



# What Is a Robotic Biobank?

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The Al Jalila Foundation has announced that it will make history next year when it opens the doors to the UAE's first robotic biobank in Dubai. The Foundation, which is part of the Mohammed bin Rashid al Maktoum Global Initiatives group, will launch the facility in conjunction with the Dubai Health Authority (DHA) and the Mohammed bin Rashid University of Medicine and Health Services (MBRU).

The first of its kind on Emirati soil, the biobank will serve as a fully automated repository for all manner of patient samples, from bloods and other bodily fluids to cells and tissues. For those interested in learning more about how the facility is expected to work and the advantages it will bring, this article will explore the topic in greater detail below.

## Storing precious samples

The idea of a medical library is nothing new, but it is one that has evolved significantly over the years. From [the use of IR spectroscopy techniques to detect the presence of certain complications in patient samples](#) to the development of an artificial intelligence (AI) system capable of regulating ambient temperature and ensuring sample integrity, technology has revolutionised the way in which these facilities function.

This latter innovation is being put to good use in the forthcoming Dubai biobank, where an automated robotic computer programme will guarantee that all biological samples at the site are kept in cryogenic storage (at a temperature below 80°C). Once it opens its doors, the biobank will have enough capacity to store seven million patient specimens.

## Furthering research

As well as storing the samples themselves, the biobank will also contain detailed information on each specimen, including data and biomolecular resources that can be instrumental in furthering healthcare research. And because the samples and their attendant data will be gathered in one place, it will greatly facilitate collaboration and accelerate research processes.

“Access to genetic and imaging data through biobanks is driving forward pioneering approaches to analysis that would have been impossible just a few years ago,” [explained Sheikh Ahmed bin Saeed al Maktoum](#), the Al Jalila Foundation chair. “The



biobank will serve as a major contributor to the advancement of modern medicine and will enable scientific discoveries that will help enhance the health and wellbeing of the community.”

## **Balancing convenience with confidentiality**

It's expected that the biobank's vast resources will be instrumental in uncovering new ways of preventing and treating some of the planet's biggest killers, including heart disease, cancer and strokes. Genetic abnormalities and pandemics will also serve as areas of study once the Dh17 million (£3.67 million) facility opens its doors.

At the same time, those behind the project are acutely aware of the importance of protecting the identity and sensitive information of those to whom the samples belong. As such, it will follow global best practices in collecting, storing, analysing and processing biological samples so as to prioritise patient confidentiality, even as it furthers our medical and scientific knowledge.