

Do surgeons need to rewash their hands during operations that last long?

More than one hundred and fifty years ago surgical pioneers like Ignaz Semmelweis and Joseph Lister introduced hand washing and sterile surgical techniques to prevent surgical site infection (SSI). However, despite advances in infection control practices over the past 150 years surgical site infection remains a substantial cause of morbidity and mortality and increased cost among hospitalized patients.

Among all possible causes of SSI, health care providers may confidently claim that their hands cannot be the possible source of infection since they wash their hands properly prior to each operation and wear surgical gloves. However, can they claim that after a single hand washing prior to a long operation, their hands will remain clean during the entire length of operation? What if germs regrow on their sweaty skin surface under gloves in a long operation? In addition there are some evidences that some germs can pass through intact gloves and contaminate the surgical site.

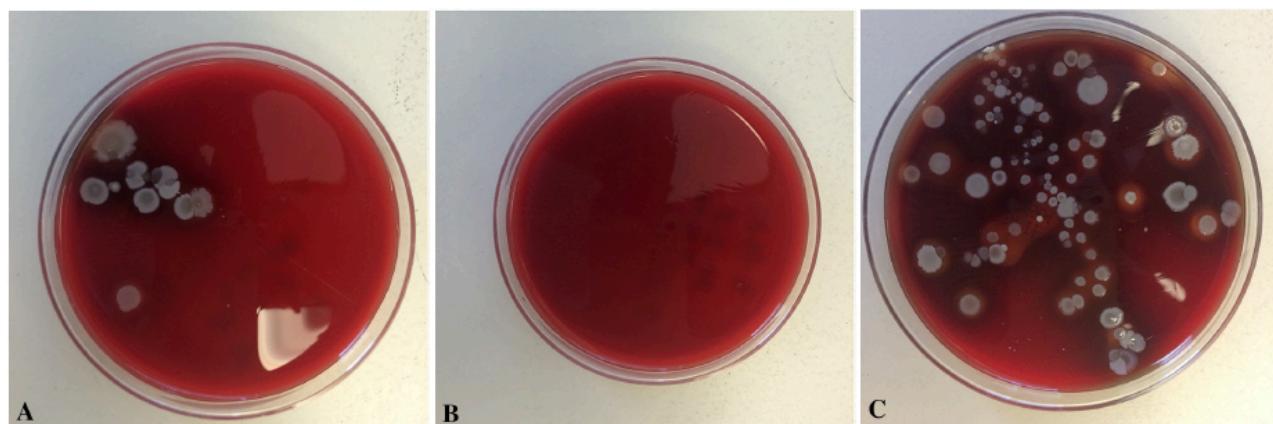


Fig. 1. (A) A blood agar dish from before wash in an 8-hour case shows some bacterial growth. (B) The blood agar dish at post wash time shows no growth, which indicates that the initial hand washing was effective. (C) Post operative blood agar dish shows even more bacterial growth compared with before wash dish. (Reprint with permission from Clin Orthop Relat Res by Springer)

Based on above-mentioned concerns authors studied the longevity of surgeons' hand cleanliness in twenty long (> 3hours) spine surgery operations. They took samples at before hand washing, immediately after hand washing, and after long operations and cultured them (Fig. 1). It was shown that after five hours of uninterrupted operation hands recontamination becomes detectable. It was also shown that the amount of hand contamination increases with time.

Authors concluded that it is ideal that health care workers rewash their hands in long operations

just before the time point when recontamination becomes detectable (at some point between 4th and 5th hour of operation). To test the efficacy of rewash technique it is recommended to compare the rate of SSI between two large groups of old fashion single wash technique and the new rewash method in the future studies.

Pooria Hosseini¹, Gregory M. Mundis Jr.^{1,2}, Robert Eastlack^{1,2}, Jeff Pawelek¹, Stacie Nguyen¹, Behrooz A. Akbarnia¹

¹*San Diego Spine Foundation; San Diego, CA, USA*

²*Scripps Clinic; San Diego, CA, USA*

Publication

[Do Longer Surgical Procedures Result in Greater Contamination of Surgeons' Hands?](#)

Hosseini P, Mundis GM Jr, Eastlack R, Nourian A, Pawelek J, Nguyen S, Akbarnia BA

Clin Orthop Relat Res. 2016 Jul