



General FAQ

What is *Mycoplasma*?

- *Mycoplasma pneumoniae* is a tiny, pleomorphic bacterium that causes upper and lower respiratory tract infections – including *atypical* or “walking” pneumonia – most commonly in school-aged children and adolescents.
- Since it **lacks a cell wall**, regularly used antibiotics that target the cell wall (e.g., beta-lactams such as amoxicillin and cephalosporins) are not effective against *Mycoplasma*.

What do I need to know about epidemiology and transmission?

- Humans are the only known reservoir.
- Infections occur worldwide in any season.
- Spread is via **aerosolized respiratory droplets** (e.g., coughing, sneezing) → outbreaks are more common in crowded environments or households with close contact.
- The **incubation period is long**: 2-3 weeks on average (range 1-4 weeks).
- Patients can have **prolonged respiratory shedding (weeks to months)**, even after recovery and/or treatment with antibiotics.
- Most commonly affects older children and adolescents. Children < 5 years are less likely to develop pneumonia but can be infected with no or mild URI-like symptoms and contribute to spread.
- Epidemic trends occur at 3–7-year intervals, likely due to change in strain types.

Why have I been hearing so much about *Mycoplasma pneumoniae* recently?

- *Mycoplasma* incidence was low during the COVID-19 pandemic but re-emerged worldwide in 2023.
- The CDC detected a rise in cases in 2024, including more cases among young children. *Mycoplasma* accounted for approximately [half of CAP in hospitalized children in 2024](#).
- There is no reporting requirement or surveillance system in California, but [CDPH reported increased pediatric hospitalizations from May through June 2025](#). We continue to see cases locally.
- For current national trends, see surveillance data on [this CDC webpage](#).

How does *Mycoplasma* present?

- *Mycoplasma* can cause **upper or lower respiratory tract infection**:
 - Upper: May be asymptomatic OR can be associated with rhinorrhea, non-exudative pharyngitis, otitis media, croup
 - Lower: Bronchitis, bronchiolitis, asthma exacerbation, atypical pneumonia
- **Prodrome** with malaise, myalgia, sore throat, headache, fever, sinus pressure, ear pain.
 - Symptoms may be **hard to differentiate from a viral process**.
- **Pneumonia**: Dry, non-productive cough develops after one week of constitutional symptoms. Paroxysms often worse at night. Cough is slowly progressive and can persist for several weeks.
 - Auscultation: Scattered crackles, wheezes, or both
 - X-ray: Variable. Classically interstitial infiltrates and/or patchy consolidation, though can have lobar/segmental infiltrates, pleural effusions, and/or hilar adenopathy.
 - Labs: WBC usually normal to slightly elevated
- **Severe infections are uncommon**, but *Mycoplasma* can cause parapneumonic effusions, severe pneumonia, acute respiratory distress syndrome, or necrotizing pneumonia.
- **Extrapulmonary manifestations are possible**, though it is unclear how much of these are driven by an immune-mediated process vs. direct bacterial effects. Examples include dermatologic manifestations (e.g., maculopapular rash, urticaria, EM, SJS, RIME), cold-agglutinin hemolytic anemia, elevated liver enzymes, pericarditis/myocarditis, arthritis, glomerulonephritis, CNS (e.g., aseptic meningitis, transfer myelitis), and others.



■ Diagnostics

What diagnostics are available?

Due to diagnostic limitations and access in primary care settings, a diagnosis of *Mycoplasma* is often not confirmed. However, options include polymerase chain reaction (PCR) and serologies. Culture is not typically performed.

1. PCR

Test	Description	Specimen Type	Turnaround Time	Other Considerations
Rapid Respiratory Pathogen Panel	Multiplex panel containing <i>Mycoplasma pneumoniae</i> performed in-house at Stanford	Nasopharynx (NP) only	Approximately 2 hours once arrives in lab	- Cost \$\$\$\$ - Needs to be transported to laboratory immediately; if delayed, must refrigerate - Only available in ED or inpatient at this time - NP less sensitive than OP
Mycoplasma pneumoniae PCR	Standalone PCR; sendout test (Mayo)	NP, oropharynx (OP), sputum, bronchoalveolar lavage	4-5 days	- Cost \$ - Sendout test with slower turnaround time - NP less sensitive than OP

! Note: Due to prolonged shedding/colonization, *Mycoplasma* can persist in respiratory tract for weeks to months after infection (with or without antibiotic treatment). Additionally, it has been detected in approximately 20% of asymptomatic children. Thus, PCR detection does not necessarily mean the organism is causing symptoms.

2. **Serologies:** (sendout, Mayo): Difficult to interpret and should not serve as the sole basis for diagnosis

- **IgG:** Indicates prior exposure; need 4-fold rise in IgG antibody tiers between acute and convalescent sera (several weeks apart) for serologic diagnosis.
- **IgM:** Subject to false positive results and can persist for months. It therefore may not indicate acute infection. IgM result is not diagnostic and requires confirmatory testing by indirect immunofluorescence assay (IFA).

Other important tips:

- Consider cost and turnaround time. If clinical concern is high and the sendout test takes 5 days to come back (i.e. the duration of the azithromycin course), then the test is unlikely to be actionable or change management.
- Neither PCR nor serologies should be used to assess response to treatment.
- Antimicrobial resistance testing is done in specialized laboratories and not widely available.



Treatment

When is treatment indicated?

- **The benefit of antibiotic treatment remains controversial, especially for mild disease in non-hospitalized patients.** Remember that viruses remain the most common cause of CAP.
- Most children have a mild, self-limited illness, and current evidence does not support treating during the URI phase to prevent later progression. Thus, benefits must be weighed against risks (e.g., dual therapy, side effects, resistance, microbiome effects).
- Treatment should be considered for:
 - Patients at higher risk for severe illness: sickle cell disease, Trisomy 21, immunocompromised, chronic lung disease, etc.
 - Those who fail to respond to treatment for typical CAP (i.e. amoxicillin) after 48-72 hours
 - High concern for *Mycoplasma*:
 - *Mycoplasma* PCR+ with compatible illness
 - Household member with recent diagnosis* and compatible illness
 - Outbreak at school* and compatible illness
 - Patients who are hospitalized with severe infection

*Prophylaxis has been shown to reduce the attack rate in outbreak settings. Prophylaxis can be considered for patients who are close contacts of a person with *M. pneumoniae* and at risk for severe illness.

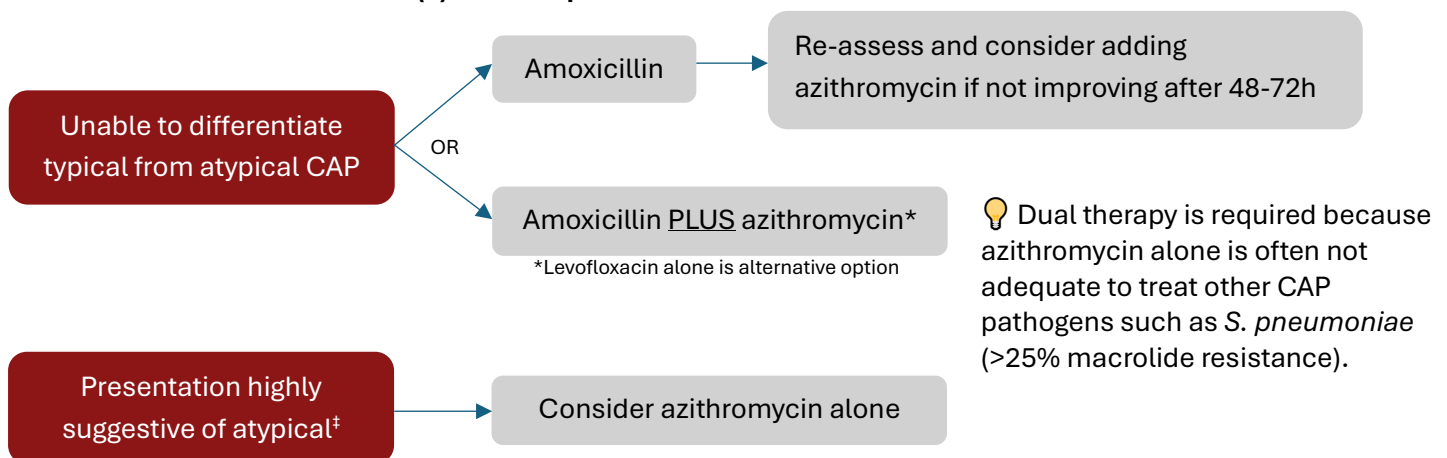
What antibiotics are effective against *Mycoplasma*?

- **Azithromycin is the preferred first-line treatment.**
- Other options include tetracyclines (doxycycline) and fluoroquinolones (levofloxacin).

Is there resistance?

- Macrolide resistance is low (<10%) overall in the United States but may be higher in the South and East. Consider possibility of macrolide resistance if recent travel to China (80%) or Japan (>50%).
- Antimicrobial resistance testing is done in specialized laboratories and not widely available.

How do I decide what antibiotic(s) I should prescribe?



- Refer to the [CORIZA Community-Acquired Pneumoniae algorithm](#) for dosing and other considerations.



References

1. Diaz M, Hersh AL, Olson J, Shah SS, Hall M, Edens C. Mycoplasma pneumoniae Infections in Hospitalized Children — United States, 2018–2024. *MMWR Morb Mortal Wkly Rep* 2025. 2025;74(23):394-400. doi:<http://dx.doi.org/10.15585/mmwr.mm7423a1>
2. Committee on Infectious Diseases AA of P, Kimberlin DW, Banerjee R, Barnett ED, Lynfield R, Sawyer MH, eds. Mycoplasma pneumoniae and Other Mycoplasma Species Infections. In: *Red Book: 2024–2027 Report of the Committee on Infectious Diseases*. American Academy of Pediatrics; 2024:0. doi:10.1542/9781610027373-S3_012_010
3. Shah SS. 196 - Mycoplasma pneumoniae. In: Long SS, Prober CG, Fischer M, eds. *Principles and Practice of Pediatric Infectious Diseases (Fifth Edition)*. Elsevier; 2018:1023-1027.e3. doi:10.1016/B978-0-323-40181-4.00196-1
4. Williams DJ, Edwards KM, Self WH, et al. Effectiveness of β -Lactam Monotherapy vs Macrolide Combination Therapy for Children Hospitalized With Pneumonia. *JAMA Pediatrics*. 2017;171(12):1184-1191. doi:10.1001/jamapediatrics.2017.3225
5. Messinger AI, Kupfer O, Hurst A, Parker S. Management of Pediatric Community-acquired Bacterial Pneumonia. *Pediatrics In Review*. 2017;38(9):394-409. doi:10.1542/pir.2016-0183
6. Gardiner S, Gavranich J, Chang A. Antibiotics for community-acquired lower respiratory tract infections secondary to Mycoplasma pneumoniae in children. *Cochrane Database of Systematic Reviews*. 2015;(1). doi:10.1002/14651858.CD004875.pub5
7. Biondi E, McCulloh R, Alverson B, Klein A, Dixon A, Ralston S. Treatment of Mycoplasma Pneumonia: A Systematic Review. *Pediatrics*. 2014;133(6):1081-1090. doi:10.1542/peds.2013-3729
8. Spuesens EBM, Fraaij PLA, Visser EG, et al. Carriage of Mycoplasma pneumoniae in the Upper Respiratory Tract of Symptomatic and Asymptomatic Children: An Observational Study. *PLOS Medicine*. 2013;10(5):e1001444. doi:10.1371/journal.pmed.1001444
9. Bradley JS, Byington CL, Shah SS, et al. The Management of Community-Acquired Pneumonia in Infants and Children Older Than 3 Months of Age: Clinical Practice Guidelines by the Pediatric Infectious Diseases Society and the Infectious Diseases Society of America. *Clinical Infectious Diseases*. 2011;53(7):e25-e76. doi:10.1093/cid/cir531
10. Harris M, Clark J, Coote N, et al. British Thoracic Society guidelines for the management of community acquired pneumonia in children: update 2011. *Thorax*. 2011;66(Suppl 2):ii1. doi:10.1136/thoraxjnl-2011-200598
11. Kutty PK, Jain S, Taylor TH, et al. Mycoplasma pneumoniae Among Children Hospitalized With Community-acquired Pneumonia. *Clinical Infectious Diseases*. 2019;68(1):5-12. doi:10.1093/cid/ciy419
12. Meyer Sauter PM, Seiler M, Tilen R, et al. A randomized controlled non-inferiority trial of placebo versus macrolide antibiotics for Mycoplasma pneumoniae infection in children with community-acquired pneumonia: trial protocol for the MYTHIC Study. *Trials*. 2024;25(1):655. doi:10.1186/s13063-024-08438-6
13. Mulholland S, Gavranich J, Chang A. Antibiotics for community-acquired lower respiratory tract infections secondary to Mycoplasma pneumoniae in children. *Cochrane Database of Systematic Reviews*. 2010;(7). doi:10.1002/14651858.CD004875.pub3
14. Saavedra-Lozano J, Slocker-Barrío M, Fresán-Ruiz E, et al. Consensus document of the Spanish Society of Paediatric Infectious Diseases (SEIP) and the Spanish Society of Paediatric Intensive Care (SECIP) for the diagnosis and treatment of central venous catheter-related infections in paediatric care. *Anales de Pediatría (English Edition)*. 2024;100(6):448-464. doi:10.1016/j.anpede.2024.05.012