

# Monkeypox Update 2022

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# MONKEYPOX - BACKGROUND

- Rare disease caused by monkeypox virus; found in West & Central Africa
- Belongs to Orthopoxvirus family: smallpox, monkeypox and cowpox
- Cases identified in multiple countries including US in last month
  - Person-to-person contact (close household & sexual contacts)
  - UK cases have been seen in gay, bisexual or other men having sex with men
- **Incubation Period:** 7-14 days after exposure
  - Can range from 5-21 days (at most 4 weeks)
- **Transmission**
  - Respiratory Droplets (prolonged face to face contact)
  - Infected body fluids (saliva/lesion fluid)
  - Mucus membranes

Source: <https://www.cdc.gov/poxvirus/monkeypox/about.html> last updated 5/21/22

# MONKEYPOX – CLINICAL PRESENTATION

## - Initial Symptoms

- Fever
- Headache
- Muscle aches
- Exhaustion
- Sore Throat/Cough
- **Swollen Lymph Nodes** (Smallpox does NOT cause)
  - Neck, armpits, groin



## - Rash Development (1-3 days after fever onset)

- Centered on extremities and face, palms and soles
  - Progresses from macules → papules → vesicles → pustules → scabs
- Contagious from initial symptoms until lesions heal and new skin forms under scabs

Source: <https://www.cdc.gov/poxvirus/monkeypox/symptoms.html> last updated 5/21/22

# VACCINES

Both options ~85% effective when used for PrEP for smallpox; thought to be similarly effective for monkeypox

Name	Indication	Dosing & Administration	Availability	Storage and Handling	Notes
<a href="#"><u>Jynneos</u></a>	FDA Approved for prevention of smallpox & monkeypox in <b>Adults 18+</b>	2 doses (0.5 mL each) administered 4 weeks apart. <b>Subcutaneous injection</b> in deltoid. <b>Ideally given within 4 days of exposure</b> If given within 4-14 days of exposure, may reduce symptoms but not prevent disease	SNS request; <b>Likely limited supply</b>	<b>Keep frozen</b> at -25°C to -15°C (-13°F to +5°F).  Once thawed, the vaccine may be kept at +2°C to +8°C (+36°F to +46°F) for 12 hours	Live attenuated virus vaccine; <b>Non-replicating</b> modified vaccinia Ankara-Bavarian Nordic (MVA-BN)  May ship refrigerated for immediate use  <b>Single dose vials</b> ; SNS does not provide ancillary supplies
<a href="#"><u>ACAM2000</u></a>	FDA Approved for Smallpox prevention  <b>Expanded access IND for monkeypox</b>	1 drop of vaccine suspension via scarification using bifurcated needle.  <a href="#"><u>CDC Training Videos for ACAM2000 administration</u></a>	SNS Request; <b>Likely greater availability than Jynneos</b>	Prior to reconstitution, <b>store frozen</b> at -15°C to -25°C (5°F to -13°F); may also be stored refrigerated at 2°C to 8°C (36°F to 46°F) for up to 18 months.  Diluent stored at room temperature of 15°C to 30°C (59°F to 86°F).	Live vaccinia virus Myocarditis risk Contraindications for severe immunocompromise  Only administered by trained individuals  Counseling on covering wound and handling bandages  <b>100 doses per vial; comes with diluent and 100 bifurcated needles; transfer syringes not included.</b>

# CURRENT PUBLIC HEALTH RECOMMENDATIONS FOR EXPOSED INDIVIDUALS

Degree of Exposure	Recommendation	Examples:
HIGH	Post Exposure Prophylaxis (PEP) recommended	<ul style="list-style-type: none"><li>- Unprotected contact with person's skin or mucous membranes or contaminated materials</li></ul>
INTERMEDIATE	Clinician decision based on individual basis to weigh risk versus benefit	<ul style="list-style-type: none"><li>- Contact with soiled linens/dressings while wearing gloves</li><li>- Activities that involve contact with clothing of affected individuals</li><li>- Being in close contact &gt; 3 hours without mask</li></ul>
LOW	No PEP recommended	<ul style="list-style-type: none"><li>- Entries into patient care room with appropriate PPE</li><li>- Being in close contact &lt; 3 hours without mask</li></ul>

Source: <https://www.cdc.gov/poxvirus/monkeypox/clinicians/monitoring.html> last updated 5/21/22

# Treatment Options

# TREATMENT OPTIONS

Name	Indication	Dosing & Administration	Availability	Storage and Handling	Notes
<b><u>Vistide</u></b> <b>(Cidofovir)</b>	FDA approved for treatment of CMV retinitis in AIDS patients  <b>EUA or IND required for monkeypox</b>	5mg/kg IV once weekly x 2 weeks  Must be administered with fluids and probenecid	<b>Commercially available</b>	75 mg/mL in clear glass, single use vial  Store at controlled room temperature 20-25°C	Causes severe nephrotoxicity  Renal function monitored within 48 hours prior to administration
<b><u>Tembexa</u></b> <b>(Brincidofovir)</b>	FDA Approved for treatment of smallpox  <b>EUA or IND required for monkeypox</b>	<b>Adults and Peds <math>\geq</math> 48 kg:</b> 200 mg (tablet or oral suspension) once weekly x 2 doses  <b>Adults and Peds 10kg – 48 kg:</b> 4 mg/kg oral suspension once weekly x 2 doses  <b>Peds &lt; 10 kg:</b> 6 mg/kg oral suspension once weekly x 2 doses.	<b>SNS Request (?)</b>	100 mg tablets in blister card in child resistant “wallet”. Each wallet contains 4 tablets. Store at room temp.  Lemon-lime flavored oral suspension; 65 mL bottle; 10mg/ml Store at room temp	May cause significant diarrhea or increase LFTs  Avoid concomitant use with clarithromycin, rifampin, cyclosporine, gemfibrozil and HIV/HEP-C protease inhibitors,  Take on empty stomach  <b>Do NOT split or break tablets or come into direct contact with suspension.</b> Wash thoroughly with soap and water

## TREATMENT OPTIONS CONT'D

Name	Indication	Dosing & Administration	Availability	Storage and Handling	Notes
<b><u>TPOXX</u></b> <b>(Tecovirimat)</b>	<p>FDA approved for treatment of Smallpox in adults and pediatric patients weighing at least 13kg.</p> <p><b>Expanded access IND for monkeypox</b></p>	<p>Oral or IV</p> <p><b>Adults up to 120 kg:</b> 600 mg of TPOXX twice daily for 14 days</p> <p><b>Adults &gt; 120 kg:</b> 600 mg of TPOXX three times daily for 14 days</p> <p><b>Peds 13 to less than 25 kg:</b> 200 mg of TPOXX twice daily for 14 days</p> <p><b>Peds 25 kg to less than 40 kg:</b> 400 mg of TPOXX twice daily for 14 days</p> <p><b>Peds 40kg or more:</b> 600 mg of TPOXX twice daily for 14 days</p>	<p><b>SNS Request</b></p>	<p>200 mg capsules, each bottles contains 42 capsules. Stored at controlled room temperature</p> <p>IV – requires refrigerated shipping and storage</p>	<p>TPOXX should be taken within 30 minutes after a full meal of moderate or high fat</p>



# TREATMENT OPTIONS CONT'D

Name	Indication	Dosing & Administration	Availability	Storage and Handling	Notes
<a href="#">Vaccinia Immune Globulin (VIG)</a>	<p>Indicated for the treatment of complications associated with vaccinia vaccination</p> <p><b>NOT FDA approved for PrEP, PEP or treatment of Monkeypox</b></p>	<p><b>6,000 U/kg IV x 1 dose</b></p> <p>Higher doses can be given if patient does not respond</p>	<p><b>SNS Request</b></p>	<p>Product may be stored frozen at or below 5°F (<math>\leq -15^{\circ}\text{C}</math>) or refrigerated at 36 to 46°F (2 to 8°C);</p> <p>If product is received frozen, use within 60 days of thawing at 2 – 8°C.</p> <p>Intravenous infusion should begin within 4 hours after entering the vial.</p> <p>Do not reuse or save VIGIV for future use. This product contains no preservative; therefore, partially used vials should be discarded.</p>	<p>Withdraw entire contents of vial to calculate dose</p> <p>Administer via dedicated IV line</p> <p>Infuse at <math>\leq 0.04</math> mL/kg/minute and <math>\leq 2</math> mL/minute.</p> <p>Monitor for infusion reactions and adjust infusion decrease rate as needed.</p>

# NORTH CAROLINA UPDATE:

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- CDC is at Level 2 Alert for Monkeypox in several countries
- Currently 0 cases under investigation in NC
- DPH has established an IMT to monitor situation & provide guidance as needed
- NC specific provider memo has been distributed
- Local Health Departments briefed 05/23 about current situation, testing, MCMs, etc.

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Any suspected case of monkeypox needs to be reported to Communicable Disease Branch  
Epidemiologist

**919-733-3419**