

Personal protective equipment (PPE), putting on, ambulatory care

Revised: August 16, 2019

■ Introduction

Following 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. Central to the success of these precautions is the selection of the proper personal protective equipment (PPE), including gowns, gloves, masks, and eye protection (such as goggles, face masks with eye shields). PPE should be selected based on the nature of the interaction with the patient and the potential for exposure to infectious agents through contact with blood, body fluids, or respiratory secretions. Gloves should be worn to protect the hands. When contact with blood or body fluids is anticipated, a fluid-resistant gown should be worn to protect the skin and clothing from exposure to these fluids. A mask and goggles or a face mask with an eye shield should be worn during procedures that may generate a splash or spray of blood or body fluids. Wearing a mask or respirator is helpful in reducing the risk of transmission of respiratory diseases between infected and noninfected persons.¹ Wearing a respirator is particularly helpful in preventing the transmission of influenza and tuberculosis. PPE should be put on in the proper sequence before entering the patient care area or room.

◆ **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, 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 (CDC), located at <https://www.cdc.gov/vhf/ebola/clinicians/index.html>, when caring for a patient with known or suspected Ebola virus disease.◆

Knowledge of the proper procedure for putting on PPE is equally important in the prevention of exposure to infectious agents. The improper use of equipment or lack of knowledge about how to use PPE properly may increase the risk of exposure to infectious agents.

■ Equipment

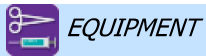
- Fluid-resistant gown
- Gloves
- Goggles or face mask with eye shield
- Mask or respirator
- Optional: hair tie or hair cover

■ Preparation of Equipment

Choose the appropriate PPE according to the level of precautions required. Check the integrity of the equipment before putting it on *to prevent exposure to blood, body fluids, or other secretions harboring potentially infectious agents.*

■ Implementation

- Gather the appropriate equipment.
- Tie back your hair or wear a hair cover if your hair is long.
- Remove your watch (or push it well up your arm) and rings, if required by your facility. *These actions help prevent the spread of microorganisms that may be harbored under these adornments.*
- Perform hand hygiene.^{2 3 4 5 6 7}
- Pick up a fluid-resistant gown and allow it to unfold in front of you.
- Put on the gown, ensuring that it covers your torso fully from your neck to your knees, covers your arms to the ends of your wrists, and wraps around your back. Fasten the gown at the back of your neck first and then at your waist. Alternatively, if using a three-armhole gown, slip your arms into the sleeves as if putting on a coat, then slide the left arm through the remaining opening in the front panel. Fasten the gown at the back.⁸
- Place a face mask snugly over your nose and mouth and below your chin.⁹ Secure the ear loops around your ears or tie the strings at the middle of the back of your head and neck *so that the mask won't slip off.* If the face mask is equipped with a metal nose strip, squeeze it to fit your nose firmly but comfortably.^{10 11} (See [Putting on a face mask](#).) If you wear eyeglasses, tuck the upper edge of the face mask under the lower edge of the glasses *to minimize the likelihood of clouding the glasses.*

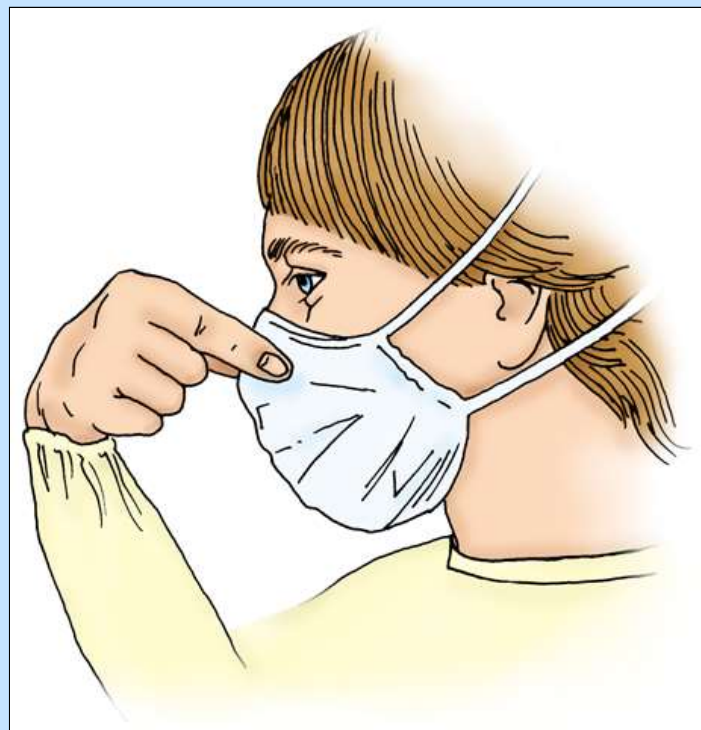


PUTTING ON A FACE MASK

To avoid spreading airborne particles, wear a face mask. Position the face mask to cover your nose and mouth, and secure it high enough to ensure stability. Tie the top strings at the back of your head above the ears. Then tie the bottom strings at the middle of the back of your neck. Alternatively, if the face mask is equipped with ear loops, secure them around your ears.^{10 11}



Adjust the metal nose strip if the face mask is equipped with one.^{10 11}



- Choose eye protection according to your risk of exposure. Although goggles provide eye protection, they don't protect the rest of the face from the splashing of potentially infectious substances. Wear a face mask with an eye shield for any procedures that may involve spraying or splashing of respiratory secretions or other body fluids.^{10 11}
- Select gloves according to your hand size to make sure that they fit securely. Put on the gloves and pull them over the cuffs of your gown *to cover the edges of the gown's sleeves*.⁹

■ Special Considerations

- Always perform hand hygiene before putting on gloves *to avoid contaminating the gloves with microorganisms from your hands*.^{2 3 4 5 6 7}
- Use gloves only once; don't wash or reuse disposable gloves. Change your gloves immediately if they are punctured, torn, or heavily contaminated.^{10 11}
- Be aware that PPE loses its effectiveness when wet *because moisture permits organisms to seep through the material*. Change face masks and gowns as soon as moisture is noticeable or according to the manufacturer's recommendations or your facility's guidelines.^{1 10 11}
- Keep PPE and other isolation precaution supplies stocked so that they're readily available for use by those who must enter the patient's room.
- Wear shoe covers if you expect gross contamination or during aerosol-generating procedures.¹¹
- Consult the CDC, World Health Organization, or Occupational Safety and Health Administration website for guidance about PPE use as necessary, especially during times of disease outbreak.

■ Complications

Improper PPE use may lead to pathogen transmission and exposure to infectious organisms.

■ Documentation

No documentation is needed.

This procedure has been co-developed and reviewed by the American Academy of Ambulatory Care Nursing.



■ Related Procedures

- [Hazardous drug preparation and handling](#)
- [Hazardous drug spill management](#)
- [Personal protective equipment \(PPE\), putting on](#)
- [Personal protective equipment \(PPE\), removal](#)
- [Personal protective equipment \(PPE\), removal, ambulatory care](#)

■ Related Lexicomp and UpToDate Patient Teaching Handouts

- [Protective Helmet](#)

■ References

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

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2. Accreditation Association for Hospitals and Health Systems. (2018). Standard 07.01.21. *Healthcare Facilities Accreditation Program: Accreditation requirements for acute care hospitals*. Chicago, IL: Accreditation Association for Hospitals and Health Systems. (Level VII)

3. Centers for Disease Control and Prevention. (2002). Guideline for hand hygiene in health-care settings: Recommendations of the Healthcare Infection Control Practices Advisory Committee and the HICPAC/SHEA/APIC/IDSA Hand Hygiene Task Force. *MMWR Recommendations and Reports*, 51(RR-16), 1–45. Accessed July 2019 via the Web at <https://www.cdc.gov/mmwr/pdf/rr/rr5116.pdf> (Level II)
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5. The Joint Commission. (2019). Standard NPSG.07.01.01. *Comprehensive accreditation manual for ambulatory care*. Oakbrook Terrace, IL: The Joint Commission. (Level VII)
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11. Siegel, J. D., et al. (2007, revised 2019). "2007 guideline for isolation precautions: Preventing transmission of infectious agents in healthcare settings" [Online]. Accessed July 2019 via the Web at <https://www.cdc.gov/infectioncontrol/pdf/guidelines/isolation-guidelines-H.pdf> (Level II)

■ Additional References

- Banach, D. B., et al. (2015). Infection control precautions for visitors to healthcare facilities. *Expert Review of Anti-Infective Therapy*, 13, 1047–1050.

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* (2nd 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.