

Test Protocol Report for Insulin Syringes and Lancets

The primary objective of the report was to assess the force exerted during the usage of insulin syringes and lancets, considering factors such as usability, safety, and effectiveness. We meticulously researched and gathered relevant information on industry standards, regulations, and best practices pertaining to force testing in the medical device field.

To accomplish this, we began by conducting extensive literature reviews and consulting reputable sources to establish a solid foundation of knowledge on force testing methodologies. We explored various testing techniques and equipment, considering factors such as load cells, force gauges, and test fixtures. Next, we designed and implemented a series of experiments to quantify the forces involved in using insulin syringes and lancets. This involved carefully selecting appropriate testing parameters, such as sample size, test environment, and measuring instruments. We documented our experimental setup, methodology, and data collection procedures in a clear and concise manner.

Furthermore, we employed the Design Failure Mode and Effects Analysis (dFMEA) approach to evaluate the risks associated with a syringe with a needle attached. This involved systematically identifying potential failure modes, assessing their severity, likelihood of occurrence, and detectability. By conducting a thorough analysis, we aimed to identify areas of improvement and propose mitigation strategies to enhance the safety and reliability of the syringe design. Throughout the process, effective communication and collaboration among team members were essential. We held regular meetings to discuss findings, share insights, and address any challenges encountered during the project. By leveraging each team member's expertise and working synergistically, we ensured the report's accuracy, coherence, and technical rigor.

In conclusion, our report on force testing for insulin syringes and lancets, as well as the dFMEA analysis for a syringe with a needle attached, demonstrated our proficiency in technical writing and our ability to apply human factors engineering principles in a real-world context. Through this project, we gained valuable insights into the complexities of

medical device testing, emphasizing the importance of thorough research, rigorous experimentation, and effective documentation to ensure the safety and usability of healthcare products.