MPOX

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SUBSPECIALITY IN "COMMUNICABLE DISEASES IN PRIMARY CARE" (FINAL YEAR)
KLINIK KESIHATAN AMPANG

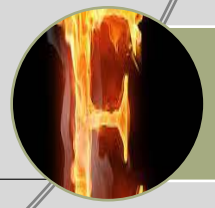
OUTLINE

What are symptoms of mpox?

What are the differential diagnoses?

How to diagnose mpox?

What is the criteria for hospital admission?

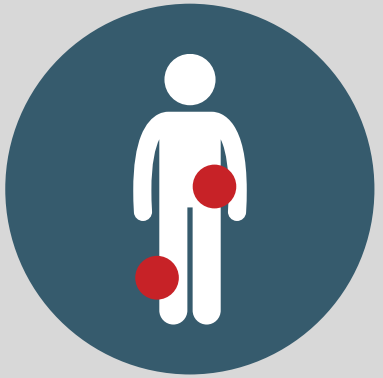


How to manage mpox?

Mpox Symptoms

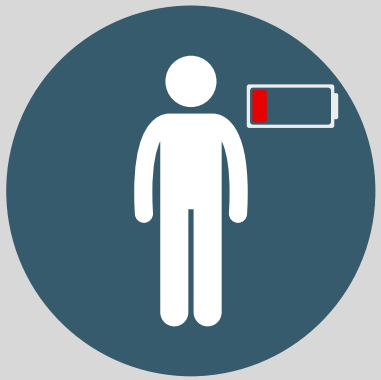
HEADACHE

FEVER



MUSCLE ACHES

CHILLS



LOW ENERGY

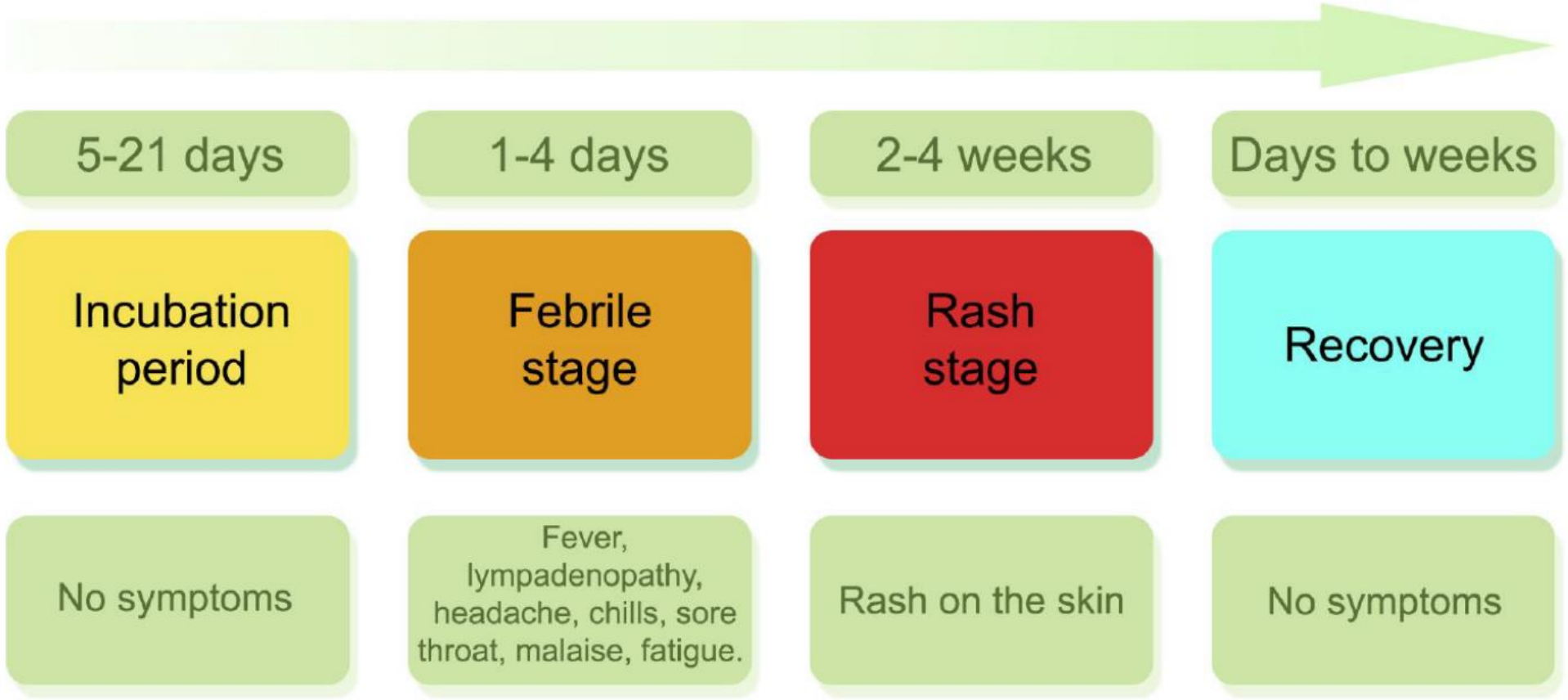
SORE THROAT

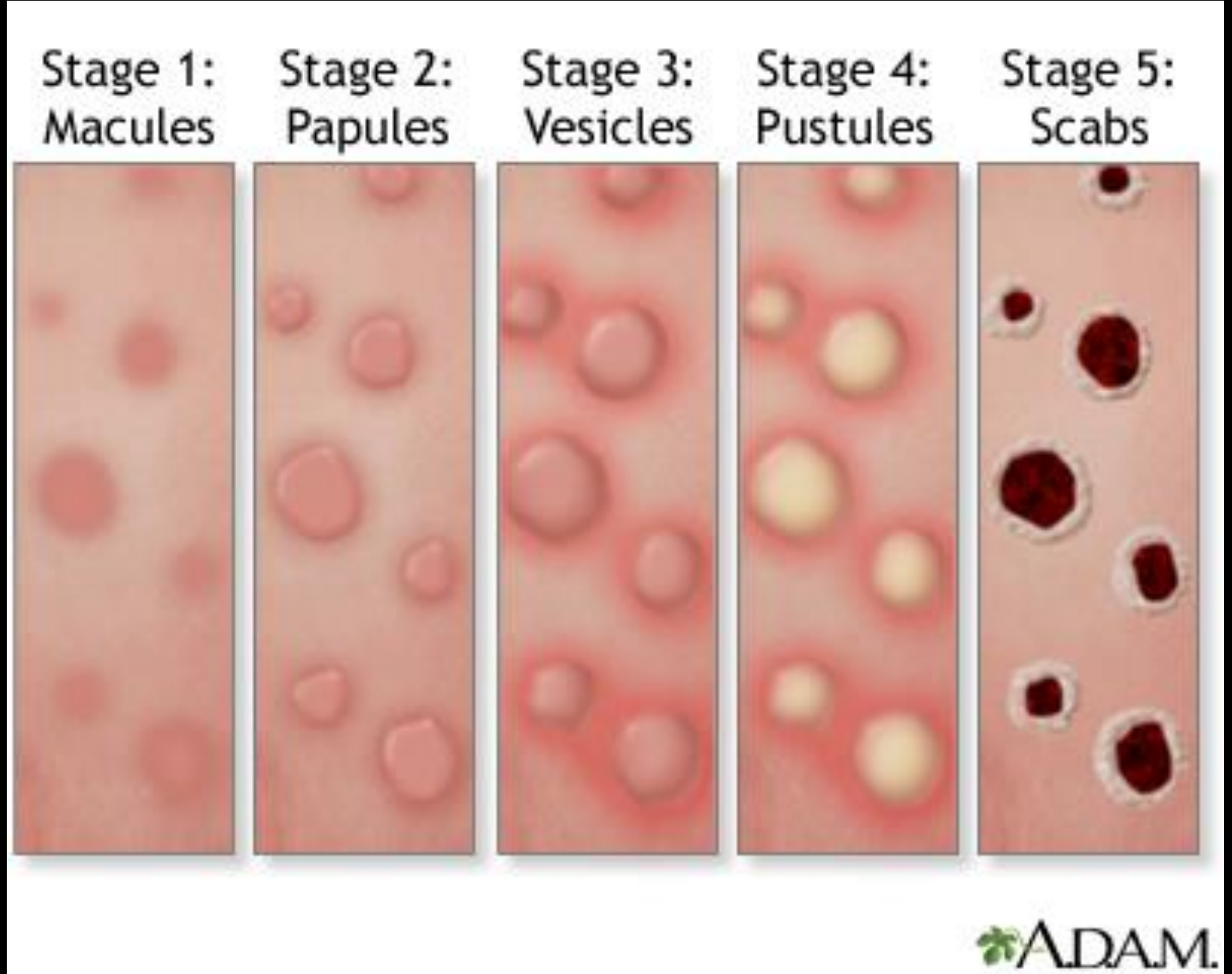
SWOLLEN LYMPH NODES

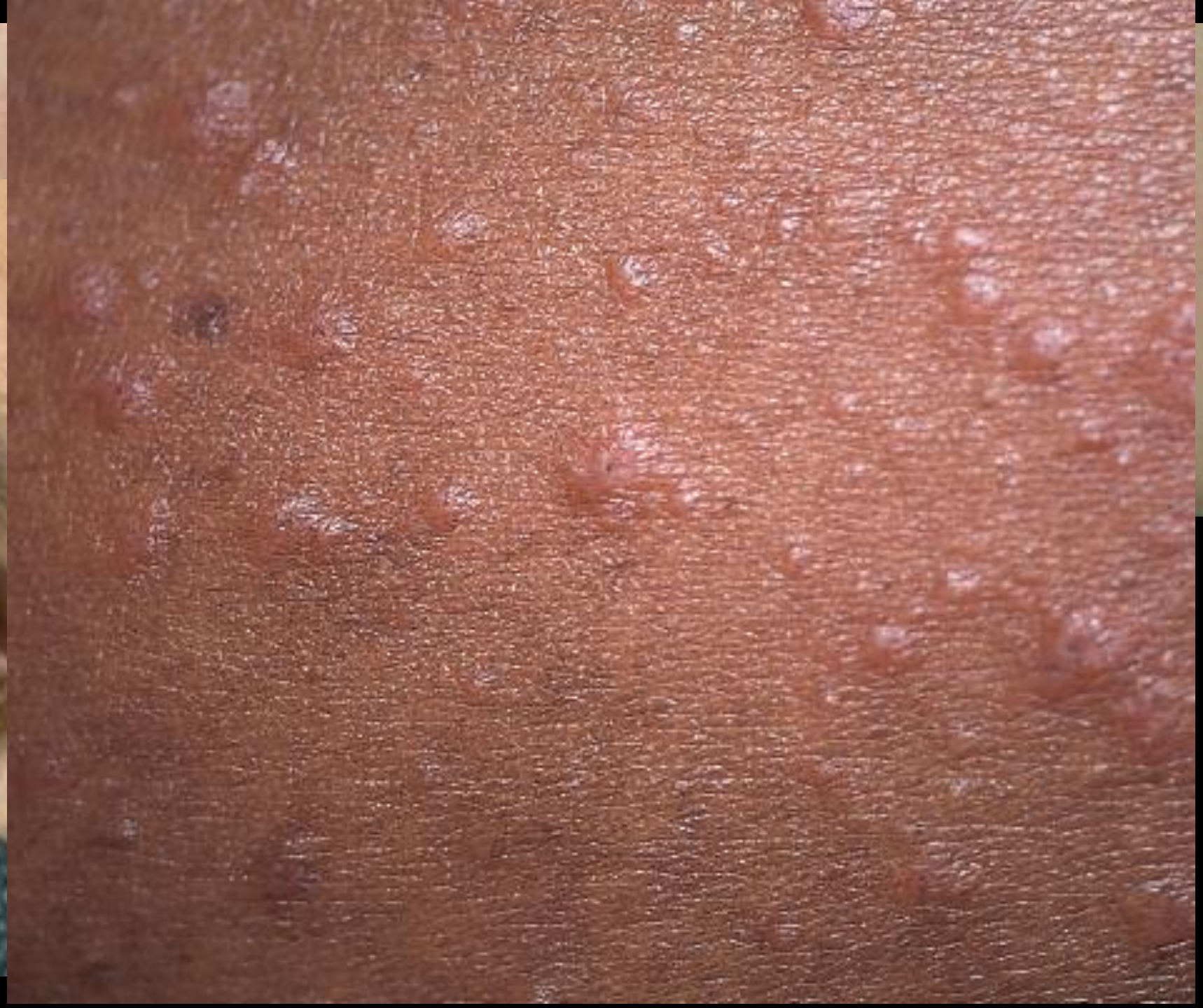
SKIN RASH & LESION

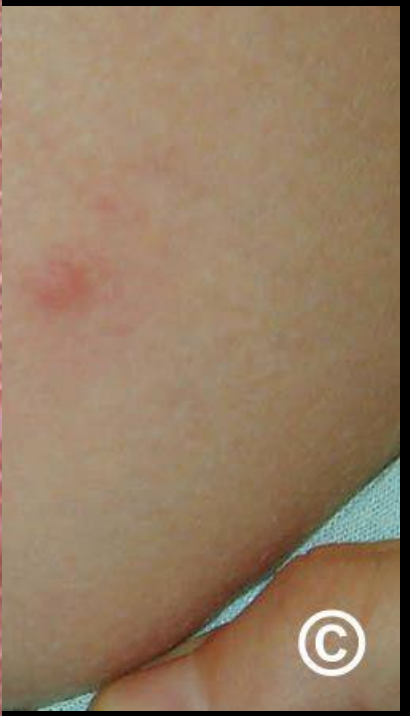
World Health Organization

Monkeypox symptoms – an overview



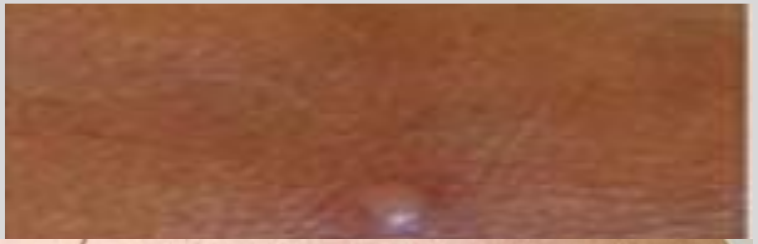

Stage 1:
Macules
Stage 2:
Papules
Stage 3:
Vesicles
Stage 4:
Pustules
Stage 5:
Scabs
A.D.A.M.

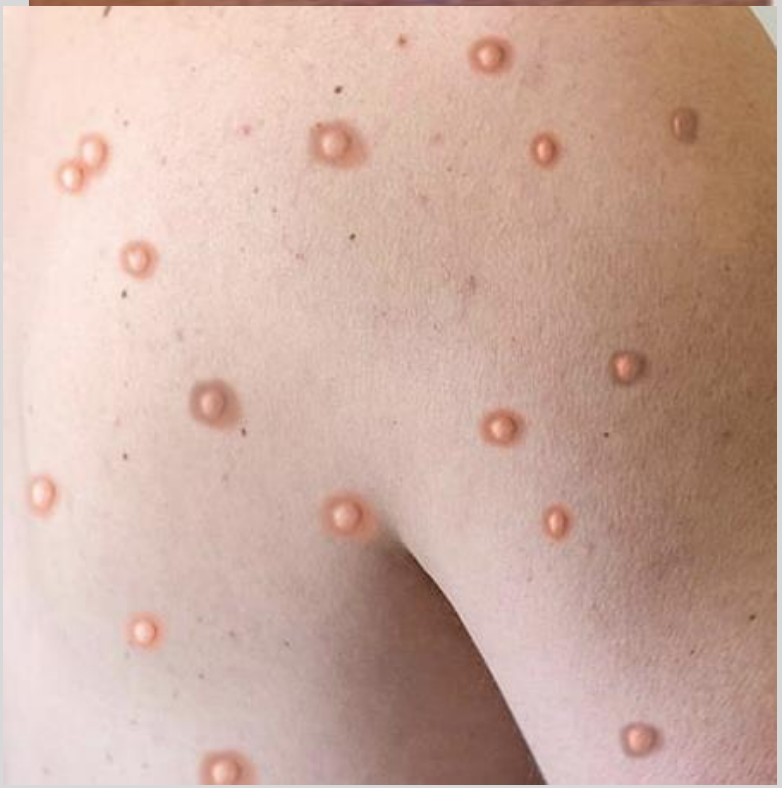




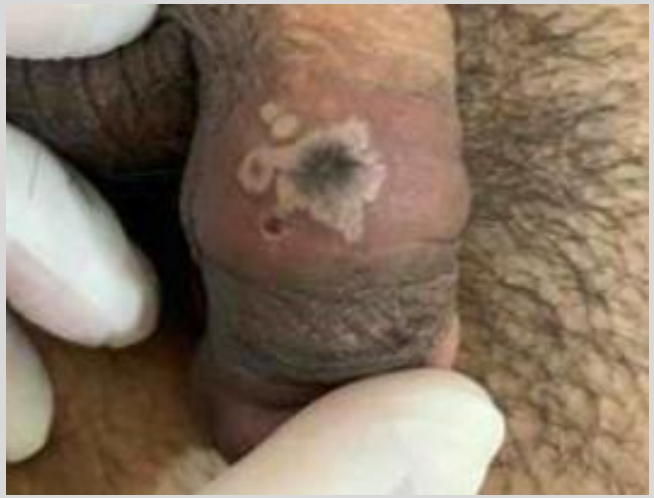
DIFFERENT TYPES OF VESICLES

VESICLE



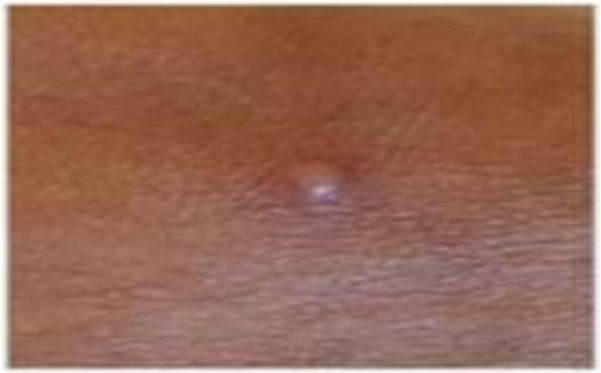


CLUSTERED VESICLES



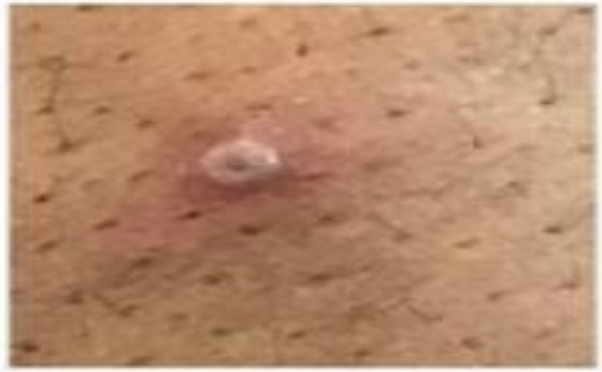
Umbilication

Vesicles, Pustules and Scabs

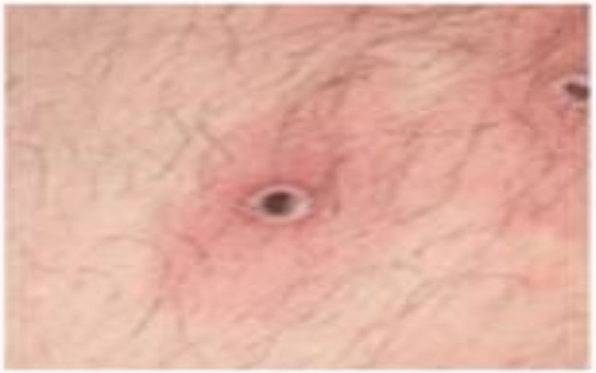


a) Early vesticle, 3mm diameter

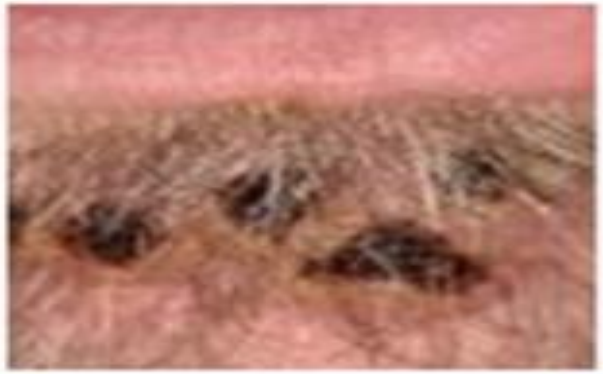
b) Small pustule, 2mm diameter



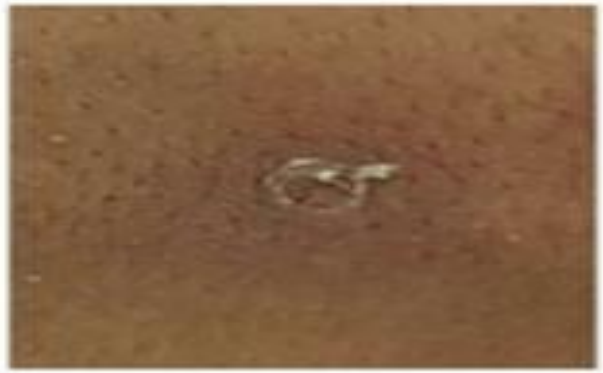
c) Umbilicated pustule, 3-4mm diameter



d) Ulcerated lesion 5mm diameter

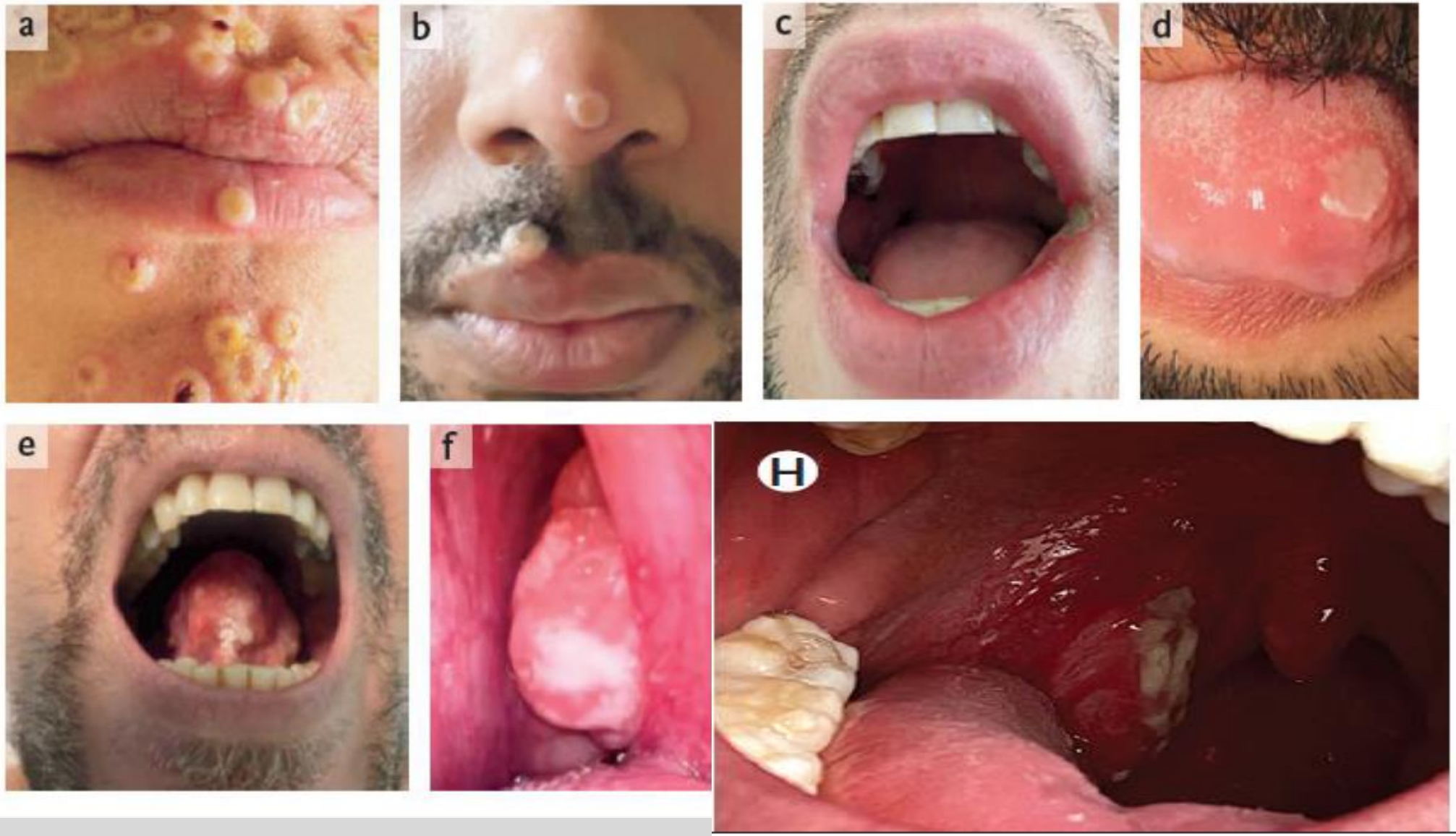


e) Crusting of mature lesions



f) Partially removed scab

Oral and Perioral Lesions



Thornhill JP et al, N Engl J Med 2022

ADDITIONAL SYMPTOMS

- **Anorectal pain**
- **Proctitis with bleeding**
- **Penile edema, balanitis, phimosis**
- **Sore throat**
- **Odynophagia**
- **Epiglottitis**
- **Tonsillitis**

Complications (children under than 8 years old and immunocompromised patients, pregnant patients)

- **Pneumonia**
- **Encephalitis**
- **Eye infections**

MPOX DIFFERENTIAL DIAGNOSES

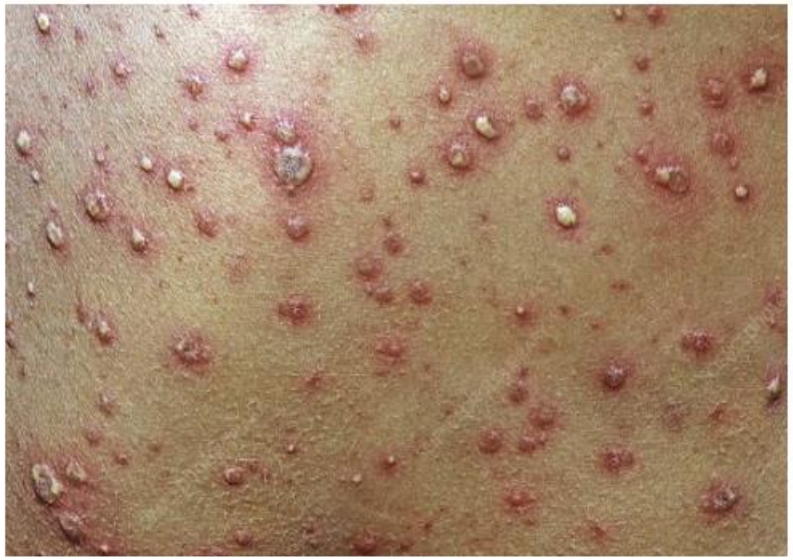
	Mpox	Chicken pox	HFMD	Measles
Incubation period	**5-21 days**	**10-21 days**	**3-6 days**	**10-15 days**
Prodromal period	**1-4 days**	**0-2 days**	**2-3 days**	**2-4 days**
Rash period	**14-28 days**	**10-21 days**	**5-10 days**	**4-6 days**

Reference: Ng YY, Azidah AK . Monkeypox: A review of data essential in primary care. Malays Fam Physician. 2023;18:9.

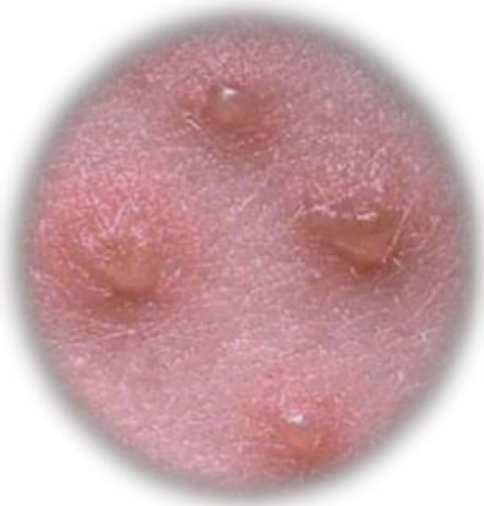
	Mpox	Chicken pox	HFMD	Measles
Rash distribution	**Centrifugal: Denser on face and extremities, often present on genitals**	**Centripetal: Denser on trunk**	**Hands, soles, buttocks and genitals**	**Face, neck, trunk and extremities**

Reference: Ng YY, Azidah AK . Monkeypox: A review of data essential in primary care. Malays Fam Physician. 2023;18:9.

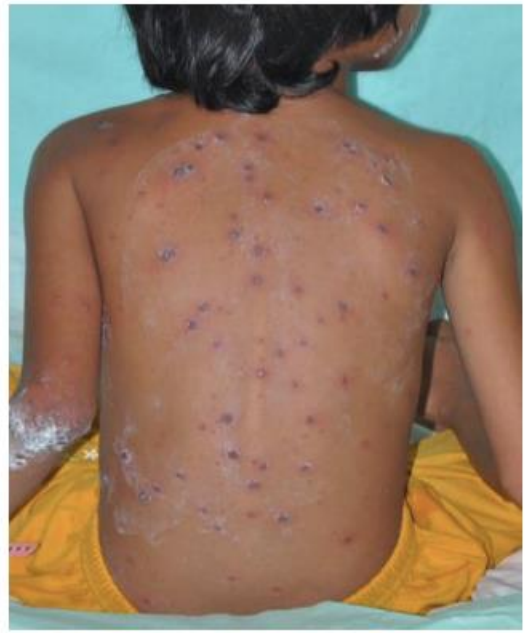
Chicken pox



Rash in multiple stages of development. Papules, vesicles, pustules and crust are often present together.

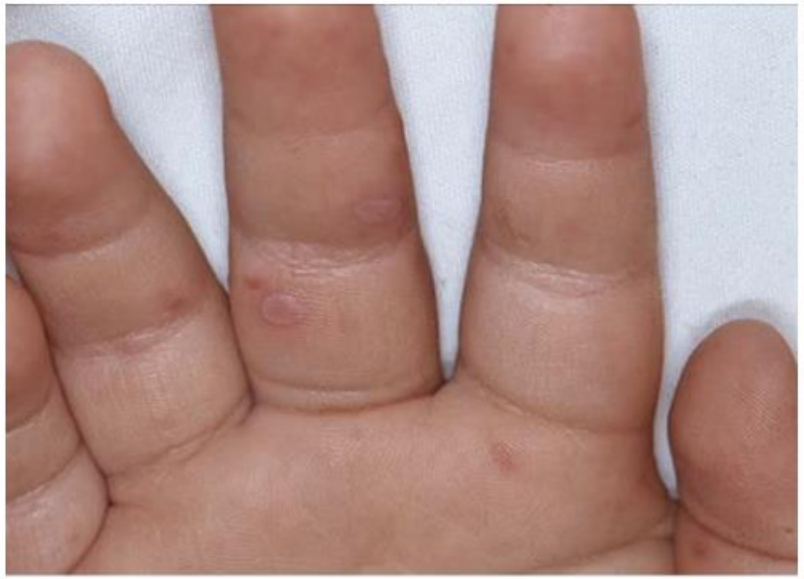


'Dew drop on a rose petal'

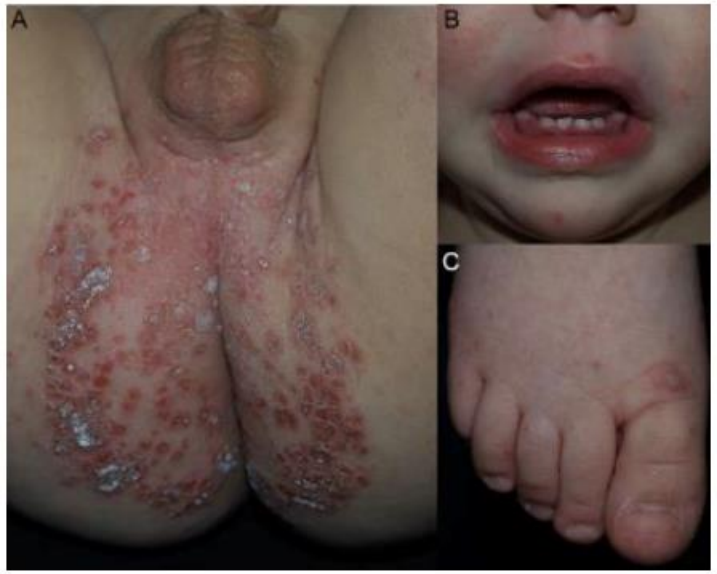


Centripetal distribution: Denser on trunk

Hand Foot and Mouth Disease

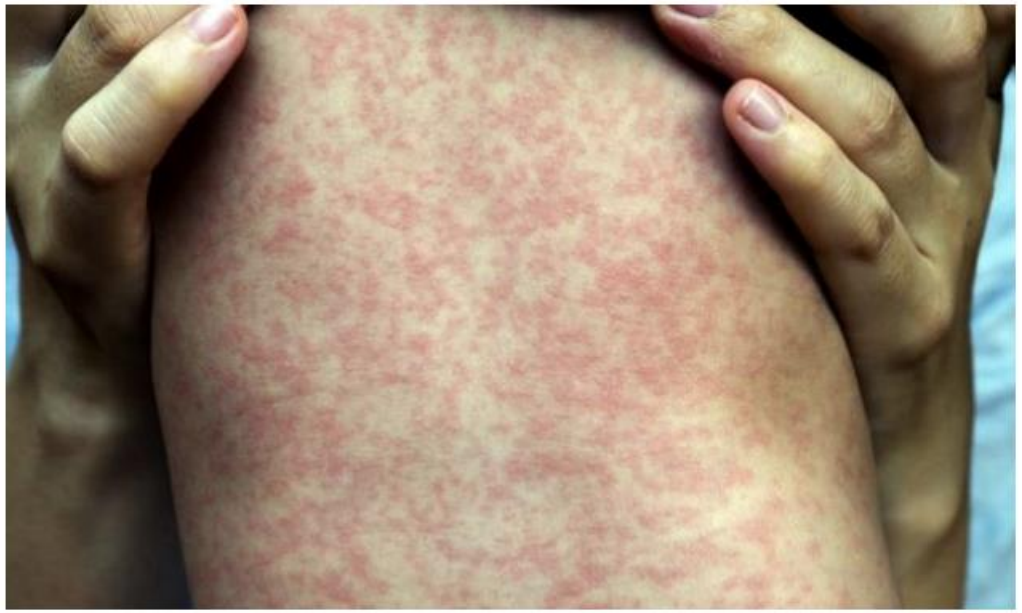


Elongated vesicles surrounded by an erythematous halo. Long axis of the lesion is oriented along the skin lines.

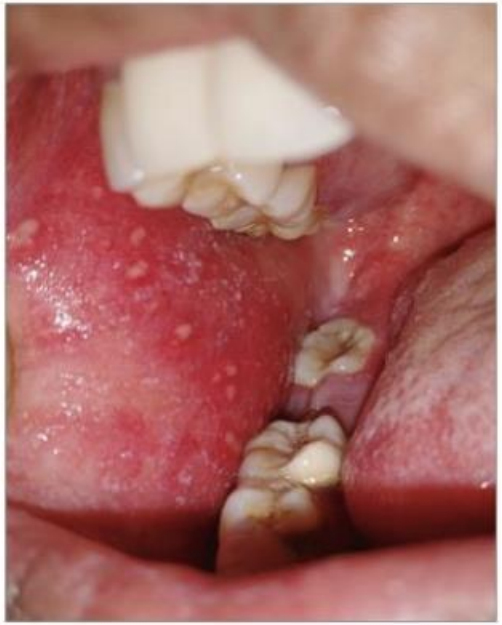


Symmetrical involvement of hands, soles, buttocks, genitalia, in and around mouth.

Measles



Maculopapular rash. Starts from face, spreads downward to the neck, trunk, arms, legs and feet.

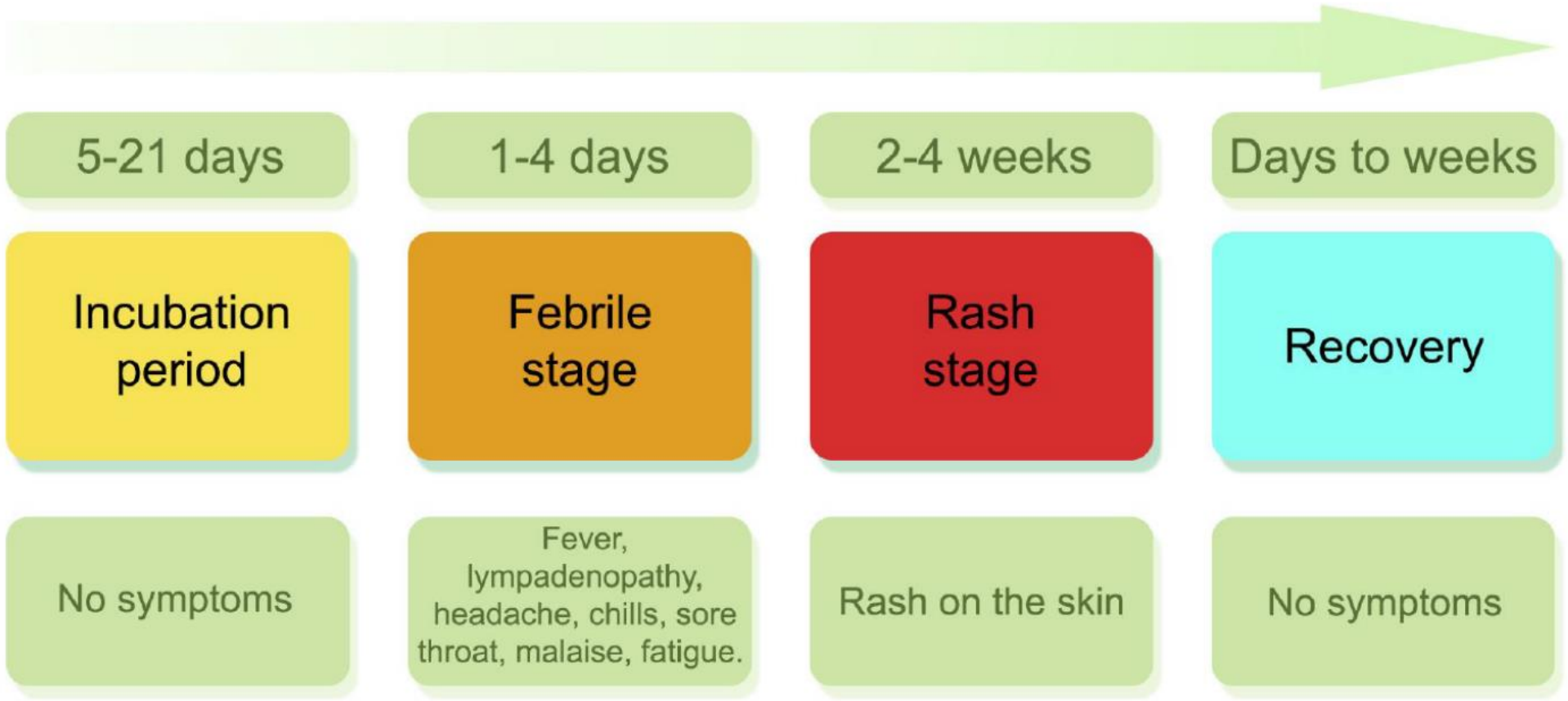


Koplik spots, present during the prodromal stage of measles.

HOW TO DIAGNOSE MPOX?

World Health Organization

Monkeypox symptoms – an overview



1. Suspected case

i) A person who is a contact of a probable or confirmed mpox case in the 21 days before the onset of signs or symptoms, and who presents with any of the following: acute onset of fever (>38.5°C), headache, myalgia (muscle pain/body aches), back pain, profound weakness or fatigue.

OR

ii) A person presenting since 1 January 2022 with an unexplained acute skin rash, mucosal lesions or lymphadenopathy (swollen lymph nodes). The skin rash may include single or multiple lesions in the anogenital region or elsewhere on the body. Mucosal lesions may include single or multiple oral, conjunctival, urethral, penile, vaginal, or anorectal lesions. Anorectal lesions can also manifest as anorectal inflammation (proctitis), pain and/or bleeding.

AND

for which the following common causes of acute rash or skin lesions do not fully explain the clinical picture: varicella zoster, herpes zoster, measles, herpes simplex, bacterial skin infections, disseminated gonococcus infection, primary or secondary syphilis, chancroid, lymphogranuloma venereum, granuloma inguinale, molluscum contagiosum, allergic reaction (e.g., to plants); and any other locally relevant common causes of papular or vesicular rash.

2. Probable case

A person presenting with an unexplained acute skin rash, mucosal lesions or lymphadenopathy (swollen lymph nodes). The skin rash may include single or multiple lesions in the anogenital region or elsewhere on the body. Mucosal lesions may include single or multiple oral, conjunctival, urethral, penile, vaginal, or anorectal lesions. Anorectal lesions can also manifest as anorectal inflammation (proctitis), pain and/or bleeding.

AND

One or more of the following:

- has an epidemiological link a to a probable or confirmed case of mpox in the 21 days before symptom onset;
- has had multiple and/or casual sexual partners, either bisexual or MSM, in the 21 days before symptom onset;
- has detectable levels of anti-orthopoxvirus (OPXV) IgM antibody (during the period of 4 to 56 days after rash onset); or a four-fold rise in IgG antibody titer based on acute (up to day 5-7) and convalescent (day 21 onwards) samples; in the absence of a recent smallpox/mpox vaccination or other known exposure to OPXV;
- has a positive test result for orthopoxviral infection (e.g., OPXV-specific PCR without mpox virus -specific PCR or sequencing).

3. Confirmed case:

A person with laboratory confirmed mpox virus infection by detection of unique sequences of viral DNA by real-time polymerase chain reaction (PCR) and/or sequencing.

4. Discarded case:

A suspected or probable case for which laboratory testing of lesion fluid, skin specimens or crusts by PCR and/or sequencing is negative for mpox virus.

A retrospectively detected probable case for which lesion testing can no longer be adequately performed (i.e., after the crusts fall off) and no other specimen is found PCR- positive, would remain classified as a probable case.

A suspected or probable case should not be discarded based on a negative result from an oropharyngeal, anal or rectal swab or from a blood test alone.

HOW TO DIAGNOSE MPOX

TRAVEL HX	Travel to mpox endemic country in last 21 days
CONTACT +VE	Contact with a person (face to face, skin to skin or sexual contact) or contaminated material (clothing, bedding or utensils) 21 days
SYMPTOMS	▪ Febrile stage symptoms ▪ Rash stage symptoms: Unexplained acute skin rash, mucosal lesion or LN +
LAB TEST	Positive Mpox PCR

Table 1: Guidance on specimens for MPXV

Case Category	Disease Phase	Sign / Symptoms	Specimens to Collect
Suspected or probable case	Rash	Vesicles or Pustules	Lesion fluid, roof, or biopsy
		Scabs or Crusts	Lesion scab or crust
Contact	Prodrome	Early stage of fever	Tonsillar tissue swab
			Nasopharyngeal swab
			Blood (Plain Tube with gel separator/ EDTA)
Confirmed case	Post-Rash	Absent	Convalescent serum (gap 2 samples in 2-3 weeks after diagnosis)

- **Choose 2 lesions**
- **Each lesion swab 1x**

Testing for Mpox (done in IMR, MKAK & selected Private Laboratory)

- Investigate if presence of unusual skin lesion especially in anogenital area
- >98% sensitivity
- Put the swab in sterile tube without viral transport media (VTM) and send to lab at 2 – 8°C; with triple layer packaging
- Blood specimen: often inconclusive due to short duration of viraemia
- Need PPE during specimen collection

HOW TO MANAGE MPOX

MPOX MANAGEMENT

FULL CLERKING 1

ANNEX III: Clerking sheet

PARTICULAR OF PATIENT							
Name of Klinik				Clerking date			
Name				I/C No.			
Age		Sex		Tel No.			
Occupation		Address					

TRAVEL HISTORY IN THE LAST 21 DAYS		
Country	Departure Date	Return Date

CONTACT HISTORY					
No contact history		Household		Close/sexual	

CLINICAL ONSET & SYMPTOMS							
Date of onset of first symptom				Date of last exposure to contact			
Fever		Rash		Headache		Myalgia	
Backache		Sore throat		Nasal congestion/ cough		Lymphadenopathy	
SOB		Lethargy		Skin redness/pain		Nausea/Vomiting	
Proctitis		Reduced vision		Site(s) of rash			

PHYSICAL EXAMINATION							
Temperature		Blood pressure		Pulse Rate		Respiratory Rate	
SPO_2		Pain score		Hydration		Throat	
Lymph nodes		Lungs		Genitalia			
Description of skin rash							
Others (ie Visual acuity)							

RISK FACTORS							
HIV		Diabetes		Heart Disease		CKD	
Liver disease		Kidney Disease		Malignancy		Pregnancy (POA)	
Extreme age (< 2 y/o or >60 y/o)		Immunosuppressed		Bed bound		Home isolation not feasible	
Others:							

TYPE OF SPECIMEN COLLECTED

CASE CLASSIFICATION	□ Suspected case	□ Probable case	□ Confirmed case	□ Close contact surveillance

MANAGEMENT			
	Stable, home isolation		Admission
Plan of Management and Prescription		Clerked by (Name, contact number, email)	

PARTICULAR OF PATIENT					
Name of Klinik				Clerking date	
Name				I/C No.	
Age		Sex		Tel No.	
Occupation		Address			

TRAVEL HISTORY IN THE LAST 21 DAYS		
Country	Departure Date	Return Date

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No contact history		Household		Close/sexual	

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TYPE OF SPECIMEN COLLECTED			
CASE CLASSIFICATION	☐ Suspected case ☐ Probable case ☐ Confirmed case ☐ Close contact surveillance		
MANAGEMENT			
	Stable, home isolation		**Admission**
Plan of Management and Prescription		**Clerked by (Name, contact number, email)**	

MPOX MANAGEMENT

1 FULL CLERKING

2 DECIDE ON ADMISSION

Admission Criteria

1. Patients who are clinically ill OR have the following symptoms:

- **a) Persistent fever beyond day 5**
- **b) Exertional dyspnoea, SpO2 <95% (at rest or at exertion)**
- **c) Dehydration**
- **d) Secondary infection of skin lesions**
- **e) Reduced level of consciousness**
- **f) Blurring of vision**

2. Patients with uncontrolled medical conditions, immunocompromised status, pregnant women, extremes of age (< 2 years or > 60 years old).

3. Patients who do not fulfil the above criteria but are not suitable for home surveillance, to consider admission.

ANNEX III: Clerking sheet

PARTICULAR OF PATIENT					
Name of Klinik				Clerking date	
Name				I/C No.	
Age		Sex		Tel No.	
Occupation		Address			

TRAVEL HISTORY IN THE LAST 21 DAYS		
Country	Departure Date	Return Date

CONTACT HISTORY					
No contact history		Household		Close/sexual	

CLINICAL ONSET & SYMPTOMS							
Date of onset of first symptom				Date of last exposure to contact			
Fever		Rash		Headache		Myalgia	
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PHYSICAL EXAMINATION							
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Description of skin rash							
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Others:							

TYPE OF SPECIMEN COLLECTED

CASE CLASSIFICATION	□ Suspected case	□ Probable case	□ Confirmed case	□ Close contact surveillance

MANAGEMENT			
	Stable, home isolation		Admission

Plan of Management and Prescription	Clerked by (Name, contact number, email)

MPOX MANAGEMENT

1. FULL CLERKING
2. DECIDE ON ADMISSION
3. PHARMACOLOGICAL THERAPY

PHARMACOLOGICAL MANAGEMENT

- **Symptomatic treatment (pain control, antihistamine, wound care)**
- **No antivirals currently approved for mpox**
- **Tecovirimat, an antiviral drug approved for treatment of smallpox disease based on animal data**
  - **Comes in oral as well as IV form**
- **Indication for treatment**
  - **Immunocompromised**
  - **Pregnant women**
  - **Children < 8 years**
  - **Developed 1 or more complications**

Adam Sherwat, John T Brooks, Debra Birnkrant, et al. Tecovirimar and the treatment of monkeypox - past, present, and future considerations. NEJM. Aug 4, 2022.

MPOX MANAGEMENT

1. FULL CLERKING
2. DECIDE ON ADMISSION
3. PHARMACOLOGICAL THERAPY
4. NON PHARMACOLOGICAL THERAPY
5. NOTIFICATION
6. CONTACT MANAGEMENT

THANK YOU

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