

Risks of shoulder replacement surgery higher than previously thought

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The risks associated with shoulder replacement surgery for arthritic conditions are higher than previously estimated, particularly for people under 60 and over 85 years old, finds a study published by *The BMJ* today.

The findings show that one in four men aged 55-59 years is at risk of needing further revision [surgery](#), especially during the first five years after surgery. What's more, the risks of serious adverse events (such as heart attacks, major blood clots and chest infections) within 90 days of surgery are much higher than previously estimated, particularly in those over 85 years.

The researchers say these risks should be made clearer to [patients](#) before they opt for surgery, and they caution against "unchecked expansion" of [shoulder](#) replacement surgery in both younger and [older patients](#).

The number of shoulder replacements performed is expanding rapidly. In adults aged over 50, surgery increased more than 5.6-fold, from 1,018 cases in 1998 to 5,691 in 2016.

Despite this growth, no study has reported on the lifetime risk of further surgery, and serious events are considered rare.

So a team of researchers based at the University of Oxford used hospital and mortality records to calculate precise risk estimates of serious adverse events and lifetime risk of revision surgery, after non-emergency

(elective) [shoulder replacement surgery](#) for arthritis.

The study included just over 58,000 procedures carried out in nearly 52,000 adults (aged 50 or over) across England between April 1998 and April 2017. Average age at surgery was 72 years and average follow-up was 5.6 years.

Rates of serious adverse events were calculated at 30 and 90 days after surgery and included major blood clots, [heart attack](#), infections, stroke and death. Revision risk according to age and sex was estimated at 3, 5, 10, and 15 years after surgery and over a patient's lifetime.

The lifetime risk of revision surgery ranged from 1 in 37 in women aged 85 years and older to 1 in 4 in men aged 55-59 years. The risks of revision were highest during the first five years after surgery.

The risk of any serious adverse event at 30 days post-surgery was 1 in 28, and at 90 days post-surgery was 1 in 22.

Serious adverse events were associated with increasing age, existing illness (comorbidity), and male sex—1 in 9 women and 1 in 5 men aged 85 years and older experienced at least one serious adverse event within 90 days.

This is an observational study, and as such, can't establish cause, and the researchers cannot rule out the possibility that some unmeasured factors may have influenced the results.

Nevertheless, they say these risks are higher than previously considered, and for some could outweigh any potential benefits.

They say younger patients, particularly men, need to be aware of a higher likelihood of early failure of shoulder replacement and the need

for further and more complex revision replacement surgery. And they suggest that all patients should be counselled about the [risks](#) of serious adverse events.

As the population ages, it is likely that demand for shoulder replacement in [older people](#) will continue to increase, and the higher risk of adverse events described here should form part of shared decision making with patients, they conclude.

More information: Serious adverse events and lifetime risk of reoperation after elective shoulder replacement: population based cohort study using hospital episode statistics for England, *BMJ* (2019). [DOI: 10.1136/bmj.1298](#)

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