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Analysis of High Speed Liquid Jets Emitted from Needle Free Jet Injectors[1] ROCCO PORTARO, AMY-LEE GUNTER, HOI DICK NG, Concordia University, Montreal, Canada — The replacement of the traditional hypodermic needle by needle free liquid jet injectors has been of great interest to the scientific community over recent years. This study utilizes a specially designed needle free injector in order to describe the behavior of high speed liquid jets. High speed photography is used to depict the injection process, as the jet emitted from the injector penetrates biological tissue. The penetration depth of the jet will be studied by varying parameter such as the jet diameter, geometry and power. This analysis will then be used in improving the performance of liquid free injectors by maintaining more consistent injection depths and minimizing the power required to penetrate human tissue. This in turn leads to painless injections with less risk of contamination and aids in making needle free liquid jet injectors a viable alternative to hypodermic needles.

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