

The most affordable laparoscopy simulator box

Objective: To create a budget friendly laparoscopic simulator at home.

To create this box, you will need:

- 10lt plastic box -3£
- Black colour paper-2£
- Plumber's endoscope camera/webcam HD (1080px)- 20£
- Laptop/smart phone
- 5-10mm ports(Expired/unused ports available in hospitals.)



Ms. Sharadhi Channegowda¹, Mr. Alexander Sefre², Dr Prajwal Shetty³
(University Hospital Leicester^{1,3}, University Hospital Northampton²)



Acknowledging previous innovations, it is noted that similar boxes utilizing smartphones for illumination and imaging, with iPads as displays, have been developed previously, and references detailing these earlier designs and their variations are available.

References:

- Travassos TDC, Schneider-Monteiro ED, Santos AMD, Reis LO. Homemade laparoscopic simulator. Acta Cir Bras. 2019 Dec 9;34(10).
- van Duren B, van Boxel G. Use your phone to build a simple laparoscopic trainer. J Minim Access Surg. 2014 Oct;10(4).
- Khine, M., Leung, E., Morran, C., & Muthukumarasamy, G. (2011). Homemade laparoscopic simulators for surgical trainees. The Bulletin of the Royal College of Surgeons of England, 93(5), 191–193.

Method

- Cover the exterior of the plastic box with black paper to eliminate glare.
- Mark the positions for three holes on the box using a bottle cap as a template, then carefully cut them out with a craft knife and use the 5/10mm ports in it.
- Insert the camera into the central port, then secure it firmly with tape if needed.
- Connect the camera to a laptop, following the product instructions and the box is ready for use.

Advantages

- ✓ Cost- effective.
- ✓ Improves hand eye co-ordination, bimanual dexterity and fulcrum effect.
- ✓ Improves confidence.
- ✓ Maintains work-life balance.
- ✓ Learn as your schedule permits.