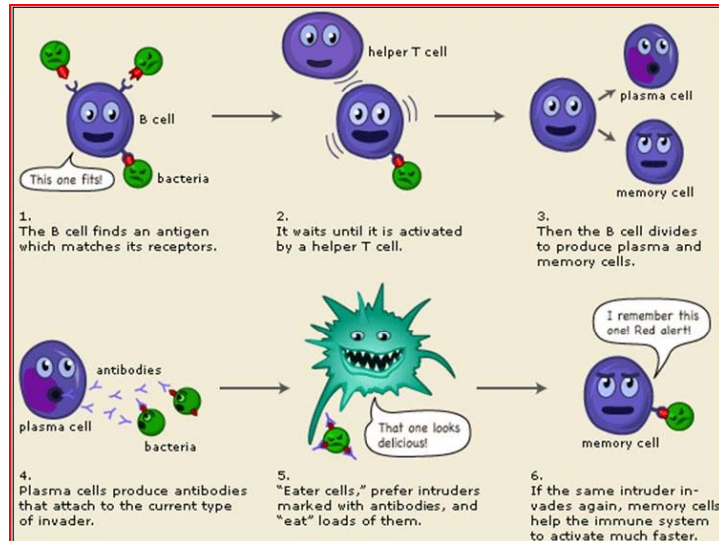


The Immune System



A "foreign" molecule which can invoke the immune response is called a(n)

- a) Colony-stimulating factor
- b) Immunoglobulin
- c) Hapten
- d) Antigen
- e) Antibody

d) Antigen

Proteins are the most common

Active artificially acquired immunity is
a result of

- a) Injection of an immune serum
- b) Antibodies passed on from mother to baby through breast milk
- c) Vaccination
- d) Antibodies passed on from mother to fetus through the placenta
- e) Contact with a pathogen

c) Vaccination

Usually dead or attenuated pathogens are used

Antibodies are produced in cells called

- a) Natural killer cells
- b) Helper T-cells
- c) Plasma cells
- d) Beta cells
- e) Memory cells

c) Plasma cells

These cells can secrete up to 2000 antibody molecules per second

Complement proteins work by

- a) Producing antibodies
- b) Phagocytosis of target cells
- c) Neutralization of antigens
- d) Creating an impermeable barrier
- e) Forming pores in the membranes of target cells

e) Forming pores in the membranes of target cells

Complement usually work with antibodies in the “classical pathway”

Cytotoxic T cells kill target cells

- a) By phagocytosis
- b) By secreting antibodies
- c) Through insertion of perforins into the targets membrane
- d) By releasing oxidizing agents
- e) Through injection of tumor necrosis factor

c) Through insertion of perforins into
the target's membrane

Cytotoxic T cells cause lysis

Lymphocytes that develop
immunocompetence in the thymus are

- a) B lymphocytes
- b) Nk cells
- c) T lymphocytes

c) T lymphocytes

T cells get their names from the fact that they develop in the thymus

Saliva and lacrimal fluid contain this enzyme that destroys bacteria

- a) Lysozyme
- b) Trypsin
- c) Amylase
- d) Salivase
- e) Pepsin

a) Lysozyme

This enzyme lyses the cell wall and membrane of bacteria

The immune cell that allows for subsequent recognition of an antigen resulting in a secondary response is called a(n)

- a) Basophil
- b) Memory cell
- c) Helper T-cell
- d) Plasma cell
- e) Antigen-presenting cell

b) Memory cell

These cells may circulate for years

The primary mechanism of antibody action is

- a) Neutralization
- b) Phagocytosis
- c) Agglutination
- d) Complement activation
- e) Precipitation

d) Complement activation

Antibodies usually activate plasma proteins

These molecules are secreted by leukocytes and macrophages and result in a fever

- a) Pyrogens
- b) Keratin
- c) Heparin
- d) Antibodies
- e) Histamine

a) Pyrogens

Interleukins are paracrine signals used by the immune system

This type of antibody binds to mast cells and basophils, thus invoking inflammation

- a) IgA
- b) IgG
- c) IgM
- d) IgD
- e) IgE

e) IgE

These antibodies are secreted by plasma cells of the mucosae

This type of disease results from the inability of the immune system to distinguish self from non-self antigens

- a) Anaphylaxis
- b) Immunodeficiency
- c) SCID
- d) Allergy
- e) Autoimmune disease

e) Autoimmune disease

Multiple sclerosis and lupus are good examples

When a localized area exhibits increased capillary filtration, hyperemia, and swelling, this is an indication of

- a) Antigens are present
- b) Antibodies are phagocytizing target cells
- c) Inflammation is occurring
- d) An immune response is underway
- e) Fever is developing

c) Inflammation is occurring

This even usually occurs when histamine or complement is mobilized

Which cell does not have a direct role in phagocytosis?

- a) Neutrophils
- b) Kupffer cells
- c) Basophil
- d) Macrophage
- e) eosinophil

c) basophil

These cells invoke inflammation via release of histamine

Which cell phagocytize antigen-bearing cells and bind them to their MHCs?

- a) Plasma cells
- b) Helper T-cells
- c) All immune cells
- d) Antigen presenting cells
- e) NK cells

d) Antigen presenting cells

Dendritic cells and macrophages are the most common

Which cells stimulate both arms of the immune response

- a) Killer T-cells
- b) Helper T-cells
- c) Basophils
- d) Plasma cells
- e) Complement cells

b) Helper T cells

Without these cells there is no immune response

Which nonspecific defense cells specialize in attacking cancer cells and virus-infected cells?

- a) Helper T-lymphocytes
- b) Natural killer cells
- c) Macrophages
- d) Plasma cells
- e) Basophils

b) Natural killer cells

These cells are NOT phagocytic

Which of the following is a nonspecific barrier defense?

- a) Mucous membranes
- b) Macrophages
- c) Complements
- d) Natural killer cells
- e) Antibodies

a) Mucous membranes

These line the hollow tube-like organs of the body that are exposed to the external environment

Which statement below is a characteristic of a secondary humoral response?

- a) It triggers fever
- b) It occurs much more rapidly than a primary response
- c) It results in less memory cell circulation
- d) It results in less antibody secretion
- e) It only occurs in the spleen

b) It occurs much more rapidly than a primary response

Memory cells trigger secondary responses

Which type of molecule is produced by viral-infected cells to communicate to non-infected cells of the presences of a virus?

- a) Antigen
- b) Interleukin
- c) Complement
- d) Pyrogen
- e) Interferon

e) Interferon

These molecules turn on genes for antiviral proteins

Which of the following is NOT a surface barrier to pathogen influx?

- a) Mucous membranes
- b) Complement cascade
- c) Saliva and tears
- d) Skin secretions

b) Complement cascade

Complement is a system of internal proteins

Which cells of the innate immune response are responsible for detecting and destroying parasites?

- a) Natural killer cells
- b) Neutrophils
- c) Mast cells
- d) Eosinophils

d) eosinophils

Eosinophils are specialized to destroy things like worms

Which of the following is NOT one of the cardinal signs of inflammation?

- a) Pain
- b) Swelling
- c) Redness
- d) Heat
- e) Opsonization

e) Opsonization

All of the signs are related to increased blood flow into the infected tissues

The process that begins when a helper T-cell binds to an MHC class II protein on a displaying cell is known as

- a) Costimulation
- b) Self antigen recognition
- c) T-cell proliferation
- d) Antigen proliferation

a) costimulation

This is the activation of both cells

All of the following are examples of autoimmune disorders EXCEPT

- a) Myasthenia gravis
- b) Grave's disease
- c) Rheumatoid arthritis
- d) Systemic lupus erythematosus (SLE)
- e) Sickle cell anemia

e) Sickle cell anemia

Sickle cell is a genetic blood disorder

All of the following are examples of characteristics of adaptive defenses EXCEPT

- a) They have memory
- b) We are born with them
- c) They are usually initiated in a lymph node
- d) They are specific
- e) They are systemic

b) We are born with them

We are born with our innate defenses; however, we gain adaptive defenses through exposure to antigens

Which of the following is a primary lymphoid organ?

- a) Lymph node
- b) Tonsil
- c) Spleen
- d) Thymus
- e) Peyer's patch

d) thymus

Primary lymphoid organs are the locations in which T and B cells become immunocompetent. This includes bone marrow and the thymus

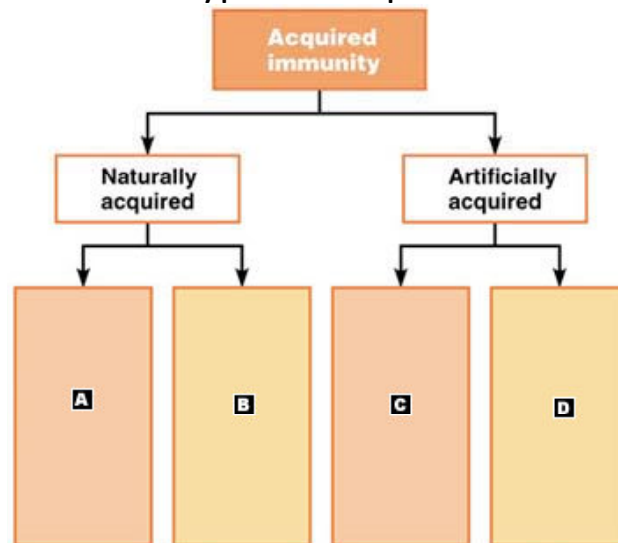
Which of the following is the hallmark of the humoral immune response?

- a) Cell lysis by T cells
- b) Phagocytosis
- c) Binding of antibody to the antigen
- d) Antigen presentation
- e) Interferon production

c) Binding of antibody to the antigen

The humoral response involves the binding of immunoglobulins to antigens causing any one of several events to take place. This ultimately results in destruction of the antigen

Label the types of acquired immunity



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