




**DNAexus®**

Genetic Technologies  
Partners with DNAexus to  
Adopt Single, End-to-End  
Cloud Platform for geneType  
Multi-Risk Analysis, from  
Pipeline to Report





## Company Overview

Genetic Technologies (GTG) is a global company focused on preserving and promoting healthy futures. Under the geneType brand GTG's clinicians, scientists, and technicians are working to develop the next generation of integrated predictive genetic testing and assessment tools, empowering physicians and patients to proactively manage health.

Genetic Technologies are leaders in breast and colorectal cancer integrated risk assessments, giving them unequaled experience in this space. GeneType risk assessment tests include polygenic and clinical risk factors in one comprehensive assessment, providing a complete picture in personalized risk assessments. By creating proprietary algorithms that are calibrated to the general population, GTG leads the way in clinical integration of polygenic risk. By collaborating internationally with Key Opinion Leaders and through the company's advisory board, GTG aims to democratize genomics through relentless innovation.



# Challenges

GTG is at the forefront of the personalized healthcare revolution and understands the importance of providing a seamless and efficient approach in delivering their commercialized tests on a global scale.

To achieve these objectives, GTG recognized the requirement for a streamlined bioinformatics ecosystem capable of supporting the complexity of their multi-disease platform. Specifically, the company sought a reporting solution for workflows, from sequence to report, that physicians could easily digest. Historically, GTG had deployed a multitude of informatics solutions that were utilized by different teams in various locations, creating a fragmented environment that provided an opportunity for improved scalability and efficiency. The company believed that a single robust and scalable platform, capable of performing analysis and generating reports on a global scale, was the ideal solution for the entire bioinformatics process, from algorithm development to results deployment and reporting.

GTG also realized that, while they had strong core competencies in many areas, the company was not specialized in bioinformatics and software engineering. To develop these competencies internally was neither strategic nor supportive of GTG's core business goals.

GTG determined that the best option was to partner with an organization that could provide these competencies, satisfying not only today's needs but with the capability to continue to support GTG's growth into the future.

"Migrating our analysis pipeline and algorithms to the DNAnexus platform enables us to streamline our personalized disease risk prediction platform and, most importantly, provides us with the capacity to scale up to meet the demands of the population health management market."

**Simon Morriss**

CEO, Genetic Technologies

# Solution:

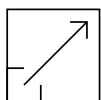
## Solution:

### SINGLE ECOSYSTEM

GTG was seeking a strategic partner with a single, comprehensive bioinformatics ecosystem to support all its needs. DNAnexus was that partner and the company worked with GTG to develop an integrated report per test on the DNAnexus platform, with direct integration from pipeline to report. Some key features of the developed report include:

- A snapshot of the patient's absolute risk scores
- Interpretation of what their risk scores mean in the context of current guidelines
- Clinical factors integrated into the risk score
- Polygenic risk score indicating patient's "baseline" risk for disease
- Information about modifiable risk factors
- The types of disease-specific screening and risk-reduction interventions available

By streamlining workflows from sequencing to report, efficiencies were gained across both R&D and production.



### SCALABILITY

DNAnexus offered an infinitely scalable cloud platform that could keep pace with the growth of the geneType product suite. The purpose-built DNAnexus platform removed seemingly difficult tasks like managing cloud instances and provisioning resources from the list of concerns, so geneType could have a trustworthy scalable platform, providing GTG with a flexible, stable, and robust infrastructure in multiple geographic regions.



### FLEXIBILITY

GTG required a bioinformatics solution that could handle R&D and production pipelines, in addition to data management and storage. DNAnexus provided GTG with a flexible solution and collaborated with them to construct their multi-risk test analysis pipeline. In addition, DNAnexus regularly updates its platform with the latest security and compliance regulations, software patches, and technology updates, eliminating further resource demands on GTG.



## EXPERTISE AND EXPERIENCE

GTG sought a partner with the expertise to successfully support the types of genomic analyses required for their geneType product line. DNAnexus provided the experience needed, with an unmatched track record in diagnostics and deep expertise across genomics, bioinformatics, cloud engineering and clinical applications. Importantly, GTG was also able to leverage DNAnexus' managed services to support ongoing operations in production.

“Integration with DNAnexus has enabled us to stay focused on our core expertise: development of integrated risk assessment tests. We were able to move analysis and reporting pipelines to the DNAnexus environment while maintaining our CLIA-certified, NATA- and ISO 15189 accredited “high-complexity” laboratory operations. As Genetic Technologies expands our footprint into population healthcare, we can concentrate our scientific expertise in disease etiology, genetic epidemiology, biostatistics, and genetic-testing-based laboratory operations. Our partnership with DNAnexus allows GTG to utilize the bioinformatic expertise from DNAnexus to design the custom workflows that enable broader commercialization.”

**Erika Spaeth**

Director of Scientific Affairs,  
Genetic Technologies

## RESULTS:

By choosing DNAnexus, GTG was able to build a single cloud platform for the geneType Multi-Test analysis and reporting. Reports were structured to make the results easy to interpret by clinicians, simplifying their communication with patients. Today, hundreds of geneType tests can now be run in parallel, eliminating excessive compute times. GTG now has 24/7 support from DNAnexus, maintaining reliable production operations and empowering clinicians to improve health outcomes for people around

the world. The partnership with DNAnexus enables GTG to outsource maintenance tasks and flexibly add memory and storage resulting in cost savings. The partnership also allows GTG to redeploy resources to focus on higher value activities. Working together, both organizations are collaborating to co-develop state-of-the-art solutions that meet Genetic Technologies' requirements and keep them at the forefront of personalized predictive genetics.