Suprachoroidal Delivery with the SCS Microinjector®: Characterization of Operational Forces

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Financial Disclosures

• NF: Employee and stockholder of Clearside Biomedical, Inc.
• CW: Employee and stockholder of Clearside Biomedical, Inc.
Suprachoroidal Injection with the SCS Microinjector®
Background

• Tactile feedback of **Loss of Resistance** (LOR) is critical for the procedure success.
• **Any resistance** from operation of the device increases the difficulty for the user to distinguish between resistance due to anatomical location of the needle and resistance from internal friction forces of the device.
• The purpose of this research was to quantify the force required to operate the **SCS Microinjector** in a controlled laboratory setting versus the international standard force requirements to operate a syringe.
Methods

• SCS Microinjector loaded with various injectates
• Force to initiate movement (break force) and complete injection (glide force) measured via force gauge
  – All injections were performed at a clinically relevant, constant speed
• Values compared to ISO 7886-1:2017, Sterile Hypodermic Syringes for Single Use
Break Force for SCS Microinjector >24X Lower than ISO Standard

10 N ISO standard

P = 0.314

<table>
<thead>
<tr>
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<th>Force (N)</th>
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<tbody>
<tr>
<td>Air</td>
<td>0.43</td>
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<tr>
<td>Water</td>
<td>0.41</td>
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Glide Force for SCS Microinjector > 20X lower than ISO Standard

CL-S-TA: Investigational Suspension of Triamcinolone Acetonide for Suprachoroidal Injection

P < 0.001
Conclusion

• Forces to operate the SCS Microinjector are far below the international standard recommendations for low-volume hypodermic syringe operation

• The usability of the SCS Microinjector is improved with the minimization of the resistance forces inherent to the device, giving the user a more accurate tactile feedback with LOR when the suprachoroidal space is reached.