

# 10 WARNING SIGNS OF PRIMARY IMMUNODEFICIENCY

Primary Immunodeficiency (PI) causes children and young adults to have infections that come back frequently or are unusually hard to cure. In America alone, up to 1/2 million people suffer from one of the 140 known Primary Immunodeficiency diseases.

If you or someone you know are affected by two or more of the following warning signs, speak to a physician about the possible presence of an underlying Primary Immunodeficiency.

**1** Eight or more new ear infections within one year

**6** Recurrent, deep skin or organ abscesses

**2** Two or more serious sinus infections within one year

**7** Persistent thrush in mouth or elsewhere on skin (after age 1)

**3** Two or more months on antibiotics with little effect

**8** Need for intravenous antibiotics to clear infections

**4** Two or more pneumonias within one year

**9** Two or more deep-seated infections

**5** Failure of an infant to gain weight or grow normally

**10** A family history of Primary Immunodeficiency



**Rainbow Babies  
& Children's Hospital**  
University Hospitals of Cleveland



**Jeffrey Modell Foundation**

These warning signs were developed by the  
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# 4 Stages

## OF IMMUNOLOGIC TESTING WHEN PRIMARY IMMUNODEFICIENCY IS SUSPECTED

1

- History and physical examination, height and weight
- CBC and differential
- Quantitative Immunoglobulin levels IgG, IgM, IgA (related to age)

2

- Specific antibody responses (tetanus, diphtheria)
- Response to pneumococcal vaccine (pre/post) (for ages 3 and up)
- IgG subclass analysis

3

- Candida and Tetanus skin tests
- Lymphocyte surface markers CD3/CD4/CD8/CD19/CD16/CD56
- Mononuclear lymphocyte proliferation studies (using mitogen and antigen stimulation)
- Neutrophil oxidation burst (if indicated)

4

- Complement screening CH50, C3, C4
- Enzyme measurements (adenosine deaminase, purine nucleoside phosphorylase)
- Phagocyte studies (surface glycoproteins, mobility, phagocytosis)
- NK cytotoxicity studies
- Further complement studies AH50
- Neo antigen to test antibody production
- Other surface/cytoplasmic molecules
- Cytokine receptor studies
- Family/genetic studies



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