Objectives: The use of surgical face masks (SFM) is believed to minimize the transmission of oro- and nasopharyngeal bacteria to wounds and surgical instruments. However, there are disadvantages for patients undergoing regional anesthesia and wearing masks: deficient assessment of lip cyanosis, anxiety, retention of CO2, costs. Up to now no studies have been published investigating whether or not SFMs, worn by patients during regional anesthesia, will reduce bacterial convection.

Methods: We investigated 72 patients during aseptic operations: 24 individuals with regional anesthesia and SFMs, 22 individuals with regional anesthesia without SFMs and 26 patients undergoing general anesthesia. Using an air sampler (volumetric impaction method) 100 L air were collected on blood agar over 2 min. After incubation at 37 °C over 60 h the colony forming units (CFU) were counted and differentiated. Airborne culturable bacteria were sampled over the operation field, on the anaesthetic side of the surgical curtain, as well as 10 cm before and to the side of the patients mouth. Results: At all 4 locations there were no significant differences in the number of CFUs between patients wearing a SFM or not (e.g. over the operation field: patient with SFM 5.5 +/- 1.1; no SFM 4.8 +/- 1.2; mean +/- SEM). Significantly more CFUs were detected in patients undergoing general anesthesia (p < or = 0.05). The extent of the operation did not correlate with the number of CFUs; however, we observed a trend that more CFUs were detected with an increasing number of persons working in the operating room. Conclusion: Surgical face masks worn by patients during regional anesthesia, did not reduce the concentration of airborne bacteria over the operation field in our study. Thus they are dispensable. A higher airborne germ concentration has been detected in patients during general anesthesia. The reasons for this finding are unknown, but it may be discussed as being a result of a higher activity and number of staff involved during general anesthesia causing more air turbulence.