Advancing Patient-Centered AI Healthcare Solutions in the U.S.

Artificial Intelligence and Machine Learning

At Johnson & Johnson, we believe health is everything. For more than 138 years, we have created a legacy of impacting human health through scientific research and innovation. **Our exclusive focus on Innovative Medicine and MedTech solutions enables us to innovate across the full spectrum of healthcare solutions today to deliver the breakthroughs of tomorrow.**

In a time when chronic diseases are on the rise and people are living longer than ever before, novel solutions for better patient care are urgently needed. In healthcare's next chapter, a new type of technology will play a bigger role than ever before.

Artificial intelligence, or AI, has the potential to transform how humans learn, work and interact with one another in every aspect of life. Rooted in the simulation of human intelligence by computer systems and machines, we believe AI holds tremendous potential to advance human health in the United States and around the world.

By combining the power of AI with our scientific expertise, we find answers to some of the most pressing questions in healthcare. We accelerate breakthroughs – in understanding and treating diseases, discovering and developing medicines and medical technologies, equipping healthcare providers with insights and personalizing care for patients.

Leveraging AI to Advance Human Health in the U.S.

We're applying AI and data science across our business here in the United States, with a focus on finding solutions to big challenges that can advance our impact on patients and U.S. healthcare systems. This includes:

Innovative Medicine

Accelerating drug discovery:
We are leveraging state-of-the-art AI & machine learning (ML) technologies across drug discovery – from identifying novel targets that we can modulate to combat disease, to enabling the identification of molecular starting points for those targets, to designing and optimizing those molecules to develop a drug candidate.

Driving greater precision in measuring disease severity and treatment response:
We are applying AI/ML to data sets – from digital images to videos to sound recordings – to identify novel biomarkers and clinical endpoints that can help us identify and stratify patients and to measure the severity and progression of disease more objectively, and thus the impact of medicine development across oncology, immunology and neuroscience.

Optimizing enrollment and increasing diversity in clinical trials:
Through our proprietary Trials360.ai platform, we are using ML algorithms to analyze real-world health data from sources like de-identified electronic medical records, labs, claims and imaging to identify and prioritize geographies and healthcare organizations where patients, including diverse patients, are being treated in communities across America.

Informing and engaging healthcare professionals:
We've developed a strategic AI-driven analytics platform – Engagement.ai – that uses extensive real-world healthcare data and interactions with customers to help advance the availability of our medicines and benefit more U.S. patients. These tailored insights help inform 200,000 healthcare providers in the U.S. via our field personnel, as they consider treatment strategies for their patients, often much earlier in the patient treatment journey.

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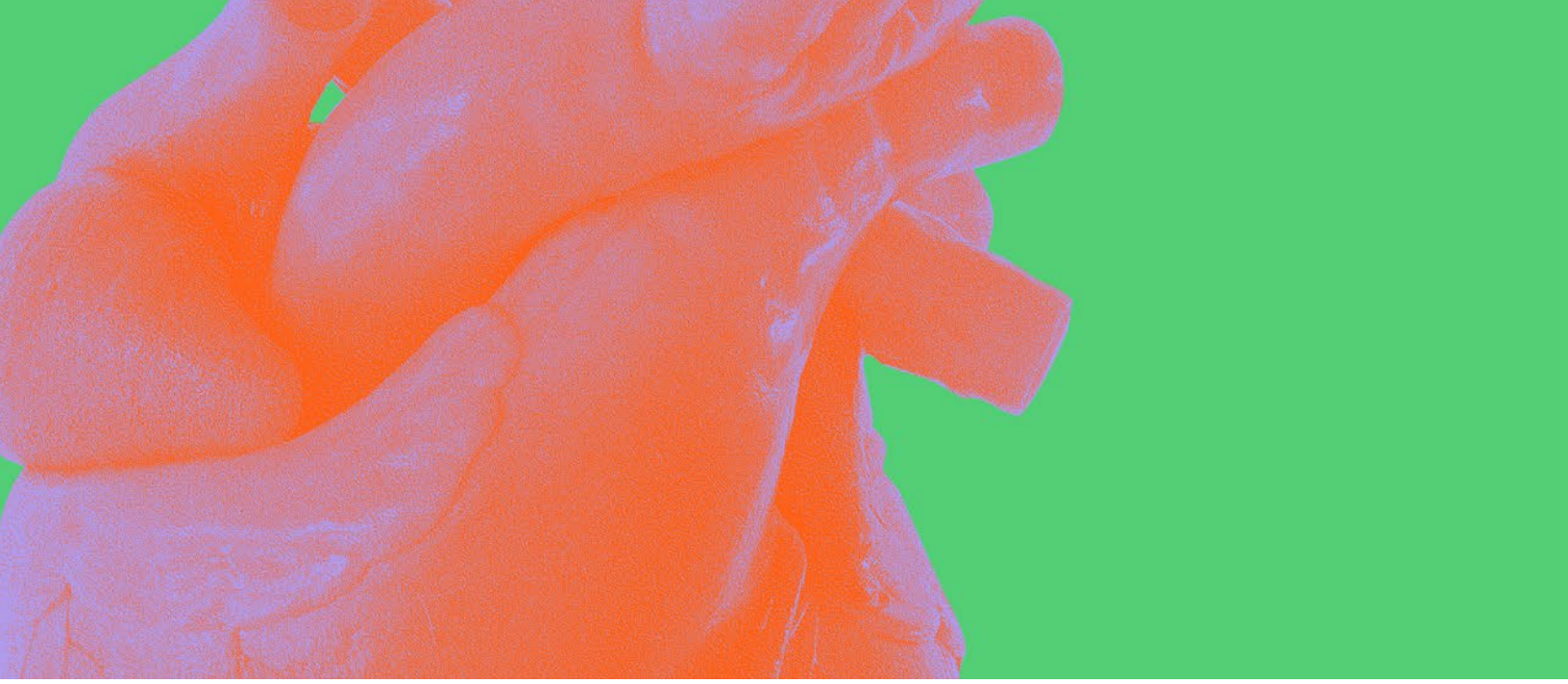

MedTech

Harnessing AI for electro-anatomical mapping of the heart: During catheter ablation procedures for atrial fibrillation, it is critical for electrophysiologists to "see" inside the heart. Our CARTO™ 3 System – a leading 3D heart mapping system used by doctors during catheter ablation procedures, now features AI to reconstruct the left atrial anatomy of the heart.

Simplifying operative experiences for physicians: Our AI-powered VirtuGuide software, currently in limited release, automates patient analysis and correction to treat bony deformities of the foot and ankle.

By using AI to analyze the patient's anatomy, this software outputs the instrument needed to treat the specific patient and recommends a correction plan, reducing the surgeon planning period from multiple weeks to a matter of days.

Predicting demand more accurately:

Our digitally integrated system, Advance Case Management, uses these ML algorithms to predict demand more accurately for knee, hip and other joint surgical implants to ensure these products are stocked when and where they're needed.

Anticipating service and repair needs for robotic solutions: Utilizing ML regression techniques and integrating customer data, we can forecast future service and repair needs based on the population of Velys Robotic-Assisted Solution robots in the field. This effort enables us to better help predict how many Velys component parts will be needed to properly service surgical robots for our customers.

Fostering Trust Through Ethics & Security

Trust is the foundation of all we do in healthcare. As we apply AI throughout our business, people are always at the center, prioritizing data privacy, security, fairness, responsibility, ethics and transparency to ensure appropriate use and avoid bias in our datasets and insights. This approach is embedded in how our employees work every day.

We help shape policies to regulate AI usage – with a focus on establishing clear and coherent guidelines across borders for responsible and safe use of AI in healthcare, while promoting innovation.

Our ethical foundation for using AI is based on the principles of Fairness, Privacy, Security, Responsibility and Transparency.

Learn more at

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Information sourced from the J&J grant reporting system and jnj.com