Refugees from the Middle East are at risk for infection with soil-transmitted helminths and *Strongyloides stercoralis*. The following guidelines are intended to help Refugee Health Assessment Program (RHAP) clinicians to care for refugees arriving from areas endemic for these infections.

**OVERSEAS (PRE-DEPARTURE) PRESUMPTIVE THERAPY OF PARASITIC INFECTIONS**

As of February 2017, the only refugees coming from the Middle Eastern countries of processing that receive presumptive treatment are Iraqi and Syrian refugees departing from Egypt, Iraq and Jordan. Presumptive treatments include:

- **Albendazole** for soil-transmitted helminths: *Ascaris lumbricoides*, whipworm (*Trichuris trichiura*), and hookworm (*Anclostoma duodenale* and *Necator americanus*); and
- **Ivermectin** (or extended albendazole treatment) for *Strongyloides stercoralis*.

Note: Special Immigrant Visa (SIV)-holders departing from Iraq do **not** receive presumptive treatment for parasitic infections.

Refugees who complete their medical examination in Lebanon or Turkey do **not** receive presumptive treatment for parasitic infections.

Check [here](#) for a full description of overseas presumptive therapy.

**REFUGEE HEALTH ASSESSMENT PROGRAM (RHAP)**

**Intestinal and Tissue-Invasive Parasitic Infections:**

The RHAP protocol requires universal screening for *Giardia* antigen by direct immunofluorescent detection procedure of a single stool sample. Summary of management of other intestinal and tissue-invasive parasitic infections is as follows:

- **Symptomatic:** Microscopic examination of a single stool specimen for ova & parasites (O&P) and serologic testing for invasive species as appropriate. Treat accordingly based on results. This is done regardless of receipt of overseas pre-departure treatment.

- **Asymptomatic:**
  
  **A. No Pre-Departure Treatment** due to contraindications to the medications or departure from a location where a presumptive treatment program does not yet exist. If due to location, treat presumptively according to CDC guidelines as noted above. If due to contraindications that still exist:
  
  - Microscopic examination of a single stool specimen for O&P:
Summary of Management of Parasitic Infection by Refugee Population

Middle East

- **Positive O & P test without peripheral blood eosinophilia** (≥400 cells/µL): Provide appropriate treatment if/when no contraindications. Otherwise have follow-up for further evaluation.
- **Positive O & P test with eosinophilia:** Provide appropriate treatment if/when no contraindications. Have follow-up to assess for persistence of eosinophilia and/or evaluation for other causes.
- **Negative O & P test without eosinophilia:** No treatment or follow-up needed.
- **Negative O&P test with eosinophilia:** Options for management include:
  - Treat for *Strongyloides stercoralis* with ivermectin or extended-course albendazole if/when contraindications are resolved, **OR**
  - Further evaluation as per targeted testing protocol (i.e., *Strongyloides* titers), **OR**
  - Referral to infectious disease specialist or primary care physician for further evaluation.

**B. Incomplete Pre-Departure Treatment, i.e.:** did not receive all of the recommended overseas presumptive treatment for parasites prior to departure:

- If not treated overseas for soil-transmitted helminths with albendazole:
  - Assume all Iraqi and Syrian (not SIV) refugees without contraindications and originating in Iraq and Jordan have received albendazole.
  - If not treated due to contraindications that are resolved, presumptively treat with albendazole now.
- If not treated overseas for *Strongyloides stercoralis* and no contraindications, presumptively treat with ivermectin now.
- If not treated overseas for *Strongyloides stercoralis* and contraindications still exist, manage the patient based on the eosinophil count:
  - **Normal eosinophil count (≤ 400 cells/µL):** No further evaluation is required.
  - **Eosinophilia (>400 cells/µL):** This could be residual due to an already treated parasitic infection or due to ongoing infection with *Strongyloides stercoralis*.
    - Treat for *Strongyloides stercoralis* with ivermectin when contraindications are resolved or now with extended-course albendazole, **OR**

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1 Peripheral blood eosinophilia could be also due to other helminthic parasites, other infections/infestations, allergies, autoimmune and related disorders, immunodeficiency states, neoplastic diseases or other conditions.
Summary of Management of Parasitic Infection by Refugee Population

**Middle East**

- Further evaluation as per targeted testing protocol (*Strongyloides* titer), OR
- Repeat CBC and eosinophil count in 3-6 months. If still elevated, further diagnostic evaluation is suggested.

**C. Complete Pre-Departure Treatment** documented: eosinophilia is most likely residual. Repeat CBC and eosinophil count in 3-6 months. If still elevated, further diagnostic evaluation is suggested.

**Medications:**

- **Albendazole** (for treatment of soil-transmitted helminths) is indicated for individuals ≥ 12 months of age and older who are NOT pregnant and do NOT have neurocysticercosis (either confirmed cases or individuals with unexplained seizures or subcutaneous nodules suggestive of cysticercosis).

- **Ivermectin** (preferred treatment for *Strongyloides stercoralis*) is indicated for individuals ≥ 15 kg in weight and ≥ 90 cm in height who are not pregnant or lactating during the first week postpartum. Caution should be used in treating individuals originating in parts of Africa known to have endemic *Loa Loa* infection. Alternative treatment is an extended, 7-day course of albendazole.

Full information on indications, dosing, and precautions for these medications can be found in Table 1 of the CDC’s summary of treatment of intestinal parasites in refugees.

**Countries in the Middle East with processing for U.S.-bound refugees:**

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<thead>
<tr>
<th>Processing Country</th>
<th>Refugee Country of Origin</th>
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<tbody>
<tr>
<td>Iraq</td>
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For more information visit [www.mass.gov/dph/refugee](http://www.mass.gov/dph/refugee)