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Ethical Considerations of CRISPR Gene Editing

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BioCybersecurity or Cyberbiosecurity is an emerging field that studies the intersection of biological data, like DNA, and digital systems. It focuses on protecting genetic, laboratory, and bioinformatics information from cyber threats, misuse, or exploitation. In the digital and cyber world, everything becomes vulnerable. Post 911, based on national security, the US government began undisclosed surveillance of its citizens. It collected private conversations, digital communications, visual monitoring, and vast data collections. It was a major intrusion into the personal lives and space of everyone. The DNA is the core, the essence of the human being. Its genetic information can identify a person's predisposition to medical health, diseases, traits, and welfare that could impact healthcare, insurance, employment, and discrimination. Guardrails like HIPAA and other credentialing are insufficient to protect against cyber attacks or breaches. Just as there are benefits to national surveillance in protecting society, there are benefits to having DNA data and information for medical breakthroughs and advancement, disease prevention or cures, and extending the lives of people. DNA and biological information have become high-value targets for hackers. Any breach can permanently compromise a person and/or their family's privacy, medical history, or future health outcomes. It could also be weaponized for biological warfare, extortion (ransomware), and other threats. The articles suggest strengthening protections by enhancing technical security to prevent or contain breaches, and by strengthening ethical and policy controls. I believe ethical and system frameworks are currently not strong enough to prevent cyberbiosecurity breaches, and therefore, the harm to individuals would be too great to advance digital DNA integration at this time.