

# Incisional negative pressure wound therapy (iNPWT) for reducing the risk of surgical site infection: an up-to-date meta-analysis and trial sequential analysis

Groenen H, Jalalzadeh H, Buis DR, et al. *eClinicalMedicine* (part of *The Lancet* group). 2023;62:102105.

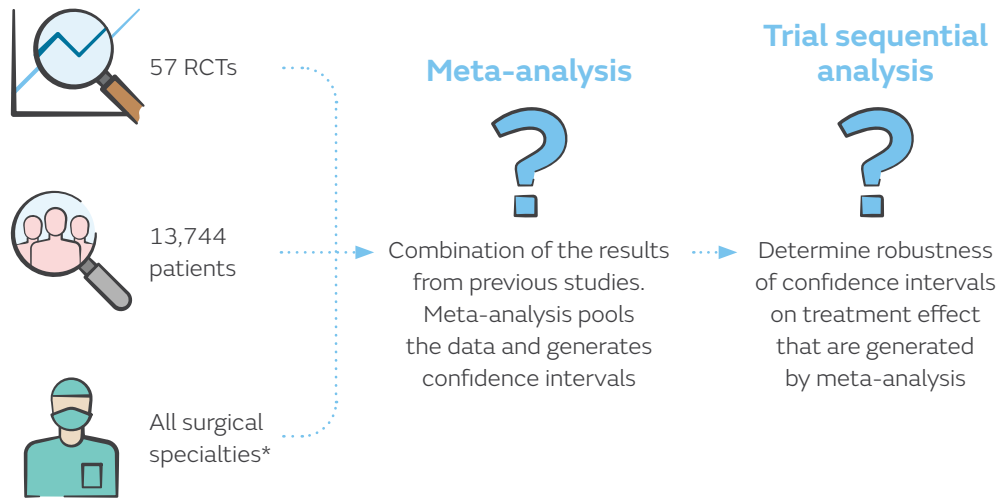
## Overview

- Previously conducted meta-analysis and RCTs for negative pressure wound therapy (NPWT) prevention of SSI are contradictory
  - Adoption of NPWT has been complicated by lack of uniformity in international guidelines
- This study compared NPWT with standard dressings on closed incisional wounds in adult patients undergoing any type of surgery
  - Providing an up-to-date systematic review and meta-analysis



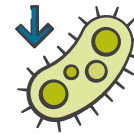
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## Methodology



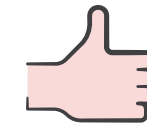
\*Abdominal, breast, cardiac, general, obstetric, orthopaedic/trauma, plastic, vascular

## Results



### Reduced risk of SSI using NPWT

**33% reduced risk** compared to standard of care, RR 0.67



### Increased confidence in results

Using trial sequential analysis, the authors concluded that the data was **robust**, whilst demonstrating that future RCTs are **very unlikely** to alter benefit of iNPWT overall in this scenario

### Industry involvement does not bias outcomes



**No significant difference** found for SSI outcomes due to industry involvement and/or sponsorship

### No significant difference between -80mmHg and -125mmHg NPWT devices



-80mmHg: 6.8% of patients developed SSI (**RR 0.67**)  
 -125mmHg: 8.9% of patients developed SSI (**RR 0.69**)

## Conclusion

This meta-analysis confidently showed that single use iNPWT reduces the risk of SSI irrespective of specific surgical specialties, whilst trial sequential analysis demonstrated the robustness of this evidence. Additionally, no significant differences were observed between -80mmHg and -125mmHg devices.



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**Abbreviations:** iNPWT = incisional negative pressure wound therapy; NPWT = negative pressure wound therapy; RCT = randomised controlled trial; RR = relative risk; sNPWT = single use negative pressure wound therapy; SSI = surgical site infection.