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# Probabilistic approaches to cancer growth.

Is it possible to determine how far or how quick a tumour may grow through a formula?

Cancer is when abnormal cells divide in an uncontrolled way. Some cancers may eventually spread into other tissues.
There are more than 200 different types of cancer.
1 in 2 people in the UK will get cancer in their lifetime.

Commerrcial implications:

By 2032 it is expected that the cancer therapeutics market will have an estimated worth of $400 billion, with growth in each year, within the USA. However, the profits of these companies will inevitably come at the cost of those who are unfotunate to be affected by this disease. By utilising, machine learning to streamline treatment the cost per patient would inevitably fall, and as a result mitigate the financial burdens of contarcting the disease.
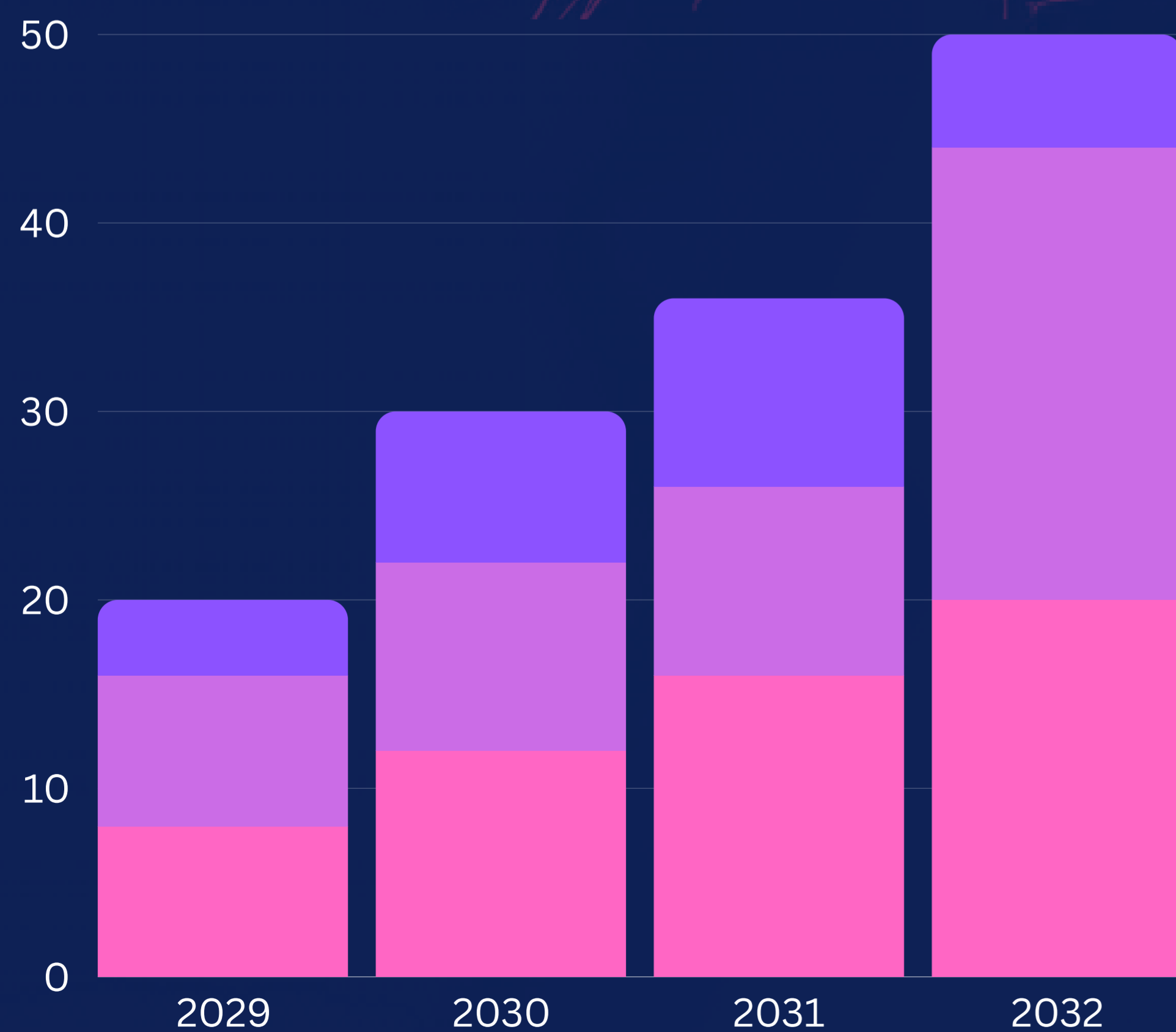
Mathematics is the future of medical treatment:

Role of machine learning in predicting and treating cancer growth:

1. Early Detection and Diagnosis:
2. Genomic Analysis:
3. Predictive Modeling:
4. Drug Discovery and Development: This is a particularly exciting field as rapid developments have taken place over the past two years including DeepMind's AlphaFold.
5. Treatment Optimisation: Reducing the effects of chemotherapy on parts of the body where it does not need to be used.

Modern Mathematical Oncology:

Modern mathematical oncology is an interdisciplinary field that applies mathematical and computational modeling techniques to better understand the dynamics of cancer growth, progression, and treatment response. It encompasses various mathematical approaches, including differential equations, agent-based modeling, network theory, and machine learning, to address complex questions in cancer biology and clinical oncology.