Guidelines for the Prevention and Treatment of Opportunistic Infections in Adults and Adolescents with HIV.

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### Table 4. Indications for Discontinuing and Restarting Opportunistic Infection Secondary Prophylaxis or Chronic Maintenance in HIV-Infected Adults and Adolescents

Last updated November 21, 2019; last reviewed November 21, 2019

<table>
<thead>
<tr>
<th>Opportunistic Infection</th>
<th>Indication for Discontinuing Primary Prophylaxis</th>
<th>Indication for Restarting Primary Prophylaxis</th>
<th>Indication for Discontinuing Secondary Prophylaxis/Chronic Maintenance Therapy</th>
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<tr>
<td><strong>Bacterial Enteric Infections: Salmonellosis</strong></td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Resolution of <em>Salmonella</em> infection and after response to ART with sustained viral suppression and CD4 counts &gt;200 cells/µL (CII)</td>
<td>No recommendation</td>
</tr>
</tbody>
</table>
| **Bartonellosis**               | Not applicable | Not applicable | • Received at least 3–4 months of treatment, and  
• CD4 count >200 cells/µL for ≥ 6 months (CIII)  
• Some specialists would only discontinue therapy if *Bartonella* titers have also decreased by four-fold (CIII). | No recommendation |
| **Candidiasis (Mucocutaneous)** | Not applicable | Not applicable | If used, reasonable to discontinue when CD4 count >200 cells/µL (AIII). | No recommendation |
| **Coccidioidomycosis**          | CD4 count ≥250 cells/µL and with viral suppression while on ART (CIII) | Restart at CD4 count <250 cells/µL (BIII) | Only for patients with focal coccidioidal pneumonia (AII):  
• Clinically responded to ≥ 6 months antifungal therapy, with CD4 count ≥250 cells/mm³, and with viral suppression while on ART.  
• Should continue monitoring for recurrence with serial chest radiographs and coccidioidal serology every 6-12 months.  
For patients with diffuse pulmonary (BIII), disseminated non-meningeal (BIII):  
• Therapy is at least 12 months and usually much longer; discontinuation is dependent on clinical and serological response and should be made in consultation with experts  
For meningeal diseases (AII):  
Suppressive therapy should be continued indefinitely, even with increase in CD4 count on ART. | No recommendation |
| **Cryptococcal Meningitis**     | Not applicable | Not applicable | If the following criteria are fulfilled (BII):  
• Completed initial (induction and consolidation) therapy, and  
• Received at least 1 year of maintenance therapy, and  
• Remain asymptomatic of cryptococcal infection, and  
• CD4 count ≥100 cells/µL for >3 months, and with suppressed plasma HIV RNA in response to ART | CD4 count <100 cells/µL (AIII) |
Table 4. Indications for Discontinuing and Restarting Opportunistic Infection Secondary Prophylaxis or Chronic Maintenance in HIV-Infected Adults and Adolescents (page 2 of 3)

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<td>Cystoisosporiasis (Formerly Isosporiasis)</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Sustained increase in CD4 count to &gt;200 cells/µL for &gt;6 months in response to ART and without evidence of I. belli infection (BIII)</td>
<td>No recommendation</td>
</tr>
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</table>
| Cytomegalovirus Retinitis | Not applicable | Not applicable | • CMV treatment for at least 3 to 6 months; and with CD4 count >100 cells/µL for >3 to 6 months in response to ART (AII).  
• Therapy should be discontinued only after consultation with an ophthalmologist, taking into account anatomic location of lesions, vision in the contralateral eye, and feasibility of regular ophthalmologic monitoring.  
• Routine (i.e., every 3 months) ophthalmologic follow-up is recommended after stopping therapy for early detection of relapse or immune restoration uveitis, and then periodically after sustained immune reconstitution (AIII). | CD4 count <100 cells/µL (AIII) |
| Histoplasmosis | On ART, with CD4 count >150 cells/mm³ and undetectable HIV-1 viral load for 6 months (BIII) | For patients at high risk of acquiring histoplasmosis, restart if CD4 count falls to <150 cells/mm³ (CIII) | If the following criteria (AII) are fulfilled:  
• Received azole therapy for >1 year, and  
• Negative fungal blood cultures, and  
• Serum or urine Histoplasma antigen below the level of quantification, and  
• Undetectable HIV viral load, and  
• CD4 count ≥150 cells/mm³ for ≥6 months in response to ART | CD4 count <150 cells/mm³ (BIII) |
| Leishmaniasis: Visceral (and possibly cutaneous leishmaniasis in immunocompromised patients with multiple relapses) | Not applicable | Not applicable | There is no consensus regarding when to stop secondary prophylaxis. Some investigators suggest that therapy can be stopped if CD4 count increases to >200 to 350 cells/µL for 3–6 months in response to ART, but others suggest that therapy should be continued indefinitely. | No recommendation |
| Microsporidiosis | Not applicable | Not applicable | No signs and symptoms of non-ocular (BIII) or ocular (CIII) microsporidiosis and CD4 count >200 cells/µL for >6 months in response to ART. | No recommendation |
| Mycobacterium avium Complex Disease | Initiation of effective ART (AII) | CD4 count <50 cells/mm³: only if not on fully suppressive ART (AIII) | If the Following Criteria are Fulfilled (AII):  
• Completed ≥12 months of therapy, and  
• No signs and symptoms of MAC disease, and  
• Have sustained (>6 months) CD4 count >100 cells/mm³ in response to ART | CD4 count <100 cells/mm³ (AIII) |
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<td><strong>Pneumocystis Pneumonia</strong></td>
<td>CD4 count increased from &lt;200 to &gt;200 cells/mm³ for &gt;3 months in response to ART (AII) Can consider when CD4 count is 100–200 cells/mm³ if HIV RNA remains below limits of detection for ≥3 months–6 months (BII).</td>
<td>CD4 count &lt;100 cells/mm³ (AII) CD4 count 100–200 cells/mm³ and HIV RNA above detection limit of the assay (AII).</td>
<td>CD4 count increased from &lt;200 cells/mm³ to &gt;200 cells/mm³ for &gt;3 months in response to ART (BII) Can consider when CD4 count is 100–200 cells/mm³ if HIV RNA remains below limits of detection for ≥3 months–6 months (BII). If PCP occurs at a CD4 count &gt;200 cells/mm³ while not on ART, discontinuation of prophylaxis can be considered once HIV RNA levels are suppressed to below limits of detection for ≥3 months–6 months (CIII). If PCP occurs at a CD4 count &gt;200 cells/mm³ while on ART, continue PCP prophylaxis for life, regardless of how high the CD4 cell count rises as a consequence of ART (BIII).</td>
<td>CD4 count &lt;100 cells/mm³ (AIII) CD4 count 100–200 cells/mm³ and with HIV RNA above detection limit of the assay (BIII).</td>
</tr>
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<td><strong>Talaromyces (Penicilliosis)</strong></td>
<td>CD4 count &gt;100 cells/mm³ for &gt;6 months in response to ART (BII) or If achieved sustained HIV viral suppression for &gt;6 months (BIII)</td>
<td>CD4 count &lt;100 cells/mm³ (BII)—if patient is unable to have ART, or has treatment failure without access to effective ART options, and still resides in or travels to the endemic area</td>
<td>CD4 count &gt;100 cells/mm³ for ≥6 months in response to ART (BII) or If achieved sustained HIV viral suppression for &gt;6 months (BIII)</td>
<td>CD4 count &lt;100 cells/mm³ (BIII)</td>
</tr>
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<td><strong>Toxoplasma gondii Encephalitis</strong></td>
<td>CD4 count increased to &gt;200 cells/µL for &gt;3 months in response to ART (AII) Can consider when CD4 count 100-200 cells/µL if HIV RNA remain below limits of detection for at least 3-6 months (BII)</td>
<td>CD4 count &lt;100 cells/µL (AIII) CD4 count 100-200 cells/µL and with HIV RNA above detection limit of the assay (AIII).</td>
<td>Successfully completed initial therapy, remain free of signs and symptoms of TE, and CD4 count &gt;200 cells/µL for &gt;6 months in response to ART (BII).</td>
<td>CD4 count &lt;200 cells/µL (AIII)</td>
</tr>
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**Key to Acronyms:** ART = antiretroviral therapy; CD4 = CD4 T lymphocyte cell; CMV = cytomegalovirus; MAC = *Mycobacterium avium* complex; PCP = *Pneumocystis* pneumonia; TE = *Toxoplasma* encephalitis

**Evidence Rating:**

*Strength of Recommendation:*

A: Strong recommendation for the statement  
B: Moderate recommendation for the statement  
C: Optional recommendation for the statement

*Quality of Evidence for the Recommendation:*

I: One or more randomized trials with clinical outcomes and/or validated laboratory endpoints  
II: One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes  
III: Expert opinion

In cases where there are no data for the prevention or treatment of an OI based on studies conducted in HIV-infected populations, but data derived from HIV-uninfected patients exist that can plausibly guide management decisions for patients with HIV/AIDS, the data will be rated as III but will be assigned recommendations of A, B, C depending on the strength of recommendation.

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