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New medical technologies using in 2019 year

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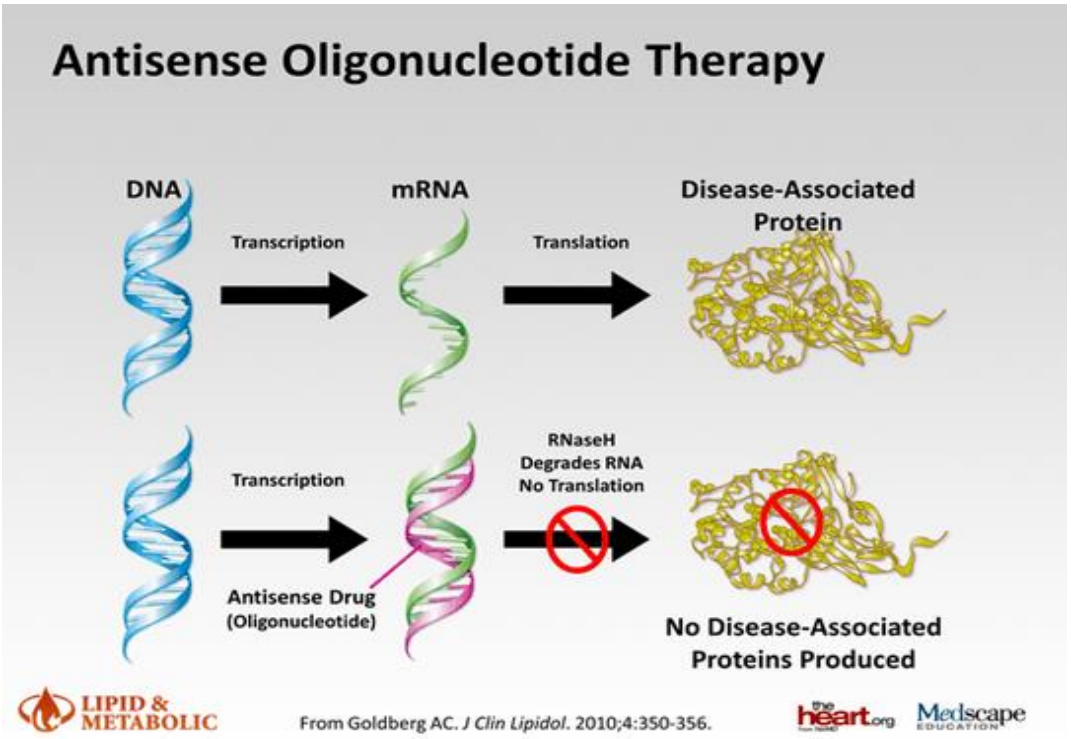
Robotic surgery

Robotic approaches to surgery are less invasive and faster, and are often associated with improved clinical outcomes, such as decreased recovery time and reduced pain. Robotic approaches to surgery also guide surgeons in the operating room. Currently, robotic surgery is used in a gamut of procedures from spine to endovascular.

For instance, the *da Vinci* Surgical System, which is probably the best-known robotic surgery platform, translates the surgeon's hand movements to smaller movements made by the robot inside the body, all visualized via laparoscopy. The *da Vinci* System has been used on more than 3 million patients globally.

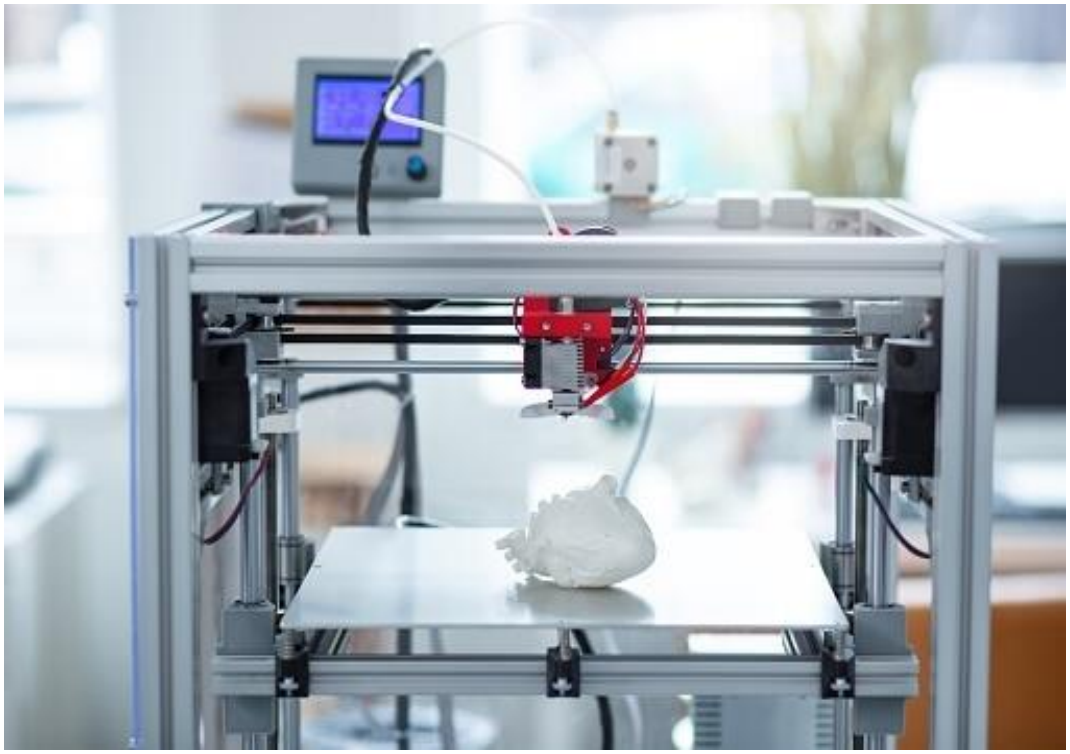
RNA therapeutics



RNA threrapeutics is used against abnormalities before these abnormalities are translated into functioning or nonfunctioning proteins. Examples of this technology include antisense nucleotides and RNA interference, and are applicable to rare genetic diseases, cancer, and neurologic illness.

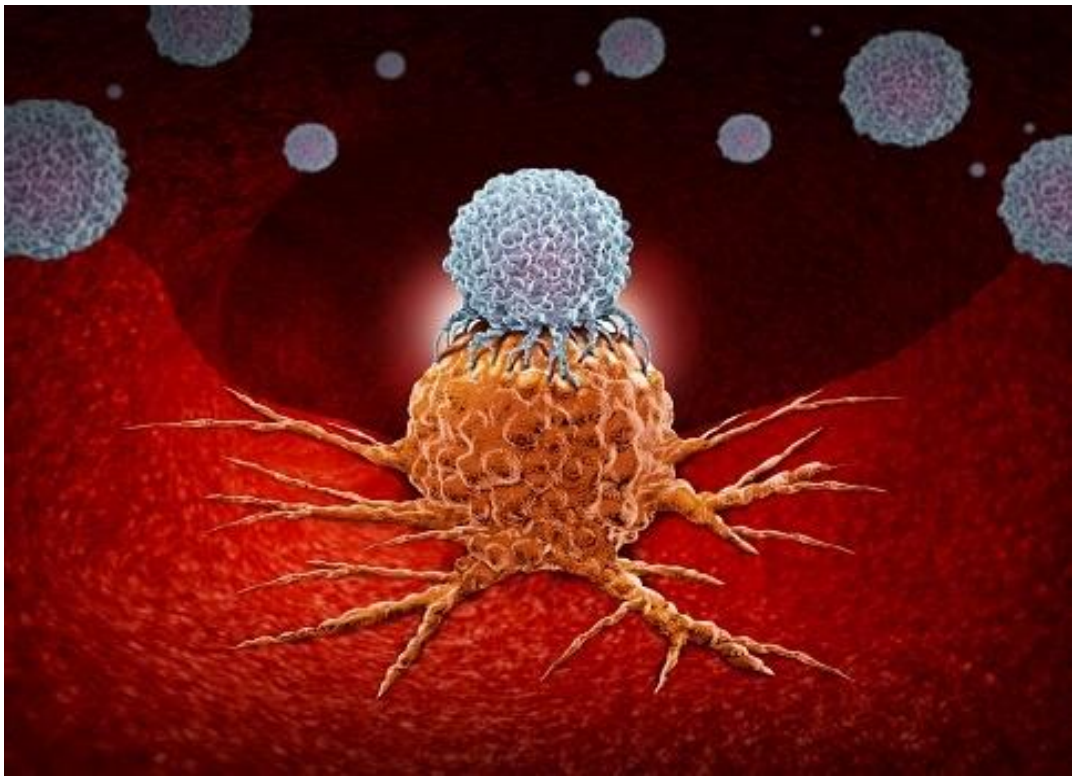
The field of RNA therapeutics is rapidly expanding, and the potential for using RNA drugs for personalised medicines and immunotherapy, as well as to address genetic, infectious and chronic diseases will ensure the continued development of RNA therapeutics for years to come.

3-D printing



3-D printing allows the user to create health products specific to the patient, including prosthetics, implants, and airway stents. These customized creations enhance comfort and performance because they are modeled after the patient's body measurements, while offering minimal risk of postoperative complications. 3-D printing also has applications in surgical planning, such as with heart surgery or even face transplant.

Immunotherapy



Immunotherapy has revolutionized cancer treatment by leveraging the immune system to fight tumors. In particular, immune checkpoint inhibitors have demonstrated great potential in the treatment of solid-tumor types, such as melanoma and non-small cell lung cancer. The hope is that someday immunotherapy options will exist for all types of tumors.

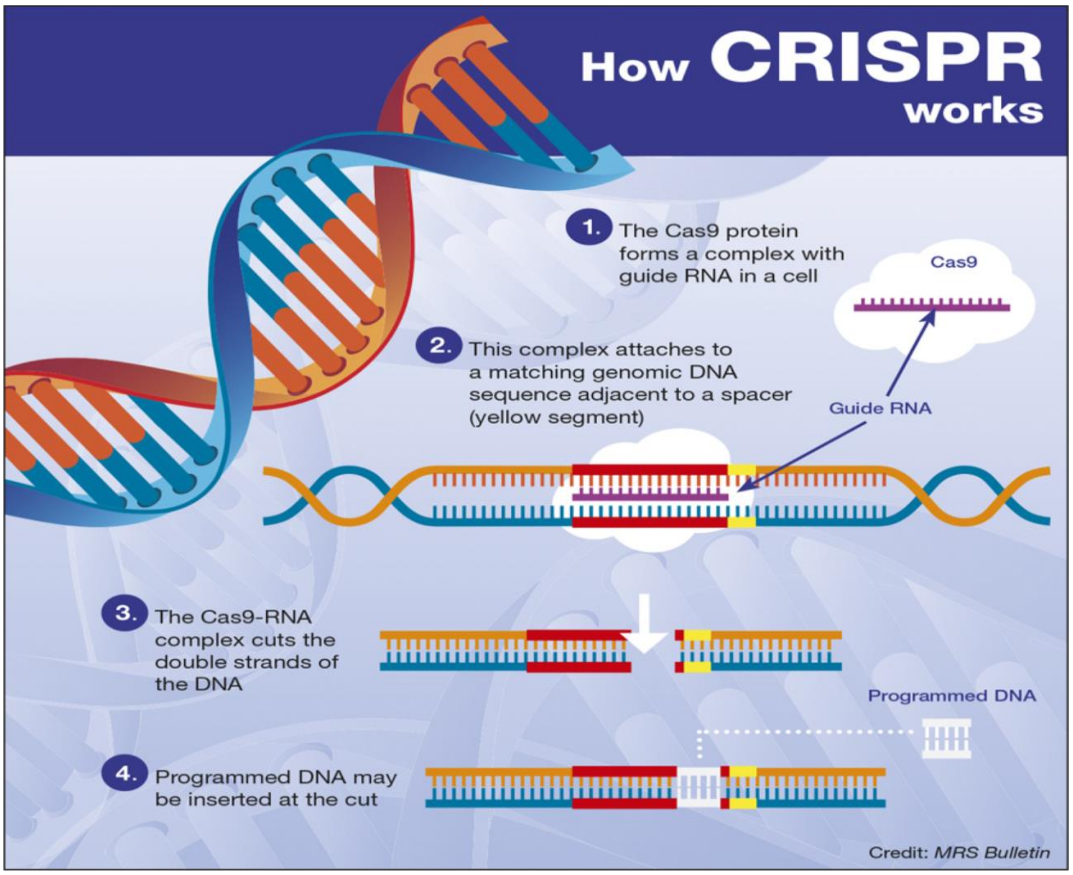
Joint therapy (immunotherapy + chemotherapy)

Engineered T cell therapy

Wireless brain sensors

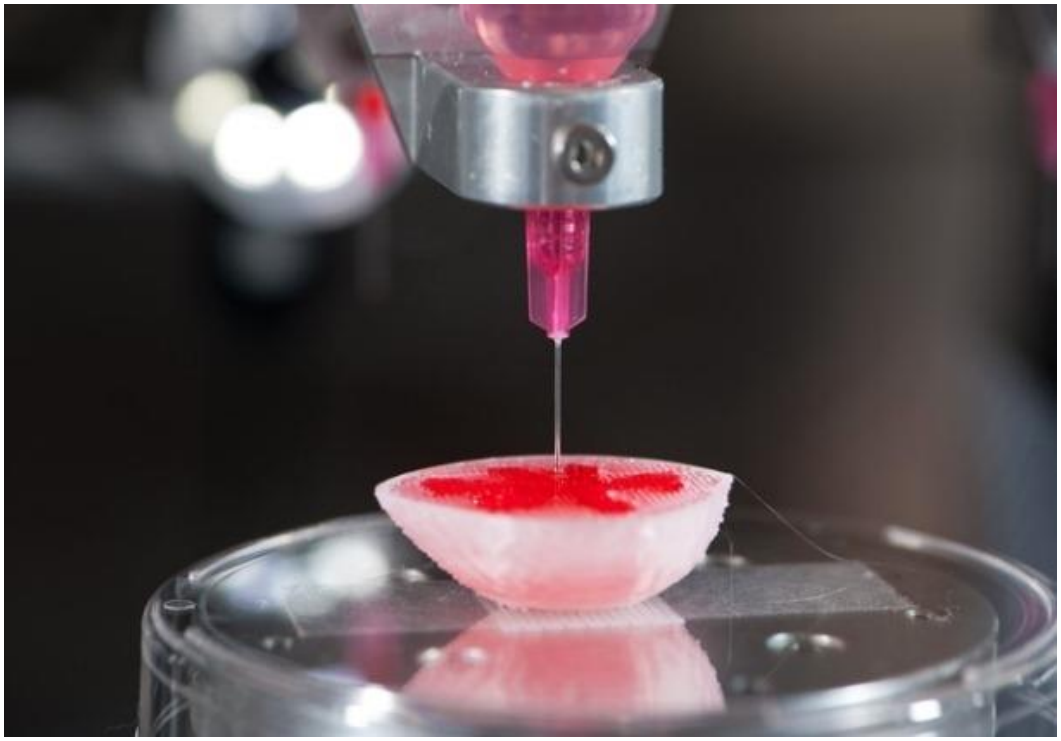
Thanks to plastics, medical advances have allowed scientists and doctors to team up and create bioresorbable electronics that can be placed in the brain and dissolve when they are no longer needed, according to Plastics today.com. This medical device will aid doctors in measuring the temperature and pressure within the brain. Since the sensors are able to dissolve, they reduce the need for additional surgeries.

CRISPR



Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR) is the most advanced gene-editing technology yet. It works by harnessing the natural mechanisms of the immune systems of bacterium cells of invading viruses, which is then able to 'cut out' infected DNA strands. This cutting of DNA is what has the power to potentially transform the way we treat disease. By modifying genes, some of the biggest threats to our health, like cancer and HIV, could potentially be overcome in a matter of years.

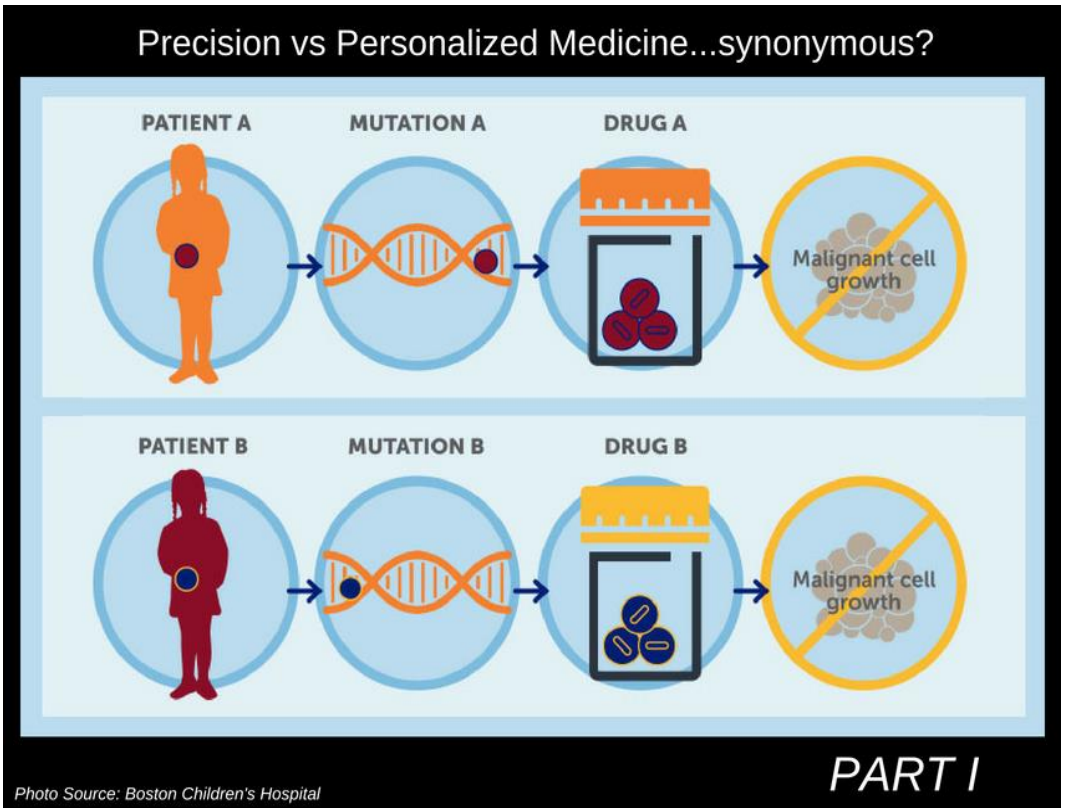
Artificial organs



To take 3D printing up another notch, bio-printing is also an emerging medical technology. While it was initially ground-breaking to be able to regenerate skin cells for skin draughts for burn victims, this has slowly given way to even more exciting possibilities. Scientist have been able to create blood vessels, synthetic ovaries and even a pancreas.

These artificial organs then grow within the patient's body to replace original faulty one. The ability to supply artificial organs that are not rejected by the body's immune system could be revolutionary, saving millions of patients that depend on life-saving transplants every year

Precision medicine

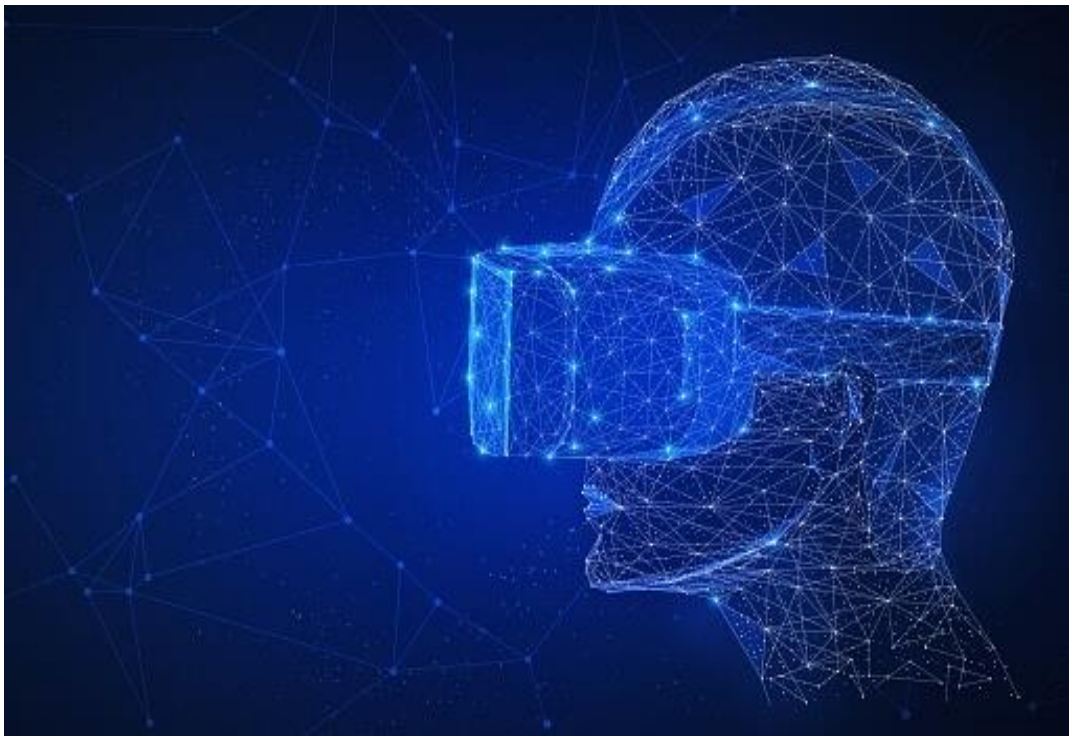


As medical technology advances it is becoming more and more personalised to individual patients. Precision medicine, for example, allows physicians to select medicines and therapies to treat diseases, such as cancer, based on an individual's genetic make-up. This personalised medicine is far more effective than other types of treatment as it attacks tumours based on the patient's specific genes and proteins, causing gene mutations and making it more easily destroyed by the cancer meds.

Heart valve replacement

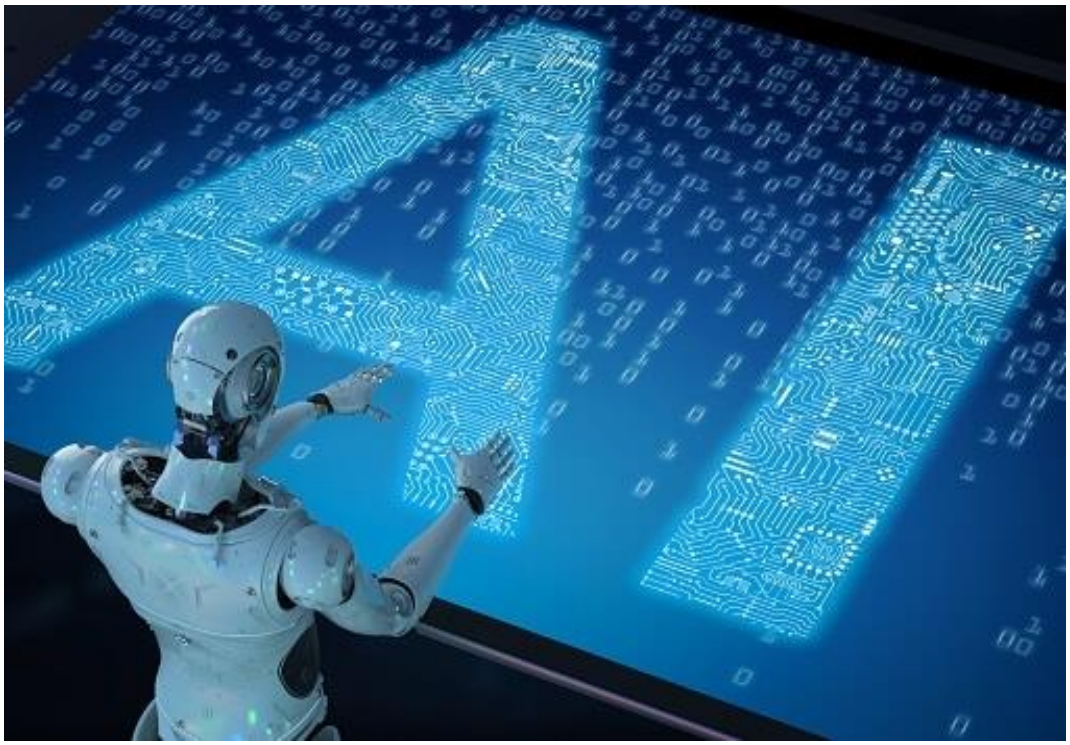
Advances in technology now allow for the performance of heart surgery percutaneously. Replacement of the aortic, mitral, or tricuspid valves via catheter obviate the need for open-heart surgery and improves surgery results.

Virtual reality/mixed reality



Virtual reality/mixed reality (VR/MR) applications have become popular in medical education. With its immersive approach, VR/MR is good for all kinds of learners: audio, visual, and kinesthetic

Artificial intelligence



The *Encyclopedia Britannica* defines artificial intelligence (AI) as "the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings. The term is frequently applied to the project of developing systems endowed with the intellectual processes characteristic of humans, such as the ability to reason, discover meaning, generalize, or learn from past experience.

Although AI technologies have matched human performance of tasks, such as mathematical calculations or playing chess, they have yet to match human adeptness at covering wide domains of information.