

NickRite: A Novel Design for a Specialized Seldinger Scalpel

(Technical Report)

Conservatism in Sport: Opposition to Safety Regulations in Professional American Football

(STS Research Paper)

An Undergraduate Thesis Portfolio
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by

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Preface

Employees across the American workforce face diverse daily occupational hazards. How can occupational injuries resulting from these hazards be prevented?

The Seldinger Technique for Catheterization is the standard method for gaining catheter access to a vessel during surgery. While the technique is simple and highly standardized, its process poses hazards to both the patient and the operating physician. To prevent injuries to patients and physicians from the Seldinger technique, a specialized scalpel was developed which can precisely guide a scalpel blade to the appropriate incision site and depth, even when the site is obscured by blood. This device was tested on an apparatus designed to simulate the operation of the Seldinger technique on a human subject, which showed promise in the device with more testing and a higher quality prototype.

Many American football players incur serious and sometimes debilitating injuries, causing demands that the National Football League (NFL) change rules of play to better protect players. While some insist that the NFL make any changes necessary to prevent physical injury to players, others argue that the burden of responsibility does not lie with the NFL, or that the tradition of the game precludes major changes. Differences in values divide these groups, but their techniques bear striking similarities.

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