

**PNEUMOCYSTIS JIROVECI (formerly *carinii*) pneumonia (PCP)<sup>1</sup>**

	Drug	Adult dosage	Pediatric dosage
Drug of choice:	Trimethoprim/ sulfamethoxazole	TMP 15 mg/SMX 75 mg/kg/d, PO or IV in 3 or 4 doses x 21d	TMP 15 mg/SMX 75 mg/kg/d, PO or IV in 3 or 4 doses x 21d
Alternative:	Primaquine <sup>2,3</sup> <b>plus</b> clindamycin <sup>2,4</sup>	30 mg base PO daily x 21d 600 mg IV q6h x 21d, or 300- 450 mg PO q6h x 21d	0.3 mg/kg base PO daily x 21d 15-25 mg/kg IV q6h x 21d, or 10 mg/kg PO q6h x 21d
	OR Trimethoprim <sup>2</sup> <b>plus</b> dapsone <sup>2</sup>	5 mg/kg PO tid x 21d 100 mg daily x 21d	5 mg/kg PO tid x 21d 2 mg/kg/d PO x 21d
	OR Pentamidine	3-4 mg/kg IV daily x 21d	3-4 mg/kg IV daily x 21d
	OR Atovaquone	750 mg PO bid x 21d	1-3mos: 30 mg/kg/d PO x 21d 4-24mos: 45 mg/kg/d PO x 21d >24mos: 30 mg/kg/d PO x 21d
<b>Primary and secondary prophylaxis<sup>5</sup></b>			
Drug of Choice:	Trimethoprim/ sulfamethoxazole	1 tab (single or double strength) daily or 1 DS tab PO 3d/wk	TMP 150 mg/SMX 750 mg/m <sup>2</sup> /d PO in 2 doses 3d/wk
Alternative:	Dapsone <sup>2</sup>	50 mg PO bid or 100 mg PO daily	2 mg/kg/d (max. 100 mg) PO or 4 mg/kg (max. 200 mg) PO each wk
	OR Dapsone <sup>2</sup> <b>plus</b> pyrimethamine <sup>6</sup>	50 mg PO daily or 200 mg PO each wk 50 mg PO or 75 mg PO each wk	
	OR Pentamidine	300 mg aerosol inhaled monthly via <i>Respirgard II</i> nebulizer	≥5yrs: 300 mg inhaled monthly via <i>Respirgard II</i> nebulizer
	OR Atovaquone <sup>2,7</sup>	1500 mg PO daily	1-3mos: 30 mg/kg/d PO 4-24mos: 45 mg/kg/d PO >24mos: 30 mg/kg/d PO

1. Pneumocystis has been reclassified as a fungus. In severe disease with room air PO<sub>2</sub> ≤ 70 mmHg or Aa gradient ≥ 35 mmHg, prednisone should also be used (S Gagnon et al, N Engl J Med 1990; 323:1444; E Caumes et al, Clin Infect Dis 1994; 18:319).
2. Not FDA-approved for this indication.
3. Primaquine phosphate can cause hemolytic anemia, especially in patients whose red cells are deficient in G-6-PD. This deficiency is most common in African, Asian and Mediterranean peoples. Patients should be screened for G-6-PD deficiency before treatment. Primaquine should not be used during pregnancy. It should be taken with food to minimize nausea and abdominal pain. Primaquine-tolerant *P. vivax* can be found globally. Relapses of primaquine-resistant strains may be retreated with 30 mg (base) x 28d.
4. Oral clindamycin should be taken with a full glass of water to minimize esophageal ulceration.
5. Primary/secondary prophylaxis in patients with HIV can be discontinued after CD4 count increases to >200 x 10<sup>6</sup>/L for >3mos.
6. Plus leucovorin 25 mg with each dose of pyrimethamine. Pyrimethamine should be taken with food to minimize gastrointestinal adverse effects.
7. Atovaquone is available in an oral suspension that should be taken with a meal to increase absorption.

Information provided by The Medical Letter. For a copy of the entire **Drugs for Parasitic Infections** article, go to: [www.medicalletter.org/parasitic\\_cdc](http://www.medicalletter.org/parasitic_cdc)

**MANUFACTURERS OF DRUGS USED TO TREAT PARASITIC INFECTIONS**

albendazole – <i>Albenza</i> (GlaxoSmithKline)	<i>Elimite</i> (Allergan) – permethrin
<i>Albenza</i> (GlaxoSmithKline) – albendazole	<i>Ergamisol</i> (Janssen) – levamisole
<i>Alinia</i> (Romark) – nitazoxanide	<i>Eurax</i> (Westwood-Squibb) – crotamiton
<i>AmBisome</i> (Gilead) – amphotericin B, liposomal	• <i>Flagyl</i> (Pfizer) – metronidazole
amphotericin B – <i>Fungizone</i> (Apothecon), others	§ <i>Flisint</i> (Sanofi-Aventis, France) – fumagillin
amphotericin B, liposomal – <i>AmBisome</i> (Gilead)	fluconazole – <i>Diffucan</i> (Pfizer), others
<i>Ancobon</i> (Valeant) – flucytosine	flucytosine – <i>Ancobon</i> (Valeant)
§ <i>Antiminth</i> (Pfizer) – pyrantel pamoate	§ fumagillin – <i>Flisint</i> (Sanofi-Aventis, France)
• <i>Aralen</i> (Sanofi) – chloroquine HCl and chloroquine phosphate	• <i>Fungizone</i> (Apothecon) – amphotericin
§ artemether – <i>Artenam</i> (Arenco, Belgium)	§ <i>Furamide</i> (Boots, United Kingdom) – diloxanide furoate
§ artemether/lumefantrine – <i>Coartem, Riamet</i> (Novartis)	§ furazolidone – <i>Furozone</i> (Roberts)
§ <i>Artenam</i> (Arenco, Belgium) – artemether	§ <i>Furozone</i> (Roberts) – furazolidone
§ artesunate – (Guilin No. 1 Factory, People's Republic of China)	† <i>Germanin</i> (Bayer, Germany) – suramin sodium
atovaquone – <i>Mepron</i> (GlaxoSmithKline)	§ <i>Glucantime</i> (Aventis, France) – meglumine antimonate
atovaquone/proguanil – <i>Malarone</i> (GlaxoSmithKline)	† <i>Hetrazan</i> – diethylcarbamazine citrate (DEC)
azithromycin – <i>Zithromax</i> (Pfizer), others	<i>Humatin</i> (Monarch) – paromomycin
• <i>Bactrim</i> (Roche) – TMP/Sulfa	§ <i>Impavido</i> (Zentaris, Germany) – miltefosine
§ benznidazole – <i>Rochagan</i> (Brazil)	iodoquinol – <i>Yodoxin</i> (Glenwood), others
• <i>Biaxin</i> (Abbott) – clarithromycin	itraconazole – <i>Sporanox</i> (Janssen-Ortho), others
§ <i>Biltricide</i> (Bayer) – praziquantel	ivermectin – <i>Stromectol</i> (Merck)
† bithionol – <i>Bitin</i> (Tanabe, Japan)	ketoconazole – <i>Nizoral</i> (Janssen), others
† <i>Bitin</i> (Tanabe, Japan) – bithionol	† <i>Lampit</i> (Bayer, Germany) – nifurtimox
§ <i>Brolene</i> (Aventis, Canada) – propamidine isethionate	<i>Lariam</i> (Roche) – mefloquine
chloroquine HCl and chloroquine phosphate –	§ <i>Leshcutan</i> (Teva, Israel) – topical paromomycin
<i>Aralen</i> (Sanofi), others	levamisole – <i>Ergamisol</i> (Janssen)
clarithromycin – <i>Biaxin</i> (Abbott), others	lumefantrine/artemether – <i>Coartem, Riamet</i> (Novartis)
• <i>Cleocin</i> (Pfizer) – clindamycin	<i>Malarone</i> (GlaxoSmithKline) – atovaquone/proguanil
clindamycin – <i>Cleocin</i> (Pfizer), others	malathion – <i>Ovide</i> (Medicis)
<i>Coartem</i> (Novartis) – artemether/lumefantrine	mebendazole – <i>Vermox</i> (McNeil), others
crotamiton – <i>Eurax</i> (Westwood-Squibb)	mefloquine – <i>Lariam</i> (Roche)
dapsone – (Jacobus)	§ meglumine antimonate – <i>Glucantime</i> (Aventis, France)
§ <i>Daraprim</i> (GlaxoSmithKline) – pyrimethamine USP	† melarsoprol – <i>Mel-B</i>
† diethylcarbamazine citrate (DEC) – <i>Hetrazan</i>	† <i>Mel-B</i> – melarsoprol
• <i>Diffucan</i> (Pfizer) – fluconazole	<i>Mepron</i> (GlaxoSmithKline) – atovaquone
§ diloxanide furoate – <i>Furamide</i> (Boots, United Kingdom)	metronidazole – <i>Flagyl</i> (Pfizer), others
doxycycline – <i>Vibramycin</i> (Pfizer), others	§ miconazole – <i>Monistat i.v.</i>
eflornithine (Difluoromethylornithine, DFMO) – <i>Ornidyl</i> (Aventis)	§ miltefosine – <i>Impavido</i> (Zentaris, Germany)
§ <i>Egaten</i> (Novartis) – triclabendazole	§ <i>Monistat i.v.</i> – miconazole
	<i>NebuPent</i> (Fujisawa) – pentamidine isethionate
	§ niclosamide – <i>Yomesan</i> (Bayer, Germany)

(continued)

- † nifurtimox – *Lampit* (Bayer, Germany)  
 nitazoxanide – *Alinia* (Romark)  
*Nix* (GlaxoSmithKline) – permethrin
- *Nizoral* (Janssen) – ketoconazole
- § ornidazole – *Tiberal* (Roche, France)  
*Ornidyl* (Aventis) – eflornithine  
 (Difluoromethylornithine, DFMO)  
*Ovide* (Medicis) – malathion
- § oxamniquine – *Vansil* (Pfizer)
- § *Paludrine* (AstraZeneca, United Kingdom) – proguanil  
 paromomycin – *Humatin* (Monarch); *Leshcutan*  
 (Teva, Israel; topical formulation not available  
 in US)  
*Pentam 300* (Fujisawa) – pentamidine isethionate  
 pentamidine isethionate – *Pentam 300* (Fujisawa),  
*NebuPent* (Fujisawa)
- † *Pentostam* (GlaxoSmithKline, United Kingdom) –  
 sodium stibogluconate  
 permethrin – *Nix* (GlaxoSmithKline), *Elimite*  
 (Allergan)
- § praziquantel – *Biltricide* (Bayer)  
 primaquine phosphate USP
- § proguanil – *Paludrine* (AstraZeneca, United Kingdom)  
 proguanil/atovaquone – *Malarone*  
 (GlaxoSmithKline)
- § propamidine isethionate – *Brolene* (Aventis,  
 Canada)
- § pyrantel pamoate – *Antiminth* (Pfizer)  
 pyrethrins and piperonyl butoxide – *RID* (Pfizer),  
 others
- § pyrimethamine USP – *Daraprim* (GlaxoSmithKline)
- Qualaquin* – quinine sulfate (Mutual Pharmaceutical  
 Co/AR Scientific)  
 quinacrine
- \* quinidine gluconate (Eli Lilly)
- § quinine dihydrochloride  
 quinine sulfate – *Qualaquin* (Mutual Pharmaceutical  
 Co/AR Scientific)  
*Riamet* (Novartis) – artemether/lumefantrine
- *RID* (Pfizer) – pyrethrins and piperonyl butoxide
  - *Rifadin* (Aventis) – rifampin  
 rifampin – *Rifadin* (Aventis), others
- § *Rochagan* (Brazil) – benznidazole
- \* *Rovamycine* (Aventis) – spiramycin
- † sodium stibogluconate – *Pentostam*  
 (GlaxoSmithKline, United Kingdom)
- \* spiramycin – *Rovamycine* (Aventis)
  - *Sporanox* (Janssen-Ortho) – itraconazole  
*Stromectol* (Merck) – ivermectin  
 sulfadiazine – (Eon)
- † suramin sodium – *Germanin* (Bayer, Germany)
- § *Tiberal* (Roche, France) – ornidazole  
*Tindamax* (Mission) – tinidazole  
 tinidazole – *Tindamax* (Mission)  
 TMP/Sulfa – *Bactrim* (Roche), others
- § triclabendazole – *Egaten* (Novartis)
- § *Vansil* (Pfizer) – oxamniquine
- *Vermox* (McNeil) – mebendazole
  - *Vibramycin* (Pfizer) – doxycycline
  - *Yodoxin* (Glenwood) – iodoquinol
- § *Yomesan* (Bayer, Germany) – niclosamide
- *Zithromax* (Pfizer) – azithromycin

\* Available in the US only from the manufacturer.

§ Not available commercially. It may be obtained through compounding pharmacies such as Panorama Compounding Pharmacy, 6744 Balboa Blvd, Van Nuys, CA 91406 (800-247-9767) or Medical Center Pharmacy, New Haven, CT (203-688-6816). Other compounding pharmacies may be found through the National Association of Compounding Pharmacies (800-687-7850) or the Professional Compounding Centers of America (800-331-2498, [www.pccarx.com](http://www.pccarx.com)).

† Available from the CDC Drug Service, Centers for Disease Control and Prevention, Atlanta, Georgia 30333; 404-639-3670 (evenings, weekends, or holidays: 770-488-7100).

• Also available generically.