INFORMATION SHEET

# For Vaccination against Monkeypox
# – IMVANEX® / JYNNEOS® with Smallpox Vaccine from Bavarian Nordic

(Use outside the scope of approval under pharmaceutical law: off-label use) -

Status: 29th June 2022 (this information sheet is continually updated)

## What is monkeypox and what symptoms can arise?

Monkeypox is caused by the monkeypox virus *(Orthopoxvirus simiae*). The virus has been known for many years. It is a viral disease transmitted primarily from rodents to humans. Human infection was first reported in the Democratic Republic of Congo in 1970. Transmission from person to person is possible via skin lesions (pathological skin changes, for example, blisters, scabs), especially in the case of close physical contact. The virus is related to the classical human poxviruses (variola, smallpox) and cowpox viruses.

Since May 2022, cases of monkeypox have been recorded in several countries outside Africa, including in Germany as well. The unusual aspect is that the affected persons had not previously travelled to African countries where the virus is endemic – as was usual with cases of the disease in the past. Monkeypox is much milder in humans than traditional human smallpox, which was declared eradicated by the World Health Organization (WHO) in 1980. However, severe courses can also occur, especially in children, pregnant women and immunocompromised individuals. So far, no deaths have been observed in the current monkeypox outbreak, and hospital treatment has been necessary in less than 10 per cent of cases.

The incubation period (time from infection to the appearance of the first signs of the disease) is 5 to 21 days. Initial symptoms of monkeypox infection usually include fever, headache, muscle and back pain, and swollen lymph nodes. Parallel to this or shortly prior to or after the onset of general symptoms, very painful skin lesions sometimes appear, which change from spots to blisters and then to pustules, which ultimately crust over and fall off. The rash often appears on the face, palms and soles. However, the skin and mucous membrane lesions may also occur in and around the mouth and in the genital, anal and groin areas, as has been observed particularly frequently in the current outbreak. In countries where monkeypox has been present for many years, the following complications have been observed: Brain inflammation, bacterial skin infections, fluid loss, conjunctivitis, cornea and pneumonia.

Transmission of the disease can occur through contact with bodily fluids and typical skin lesions, such as the contents of blisters or scabs of infected individuals. However, transmission of the virus is also possible even before rashes occur if there is close contact, including sexual contact and potentially through respiratory secretions. Others can also become infected by objects that have been contaminated with viruses, such as clothing, bed linens, towels, as well as dishes and eating utensils. The virus can also be transmitted through the saliva of infected persons. Entry sites are often the smallest skin lesions along with all mucous membranes (eye, mouth, nose, genitals, anus), and in rare cases, the respiratory tract via droplet transmission during conversations with a person in close proximity. Whether monkeypox can be spread through direct sexual means of transmission (for example, seminal fluid or vaginal secretions) has not been conclusively determined at this time, although this seems possible.

Infected individuals remain contagious as long as they have symptoms, which is typically for 2 to 4 weeks. Only when all wounds, including the scab, have healed is one no longer contagious.

## Which vaccine can be used to protect against monkeypox?

The IMVANEX® and JYNNEOS® vaccines are vaccines that were originally developed for use against traditional smallpox. IMVANEX® was approved for this purpose in the European Union in 2013 for persons 18 years of age and older. In the U.S., this vaccine is already approved for treatment against monkeypox in adults aged 18 and older under the name JYNNEOS®. In the European Union, the vaccine under the name IMVANEX® is currently not yet approved for use against monkeypox. A corresponding approval to extend the field of application to monkeypox is in preparation. Thus, inoculation of this vaccine against monkeypox is an application outside the scope of approval currently existing in the European Union (so-called "off-label use"). Currently, a product that complies with the U.S. approval is being supplied and used for vaccination (product name: JYNNEOS®).

Use of the IMVANEX® / JYNNEOS® vaccine against monkeypox outside the scope of approval under pharmaceutical law and the procurement by the Federal Ministry of Health (BMG) have the consequence that the BMG assumes liability under pharmaceutical law for the manufacturer when the vaccine is used. Only in case of production defects will the manufacturer, Bavarian Nordic, continue to be liable.

Incidentally, the IMVANEX® / JYNNEOS® vaccine can be used in immunocompromised individuals as well as in individuals with chronic inflammatory skin disease (atopic dermatitis).

The vaccine is based on an attenuated virus - the modified vaccinia virus Ankara (MVA vaccine). Such vaccine viruses cannot replicate in humans, they cannot cause smallpox disease in the vaccinated person, and they are not transmissible to persons around the vaccinated person.

The vaccine viruses are recognised by the immune system as "foreign"; as a result, antibodies and defence cells are produced against the virus. This creates a protective immune response. Based on studies in Africa, where the monkeypox virus is endemic, it is known that the conventional (non-MVA) smallpox vaccine for protection against monkeypox has at least an 85 per cent efficacy against monkeypox infection.

## How is the vaccine administered as part of basic immunisation?

The IMVANEX® / JYNNEOS® vaccine is injected subcutaneously, i.e. under the skin. This is preferably done on the upper arm. For basic immunisation, the vaccine must be administered 2 times at least 28 days apart. For persons who have been vaccinated against human smallpox in the past, 1 dose of vaccine is sufficient. Immunocompromised persons who have been previously vaccinated against smallpox should receive 2 doses of vaccine at least 28 days apart.

## Who should be vaccinated against monkeypox?

The Standing Commission on Vaccination (STIKO) at the Robert Koch Institute recommends vaccination against monkeypox in special risk circumstances and for groups of people particularly at risk of infection. These include the following:

1. **Post-exposure vaccination after possible infection (post-exposure prophylaxis**) in *asymptomatic* persons 18 years of age and older as early as possible in the period of up to 14 days after possible infection (exposure):

a. After close physical contact via non-intact skin or via mucous membranes with a person infected with monkeypox (for example, sexual contact) or during prolonged unprotected face-to-face contact at a distance of less than 1 meter (for example, household contact).
b. After close contact without adequate personal protective equipment (FFP2 mask/medical mouth/nose protection, gloves, protective gown) with a person with confirmed monkeypox disease, their body fluids or contaminated potentially infectious material (for example, clothing or bedding of ill persons) in the medical care system.
c. For personnel in laboratories with accidental unprotected contact with laboratory specimens containing non-inactivated monkeypox material; especially when virus enrichment is performed.

2. **Pre-exposure vaccination for increased risk of infection (indication vaccination)** for persons at increased risk of exposure and/or infection:
   a. Men ≥18 years who have sex with men (MSM) and, in doing so, frequently change partners. Currently, the indication is restricted to this group, since almost only MSM have been affected in the current monkeypox cases so far, and this group should therefore be given special protection.
   b. Personnel in special laboratories with targeted activities with infectious laboratory samples containing orthopox material, following individual risk assessment by safety officers.

## Who should not be vaccinated?

Anyone suffering from an acute illness with fever (38.5°C or higher) should not be vaccinated until they have recovered. However, a cold or slightly elevated temperature (below 38.5°C) is not an obstacle to vaccination. Please tell your practitioner prior to vaccination if you have any allergies (especially to chicken protein, Benzonase, ciprofloxacin or gentamicin). You must not receive IMVANEX® / JYNNEOS® if you have previously had a sudden life-threatening allergic reaction to any of the components of the vaccine. Use of the vaccine during pregnancy and lactation is currently not recommended. In this case, the benefits and risks of vaccination must be carefully weighed. Your practitioner can advise you in this regard.

## How should I behave prior to and after receiving the vaccination?

If you have fainted after a previous vaccination or other injection, are prone to immediate allergies or have had other reactions, please tell your practitioner prior to vaccination. He or she can then observe you for a longer period of time after the vaccination if necessary.
Please inform your practitioner prior to vaccination if you have had an allergic reaction after a vaccination in the past, or if you have allergies. Your practitioner will clarify with you whether there is anything that argues against the vaccination.

During the initial days after vaccination, unusual physical stress and competitive sports should be avoided. If you experience any pain or fever after vaccination, analgesic/fever-reducing medications may be taken. Your practitioner can advise you on this.

Please note that protection does not start immediately after vaccination and is not equally present in all vaccinated individuals.

## What vaccine reactions can occur after receiving the vaccine?

The safety of the smallpox vaccine, which can also be used to protect against monkeypox, has been studied in several clinical trials. Adverse reactions following vaccination with the smallpox vaccine were primarily transient local and general reactions that may occur as a manifestation of the body's exposure to the vaccine. Such reactions usually appeared within a few days after vaccination and had subsided after 7 days without the need for treatment. Vaccine reactions were generally mild to moderate in severity and were commensurate with the respective vaccine doses.

Local vaccination reactions (in 10 per cent or more of vaccinated persons) that were frequently reported included pain, redness, swelling, hardening – very rarely accompanied by restricted movement – and itching at the injection site. Often (1 to less than 10 per cent of those vaccinated), a nodule developed at the vaccination site or a "bruise" or the injection site became warm. Very rarely (0.01 to less than 0.1 per cent of those vaccinated), the injection site became inflamed, and there was discomfort, a rash or blistering.

Common vaccination reactions that were also reported with a high degree of frequency were headache, nausea and muscle pain, occurring in 10 per cent or more of those vaccinated. Muscle stiffness (rigor) and chills, elevated body temperature or fever, appetite disturbances, aching limbs and joint pain were also frequent (1 to less than 10 per cent of those vaccinated). Swelling in the armpit, a general feeling of illness, facial flushing, chest pain, and stiffness of the musculoskeletal system have occasionally (0.1 to less than 1 per cent of those vaccinated) been described or upper respiratory tract infections or symptoms such as rhinitis, sore throat and cough have been reported. Swelling of the lymph nodes, sleep disturbances, vomiting and diarrhoea, skin rash, itching, dizziness or skin inflammation may likewise occur occasionally.

Very rarely (0.01 to less than 0.1 per cent), those vaccinated suffered from migraines, dizziness or marked drowsiness, palpitations, dry mouth or abdominal pain; they reported increased sweating (sometimes occurring at night), muscle cramps, pain of the locomotor system as well as the back or neck, or they indicated sinusitis, conjunctivitis or a flu-like illness.

Occasionally, some laboratory tests, such as liver enzymes or leukocyte counts, may be altered after vaccination. During such examinations, please inform your practitioner that you have been vaccinated.

If you suffer from atopic dermatitis, local skin reactions and other general symptoms may develop to an increased degree. Likewise, a flare-up or worsening of the skin disease may occur.

## Are complications possible due to the vaccine?

Vaccine complications are consequences of vaccination beyond the normal level of a vaccine reaction, which significantly burden the health status of the vaccinated person.

After vaccination against monkeypox, an allergic skin reaction in the form of urticaria (hives) may occur in very rare cases. So-called peripheral oedema, in which fluids are deposited in the tissue, especially in the arms and legs, which then swell, is also very rarely observed. So-called angioedema with swelling, for example in the facial area (lips, cheeks), has also been reported. Very rarely, disorders of the peripheral nervous system (for example, insensitivity, numbness, pain) occur.

In principle, as with all vaccines, in very rare cases an allergic immediate reaction up to shock, or even other hitherto unknown complications, cannot be excluded.

If, after vaccination, symptoms occur that exceed the above-mentioned rapidly transient local and general reactions, your practitioner is available for consultation. In case of severe adverse effects or possible allergic reactions as described above, please seek medical treatment/advice immediately.

It is also possible to self-report side effects:

Federal Institute for Vaccines and Biomedicines
Paul Ehrlich Institute
Paul-Ehrlich-Str. 51-59
63225 Langen
Phone: +49 6103 77 0
Fax: +49 6103 77 1234
Online: www.pei.de
or via e-mail to: pharmakovigilanz1@pei.de
and
https://www.nebenwirkungen.bund.de

**In addition to this information sheet, your practitioner administering the vaccine will offer you a clarifying consultation.**

For more information on monkeypox and vaccination, visit

www.rki.de/affenpocken und

www.rki.de/affenpocken-impfung

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Medical History for Vaccination against Monkeypox
– with IMVANEX® / JYNNEOS® Smallpox Vaccine from Bavarian Nordic
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**1. Do you[1] currently have an acute illness with fever?** 0 Yes 0 No

**2. Have you[1] already been vaccinated against smallpox (up to 1980)**? (If you do not know, check your immunisation record or see if you have a pockmark on your upper arm)
0 Yes 0 No

**3. Do you[1] have chronic illnesses or do you[1] suffer from an immunodeficiency** (for example, HIV infection, atopic dermatitis, immunodeficiency due to chemotherapy, immunosuppressive therapy or other medications)**?** 0 Yes 0 No

If yes, which?

**4. Do you[1] have a known allergy?** 0 Yes 0 No

If yes, which?

**5. Did you[1] experience allergic symptoms, high fever, fainting, or other unusual reactions after a previous, different vaccination?** 0 Yes 0 No

If yes, which?

***The following questions are for women only***

**6. Are you[1] pregnant?** 0 Yes 0 No

**7. Are you[1] currently breastfeeding?** 0 Yes 0 No

[1] This will potentially be answered by the legal representative

## Declaration of Consent for Vaccination against Monkeypox
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(Use outside the scope of approval under pharmaceutical law: off-label use) -

Name of the person to be vaccinated (surname, first name):

Date of birth:

Address:

I am aware of the contents of the information sheet and have had the opportunity to have a detailed discussion with my practitioner administering the vaccine. I consent to the proposed vaccination against monkeypox.

Declaration of the person to be vaccinated regarding off-label use:

I hereby declare that I have been informed by my practitioner administering the vaccine that the above-mentioned medicinal product is being used on me outside the scope of the current approval under pharmaceutical law and that the manufacturer is liable only in the event of gross negligence or fault for damage attributable to the failure to conduct the approval procedure. In all other respects, the manufacturer's liability continues in principle, but is assumed by the Federal Ministry of Health in most cases.

I have been fully informed by my practitioner administering the vaccine about the medical and legal aspects of the use of this medicine in a personal consultation. I was able to ask my questions about this and they were answered to my satisfaction.

In light of the above, I legally waive the liability of my prescribing practitioner based on the use of the IMVANEX® / JYNNEOS® smallpox vaccine outside the scope of approval (off-label use). IMVANEX® / JYNNEOS® smallpox vaccine outside of approval (off-label use).

Notes:

_____
City, date

_____ _____
Signature of the person to receive the vaccine Signature of the practitioner

If the person to be vaccinated is not competent to provide consent:

Additionally for custodians: *I declare that I have been authorised to provide consent by any other persons entitled to custody.*

_____

Signature of the person authorised to provide consent (custodian, legal care provider or guardian)

If the person to be vaccinated is not competent to provide consent, please also provide the name and contact details of the person authorised to provide consent (custodian, legal care provider or guardian):

Surname, first name:
Telephone no.: E-mail:

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