



AMERICAN SOCIETY OF TROPICAL MEDICINE & HYGIENE  
ADVANCING GLOBAL HEALTH SINCE 1903

## Certificate of Knowledge in Clinical Tropical Medicine and Travelers' Health (CTropMed<sup>®</sup> Examination)

Striving for Professional Excellence in  
Clinical Tropical Medicine and Travelers' Health

**November 14, 2020**  
Metro Toronto Convention Centre  
Toronto, Ontario, Canada



#TropMed20

Sample  
questions  
included

see page 15 >>>>

# Certificate of Knowledge in Clinical Tropical Medicine and Travelers' Health (CTropMed® Examination)

Fostering professional development in the fields of clinical tropical medicine and travelers' health is one of the Society's highest priorities. To that end, ASTMH developed the Certificate in Clinical Tropical Medicine and Travelers' Health (CTropMed® Examination) as a means to distinguish individuals who have demonstrated advanced knowledge and experience in these fields. The Certificate of Knowledge in Clinical Tropical Medicine and Travelers' Health is conferred on licensed healthcare professionals who 1) have passed an ASTMH accredited training (diploma) course or have extensive professional experience in clinical tropical medicine, 2) have experience in a clinical setting in the tropics, and 3) have passed the ASTMH Examination in Clinical Tropical Medicine and Travelers' Health.

To support this process, ASTMH accredits specific diploma courses that meet rigorous standards for excellence in clinical training developed by the Society. Successful completion of one of these courses (see page 3) prepares the individual to sit for the examination. Established by ASTMH in 1995, the examination assesses and recognizes individual excellence in training and knowledge. Fulfilling these criteria confers eligibility for the CTropMed® examination and indicates that the candidate has achieved the ASTMH standard of excellence in knowledge and expertise in clinical tropical medicine and travelers' health.

## Table of Contents

CTropMed® Examination Eligibility Requirements. . . . .	2
About the Examination . . . . .	5
Applying for the Examination . . . . .	5
Application Instructions and Documents . . . . .	6
Approval to Take Examination . . . . .	7
Test Center Procedures . . . . .	7
Scoring . . . . .	8
Examination Results. . . . .	8
Special Circumstances. . . . .	8
Receiving the CTropMed® Certificate . . . . .	9
Examination Study Guide . . . . .	11
Examination Outline . . . . .	11
Sample Questions . . . . .	15
References. . . . .	16

## About the Certificate of Knowledge in Clinical Tropical Medicine and Travelers' Health (CTropMed® Examination)

The eligibility requirements and examination materials are developed based on a review and analysis of the current state of medical and scientific knowledge in the fields of clinical tropical medicine and travelers' health.

## Who Can Apply for the CTropMed® Examination

Open to any licensed healthcare professional (physician, physician assistant, nurse, nurse practitioner) in the United States or Canada or the equivalent elsewhere in the world. Physicians must have an unconditional, unrestricted license to practice medicine. Nurses must have a current, unencumbered license as a registered nurse valid through the date of the examination. Students may apply under specific circumstances (see page 3, Diploma Course Pathway).

## When:

**November 14, 2020**  
**8:00 a.m. – Noon**  
Metro Toronto  
Convention Centre  
Toronto, ON, Canada

## Fees:

**ASTMH Member**  
**Early-bird rate \$475**  
(\$605 after May 6)

**ASTMH Nonmember**  
**Early-bird rate \$580**  
(\$710 after May 6)

## 1. Obtain Eligibility Through a) Diploma Course or b) Practice Pathway

### Diploma Course

- Successful completion of an ASTMH-approved diploma course in tropical medicine. The course must have been accredited at the time the diploma was awarded. Course must be completed prior to June 8, 2020.
- If more than five years since completion of diploma course:
  - physicians and physician assistants must provide documentation of 15 hours of continuing education credit in tropical and/or travel medicine. Include a copy of the certificate(s) of attendance issued by the continuing education provider.
  - nurses must provide documentation of continuing education credit in a related field. Include a copy of the certificate(s) of attendance issued by the continuing education provider.
- A license is not required for students in healthcare professions who wish to sit for the examination and are applying via the diploma course pathway. However, ASTMH will hold the certificates of those who pass the examination until a copy of the unconditional, unrestricted license to practice has been received.

### ASTMH-accredited Diploma Courses:

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• Diploma in Tropical Medicine, Baylor College of Medicine</li> <li>• Diploma in Tropical Medicine, Baylor International Pediatric AIDS Initiative</li> <li>• Diploma in Tropical Medicine, Bernhard Nocht Institute</li> <li>• Gorgas Memorial Institute of Tropical and Preventive Medicine</li> <li>• Diploma in Tropical Medicine and Public Health, Charité University Medicine Berlin, Humboldt University and Free University Berlin</li> <li>• Summer Institute in Tropical Medicine and Public Health, Johns Hopkins Bloomberg School of Public Health</li> <li>• Diploma in Tropical Medicine &amp; Hygiene, Liverpool School of Tropical Medicine</li> <li>• Diploma in Tropical Medicine &amp; Hygiene, London School of Hygiene and Tropical Medicine</li> <li>• East African Diploma in Tropical Medicine and Hygiene, London School of Hygiene &amp; Tropical Medicine</li> </ul> | <ul style="list-style-type: none"> <li>• Graduate Diploma in Tropical Medicine and Hygiene, Mahidol University</li> <li>• Postgraduate Course in Tropical Medicine and International Health, Prince Leopold Institute of Tropical Medicine</li> <li>• Diploma Course in Clinical Tropical Medicine and Travelers' Health, Tulane University</li> <li>• Training in Tropical Medicine and Travelers' Health, Uniformed Services University of the Health Sciences</li> <li>• Global Health Course: Clinical Tropical, Migrant and Travel Medicine, University of Minnesota/Centers for Disease Control and Prevention</li> <li>• Intensive Course in Tropical and Travel Medicine, University of Texas Medical Branch at Galveston</li> <li>• Tropical Medicine and Global Health, University of Virginia Health System</li> <li>• Clinical Tropical Medicine and Travelers' Health, West Virginia University</li> <li>• University of Hawaii at Manoa</li> </ul> |
|---|--|

**Cavitary lung lesions are seen in patients with tuberculosis and which of the following infections?**

- (A) strongyloidiasis
- (B) paragonimiasis
- (C) ascariasis
- (D) filariasis

## Practice Pathway

- Evidence of a minimum of five years of substantial, cumulative practice experience in the field of clinical tropical medicine following completion of residency training. Substantial practice experience is defined as at least 10 percent of total professional time devoted to clinical tropical medicine in at least two of the following areas:
  - Assessment and management of illness in persons in, or returned from, the tropics.
  - Diagnosis and treatment of infectious diseases.
  - Health evaluation and treatment of tropical infectious diseases.
  - Diagnosis and management of common parasitic infections.
  - Pre-travel health advice. Time devoted to pre-travel health advice may be used to account for no more than one-half (5 percent total professional time) of the total time required for eligibility.
- For physicians, 30 documented hours of continuing education credit in tropical and/or travel medicine within the five years prior to the application deadline. Include a copy of the certificate(s) of attendance issued by the continuing education provider.
- For nurses, 30 documented hours of continuing education credit in a related field within the five years prior to the application deadline. Include a copy of the certificate(s) of attendance issued by the continuing education provider.

## 2. Demonstrate Two Months of Clinical Experience

All applicants, whether applying via the diploma or practice pathway, must have two months of clinical experience in a developing country/ tropical setting or a domestic clinical activity meaningful to clinical tropical medicine and travelers' health and/or refugee medicine. For physicians, appropriate experience obtained during medical school may be used as long as the activities took place during the last part of medical school training and they were clinically engaged. If the two months of clinical experience has not been completed, one may still apply for the examination as long as the remaining criteria for the selected pathway is met. Upon passing the examination, ASTMH will hold certificates until documentation of two months of cumulative experience is received by the Society. To see a full list of developing countries that would qualify, [click here](#).

## 3. Pass the Examination

For each overseas location, please format description as shown

**Location:** Arusha, Tanzania

**Institution:** Selian District Hospital

**Duration:** 8 Weeks

**Dates:** November – December 2010

**Clinical Work:** Infectious disease research, patient care, disease surveillance, etc.

**Diagnoses Seen:** Indicate diagnoses here

## Attend the Update Course July 17-18, 2020

This two-day condensed course provides a broad overview of core topics in clinical tropical medicine and travelers' health.

**Register online  
beginning April 15!**

## About the Examination

The examination design complies with the American Psychological Association's joint technical standards on testing and testing-industry standards.

To designate knowledge areas appropriate for testing in the examination, specialists and other experts in the fields of tropical medicine and travelers' health are surveyed. Their reports are used to develop specifications and content for the examination; an outline is provided on pages 11–13.

ASTMH offers the examination in even-numbered years prior to the ASTM Annual Meeting. It consists of 200 multiple-choice questions, some of which are accompanied by diagrams or other images. Four hours are allowed to complete the examination. Each question contains four choices, with only one correct answer. The questions are developed and regularly reviewed by an ASTM expert panel, with the assistance of Scantron Corporation, a widely respected provider of high-quality testing and training for corporations, government agencies, educational institutions, and trade and professional associations.

Given the rapid changes in medical knowledge and scientific developments, ASTM makes every reasonable effort to ensure that the examination reflects the current state of knowledge. However, it is important to note that no certificate program can guarantee medical competence, nor does this examination guarantee clinical competence.

The examination will be held **November 14, 2020, from 8:00 a.m. – Noon at the Metro Toronto Convention Centre, Toronto, ON, Canada.**

## Applying for the CTropMed® Examination

### Non-Discrimination Policy

ASTMH does not discriminate against any person on the basis of age, gender, sexual orientation, race, religion, national origin, medical condition, physical disability, marital status or any other protected classification.

### Special Testing Arrangements

The Society will make every reasonable effort to accommodate examination candidates who provide documented evidence of their specific testing arrangement need related to a disability. Candidates are asked to inform ASTM of the needs in writing at least eight weeks prior to the scheduled examination. Auxiliary aids and services will be provided if they do not present an undue burden to the Society, other test takers, the test environment and do not alter the measurement of knowledge that the examination is intended to test.

**Orbicularis oculi paresis with lagophthalmos and an insensitive cornea frequently leads to blindness in patients with**

- ☐ (A) leprosy
- ☐ (B) vitamin A deficiency
- ☐ (C) diabetes
- ☐ (D) trachoma

## Online Application

All applications and payments must be submitted online by June 8, 2020. Once the submission site closes, applications will no longer be accepted. **ASTMH is unable to pre-review qualifications for the examination.**

### Submission Requirements:

1. Online application and application fee online if paying by credit card. Payment may be made by credit card (Visa, MasterCard, American Express or Discover), money order, check (certified or personal) or wire transfer. Checks must be in U.S. funds and drawn on a U.S. bank. Make checks payable to the American Society of Tropical Medicine and Hygiene or ASTMH. Payment must be received prior to the application being reviewed. If paying by check, money order or wire transfer, applications are still submitted online but payment must be received before application will be reviewed.
2. Upload: (all documents to be uploaded in English)
  - Copy of current professional healthcare license.
  - Description of the two months of overseas experience, including institution name, location, dates, nature of clinical work and a description of common diagnoses seen at the facility (see example on page 4).
  - For diploma course pathway: Documentation of successfully completing an accredited diploma course.
  - For diploma course pathway: Documentation of 15 hours of continuing education credit (only if course was completed more than five years ago).
  - For practice pathway: Description of the clinical tropical medicine experience during a minimum of five years (limit of two pages).
  - For practice pathway: Documentation of 30 hours of continuing education credit.

### Helpful Tips:

1. Applicants are not required to disclose date of birth or gender. This is voluntary information. The Examination Committee seeks this information only for demographic purposes.
2. Please do not upload transcripts or *curriculum vitae*.
4. It is recommended that applicants print a copy of the completed application for their records.
5. Payment must accompany the application. A \$95 non-refundable fee is included in the application fee. If for any reason eligibility requirements are not met at the time of application, the fee, less \$95, will be returned.

#### If applicant is going to pay by check, mail the fee to:

Buffy Finn, *Manager, Membership*  
 ASTMH Certificate Examination  
 241 18th Street South, Suite 501  
 Arlington, VA 22202 USA

For questions concerning the application procedure, contact Buffy Finn, Manager, Membership, at [bfinn@astmh.org](mailto:bfinn@astmh.org), +1-703-650-5830, or fax +1-571-351-5422.

### Join ASTMH and SAVE!

Join now and receive the member rate for the CTropMed® examination.

### Attend the Update Course July 17-18, 2020

This two-day condensed course provides a broad overview of core topics in clinical tropical medicine and travelers' health.

### Register online beginning April 15



## Approval to Sit for the CTropMed® Examination

Applicants will receive two notices: 1) confirmation that they have met the requirements and 2) **approximately 30 days before the examination**, approved applicant will receive an admission document that contains:

- Admission to the examination
- Unique identification (ID) number
- Specific information about the date, time and location of the test center

Please retain the unique ID number. Applicants will need it when reporting for the examination, when completing the answer sheet, and if there are any inquiries about test scores afterward.

**Contact [Buffy Finn](#) if:**

- the admission document gets misplaced
- the applicant has not received the admission document by October 9

## Test Center Procedures

1. All examinees must present the ASTMH-issued admission document and a government-issued photo identification (e.g., driver's license, passport) at the test location.

**NO EXCEPTIONS WILL BE MADE.**

2. Due to the large number of examinees, please arrive at the test location approximately one hour prior to the testing time. Late arrivals (after 8 am) will not be admitted and the application fee will not be refunded.
3. Books, paper, notes and devices with memory capabilities (iPads, computers, notebooks, tablets and laptops) are not permitted in the testing room.
4. Cell phones and pagers are not permitted in the testing room.
5. Food and beverages are not permitted in the testing room.
6. Unauthorized visitors are not permitted in the testing room.
7. For a complete list of prohibited items from the test site, please refer to the admission document which will be sent to examinees in October.
8. Examinees have four hours to complete the examination.
9. Trained proctors supervise the administration of the examination and maintain strict security throughout the testing period. Irregularities observed during the testing period, such as creating a disturbance, the perception of giving or receiving information or aid to or from other examinees, or attempting to remove test materials or notes from the test location, may be sufficient cause to terminate examinee participation or to invalidate or cancel scores. Irregularities may be identified by observation or suspicion by the examination proctors or may be evidenced by subsequent statistical analysis of testing materials. ASTMH reserves the right to investigate each incident of misconduct or irregularity.

**If neither individuals nor population are treated, for how long must vector control be continued to eliminate onchocerciasis from a designated region?**

- ☐ A Less than one year
- ☐ B Five years
- ☐ C 10 years
- ☐ D More than 10 years

Approved applicants will be notified on or before October 9.

## Scoring

The passing score is set by a national panel of experts in tropical medicine and travelers' health. Each question is reviewed by a respective expert. An informed judgement is made as to what percentage of minimally competent tropical medicine specialists would answer each question correctly. This deliberative and thoughtful process establishes a minimum level of knowledge expected of passing candidates. The judgements made by the expert panel are subjected to statistical analyses that yield a passing score approved by the Certificate Examination Committee.

The passing score is based on an expected level of knowledge; it is not related to the distribution of scores obtained during a particular administration of the examination. In any given year an examinee has the same chance of passing the examination whether those taking the examination at that time tend to have high scores or low scores. Each examinee is measured against a standard of knowledge, not against the performance of the other individuals taking the examination.

## Examination Results

ASTMH will notify examinees by email in March of their results. Results will not be given by phone.


Given that the examination is designed as a minimum professional competency test and not intended to distinguish between scores achieved above the passing point, no numeric scores will be reported to examinee. Examinees will receive their score and the minimum passing score and an analysis of their test results showing subject areas needing strengthening.

For the purpose of scoring the examination and any subsequent discussions regarding the scores of individual examinees, each examinee will be assigned and identified by a number. No names will be linked with these numbers at any time.

## Special Circumstances

### Retaking the Examination

There is no limit on the number of times one may apply for and retake the examination. However, if an examinee does not pass after three attempts, he or she will be required to show proof of courses or seminars taken to remedy areas needing strengthening. A new application form and all applicable fees are required for each re-examination application.



**Excluding underlying diseases, the most common cause of death for United States citizens traveling to tropical countries is:**

- ☐ (A) malaria
- ☐ (B) typhoid fever
- ☐ (C) accidental injury
- ☐ (D) homicide



## Appeals and Request for Hand Scoring

Examinees who do not pass the examination may request a re-scoring by hand to verify reported scores. Requests must be in writing and accompanied by a check in the amount of \$65 made payable to ASTMH. Requests for hand scoring must be made within 30 days of the candidate's receipt of the examination score. The results of the hand scoring will be considered the final examination results. Please allow 2-3 weeks for hand scoring results.

## Request to Nullify

**If the examinee does not want his or her test scored, two options are available:**

1. Before leaving the test location, inform the test proctor that you wish to cancel your test and then complete and sign a score cancellation form.
2. On or before November 18, 2020, contact [Buffy Finn](#) requesting cancellation of examination. This request (postal mail, email, fax, overnight delivery) must be signed by the examinee. It is the examinee's responsibility to confirm that this request is received by ASTMH.

A canceled test will not be scored or reported to the examinee or ASTMH, nor will Scantron Corporation keep a record of examination results. No refunds will be issued for test cancellations. To retake the examination after a test cancellation, a new application and fee are required.

## Inability to Sit for the CTropMed® Examination

In the event an examinee is found ineligible or does not sit for the examination for which he/she is eligible, a refund of the examination fee less the \$95 non-refundable application fee may be requested by October 5, 2020. Refunds will not be given after October 5, 2020. Future applications will need to meet all required fees and eligibility criteria.

## Receiving the CTropMed® Certificate

Examinees passing the examination and fulfilling all requirements will be allowed—by law—to designate that they have “Received a CTropMed® certificate from ASTMH” and will receive a certificate. Examinees passing the examination but not meeting all requirements will have their certificate held until all requirements are fulfilled. During this interim period, the examinee must not list or indicate in any way that he or she has “Received the CTropMed® certificate from ASTMH.”

The most frequently identified pathogen in tropical pyomyositis is:

- (A) a Gram-negative organism
- (B) *Staphylococcus aureus*
- (C) *Streptococcus pyogenes*
- (D) the pneumococcus

Attend the Update Course, July 17-18, 2020, Crystal City Marriott at Reagan National Airport, Arlington, VA.

This two-day condensed course provides a broad overview of core topics in clinical tropical medicine and travelers' health. For more information on the Update Course, visit the [ASTMH website](https://www.astmh.org).



## CTropMed® Examination Application Checklist

**APPLY  
NOW!**

- ✓ Complete online application
- ✓ Pay fee online or make check payable to ASTMH
- ✓ Upload copy of current professional healthcare license
- ✓ Upload description of overseas experience
- ✓ Upload documentation for pathway option: description of 5 years clinical experience  
**OR**
- ✓ Upload documentation for diploma course pathway: diploma course certificate
- ✓ Upload documentation of continuing medical or nursing education

**All documents must be uploaded in English.**

## CTropMed® Examination Study Guide

- Carefully review the examination outline. The approximate percentage of the total examination allotted to each major content area is indicated in parentheses.
- Answering the provided sample questions on page 15 will help familiarize you with the nature and format of the questions on the examination.
- The references provided on page 16 may be helpful in your preparation. This list is not intended to be exhaustive.

## CTropMed® Examination Outline

Seven major content areas are covered in the examination.

### **DOMAIN I: LIFE CYCLES, EPIDEMIOLOGY, PATHOLOGY AND PATHOGENESIS OF INFECTIOUS DISEASES (15%)**

(see specific topics below)

### **DOMAIN II: DIAGNOSIS, CLINICAL MANIFESTATIONS, TREATMENT, AND PREVENTION OF INFECTIOUS DISEASES (25%)**

(see specific topics below)

#### **Intestinal Protozoa**

- Amebiasis; Giardiasis; Cryptosporidiosis and other coccidial infections; Nonpathogenic protozoa; Emerging topics

#### **Blood and Tissue Protozoa**

- Malaria; Leishmaniasis; Toxoplasmosis; Trypanosomiasis (African); Trypanosomiasis (American); Free-living amebae; Babesiosis; Emerging topics

#### **Nematodes**

- Ascariasis, trichuriasis, enterobiasis, hookworm, strongyloidiasis, and intestinal capillariasis; Lymphatic filariasis, onchocerciasis, loiasis, mansonellosis, and dracunculiasis; Trichinosis; Larva migrans: toxocariasis, creeping eruption, etc.; Other zoonotic nematodes: anisakiasis, angiostrongyliasis, gnathostomiasis, oesophagostomum; Emerging topics

#### **Cestodes**

- Intestinal tapeworms; Cysticercosis and echinococcosis; Other larval cestode infections; Emerging topics

#### **Trematodes**

- Schistosomiasis; Intestinal flukes; Liver flukes; Paragonimiasis; Emerging topics

**Diagnosis and treatment of infected persons is an important means of interrupting transmission due to which of the following?**

- (A) American cutaneous leishmaniasis
- (B) Mediterranean visceral leishmaniasis
- (C) Gambian trypanosomiasis
- (D) Chagas disease

### Diseases Caused by Bacteria

- Typhoid fever; Other salmonellosis; Cholera and other secretory diarrheas; Other vibrios; Shigellosis; *Campylobacter*, *Yersinia*, *E. coli*, and other bacterial causes of diarrhea; *Neisseria meningitidis* and other causes of meningitis; Tuberculosis; Leprosy; Atypical mycobacterial infections; Respiratory infections (bacterial); Tetanus; Diphtheria; Streptococcal infections including rheumatic fever; Melioidosis; Brucellosis; Bartonellosis; Sexually transmitted infections (syphilis, gonorrhea, chancroid, lymphogranuloma venereum, granuloma inguinale, and nongonococcal urethritis); Plague and tularemia; Anthrax; Q fever; Rickettsia infections including typhus, spotted fevers, scrub typhus; Ehrlichiosis and anaplasmosis; Leptospirosis, nonvenereal treponemal spirochetes, and borrelial infection; Trachoma and other nonvenereal diseases caused by chlamydia; Emerging topics

### Diseases Caused by Fungi

- Histoplasmosis, blastomycosis, paracoccidioidomycosis, and coccidioidomycosis; Subcutaneous mycoses: mycetoma, sporotrichosis, and chromoblastomycosis; Opportunistic mycoses: Candida, Cryptococcus, talalaromycosis, and pneumocystosis; Emerging topics

### Diseases Caused by Viruses

- HIV infection; Hepatitis; Yellow fever; Dengue; Other flaviviruses: Zika, Japanese encephalitis, West Nile, tickborne encephalitis; Rabies; Bunyaviruses: Rift Valley fever, Crimean Congo hemorrhagic fever, hantaviruses, sandfly fever, and Oropouche; Lassa and other arenaviruses; Filovirus: Ebola, Marburg; Chikungunya; Other Alphaviruses: Venezuelan equine encephalitis, Ross River, Mayaro; Smallpox and monkeypox; HTLV-1; Avian influenza; Respiratory infections (viral); Rotavirus and other causes of diarrhea; Polio; Measles; Emerging topics

### Ectoparasites

- Lice; Scabies; Myiasis; Emerging topics

## DOMAIN III: NONINFECTIOUS DISEASES (10%)

### Nutritional Disorders

- Principles of nutrition; Infection and nutrition; Malnutrition and refeeding; Vitamin and mineral deficiencies

### Environmental Disorders

- Heat; Cold; Altitude and diving

### Poisonous and Toxic Plants and Animals

- Poisonous plants; Shellfish and fish poisoning; Venomous reptiles and marine animals; Biting and poisonous arthropods

### Post-infectious Sequelae

- Complications requiring surgery; Oncologic; Post-inflammatory (e.g., lymphedema, irritable bowel syndrome)

## **DOMAIN IV: APPROACH TO CLINICAL SYNDROMES (16%)**

### **Cardiovascular Symptoms and Signs**

- Heart failure; Valvular disease; Arrhythmia

### **Dermatologic Symptoms and Signs**

- Cutaneous ulcers; Cutaneous nodules; Fever and rash; Pruritus; Pigmentary disorders

### **Gastrointestinal Symptoms and Signs**

- Acute diarrhea; Chronic diarrhea; Abdominal pain; Jaundice; Hepatobiliary

### **Neurologic Symptoms and Signs**

- Seizures; Paralysis; Altered mental status; Meningitis and encephalitis; Chorea and other movement disorders

### **Ocular Symptoms and Signs**

- Vision loss; Inflammation

### **Genitourinary Symptoms and Signs**

- Hematuria, sterile pyuria, and chyluria; Ulcers, discharge, and lymphadenopathy; Cervical or bladder lesions

### **Respiratory Symptoms and Signs**

- Fever and acute cough; Chronic cough; Hemoptysis, cavitary lung lesions, and pulmonary nodules; Wheezing

### **Hematologic Symptoms and Signs**

- Anemia; Eosinophilia; Leukopenia and thrombocytopenia; Splenomegaly

### **Other Fever Syndromes**

- Undifferentiated fever; Fever and arthritis; Manifestations of agents of bioterrorism

## **DOMAIN V: TRAVELERS' HEALTH (15%)**

### **Clinical Epidemiology and Distribution of Diseases**

- Travelers; Migrants

### **Preventive Medicine**

- Pre-travel risk assessment; Available vaccines: indications, dosing, adverse effects; Prophylaxis; Prevention of diseases transmitted by food, water and soil; Prevention of diseases transmitted by arthropods and animals

### **High-risk Travelers**

- Pregnant; Pediatric; Immunocompromised; Chronic disease

### **Air and Sea Travel**

- Jet lag; Motion sickness; Spread of infection; On-board care

### **Other Conditions**

- Cultural adaptation; Mental health; Altitude sickness; Air pollution; Trauma and injury

### **The Ill Traveler**

- Self-treatment; Medical care abroad; Post-travel assessment and screening

## DOMAIN VI: PUBLIC HEALTH IN THE TROPICS (9%)

### Maternal and Child Health

- Epidemiology of maternal mortality and morbidity; Epidemiology of childhood mortality and morbidity; Breastfeeding (including HIV transmission)

### Water, Sanitation, and Hygiene

- Water supply; Wastewater management; Sanitation

### Community Approaches to Primary Health Care

- Preventable illness: children and adults; Chronic diseases and disability; Essential drugs; Vaccine-preventable diseases; Mass supplementation and chemotherapy programs

### International, Government, and Nongovernment Organizations in the Tropics

- International Health Regulations; Professional standards; Ethics; Health systems structure

### Disease Control

- Investigation and control of outbreaks and epidemics; Principles of surveillance; Approach to disasters, international emergencies; Biosafety: containment of current pathogens and emerging pathogens; Pest and vector control

## DOMAIN VII: DIAGNOSTIC TOOLS (10%)

### Laboratory Procedures and Techniques

- Smears of blood and other fluids; Biopsy specimens (e.g., skin, bone marrow); Stool specimens for microscopic examination; Cultures for bacteria, fungi, and parasites

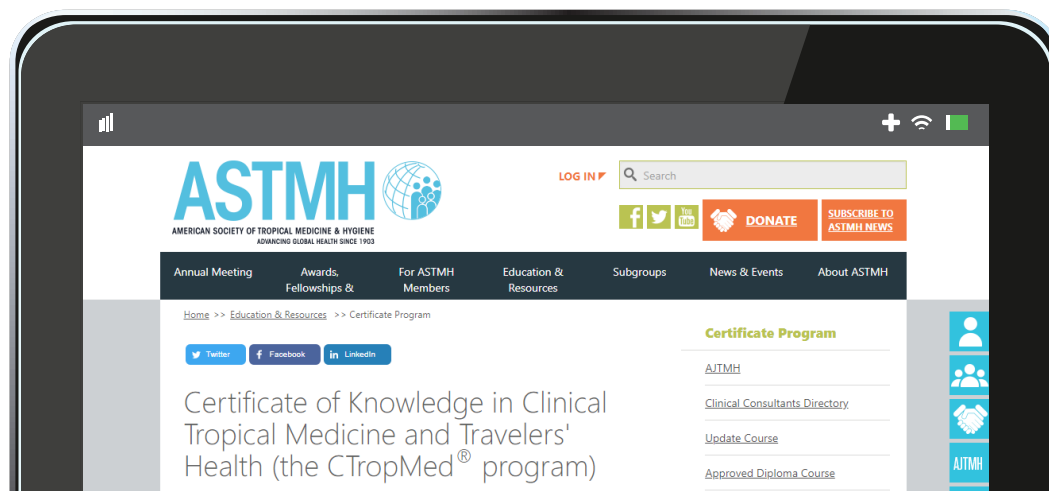
### Laboratory Interpretation and Identification

- Routine tests (e.g., complete blood count, urinalysis); Microscopic identification of bacteria, fungi, viruses, protozoa, and helminths; Macroscopic identification of common helminths (e.g., Ascaris, tapeworms, pinworms) and ectoparasites; Interpretation of serologic tests for protozoa, helminths, bacteria, fungi, and viruses; Special tests (e.g., molecular diagnosis, histopathology, point-of-care testing)

### Radiologic Image Interpretation

- Radiograph; MRI/CT scan; Ultrasound

Check the ASTMH [website](http://astmh.org) for the most up-to-date CTropMed® certificate examination information.



## Sample Questions

Each question has only one correct answer.

1. **Cavitary lung lesions are seen in patients with tuberculosis and which of the following infections?**
  - (A) strongyloidiasis
  - (B) paragonimiasis
  - (C) ascariasis
  - (D) filariasis
2. **Which of the following is characteristic of helminths that infect human beings?**
  - (A) They usually do not multiply in the host.
  - (B) They rarely provoke an eosinophilia.
  - (C) They cause severe disease after infection with only a few parasites.
  - (D) They typically cause lifelong infections.
3. **Orbicularis oculi paresis with lagophthalmos and an insensitive cornea frequently leads to blindness in patients with:**
  - (A) leprosy
  - (B) vitamin A deficiency
  - (C) diabetes
  - (D) trachoma
4. **The most frequently identified pathogen in tropical pyomyositis is:**
  - (A) a Gram-negative organism
  - (B) Staphylococcus aureus
  - (C) Streptococcus pyogenes
  - (D) the pneumococcus
5. **Which of the following is the most appropriate advice for preventing acute mountain sickness?**
  - (A) Take acetazolamide beginning with onset of symptoms.
  - (B) Keep fluid intake low enough to prevent pulmonary and cerebral edema.
  - (C) Spend two to three nights at 2500 to 3000 meters before going higher.
  - (D) Rest in place at onset of symptoms and breathe emergency oxygen, if available.
6. **Excluding underlying diseases, the most common cause of death for United States citizens traveling to tropical countries is:**
  - (A) malaria
  - (B) typhoid fever
  - (C) accidental injury
  - (D) homicide
7. **A 25-year-old male presents with a three-day history of numbness and tingling in his right hand. One day preceding the development of these symptoms, he noted non-pruritic swelling of his entire forearm that lasted 36 hours and resolved spontaneously. Although he has been living in the United States for the past year, he spent the previous two years in rural Gabon, West Africa. Neurological evaluation and physical examination are significant only for decreased sensation in a glove-like distribution of the right hand. Which of the following is most likely to lead to the correct diagnosis?**
  - (A) Skin snips
  - (B) C1 inhibitor levels
  - (C) Antifilarial antibody levels
  - (D) Giemsa-stained smears of blood drawn at night
8. **Which of the following is the most sensitive test for suspected chronic Chagas disease?**
  - (A) Serologic test for antibodies to Trypanosoma cruzi
  - (B) Culture of blood on LIT (liver infusion tryptose) medium
  - (C) Xenodiagnosis using 40 third-instar nymphs of Triatoma infestans
  - (D) Microscopic examination of peripheral blood for trypomastigotes
9. **If neither individuals nor population are treated, how long must vector control be continued to eliminate onchocerciasis from a designated region?**
  - (A) Less than one year
  - (B) Five years
  - (C) 10 years
  - (D) More than 10 years
10. **Diagnosis and treatment of infected persons is an important means of interrupting transmission due to which of the following?**
  - (A) American cutaneous leishmaniasis
  - (B) Mediterranean visceral leishmaniasis
  - (C) Gambian trypanosomiasis
  - (D) Chagas' disease

Answers :

1. (B), 2. (A), 3. (A), 4. (B), 5. (C),  
6. (C), 7. (C), 8. (A), 9. (D), 10. (C)



## References

This list is provided as a study aid only. ASTMH does not imply endorsement of these references, nor are test questions necessarily taken from these sources.

### Texts:

Atlas of Human Parasitology. 5th ed. Ash LR, Orihel TC. Chicago: ASCP Press, 2007.

Color Atlas of Tropical Medicine and Parasitology. 6th ed. Text with CD ROM. Peters W, Pasvol G. Mosby, 2006.

Control of Communicable Diseases Manual. 20th ed. Heymann DL. Washington, D.C.: American Public Health Association, 2004.

Diagnostic Medical Parasitology. 6th ed. Garcia LS. American Society for Microbiology, 2016.

Health Information for International Travel 2010: CDC Yellow Book by CDC. Brunette GW et al., 2020. Also available online at [www.cdc.gov](http://www.cdc.gov) under *Travelers' Health*.

Hunter's Tropical Medicine. 10th ed. Ryan et al. Elsevier, 2019.

Infectious Diseases. 3rd ed. Gorbach SL, Bartlett JG, Blacklow NR. Lippincott Williams & Wilkins, 2003.

Manson's Tropical Diseases. 23rd Ed. Farrar et al. London: WB Saunders, 2013.

Markell and Voge's Medical Parasitology. 9th ed. John DT, Petri WA. Philadelphia: WB Saunders, 2006.

Principles and Practice of Infectious Diseases. 9th ed. Bennett JE, Dolin R, and Blaser MJ. Elsevier, 2019.

The Travel and Tropical Medicine Manual. 5th ed. Jong EC, Sanford C. Philadelphia: WB Saunders, 2008.

Travel Medicine: Expert Consult. 3rd ed. Keystone JS, Kozarsky P, Freedman DO, Nothdurft H, Connor B. Mosby, 2008.

Tropical Infectious Diseases: Principles, Pathogens & Practice. 3rd ed. Guerrant RL, Walker DH, Weller PF. Churchill Livingstone, 2006.

Peters' Atlas of Tropical Medicine and Parasitology. 7th ed. Nabarro L, Morris-Jones S, and Moore D. Elsevier, 2019.

Wilderness Medicine. Management of Wilderness and Environmental Emergencies. 6th ed. Auerbach PS. St. Louis, MO. Mosby, 2012.

### Journals:

*Advances in Parasitology*  
*American Journal of Tropical Medicine and Hygiene*  
*Bulletin of the Pan American Health Organization*  
*Bulletin of the World Health Organization*  
*Clinical Infectious Diseases*  
*Emerging Infectious Diseases*  
*Infectious Disease Clinics of North America*  
*International Journal of Infectious Disease*  
*Journal of Infectious Diseases*  
*Journal of Travel Medicine*  
*Journal of Travel Medicine and Infectious Diseases*  
*Morbidity and Mortality Weekly Report*  
*Transactions of the Royal Society of Tropical Medicine and Hygiene*  
*Trends in Parasitology*  
*Tropical Medicine and International Health*

### Online Resources:

#### Centers for Disease Control and Prevention

Multiple tropical medicine topics, including:

- [Travelers' Health](#)
- [HIV/AIDS Guidelines](#)
- [Tuberculosis Guidelines](#)
- [Malaria Guidelines](#)

#### World Health Organization

Multiple health topics, including:

- [International Health Regulations](#)
- [Travelers' Health](#)
- [HIV/AIDS Guidelines](#)
- [Tuberculosis Guidelines](#)
- [Malaria](#)

## ASTMH CTropMed® Examination Committee

Patrick Hickey, MD, FAAP, FIDSA, *Chair*  
*Uniformed Services University of the Health Sciences*

Robert DeFraites, MD, MPH  
*Uniformed Services University of the Health Sciences*

Jessica Fairley, MD, MPH  
*Emory University*

Yasuyuki Kato, MD, MPH, DTM&H  
*International University of Health and Welfare*

Amy Klion, MD, FASTMH  
*National Institutes of Health*

Alexia Knapp, MD  
*HealthPartners Medical Group*

Gregory Martin, MD, FASTMH  
*U.S. Department of State*

Obinna Nnedu, MD, MPH  
*Ochsner Medical Center*

Jakrapun Pupaibool, MD  
*University of Utah School of Medicine*

Latha Rajan, MD, MPHTM, FASTMH  
*Tulane University, Department of Tropical Medicine*

Kristina St. Clair, DO, MTM&H, FACP  
*U.S. Navy*

Jill Weatherhead, MD  
*National School of Tropical Medicine,  
Baylor College of Medicine*

Certificate of Knowledge in  
Clinical Tropical Medicine  
and Travelers' Health  
(CTropMed® Examination)

**American Society of Tropical  
Medicine and Hygiene**

241 18th Street South, Suite 501  
Arlington, VA 22202 USA

+1-571-351-5409

Fax +1-571-351-5422

[bfinn@astmh.org](mailto:bfinn@astmh.org)

[astmh.org](http://astmh.org)