Mpox Q&A

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- How can we improve access to mpox vaccines?

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What is mpox?

- Mpox is a virus from the same family as smallpox
  - It can cause mild to life-threatening illness (depending on a person's age, health and nutrition status, access to healthcare and other factors)

- Smallpox vaccines can also prevent, or lessen illness from mpox
  - This is known as cross-protection

- Smallpox was eradicated in 1980, so countries stopped vaccinating people. This left people vulnerable to mpox
  - High-income countries kept making and stockpiling smallpox vaccines in case of bioterrorism

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Mpox timeline

1958: first mpox cases discovered in monkeys used for lab research in Denmark

1970s: First human case of mpox reported in the DRC, in a 9-month-old boy - the only person in his family who was not vaccinated against smallpox. Since then, mpox has been found in Central and West Africa. First, mpox spread in rural and forested areas, from infected animals to young people who did not get smallpox vaccines – then, over years, it began spreading from person to person.

2022: Mpox begins to spread across the globe, transmitted by close contact between people, including sex. Gay men and other men who have sex with men are the most affected population. In July, the WHO declares mpox a public health emergency of international concern, or a PHEIC.

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Mpox timeline

2023: A different mpox variant, clade Ib, begins to spread in the Democratic Republic of Congo (DRC) first among sex workers and their partners, and then into households.

2024: Mpox clade Ib continues to spread in the DRC and then to nearby countries, leading WHO to declare a second PHEIC.

2025: Mpox is still spreading, amidst an inadequate global response.

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Mpox family: Clade IIb

The 2022 global mpox outbreak was clade IIb.

- Clade IIb mpox is still spreading at low levels in many countries.

- Clade IIb is mainly passed from person to person by close physical contact, including sex, and among households, during pregnancy and delivery, and from bedding, clothes and towels used by a person with mpox.

- Gay men and other men who have sex with men have been the most affected population. Many were also living with HIV. Mpox has added to the stigma and discrimination they already face.

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Mpox family: Clade I

Clade I mpox – particularly clade !a - can cause more severe illness and death than Clade II mpox.

- Clade Ia mpox originally spread to people from contact with infected, sick or dead small mammals (squirrels and rodents) - from bites, scratches, during hunting. butchering, and from eating undercooked meat, most commonly among people under age 15 years, but cases have been reported in adults – and it now seems to be spreading by close physical contact between people.

- Clade Ib seems to spread more easily than other forms of mpox. It has spread from DRC to nearby countries, and travel-related cases have been reported in many other countries. It is transmitted by close physical contact between people, from contaminated bedding, clothing and towels and needlesticks and tattooing equipment, and from inhaling tiny respiratory droplets

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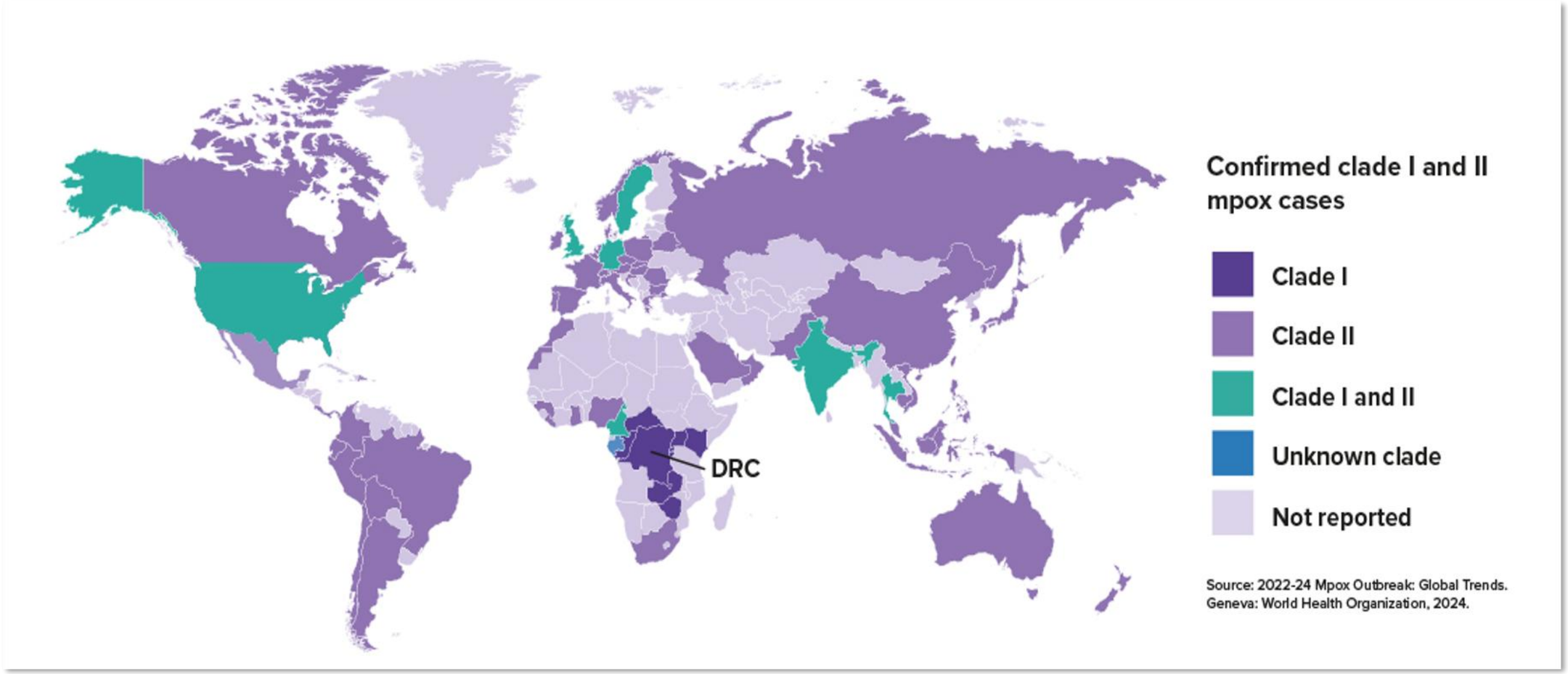
Where is mpox found?



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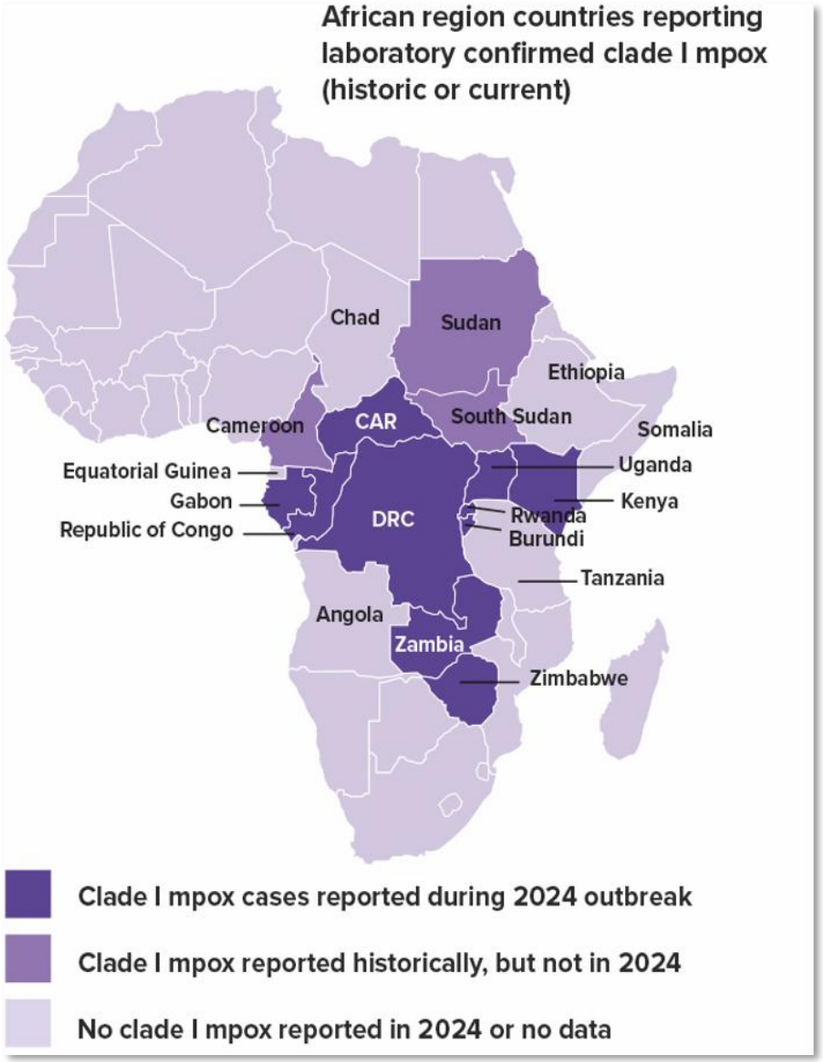
What part of the world is most affected?



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Current Situation

- DRC is the most affected country, followed by Burundi and Uganda
  - Violence in Eastern DRC complicates the mpox response
- New travel-related cases of clade Ib have been reported in China, Germany, Thailand, the UK/Northern Ireland and the US
- Azerbaijan has reported its first mpox case (clade not yet known)

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Current Situation

From: WHO Multi-country external situation report 46, published 28 January 2025:

- Total number of ***confirmed*** mpox cases in Africa from 1 January 2024 -19 January 2025 : 20,345
  - DRC: 14,530 and 43 deaths
  - Burundi 3,116 and 1 death
  - Uganda: 2,031 and 10 deaths

- The number of ***suspected*** cases is much higher, since access to testing is limited in some countries, such as the DRC, where there were 9,513 confirmed cases of mpox vs. 43,862 suspected cases of mpox and 1,138 deaths from 1 January 2024 - 15 December 2024.

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Current Situation

WHO risk assessment, as of November 2024:

- **Clade Ib mpox:** Predominantly affecting non-endemic areas for mpox in the Democratic Republic of the Congo and neighboring countries **— High**
- **Clade Ia mpox:** Primarily affecting endemic areas for mpox within the Democratic Republic of the Congo **— High**
- **Clade II mpox:** Observed in Nigeria and other endemic countries in West and Central Africa **— Moderate**
- **Clade IIb mpox:** Associated with the global mpox epidemic **— Moderate**

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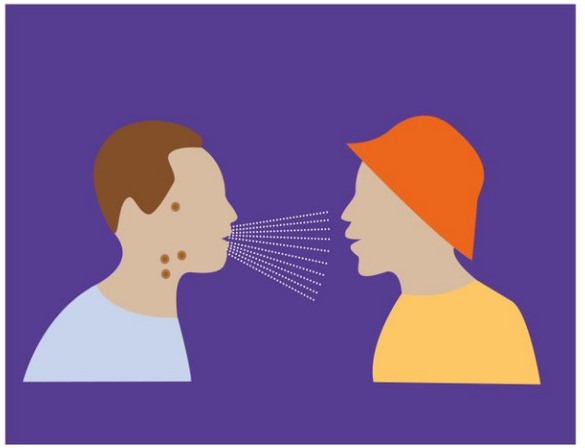
Mpox transmission

Animals to people

Person to person – close contact and sex



Person to person – inhaling droplets

People who are ill with mpox need to isolate until their sores are scabbed over and healed, leaving a layer of new, unbroken skin

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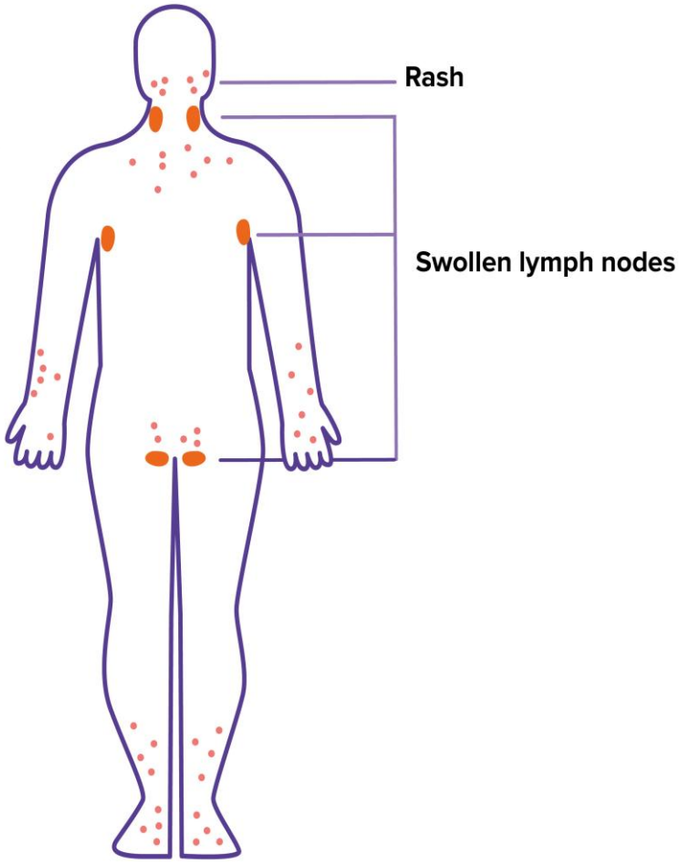
Mpox symptoms

Symptoms start between 1-21 days – usually within a week.

They last for 2-4 weeks (or longer in immunocompromised people

They include:

- Rash
- Fever
- Swollen lymph nodes
- Sore throat
- Headache
- Muscle aches
- Low energy
- Back pain



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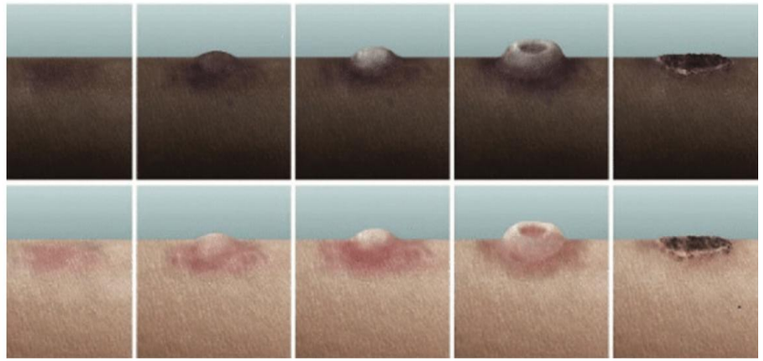
What does an mpox rash look like?

The rash usually begins at the point of contact (genitals, anus, rectum) or on the face, then it spreads to the body, the palms of the hand and soles of the feet. Some people will develop a few sores, but people with severe mpox may have hundreds of them.

CDC

Marina Demidiuk / iStock

The rash starts as flat sores, then turns into itchy, painful blisters which can become infected.



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Mpox complications- who is vulnerable?

Although most people will recover from mpox, some people may become very ill. Mpox complications can include blindness, pneumonia, bacterial infections, and permanent scarring.

The risk of severe illness and death from mpox is greatest:

- **During pregnancy**
- **For people living with HIV, if 1) they are not on ART, and 2) they have a low CD4 cell count (<200 cells/mm3), and 3) if CD4 cell count is low and viral load is high**
- **For infants and children, especially if they are malnourished**

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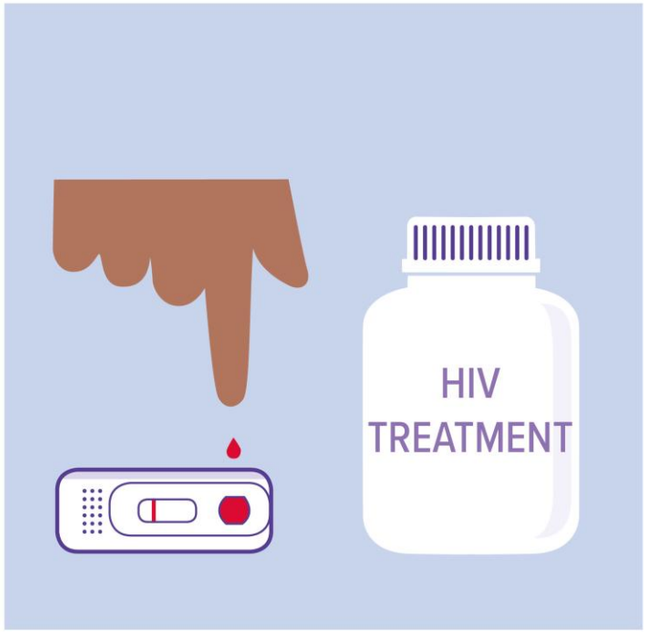
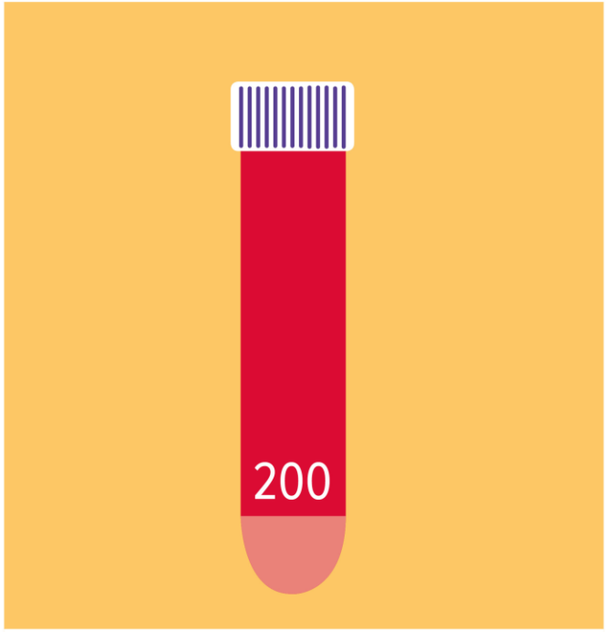
Mpox & HIV



People with a positive HIV test result should be offered HIV treatment.

People with untreated HIV who are diagnosed with mpox should start HIV treatment.



People with mpox and HIV with a low CD4 cell count need to be closely monitored.

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Mpox testing

Mpox symptoms are similar to those from other illnesses (measles, chickenpox, bacterial skin infections, herpes, scabies, syphilis, and others), so **testing is important** to confirm or rule out the cause of illness. For example, there have been outbreaks of measles and mpox in some parts of the DRC, and children have been diagnosed with both.

Testing is done by swabbing mpox sores and sending samples to a lab. Access to mpox testing has been limited in some places, including the DRC, and results can often be delayed. Tests have been expensive ($20) despite pressure from activists - but Morocco has just produced a $5 test.

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Mpox treatment & care

Currently, there is no approved treatment for mpox, although research is underway.

Stigma can prevent people with mpox from seeking care, but it is very important!

Research has proven that <u>SUPPORTIVE MPOX CARE SAVES LIVES</u>

This means nutritional support (especially for malnourished children) and hydration, pain and fever medication, caring for sores to prevent infection and lessen itching, and treating bacterial infections.

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Mpox care

If you fall ill with mpox, take care of yourself by:

- Seeking healthcare if you become seriously ill
- Taking medicines for fever and pain
- Asking for help and support
- Drinking lots of fluids
- Resting as much as possible
- Eating well
- Keeping your skin clean and dry
- Taking warm baths with baking soda or Epsom salts
- Trying not to scratch mpox sores
- Use a saltwater rinse for mouth sores

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Mpox prevention- vaccines

Because smallpox and mpox are from the same family of viruses, smallpox vaccines can prevent or lessen illness from mpox (this is called cross protection)

There are 2 WHO-recommended mpox vaccines, MVA-BN and LC16

- MVA-BN is a 2-dose vaccine given a month apart, either by injection into the upper arm or under the top layer of skin inside the arm.
- One dose of MVA-BN reduces mpox risk by 75%; two doses, by 85%.
- MVA-BN is made from a weakened form of the vaccinia virus, which cannot cause illness in people, so it can be used in people with weakened immune systems, children ages 12 and over, and during pregnancy.
- The most common side effects from MVA-BN are pain, redness and swelling at the injection side, headache, muscle aches and feeling tired.

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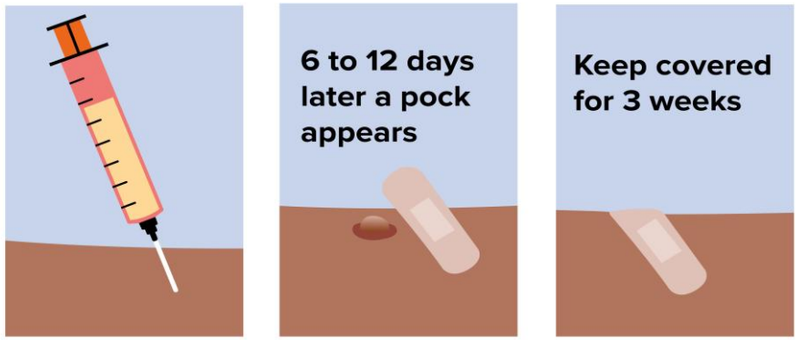
Mpox prevention- vaccines

- LC16 is a single-dose vaccine that contains a weakened form of the vaccinia virus. Because it has the potential to cause illness, it should not be given during pregnancy, to people with certain skin diseases, and to people with weakened immune systems, including PLHIV who have a CD4 cell count of <200 cells/mm^3
- LC16 is given by multiple jabs from a two-pronged needle. A sore (called a pock) will appear where you got the vaccine.



- The pock is infected with vaccinia virus. It will blister and scab over- keep it covered and do not touch it so vaccinia does not spread to other parts of the body or to other people. It will heal in about 3 weeks, leaving a small scar.

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Mpox prevention- vaccines

- LC16 is the only vaccine that can be given to children ages 1 to 12 years, as well as adolescents and adults.

- Common side effects from LC16 include swelling and redness at the injection site, fever, chills, rash, and swollen lymph nodes – this does not mean the vaccine has made someone sick – it is the immune system responding to the vaccine.

Who should get the mpox vaccine?

Ideally, everyone should be offered the mpox vaccine during outbreaks, but access is currently limited. This means vaccines need to go to people who are at the highest risk of mpox first – healthcare workers and people who have had close contact with a person who has mpox.

- It takes a few weeks for immunity to build up after getting the vaccine.
- The vaccine will lower the risk of mpox – and prevent serious illness among people who fall ill with mpox.
- People can get mpox more than once, and even if they have been vaccinated- so prevention is still important

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Preventing mpox

People who do not have access to vaccines can lower their risk of mpox by:

- Sharing information with your community about mpox
- Avoiding close contact, including sex, with people who have a blistery skin rash
- Taking a break from sex or having fewer partners during an mpox outbreak (Condoms offer some protection, but they don't cover all the places where sores are). Share information with sex partners – and avoid close contact if you have mpox
- Wearing gloves and a mask, if you can, while caring for someone with mpox
- Washing or sanitizing your hands often, especially after contact with a person who has mpox, and their clothing, towels and bedding
- Staying away from sick or dead animals that can carry mpox – and wash your hands afterwards if you touch them
- Eating well-cooked meat

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If you have mpox, seek healthcare. You can lower the risk of passing it to others by:

Isolate, or ...

Staying by yourself until all your sores are completely healed – if this is not possible, you can take other steps: keep windows open, keep sores covered when you are near others, and use a condom for 3 months after you recover

Wash hands

Avoid close contact or wear gloves and mask

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Mpox vaccine need vs. access

In August 2024, the Africa CDC called for 10 million mpox vaccines by 2025.

As of 28 January, 465,760 mpox vaccines have been delivered to six countries - and vaccination has started in Central African Republic, DRC, Nigeria, and Rwanda

- More than 4.83 million doses of mpox vaccines are expected in 2025 from multiple countries and organizations
  - 1.73 million doses of MVA-BN donated (150,000 from the EU, 696,200 from the US, 876,300 from UNICEF/Gavi
  - 50,000 doses of ACAM2000mfrom Emergent Biosolutions
  - 3.05 million doses of LC16 from Japan

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Access barriers to mpox vaccines

- Pharmaceutical companies have patents, which gives them the right to produce and sell MVA-BN and LC16 at the price they choose for at least 20 years- for example, it probably costs $4 or less to make a dose of MVA-BN, but the company is selling it to UNICEF for $65/dose

- Donations are not sustainable

- Countries need to be able to produce their own supplies of mpox vaccines – or buy them from a nearby country at an affordable price, but patents (and other intellectual property barriers) prevent this

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Access measures

- Voluntary measures have limitations- for example, voluntary licenses are controlled by pharmaceutical companies; they decide which countries that are eligible to purchase affordable versions of their products - and sometimes, even on who can use their products or how they can be used within a country.
- Compulsory licenses can be issued by a government, which enables national production of an affordable generic/biosimilar product without the patent holder’s permission.
- Patent oppositions can be filed by civil society and activists, either before or after a patent is granted
- Strengthening patentability criteria at the national level can make it more difficult for pharmaceutical corporations to get patents on their products.
- To learn more about work on access to medicines and vaccines, go to www.makemedicinesaffordable.org

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Thank you!

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