

## Personal protective equipment (PPE), removal

Revised: June 14, 2019

### ■ Introduction

The use of standard and transmission-based precautions helps prevent the spread of infection from patient to patient, patient to health care worker, and health care worker to patient.<sup>1 2 3 4 5</sup> Their use also helps reduce the risk of infection in immunocompromised patients. Central to the success of these precautions is the selection of the proper personal protective equipment (PPE), such as gowns, gloves, masks, and protective eyewear, as well as adequate training of those who use it.<sup>6</sup>


◆ **Clinical alert:** For information on Coronavirus disease (COVID-19), please refer to the latest recommendations from the CDC, located at [https://www.cdc.gov/coronavirus/2019-ncov/infection-control/control-recommendations.html?CDC\\_AA\\_refVal=https%253A%252F%252Fwww.cdc.gov%252Fcoronavirus%252F2019-ncov%252Fhcp%252Finfection-control.html](https://www.cdc.gov/coronavirus/2019-ncov/infection-control/control-recommendations.html?CDC_AA_refVal=https%253A%252F%252Fwww.cdc.gov%252Fcoronavirus%252F2019-ncov%252Fhcp%252Finfection-control.html), when caring for a patient with known or suspected Coronavirus disease.◆

◆ **Clinical alert:** Please refer to the latest recommendations from the Centers for Disease Control and Prevention, located at <https://www.cdc.gov/vhf/ebola/clinicians/index.html>, when caring for a patient with known or suspected Ebola virus disease.◆

### ■ Equipment

- Receptacles for gown and other PPE

### ■ Implementation


- After completing patient care, prepare to leave the room by collecting items that require removal.
- Remember that the outside surfaces of your goggles or face shield, mask or respirator, gloves, and barrier clothes such as a gown) are contaminated.<sup>3 5</sup>
- Except for a respirator mask, remove all PPE at the patient's doorway or in the anteroom. Remove a respirator mask after leaving the patient's room and closing the door.<sup>3 5 7</sup>
- Remove your gloves using the appropriate technique. (See [Removing contaminated gloves.](#)) Don't touch any of your skin surfaces with the outside of either glove.<sup>5 6</sup> 
- Discard your gloves in the appropriate receptacle.<sup>3 5 8</sup>
- Perform hand hygiene.<sup>9 10 11 12 13 14</sup>




#### EQUIPMENT

#### REMOVING CONTAMINATED GLOVES



Proper removal techniques are essential to helping prevent the spread of pathogens from your gloves to your skin surfaces. Follow these steps carefully to remove your contaminated gloves properly.<sup>5 6</sup>

- Grasp the outside of one glove with your opposite gloved hand and peel it off, turning the glove inside out as you pull it off (as shown below). Hold the removed glove in your remaining gloved hand.<sup>6</sup> 







- Slide two fingers of your ungloved hand under the remaining glove at the wrist, taking care not to touch the outer surface of the glove (as shown below).<sup>6</sup> 



- Peel off the glove over the first removed glove, containing the one glove inside the other (as shown below).<sup>6</sup> 
- Discard your gloves in the appropriate receptacle.<sup>3 5 6 8</sup>
- Perform hand hygiene.<sup>9 10 11 12 13 14</sup> 









- To remove your goggles or face shield:
  - Grasp the ear pieces or headband, and remove the goggles or face shield carefully. 
  - Place the equipment in the appropriate receptacle for reprocessing or discard it in the appropriate receptacle. 
- To remove your gown:
  - Untie the neck straps and then the waist ties.
  - Pull the gown away from your neck and shoulders, touching only the inside of the gown (as shown below). Turn the gown inside out as you remove it, folding it or rolling it into a bundle *to help ensure containment of pathogens*. 
  - Discard the gown in the appropriate receptacle. (See [Removing your gown and gloves together.](#)) 



- To remove your mask or respirator:
  - Grasp the bottom tie or elastic, and lift it over your head.<sup>6</sup>
  - Grasp the top tie or elastic, and carefully remove the mask or respirator. Don't touch the front of the mask *to help prevent contamination*.<sup>6</sup>
  - Discard the mask or respirator in the appropriate receptacle.<sup>3 5 7 8</sup>
- Perform hand hygiene immediately.<sup>9 10 11 12 13 14</sup>

### REMOVING YOUR GOWN AND GLOVES TOGETHER

The Centers for Disease Control and Prevention discusses an alternative method for removing your gown and gloves. For this method, you'll use a disposable gown and remove the gown and gloves together.<sup>15</sup> Follow these steps to remove your gown and gloves together:

- With your gloved hands, grasp the gown in the front. 
- Pull the gown away from your body so that the ties break. 
- While removing the gown, fold or roll the gown inside-out into a bundle. 
- As you remove the gown, peel off your gloves at the same time; touch only the inside of your gloves and gown with your bare hands. 
- Discard the gown and gloves in the appropriate receptacle.<sup>3 5 7 8</sup> 
- Perform hand hygiene immediately.<sup>9 10 11 12 13 14</sup> 

### Special Considerations

- Use gloves only once, and discard them in the appropriate trash container before leaving a contaminated area.<sup>3 5 8</sup>
- If your respiratory protection device is reusable, retain it for further personal use unless it's contaminated or damaged or it fails to form a good seal.<sup>16</sup> Store it as directed by your facility. Reuse of respiratory protection may consist of removing and reapplying the device between patient encounters. *To help avoid a transmission risk*, adhere to stringent hand hygiene before and after handling the respiratory protection device.<sup>16</sup>
- Be aware that masks and gowns lose their effectiveness when wet *because moisture permits organisms to seep through the material*. Change your mask and gown as soon as it becomes moist or according to the manufacturer's recommendations or your facility's guidelines.<sup>3 5 17</sup>

## ■ Documentation

None needed.

This procedure has been reviewed by the Academy of Medical-Surgical Nurses.



## ■ Related Procedures

- [Personal protective equipment \(PPE\), putting on](#)
- [Personal protective equipment \(PPE\), putting on, ambulatory care](#)
- [Personal protective equipment \(PPE\), removal, ambulatory care](#)

## ■ References

[\(Rating System for the Hierarchy of Evidence for Intervention/Treatment Questions\)](#)

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16. Rebmann, T., et al. (2009). "APIC position paper: Extending the use and/or reusing respiratory protection in healthcare settings during disasters" [Online]. Accessed April 2019 via the Web at [http://www.apic.org/Resource\\_/TinyMceFileManager/Advocacy-PDFs/APIC\\_Position\\_Ext\\_the\\_Use\\_and\\_or\\_Reus\\_Resp\\_Prot\\_in\\_Hlthcare\\_Settings1209l.pdf](http://www.apic.org/Resource_/TinyMceFileManager/Advocacy-PDFs/APIC_Position_Ext_the_Use_and_or_Reus_Resp_Prot_in_Hlthcare_Settings1209l.pdf) (Level VII)
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## ■ Additional References

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### Rating System for the Hierarchy of Evidence for Intervention/Treatment Questions

The following leveling system is from *Evidence-Based Practice in Nursing and Healthcare: A Guide to Best Practice* (2<sup>nd</sup> ed.) by Bernadette Mazurek Melnyk and Ellen Fineout-Overholt.

Level I: Evidence from a systematic review or meta-analysis of all relevant randomized controlled trials (RCTs)

Level II: Evidence obtained from well-designed RCTs

Level III: Evidence obtained from well-designed controlled trials without randomization

Level IV: Evidence from well-designed case-control and cohort studies

Level V: Evidence from systematic reviews of descriptive and qualitative studies

Level VI: Evidence from single descriptive or qualitative studies

Level VII: Evidence from the opinion of authorities and/or reports of expert committees

*Modified from Guyatt, G. & Rennie, D. (2002). Users' Guides to the Medical Literature. Chicago, IL: American Medical Association; Harris, R.P., Helfand, M., Woolf, S.H., Lohr, K.N., Mulrow, C.D., Teutsch, S.M., et al. (2001). Current Methods of the U.S. Preventive Services Task Force: A Review of the Process. American Journal of Preventive Medicine, 20, 21-35.*