

DEFINITION

- Recently examined by a doctor (or NP/PA) and diagnosed with monkeypox OR monkeypox is suspected but has not yet seen a doctor for confirmation.
- *Use this protocol only if the patient has symptoms that match monkeypox.*

Monkeypox should be strongly **suspected if a person has symptoms** of monkeypox, such as an unexplained rash with fever, muscle aches, or swollen lymph nodes; AND any of the following **exposures in the past 21 days**:

- Skin-to-skin contact (e.g., hugging, kissing, massaging, having sex) with someone with monkeypox;
- Contact with materials (e.g., bed linens, clothing, sex toys) contaminated with monkeypox;
- Recent travel to a country where monkeypox is endemic (e.g., Central and West Africa);
- Not wearing a facemask during prolonged close contact (e.g., within 6 feet or 2 meters, for 3 hours or longer) with an unmasked person with monkeypox.

Symptoms of monkeypox include:

- Initial symptoms are chills, fatigue, **fever**, headache, muscle aches, back pain, and **swollen lymph nodes**. These symptoms last 1 to 5 days.
- About 1 to 4 days after the fever subsides a **rash** appears. The rash is often on the genitals (penis, testicles, labia, and vagina) or anus. However, it can be on other areas such as the face, feet, hands, chest, and mouth. Each monkeypox sore is about 0.5 cm to 1 cm wide. Each sore goes through several stages: small red spot (macule), small red bump (papule), small water blister (vesicle), small cloudy blister (pustule). Then, the sore crusts over and the scab falls off after about a week.
- Sometimes people get the rash first and afterwards other symptoms. Some people get just the rash.
- For most people, the symptoms of monkeypox last 2 to 4 weeks.

Notes:

- Nearly all of the current monkeypox cases occur in adult men. Most cases occur in men who have sex with men.
- Monkeypox should be suspected in men who have sex with men who also have typical symptoms of monkeypox.
- However, anyone who has been in close contact with someone who has monkeypox can get the illness.

Updated: August 2, 2022 (version 2)

TRIAGE ASSESSMENT QUESTIONS

Call EMS 911 Now

Severe difficulty breathing (e.g., struggling for each breath, speaks in single words)

R/O: respiratory failure, hypoxia

Difficult to awaken or acting confused (e.g., disoriented, slurred speech)

R/O: encephalitis, shock

Sounds like a life-threatening emergency to the triager

See More Appropriate Protocol

Monkeypox Exposure (e.g., skin-to-skin contact such as sex, recent travel to West or Central Africa) and NO symptoms

Go to Protocol: Monkeypox - Exposure (Adult)

Widespread rash and last exposure to monkeypox > 21 days ago

Go to Protocol: Rash or Redness - Widespread (Adult)

Localized rash and last exposure to monkeypox > 21 days ago

Go to Protocol: Rash or Redness - Localized (Adult)

Rash and no known exposure to monkeypox (Exception: Man who has sex with men and has typical monkeypox symptoms; continue triage.)

Go to Protocol: Rash or Redness - Localized (Adult)

Monkeypox vaccine reaction suspected (e.g., pain or redness at injection site; fatigue, fever) occurring 1 to 3 days after getting vaccine

Go to Protocol: Immunization Reactions (Adult)

Go to ED Now

Difficulty breathing

R/O: pneumonia

Go to ED/UCC Now (or to Office with PCP Approval)

Fever > 103° F (39.4° C)

R/O: serious bacterial infection

Bright red skin or red streak

R/O: bacterial skin infection (e.g., cellulitis, lymphangitis)

Eye pain or blurred vision

R/O: monkeypox infection of cornea

Drinking very little and dehydration suspected (e.g., no urine > 12 hours, very dry mouth, very lightheaded)

Reason: May need IV hydration.

Patient sounds very sick or weak to the triager

Reason: Severe acute illness or serious complication suspected.

See in Office Today

Monkeypox Exposure in past 21 days (e.g., direct skin contact such as sex, recent travel to West or Central Africa) and **Any Symptoms of Monkeypox** (e.g., rash, fever, muscle aches, or swollen lymph nodes), and has NOT been seen by a doctor (or NP/PA) for this

Reason: Suspected or probable monkeypox and not yet evaluated by doctor (or NP/PA).

At Risk for Monkeypox (men-who-have-sex-with-men) and possible exposure (e.g., multiple sex partners in past 21 days) and **Any Symptoms of Monkeypox** (e.g., rash, fever, muscle aches, or swollen lymph nodes), and has NOT been seen by a doctor (or NP/PA) for this

Reason: Suspected monkeypox and not yet evaluated by doctor (or NP/PA).

Severe pain (e.g., excruciating rectal pain, unable to have a bowel movement)

R/O: proctitis (inflammation of rectum)

Scab or sore is draining yellow pus

R/O: superimposed impetigo

Scab or sore has become much larger in size than the others (size > dime or 15 mm)

R/O: superimposed impetigo

Lymph node becomes large (> 1 inch or 2.5 cm) and tender

R/O: bacterial lymphadenitis

Fever returns after gone for over 24 hours

R/O: bacterial superinfection

Callback by PCP Today

Pregnant or breastfeeding

Reason: Follow-up for already diagnosed monkeypox. May be at higher risk of severe illness. Note: A phone or telemedicine encounter may be preferable.

Weak immune system (e.g., HIV positive, cancer chemo, splenectomy, organ transplant, chronic steroids)

Reason: Follow-up for already diagnosed monkeypox. May be at higher risk of severe illness. Note: A phone or telemedicine encounter may be preferable.

Chronic skin condition (e.g., atopic dermatitis)

Reason: Follow-up for already diagnosed monkeypox. May be more susceptible to skin superinfection. Note: A phone or telemedicine encounter may be preferable.

More than 100 monkeypox spots

Reason: Follow-up for already diagnosed monkeypox. R/O: severe monkeypox

New spots are appearing after 14 days

Reason: Follow-up for already diagnosed monkeypox. R/O: wrong diagnosis

Patient wants to be seen

Note: A phone or telemedicine encounter may be preferable.

Home Care

Monkeypox diagnosed by doctor (or NP/PA) and no complications

Monkeypox, questions about

HOME CARE ADVICE

Monkeypox Diagnosed by Doctor and No Complications

- Note to Triager - Answer the Question:**
 - Answer the caller's question from information in triage protocols, your clinical experience and knowledge, or a relevant reference / resource.
 - If you have access to the patient's medical record, you may wish to review the plan of care from the **most recent medical visit**.
 - If unsure, discuss with the patient's PCP.
 - Document your response.
- Reassurance and Education - Monkeypox:**
 - It sounds like monkeypox without any complications.
 - For **most healthy people** with monkeypox, prescription medicines are usually not needed. People can treat the symptoms at home using over-the-counter medicines for fever and pain.
 - Follow any instructions that your doctor (or NP/PA) has given you.
 - *Here is some care advice and health information that should help.*
- Monkeypox:**
 - Monkeypox is a rare disease caused by the monkeypox virus.
 - Monkeypox can be spread from person-to-person by direct skin contact. For example, spread can occur during intimate contact and sex.
 - Nearly all of the current monkeypox cases occur in adult men. Most cases occur in men who have sex with men.
- Monkeypox - Symptoms:**
 - Initial symptoms are chills, fatigue, **fever**, headache, muscle aches, back pain, and **swollen lymph nodes**. These symptoms last 1 to 5 days.
 - About 1 to 4 days after the fever subsides a **rash** appears. The rash is often on the genitals (penis, testicles, labia, and vagina) or anus. However, it can be on other areas such as the face, feet, hands, chest, and mouth. Each monkeypox sore is about 0.5 cm to 1 cm wide. Each sore goes through several stages: small red spot (macule), small red bump (papule), small water blister (vesicle), small cloudy blister (pustule). Then, the sore crusts over and the scab falls off after about a week.
 - Sometimes people get the rash first and afterwards other symptoms. Some people get just the rash.
 - For most people, the symptoms of monkeypox last 2 to 4 weeks.
- Pain and Fever Medicines:**
 - For pain or fever relief, take either acetaminophen or ibuprofen.
 - They are over-the-counter (OTC) drugs that help treat both fever and pain. You can buy them at the drugstore.
 - Treat fevers above 101° F (38.3° C). The goal of fever therapy is to bring the fever down to a comfortable level. Remember that fever medicine usually lowers fever 2 degrees F (1 - 1 1/2 degrees C).
 - **Acetaminophen Regular Strength Tylenol:** Take 650 mg (two 325 mg pills) by mouth every 4-6 hours as needed. Each Regular Strength Tylenol pill has 325 mg of acetaminophen. The most you should take each day is 3,250 mg (10 pills a day).
 - **Acetaminophen - Extra Strength Tylenol:** Take 1,000 mg (two 500 mg pills) every 8 hours as needed. Each Extra Strength Tylenol pill has 500 mg of acetaminophen. The most you should take each day is 3,000 mg (6 pills a day).
 - **Ibuprofen (e.g., Motrin, Advil):** Take 400 mg (two 200 mg pills) by mouth every 6 hours. The most you should take each day is 1,200 mg (six 200 mg pills), unless your doctor has told you to take more.

6. **Pain and Fever Medicines - Extra Notes and Warnings:**
 - Use the lowest amount of medicine that makes your pain or fever better.
 - Acetaminophen is thought to be safer than ibuprofen or naproxen in people over 65 years old. Acetaminophen is in many OTC and prescription medicines. It might be in more than one medicine that you are taking. You need to be careful and not take an overdose. An acetaminophen overdose can hurt the liver.
 - McNeil, the company that makes Tylenol, has different dosage instructions for Tylenol in Canada and the United States. In Canada, the maximum recommended dose per day is 4,000 mg or twelve Regular-Strength (325 mg) pills. In the United States, the maximum dose per day is ten Regular-Strength (325 mg) pills.
 - **Caution:** Do not take acetaminophen if you have liver disease.
 - **Caution:** Do not take ibuprofen if you have stomach problems, kidney disease, are pregnant, or have been told by your doctor to avoid this type of anti-inflammatory drug. Do not take ibuprofen for more than 7 days without consulting your doctor.
 - *Before taking any medicine, read all the instructions on the package.*
7. **Reducing the Itch - Oatmeal (Aveeno) Bath:**
 - Sprinkle contents of one packet of Aveeno under running faucet with comfortably warm water.
 - Bathe for 15 to 20 minutes, 1 to 2 times daily.
 - Pat dry using towel - do not rub.
 - *Caution:* This can make the tub slippery.
8. **Antihistamine Medicines for Severe Itching:**
 - For severe itching, take either cetirizine or loratadine.
 - They are over-the-counter (OTC) antihistamine medicines. You can buy them at the drugstore.
 - **Cetirizine (Reactine, Zyrtec):** The adult dose is 10 mg and you take it once a day. Cetirizine is available in the United States as Zyrtec and in Canada as Reactine.
 - **Loratadine (Alavert, Claritin):** The adult dose is 10 mg and you take it once a day. Loratadine is available in the United States as Alavert and Claritin; it is available in Canada as Claritin.
9. **Antihistamine Medicines - Extra Notes and Warnings:**
 - Antihistamine medicines can be used to treat allergic reactions, allergies, hay fever, hives, and itching.
 - Diphenhydramine (Benadryl) is a **first generation antihistamine** medicine. It causes more sleepiness than the newer second generation antihistamine medicines. The adult dosage of Benadryl is 25 to 50 mg by mouth and you can take it up to 4 times a day.
 - **Second generation antihistamines** such as cetirizine and loratadine have fewer side effects than first generation antihistamines. Loratadine is one of the least sedating antihistamines.
 - **Caution:** Antihistamine medicines can make you sleepy. Do not drink alcohol, drive, or operate dangerous machinery while taking this drug. It can also worsen dry eyes by decreasing natural tearing.
 - *Before taking any medicine, read all the instructions on the package.*
10. **Don't Scratch:**
 - Try not to scratch.
 - Scratching makes the itching worse (the 'Itch-Scratch' cycle).
 - Cut your fingernails short. Wash hands frequently with an antibacterial soap. This will help prevent a bacterial skin infection.
11. **Mouth Pain:**
 - For mouth and throat sores, eat a **soft diet**.
 - For severe mouth sores, use 1 tsp (5 ml) of liquid **antacid** (e.g., Mylanta) as a mouth wash four times a day after meals.

12. **Contact Lenses and Shaving:**
 - Do not use contact lenses. This can spread the infection to your eyes. Switch to glasses until your sores have healed.
 - Do not shave any areas with rash. This can spread the infection to new areas of skin.
13. **Clean Your Hands:**
 - **Wash Your Hands:** Wash your hands often with soap and water for at least 20 seconds.
 - **Use Hand Sanitizer:** If soap and water are not available, use an alcohol-based hand sanitizer with at least 60% alcohol, covering all surfaces of your hands and rubbing them together until they feel dry.
 - Avoid touching your eyes, nose, and mouth with unwashed hands.
14. **How Can You Protect Others If You Have Monkeypox?**
 - Stay at home (isolate) until all of the scabs have fallen off the monkeypox spots and the skin is healing. Stay in a separate area from other household members and pets. If able, use a separate bathroom from others. Only leave home as needed for emergencies and medical care.
 - Avoid any skin-to-skin contact. This includes:
 - ... Do not have sex (anal, oral, vaginal).
 - ... Do not cuddle, hug, or kiss.
 - ... Do not give or receive massages.
 - ... Do not share bedding, cups, eating utensils, or towels.
 - Avoid face-to-face contact. Wear a mask when within 6 feet (2 meters) of others.
 - Wash hands frequently with soap and water, or use hand sanitizer.
 - Clean and disinfect high touch surfaces daily (such as phones, remote controls, counters, tabletops, doorknobs).
 - Keep the rash covered. For example, with a bandage, long sleeves, or long pants.
15. **Call Back If:**
 - Difficulty breathing
 - Fever over 103° F (39.4° C)
 - New spots appear after 14 days
 - You become worse

Monkeypox Suspected or Probable (Doctor Evaluation Pending)

1. **Note to Triage - Call Ahead If Patient Has Known or Suspected Monkeypox:**
 - If the patient has known or suspected monkeypox, the **triage should try to call ahead** to coordinate and facilitate the patient's arrival. Get instructions on how to enter facility and prevent exposing others to monkeypox.
 - Should the patient go to the office, a public health center, or the local emergency department?
 - Follow local public health and call center guidelines.
2. **Note to Triage - Patients at Higher Risk of Severe Illness:**
 - Currently there is no prescription medicine that has been proven to cure this infection or help a person get better sooner.
 - For **most healthy people** with monkeypox, prescription medicines are usually not needed. People can treat the symptoms at home using over-the-counter medicines for fever and pain.
 - However, there are some medicines (e.g., tecovirimat) that were developed for treating smallpox that may help treat monkeypox. Some patients with monkeypox are at **higher risk of severe illness** and should be considered for treatment after their doctor (or NP/PA) consults with the CDC or the local health department. **People at higher risk** include:
 - ... People who have a chronic skin condition (such as atopic dermatitis).
 - ... People who have a weak immune system (such as HIV positive, cancer chemo,

splenectomy, organ transplant, chronic steroids).

- ... Women who are pregnant or breastfeeding.
- ... Infants and children less than 8 years old.

3. **Tell Healthcare Personnel That You Might Have Monkeypox:**

- When seeking medical care, tell the first healthcare worker you meet that you might have monkeypox.

4. **Monkeypox - Symptoms:**

- Initial symptoms are chills, fatigue, **fever**, headache, muscle aches, back pain, and **swollen lymph nodes**. These symptoms last 1 to 5 days.
- About 1 to 4 days after the fever subsides a **rash** appears. The rash is often on the genitals (penis, testicles, labia, and vagina) or anus. However, it can be on other areas such as the face, feet, hands, chest, and mouth. Each monkeypox sore is about 0.5 cm to 1 cm wide. Each sore goes through several stages: small red spot (macule), small red bump (papule), small water blister (vesicle), small cloudy blister (pustule). Then, the sore crusts over and the scab falls off after about a week.
- Sometimes people get the rash first and afterwards other symptoms. Some people get just the rash.
- For most people, the symptoms of monkeypox last 2 to 4 weeks.

5. **Pain and Fever Medicines:**

- For pain or fever relief, take either acetaminophen or ibuprofen.
- They are over-the-counter (OTC) drugs that help treat both fever and pain. You can buy them at the drugstore.
- Treat fevers above 101° F (38.3° C). The goal of fever therapy is to bring the fever down to a comfortable level. Remember that fever medicine usually lowers fever 2 degrees F (1 - 1/2 degrees C).
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6. **Pain and Fever Medicines - Extra Notes and Warnings:**

- Use the lowest amount of medicine that makes your pain or fever better.
- Acetaminophen is thought to be safer than ibuprofen or naproxen in people over 65 years old. Acetaminophen is in many OTC and prescription medicines. It might be in more than one medicine that you are taking. You need to be careful and not take an overdose. An acetaminophen overdose can hurt the liver.
- McNeil, the company that makes Tylenol, has different dosage instructions for Tylenol in Canada and the United States. In Canada, the maximum recommended dose per day is 4,000 mg or twelve Regular-Strength (325 mg) pills. In the United States, the maximum dose per day is ten Regular-Strength (325 mg) pills.
- **Caution:** Do not take acetaminophen if you have liver disease.
- **Caution:** Do not take ibuprofen if you have stomach problems, kidney disease, are pregnant, or have been told by your doctor to avoid this type of anti-inflammatory drug. Do not take ibuprofen for more than 7 days without consulting your doctor.
- *Before taking any medicine, read all the instructions on the package.*

7. **Stay Home (Isolate) If You Have or Might Have Monkeypox:**
 - Stay at home (isolate) until all of the scabs have fallen off the monkeypox spots and the skin is healing. Stay in a separate area from other household members and pets. If able, use a separate bathroom from others. Only leave home as needed for emergencies and medical care.
 - Avoid any skin-to-skin contact. This includes:
 - ... Do not have sex (anal, oral, vaginal).
 - ... Do not cuddle, hug, or kiss.
 - ... Do not give or receive massages.
 - ... Do not share cups or eating utensils.
 - Avoid face-to-face contact. Wear a mask when within 6 feet (2 meters) of others.
 - Wash hands frequently with soap and water, or use alcohol sanitizer.
 - Clean and disinfect high touch surfaces daily (such as phones, remote controls, counters, tabletops, doorknobs).
 - Keep the rash covered. For example, with a bandage, long sleeves, or long pants.
8. **Call Back If:**
 - Difficulty breathing
 - Fever over 103° F (39.4° C)
 - You become worse

Monkeypox - Questions About

1. **Monkeypox:**
 - Monkeypox is a rare disease caused by the monkeypox virus.
 - Monkeypox can be spread from person-to-person by direct skin contact. For example, spread can occur during intimate contact and sex.
 - Nearly all of the current monkeypox cases occur in adult men. Most cases occur in men who have sex with men.
2. **Monkeypox - Symptoms:**
 - Initial symptoms are chills, fatigue, **fever**, headache, muscle aches, back pain, and **swollen lymph nodes**. These symptoms last 1 to 5 days.
 - About 1 to 4 days after the fever subsides a **rash** appears. The rash is often on the genitals (penis, testicles, labia, and vagina) or anus. However, it can be on other areas such as the face, feet, hands, chest, and mouth. Each monkeypox sore is about 0.5 cm to 1 cm wide. Each sore goes through several stages: small red spot (macule), small red bump (papule), small water blister (vesicle), small cloudy blister (pustule). Then, the sore crusts over and the scab falls off after about a week.
 - Sometimes people get the rash first and afterwards other symptoms. Some people get just the rash.
 - For most people, the symptoms of monkeypox last 2 to 4 weeks.
3. **Monkeypox - How It Is Spread:**
 - Monkeypox can be spread from person-to-person. Most spread appears to occur from **direct contact** with infected sores, scab, and body fluids. In North America, most spread occurs by direct skin contact **during sex** (anal, oral, vaginal).
 - Monkeypox can also be spread by respiratory droplets between people with close face-to-face encounters. It can also be spread by touching objects that have infectious body fluids on them (e.g., bedding, towels).
 - People can also get monkeypox from infected animals (in Central and West Africa).
 - *Incubation period:* Symptoms usually start between 1 to 2 weeks after exposure. Range is from 4 to 21 days.
 - *Contagious period:* A person can spread monkeypox to others from when the first rash

appears until the rash has crusted over and the scabs fall off (usually 7 to 14 days).

4. **Monkeypox - Diagnosis:**

- A doctor (or NP/PA) can suspect the diagnosis of monkeypox based on a person's symptoms and confirm the diagnosis with testing.
- Two main types of tests are available for diagnosing monkeypox:
- ... A healthcare worker can take a **swab of a monkeypox lesion** and send it to a laboratory for virus testing (e.g., monkeypox DNA PCR test). Virus testing can be performed by LabCorp (<https://www.labcorp.com/infectious-disease/monkeypox>) and an expanding number of other laboratories (Aegis, Mayo Clinic Laboratories, Quest Diagnostics, and Sonic Healthcare).
- ... A blood test that shows **anti-orthopoxvirus IgM antibody** during the period of 4 to 56 days after rash onset.

5. **Monkeypox - Treatment:**

- Currently there is no prescription medicine that has been proven to cure this infection or help a person get better sooner.
- For **most healthy people** with monkeypox, prescription medicines are usually not needed. People can treat the symptoms at home using over-the-counter medicines for fever and pain.
- However, there are some medicines (e.g., tecovirimat) that were developed for treating smallpox that may help treat monkeypox. Patients with monkeypox who are at **higher risk of severe illness** should be considered for treatment after their doctor (or NP/PA) consults with the CDC or the local health department.

6. **How Can You Protect Others If You Have Monkeypox?**

- Stay at home (isolate) until all of the scabs have fallen off the monkeypox spots and the skin is healing. Stay in a separate area from other household members and pets. If able, use a separate bathroom from others. Only leave home as needed for emergencies and medical care.
- Avoid any skin-to-skin contact. This includes:
 - ... Do not have sex (anal, oral, vaginal).
 - ... Do not cuddle, hug, or kiss.
 - ... Do not give or receive massages.
 - ... Do not share bedding, cups, eating utensils, or towels.
- Avoid face-to-face contact. Wear a mask when within 6 feet (2 meters) of others.
- Wash hands frequently with soap and water, or use hand sanitizer.
- Clean and disinfect high touch surfaces daily (such as phones, remote controls, counters, tabletops, doorknobs).
- Keep the rash covered. For example, with a bandage, long sleeves, or long pants.

7. **How Can You Protect Yourself From Getting Monkeypox?**

- Avoid contact with materials (e.g., bed linens, clothing, sex toys) contaminated with monkeypox.
- Avoid skin-to-skin contact with people who have monkeypox or have a rash that might be monkeypox. This includes:
 - ... Do not have sex (anal, oral, vaginal).
 - ... Do not cuddle, hug, or kiss.
 - ... Do not give or receive massages.
 - ... Do not share bedding, cups, eating utensils, or towels.
- Wash your hands with soap and water. If soap and water are not available use a hand sanitizer.
- Wear a well-fitted mask if you need to come in close contact with or care for someone suspected of having monkeypox.

8. **Call Back If:**

- You have more questions

FIRST AID

N/A

BACKGROUND INFORMATION

Key Points

- Monkeypox is a rare disease caused by the monkeypox virus.
- Monkeypox can be spread from person-to-person by direct skin contact. For example, spread can occur during intimate contact and sex.
- Nearly all of current monkeypox cases occur in adult men. Most cases occur in men who have sex with men.
- Fever and rash occur in nearly all people who get monkeypox.
- An outbreak of monkeypox began in May, 2022. In July, 2022 the World Health Organization (WHO) declared monkeypox a global health emergency.

Symptoms

Monkeypox usually starts off with **initial symptoms** lasting 1 to 5 days:

- Back pain
- Chills
- Fatigue
- **Fever**
- Headache
- **Muscle aches**
- Respiratory symptoms (e.g., cough, nose stuffiness, sore throat)
- **Swollen lymph nodes**

About 1 to 4 days after the fever subsides a **rash** appears. The rash is often on the genitals (penis, testicles, labia, and vagina) or rectal area. However, it can be on other areas such as the face, feet, hands, chest, and mouth. Each monkeypox sore is about 0.5 cm to 1 cm (about 1/4 inch) wide. Each monkeypox sore goes through the following stages:

- Small red spot (macule)
- Small red bump (papule)
- Small water blister (vesicle)
- Small cloudy blister (pustule)
- Then the sore crusts over and the scab falls off after about a week.

A person can have just a few or several hundred monkeypox sores. Sometimes people get the rash first and afterwards other symptoms. Some people get just the rash.

Fever and rash occur in nearly all people who get monkeypox.

For most people the symptoms of monkeypox last 2 to 4 weeks.

Causes

Monkeypox is caused by the monkeypox virus.

How It Is Spread (Transmission)

Monkeypox can be spread from person-to-person. Most spread appears to occur from **direct contact** with infected sores, scab, and body fluids. In North America, most spread occurs by direct skin contact during **sex** (anal, oral, vaginal). Monkeypox can also be spread by respiratory droplets between people with close face-to-face encounters. It can also be spread by touching objects that have infectious body fluids on them (e.g., bedding, towels).

- *Incubation period:* Symptoms usually start between 1 to 2 weeks after exposure. Range is from 4 to 21 days.
- *Contagious period:* A person can spread monkeypox from the time symptoms start until all the monkeypox sores have crusted over and fallen off (usually 7 to 14 days).

Risk Factors

The main risk factor is known exposure to monkeypox. Other risk factors are:

- Men who have sex with men
- Recent travel to Central and West Africa

Complications

Nearly all adults (99%) who get monkeypox will survive. People can sometimes develop scars or pockmarks from the monkeypox sores.

Rare complications include:

- Bacterial skin infections such as an abscess, cellulitis, pyomyositis, and lymphangitis
- Cervical lymphadenopathy
- Dehydration
- Encephalitis
- Ocular lesions
- Pneumonia
- Sepsis and septic shock

Diagnosis

A doctor (or NP/PA) can suspect the diagnosis of monkeypox based on a person's symptoms and confirm the diagnosis with testing.

Two types of tests are available for diagnosing monkeypox.

- A healthcare worker can take a **swab of a monkeypox lesion** and send it to a laboratory for virus testing (e.g., monkeypox DNA PCR test). Virus testing can be performed by LabCorp (<https://www.labcorp.com/infectious-disease/monkeypox>) and an expanding number of other laboratories (Aegis, Mayo Clinic Laboratories, Quest Diagnostics, and Sonic Healthcare).
- A blood test that shows **anti-orthopoxvirus IgM antibody** during the period of 4 to 56 days after rash onset.

Treatment

Currently there is no prescription medicine that has been proven to cure this infection or help a person get better sooner.

For **most healthy people** with monkeypox, prescription medicines are usually not needed. People can treat the symptoms at home using over-the-counter medicines for fever and pain.

However, there are some medicines (e.g., tecovirimat) that were developed for treating smallpox that may help treat monkeypox. Patients with monkeypox who are at **higher risk of severe illness** should be considered for treatment after their doctor (or NP/PA) consults with the CDC or the local health department. People at higher risk include:

- People who have a chronic skin condition (e.g., atopic dermatitis).
- People who have a weak immune system (e.g., HIV positive, cancer chemo, splenectomy, organ transplant, chronic steroids).
- Women who are pregnant or breastfeeding.

Prevention

How can a person protect themselves from getting monkeypox?

- Avoid contact with materials (e.g., bed linens, clothing, sex toys) that might be contaminated with monkeypox.
- Avoid skin-to-skin contact with people who have monkeypox or have a rash that might be monkeypox. This includes:
 - ... Do not have sex (anal, mouth, vaginal).
 - ... Do not cuddle, hug, or kiss.
 - ... Do not give or receive massages.
 - ... Do not share bedding, cups, eating utensils, or towels.
- Wash your hands with soap and water. If soap and water are not available use a hand sanitizer.
- Wear a well-fitted mask if you need to come in close contact with or care for someone suspected of having monkeypox.

How can a person with monkeypox protect others from getting monkeypox?

- Stay at home (isolate) until all of the scabs have fallen off the monkeypox spots and the skin is healing. Stay in a separate area from other household members and pets.
- Avoid any skin-to-skin contact. This includes:
 - ... Do not have sex (anal, oral, vaginal).
 - ... Do not cuddle, hug, or kiss.
 - ... Do not give or receive massages.
 - ... Do not share bedding, clothes, cups, eating utensils, or towels.
- Avoid face-to-face contact. Wear a mask when within 6 feet (2 meters) of others.
- Wash hands frequently with soap and water, or use a hand sanitizer.
- Clean and disinfect high touch surfaces daily (such as phones, remote controls, counters, tabletops, doorknobs).
- Keep the rash covered. For example, with a bandage, gloves, long sleeves, or long pants.

Information on cleaning clothes and disinfecting the home is available at <https://www.cdc.gov/poxvirus/monkeypox/specific-settings/home-disinfection.html>.

The smallpox vaccine confers about 85% immunity against monkeypox. Monkeypox infection in those

vaccinated against smallpox may result in milder infection. Routine smallpox vaccination ended in 1972 and those vaccinated typically have a post vaccine scar on upper arm.

Prevention - Post-Exposure

There are two smallpox vaccines that can also be used for **post-exposure (after an exposure)** prevention of monkeypox.

- **ACAM2000 Vaccine (U.S.):** This is a live vaccine. It has more serious side effects than the MVA vaccine.
- **MVA Vaccine (IMVAMUNE in Canada, JYNNEOS in U.S.):** It is **preferred** over the ACAM2000. The most common side effects are itching, pain, redness, and swelling at the injection site. People may also have minor reactions such a feeling tired, headache, a mild fever, and muscle aches. Severe reactions (e.g., allergic reaction, anaphylaxis) are rare.

Vaccination works better the sooner it is given. Ideally, it should be given within 4 days of exposure. Vaccination can be considered for up to **14 days after an exposure** according to the CDC. Vaccination may be indicated in people with intermediate to high-risk exposures, such as:

- Skin-to-skin contact (e.g., hugging, kissing, massaging, having sex) with someone with monkeypox;
- Contact with materials (e.g., bed linens, clothing, sex toys) contaminated with monkeypox;
- Or, not wearing an N-95 mask while being in a patient's room (or within 6 feet or 2 meters) during any procedure that may have created an aerosol of the monkeypox secretions.

For those that cannot receive the vaccine, vaccinia immune globulin may be an alternative treatment for post-exposure prevention.

FAQs

What other infections have similar symptoms as monkeypox?

The two viral infections that most closely resemble monkeypox are:

- Chickenpox (varicella zoster)
- Smallpox

There are many other infections that should be considered in the differential diagnosis, including: bacterial skin infections, chancroid, dengue fever, herpes simplex, molluscum contagiosum, scabies, and others.

Where on the body does the monkeypox rash occur?

The rash tends to be centrifugal, starting on the face and moving out towards the palms and soles of the hands and feet. It can also involve the oral mucous membranes, conjunctiva, cornea, or genitalia.

How do the symptoms of chickenpox and monkeypox compare?

In people who have chickenpox...

- The fever usually begins at the same time as the rash.
- A rash on palms and soles is rare.
- The rash is more concentrated on the trunk.
- There are usually different stages of rash (e.g., red bumps, cloudy blisters, crusts) all present at the same time.

- Chickenpox typically occurs after exposure to a child with chickenpox.

In people who have monkeypox...

- Fever and other symptoms usually begin before the rash.
- Lymph node swelling is common.
- The rash is typically the same size and at the same stage on different areas of the body.
- Monkeypox typically occurs after exposure during intimate direct contact (e.g., kissing, hugging) or sex with an adult (usually male) who has monkeypox.

Internet Resources

- *Canada.CA*: Monkeypox Outbreak Update. Available at <https://www.canada.ca/en/public-health/services/diseases/monkeypox.html>.
- *Johns Hopkins - Center for Health Security*: Monkeypox. Available at <https://www.centerforhealthsecurity.org/our-work/publications/monkeypox>.
- *U.S. Centers for Disease Control and Prevention (CDC)*: Monkeypox. Available at <https://www.cdc.gov/poxvirus/monkeypox/index.html>.
- *U.S. Centers for Disease Control and Prevention (CDC)*: Monkeypox and Global Case Count. Available at <https://www.cdc.gov/poxvirus/monkeypox/response/2022/index.html>.
- *U.S. Centers for Disease Control and Prevention (CDC)*: Monkeypox and Safer Sex. PDF handout. Available at <https://www.cdc.gov/poxvirus/monkeypox/pdf/MonkeyPox-SaferSex-InfoSheet-508.pdf>.
- *U.S. Centers for Disease Control and Prevention (CDC)*: Smallpox/Monkeypox Vaccine (JYNNEOS) Vaccine Information Statement (VIS). PDF handout. Available at <https://www.cdc.gov/vaccines/hcp/vis/vis-statements/smallpox-monkeypox.pdf>.
- *World Health Organization (WHO)*: Clinical Management and Infection Prevention and Control for Monkeypox. Interim Guidance June 2022. Available at <https://www.who.int/publications/i/item/WHO-MPX-Clinical-and-IPC-2022.1>.

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