

# A cost-effectiveness modelling study of strategies to reduce risk of infection following primary hip replacement based on a systematic review

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## Plain English summary

### Reducing infection risk following primary hip replacement

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## Plain English summary

Patients who undergo total hip replacement surgery are at risk of developing a deep infection in the surgical site. Risks are low, but the consequences are potentially serious, especially for older and frail people. Patients often need costly revision surgery, which can be painful and reduces their quality of life; for some, the result is permanent disability.

A range of strategies is available to reduce the risk of infection following surgery, including injected antibiotics, antibiotic-impregnated cement to fix the artificial hip, different types of ventilation systems in operating theatres and operator body exhaust suits. These strategies can be used on their own or in combinations. This research is about the changes to cost and health benefits of different combinations of strategies designed to reduce infection risk following surgery.

Our results suggest that a combination of injected antibiotics, antibiotic-impregnated cement and conventional theatre ventilation systems without exhaust body suits is the best strategy for reducing the risk of infection following hip replacement surgery. It is also the most likely strategy to be cost-effective. The results suggest that expensive laminar airflow ventilation systems and body exhaust suits used in many operating theatres lead to higher costs and higher infection risk, and so should not be used.

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