



HOW STUFF WORKS ?

Word Count (200 max): 200

ABO Blood Typing

When blood is spilled at a crime scene, the forensics team may use a test called blood typing. There are four main blood types: A, B, AB, and O. Blood typing is used to identify from whom blood originated at a crime scene, whether the victim or assailant(s), and can narrow the list of suspects by excluding anyone with a different blood type.

The test works by determining which **antigens** – sugar molecules embedded on the surface of red blood cells – are present in a given blood sample. These antigens have corresponding **antibodies** that attach to their respective antigens in nearby blood cells, causing them to clump together in groups. People with type A blood thus have anti-B antibodies that cause type B blood to clump and vice-versa. Type AB blood contains both A and B antigens, but neither anti-A or anti-B antibody. Type O blood contains both antibodies, but neither antigen.

Blood typing works by mixing a sample of blood with each antibody separately and observing where clumping occurs. If clumping occurs, this indicates that the blood sample contains the corresponding antigen to the specified antibody. The results are used to determine which blood type is present in the sample.

References:

Claridge, Jack. "Jack Claridge." *Explore Forensics*, <https://www.exploreforensics.co.uk/blood-types.html>.

Dean, Laura. "Chapter 2: Blood Group Antigens Are Surface Markers on the Red Blood Cell Membrane." *Blood Groups and Red Cell Antigens*, NCBI, Bethesda, MD, 2005.

Class Slides (Forensic Serology, Part 1)