

# TrueTissue

## Biofidelic Skin Surrogate for Less-Lethal Weapons Testing

### BACKGROUND AND CHALLENGE

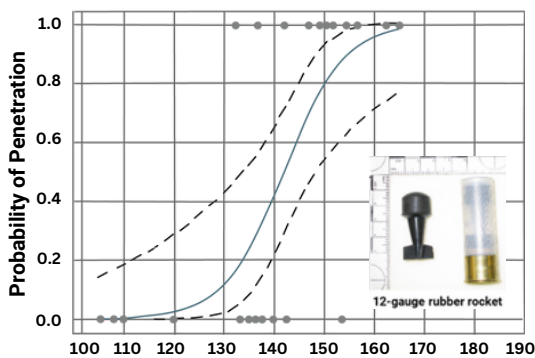
Less-lethal weapons are employed by law enforcement or military forces in situations where lethal force is prohibited or undesirable. To ensure development of less-lethal weapons capable of the intended use, safety assessments are critical. Ballistic injury surrogates have been limited by high costs, variable outcomes, and lack of a predictive injury response. A skin surrogate for penetration evaluations is needed for greater confidence of safety.

### SOLUTION

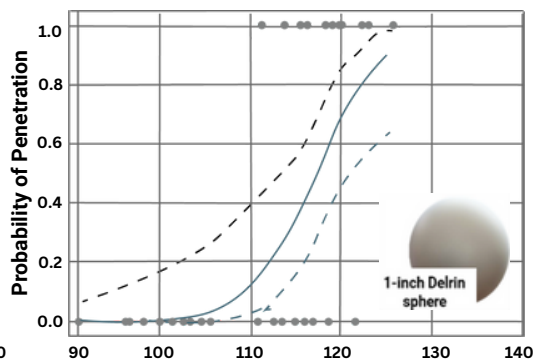
Luna Labs has developed TrueTissue™, a physical skin surrogate which demonstrates mechanical properties comparable to human skin with less sample-to-sample variability.

- ✓ Designed to mimic the structure of human skin
- ✓ Demonstrates high consistency in munition impact response
- ✓ Validated to accurately assess penetration risk with multiple less lethal munitions

**Assessment of penetration risk for multiple less lethal projectiles has been demonstrated with TrueTissue. TrueTissue test results show velocity-dependent injury response curves with 90% confidence bounds for two different projectiles.**

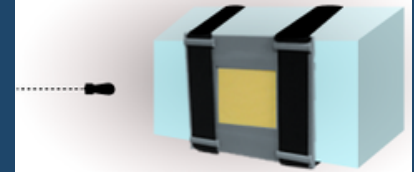


Bir CA, Stewart SJ, Wilhelm M. J Forensic Sci; 50(6):1426-9 (2005).



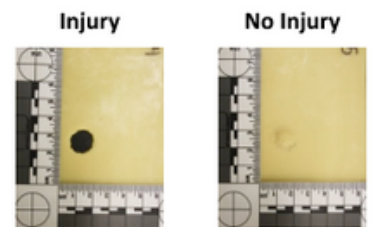
Shedd DF, Berthelson PR, Rifkin JA, McMahon J, Giudice JS, Forman JL, Panzer MB. Hum Factors Mech Ena Def Saf; 6(5): 1-12 (2022).

### Impact



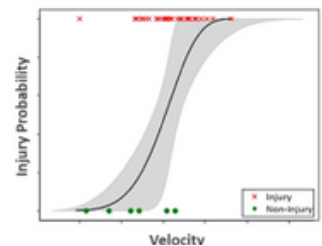
TrueTissue secured to gelatin block and impacted with a non-lethal projectile.

### Inspect



Skin surrogates are inspected for penetration indicating injury or no injury.

### Assess



Results are utilized to create an injury probability function to ensure effective weapon use.



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