

Commentary

Innovations in the field of Orthopaedics

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Introduction

Medical science has benefited much from this growth in science, thus we can say that doctors are fully utilising science and technology, and the field of medicine has advanced swiftly. Virtual reality is redefining surgical training methods: old approaches like teaching in the operating room or cadaver labs are gradually being phased out in favour of virtual reality, which offers a better perspective and knowledge of the manipulations to be performed.

It is feasible to greatly minimise variability during operations by incorporating robotics, as well as augmented and virtual reality, into the operating room, resulting in better patient outcomes. This technology, when paired with sensors and 3D printing, has the potential to improve patient care throughout the duration of their treatment, from diagnosis through post-op follow-up. Sensors could be employed to monitor the patient's physical data before and after the orthopaedic operation as a preventive step. For example, consider a custom-made corset with sensors that track the progression of the back's curvature in real time, as well as the use of post-operative implants that detect potential issues.

These technologies should continue to evolve in the years ahead, whether it's to complete medical training, increase precision and repeatability in orthopaedic surgery in the operating room, or provide appropriate patient follow-up. At Alcimed, we're excited to learn more about the technologies that will revolutionise orthopaedics in the future. Bone grafts, growth factors, stem cells, platelet-rich plasma, autologous blood, and autologous conditioned serum are among the treatments available.

Smart gadgets have built-in sensors that provide surgeons with real-time tracking and post-operative evaluation information for improved patient safety throughout the clinical procedure. Periprosthetic infection, which is becoming more common in orthopaedics, can be reduced using these

implants. Sensor-enabled inventions also provided a variety of inventive and cost-effective products to health-care providers. With the arrival of technology, medical science has taken a significant leap forward. The orthopaedic business has also undergone significant changes to ensure that experts and surgeons can effectively treat and operate on their patients. Almost all orthopaedic institutions are outfitted with cutting-edge technology and equipment to aid doctors.

A number of novel surgical methods are helping to improve outcomes. Motion preservation procedures, minimally invasive surgeries, tissue-guided surgeries, and cement-free joint replacements are just a few of the options. In orthopaedics, 3-D printing is gaining traction in the manufacturing of personalised implants, medical equipment, and orthotics made of a variety of materials. 3-D printing technology shortens surgery times, saves money, increases implant stability in the long run, and enhances surgical operation clinical outcomes.

Surgeons and patients are collaborating in ways they've never done before thanks to these platforms and technologies. They're building more customised patient pathways as a result of their collaboration, which leads to more accurate therapies and better care. As we move away from a one-size-fits-all approach, it's critical that we continue to recognise and honour those in our business who are pushing limits and innovating.

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Conflict of Interest

We have no conflict of interests to disclose and the manuscript has been read and approved by all named authors.