Top Clinical Reasons to Wear Powder-Free Gloves Safe, Effective, Secure

Exposure to powder from surgical gloves can cause unacceptable reactions to patients and staff. Latex proteins can bind with glove powder and be aerosolized when gloves are removed from the package, donned or removed from the hands. These aerosolized latex proteins can remain in the air, on clothing as well as surgical equipment for many hours after exposure to powdered gloves.

With this exposure, comes **important clinical reasons to wear powder-free** surgical gloves.

1. Glove powder promotes development of adhesion and granuloma formation.

Adhesions and granuloma formation is well documented in the peritoneal cavity but can affect other anatomical sites such as the eyes, cranial cavity and bladder.^{1,2,3,4,5}

2. Glove powder increases risk for post-operative site infections.

The body views glove powder as a foreign object. This alters the normal healing process while increasing the body's inflammatory response. ^{2,3,4,6}

3. Glove powder increases latex allergy sensitization potentially illiciting delayed hypersensitivity reactions.

Powdered surgical gloves show higher levels of natural rubber latex allergens than gloves that are powder-free. This allows for the potential increase in latex sensitization and/or Type I reactions upon direct and indirect contact.^{3,7,8,9,10,14}

4. Glove powder increases health care workers risk for developing asthma.

Latex allergy proteins coated with powder particles increases occupational risks to healthcare workers and patients. When these particles are released into the air when gloves are donned or removed, allergic reactions associated with upper respiratory tract and asthma can occur.^{8,9,10}

5. Glove powder unbalances the natural pH of the skin producing an abrasive action on the skin.

Normal skin pH, that is relevant to protect against microorganisms, remains alkaline after wearing powdered gloves due to the alkalinity of the powder. This affects the normal skin pH of 5.5 necessary for the protection against microorganisms such as bacteria and fungi. 11,12



6. Glove powder causes erroneous interpretation of laboratory tests and x-ray images.

Glove powder can cause false results resulting in a misdiagnosis for the patient.8

7. Glove powder compromises surgical instruments.

Glove powder affects the functionality of surgical equipment ie. Scopes. 9,14

8. Glove powder is abrasive to the skin.

It has been well documented in literature that powder has been determined to act as an irritant to the wearer most often referred to as Contact Dermatitis or Acute Contact Dermatitis (ACD).^{11,12}

9. Glove powder increases time, costs and concern to the facility.

The FDA requires glove manufacturers to label the total quantity of glove powder content for all medical gloves unless the manufacturer had demonstrated methods to ensure the total powder content is 2mg or less. 13

Manufacturing labels instruct the wearer to remove powder once the glove has been donned. This means removing the powder by using sterile water in a basin or sterile water on gauze or lap sponge, adding extra time which adds cost to the procedure.

More concern is that washing gloves after donning to remove powder, does not completely remove the powder. This may cause clumping with potential absorption of the clumped powder particles into the wound bed.

10. Glove powder ban currently under review from the FDA^{10,11,12,13}

The National Institute of Occupational Safety and Health (NIOSH) has issued a safety alert recommending the use of powder-free, reduced protein content latex gloves to reduce exposure to natural latex proteins (allergens). 13

Make Powder Free Surgical Gloves Your Solution.... the Only Solution!

- Van den Tol, M.P. etal. (2001). Glove powder promotes adhesion formation and facilitates tumour cell adhesion and growth. British Journal of Surgery. 88. 1258-1263.
- Bosco, Joseph et al. (2010). Perioperative Strategies for Decreasing Infection. A Comprehensive Evidenced-based Approach. AAOS,
- The Journal of Bone and Joint Surgery, Vol 92-A. No-1, 232-239.

 Edlich, RF etal, (2009). Dangers of Cornstarch Powder on Medical Gloves. Seeking a Solution. Ann of Plastic Surgery. Jul: 63(1):1 (in
- Hinsch, M. (2009) Cornstarch Powder and Medical Gloves. A Dire Combination. Managing Infection Control. 94-98
- SjoEsten, A etal. (2004) Retrograde migration of glove powder in the human female genital tracts. Department of Obstetrics & Gynecology at Stockholm SoEder Hospital, s-118 83 Stockholm, Sweden and 2Department of Anatomy, Guy's, King's and St Thomas' School of Biomedical Sciences, London Bridge, London SEI 9RT, UK uman Reproduction Vol.19, No.4 pp. 991±995. (in MHC archives)/
- Jaffray, D etal (1983) Does Surgical Glove Powder Decrease the Inoculum of Bacteria Required to Produce an Abscess? Journal of the Royal College of Surgeons 1983; Edinburgh 28(4): 219-222. (in MHC archives).
- Barbara. J. etal. (2004) Inhaled cornstarch glove powder increases latex induced airway hypersensitivity in guinea pigs. Clin Exp Allergy. 34: 978-983.
- Grunewald, J. et al (2003). Lung accumulations of eosinophil granulocytes after exposure to cornstarch glove powder. European Respiratory Journal 21: 646-651
- Filon L. etal (2006) Latex Allergy.. A follow up study of 1040 healthcare workers. Occup Envionm Med 63:121-125.
- 10. Kelly, K. etal (2011) Prevention of IgE Sensitization to Latex in Health Care Workers After Reduction of Antigen Exposures. JOEM. Volume 53, Number 8.
- 11. Mirza, M. etal (2006) A randomized controlled double blind study of the effect of wearing coated pH 5.5 latex gloves compared with standard powder free larex gloves on skin pH, transepidermal water loss and skin irritation. Contact Dermatitis. Jul:55[1]: 20-25. (abstract)
- Brehler. R etal (2007 online) Glove powder affects skin roughness, one parameter of skin irritation. Contact Dermatitis. Vol 39. Iss5. 227-230 (abstract).
- F.D.A., US Food and Drug Administration. For Consumers. Medical Glove powder Report. http://www.fda.gov/ForConsumers/ ByAudience/ForPatientAdvocates/HIVandAIDSActivities/ucm126383.htm.
- Hunt, T.K., etal (1994). Starch Powder Contaminants of Surgical Wounds. Archives of Surgery. Vol 129. p.824-827.

