

# Top Clinical Reasons to Double-Glove with Biogel® Puncture Indication® System™

**1** Glove perforations are **more common** than you think:

**1-in-10**  
Chance of perforating a single layer glove during low-risk surgical procedures<sup>2</sup>

Percent of gloves perforated vs. percent of surgeries that encountered perforations<sup>3</sup>

**3.3%** gloves

**33.3%** of surgeries

**2** % of sharps injuries by location:<sup>5</sup>

**61%** of sharps injuries are classified as preventable

% of sharps injuries by occupation:<sup>5</sup>

Nurses are at the **highest risk** of sharps injuries

**3** Transmission of infection to healthcare workers

- Sharps injuries increase risk of both bacterial and viral cross infection<sup>1</sup>
  - e.g., as many as **18,900** *S. aureus* bacteria could pass through a single-needle hole in a gloved finger in 20 minutes<sup>1</sup>
- Cuts/grazes in the skin increase infection risk<sup>4</sup>
- Bacterial passage from patient to healthcare worker's hand through punctured glove occurred **~5%** of all gloves worn<sup>1</sup>



The **Biogel® Puncture Indication® System™**

can increase breach detection from 10% to

**97%**<sup>10</sup>

## Biogel Indicator Undergloves

are uniquely engineered to work together to maximize speed and visibility of any puncture or breach.



**4** Double gloving **significantly** reduces risk of perforation

Risk reduction:  
Healthcare worker risk is significantly decreased when using double gloves vs. single gloves.<sup>2</sup>

**4X** Lower risk of perforations with double gloves<sup>2</sup>

Perforation Rates

Single Glove 9% Double Glove 2%

(2006 meta-analysis of 14 low-risk surgical trials utilizing total of 8,885 gloves)<sup>2</sup>

**5** Double gloves **lower** passage of blood/bodily fluid<sup>6</sup>

Double gloves reduced risk of blood exposure by **85%** when outer glove was punctured.<sup>7</sup>

**95%**

Reduction in blood volume on a solid suture needle if sharps injury caused perforation in both inner and outer glove layers.<sup>8</sup>

**6** Enhanced protection with indicator gloves

Use of indicator gloves allows outer glove punctures to be more visually revealed when they occur and significantly increases the awareness of perforation<sup>8,9</sup>

Indicator Group: 81% Noticed, 19% Unnoticed Perforations

Standard Group: 79% Noticed, 21% Unnoticed Perforations

**✓ Clear**  
Blue inner glove color was selected based on color physics to maximize visibility.<sup>11</sup>

**✓ Fast**  
Designed to make the spot following a puncture visible as fast as possible.<sup>11</sup>

**✓ Large**  
Indication size is designed to provide a large, visual alert from a distance.<sup>11</sup>

Reference: 1. Phillips S. The comparison of double gloving to single gloving in the theatre environment. J Perioper Pract. 2011 Jan;21(1):10-5. 2. Tanner J, Parkinson H. Double gloving to reduce surgical cross-infection. Cochrane Database of Systematic Reviews. 2006, Issue 3 Art. No.: CD003087. DOI: 10.1002/14651858.CD003087.pub2. 3. Korniewicz D, El-Masri M. Exploring the benefits of double gloving during surgery. AORN J. 2012;95:328-336. 4. Kaya I, Ugras AA, Sungur I, et al. Glove perforation time and frequency in total hip arthroplasty procedures. Acta Orthop Traumatol Turc. 2012;46(1):57-60. 5. Department of Health and Human Services (HHS). Centers for Disease Control and Prevention (CDC). Proceedings of the National Sharps Injury Prevention Meeting. September 12, 2005, Atlanta, GA. 6. Mischke C, Verbeek JH, Saarto A, et al. Gloves, extra gloves or special types of gloves for preventing percutaneous exposure injuries in healthcare personnel. Cochrane Database Syst Rev. 2014;3:CD009573. 7. Welc CM, Nassiry A, Elam K, et al. Continued non-compliance with the American College of Surgeons recommendations to decrease infectious exposure in the operating room: why? Surg Infect (Larchmtl). 2013;14(3):288-92. 8. Thomas-Copeland J. Do Surgical Personnel Really Need to Double-Glove? AORN J. 2009;89(2):322-8; quiz 329-32. 9. Walczak DA, Pawelczak D, Grobelski B, Pasieka Z. Surgical gloves-do they really protect us? Pol Przegl Chir. 2014;86(5):238-43. doi: 10.2478/pjs-2014-0042. 10. Wigmore SJ & Rainey JB. BJS 1994; 61: 1480. 11. MHC on file Report no. 887.