	DNA type Enveloped	Tropism	Transmission	Pathogenesis	Clinical	Diagnosis	Treatment	Prevention	Some Notes
Variola (Smallpox) Poxviridae	dsDNA Yes		Respiratory droplets Direct contact with lesions Contaminated fomites	Respiratory tract >> lymphatic spread >> viremia Secondary viremia seeds skin >> rash	Fever Malaise Back pain Centrifugal rash Lesions (Face/Extremities) Scarring	Clinical PCR EM or culture	Supportive - Antivirals	Vaccination with live vaccinia Isolation of cases (Contact tracing)	Why fatal 30%? Shock / Multi-organ failure Pneumonia/ Sepsis --- Replicate in the cytoplasm --- Eradicated from human population in late 1970s
Monkeybox Poxviridae	dsDNA Yes		Broken skin Mucosa	Broken skin or mucosa >> replication in lymph node >> viremia >> systemic spread (vesiculopustular eruption)	Fever Lymphadenopathy Malaise Centrifugal rash	PCR	Supportive - Antivirals (tecovirimat)	Vaccination with live modified vaccinia	Replicate in the cytoplasm
Molluscum virus Poxviridae	dsDNA Yes	Keratinocytes	Direct skin to skin Fomites Autoinoculation (from scratching) Sexually	Localized proliferation and formation of **umbilicated papules** without systemic spread		Clinical	Curettage - Cryotheraby - Topical antivirals		Replicate in the cytoplasm
Parvoviridae (Parvovirus B19, bocaparvovirus)	ssDNA No	**B19 virus:** Erythroid progenitors **Bocavirus:** Respiratory cells	Respiratory secretions Mother-to-child		**Bocavirus:** Upper and lower respiratory tract infections **B19:** a) Children: Fever Rash(erythema infectious, fifth disease or slapped cheek syndrome) b) Adults Arthritis	Clinical PCR Serology	Supportive		B19 disease in special groups of patients: **1) Immunosuppressed:** (Pure red cell aplasia) Chronic anemia **2) Underlying chronic anemia:** (Transient aplastic crisis) Severe acute anemia **3) Congenital infection:** (Hydrops fetalis) Anemia that could be fatal

	DNA type Enveloped	Tropism	Transmission	Pathogenesis	Clinical	Diagnosis	Treatment	Prevention	Some Notes
Adenoviridae	dsDNA No	Epithelial cells of resp tract, eyes, GI tract and urinary tract	Respiratory secretions Fecal-Oral Direct contact		Upper and lower respiratory tract infections (Adenoviridae is the main cause of Pharyngitis) Gastroenteritis Conjunctivitis Cystitis	Antigen detection PCR	Supportive	Live attenuated vaccine (For few serotypes that cause pneumonia)	1) Adenovirus replicates in the nucleus, it has >60 serotypes --- 2) Epidemiology Year around without seasonality
Papillomaviridae	dsDNA No	Epithelial cells of the skin and mucus membranes	Direct contact Sexual		Common warts Condyloma acuminate (genital warts) HPV-6 / HPV-11 Laryngeal papilloma Cervical cancer HPV-16 / HPV-18 Other cancers: Penile, anal , vulvar and oropharyngeal HPV-16 / HPV-18	Clinical Pap smear (A method of cervical screening to look for precancerous lesions in cervix) PCR	Most do not require treatment - Surgical excision - Laser therapy - Chemical agents: Podophyllotoxin Podophyllin Imiquimod	Subunit vaccines: 1) Cervarix Bivalent HPV-16 / 18 2) Gardasil Quadrivalent HPV-6/11/16/18 3)Nonavalent vaccine HPV-6/11/16/18/31/33/45/52/58	1. HPV is the most common cause of sexually transmitted infections worldwide. 2. Most HPV infections resolve spontaneously within 2-3 years. 3. Many infections are totally asymptomatic, so the patient can have HPV without knowing 4. Some HPV types are benign, some have low-risk of causing cancer and some are high-risk types that can cause the following cancers: cervical, penile, anal, oropharyngeal, and vulvar cancers. 5. High-risk HPV types have transforming proteins that are related to cancer development. --- 6) Replicates in the nucleus, many types >200 --- 7) Epidemiology: Prevalence 10%
Polyomaviridae JC virus BK virus Merkel cell virus	dsDNA No		Not established		**BK virus:** cystitis in bone marrow transplant patients **JC virus:** progressive multifocal leukoencephalopathy (PML) in AIDS patients. **Merkel cell polyomavirus:** Merkel cell carcinoma (rare skin cancer). So, Merkel cell polyomavirus is an oncovirus	PCR Radiology Histopathology	No specific treatment		1) Replicate in the nucleus --- 2) Epidemiology Widely spread Especially BK and JC --- 3) Most of these infections remain latent in the body without symptoms