about how your data is used. Personal data is held safely and lawfully by the NHS. You can opt out of your data being used in most situations beyond your own care. However, the use of your information in research may be to your benefit, should a new treatment be discovered. Otherwise, the NHS only allows patient data to be used to improve health and care services and for medical research. Therefore, only researchers and medical professionals can use your data. Information is anonymised whenever it can be. Your NHS data is never used for marketing or insurance purposes.

Will AI mean that I spend less time face to face with my doctor?

Human contact is very important in healthcare. Artificial intelligence only plays a support role in clinics. AI is not there to replace the doctor. Instead, AI can do skilled but repetitive tasks that doctors would normally do. Then, the doctor just needs to check and edit what the AI has done. This speeds up the process and frees up the doctor to focus on other areas of your care. Therefore, the doctor might spend more time face to face with you.

Some AIs are biased. What about the ones used in healthcare?

When artificial intelligence software is not trained with a variety of previous examples, it can give biased results. For instance, some facial recognition software on mobile phones can be less accurate for people with darker skin tones. AI in healthcare is held to a very high standard. However, getting hold of the widest variety of training data can still be difficult – for example, some clinics in other countries might not have the resources to share their data. Despite these challenges, the aim is always to create software that works well for everyone.

Contact

Talk to *brainstrust*. We can help. You can call, write, type, text. Email for help and support: hello@brainstrust.org.uk. Telephone: **01983 292 405**.

Helpful links

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