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ABSTRACT

Information about Acquired Immune Deficiency Syndrome (AIDS) is presented to alert National Education Association educators to behaviors that place people at risk for AIDS. The material was prepared by the Public Health Service. Topics include: sexual transmission, transmission from injected blood, transmission during pregnancy, groups at greatest risk for AIDS infection, the geographic distribution of reported AIDS cases, whether AIDs is spread through casual contact, AIDS prevention, the risk for heterosexuals, how children get AIDs and whether they can contract it from friends or schoolmates, suggestions for persons at increased risk of AIDS infection, suggestions for persons with a positive antibody test, how AIDS compares with other sexually transmitted diseases, how education can help stop AIDS, symptoms of AIDS, the length of time after infection with the AIDS virus that AIDS can occur, AIDS diagnosis, a laboratory test that detects AIDS virus antibodies, AIDS risk and blood donation, AIDS treatment, the nature of the AIDS virus, organisms that cause AIDS, AIDS prevention and education programs, AIDS testing of students, admission of students with AIDS, and employees with AIDS. Books and videotapes about AIDS and AIDS hotlines are identified. (SW)

NEA Higher Education Advocate

For NEA Members in Higher Education

The Facts About Aids

A Special *NEA Higher Education Advocate* Report

This issue of the *NEA Higher Education Advocate* is devoted to a factbook on the number one public health problem facing the United States today: AIDS.

The Facts About AIDS is a special publication prepared specially for NEA members by the U.S. Public Health Service. It is designed to place in the hands of every NEA member accurate, up-to-date information that can help alert educators to the behaviors that place people at risk for AIDS.

Reviewed in draft and in final form by NEA members, *The Facts About Aids* is the first project of the Health Information Network, a new effort that joins NEA, the U.S. Public Health Service, and Merrell Dow Pharmaceuticals, Inc. in an ongoing partnership to empower educators with the best available information on health issues.

"AIDS and most all the diseases killing and disabling Americans today—diseases that range from heart failure to lung cancer—are diseases that are, to a great degree, caused or aggravated by lifestyle decisions," notes NEA President Mary Hatwood Futrell. "The more Americans understand how their lifestyles, their behaviors, place them at risk for these diseases, the more likely we as a nation are to reduce the incidence and severity of disease."

"The primary response of colleges and universities to the AIDS epidemic," adds Dr. Richard P. Keeling, editor of the recent *AIDS on the Campus*, "must be education. Higher education must move aggressively and directly to controvert misinformation and counter mythology."

The U.S. Centers for Disease Control has designated October *AIDS Prevention Month*. The information in this booklet can help all educators address the questions *AIDS Prevention Month* activities are likely to encourage students to ask.

THE SPREAD OF AIDS

Proper information and education can prevent thousands of deaths from Acquired Immune Deficiency Syndrome (AIDS).

AIDS was first reported in the United States in mid-1981. Since that time, the Public Health Service has received reports of more than 40,000 adults and 500 children who have contracted AIDS. More than half of these have died. No cure as yet exists. And AIDS is expected to claim increasing numbers of lives.

An estimated 1.5 million people have been infected by the virus that causes AIDS, but many have no symptoms. Current research indicates that at least a third of those infected may develop AIDS within a six-year period. By 1992, authorities project that 270,000 persons will have developed AIDS, and 180,000 will have died. In 1991 alone, a predicted 54,000 persons with AIDS will die.

Fighting AIDS has been designated the number one priority of the U.S. Public Health Service. Researchers in the Service and in many major medical institutions have been working since 1981 to understand AIDS, identify its cause, and develop treatments and preventive measures. These efforts have generated a substantial body of knowledge about the nature of the AIDS virus and how it is transmitted.

Curative treatment or preventive vaccine is likely to take years to develop. Our most effective weapon against both AIDS and the fear of AIDS will be—for years to come—our understanding of how the virus is spread. For this reason it is vitally important for all of us to understand what is known about this deadly disease. It is especially important that educators have complete and accurate information about AIDS.

This booklet offers current information about the risk of infection from the AIDS virus, how infection can best be prevented, the diagnosis and treatment of AIDS, and the nature of the AIDS virus.

WHAT IS AIDS?

AIDS is a serious condition characterized by a defect in an individual's natural immunity against disease. AIDS is caused by a virus that attacks the white blood cells that help protect the body from infections. The AIDS virus is now called the Human Immunodeficiency Virus (HIV).

People with AIDS are vulnerable to serious illnesses that are not a threat to those whose immune system is functioning normally. Among the illnesses that become life-threatening to AIDS-infected persons are infections caused by certain bacteria, funguses, viruses, protozoa (one-celled parasites), and some forms of cancer. These illnesses are called "opportunistic": they take the opportunity to attack when natural immunity is weakened. The unexpected presence of such illnesses in groups of young men in 1981 first led to the recognition of AIDS by public health workers.

People infected with the AIDS virus who have no symptoms may nonetheless spread the virus to others through unprotected sexual contact, sharing of intravenous (IV) needles, and transmission during pregnancy or childbirth. Other infected persons may have chronic symptoms such as fever, weight loss, diarrhea, or swollen lymph glands. Such symptoms are sometimes called the AIDS Related Complex (ARC). In one

study of persons infected with the AIDS virus, over a period of six years 30 percent developed AIDS, 22 percent developed swollen lymph nodes, 27 percent developed other chronic symptoms, and 21 percent remained free of symptoms.

HOW IS THE AIDS VIRUS TRANSMITTED?

The AIDS virus is transmitted by certain behaviors. In an infected person, virus present in semen and vaginal fluid can be passed to others by intimate sexual contact. Virus in the blood can be passed to others by sharing IV needles contaminated with blood, or can be transmitted from the mother to a fetus during pregnancy. The AIDS virus is not transmitted by any form of casual, nonsexual contact.

SEXUAL TRANSMISSION

The AIDS virus can be passed from infected men to women and from infected women to men through vaginal intercourse (penis in vagina). The virus can also be passed from infected men to other men, principally through anal intercourse (where the penis is inserted in the rectum).

Sexual practices that cause small, often invisible tears in the vagina, penis, or rectum may increase the likelihood of transmission. This fact may explain why anal intercourse, whether involving men or women, greatly increases the risk of transmitting the AIDS virus.

Scientists do not yet fully understand how the virus gets into the bloodstream during sexual intercourse. But they believe the presence of other infections of the penis, rectum, vagina, or cervix (the canal which leads into the uterus, or womb) may be a factor.

Some studies suggest that the AIDS virus may be transmitted more readily from men to women than from women to men. Some sexual partners of persons infected with the AIDS virus have not been infected despite repeated exposure. There is no definitive evidence that the virus is transmitted through oral sex (contact between the penis, vagina, or anus and the mouth), although this possibility cannot be ruled out.

The risk of being infected with the AIDS virus through sexual contact is greatly increased if a person has unprotected sexual contact with persons who share IV needles, with men who have sex with other men, or with prostitutes (many of whom use intravenous drugs). Persons who abstain from sexual relations, as well as couples who are not infected with the AIDS virus and who have sex only with each other, have no risk of infection through sexual transmission.

With virtually all sexually transmitted diseases, the more sexual partners a person has, the greater the risk of infection. The same holds true for AIDS. But for men who have sex with other men and for those who have sex with persons who share needles, even one new sexual partner greatly increases the probability of infection—unless protection is used. The reason: these populations already include a high number of individuals infected with the AIDS virus.

The regular use of latex condoms ("rubbers") can help prevent sexual transmission of the AIDS virus. The effectiveness of condoms may be enhanced if they are used together with nonoxynol-9, a spermicide that has been shown to kill the AIDS virus.

To provide protection, condoms must be used from *start to finish* and must be used *every time*. Condoms made of latex are preferred because the virus is less likely to pass through them. Using two condoms at the same time may also improve effectiveness.

Regular use of condoms can also prevent other sexually transmitted infections that appear to increase susceptability to the AIDS virus. But condoms may fail to protect against infection if they break or leak during contact.

TRANSMISSION FROM INJECTED BLOOD

Persons infected with the AIDS virus usually have large numbers of viral organisms present in their blood. Persons who share needles to inject substances into the bloodstream therefore greatly increase their chances of contracting AIDS.

Some studies of IV drug users show that as many as 60 percent have been infected with the AIDS virus. The sharing of needles in "shooting galleries" is especially dangerous, because many others may have used the same needle. Research also suggests that the use of unsterilized needles for medical injections may be responsible for the spread of the AIDS virus in certain African countries.

Before the discovery that the AIDS virus is found in the blood, a small number of people receiving blood transfusions or blood products (such as persons with hemophilia) were infected with the virus. Some have developed AIDS, accounting for 3 percent of all AIDS cases. Doctors and researchers are now able to detect antibodies to the AIDS virus in infected blood. And high-risk persons are no longer donating blood. The result is that blood and blood products are virtually free of the virus.

But individuals who received blood transfusions from 1978 to 1985 may wish to consult their physicians about having a blood test for antibodies to the AIDS virus, especially if they received multiple transfusions and were living in an area where AIDS is relatively common.

TRANSMISSION DURING PREGNANCY

A pregnant woman infected with the AIDS virus is highly likely to pass the virus to her unborn child, because of the close contact between the mother's bloodsteam and the infant's.

Children born with the AIDS virus are very likely to become seriously ill. For this reason, women at greater risk for having the AIDS virus are strongly urged to have a test for antibodies to the virus *before* considering pregnancy. Women at greater risk include those who share needles and those who have sex with IV drug users or with men who have sex with other men.

HOW THE AIDS VIRUS IS *NOT* TRANSMITTED

Compared to many other viruses, the AIDS virus is weak, fragile, and easily destroyed outside the body. Thus, it is transmitted *only* by sexual contact, introduction into the blood stream, or pregnancy.

AIDS is *not* transmitted by casual contact of any kind, including shaking hands, hugging, social kissing, crying, coughing, or sneezing. Nor is it transmitted from water in pools or baths, from food or beverages, or from sharing bed linens, towels, cups, dishes, straws, or other eating utensils.

You *cannot* get AIDS from toilets, doorknobs, telephones, office equipment, furniture, massages, or any other form of nonsexual contact. The virus is *not* transmitted through vomit, stool, or nasal secretions. Although the virus is also found in small amounts in tears and saliva, no documented cases of transmission from these fluids exist.

In addition, there is no evidence that the virus is transmitted by mosquito or other insect bites. (Unlike diseases that are transmitted by mosquitos, such as malaria and yellow fever, the AIDS virus does not infect the mosquitos' salivary glands.)

WHO IS AT GREATEST RISK FOR INFECTION WITH THE AIDS VIRUS?

The only ways of being infected by the AIDS virus are through sexual contact with infected persons, through the injection of infected blood, or through transmission from mother to child during pregnancy or birth. So the risk of infection is a function of *behavior*. It is *not* a function of genetics *or of sexual preference in itself*.

Men who have sex with men, for example, are more likely to be infected because of the greater frequency of two behaviors in

some individuals in this group: having multiple sexual partners (which increases the chance of getting infected and passing the disease to others) and practicing anal intercourse. Men who have sex with men presently make up 65 percent of all persons with AIDS. (An additional 8 percent of cases occur in men who both have sex with men and use IV drugs.)

Anal intercourse is believed to be more likely to transmit the AIDS virus because of the vulnerability of the rectal lining. Heterosexual couples who engage in anal intercourse are also at greater risk. The presence of inflammation due to other sexually transmitted diseases may also increase the risk of infection with the AIDS virus.

For IV drug users, it is the sharing of needles that increases risk of transmitting the AIDS virus. IV drug users make up 17 percent of persons with AIDS. A higher proportion of these cases occur in Blacks and Hispanics because sharing of needles among IV drug users is more common among Blacks and Hispanics than among Whites. Among heterosexual Blacks and Hispanics who do not use IV drugs or have sexual contact with IV drug users, the risk of AIDS is no higher than for the rest of the population. *That is because AIDS is transmitted by risky behavior, not risk groups.*

Most women who transmit AIDS to their children during pregnancy either use IV drugs or have sexual contact with IV users or with men who have sex with men.

The principle that must be kept in mind is that the incidence of AIDS is always a function of *specifically defined behavioral choices, not of genetic or physiological predispositions.* No group is inherently at risk, or inherently susceptible. But *any* group can *become* at risk if the members of the group choose behavioral patterns that are known to increase the susceptibility to AIDS. These facts must be kept firmly in mind if the following statistics are to be properly understood.

Race and Ethnicity of Persons with AIDS (U.S.)
(percentages are by row; some rows don't total 100% due to incomplete statistics on ethnicity)

	White	Black	Hispanic
Men who have sex with men	75%	15%	10%
IV drug users	19	51	30
Both of the above	65	22	13
Heterosexual cases*	14	72	13
Blood clotting disorders	86	5	7
Transfusion recipients	77	14	7
Undetermined	37	42	19
Children with AIDS	20	55	24

Gender of Persons with AIDS (U.S.)

	Male	Female
Men who have sex with men	100%	0%
IV drug users	79	21
Both of the above	100	0
Heterosexual cases*	48	52
Blood clotting disorders	98	2
Transfusion recipients	64	36
Undetermined	78	22
Children with AIDS	55	45

* Heterosexuals represent 4 percent of all AIDS cases in the U.S. Half of these cases are in persons from Africa or the West Indies. The other half are in persons who have had sexual contact with IV drug users, bisexual men, or recipients of infected blood products.

WHAT IS THE GEOGRAPHIC DISTRIBUTION OF REPORTED AIDS CASES?

AIDS cases have been reported from 50 states, the District of Columbia, Puerto Rico, and more than 100 other countries. The disease has been recognized by the World Health Organization as a worldwide epidemic.

Currently, about half of the cases in the U.S. are reported from New York State and California, followed by Florida, Texas, New Jersey, Illinois, Pennsylvania, Massachusetts, Georgia, and the District of Columbia. Over the next four years, it is projected that an increasing proportion of AIDS cases will be in states other than New York and California.

The cities where AIDS is most common are New York (28 percent of cases), San Francisco (10 percent), and Los Angeles (8 percent), followed by Houston, Washington, Miami, Newark, Chicago, Dallas, Philadelphia, and Boston.

IS AIDS SPREAD THROUGH CASUAL CONTACT?

AIDS is *not* spread by casual (nonsexual) contact. Casual contact with AIDS patients or persons who might be at risk for the illness does *not* place others at risk.

No cases have been found where AIDS or the AIDS virus has been transmitted by casual household contact with AIDS patients or infected persons. No cases of AIDS have occurred in persons whose only risk factor was casual contact with someone with AIDS. No family members or others living in close contact with adults or children with AIDS have been infected with the AIDS virus, despite kissing, hugging, sharing dishes, glasses, razors, or toothbrushes, or any other form of close but nonsexual contact.

Additional evidence that the AIDS virus is not spread by casual contact emerges from examining the 5-to-15-year-old population. In this age group, the very few cases of AIDS that have occurred have been due to known risk factors. If the AIDS virus were transmitted by casual contact, many more cases would be expected. The same argument applies to those over age 50.

Although the AIDS virus may be found in small quantities in saliva and tears, no cases of AIDS have resulted from exposure to these substances. Ambulance drivers, police, and firefighters who have assisted AIDS patients, even by mouth-to-mouth resuscitation, have not been infected.

Nurses, doctors, and health care personnel have not developed AIDS from caring for AIDS patients. In a group of 3,000 health care workers in the U.S. who have been studied, including 1,000 with puncture of the skin by needles contaminated with blood from AIDS patients, only one has developed antibodies to the AIDS virus (indicating infection). Three other health care workers with breaks in the skin and persistent exposure to the blood of AIDS patients have also developed antibodies.

Out of 1,800 dentists studied who did not use recommended precautions against exposure to blood, one (in New York City) has developed antibodies. Health workers have much more contact with patients than would be expected from common everyday contact. The fact that these workers have remained uninfected offers further evidence that the AIDS virus is not transmitted by casual contact.

HOW CAN AIDS BE PREVENTED?

AIDS can be prevented by stopping the passage of the virus from one person to another. Since the AIDS virus is transmitted by sexual contact or injection of contaminated blood, transmission can be prevented by eliminating direct sexual contact with infected persons and eliminating the use of contaminated needles.

The Public Health Service recommends the following steps for all persons to reduce their chances of becoming infected with the virus that causes AIDS:

- Recognize that abstinence or mutual monogamy is the best protection against sexual transmission of the AIDS virus.
- Do not have unprotected sex with multiple partners or with persons who have had multiple partners (including prostitutes). The more partners you have, the greater your risk of infection.
- Do not have unprotected sex with persons with AIDS, persons who have engaged in high-risk behavior, or persons who have a positive antibody test for the AIDS virus. If you do have sex with a person you think may be infected, protect yourself by using a latex condom from start to finish.
- Avoid sexual activities that could cause cuts or tears in the lining of the rectum, vagina, or penis, such as anal intercourse.
- Do not have sex with male or female prostitutes; drug abuse is common among prostitutes.
- Use condoms and spermicides to reduce the possibility of transmitting the virus.
- Do not use intravenous (IV) drugs. Do not share needles or syringes.

Infection with the AIDS virus through the medical use of blood or blood products is now being prevented by use of antibody screening tests at blood donor sites. In addition, members of high risk groups are not donating blood. And heat treatment of blood products now prevents infection in patients with hemophilia and other blood-clotting disorders.

There is as yet no vaccine for AIDS itself, and medical experts estimate that it will be at least several years before an effective vaccine is available. But there is good reason to believe that individuals can reduce their risk of infection with the AIDS virus by following the recommendations above.

Communities can help prevent AIDS by vigorous educational efforts, with special emphasis on educational activities for individuals most likely to engage in risky behaviors.

WHAT IS THE RISK FOR HETEROSEXUALS?

It is now very clear that the AIDS virus can be transmitted through vaginal intercourse from a man to a woman and a woman to a man. In one recent study of spouses of persons with AIDS, most spouses who did not abstain from intercourse or use condoms became infected with the AIDS virus even when only vaginal intercourse was practiced. For spouses not already infected, however, the use of condoms greatly reduced transmission.

Other evidence concerning heterosexual risk comes from studies in certain African countries where equal numbers of men and women have contracted AIDS. In these countries, heterosexual intercourse is believed to be a major factor in the spread of AIDS. Multiple sexual partners and contact with prostitutes appear to increase the risk of contracting the AIDS virus. Other factors that may account for the increased incidence of infection among heterosexuals in these countries include the transfusion of blood infected with the AIDS virus and the use of unsterilized needles for IV injections aimed to remedy common illnesses.

Sexual contact with prostitutes can significantly increase the risk of being infected with the AIDS virus. In a recent study of seven geographic areas in the United States, 11 percent of the prostitutes tested had evidence of infection with the AIDS virus, and in one area (northern New Jersey) 57 percent were infected. Of those with evidence of infection, 76 percent gave a history of IV drug use.

Current evidence strongly suggests that the presence of other sexually transmitted infections can increase the likelihood of contracting the AIDS virus. And these infections are common among prostitutes.

Four percent of all persons with AIDS are believed to have been infected through heterosexual contact with an infected person. About half of these cases involve persons from other countries (mainly in Africa) where the equal incidence of AIDS among men and women suggests heterosexual transmission. The other half consist almost exclusively of individuals who have been the sexual partners of bisexual men or IV drug users.

One fact indicates the increased difficulty of stemming the spread of AIDS: the number of new AIDS cases arising from heterosexual contact is increasing about one and a half times faster than the new cases in all other categories.

At present, nearly all persons who contracted AIDS through heterosexual contact are the sexual partners of IV drug users or of men who have sex with other men. But this pattern is likely to change unless sexual behavior changes.

Persons infected with the AIDS virus through heterosexual contact with someone in a risk group can set in motion a cycle of heterosexual transmission. In this way the virus can spread, like other sexually transmitted diseases, through all parts of society. Abstinence, monogamy, and the use of condoms are the only ways to prevent this from happening.

HOW DO CHILDREN GET AIDS?

There are currently more than 500 documented cases of AIDS in children under age 13. An estimated 3,000 more children have other serious illnesses resulting from the AIDS virus. And it's estimated that 3,000 additional infected children will be born in 1987.

Eighty percent of all children with AIDS were infected during pregnancy or at the time of delivery; 12 percent received transfusions of infected blood before the blood supply was protected; and 5 percent are hemophiliacs who were treated with blood products before the need to destroy the virus was known.

IS THERE DANGER OF A CHILD'S CONTRACTING AIDS FROM FRIENDS OR SCHOOLMATES?

No. The AIDS virus is difficult to catch, even among people at highest risk for the disease. No cases of AIDS are known or suspected to have been transmitted from one child to another in school, day care, or foster care settings.

Transmission would require direct exposure of a child's bloodstream to blood from an infected child.

The Public Health Service recommends that except in very unusual circumstances, children with AIDS "should be allowed to attend school and after-school day care and to be placed in a foster home in an unrestricted setting."

Each case should be evaluated separately, with individualized attention to the child and the setting. Decisions affecting the schooling of an AIDS-infected child should be made in the same way as decisions for any child having a special problem (such as cerebral palsy). Such decisions should be made by a team that includes the child's parents, teacher, physician, school board members, and local public health officials.

ADDITIONAL RECOMMENDATIONS FOR PERSONS AT INCREASED RISK OF AIDS VIRUS INFECTION

In addition to the recommendations for all persons, the Public Health Service recommends the following precautions for persons at increased risk for infection by the AIDS virus. The population that is especially at risk includes intravenous drug users and men who have sex with other men, as well as the sexual partners of persons in either of these groups.

The following recommendations are based on the fact that it is possible to carry the AIDS virus without knowing it and, as a result, to transmit it unwittingly to others.

- Consult your physician or public health department and/or local AIDS service organization for counseling. Consider taking the AIDS virus antibody test, which would enable you to know your status and take appropriate actions. This precaution is particularly important if knowing the result would change your behavior. Tests are available in most parts of the country on an anonymous or confidential basis at counseling and testing sites that can be identified by your local health department.
- During sexual activity, protect your partner from contact with the rectum, blood, and semen or vaginal fluids. Use a latex condom from start to finish.
- Do not donate blood, plasma, organs, sperm, or other body tissue.
- If you are a woman at increased risk, consider the risk to your baby before becoming pregnant. Remem-

ber that the AIDS virus is easily transmitted from an infected mother to her infant. Before becoming pregnant, you should take the AIDS antibody test. If you do become pregnant, you should consider testing during pregnancy.

ADDITIONAL RECOMMENDATIONS FOR PERSONS WITH A POSITIVE ANTIBODY TEST

In addition to the recommendations for persons at increased risk, the Public Health Service recommends the following additional steps for persons with positive results on the blood test for antibodies to the AIDS virus.

- Seek regular medical evaluation and follow-up.
- Either avoid sexual activity or inform your prospective partner of your antibody test results and protect him or her from contact during sex. Use a condom, and avoid sexual practices that may injure body tissues, such as anal intercourse.
- Inform your present and previous sex partners and any persons with whom you may have shared needles of their potential exposure to the AIDS virus. Encourage them to seek counseling and antibody testing from their physicians or from appropriate health clinics.
- Do not share items that could become contaminated with blood.
- If you use drugs, enroll in a drug treatment program. Needles and other drug equipment must never be shared.
- Clean blood off household or other surfaces with freshly diluted bleach—one part bleach to 10 parts water. (Do not use bleach on the body or on wounds.) Hot water and soap or other disinfectants may also be used.
- Inform your doctor, dentist, and eye doctor of your positive antibody status so they can take proper precautions to protect you and others.
- If you're a woman with a positive antibody test, avoid pregnancy because of the high risk of transmission to your baby.

HOW DOES AIDS COMPARE WITH OTHER SEXUALLY TRANSMITTED DISEASES?

The AIDS virus is only one of many infections transmitted by sexual contact. AIDS is much more serious than other sexually transmitted diseases, but it is actually less contagious.

Like AIDS, the frequency of many other sexual transmitted diseases has been increasing over the last few decades. Reported cases of gonorrhea more than tripled between 1965 and 1976. Between 1966 and 1984 the number of visits to physicians' offices for genital herpes increased sixteenfold; for vaginal infections, fivefold; and for genital warts, sixfold. Between 1956 and 1982 the number of cases of syphilis in men increased sixfold; congenital syphilis cases almost tripled between 1983 and 1986. Hospitalization rates for tubal infections in teenage girls more than doubled between 1970 and 1975. All social classes have been affected by these increases.

Like other sexually transmitted organisms, the AIDS virus is relatively fragile and can invade the body only through sexual transmission or injection into the blood stream. Outside the body, the AIDS virus is easily destroyed by mild soaps or disinfectants, such as a diluted solution of household bleach.

Because sexual contact makes it easier for an organism to enter the body, many other organisms are transmitted only by sexual contact: gonorrhea, syphilis, venereal warts, genital herpes, chlamydia, trichomonas, chancroid, and granuloma inguinale. Other infections transmitted sexually include shiegella, salmonella, guiardiasis, amoebic

dysentery, hepatitis-B, scabies, lice, and cytomegalovirus. Evidence suggests that the presence of sexually transmitted diseases increases the likelihood of infection with the AIDS virus and the development of AIDS.

HOW CAN EDUCATION HELP US STOP AIDS?

Our major weapon against the spread of AIDS has been and will likely continue to be our understanding of the disease and how it is transmitted.

One example of how an understanding of AIDS has generated behavioral change is the virtual elimination of the AIDS virus from the nation's blood supply. The response of persons at risk to requests that they not donate blood has helped ensure a safe supply of blood. Testing of donated blood for the presence of the AIDS virus has shown that members of high risk groups have ceased donating blood.

Two other examples of the effectiveness of education are the sharp decline in other sexually transmitted diseases among homosexual men in certain cities and the decrease among these men of sexual practices that increase the risk of AIDS. The declining rate at which AIDS is spreading in certain cities may also be partly due to the education of high-risk persons.

IV drug users, however, have proved to be a difficult group to reach and influence through educational programs. And many sexually active heterosexuals continue to behave in ways that suggest a denial of the AIDS risk, such as having contact with prostitutes.

DIAGNOSIS AND TREATMENT

WHAT ARE THE SYMPTOMS OF INFECTION WITH THE AIDS VIRUS?

Many individuals infected with the AIDS virus have no symptoms and experience no discomfort. Their defenses against infection are still functioning. Some have remained symptom-free for up to seven years.

If the AIDS virus causes moderate damage to the immune system, symptoms of chronic infection may occur and may include tiredness, fever, loss of appetite and weight, diarrhea, night sweats, skin rashes, yeast infection (candida) of the mouth, and swollen glands (lymph nodes)—usually in the neck, armpits, or groin. Most of these symptoms are quite common and do not usually indicate immune deficiency. Only if they persist *for more than two weeks* should a person see a doctor so that the cause can be identified with certainty.

When damage to the immune system is substantial, the serious opportunistic infections of AIDS are likely to occur. Most adults with AIDS have had one or both of two rare diseases: a parasitic infection of the lungs known as *Pneumocystis carinii* pneumonia (PCP), or a type of cancer known as Kaposi's sarcoma (KS).

Pneumocystis has symptoms similar to other forms of severe pneumonia, such as persistent cough, fever, and difficulty in breathing or shortness of breath.

Kaposi's sarcoma is a tumor of blood vessels and can occur on the surface of the skin or mouth or inside the body. The tumors may show up as purple, blue-violet, or brownish spots or bumps.

Other opportunistic infections seen in AIDS patients include unusually severe infections with yeast (candida), cytomegalovirus, herpes virus, and various parasites. But milder infections with these organisms, such as vaginal yeast infections, do not suggest immune deficiency.

When the AIDS virus attacks the brain and nervous system, symptoms may include memory loss, indifference, loss of coordination, partial paralysis, or mental disorders. Such symptoms may develop slowly over a

long period of time.

Children infected with the AIDS virus tend to have different opportunistic infections than adults. The most common findings in children are poor growth, enlargement of the liver and spleen, and a form of pneumonia in which white blood cells (lymphocytes) are found in large numbers in the lungs. *Pneumocystis* is less common and Kaposi's sarcoma is very rare among children.

HOW LONG AFTER INFECTION WITH THE AIDS VIRUS CAN AIDS OCCUR?

The time between infection with the AIDS virus and the onset of AIDS symptoms (the incubation period) can range from six months to six years or more. The longer a person has been infected with the virus, the more likely he or she is to develop AIDS.

In one study, for those infected for six years, the risk of developing AIDS was 30 percent. Antibodies to the AIDS virus, which are detected by the blood test, may take two weeks to three months to appear after exposure to the virus.

HOW IS AIDS DIAGNOSED?

Infection with the AIDS virus is indicated by the presence of antibodies to the virus in the blood. The diagnosis of AIDS depends on the presence of opportunistic diseases that indicate the loss of immunity. Tests demonstrating damage to various parts of the immune system, such as a decrease in the number of certain white blood cells (T4-lymphocytes), support the diagnosis.

IS THERE A LABORATORY TEST FOR AIDS?

There is no single test for diagnosing AIDS. There is, however, a test that detects antibodies to the virus that causes AIDS.

The current and preferred name for the AIDS virus is Human Immunodeficiency Virus (HIV). Other names that have been used for the AIDS virus are HTLV-III (Human T-Lymphotropic Virus, type III) and Lymphadenopathy Associated Virus (LAV).

Antibodies are substances produced by white blood cells to fight disease organisms. Unfortunately, the antibodies produced to combat the AIDS virus are not effective in destroying the virus.

The presence of antibodies to the AIDS virus means that a person has been infected with that virus. When a person is infected, it may take from two weeks to three months for antibodies to appear in the blood. *Even if someone has a negative test for antibodies, it is still very important to avoid high-risk behaviors.*

Although the test for antibodies to the AIDS virus is very accurate, it is possible to get a false positive result—indicating antibodies to the AIDS virus even though none exist. This inaccurate result is more likely to occur when the test is performed on persons whose risk of infection is low and may also be more common in pregnant women.

The antibody test is used to screen donated blood to prevent the AIDS virus from being transmitted by blood transfusions or use of blood products (such as Factor VIII) needed by patients with hemophilia.

The antibody test is available through private physicians and most state and local health departments, as well as from local AIDS services organizations. This test is strongly recommended for individuals at high risk who would change their behavior if they knew they were infected.

Confidentiality for those who choose to be tested is, of course, a very important con-

rn. In many testing centers, the test is done anonymously (using a number instead of a name), so that only the person tested knows the result.

IS THERE ANY DANGER OF GETTING AIDS FROM DONATING BLOOD?

No. Blood banks and other blood collection centers use new sterile equipment and disposable needles for each donor.

Today, all blood donors are interviewed, and blood is not accepted from individuals with high-risk behaviors. All donated blood is tested for the presence of the antibody to the AIDS virus. Any blood that tests positive is discarded, and the donor is notified

This routine testing of blood products has made the blood supply safer than it has ever been with regard to AIDS.

The need for blood is always acute, and people whose behavior does not put them at increased risk for getting AIDS are urged to continue to donate blood as they have in the past. Persons having elective surgery may also wish to consider donating their own blood in advance of the surgery so that it will be available if needed.

HOW IS AIDS TREATED?

Currently there are no antiviral drugs available anywhere that cure AIDS. But the search for such drugs is being pursued vigorously.

Zidovudine (AZT) has been shown to prolong life in some AIDS patients and has been approved for use in certain patients. It does not, however, cure AIDS.

Work is continuing on other drugs that attack the AIDS virus and on drugs that might help restore a damaged immune system. Eventually, a combination of drugs may be the most effective therapy. Though no treatment has yet been successful in restoring AIDS patients' immune systems, doctors have had some success in using drugs, radiation, and surgery to treat the various illnesses AIDS patients suffer.

THE AIDS VIRUS

WHY IS AIDS SUCH A DEVASTATING DISEASE?

Individuals with AIDS are vulnerable to opportunistic infections because the AIDS virus selectively attacks the "helper" T-lymphocyte or T4 cell. This white blood cell is perhaps the single most important element in the body's defense against infection.

Nothing has a more devastating effect on the human immune system than the destruction of the "helper" T-lymphocyte.

T-cells are critical to defending against invasion by protozoa (single-celled animals), funguses, viruses, and many bacteria—the organisms responsible for the opportunistic infections seen in AIDS patients.

When a foreign organism is present in the bloodstream, it is picked up by a white blood cell called a macrophage. It is then the job of the T cell to recognize the infection by means of a special area on its surface called a "receptor site." The T-cell then multiplies to form a "clone" of a thousand or more identical T-cells—all of which have the job of fighting that particular organism.

T-cells produce a number of different substances that help activate the immune system to overcome infection. These substances stimulate other white blood cells to destroy infected cells and invading organisms, instruct B-lymphocytes to multiply and produce antibodies against the invading organism, and stimulate the bone marrow to make more lymphocytes. T-cells also produce substances that help to destroy cancer

cells.

Since the cause of AIDS is a virus, it is the job of the T-cell to recognize it as such and to coordinate the different parts of the immune system in order to destroy it. Unfortunately, the AIDS virus has evolved the ability to hook on to the T-cell "receptor site," the very part of the T-cell that normally recognizes a virus infection. By blocking the receptor site, the virus prevents the T-cell from multiplying to form a special group (clone) of T-cells dedicated to attacking the AIDS virus.

This blocking capacity of the AIDS virus may explain why persons infected with the virus are unable to eliminate infection. Some antibodies to the AIDS virus are made by B-lymphocytes (resulting in a positive antibody test), but these antibodies are not effective in destroying the virus.

The AIDS virus may, over a period of months or even years, multiply and destroy T-cells. If a moderate number are destroyed, the infected person may have chronic symptoms such as diarrhea or weight loss. If a large number of T-cells are destroyed by the AIDS virus, then the body loses its ability to effectively fight infections due to protozoa, fungi, viruses, and bacteria that would normally be easily overcome. The presence of these infections helps establish the diagnosis of AIDS.

Powerful antibiotics and drugs may help the AIDS patient overcome one infection. But given the destruction of T-cells these patients have suffered, they are likely to contract another infection within a short time.

Loss of T-cells also makes certain cancers more likely to occur, such as Kaposi's sarcoma (a tumor of blood vessels) and cancers of the lymphatic system.

Even one encounter with the virus may lead to AIDS. But repeated exposure to the virus through sexual relations with infected persons or through injections of infected blood products may increase the risk of infection. The presence of other sexually transmitted diseases may also increase the risk.

WHAT IS THE AIDS VIRUS LIKE?

AIDS is the most serious form of infection caused by the Human Immunodeficiency Virus (HIV).

Viruses are very small particles made of the same material (nucleic acids) as the chromosomes found in the nucleus of each cell in our body. These chromosomes carry our genetic inheritance.

Chromosomes are made of DNA (deoxyribo-nucleic acid) and contain coded instructions (genes) for making the proteins that govern the activities of our cells. When a virus enters a cell, it inserts itself into our DNA and instructs the cell to make virus. As the virus multiplies inside the cell, the cell breaks open and releases the new virus particles. Viruses may also interfere with the genes that tell cells when to stop reproducing, so that the cells multiply uncontrollably to form cancers.

The virus that causes AIDS is made of RNA (ribo-nucleic acid) enclosed in a protein envelope. This envelope has the ability to attach to and block the receptor sites on the outer wall of the T-cell. The virus then enters the T-cell and uses an enzyme that it carries (called "reverse transcriptase") to copy itself into the DNA of the cell. (The drug AZT interferes with reverse transcriptase.) At this point, the virus may become inactive and remain hidden in the cell and may not be copied until the rest of the cell's DNA divides. For this reason, a person recently infected with the AIDS virus may be less likely to transfer the virus to others.

Perhaps in response to some new infection or other stress, the virus hiding in the T-cell DNA may suddenly begin replicating, using the chemical machinery of the cell to produce more of the AIDS virus. The increased number of AIDS virus particles then push through the cell wall, destroying the cell. These particles can then travel through the blood stream to infect other T-cells. Rapid multiplication of the virus can begin even several years after the initial infection.

Depending on how many T-cells are destroyed, the infected person may have no symptoms, chronic symptoms (ARC), or full-blown AIDS. Normally, about 950 helper T-cells occupy each cubic millimeter of blood. When this number falls below 400, the likelihood of chronic infection or AIDS is greatly increased.

Even in infected individuals who are free

of symptoms, the AIDS virus is usually present in blood and in semen or vaginal fluid. Smaller amounts of the virus may be found in sweat, saliva, and tears, but there is no evidence that these fluids transmit the virus.

AIDS patients, in addition to susceptibility to opportunistic infection and certain cancers, may also develop infections of the brain and nervous system. These infections are due to the ability of the AIDS virus to attach to and infect nerve cells, which have receptor sites similar to T-cells. But the cells of the brain are separated from many of the substances in the blood by the "blood-brain barrier." As a result, infections of brain cells are more difficult for drugs to reach.

WHERE DID THE AIDS VIRUS COME FROM?

As the French biologist Rene Dubos explains in *The Mirage of Health*, new infectious diseases are constantly evolving. The day will never arrive when we have "conquered" infectious disease once and for all.

The organisms that cause infections multiply, mutate, and evolve very rapidly. This rapid rate of multiplication and change explains why bacteria can quickly become resistant to new antibiotics. In addition to AIDS, other new infection-related diseases—Reye's syndrome, toxic shock syndrome, and Legionnaire's disease—have emerged during recent years.

It is reasonable to expect appearances of new infections. And because transmission through sexual intercourse gives infectious organisms an advantage, it is likely that many of these new infections will be sexually transmitted. Syphilis, for example, was virtually unknown prior to the 16th century, and genital herpes and chlamydia (the most common cause of tubal infections) have only very recently become significant problems.

Researchers do not know for certain where the AIDS virus came from. It is a member of a group of viruses called lenti-viruses—the "slow" viruses that can leave victims free from symptoms years after infection. The lentivirus that causes visna, a wasting disease in sheep, is similar to the AIDS virus.

Another recently discovered lenti-virus, STLV-III, causes a disease similar to AIDS in the African green monkey and could be a remote ancestor of the AIDS virus. Other viruses similar to the AIDS virus have recently been discovered in West Africa. These viruses infect humans, and some also cause immune deficiency.

Blood samples drawn in the 1950s from individuals in different countries have been tested for evidence of the AIDS virus. Only those samples collected from a small region of central Africa have tested positive. This finding has led to speculation that the virus may have spread from central Africa to other parts of Africa and then to Haiti, the Americas, and Europe.

The 1987 NEA Representative Assembly

Los Angeles, July 2-5, 1987

ACTIONS RELATED TO AIDS

New Business Item

NEA recognizes the responsibility of schools to respond to the AIDS/sexually transmitted diseases crisis in today's society. NEA urges the establishment of comprehensive AIDS/sexually transmitted disease prevention programs in schools, colleges, and universities during the 1987-88 school year. These programs must include education about prevention options, including abstinence and medically accepted protective devices. These programs should be developed at the local level by educators, administrators, parents, and community representatives and be presented by certified and properly trained personnel.

New Resolutions

AIDS Education

The National Education Association recommends that educational institutions establish comprehensive AIDS education programs. These programs must include education about all means of transmission, including sex and intravenous (IV) drug use. Information on prevention options must include abstinence and medically accepted protective devices.

The Association believes that proper implementation of these programs requires educational employee training and input and that these programs should be presented by properly trained personnel.

AIDS Testing of Students

The National Education Association opposes mandatory/involuntary AIDS testing of students except where legally defined probable cause exists.

Admission of Students with AIDS

The National Education Association supports a free, appropriate public education for all students with AIDS in a least-restrictive environment.

The Association believes that the placement of children in school should be made on a case-by-case basis by a team composed of qualified health care professionals, school officials, representatives of the local Association, the child's physician, and the child's parent or guardian.

AIDS Testing of Educational Employees

The National Education Association opposes mandatory/involuntary testing of school employees for AIDS.

Employees with AIDS

The National Education Association believes that educational employees shall not be fired, nonrenewed, suspended (with or without pay), transferred, or subjected to any other adverse employment action solely because they have tested positive for the AIDS antibody or have been diagnosed as having AIDS or AIDS-related complex (ARC).

Resources About AIDS

Books and Videotapes

The AIDS Dilemma: Higher Education's Response, videotape produced by the American College Health Association, 15879 Crabbs Branch Way, Rockville, MD 20855.

AIDS on the College Campus: ACHA Special Report, Richard P. Keeling, M. D., Editor (American College Health Association).

"The AIDS Virus," Robert Gallo, *Scientific American*, February, 1987.

AIDS: What Everyone Should Know, American College Health Association, 1987.

Making Sex Safer, American College Health Association, 1987.

The Mirage of Health, Rene Dubos (Anchor, 1959).

Surgeon General's Report on Acquired Immune Deficiency (single copies free by calling 404-329-3534)

Hotlines

Minority Task Force on AIDS: 212-749-1214

National Gay Task Force AIDS Hotline: 800-221-7044 (212-807-6016 in New York)

U.S. Public Health Service: 800-342-AIDS (recorded message); 1-800-342-7514 (counselor)

National STD Hotline (American Social Health Association): 800-227-8922

AIDS School Education File: available on a computer bulletin board called Combined Health Information Database (CHID).Password can be obtained from BRS, 1200 Route 7, Latham, New York, 12110; 800-342-4277. Cost is $10 to $45 per hour.

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