



SIGNS AND SYMPTOMS IN INFECTIONS

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INFECTION

Definition

- ❑ **The invasion and growth of microorganisms in the body.**

INFECTION

Definition

- ❑ **Microorganisms: Small, living organisms not visible to the naked eye.**
 - ❑ **Fungi**
 - ❑ **Bacteria**
 - ❑ **Viruses**
 - ❑ **Protozoans**
 - ❑ **Prions**
- ❑ **Pathogens: Microorganisms that cause disease**
- ❑ **Disease results if the invading pathogen causes impairment in the host.**

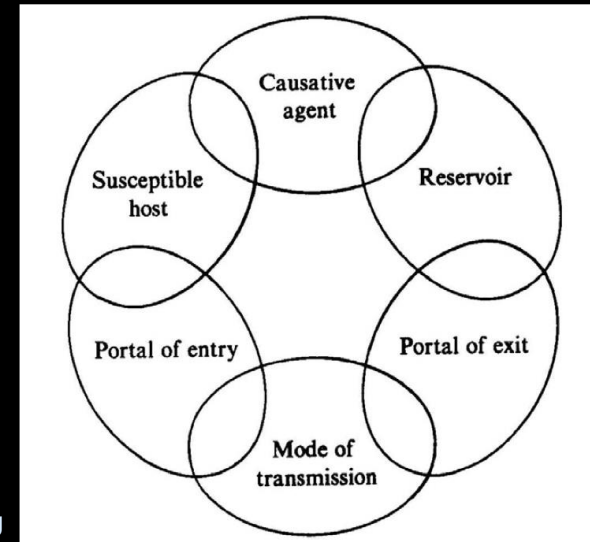


INFECTION

Chain of Infection

□ Conditions that must exist for disease to occur and spread

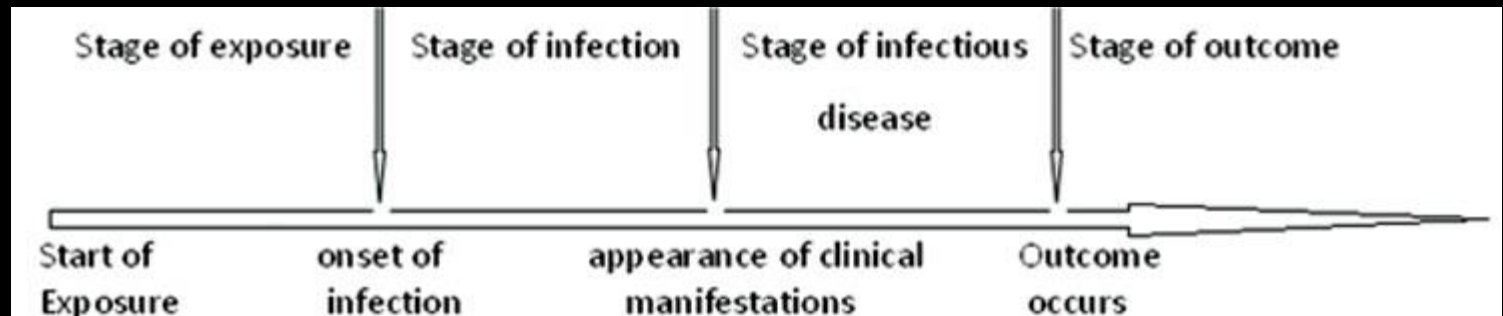
1. **Causative Agent:** A pathogen such as a bacterium or virus that can cause disease.
2. **Reservoir:** The place where a causative agent can live. Common reservoirs are human body, animals, environment and fomites which is nonliving objects such as doorknobs, cups, utensils, needles.
3. **Portal of Exit:** The way for a causative agent to escape from the reservoir pathogens can leave the body through such as urine, feces, saliva, blood, tears, mucous discharge, sexual secretions, and wounds
4. **Mode of Transmission:** The way that causative agent can be transmitted to a host including direct contact; person-to-person, examples include: sex, saliva/kissing, handshake/touching and indirect contact; contaminated substances examples include: food, air, soil, insects, animals, feces, equipment
5. **Portal of Entry:** A way for the causative agent to enter a new host. Different portals of entry include breaks in the skin, respiratory tract, digestive tract, genitourinary tract, circulatory system
6. **Susceptible Host:** An individual who can contract the disease. Humans become susceptible if large numbers of pathogens invade the body and body defenses are weak



INFECTION

The Natural History of a Communicable Disease

- ❑ The natural history of a communicable disease refers to the sequence of events that happen one after another, over a period of time, in a person who is not receiving treatment.
- ❑ Signs and symptoms are related to these different stages.
- ❑ Events that occur in the natural history of a communicable disease are grouped into four stages:
 - ❑ Exposure
 - ❑ Infection
 - ❑ Infectious disease
 - ❑ Outcome



SIGNS AND SYMPTOMS IN INFECTIONS

Definition

Different signs and symptoms are seen with various variables such as the organ system involved and the causative microorganism.

- Fever**
- Chills and sweats**
- Change in cough or a new cough**
- Sore throat or new mouth sore**
- Shortness of breath**
- Nasal congestion**
- Stiff neck**
- Unusual vaginal discharge or irritation**
- Increased urination**
- Burning or pain with urination**
- Redness, soreness, or swelling in any area**
- Diarrhea**
- Vomiting**
- Pain in the abdomen or rectum.**
- New onset of pain**

SIGNS AND SYMPTOMS IN INFECTIONS

Gastroenteritis

- ❑ Gastroenteritis is an intestinal infection marked by watery diarrhea.
 - ❑ Diarrhea
 - ❑ Abdominal pain
 - ❑ Nausea
 - ❑ Vomiting
 - ❑ Fever



SIGNS AND SYMPTOMS IN INFECTIONS

Gastroenteritis

- ❑ **Assess children with fever for signs of dehydration. Look for:**
 - ❑ **Prolonged capillary refill time**
 - ❑ **Abnormal skin turgor**
 - ❑ **Abnormal respiratory pattern**
 - ❑ **Weak pulse**
 - ❑ **Cool extremities**

SIGNS AND SYMPTOMS IN INFECTIONS

Gastroenteritis

- ❑ Skin turgor is the skin's elasticity. It is the ability of skin to change shape and return to normal.
- ❑ To check for skin turgor, grasp the skin between two fingers so that it is tented up. The skin is held for a few seconds then released.
- ❑ Skin with normal turgor snaps rapidly back to its normal position. Skin with poor turgor takes time to return to its normal position.



Abnormal skin turgor



Abnormal skin turgor

SIGNS AND SYMPTOMS IN INFECTIONS

Gastroenteritis

- This examination could be performed on arm and leg but, commonly abdomen is checked in children.



Abnormal skin turgor

SIGNS AND SYMPTOMS IN INFECTIONS

Gastroenteritis

- ❑ **Abnormal skin turgor**
- ❑ **Dry mouth**
- ❑ **Sunken eyes**
- ❑ **Sunken anterior fontanelle**
- ❑ **Irritability**



Dehydrated infant

SIGNS AND SYMPTOMS IN INFECTIONS

Gastroenteritis

- ❑ **Abnormal skin turgor**
 - ❑ The skin often has a doughy texture when the dehydration is associated with elevation of serum sodium.
- ❑ **Dry mouth**
- ❑ **Sunken eyes**
- ❑ **Sunken anterior fontanelle**
- ❑ **Irritability**

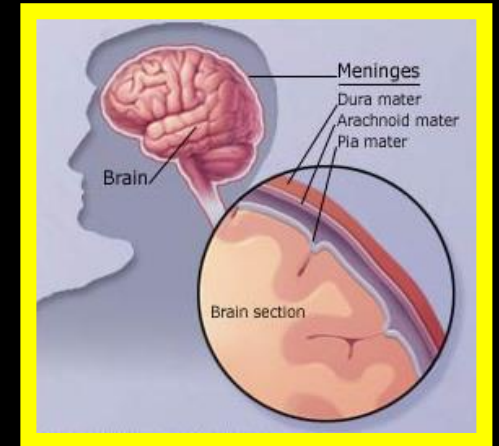


Doughy skin

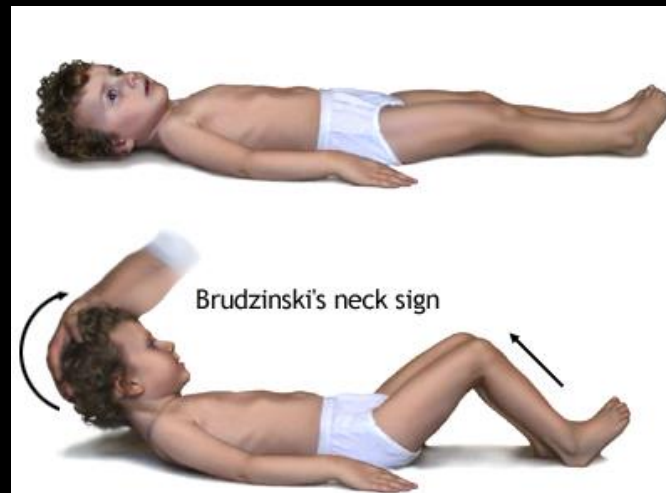
SIGNS AND SYMPTOMS IN INFECTIONS

Meningitis

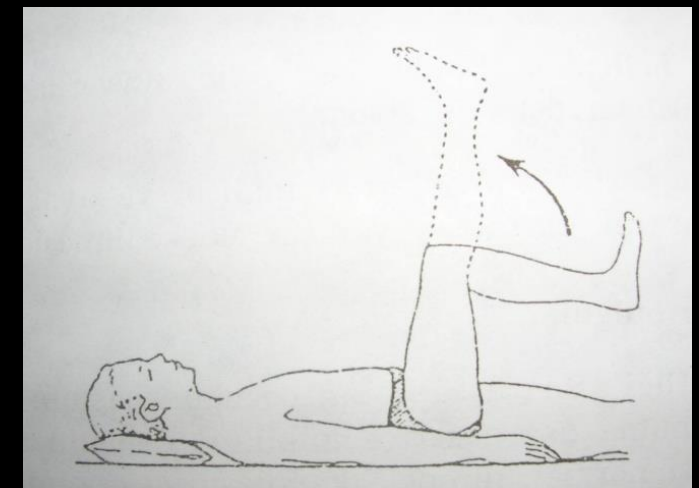
- ❑ Stiff neck
- ❑ Brudzinski's sign positivity
- ❑ Kernig's sign positivity
- ❑ Bulging fontanelle
- ❑ Decreased level of consciousness
- ❑ Convulsive status epilepticus



Stiff neck



Brudzinski's sign

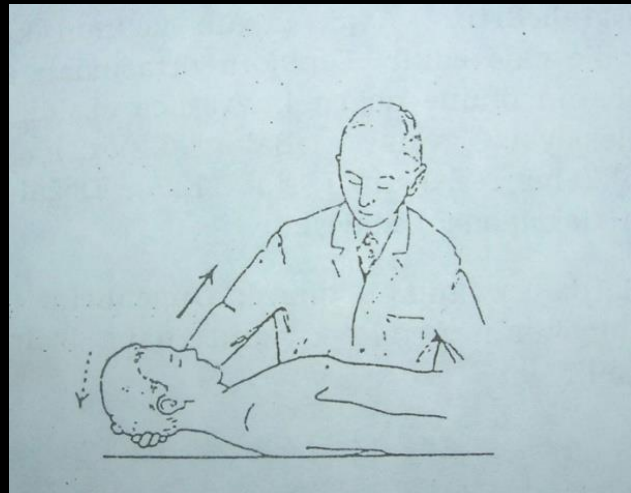
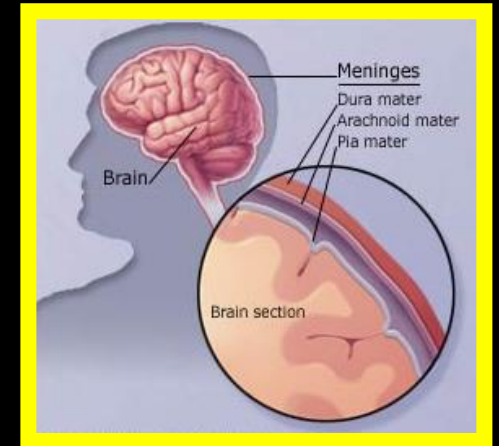


Kernig's sign

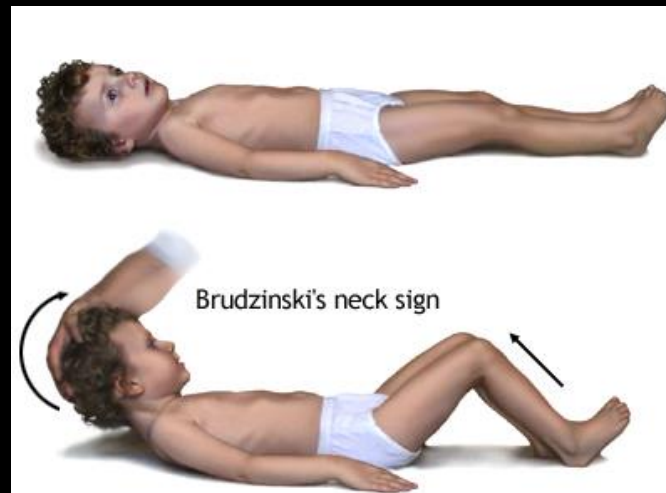
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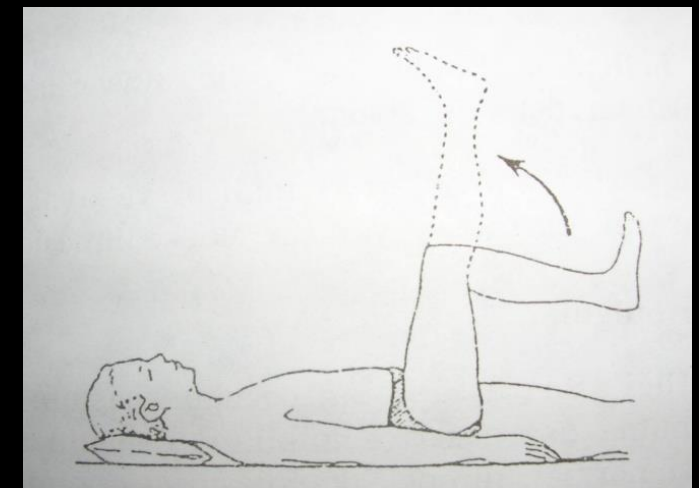
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Stiff neck



Brudzinski's sign

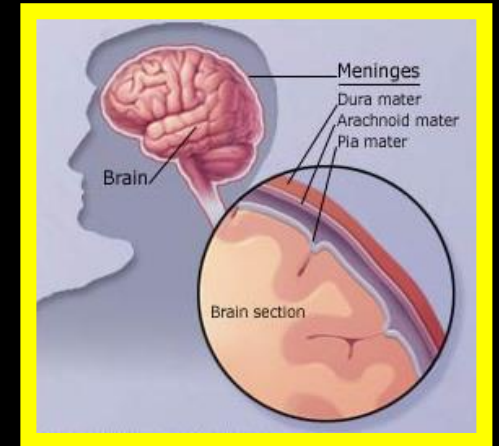


Kernig's sign

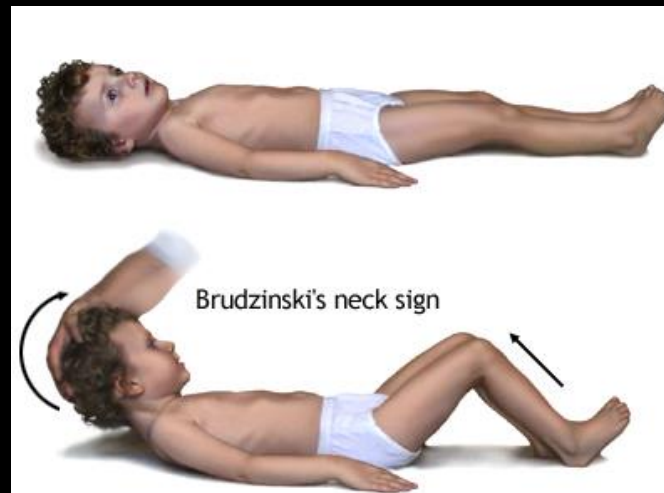
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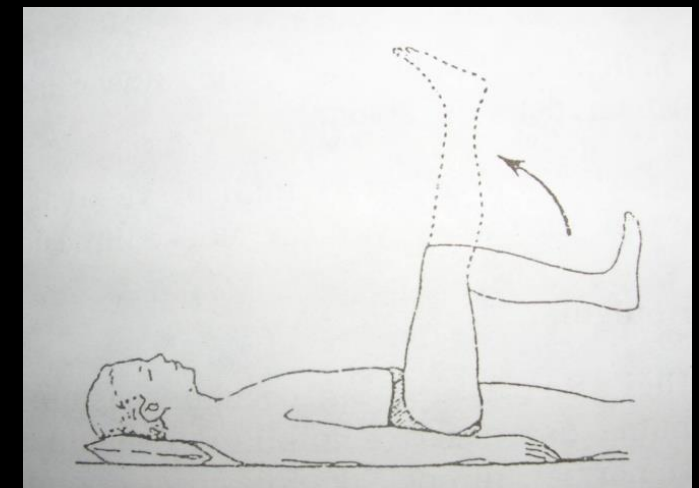
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Stiff neck



Brudzinski's sign

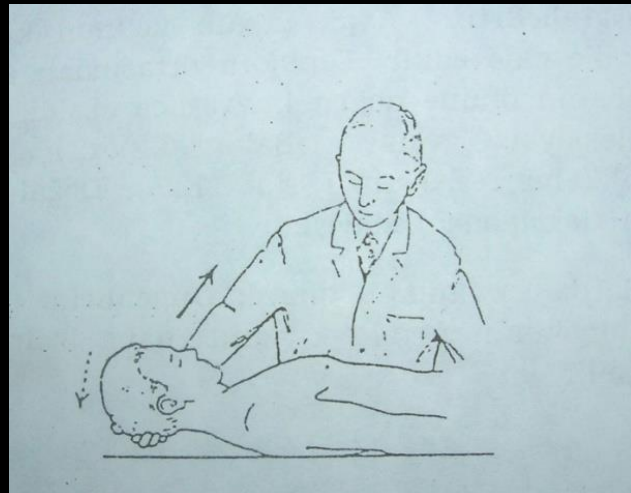
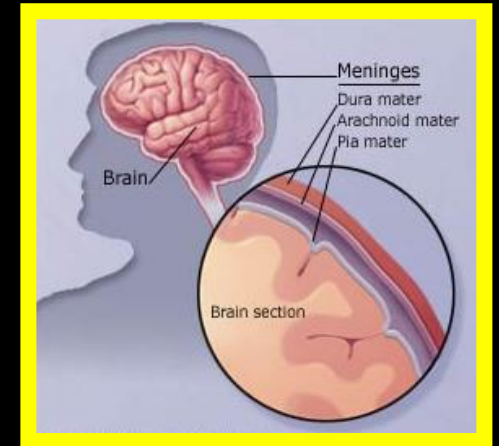


Kernig's sign

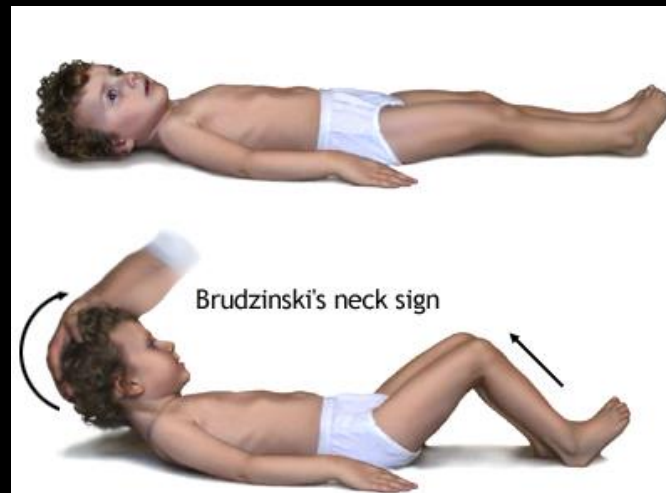
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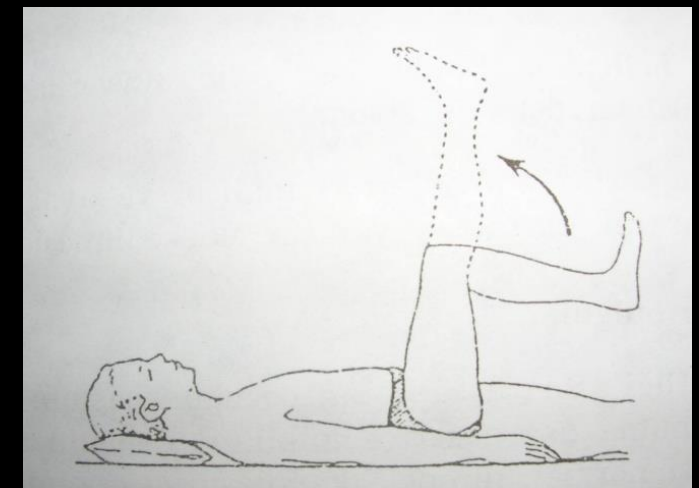
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Stiff neck



Brudzinski's sign



Kernig's sign

SIGNS AND SYMPTOMS IN INFECTIONS

Meningitis

- ❑ Consider meningococcal disease in any child with fever and a non-blanching rash, particularly if any of the following features are present:
 - ❑ An ill-looking child
 - ❑ Lesions larger than 2 mm in diameter (purpura)
 - ❑ A capillary refill time of 3 seconds or longer



Meningococcal rash

SIGNS AND SYMPTOMS IN INFECTIONS

Pneumonia

- ❑ Consider pneumonia in children with fever and any of the following signs:

- ❑ Tachypnea

Age

Tachypnea if respiratory rate greater than

0-2 months

60/minute

2-12 months

50/minute

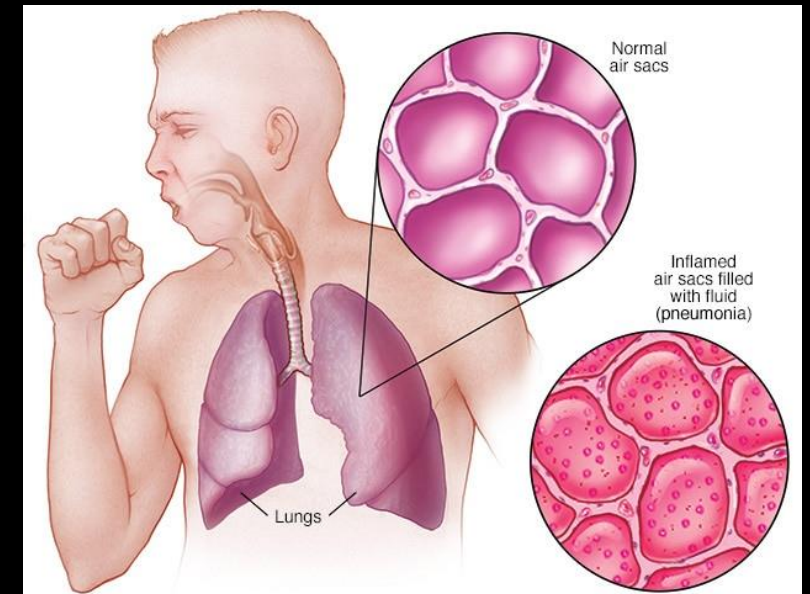
1-5 years

40/minute

>5 years

20/minute

- ❑ Crackles in the chest
- ❑ Nasal flaring
- ❑ Chest indrawing
- ❑ Cyanosis
- ❑ Oxygen saturation of 95% or less on room air.



SIGNS AND SYMPTOMS IN INFECTIONS

Urinary Tract Infection

- ❑ **Consider urinary tract infection in any child younger than 3 months with fever.**
- ❑ **Consider urinary tract infection in a child aged 3 months or older with fever and 1 or more of the following:**
 - ❑ **Vomiting**
 - ❑ **Poor Feeding**
 - ❑ **Lethargy**
 - ❑ **Irritability**
 - ❑ **Abdominal pain or tenderness**
 - ❑ **Urinary frequency or dysuria.**



SIGNS AND SYMPTOMS IN INFECTIONS

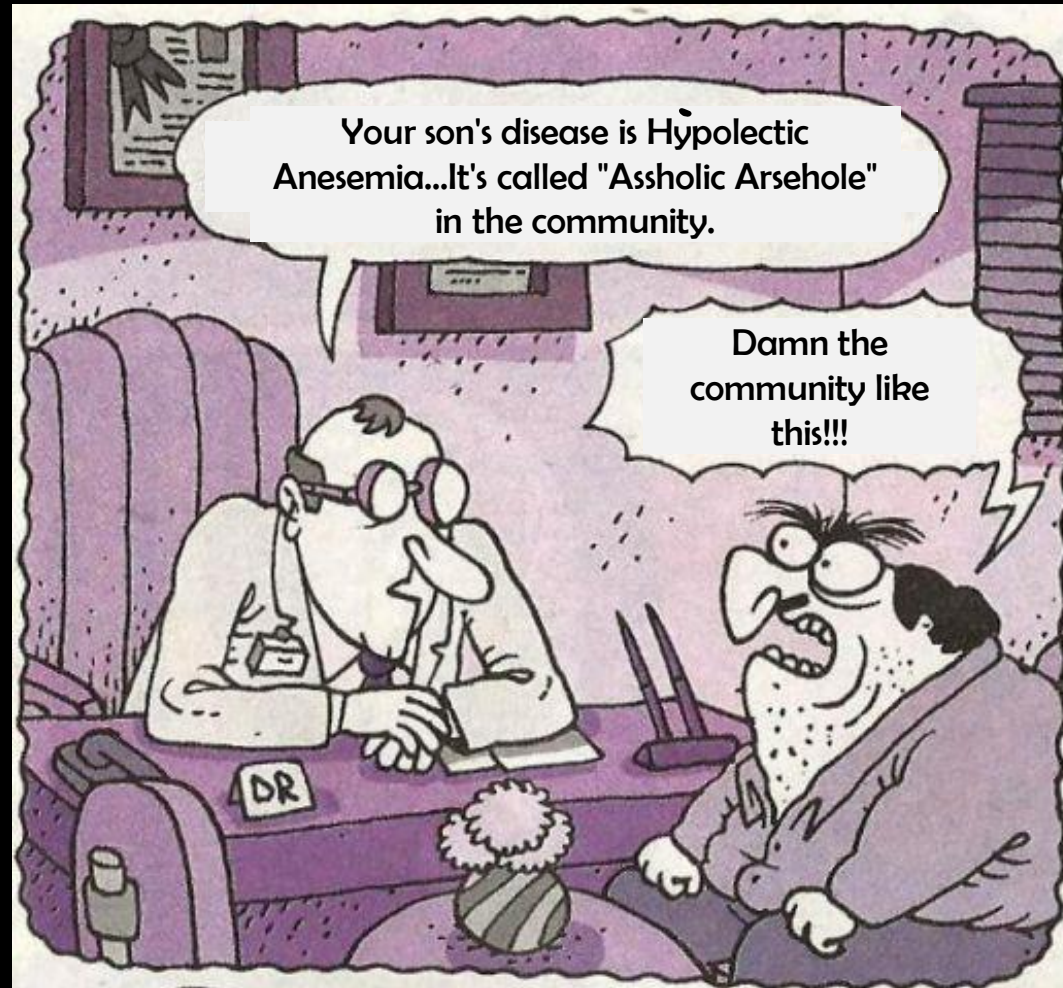
Septic Arthritis/Osteomyelitis

- ❑ Consider septic arthritis/osteomyelitis in children with fever and any of the following signs:
 - ❑ Swelling of a limb or joint
 - ❑ Not using an extremity
 - ❑ Non-weight bearing



SIGNS AND SYMPTOMS IN INFECTIONS

To be able to Tell in the Community's Language...



SIGNS AND SYMPTOMS IN INFECTIONS

Common Childhood Exanthems

- ❑ Six separate childhood exanthems were defined in the late 19th, early part of the 20th Century. These were named in the order they were discovered and are outlined.
- ❑ The term fourth disease or Filatov-Dukes disease is thought to be a variant of scarlet fever and is no longer used.

<i>Number</i>	<i>Disease</i>
<i>First</i>	Measles (Rubeola)
<i>Second</i>	Scarlet fever
<i>Third</i>	Rubella (German measles)
<i>Forth</i>	Filatov-Dukes disease
<i>Fifth</i>	Erythema infectiosum
<i>Sixth</i>	Roseola infantum, Exanthem subitum

SIGNS AND SYMPTOMS IN INFECTIONS

Measles



Conjunctivitis



Photophobia



Koplik's spots

SIGNS AND SYMPTOMS IN INFECTIONS

Measles



First day

SIGNS AND SYMPTOMS IN INFECTIONS

Measles



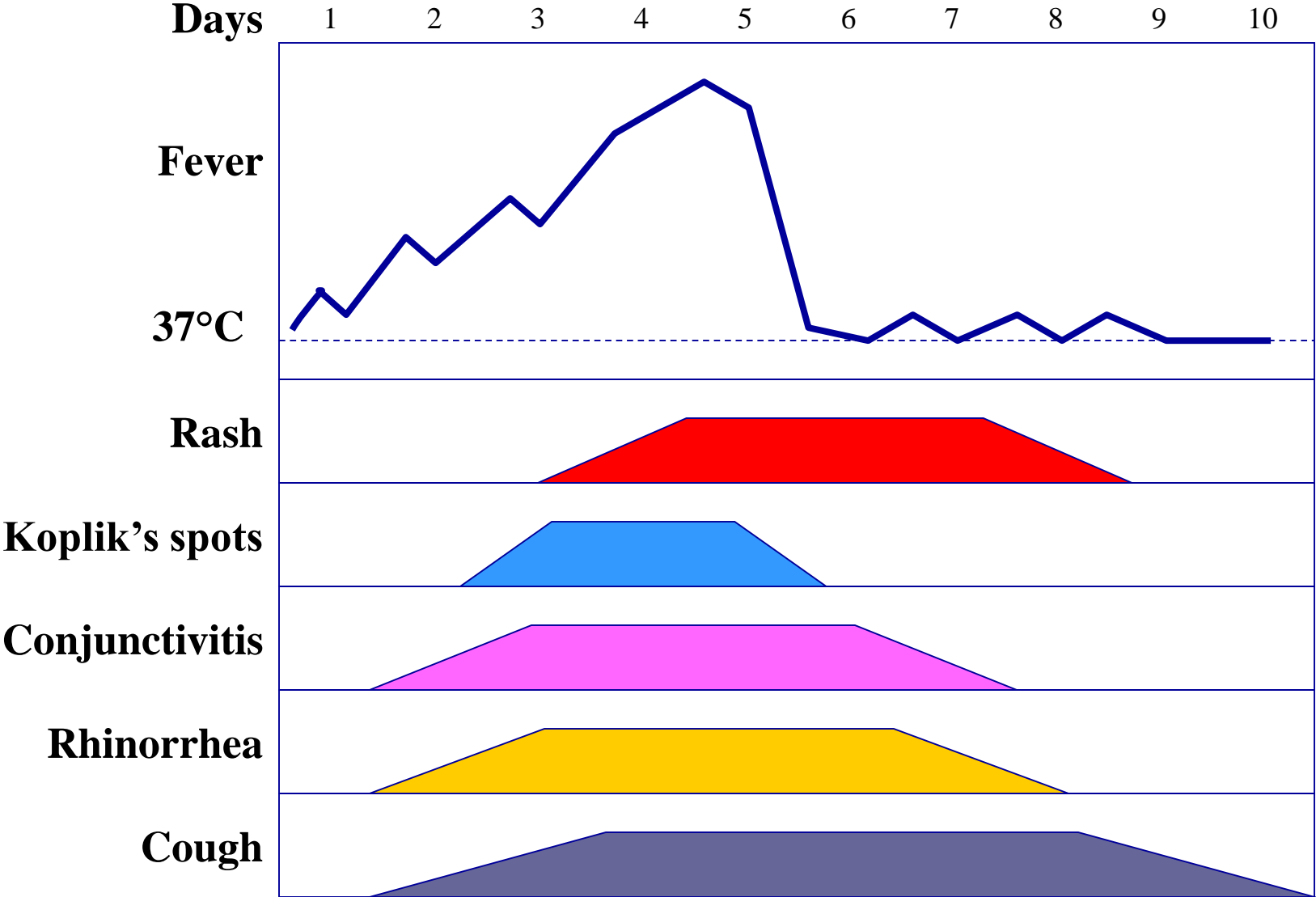
Second day



Third day

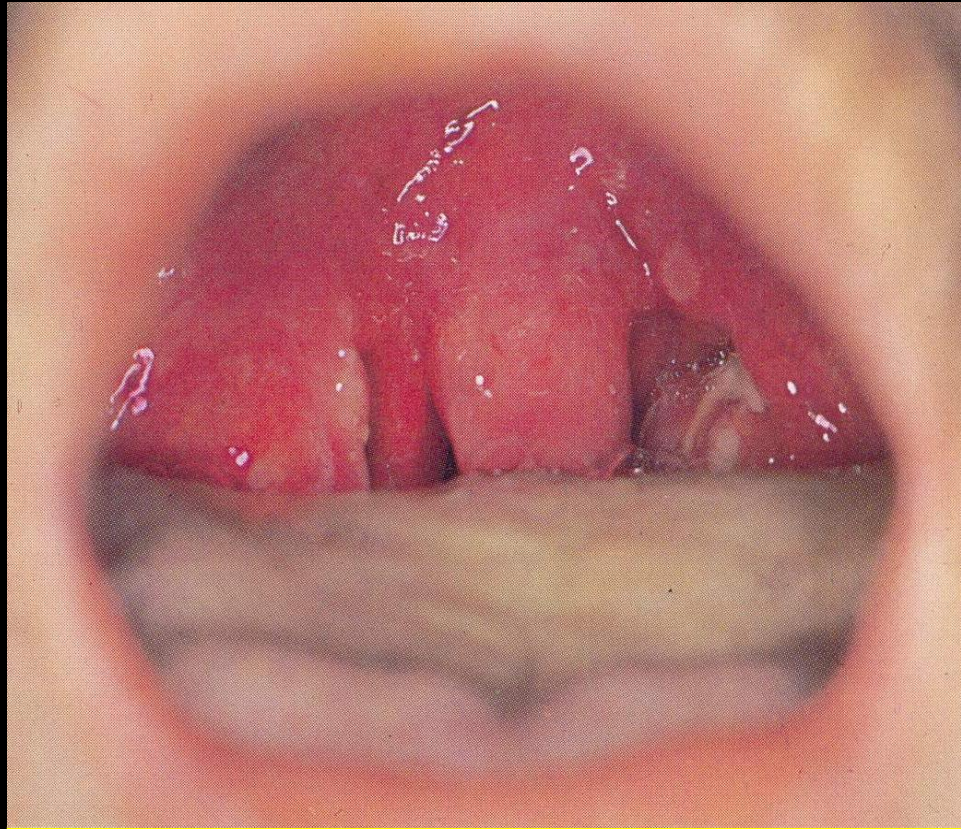
SIGNS AND SYMPTOMS IN INFECTIONS

Measles



SIGNS AND SYMPTOMS IN INFECTIONS

Pharyngitis and Tonsillitis



Pharyngitis, exudative tonsillitis



Pharyngitis, palatal petechiae

SIGNS AND SYMPTOMS IN INFECTIONS

Pharyngitis and Tonsillitis



White strawberry tongue



Red strawberry tongue

SIGNS AND SYMPTOMS IN INFECTIONS

Pharyngitis and Tonsillitis

Scarlet fever



Circumoral pallor



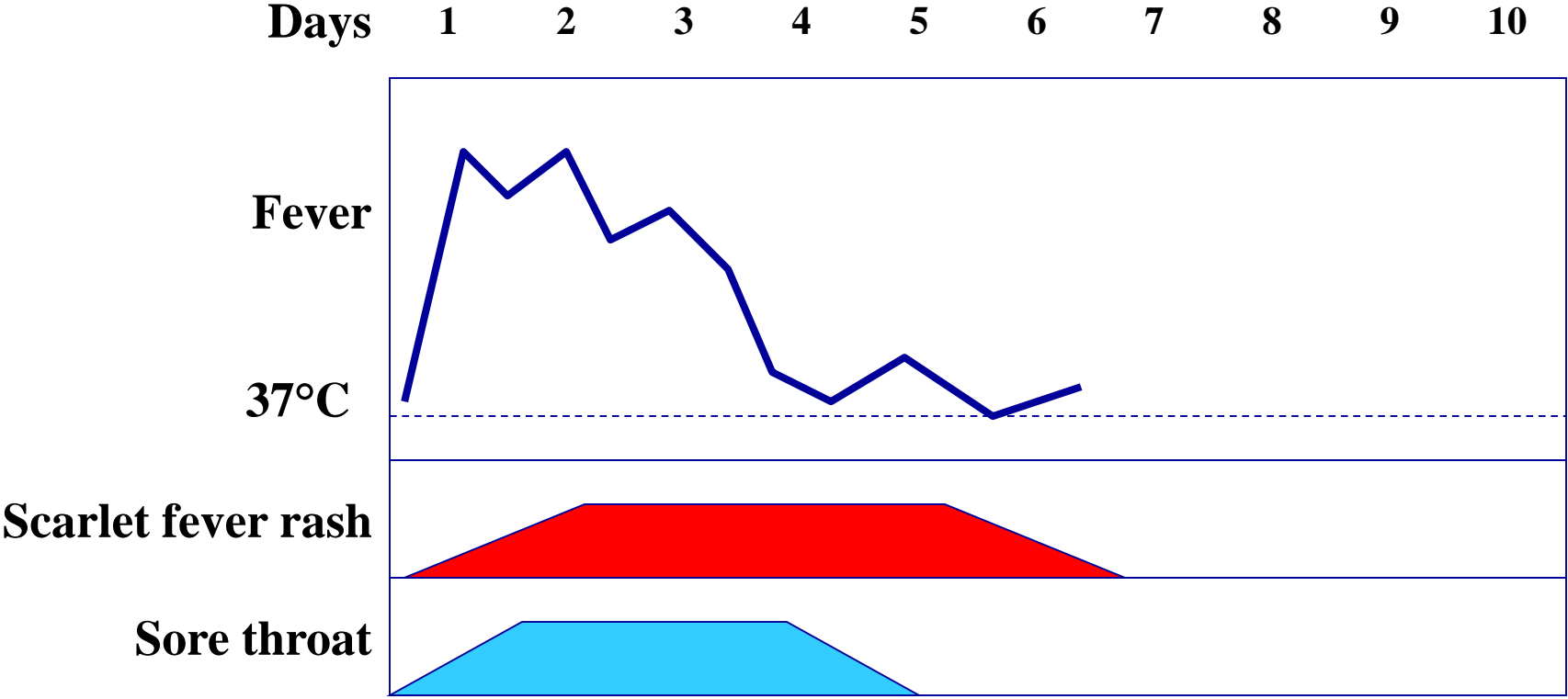
Sandpaper-like rash



Pastia's lines

SIGNS AND SYMPTOMS IN INFECTIONS

Scarlet Fever



SIGNS AND SYMPTOMS IN INFECTIONS

Rubella



Forchheimer's spots



Rubella rash

SIGNS AND SYMPTOMS IN INFECTIONS

Rubella



Suboccipital lymph nodes

FIG 1. Photograph of a 2-year-old boy with rubella showing bilateral suboccipital lymph nodes and a maculopapular rash on the back. One of the lymph nodes is indicated by a white arrow



Posterior auricular lymph nodes

SIGNS AND SYMPTOMS IN INFECTIONS

Rubella

Days 1 2 3 4 5 6 7 8 9 10

Fever

37°C

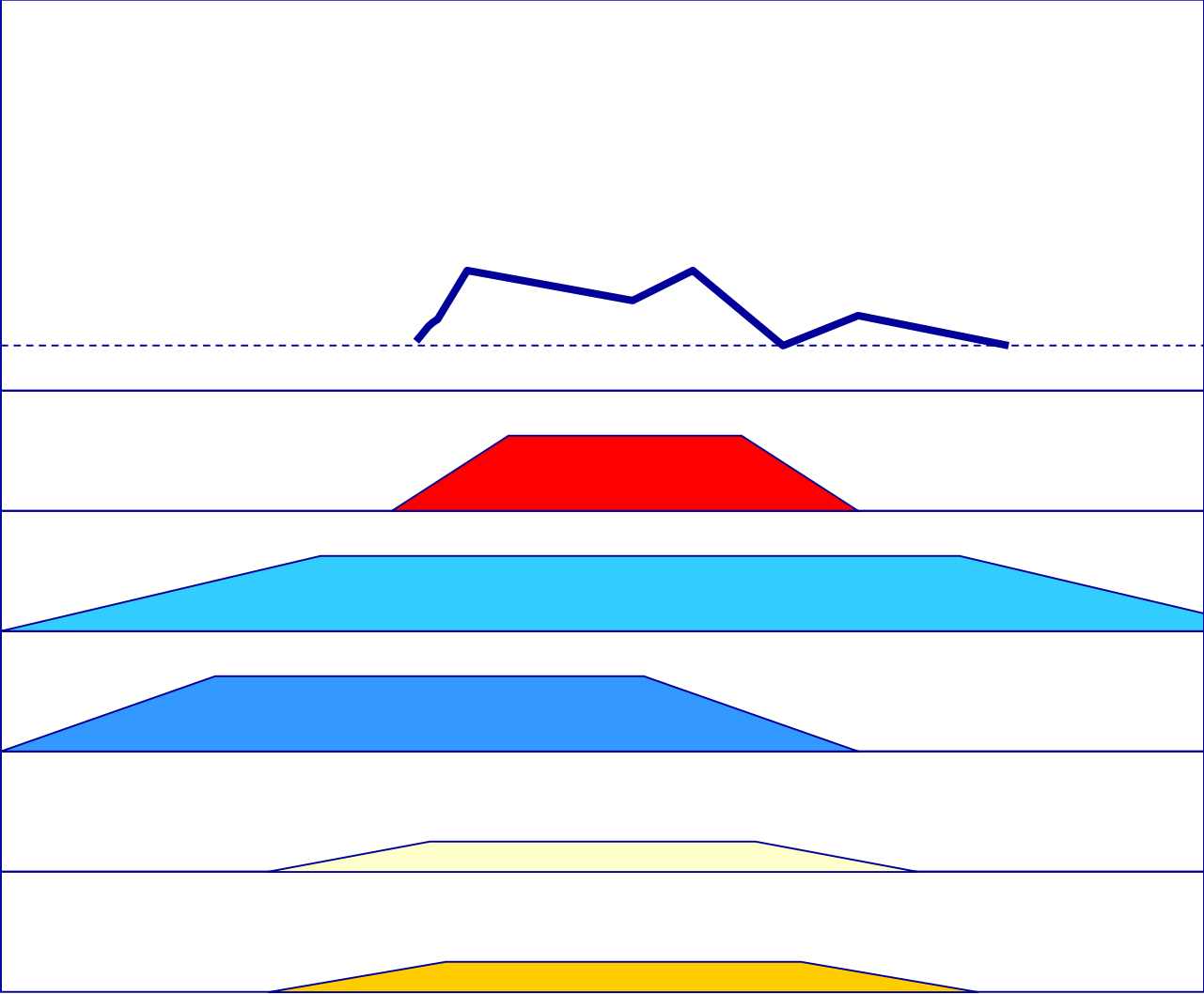
Rash

Lymphadenopathy

Malaise

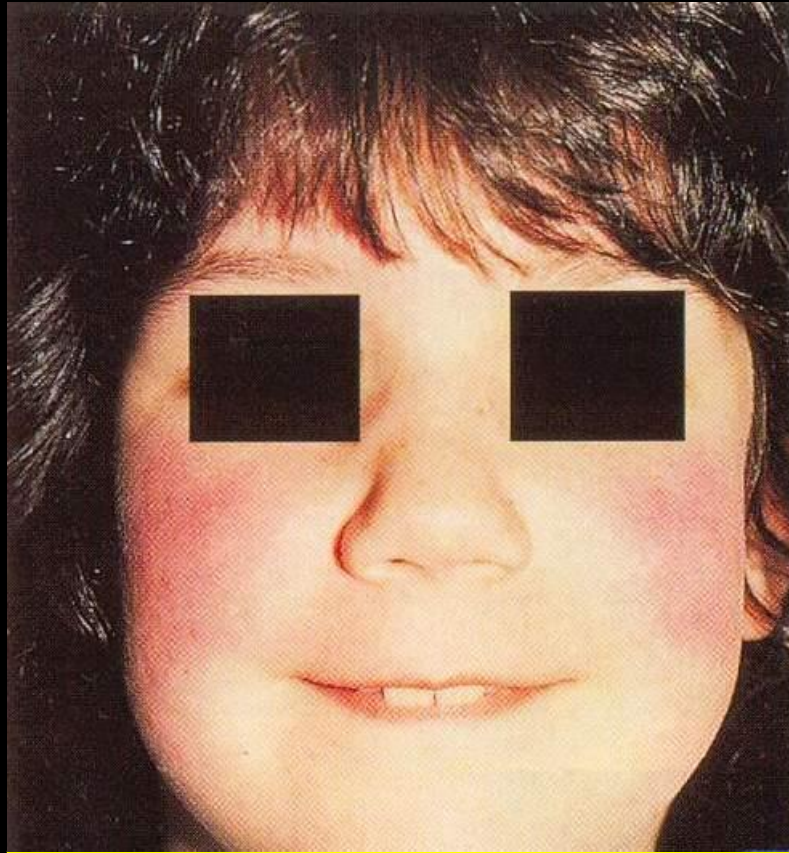
Conjunctivitis

Rhinorrhea



SIGNS AND SYMPTOMS IN INFECTIONS

Fifth Disease (Erythema Infectiosum)



"Slapped cheek" rash



Fifth disease "lacy" rash

SIGNS AND SYMPTOMS IN INFECTIONS

Sixth Disease (Roseola Infantum)



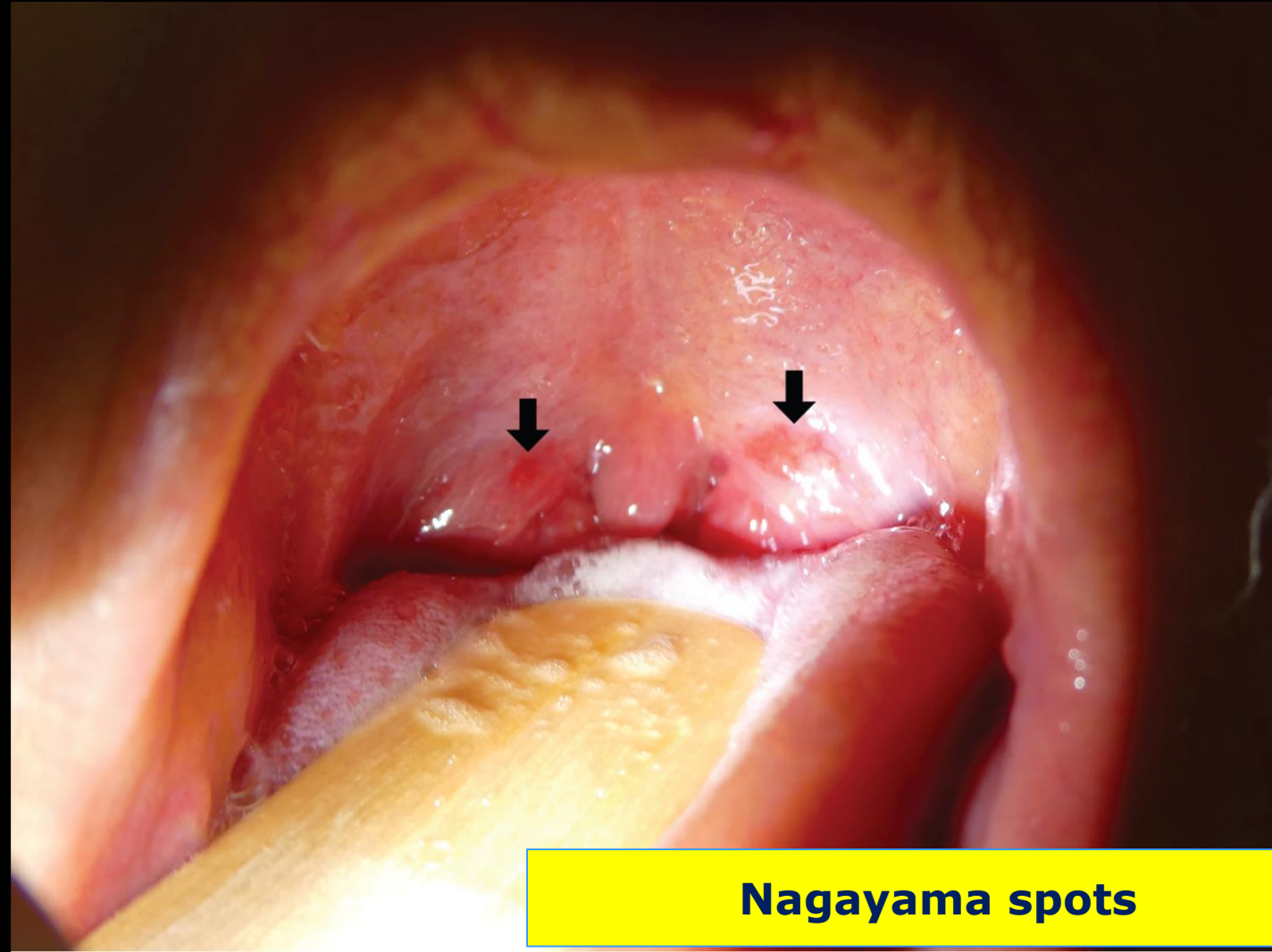
Sixth disease rash



Sixth disease rash

SIGNS AND SYMPTOMS IN INFECTIONS

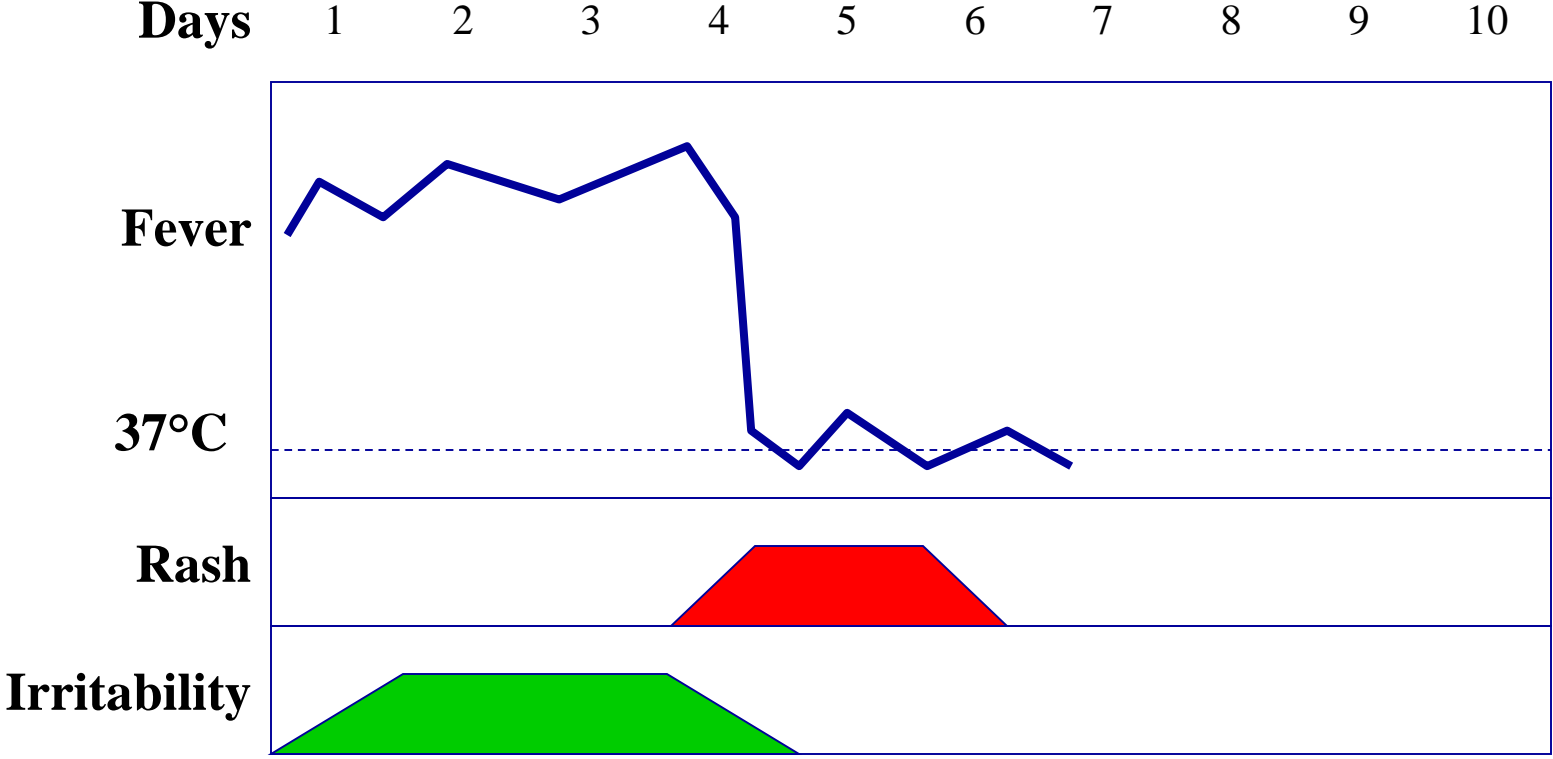
Sixth Disease (Roseola Infantum)



Nagayama spots

SIGNS AND SYMPTOMS IN INFECTIONS

Sixth Disease (Roseola Infantum)



SIGNS AND SYMPTOMS IN INFECTIONS

Chickenpox



Polimorph rash



Oral chickenpox lesions



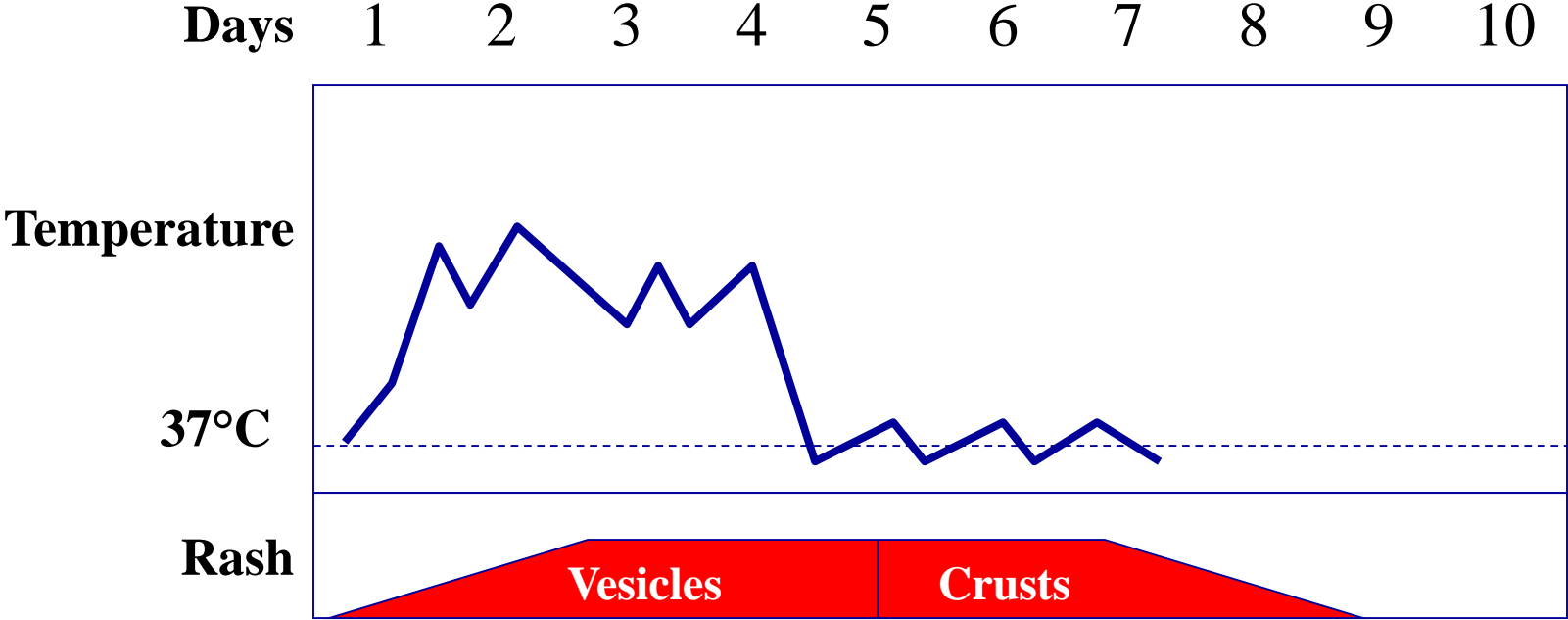
Severe chickenpox rash





SIGNS AND SYMPTOMS IN INFECTIONS

Chickenpox



SIGNS AND SYMPTOMS IN INFECTIONS

Herpes Zoster After Chickenpox



Herpes zoster



Herpes zoster

SIGNS AND SYMPTOMS IN INFECTIONS

Movie Recommendation

The Andromeda Strain (1971)


When in Southern California visit Universal Studios

Rated **G**
but may be too intense
for younger
children.

The picture
runs 130 minutes!...

The story
covers 96 of the most critical hours in man's history!...

The suspense
will last through your lifetime!



A ROBERT WISE PRODUCTION
From the Best Seller by MICHAEL CRICHTON
THE ANDROMEDA STRAIN
STARRING
ARTHUR HILL · DAVID WAYNE · JAMES OLSON · KATE REID
Production Designed by BORIS LEVEN · NELSON GIDDING · Screenplay by MICHAEL CRICHTON · Directed by ROBERT WISE · Music by GIL MELLÉ
Soundtrack Album exclusively on Kapp Records
A UNIVERSAL PICTURE
TECHNICOLOR® PANAVISION®
NOTE: NO ONE WILL BE SEATED EXCLUSIVELY DURING THE LAST 10 MINUTES.