

# Health issues during Hajj

## Ahmed Saad

Department of Internal Medicine & Infectious Diseases, Cairo University, Cairo, Egypt

Correspondence to Ahmed Saad, MD, FACP, Department of Internal Medicine & Infectious Diseases, Cairo University, Cairo, Egypt  
e-mail: medosaad@yahoo.com

Egypt J Intern Med 29:37–39  
© 2017 The Egyptian Journal of Internal Medicine  
1110-7782

**Received** 5 March 2017

**Accepted** 1 May 2017

**The Egyptian Journal of Internal Medicine**  
2017, 29:37–39

---

### Immunizations

All pilgrims should be up-to-date with routine immunizations. In addition, hepatitis A and B and typhoid vaccines are recommended. Children up to 15 years of age must show proof of vaccination with quadrivalent meningococcal vaccine [1].

---

### Meningococcal vaccine

Because of the intensely crowded conditions of the Hajj and high carrier rates of *Neisseria meningitidis* among pilgrims, outbreaks of meningococcal disease have historically been a problem during Hajj. In the aftermath of outbreaks in 2000 and 2001 that affected 1300 and 1109 people, respectively, the Saudi Ministry of Health began requiring all pilgrims and local at-risk populations to receive the meningococcal vaccine. Hajj visas cannot be issued without proof of meningococcal vaccination. All adults and children more than 2 years of age must have received a single dose of quadrivalent A/C/Y/W-135 vaccine and must show proof of vaccination on a valid International Certificate of Vaccination or Prophylaxis. Hajj pilgrims must have received the meningococcal vaccine less than or equal to 3 years and at least 10 days before arriving in Saudi Arabia. Now the conjugate vaccine is available, which is good coverage for 5 years [1].

---

### Respiratory infections

Respiratory tract infections are common during Hajj; the most common cause of hospital admission is pneumonia. These risks underscore the need to follow the Advisory Committee on Immunization Practices' recommendations for pneumococcal polysaccharide vaccine for pilgrims aged at least 65 years and for younger pilgrims with comorbidities. Seasonal influenza vaccine, including H1N1, is strongly recommended for

all pilgrims. Behavioral interventions such as hand hygiene, wearing a face mask, cough etiquette, social distancing, and contact avoidance can be effective at mitigating respiratory illness among Hajj pilgrims. Pre-Hajj travel advice about common respiratory conditions should include a general assessment for respiratory fitness, necessary vaccinations, and prescription of adequate supplies of portable respiratory medications (prefer inhalers over nebulizers).

The crowded conditions during Hajj increase the probability of tuberculosis transmission. Pilgrims are advised to see their doctors if they develop signs of active tuberculosis: cough with sputum and blood at times, chest pains, weakness, weight loss, fever, and night sweats [2].

Middle East respiratory syndrome was first identified in Saudi Arabia in 2012. The illness is caused by a novel coronavirus that is similar to the virus responsible for the 2003 global outbreak of severe acute respiratory syndrome. Cases have been identified in and around the Arabian Peninsula, but cases have also been exported to other countries, including the United States. The most common symptoms include fever, cough, and shortness of breath. However, myalgias, diarrhea, vomiting, abdominal pain, thrombocytopenia, and leukopenia have also been reported. The severity of illness has ranged from mild to severe, and ~35% of reported cases have been fatal. The role of animal-to-human transmission is unclear, but the virus has been found in camels in this region. The diagnosis can be

---

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work noncommercially, as long as the author is credited and the new creations are licensed under the identical terms.

suspected on clinical grounds and confirmed by PCR testing [3].

---

## Other health and safety risks

### Communicable diseases

Diarrheal disease is common during Hajj, and travelers should be educated on usual prevention measures and self-treatment. A pretravel visit should include discussions about prevention, oral rehydration strategies, antimotility agents, and emergency antibiotic use for treatment of traveler's diarrhea [4].

Clothing should be light, not restrictive, and changed often to maintain hygiene. Travelers should be advised to keep skin dry, use talcum powder, and be aware of any pain or soreness caused by garments. Any sores or blisters that develop should be disinfected and kept covered. Special attention should be paid to protect the feet, which are bare when inside the Grand Mosque.

At the end of Hajj, Muslim men must shave their heads. The use of unclean blades can transmit blood-borne pathogens, such as hepatitis B, hepatitis C, and HIV. Licensed barbers are tested for these blood-borne pathogens and are required to use disposable, single-use blades. Unfortunately, unlicensed barbers continue to operate by the roadside, where they use nonsterile blades on multiple men. Male travelers should be advised to be shaved only at officially designated centers, which are clearly marked [5].

### No communicable diseases and other hazards

Hajj is arduous even for young, healthy pilgrims, and many Muslims wait until they are older before making Hajj. Pilgrims who are caught up in the spiritual experience of Hajj may forget to take their usual medications. Travelers with chronic medical conditions should undergo a functional assessment before leaving for Hajj. The medical provider should identify each traveler's unique risks and tailor a plan on how to reduce them. The provider should make any adjustments to the usual medical regimen, ensure that the traveler has an adequate supply of medications, and educate the traveler about symptoms that should prompt urgent medical attention [6].

Heat exhaustion and heatstroke are leading causes of death, particularly when Hajj occurs during the summer months. Pilgrims should stay hydrated, wear

sunscreen, and seek shade when possible. Umbrellas are frequently used to provide portable sun protection. Travelers should be counseled on minimizing the risk for heat-related injuries as well as on sun avoidance. Some rituals may also be performed at night to avoid daytime heat. Pilgrims can be reassured that night rituals have been advocated as legitimate by religious clerics.

Fire is a potential risk at Hajj. In 1997, open stoves set tents on fire, and the resulting blaze killed 343 pilgrims and injured more than 1500. As a result, makeshift tents were replaced with permanent fiberglass structures; no pilgrim is allowed to set up his or her own tent or prepare his or her own food. Cooking in the tents is also prohibited [4].

### Trauma

Trauma is a major cause of injury and death during Hajj. Pilgrims may walk long distances through or near dense traffic, and motor vehicle accidents are inevitable. The most feared trauma hazard, however, is stampede. In such dense crowds, little can be done to avoid or escape a stampede once it has begun, but the physical environment of the Hajj has been engineered specifically to minimize this risk. Past stampedes have often begun as minor incidents; the 2006 Hajj stampede, for example, began when some pilgrims tripped over fallen luggage, but it resulted in hundreds of injuries and deaths. Death usually results from asphyxiation or head trauma, and providing prompt treatment is next to impossible in large crowds [7].

---

## Special health considerations

### Menstruation

Women are not permitted to perform *Tawaf* around the Ka'aba stone if they are menstruating. The remainder of the rituals may be performed during menstruation if the *Tawaf* was performed before the menstrual period began. Thus, a female Hajj pilgrim who suspects that she may be menstruating during the Hajj may request hormonal suppression of menstrual bleeding [8].

### Diabetes mellitus

Muslims with diabetes planning to make Hajj should make a pre-Hajj travel clinic visit with enough advanced notice to carefully construct a diabetes management plan tailored to the health challenges of the Hajj. Diabetic patients should ensure adequate prescriptions for all medications, including syringes and needles. A diabetes emergency kit should

include easily accessible carbohydrate sources to counter hypoglycemia, glucometer and test strips, urine ketone sticks to evaluate for ketoacidosis, a list of medications and care plans, and glucagon as indicated. Finally, durable and protective footwear are necessary to avoid minor foot trauma that can lead to infections [9].

### Epilepsy

Before making Hajj, a pilgrim's seizure disorder must be controlled on stable doses of medications. Before departure, Hajj travelers should ensure that they have adequate supplies of routine medications, as well as a buccal or rectal formulation of antiseizure medications [8].

---

### Saudi government safety measures

The Saudi government has created a Ministry of Hajj that collaborates with the Ministry of Health to improve pilgrims' experience, including mitigating health risks during Hajj. The hospitals and health centers in and around the holy sites are adequately staffed and equipped for the large gathering. The medical facilities offer high quality of care, and services are offered free to Hajj pilgrims.

To ensure efficient transport through the King Abdulaziz International Airport in Jeddah, the Saudi government has built a modern airport terminal solely dedicated to Hajj pilgrims. Furthermore, modern modes of transportation (light rail, 15 000 Hajj dedicated buses, and even high-speed rail lines) have been developed to safely transport pilgrims to the city of Mecca and other holy sites.

To mitigate the risk for heat exposure during this journey, the government provides complimentary water distributed from refrigerated trucks, more air

conditioned sites (tents at Mina), large sun-blocking canopies, and thousands of fine mist sprinklers. To further protect themselves, travelers are urged to avoid the most densely crowded areas during Hajj. When the option exists, performance of rituals at nonpeak hours is encouraged. For example, most pilgrims prefer to perform the Stoning of the Devil at midday, but Saudi authorities have decreed that it may be performed anytime between sunrise and sunset or even by proxy, if the pilgrim cannot access the Jamarat bridge [10].

I pray for Allah to accept our good deeds and give us the chance of Hajj.

---

### References

- 1 Ahmed QA, Arabi YM, Memish ZA. Health risks at the Hajj. *Lancet* 2006;367:1008-1015.
- 2 Khan NA, Ishag AM, Ahmad MS, El-Sayed FM, Bachal ZA, Abbas TG. Pattern of medical diseases and determinants of prognosis of hospitalization during 2005 Muslim pilgrimage Hajj in a tertiary care hospital. A prospective cohort study. *Saudi Med J* 2006;27:1373-1380.
- 3 Assiri A, Al-Tawfiq JA, Al-Rabeeah AA, Al-Rabiah FA, Al-Hajjar S, Al-Barrak A, *et al.* Epidemiological, demographic, and clinical characteristics of 47 cases of Middle East respiratory syndrome coronavirus disease from Saudi Arabia: a descriptive study. *Lancet Infect Dis* 2013;13:752-761.
- 4 Alzahrani AG, Choudhry AJ, Al Mazroa MA, Turkistani AH, Nouman GS, Memish ZA. Pattern of diseases among visitors to Mina health centers during the Hajj season, 1429 H (2008 G). *J Infect Public Health* 2012;5:22-34.
- 5 Balaban V, Stauffer WM, Hammad A, Afgarshe M, Abd-Alla M, Ahmed Q, *et al.* Protective practices and respiratory illness among US travelers to the 2009 Hajj. *J Travel Med* 2012;19:163-168.
- 6 Memish ZA. The Hajj: communicable and non-communicable health hazards and current guidance for pilgrims. *Euro Surveill* 2010;15:19671.
- 7 Memish ZA. Saudi Arabia has several strategies to care for pilgrims on the Hajj. *BMJ* 2011;343:d7731.
- 8 Memish ZA, Al-Rabeeah AA. Health conditions of travellers to Saudi Arabia for the pilgrimage to Mecca (Hajj and Umra) for 1434 (2013). *J Epidemiol Glob Health* 2013;3:59-61.
- 9 Alsafadi H, Goodwin W, Syed A. Diabetes care during Hajj. *Clin Med* 2011;11:218-221.
- 10 World Health Organization. Health conditions for travellers to Saudi Arabia pilgrimage to Mecca (Hajj). *Wkly Epidemiol Rec* 2005;80:431-432.