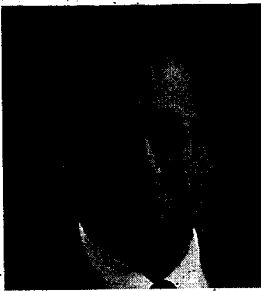




Risk in Perspective

Whose Blood Is Safer?



Eugene Litvak, Ph.D.

We suggest modifying the definition of a "high-risk" blood donor group to include populations with a high ratio of HIV-to-AIDS incidence, even though the population may have low HIV prevalence.

Suppose you need a blood transfusion and are concerned about the risk of contracting HIV from donated blood. Suppose also that you are given a choice between receiving donated blood from a female or male donor. Whose blood would you choose? Intuition says that a female donor's blood is preferable, because both current levels of infection and rates of new infection are lower in women.

Blood banks in the U.S. have followed such logic in recruiting donors from segments of the population believed to be "low risk." However, the truth is not that simple. In 1992, researchers from the Centers for Disease Control and Prevention (CDC) noted in a study published in the *New England Journal of Medicine* that "data do not support the conjecture that HIV infection from screened blood is more likely in areas with high incidences rather than low ones; that is, the risk of HIV infection from screened blood may not be directly proportional to the prevalence of AIDS in a geographic area."

In this issue of RISK IN PERSPECTIVE, we explain this observation

and describe the role of the stage of the AIDS epidemic on the accuracy of negative test results for first-time donors.

ELISA TEST AND FALSE-NEGATIVE ERRORS

The commonly used test for blood bank screening is an antibody test, called the enzyme-linked immunoabsorbent assay (ELISA). This test does not detect HIV.

Rather, it detects the presence of antibodies to HIV, which the human body creates as a reaction to the HIV infection. However, this reaction is not immediate and may occur any time from three weeks to a few months after infection. The period between infection and seroconversion (developing antibodies to HIV) is called the seronegative window or simply "the window." ELISA tests performed on an HIV-infected person in the window will produce a negative result (commonly referred to as a "false-negative").

The rate of false-negative errors of the ELISA test is extremely low. According to a CDC report by Lackritz et al. published in the *New*

