

# Comparison of Short-Term Clinical Outcomes Between Robotic, Minimally Invasive and Open Esophagectomy in Esophageal Cancer Surgery: Systematic Review

**Adele Zacken**

Queen Mary University London, United Kingdom

**Kayaththery Varathan**

Queen Mary University London, United Kingdom

**Praveen Surya Ravichandran**

Queen Mary University London, United Kingdom

**Juweyriya Abdi Isse**

Queen Mary University London, United Kingdom

**Havil Stephen Alexander Bakka**

Queen Mary University London, United Kingdom

**Mustafa Albayati**

Queen Mary University London, United Kingdom

**Uzair Khan**

Queen Mary University London, United Kingdom

## Abstract:

**Background:** Esophageal cancer is an aggressive disease traditionally managed with open esophagectomy (OE), a procedure associated with high morbidity and mortality. Minimally invasive esophagectomy (MIE) and robot-assisted minimally invasive esophagectomy (RAMIE) have emerged as alternatives, offering benefits such as reduced blood loss, shorter hospital stay, and quicker recovery. RAMIE additionally provides surgeons with three-dimensional visualization and improved ergonomics.

**Objectives:** This systematic review compares short-term outcomes of OE, MIE, and RAMIE, focusing on operative time, blood loss, anastomotic leak, recurrent laryngeal nerve injury, hospital stay, and mortality.

**Methods:** Electronic databases (Cochrane, PubMed, EMBASE, PsychInfo, UpToDate, and OpenGrey) were searched using defined criteria. Eligible articles were assessed using the Newcastle-Ottawa Scale for non-randomized studies and the Cochrane Risk of Bias 2 tool for randomized controlled trials.