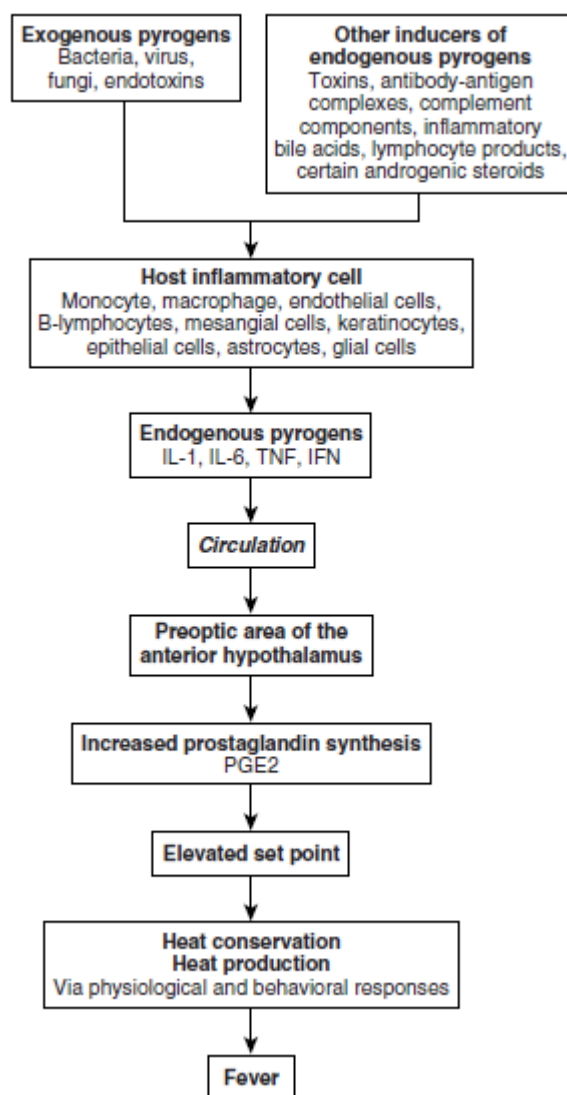


FEVER

What is fever?

Fever is defined as a rectal temperature $\geq 38^{\circ}\text{C}$ (100.4°F), and a value $>40^{\circ}\text{C}$ (104°F) is called hyperpyrexia. Body temperature fluctuates in a defined normal range ($36.6\text{--}37.9^{\circ}\text{C}$ [$97.9\text{--}100.2^{\circ}\text{F}$] rectally), so that the highest point is reached in early evening and the lowest point is reached in the morning. Any abnormal rise in body temperature should be considered a symptom of an underlying condition (Nelson)



What are the causes of fever?

The causes of fever can be organized into 4 main categories: infectious, inflammatory, neoplastic, and miscellaneous. Self-limited viral infections (common cold, gastroenteritis) and uncomplicated bacterial infections (otitis media, pharyngitis, sinusitis) are the most common causes of acute fever.

What are the associated symptoms?

Altered sensorium: encephalitis

Seizure: febrile seizure, meningitis

Cough, fast breathing: pneumonia

Fever, rash, abdominal pain, bleeding: dengue

Dysuria, frequency: UTI

Sore throat, drooling, oral ulcer

Ear discharge, earache: otitis media

Diarrhoea, vomiting: AD

Cold, coryza, conjunctivitis: measles

Fever, rash, fever abates with appearance of rash: exanthema subitum

What is fever without focus?

Fever without a focus refers to a rectal temperature of 38°C (100.4°F) or higher as the sole presenting feature. Fever of acute onset, with duration of <1 wk and without localizing signs, is a common diagnostic dilemma in children <36 mo of age. The etiology and evaluation of fever without localizing signs depends on the age of the child. Traditionally, 3 age groups are considered: neonates or infants to 1 mo of age, infants >1 mo to 3 mo of age, and children >3 mo to 3 yr of age.

What are the common causes of fever in neonate?

Consider a neonate with as having serious bacterial infection until proved otherwise. In general, neonates who have a fever and do not appear ill have a 7% risk of having a serious bacterial infection. **Serious bacterial infections include bacteremia, meningitis, pneumonia, osteomyelitis, septic arthritis, enteritis, and urinary tract infections.** If excessive clothing and blankets encasing the infant are suspected of falsely elevating the body temperature, then the excessive coverings should be removed and the temperature retaken in 15-30 min.

Owing to the unreliability of physical findings and the presence of an immature immune system, all febrile neonates should be hospitalized; blood, urine, and cerebrospinal fluid (CSF) should be cultured, and the child should receive empirical intravenous antibiotics

What all points in history to be noted?

In the patient's history, ask about the following: onset, pattern, and degree of fever, intermittent or remittant; perinatal risk factors (i.e., prematurity, maternal fever, herpes infection, premature rupture of membranes, prolonged nursery stay with antibiotic treatment); alterations in the mental status and normal level of activity (i.e., playfulness, irritability, feeding and sleeping patterns, responsiveness, seizures); respiratory symptoms (i.e., cough, congestion, coryza, fast or difficult

breathing, chest indrawing [retractions]); and gastrointestinal symptoms (i.e., vomiting, diarrhea, abdominal distention, blood in stools).

What all points to be noted in physical examination?

B. On physical examination, look, listen, and feel for findings that suggest meningitis, such as a full fontanelle and being too weak to feed, difficult to arouse, or extremely irritable. It is more difficult to evaluate infants who have not developed a social smile (4–6 weeks) or the ability to make eye contact. An infant's smile is a useful negative predictor of meningitis.

Note signs of perfusion, such as color and warmth of the extremities and capillary refill time (.2 seconds is abnormal). Findings of acute otitis media include tympanic membrane with decreased mobility, opaque rather than translucent, and bulging contour. Findings of pneumonia are tachypnea, retractions, grunting, and crackles.

Soft tissue cellulitis or abscess (especially omphalitis) is suggested by swelling, erythema, induration, tenderness, and warmth of tissue. Bone or joint infection presents with limitation of motion, sometimes with pain or swelling; enteroviral infection presents with rash, erythematous

macules, and hand, foot, and mouth lesions. *Neisseria meningitidis* bacteremia is often associated with petechiae or purpura

What are the common causes of fever in 1-3 months ?

The large majority of children with fever without localizing signs in the 1-3 mo age group likely have a viral syndrome.

In contrast to bacterial infections, most viral diseases have a distinct seasonal pattern: respiratory syncytial virus and influenza A virus infections are more common during the winter, whereas enterovirus and parechovirus infections usually occur in the summer and fall.

Although a viral infection is the most likely etiology, fever in this age group should always suggest the possibility of serious bacterial disease. Organisms to consider include *E. coli*, group B *Streptococcus*, *L. monocytogenes*, *Salmonella enteritidis*, *N. meningitidis*, *S. pneumoniae*, *H. influenzae* type b, and *S. aureus*. Pyelonephritis is the most common serious bacterial infection in this age group and is also more common in uncircumcised infant boys and infants with urinary tract anomalies. *E. coli* is the most common pathogen identified in bacteremic infants, the majority having pyelonephritis. Group B *Streptococcus* followed by *S. aureus* are the next most frequently identified pathogens causing bacteremia; pneumococcus tends to be seen in older infants.

What are the common causes of fever in >3 months?

Fever is documentation of a rectal temperature of at least 38° C (100.4° F) in an infant or child 3 to 36 months of age. Fever without source is an acute febrile illness in which no probable cause can be identified with a careful history and physical examination. Serious bacterial infections include bacterial meningitis, bacteremia, bacterial pneumonia, urinary tract infections, bacterial enteritis, cellulitis, and bone and joint infections

What are the points to be highlighted in history?

In the history, ask about the onset, pattern, and degree of the fever. Evaluate the family's ability to care for the child at home, and their access to transportation and a telephone. Risk factors include immunization status; current medications; allergies; underlying conditions, such as cardiopulmonary, gastrointestinal, or renal disease; sickle cell disease; central venous catheter and other indwelling lines; and conditions and therapy that compromise immunity, especially human immunodeficiency virus infection. Assess alterations in the mental status and normal level of activity: playfulness,

irritability, feeding and sleeping patterns, responsiveness, and seizures. Note any respiratory symptoms:

cough, congestion, coryza, sore throat, earache, fast or difficult breathing, or chest indrawing (retractions).

Check for gastrointestinal symptoms: vomiting, diarrhea, abdominal distention, abdominal pain, or blood in stools. Assess renal symptoms: pain with urination (dysuria), urinary frequency, flank pain, or lower abdominal pain.

What all points in examination is to be noted?

On physical examination, look, listen, and feel for findings that suggest the following: meningitis (full fontanelle, too weak to feed, difficult to arouse, unresponsive, extreme or paradoxical irritability, nuchal rigidity, and Brudzinski and Kernig signs); an infant's smile is a useful negative predictor of meningitis; dehydration and poor perfusion (skin turgor, tears, moist mucous membranes, color and warmth of the extremities, and capillary refill time [≥ 2 seconds is abnormal]); acute otitis media (tympanic membrane

with decreased mobility, opaque with obscured landmarks, bulging contour); pneumonia (tachypnea, retractions, grunting, crackles); adenitis, soft tissue cellulitis, or abscess (swelling, erythema, induration, pain, warmth of tissue); bone or joint infection (painful swelling with limitation of motion); enteroviral infection (rash, erythematous exanthem, and hand, foot, and mouth lesions); *N. meningitidis* bacteremia (petechiae, purpura).

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