

Tissue handling skills trainer

Training tool for proper suturing techniques

VCU researchers have developed a tool which is designed to help train medical and veterinary professionals in proper tissue handling techniques. When handling any type of tissue, a delicate touch is an absolute necessity. Handling tissue with too much force can cause damage to the macrostructure as well as impede blood flow, resulting in ischemia. This leads to poor healing of the tissue which can increase the risk of infection and potential for breakdown of the wound or suture line. Learning proper tissue handling techniques requires years of experience, with feedback being provided through direct supervision and the observation of tissue damage post-handling. The Tissue Handling Skills Trainer is designed to train individuals by providing them with immediate and objective feedback during practice sessions on simulated tissue, thus allowing handling techniques to be learned more quickly and reducing the number of instances of tissue damage.

The technology

The system consists of a pair of Adson forceps with an attached pressure sensor. Pressure ranges have been calibrated to the amount of pressure required to properly handle various types of tissue, so if the user is applying an excessive amount of force, the system alerts the user so that they know to reduce their applied force. The threshold for excessive force can be adjusted for different tissue types as well as different skill levels, thus allowing professionals the opportunity to refine and enhance their skills. The system also provides a report at the end of the training session which shows a count for the extent of time the threshold was exceeded.

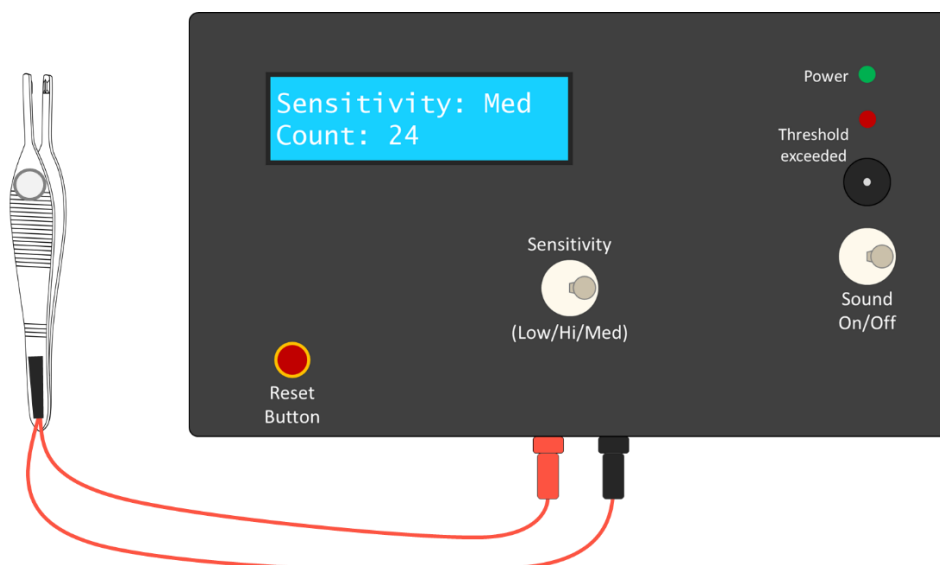


Figure 1. Representation of the Tissue Handling Skills Trainer device, highlighting its various sensitivity settings and performance feedback.

Benefits

- » Alerts user when applying excessive force
- » Adjustable thresholds
- » Provides session performance report

Applications

- » Training tool for medical & veterinary professionals
- » Simulation training for a variety of tissue types:
 - Skin
 - Hollow organ
 - Blood/Lymph vessels

Patent status:

Patent pending: U.S. and foreign rights are available.

License status:

This technology is available for licensing to industry for commercialization and continued development.

Category:

Biomedical

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