

# Immunodeficiency Screening and Management for Patients with Recurrent Sinusitis

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# Introduction



Importance of understanding immunodeficiencies for rhinology patients



Common presentations of immunodeficiencies in rhinology practice

# The Immune System Basics

Innate, humoral, and  
cellular immunity

Importance of  
immune system  
balance for health

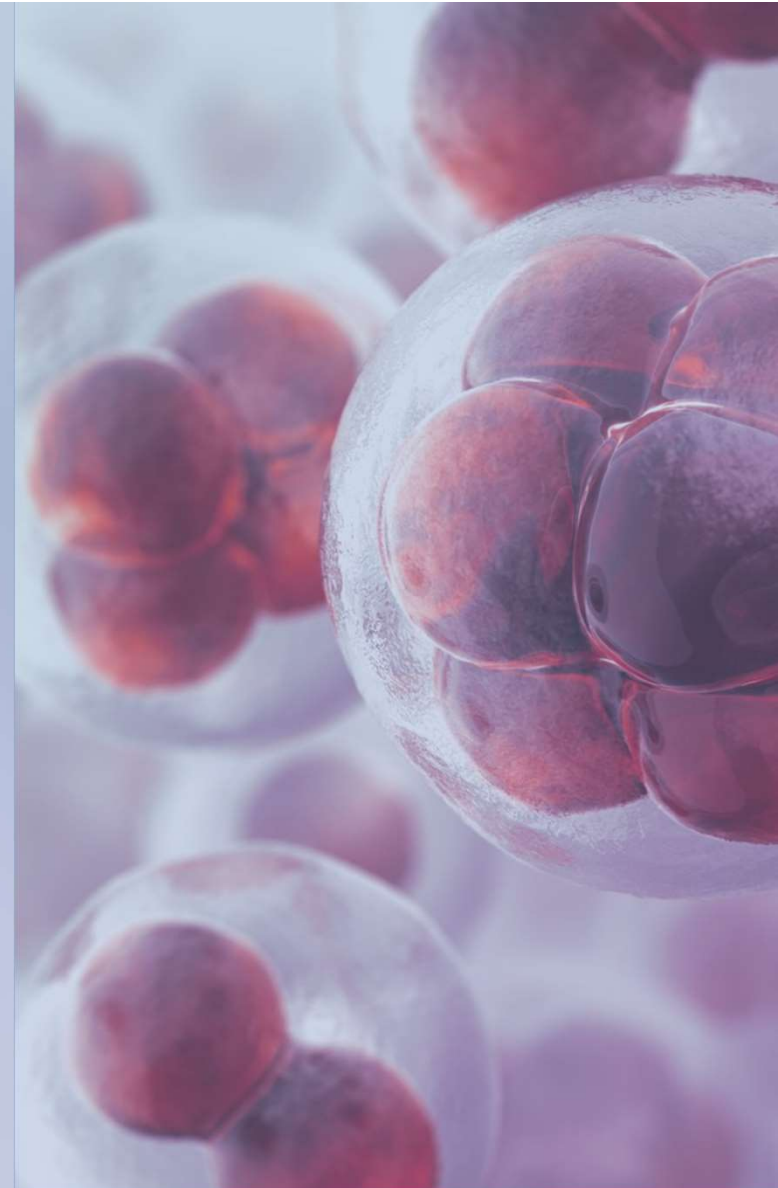
# Clinical Presentations

Symptoms  
indicating  
potential  
immunodeficiency

Role of rhinology  
team in early  
recognition and  
referral

# Types of Immunodeficiencies

- Primary Immunodeficiency (PIDs)
  - Definition and genetic basis
  - Common types: Specific Antibody Deficiency (SAD), Common Variable Immunodeficiency (CVID)
- Secondary Immunodeficiency (SIDs)
  - Causes: infections, malignancy, medications



# Evaluation Algorithm



Steps for evaluating adult patients with suspected immunodeficiency



Importance of assessing vaccine responses

**Step 1:** Has the patient been previously diagnosed or evaluated for an immunodeficiency?

**Step 2:** Is there a history of recurrent infections as an adult?

**Step 3:** Was the patient born preterm or full term? Any complications surrounding the delivery, including neonatal intensive care unit (NICU) stay, illnesses, antibiotic use, ventilator support?

**Step 4:** Was the patient primarily healthy during childhood, excluding the expected viral infections that are known to occur? Or was the childhood marked by recurrent infections and antibiotic use and frequent absences from school?

**Step 5:** If there is a history of recurrent infections in adulthood and/or childhood, obtain additional history regarding the types and frequency of infections, duration of symptoms, and treatments rendered. Refer to Step 6 and 7.

**Step 6:** Assess if there is a history of the following:

- Recurrent bacterial infections, such as acute otitis media, sinusitis, and pneumonia?
- Recurrent respiratory viral infections or prolonged duration of these illnesses?
- Systemic viral infections, such as Epstein-Barr virus (EBV), Cytomegalovirus (CMV), Herpes Simplex Virus (HSV)?
- Bacteremia, meningitis, abscesses, skin or soft tissue infections?
- Fungal infections, such as thrush or fungal sinus or lung infections?
- Recalcitrant warts or eczema?
- Recurrent or chronic diarrhea or GI disorders?
- Autoimmune disorders?
- Hospitalization for illness?
- Travel?
- Did they receive the standard vaccinations for their age, including childhood vaccinations?(17)
- Family history of recurrent infections, clinically diagnosed immunodeficiencies or autoimmune disorders?
- Does the patient have infections and/or physical features of a syndromic disorder?
- Has the patient ever undergone clinical genetic testing?

**Step 7:** Assess for possible etiologies of secondary immunodeficiencies.

**Step 8:** Based on the aforementioned history, if there are frequent cases of bacterial infections then consider evaluation for a humoral immunodeficiency. If there are frequent viral or fungal infections then consider evaluation for a cellular immunodeficiency.

**Step 9:** Initial immunology laboratory assessment:

- Quantitative immunoglobulins (IgA, IgG, IgM)
- Complete blood count (CBC) with differential. Assess Absolute Lymphocyte Count (ALC), Absolute Neutrophil Count (ANC) and Absolute Eosinophil Count (AEC).
- Streptococcus pneumoniae titers. This may test evaluate either 14 or 23 serotypes depending on the lab. Determine if and when pneumococcal vaccine(s) have been received in the patient's lifetime. As noted previously, pneumococcal conjugate vaccine is now part of the childhood vaccine series.
- Tetanus titer. Determine when tetanus vaccine had been most recently administered in the patient's lifetime. This is part of the childhood vaccine series.
- If any of these labs have been previously checked, compare the trend of the results over time.

**Step 10:** If any of the aforementioned labs are abnormal, consider a referral to a Clinical Immunologist. If the aforementioned labs are normal but the history is concerning for an immunodeficiency, consider a referral to a Clinical Immunologist.

# Specific Antibody Deficiency (SAD)



Characteristics and clinical implications



Relationship with chronic rhinosinusitis (CRS)



Management strategies:  
antibiotic use, immunoglobulin replacement



# Common Variable Immunodeficiency (CVID)



Epidemiology and diagnostic criteria



Treatment options such as immunoglobulin replacement therapy and prophylactic antibiotics

# Management Options



Antibiotic prophylaxis



Immunoglobulin replacement therapy administration methods



Considerations for long-term care

# Collaborative Care

Importance of multidisciplinary care (rhinology team, clinical allergy/immunologists)

Enhancing patient outcomes through collaborative management

# Nursing Implications

## Key Responsibilities:

### Patient Education

- Explain the importance of follow-up appointments and adherence to prescribed therapies.
- Teach patients and caregivers about recognizing signs of infection and when to seek medical attention.

### Support in Treatment Administration

- Assist in administration of immunoglobulin replacement therapy (IV or SC) as per physician's orders.
- Monitor for infusion reactions and provide supportive care as needed.

### Documentation and Reporting

- Document patient assessments, treatments, and responses accurately.
- Communicate effectively with the healthcare team to ensure continuity of care.

# Nursing Implications

## Role of Nurses in Immunodeficiency Care

Educating patients about signs and symptoms of immunodeficiency.

Providing instructions on medication adherence and infection prevention.

Monitoring patients for treatment responses and adverse effects.

Collaborating with rhinologists and clinical immunologists in patient care

# Conclusion



Recap of key points discussed



Future directions in managing immunodeficiencies in rhinology practice

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