

〈原 著〉

手術前手洗いの皮膚機能に与える影響 ——ブラシを用いた手洗い法（ブラシ洗い法）とブラシを用いない 手洗い法（もみ洗い法）の皮膚生体工学的手法を用いた比較検討——

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Evaluation of the Influence of Scrubbing on the Skin of the Hands of Nurses Working in an Operating Room with Non-invasive Methods

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Abstract

We studied how irritating the scrubbing with a brush (brush washing) is as compared with that without a brush (simple hand washing) on the skin of the hands of nurses working in the operating room of the hospital by using non-invasive bioengineering methods. Transepidermal water loss (TEWL), high frequency conductance and skin surface pH were measured on the dorsum of the hand before and after daily handwashings for 11 days by choosing two different seasons from the view point of favorable and unfavorable ones for hand skin, namely the early summer and fall. In addition, we compared the antimicrobial effects of the two different handwashings techniques on the skin with a palm stamp method. Although no difference was noted in the results of the measurements between the two washing techniques performed in the early summer, TEWL values, the well known parameter for the water barrier function of the skin, were found to be significantly higher with brush washing than with simple hand washing carried out in the fall. There was no statistically significant difference in the antimicrobial effects between the two washing techniques even just after washing or after wearing rubber gloves for 2 h. The obtained results indicate the deleterious effects of handwashings particularly that using a brush in the cold season on the skin of the hands of nurses working in the operating room.

Key words: handwashings, hand eczema, stratum corneum, barrier function, bioengineering.