

Active and Passive Immunity

The Mechanisms of Human Defense

A comprehensive breakdown of how the body develops specific antibodies post-exposure and how it utilizes ready-made immunological protection for immediate defense.

Exam Focus

Biology



Active Immunity: Forging the Defense

The Antigen Trigger

Active immunity develops when a host is exposed to foreign antigens. In response, the host's own body produces specific antibodies to neutralize the threat.

Living Microbes

Dead Microbes

Proteins

Response Time & Sources

This process is structurally slow and takes time to give its full, effective response.

- Natural Source: Infectious organisms gaining natural access to the body during infection.
- Artificial Source: Deliberate injection of microbes during immunisation.

Antigen
Exposure



Time Delay /
Host Processing



Antibody
Production

Passive Immunity: Ready-Made Protection

Direct Transfer of Antibodies

Unlike active immunity, passive immunity does not require the host to produce its own defenses over time. Instead, ready-made antibodies are directly given to protect the body against foreign agents.



Exam Tip: Look for the keyword "ready-made" to instantly identify passive immunity in multiple-choice questions.



You've Learned the Theory. Let's Test Them Now.

$$E=mc^2$$



Turn theory into marks with **unlimited MCQs, smart analysis, and focused revision.**

Practice Now



At prep.topall.app

Key Highlights

- » Free Study Material, Videos & Infographics
- » Push Your Limits with Level-Based Challenges
- » Climb the Leaderboard Among Fellow Aspirants
- » Practice Unlimited MCQs for NEET & JEE
- » Get Clear Explanations, Not Just Marks
- » Track Your Performance Smarter



Maternal-Infant Passive Immunity

Nature provides essential passive immunity to newborns who cannot yet produce their own effective antibody responses.

Colostrum (Postnatal)

The yellowish fluid secreted by the mother during the initial days of lactation.

Contains abundant antibodies to actively protect the infant.

IgA Antibody



Placental Transfer (Prenatal)

The developing foetus receives some vital antibodies directly from the mother during pregnancy.

Placenta



Key Takeaways



Active Immunity occurs when host exposure to antigens forces the body to produce its own antibodies. It is an effective but inherently slow process.



Passive Immunity occurs when pre-formed, ready-made antibodies are directly introduced into the body, bypassing host production for immediate protection.



Mother-to-child transfer (colostrum containing IgA during lactation, and placental transfer during pregnancy) are the primary natural examples of passive immunity.

Active vs. Passive Immunity

Feature	Active Immunity	Passive Immunity
Source of Antibodies	Produced internally by the host body.	Acquired directly from an external source (ready-made).
Trigger Mechanism	Exposure to antigens (living/dead microbes or proteins).	Direct delivery of antibodies.
Response Time	Slow; takes time to give full effective response.	Immediate protection upon transfer.
Acquisition Methods	Natural infection or intentional immunisation (injection).	Colostrum (IgA), placental transfer, or injection.

Mastery of this matrix is essential for distinguishing complex immune system scenarios on your exam.



You've Learned the Theory.

Now Let's Test It.

Reading notes gets you knowledge.

Practicing MCQs gets you marks.

That's exactly what TopAll Pro is built for.

Try TopAll Pro Now

What TopAll Pro Does Differently

-  **Stuck? Snap it. Solve it. — Doubts AI**
Photo → step-by-step solution in seconds, 24/7
-  **Your AI Coach finds your blind spots**
Concept-level weakness detection — not just chapter-level
-  **4.5 Lakh+ questions. Never run out.**
13× more content than any other prep app in India
-  **Build your own test in 60 seconds**
Pick a chapter, set difficulty — AI does the rest instantly.
-  **AI Recommendation that helps you improve**
AI Recommendation Analysis your Tests and tell you where you need to improve.



Practice the moment you finish studying
Jump in while the concept is still fresh in your head

4.5L+
MCQs

1.5L+
Students

AI Powered
In-Depth Analysis