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DOUBLE GLOVING

Evidence for best practice

CLINICAL BULLETIN

DOUBLE GLOVING

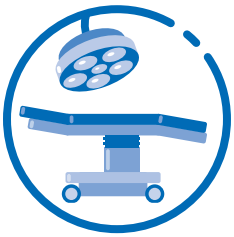
Double gloving is advocated by many international health and perioperative organizations as listed below. These peak bodies recognize the need to advocate for the benefits and positive outcomes of double gloving. Understanding the evidence-based rationale for double gloving in perioperative practice is key to educating others and improving compliance outcomes.

AAOS - American Academy of Orthopedic Surgeons
ACORN - Australian College of Perioperative Nurses
ACS - American College of Surgeons
AfPP - The Association for Perioperative Practice
AORN - Association of periOperative Registered Nurses
AST - Association of Surgical Technologists
EORNA - European Operating Room Nurses Association
CDC - Centers for Disease Control and Prevention
NICE - The National Institute for Health and Care Excellence
ORNAC - Operating Room Nurses Association of Canada
WHO - World Health Organization

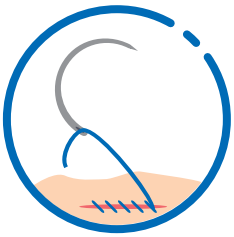
OVERVIEW

Evidence has shown that surgical glove microperforations occur commonly during surgical procedures regardless of the specialty, although the risk increases with the number of instruments used, the time of wear, and the surgical experience of the wearer. Double gloving has shown to provide overall better protection from microperforations and sharps injury.[1]

FACTORS THAT MAY RESULT IN MICROPERFORATIONS



The operating theatre is a fast paced and high stress environment, containing the greatest concentration of sharp instruments. All this, increases the risk of exposure to harmful microorganisms.[2]



The risk of glove failure rate correlates with the duration of continuous operating time. Overall, the consensus of study results recommends changing gloves no later than 1½ to 2 hours.[4]

During surgical procedures, a greater number of instruments, surgical equipment, technique and reduced surgical experience increases the risk of glove failure rate.[3]

The exposure to mechanical[5] and chemical[6] stress have shown to weaken and degrade the glove overtime. Change gloves if you notice any discoloration, and/or change in shape.[7]

All these factors influence glove integrity and increase perforation risk.

THE RISKS OF SINGLE GLOVING

Perforation of surgical gloves are common, occurring up to **43%** of cases.[8]

Up to **70%** of nurses and doctors have experienced a needlestick or sharps injury and **44%** occur in the operating room.[10]

World Health Organization reports **2 million** needlestick injuries per year, resulting in an estimated 40% of Hepatitis B and C, and 2.5% of HIV infections among HCWs. [9]

CDC estimates **385,000** U.S. HCW sharps injuries occur annually and up to half go unreported.[11,12]

THE BENEFITS OF DOUBLE GLOVING

Double gloving **reduces risk of exposure** to patient blood by **as much as 87%** when the outer glove is perforated.[13]

Two layers of gloves **reduce the transmission of blood volume** by as much as **95%** thereby reducing the viral load in the event of a contaminated percutaneous injury.[13]

Two layers of gloves can alert the surgeon to glove failure, detecting **77% of perforations versus** only **21%** with single gloves.[15]

Wearing a colored under glove increases identification of **perforations by up to 86%**.[14] Colored under gloves also **reduce time to awareness from 67 seconds to 42 seconds**.[18]

THE IMPORTANCE OF GLOVE CHANGE

In summary, one major factor for glove failure is wear time. **Glove defect rates are exponentially correlated with longer wear time**.

In a study by Tlilli et al. (2017), it was reported that **significantly higher perforation rates** occurred when the **gloves were worn for over 90 minutes**.[15] AORN, ACORN, AfPP and many other organizations recommend routine glove change. The range averages between **60 - 150 minutes, with 90 minutes being most common**.

WHY SURGICAL STAFF MIGHT NOT PRACTICE DOUBLE GLOVING

Some HCWs claim that dexterity and ability to safely handle and use instruments is compromised or even diminished with the addition of a second layer of gloves. Multiple studies investigating tactility and sensation, both objectively and subjectively, concluded there is **no negative impact on manual dexterity and tactile sensation associated with the use of double gloves.**[16]

A range of factors influence and impact PPE-related behaviors. Compliance can be dependent on[17]:

Individual Factors
- Knowledge
- Beliefs
- Attitudes
- Experience
- Perception of risk

Environmental Factors
- Availability of glove types/styles
- Cost
- Perceived time

Organizational Factors
- Administrative expectations
- Performance feedback
- Workplace policies

For Healthcare worker and patient safety, always consider the risk when single gloving.
Make double gloving your gold standard for optimal protection.
To learn about the benefits of double gloving, go to www.ansell.com/AnsellCARES.

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Supplemental Websites and Additional Information:

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2. American College of Surgeons (ACS), http://www.facs.org
3. Association for Perioperative Practice (AfPP), https://www.afpp.org.uk/home
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