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Immune System and Disorders

What is the immune system?

Your immune system is a complex network of cells, tissues, and organs. Together they help the body fight infections and other diseases.

When germs such as bacteria [<https://medlineplus.gov/bacterialinfections.html>] or viruses [<https://medlineplus.gov/viralinfections.html>] invade your body, they attack and multiply. This is called an infection. The infection causes the disease that makes you sick. Your immune system protects you from the disease by fighting off the germs.

What are the parts of the immune system?

The immune system has many different parts, including:

- Your skin, which can help prevent germs from getting into the body
- Mucous membranes, which are the moist, inner linings of some organs and body cavities. They make mucus and other substances which can trap and fight germs.
- White blood cells, which fight germs
- Organs and tissues of the lymph system [<https://medlineplus.gov/lymphaticdiseases.html>] , such as the thymus, spleen [<https://medlineplus.gov/spleendiseases.html>] , tonsils, lymph nodes, lymph vessels, and bone marrow [<https://medlineplus.gov/bonemarrowdiseases.html>] . They produce, store, and carry white blood cells.

How does the immune system work?

Your immune system defends your body against substances it sees as harmful or foreign. These substances are called antigens. They may be germs such as bacteria and viruses. They might be chemicals or toxins. They could also be cells that are damaged from things like cancer [<https://medlineplus.gov/cancer.html>] or sunburn [<https://medlineplus.gov/sunexposure.html>] .

When your immune system recognizes an antigen, it attacks it. This is called an immune response. Part of this response is to make antibodies. Antibodies are proteins that work to attack, weaken, and destroy antigens. Your body also makes other cells to fight the antigen.

Afterwards, your immune system remembers the antigen. If it sees the antigen again, it can recognize it. It will quickly send out the right antibodies, so in most cases, you don't get sick. This protection against a certain disease is called immunity.

What are the types of immunity?

There are three different types of immunity:

- **Innate immunity** is the protection that you are born with. It is your body's first line of defense. It includes barriers such as the skin and mucous membranes. They keep harmful substances from entering the body. It also includes some cells and chemicals which can attack foreign substances.
- **Active immunity**, also called adaptive immunity, develops when you are infected with or vaccinated [<https://medlineplus.gov/vaccines.html>] against a foreign substance. Active immunity is usually long-lasting. For many

diseases, it can last your entire life.

- **Passive immunity** happens when you receive antibodies to a disease instead of making them through your own immune system. For example, newborn babies have antibodies from their mothers. People can also get passive immunity through blood products that contain antibodies. This kind of immunity gives you protection right away. But it only lasts a few weeks or months.



What can go wrong with the immune system?

Sometimes a person may have an immune response even though there is no real threat. This can lead to problems such as allergies [<https://medlineplus.gov/allergy.html>] , asthma [<https://medlineplus.gov/asthma.html>] , and autoimmune diseases [<https://medlineplus.gov/autoimmunediseases.html>] . If you have an autoimmune disease, your immune system attacks healthy cells in your body by mistake.

Other immune system problems happen when your immune system does not work correctly. These problems include immunodeficiency diseases. If you have an immunodeficiency disease, you get sick more often. Your infections may last longer and can be more serious and harder to treat. They are often **genetic disorders** [<https://medlineplus.gov/geneticdisorders.html>] .

There are other diseases that can affect your immune system. For example, **HIV** [<https://medlineplus.gov/hiv.html>] is a virus that harms your immune system by destroying your white blood cells. If HIV is not treated, it can lead to AIDS (acquired immunodeficiency syndrome). People with AIDS have badly damaged immune systems. They get an increasing number of severe illnesses.

Start Here

- Immune System (For Parents) [<https://kidshealth.org/en/parents/immune.html>] (Nemours Foundation)
Also in Spanish [<https://kidshealth.org/es/parents/immune.html>]
- Overview of the Immune System [<https://www.niaid.nih.gov/research/immune-system-overview>]
 (National Institute of Allergy and Infectious Diseases)
- Primary Immune Deficiency Diseases (PIDDs) [<https://www.niaid.nih.gov/diseases-conditions/primary-immune-deficiency-diseases-pidds>]
 (National Institute of Allergy and Infectious Diseases)

Symptoms

- 10 Warning Signs of Primary Immunodeficiency
[https://res.cloudinary.com/info4pi/image/upload/v1662306262/JMF_10_Signs_Adult_Poster_082421_v2_172804c98d.pdf]
(Jeffrey Modell Foundation) - **PDF**
- Recurrent Infections May Signal Immunodeficiencies [<https://www.aaaai.org/tools-for-the-public/conditions-library/immunodeficiency/recurrent-infections-immunodeficiencies>] (American Academy of Allergy, Asthma, and Immunology)
Also in Spanish [<https://www.aaaai.org/tools-for-the-public/biblioteca-de-condiciones/biblioteca-de-inmunodeficiencias/la-recurrencia-de-infecciones-puede-indicar-inmuno>]

Diagnosis and Tests

- Laboratory Tests [<https://primaryimmune.org/understanding-primary-immunodeficiency/diagnosis/laboratory-tests>]
(Immune Deficiency Foundation)

Treatments and Therapies

- Intravenous Immunoglobulin (IVIG) [<https://rheumatology.org/patients/intravenous-immunoglobulin-ivig>]
(American College of Rheumatology)
Also in Spanish [<https://rheumatology.org/patients/inmunoglobulina-intravenosa-ivig>]

Related Issues


- Covid-19 Vaccines for Moderately to Severely Immunocompromised People
[<https://www.cdc.gov/covid/vaccines/immunocompromised-people.html>] (Centers for Disease Control and Prevention)

Flu Vaccine Guidance for Patients with Immune Deficiency [<https://www.aaaai.org/tools-for-the-public/conditions-library/immuno-deficiency/flu-vaccine-guidance>] (American Academy of Allergy, Asthma, and Immunology)

Also in Spanish [<https://www.aaaai.org/tools-for-the-public/biblioteca-de-condiciones/biblioteca-de-inmunodeficiencias/guia-sobre-la-vacuna-contra-la-gripe-para-paciente>]



- People at Risk: Those with Weakened Immune Systems [<https://www.foodsafety.gov/people-at-risk/people-with-weakened-immune-systems>] (Department of Health and Human Services)


Also in Spanish [<https://espanol.foodsafety.gov/personas-en-riesgo-mgac/personas-con-el-sistema-inmunitario-debilitado>]

- Talking to Your Doctor about Primary Immune Deficiency Diseases [<https://www.niaid.nih.gov/diseases-conditions/pidds-talking-your-doctor>]  (National Institute of Allergy and Infectious Diseases)

- Travelers' Health: Immunocompromised Travelers [<https://www.cdc.gov/yellow-book/hcp/travelers-with-additional-considerations/immunocompromised-travelers.html>] (Centers for Disease Control and Prevention)

Specifics

- Chronic Granulomatous Disease (CGD) [<https://www.niaid.nih.gov/diseases-conditions/chronic-granulomatous-disease-cgd>]   (National Institute of Allergy and Infectious Diseases)

- Common Variable Immunodeficiency (CVID) [<https://www.niaid.nih.gov/diseases-conditions/common-variable-immunodeficiency-cvid>]  (National Institute of Allergy and Infectious Diseases)

- Congenital Neutropenia Syndromes [<https://www.niaid.nih.gov/diseases-conditions/congenital-neutropenia-syndromes>]  (National Institute of Allergy and Infectious Diseases)

- DiGeorge Syndrome (DGS) [<https://www.aaaai.org/conditions-treatments/primary-immunodeficiency-disease/digeorge-syndrome>] (American Academy of Allergy, Asthma, and Immunology)

Also in Spanish [[https://www.aaaai.org/conditions-treatments/afecciones-y-tratamientos/enfermedades-de-inmunodeficiencia-primaria/sindrome-de-digeorge-\(sdg\)](https://www.aaaai.org/conditions-treatments/afecciones-y-tratamientos/enfermedades-de-inmunodeficiencia-primaria/sindrome-de-digeorge-(sdg))]

- DOCK8 Deficiency [<https://www.niaid.nih.gov/diseases-conditions/dock8-deficiency>]

 (National Institute of Allergy and Infectious Diseases)


- GATA2 Deficiency [<https://www.niaid.nih.gov/sites/default/files/GATA2-Factsheet.pdf>]

 (National Institute of Allergy and Infectious Diseases) - PDF

- General Information about Langerhans Cell Histiocytosis (LCH)

[<https://www.cancer.gov/types/langerhans/patient/langerhans-treatment-pdq>]  (National Cancer Institute)

Also in Spanish [<https://www.cancer.gov/espanol/tipos/langerhans/paciente/tratamiento-langerhans-pdq>]

- Glycosylation Disorders with Immunodeficiency [<https://www.niaid.nih.gov/diseases-conditions/glycosylation-disorders-immunodeficiency>]  (National Institute of Allergy and Infectious Diseases)

- Hyper-Immunoglobulin E Syndromes (HIES) [<https://www.niaid.nih.gov/diseases-conditions/hyper-immunoglobulin-e-syndromes-hies>]  (National Institute of Allergy and Infectious Diseases)

- Mastocytosis [<https://familydoctor.org/condition/mastocytosis/?adfree=true>] (American Academy of Family Physicians)

Also in Spanish [<https://es.familydoctor.org/condicion/mastocitosis-es/?adfree=true>]

- Monoclonal Gammopathies [<https://www.hopkinsmedicine.org/health/conditions-and-diseases/monoclonal-gammopathies>] (Johns Hopkins Medicine)



- Overview of Immunodeficiency Disorders [<https://www.merckmanuals.com/home/immune-disorders/immunodeficiency-disorders/overview-of-immunodeficiency-disorders>] (Merck & Co., Inc.)

Also in Spanish [<https://www.merckmanuals.com/es-us/hogar/trastornos-inmunol%c3%b3gicos/inmunodeficiencias/introducci%c3%b3n-a-las-inmunodeficiencias>]

- PLCG2-Associated Antibody Deficiency Immune Dysregulation (PLAID) [<https://www.niaid.nih.gov/diseases-conditions/plcg2-associated-antibody-deficiency-and-immune-dysregulation-plaid>]

 (National Institute of Allergy and Infectious Diseases)


















- Selective IgA Deficiency [<https://www.aaaai.org/conditions-treatments/primary-immunodeficiency-disease/selective-iga-deficiency>] (American Academy of Allergy, Asthma, and Immunology)






















- Severe Combined Immunodeficiency (SCID) [<https://www.niaid.nih.gov/diseases-conditions/severe-combined-immunodeficiency-scid>]   (National Institute of Allergy and Infectious Diseases)







Types of Primary Immune Deficiency Diseases [<https://www.niaid.nih.gov/diseases-conditions/types-pids>]
 (National Institute of Allergy and Infectious Diseases)

- Warts, Hypogammaglobulinemia, Infections, and Myelokathexis (WHIM) Syndrome [<https://www.niaid.nih.gov/diseases-conditions/warts-hypogammaglobulinemia-infections-myelokathexis-syndrome-whims>]
 (National Institute of Allergy and Infectious Diseases)
- Wiskott-Aldrich Syndrome (WAS) [<https://www.niaid.nih.gov/sites/default/files/Wiskott-Aldrich-Syndrome-Factsheet.pdf>]
 (National Institute of Allergy and Infectious Diseases) - **PDF**
- X-Linked Agammaglobulinemia (XLA) [<https://www.niaid.nih.gov/diseases-conditions/x-linked-agammaglobulinemia>]
 (National Institute of Allergy and Infectious Diseases)



Genetics

- 22q11.2 deletion syndrome: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/22q112-deletion-syndrome>]
 (National Library of Medicine)
- Activated PI3K-delta syndrome: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/activated-pi3k-delta-syndrome>]  (National Library of Medicine)
- Adenosine deaminase deficiency: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/adenosine-deaminase-deficiency>]  (National Library of Medicine)
- Anhidrotic ectodermal dysplasia with immune deficiency: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/anhidrotic-ectodermal-dysplasia-with-immune-deficiency>]
 (National Library of Medicine)
- Autosomal dominant hyper-IgE syndrome: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/autosomal-dominant-hyper-ige-syndrome>]  (National Library of Medicine)
- Bare lymphocyte syndrome type I: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/bare-lymphocyte-syndrome-type-i>]  (National Library of Medicine)
- Bare lymphocyte syndrome type II: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/bare-lymphocyte-syndrome-type-ii>]  (National Library of Medicine)
- Chediak-Higashi syndrome: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/chediak-higashi-syndrome>]
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- Chronic granulomatous disease: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/chronic-granulomatous-disease>]  (National Library of Medicine)
- Common variable immune deficiency: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/common-variable-immune-deficiency>]  (National Library of Medicine)
- Complement component 2 deficiency: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/complement-component-2-deficiency>]  (National Library of Medicine)
- Complement component 8 deficiency: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/complement-component-8-deficiency>]  (National Library of Medicine)
- Complement factor I deficiency: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/complement-factor-i-deficiency>]  (National Library of Medicine)
- DOCK8 immunodeficiency syndrome: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/dock8-immunodeficiency-syndrome>]  (National Library of Medicine)
- Erdheim-Chester disease: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/erdheim-chester-disease>]
 (National Library of Medicine)
- Familial candidiasis: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/familial-candidiasis>]
 (National Library of Medicine)
- Familial hemophagocytic lymphohistiocytosis: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/familial-hemophagocytic-lymphohistiocytosis>]  (National Library of Medicine)

- Griscelli syndrome: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/griscelli-syndrome>]  (National Library of Medicine)
- Hepatic veno-occlusive disease with immunodeficiency: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/hepatic-veno-occlusive-disease-with-immunodeficiency>]  (National Library of Medicine)
- Immune dysregulation, polyendocrinopathy, enteropathy, X-linked syndrome: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/immune-dysregulation-polyendocrinopathy-enteropathy-x-linked-syndrome>]  (National Library of Medicine)
- IRAK-4 deficiency: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/irak-4-deficiency>]  (National Library of Medicine)
- JAK3-deficient severe combined immunodeficiency: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/jak3-deficient-severe-combined-immunodeficiency>]  (National Library of Medicine)
- Langerhans cell histiocytosis: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/langerhans-cell-histiocytosis>]  (National Library of Medicine)
- Leukocyte adhesion deficiency type 1: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/leukocyte-adhesion-deficiency-type-1>]  (National Library of Medicine)
- Mannose-binding lectin deficiency: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/mannose-binding-lectin-deficiency>]  (National Library of Medicine)
- MDA5 deficiency: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/mda5-deficiency>]  (National Library of Medicine)
- Omenn syndrome: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/omenn-syndrome>]  (National Library of Medicine)
- PGM3-congenital disorder of glycosylation: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/pgm3-congenital-disorder-of-glycosylation>]  (National Library of Medicine)
- Poikiloderma with neutropenia: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/poikiloderma-with-neutropenia>]  (National Library of Medicine)
- Primary Immune Deficiency Disease Genetics and Inheritance [<https://www.niaid.nih.gov/diseases-conditions/pidds-genetics-inheritance>]  (National Institute of Allergy and Infectious Diseases)
- Purine nucleoside phosphorylase deficiency: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/purine-nucleoside-phosphorylase-deficiency>]  (National Library of Medicine)
- Spondyloenchondrodysplasia with immune dysregulation: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/spondyloenchondrodysplasia-with-immune-dysregulation>]  (National Library of Medicine)
- Systemic mastocytosis: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/systemic-mastocytosis>]  (National Library of Medicine)
- T-cell immunodeficiency, congenital alopecia, and nail dystrophy: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/t-cell-immunodeficiency-congenital-alopecia-and-nail-dystrophy>]  (National Library of Medicine)
- TRNT1 deficiency: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/trnt1-deficiency>]  (National Library of Medicine)
- Vici syndrome: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/vici-syndrome>]  (National Library of Medicine)
- Wiskott-Aldrich syndrome: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/wiskott-aldrich-syndrome>]  (National Library of Medicine)
- X-linked agammaglobulinemia: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/x-linked-agammaglobulinemia>]  (National Library of Medicine)

- X-linked hyper IgM syndrome: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/x-linked-hyper-igm-syndrome>]  (National Library of Medicine)
- X-linked immunodeficiency with magnesium defect, Epstein-Barr virus infection, and neoplasia: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/x-linked-immunodeficiency-with-magnesium-defect-epstein-barr-virus-infection-and-neoplasia>]  (National Library of Medicine)
- X-linked lymphoproliferative disease: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/x-linked-lymphoproliferative-disease>]  (National Library of Medicine)
- X-linked severe combined immunodeficiency: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/x-linked-severe-combined-immunodeficiency>]  (National Library of Medicine)
- Yao syndrome: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/yao-syndrome/>]  (National Library of Medicine)
- ZAP70-related severe combined immunodeficiency: MedlinePlus Genetics [<https://medlineplus.gov/genetics/condition/zap70-related-severe-combined-immunodeficiency>]  (National Library of Medicine)


Videos and Tutorials

- Immune response [<https://medlineplus.gov/ency/anatomyvideos/000073.htm>]  (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/anatomyvideos/000073.htm>]
- Phagocytosis [<https://medlineplus.gov/ency/anatomyvideos/000098.htm>]  (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/anatomyvideos/000098.htm>]





Test Your Knowledge

- Fitness Facts & Fiction Quiz [https://medlineplus.gov/ency/quiz/007165_45.htm] (Medical Encyclopedia)
Also in Spanish [https://medlineplus.gov/spanish/ency/quiz/007165_100.htm]
- Immune System Quiz [<https://kidshealth.org/en/kids/isquiz.html>] (Nemours Foundation)

Statistics and Research

- Immune System Research [<https://www.niaid.nih.gov/research/immune-system-research>]  (National Institute of Allergy and Infectious Diseases)

Clinical Trials

- ClinicalTrials.gov: Granulomatous Disease, Chronic [<https://clinicaltrials.gov/search?cond=%22Granulomatous+Disease,+Chronic%22&aggFilters=status:not%20rec>]  (National Institutes of Health)
- ClinicalTrials.gov: Immune System Diseases [<https://clinicaltrials.gov/search?cond=%22Immune+System+Diseases%22&aggFilters=status:not%20rec>]  (National Institutes of Health)
- ClinicalTrials.gov: Primary Immunodeficiency Diseases [<https://clinicaltrials.gov/search?cond=%22Primary+Immunodeficiency+Diseases%22&aggFilters=status:not%20rec>]  (National Institutes of Health)
- ClinicalTrials.gov: Severe Combined Immunodeficiency [<https://clinicaltrials.gov/search?cond=%22Severe+Combined+Immunodeficiency%22&aggFilters=status:not%20rec>]  (National Institutes of Health)


Journal Articles

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- Article: Hypoxic link between cancer cells and the immune system: The role... [<https://www.ncbi.nlm.nih.gov/pubmed/40746883>]
- Article: Brain and Immune System: Intercellular Communication During Homeostasis and Neuroimmunomodulation upon... [<https://www.ncbi.nlm.nih.gov/pubmed/40724800>]
- Article: The Immune Regulatory Functions of CD226 and Its Implications in Immune-Mediated... [<https://www.ncbi.nlm.nih.gov/pubmed/40723878>]

Immune System and Disorders -- see more articles [<https://pubmed.ncbi.nlm.nih.gov/?term=%22Immune+System%22%5Bmajr%3Anoexp%5D+OR+%22Immune+System+Diseases%22%5Bmajr%3Anoexp%5D+AND+humans%5Bmh%5D+AND+english%5Bla%5D+AND+%22last+1+Year%22+%5Bedat%5D+NOT+%28letter%5Bpt%5D+OR+case+reports%5Bpt%5D+OR+editorial%5Bpt%5D+OR+comment%5Bpt%5D%29+AND+free+full+text%5Bsb%5D+>]


Find an Expert

- American Academy of Allergy, Asthma, and Immunology [<https://www.aaaai.org/>]
- Find an Expert Immunologist [<https://info4pi.org/information-booth/?findAnExpert=true&searchBy=place&searchTerm=>] (Jeffrey Modell Foundation)
- Immune Deficiency Foundation [<https://primaryimmune.org/>]
- National Institute of Allergy and Infectious Diseases [<https://www.niaid.nih.gov/>] 

Children

- 22q11.2 Deletion Syndrome (DiGeorge Syndrome) (For Parents) [<https://kidshealth.org/en/parents/22q11-deletion.html>] (Nemours Foundation)
Also in Spanish [<https://kidshealth.org/es/parents/22q11-deletion.html>]
- Repeated Infections in Children [<https://familydoctor.org/condition/repeated-infections-in-children/?adfree=true>] (American Academy of Family Physicians)
Also in Spanish [<https://es.familydoctor.org/condicion/infecciones-reiteradas-en-los-ninos-es/?adfree=true>]
- Severe Combined Immunodeficiency (SCID) [<https://kidshealth.org/en/parents/severe-immunodeficiency.html>] (Nemours Foundation)
Also in Spanish [<https://kidshealth.org/es/parents/severe-immunodeficiency.html>]
- Weakened Immune Systems [<https://www.healthychildren.org/English/safety-prevention/immunizations/pages/Weakened-Immune-Systems.aspx>] (American Academy of Pediatrics)
Also in Spanish [<https://www.healthychildren.org/spanish/safety-prevention/immunizations/paginas/weakened-immune-systems.aspx>]
- What Is a Pediatric Allergist / Immunologist? [<https://www.healthychildren.org/English/family-life/health-management/pediatric-specialists/Pages/What-is-a-Pediatric-Allergist-Immunologist.aspx>] (American Academy of Pediatrics)
Also in Spanish [<https://www.healthychildren.org/spanish/family-life/health-management/pediatric-specialists/paginas/what-is-a-pediatric-allergist-immunologist.aspx>]

Teenagers

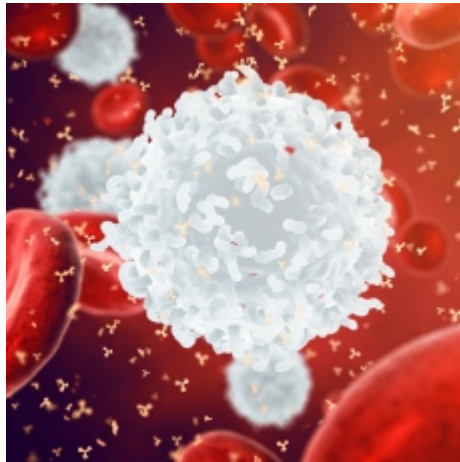
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- Agammaglobulinemia [<https://medlineplus.gov/ency/article/001307.htm>] (Medical Encyclopedia)
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- Aging changes in immunity [<https://medlineplus.gov/ency/article/004008.htm>] (Medical Encyclopedia)
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- Chronic granulomatous disease [<https://medlineplus.gov/ency/article/001239.htm>] (Medical Encyclopedia)
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- Graft-versus-host disease [<https://medlineplus.gov/ency/article/001309.htm>] (Medical Encyclopedia)
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- Histiocytosis [<https://medlineplus.gov/ency/article/000068.htm>] (Medical Encyclopedia)
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- Hyperimmunoglobulin E syndrome [<https://medlineplus.gov/ency/article/001311.htm>] (Medical Encyclopedia)
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- Immunodeficiency disorders [<https://medlineplus.gov/ency/article/000818.htm>] (Medical Encyclopedia)
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MEDICAL ENCYCLOPEDIA

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Immunofixation blood test [<https://medlineplus.gov/ency/article/003543.htm>]

Latex agglutination test [<https://medlineplus.gov/ency/article/003334.htm>]

Nitroblue tetrazolium blood test [<https://medlineplus.gov/ency/article/003355.htm>]

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Quantitative nephelometry test [<https://medlineplus.gov/ency/article/003545.htm>]

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Serum sickness [<https://medlineplus.gov/ency/article/000820.htm>]

Related Health Topics

Autoimmune Diseases [<https://medlineplus.gov/autoimmunediseases.html>]

Vaccines [<https://medlineplus.gov/vaccines.html>]

National Institutes of Health

The primary NIH organization for research on *Immune System and Disorders* is the National Institute of Allergy and Infectious Diseases [<http://www.niaid.nih.gov/>]

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