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## Noise Triggers Post-Op Patient Infections



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**Noisy operating theatres have a negative effect on patients following surgery, new research from Switzerland shows. Presented in the British Journal of Surgery, the study has found that surgical site infections (SSIs) result in patients who undergo surgery in theatres with significantly higher levels of noise, forcing them to extend their hospital stay by an average of 7 to 13 days, and thus paying 3 times as much.**

The researchers from the Universities of Neuchâtel and Bern in Switzerland assessed 35 patients that underwent planned, major abdominal surgery. They investigated the duration of the operation, the demographic parameters and the sound levels in the operating theatre. According to the team, 17 percent developed SSIs, and the sole variable was the level of noise in the operating theatre, which was significantly higher in the infected patients.

'SSIs lead to patients spending up to 13 days longer in hospital, making their stay cost up to 3 times as much,' explains Dr Guido Beldi, a senior author of the study from the Department of Visceral Surgery and Medicine, Bern University Hospital.

'Having found a significant association between SSIs within 30 days of surgery and increased sound levels in the operating theatre, we can only conclude that noise is associated with a stressful environment or lack of concentration and this impacts on the surgical outcome.'

The data show that median levels during surgery were much higher for patients who developed SSIs; 43.5 decibels (dB), compared to patients who did not develop SSIs, 25dB. The researchers found peak levels of at least 4dB above the median in 23 percent of the SSI patient operations, against 11 percent found in the other operations.

According to the team, sound levels appeared to rise in both groups an hour after the first incision. They suggest the increase could be related to the complexity of the surgery, but talking about non-patient topics was also linked with a much higher level of noise, which is probably due to a lack of concentration by the surgical team. But the researchers point out that this interpretation is speculative because the timing of the non-patient-related conversations was not recorded.

'The results of our study suggest that increased sound levels in the operating theatre may point to issues such as surgical difficulty, a stressful environment, impaired discipline or concentration,' Dr Beldi says. 'Each of these factors may increase the risk of SSIs and other complications and further studies looking at the source of operating theatre noise and its specific influence on the behaviour and performance of surgeons is warranted.'

Commenting that noisy surgical environments possibly affect a surgeon's focus on the task at hand, Professor Ara Darzi from the Division of Surgery at Imperial College London writes in an editorial on the paper: 'The authors are to be commended on seeking clinically important parameters concerning the quality and safety against which to measure outcome. It is also worth noting that this research stems from a simple research question and did not involve a multicentre trial. Yet it produced interesting and relevant results for the surgical community. Not all great research need necessarily be on a large scale; surgeons should be encouraged to examine the day-to-day problems they encounter and seek innovative ways to investigate them.'

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