



serotonin. Occasionally, persons with CNS disorders such as paraplegia and persons with severe dermatologic conditions are unable to dissipate heat and can experience hyperthermia.

*Hyperpyrexia* is the term for extraordinarily high fever ( $>41.5^{\circ}\text{C}$  or  $106.7^{\circ}\text{F}$ ), which can occur in patients with severe infections but is most commonly observed in persons with CNS hemorrhages.

### DIAGNOSTIC APPROACH TO THE ACUTELY ILL PATIENT WITH FEVER

Patterns of fever should be considered when assessing acutely ill, febrile persons. Evaluation includes determining the normal diurnal variation in body temperature, which often persists when patients have fever. Normally, body temperature peaks in the late afternoon or early evening.

Rigors (i.e., bed-shaking chills) often mark the onset of bacterial infection, typically bacteremia, although they may occur in other clinical situations, such as drug-induced fever or transfusion reactions. Wide swings in temperature may indicate an abscess. Malaria should be considered for anyone with fever who has visited or lived in malarious regions or who has relapsing fever accompanied by episodes of shaking chills and high fever separated by 1 to 3 days of normal body temperature and relative well-being. The timing of administration of anti-inflammatory drugs should be assessed because they may alter or blunt the febrile response. Most infectious diseases manifest with fever as an early finding and with subclinical and eventual clinical involvement of specific organ systems.

If fever occurs as the sole complaint or is associated with localized symptoms and signs, the diagnostic approach includes taking a thorough history, including an extensive review of systems, medical and surgical histories, and immunizations, including those from childhood. Antipyretics may be withheld to allow assessment of the fever trajectory. Elderly individuals, persons taking corticosteroids, and patients with chronic liver or renal disease may be less likely to mount a fever. All likely sources of disease, including travel, exposure to *Mycobacterium tuberculosis*, and occupational, hobby, animal, insect, and sexual contacts, should be assessed. Previous itineraries and activities, geographic risks of diseases, and the seasonality and incubation periods of possible disease exposures should be considered in returning travelers (Table 88-1).

### Viral Infection

Acute febrile illnesses in young healthy adults usually are caused by viral infections, which do not require precise diagnosis because they are self-limited and seldom have therapeutic options. Upper respiratory tract symptoms of rhinorrhea, sore throat, cough, and hoarseness most often result from rhinovirus, coronavirus, parainfluenza virus, and adenoviruses. Adenovirus outbreaks occur among persons living in close quarters such as military barracks or college dormitories. Respiratory syncytial virus, human metapneumovirus, and human bocavirus infections occur in similar conditions and sometimes manifest with pneumonia.

A coronavirus causes the potentially fatal upper respiratory viral infection called *Middle East respiratory syndrome* (MERS).

**TABLE 88-1** COMMON INFECTIONS IN TRAVELERS BY INCUBATION PERIOD

DISEASE	USUAL INCUBATION PERIOD (RANGE)	DISTRIBUTION
<b>INCUBATION &lt;14 DAYS</b>		
Malaria, <i>Plasmodium falciparum</i>	6-30 days	Tropics, subtropics
Dengue	4-8 days (3-14 days)	Tropics, subtropics
Chikungunya	2-4 days (1-14 days)	Tropics, subtropics (Eastern Hemisphere)
Spotted fever, rickettsiae	Few days to 2-3 weeks	Causative species vary by region
Leptospirosis	7-12 days (2-26 days)	Widespread; most common in tropical areas
Enteric fever	7-18 days (3-60 days)	Especially in Indian subcontinent
Malaria, <i>Plasmodium vivax</i>	8-30 days (often >1 month to 1 year)	Widespread in tropics/subtropics
Influenza	1-3 days	Worldwide; can also be acquired en route
Acute human immunodeficiency virus (HIV) infection	10-28 days (10 days to 6 weeks)	Worldwide
Legionellosis	5-6 days (2-10 days)	Widespread
Encephalitis, arboviral (e.g., Japanese encephalitis, tick-borne encephalitis, West Nile virus)	3-14 days (1-20 days)	Specific agents vary by region
<b>INCUBATION 14 DAYS TO 6 WEEKS</b>		
Malaria, enteric fever, leptospirosis	See earlier incubation periods for relevant diseases	See earlier distribution for relevant diseases
Hepatitis A	28-30 days (15-50 days)	Most common in developing countries
Hepatitis E	26-42 days (2-9 weeks)	Widespread
Acute schistosomiasis (Katayama syndrome)	4-8 weeks	Most common after travel to sub-Saharan Africa
Amebic liver abscess	Weeks to months	Most common in developing countries
<b>INCUBATION &gt;6 WEEKS</b>		
Malaria, amebic liver abscess, hepatitis E, hepatitis B	See earlier incubation periods for relevant diseases	See earlier distribution for relevant diseases
Tuberculosis	Primary, weeks; reactivation, years	Global distribution; rates and levels of resistance vary widely
Leishmaniasis, visceral	2-10 months (10 days to years)	Asia, Africa, South America

Modified from Centers for Disease Control and Prevention: CDC health information for international travel, 2012, New York, 2012, Oxford University Press.