



Jun 12, 2024

# Sensor Guided Needle Entry Procedures: A Scoping Review of Advancements to the Veress Needle & selected Needle Entry Techniques

DOI

[dx.doi.org/10.17504/protocols.io.bp2l621jkgqe/v1](https://dx.doi.org/10.17504/protocols.io.bp2l621jkgqe/v1)

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**Protocol Citation:** Chimwemwe Miti, Richard Scott, Hermes Gadelha-Bloomfield 2024. Sensor Guided Needle Entry Procedures: A Scoping Review of Advancements to the Veress Needle & selected Needle Entry Techniques. **protocols.io** <https://dx.doi.org/10.17504/protocols.io.bp2l621jkgqe/v1>

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**Protocol status:** Working

**We use this protocol and it's working**

**Created:** May 11, 2024

**Last Modified:** June 12, 2024

**Protocol Integer ID:** 99600

**Keywords:** Veress needle, sensor, needle entry, primary laparoscopic entry



**Funders Acknowledgement:**

**EPSRC funded CDT in Digital  
Health & Care University of  
Bristol**

**Grant ID: UKRI Grant No.  
EP/S023704/1**

## Disclaimer

No conflicting interests

## Abstract

Primary entry during minimally invasive abdominal surgery remains the one step associated with controversy and complications.

This scoping review attempts to draw literature describing sensor augmented techniques for introducing the primary trocar or Veress needle into the abdomen in a bid to reduce associated challenges. Publications related to other relevant needle entry techniques into critical spaces where sensors are successfully utilised are also briefly reviewed.

It is expected that an overview of related areas in which the technology is applicable and modifications to established techniques alongside the added improvements will be described.

## Eligibility Criteria

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- 1 Studies in English
- 2 Publication period 1992- May 2024
- 3 Articles with full text available
- 4 Human subjects
- 5
- 6

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