

STDs: Risk & Vulnerability

Grades 9-12, Lesson 18

Student Learning Objectives

The student will be able to ...

1. compare the relative risk of different sexual behaviors, including abstaining.
2. compare the relative risk of varying numbers of partners, sequential and concurrent.

Agenda

1. Introduce lesson with STD risk story.
2. Lead STD transmission activity using fluid exchange or 3x5 card method.
3. Explain why teens are at greater risk for STDs.
4. Explain concurrent partners using *STD Risk and Vulnerability Visuals 1-3*.
5. Lead risky behavior activity using *Risk Behavior Cards*.
6. Conclude lesson.

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Materials Needed

Student Materials

- None

Classroom Materials

- **Risk Signs 1-4**
- **Behavior Cards** – one set, cut in half
- **STD Risk and Vulnerability Visuals 1-3:** (contained in this lesson & also available online as a PowerPoint presentation at www.kingcounty.gov/health/FLASH)
- Small paper cups (one per student – can be reused if teaching multiple classes)
- White vinegar
- pH paper slips (one per student) – these can be obtained from a science teacher or an online science materials company
- Plastic wrap
- Large pitcher of water (if your classroom does not have a sink)
- Rubber band
- Index cards (one per student) – only if doing Alternative Activity 2, in which case, see page 6 of this lesson for how to prepare the cards
- One pair of scissors or paper cutter

Teacher Preparation

The day before or the day of the lesson ...

NOTE: this lesson requires a fair amount of preparation time. You may consider getting it ready the day before or asking a TA to help you set it up.

- If you do not have a sink in your classroom, fill a large pitcher with water.
- For each student, fill one small paper cup half full with water. If you teach multiple classes, prepare a set of cups for the class that has the most students. You can reuse the cups. In one cup, make a solution of 2/3 cup water and 1/3 cup vinegar. Keep the cup with vinegar separate. Cover one paper cup with plastic wrap after you have filled it with water. Slip a rubber band over the rim of the cup so the water is sealed inside.
- Gather all materials for the fluid exchange activity on a table so they are easily reachable by students or yourself if you are going to pass the cups around. If you want to pass the cups around, you could place them on a cafeteria tray.
- Prior to the beginning of the fluid exchange activity, identify three students in private and tell them that regardless of the directions you give the class, two of them should only exchange fluid with each other. The third student should not exchange his or her fluid with anyone during this activity.
- Choose a wall in your classroom where all the students in your class could comfortably stand. Photocopy the 4 **Risk Signs** and tape them on the wall so they form a continuum from **No Risk** on one side of the room to **A Big Risk** on the other side of the room.
- Print and cut the **Behavior Cards**.

Most cups are plain water; one is a 1/3 vinegar, 2/3 water solution:



Standards

National Health Education Standard

- **Standard 1:** Students will comprehend concepts related to health promotion and disease prevention to enhance health.
Performance Indicator 1.12.1: Predict how healthy behaviors can affect health status.
- **Standard 2:** Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.
Performance Indicator 2.12.9: Analyze how some health risk behaviors can influence the likelihood of engaging in unhealthy behaviors.

Washington State Health Education Standard

- **EALR 2:** The student acquires the knowledge and skills necessary to maintain a healthy life: Recognizes dimensions of health, recognizes stages of growth and development, reduces health risks, and lives safely.
Component 2.3: Understands the concepts of prevention and control of disease.
GLE 2.3.1: Analyzes personal health practices, and how they affect communicable diseases.

Rationale

This lesson is a follow up to the STD Prevention lesson and HIV lessons. By addressing students' beliefs about their own risks and vulnerability to STDs, the hope is that students will choose healthier behaviors such as: less permissive attitudes towards early sex, perceiving more costs than benefits toward early sex, and if choosing to have sex - fewer sexual partners, greater motivation and intention to use condoms, and less frequent sex. Proven programs that address these determinants have been shown to reduce teen pregnancy and reduce STD transmission. The activities in this lesson are specifically designed to address those determinants.

Activities

NOTE: Instructions to you are in regular font. A suggested script is in *italics*. Feel free to modify the script to your style and your students' needs.

1. Introduce lesson with STD risk story.

Tell students that you are going to read them a story.

Ramón went to a local clinic for an STD check up. He said his new girlfriend wanted him to get tested for everything before they started having sex. He told the doctor at the clinic this was his second relationship, and he'd had oral and vaginal sex with his first girlfriend. He figured his chances of having an STD were pretty low because he had only had sex with one person in his life. The doctor told Ramón to pee in a cup in the bathroom for the test, and the lab results came back positive for gonorrhea. The doctor asked if Ramón would tell his ex-girlfriend about the results, but Ramón was too mad to talk to his ex-girlfriend about this. The doctor said Public Health can contact her, instead, and tell her she should get tested. When she got the phone call, she asked the Public Health staff person how they got her name. He said he couldn't tell her; he explained that he had to protect that person's privacy, just like he would protect hers. In the end she gave him contact information for four people she had had sex with, so that he could contact them, too. Ramón didn't know that his ex-girlfriend had ever had sex with anyone else.

The fact of the matter is that the age group with the most STDs is teenagers. The Centers for Disease Control says:

- *Each year, there are approximately 19 million new STD infections, and almost half of them are among youth aged 15 to 24.¹*
- *In one recent year, an estimated 5,259 young people aged 13-24 in the 33 states reporting to CDC were diagnosed with HIV/AIDS, representing about 14% of the persons diagnosed that year.²*

Anyone having unprotected sex can get STDs, and anyone can spread them. The point of this lesson is that many times, people think that STDs only happen to "other people". But if one in four teenage women had an STD in a national study done in 2008,³ then there is a 25% chance that "other person" could be you, your boyfriend or girlfriend, your brother or sister, or your teammate or friend. I hope you can learn from other peoples' mistakes and not have to make your own. Just remember, sometimes people get an STD from sexual assault or rape and they did not make a mistake. What happened is not their fault.

When people start new relationships, trust has to be earned over time. If people are going to have sex with someone, they should know the person's sexual history, if they have one, and whether or not they used condoms with their previous partner(s). It is also important to ask their partner's disease status (whether they have any diseases), because some STDs like HPV, HIV, and genital herpes have no cure. Remember, it is illegal to not tell sex partners that you have HIV if you know you have it.

2. Lead STD transmission activity.

Prior to the beginning of this activity, be sure you identify three students in private and tell them that regardless of the directions you give the class, two should only exchange fluid with each other and one should not exchange fluid with anyone during this activity. Remind them discreetly.

Explain to students that they are now going to do an activity. Hold up two cups of plain water to demonstrate how you want students to trade their liquids by pouring a little bit into one cup and then a little back into the first cup. The amounts of fluid should be roughly equal after the trade. Instruct the students to mingle among others in the class and to share a little bit of liquid from each other's cup with three other students.

Now provide each student with a cup of water. Tell the students not to drink the liquid. Be sure one student gets the cup with the vinegar solution and another student gets the cup with the plastic wrap rubber banded around the top. Make a mental note of which student got the vinegar solution.

After students have had time to complete three trades, have them return to their seats.

How does this experience relate to transmission of HIV and other sexually transmitted diseases? Explain that one student's cup contained water that was "infected" with an acidic solution (vinegar) and even though no one could tell by its appearance, it was capable of "infecting" others by the exchange of fluids. This represents an STD. Some students may have smelled the vinegar, which shows there sometimes are symptoms of STDs, but more often there are not.

In order to visually determine who may have become "infected" by the exchange of water, give each student a small piece of pH or litmus paper – you can tear each piece into thirds. If the litmus paper changes color when it hits the water, they have been exposed to the STD and could be "infected." For the cup with the plastic wrap on it, tell the student to test the water below the plastic wrap.

ALTERNATE ACTIVITY:

If you do not have access to the materials needed or time to set it up, there is a low-tech alternative. Gather index cards so that you have one for each student. Using pencil, so the letters are barely visible, on the back of one index card write the letter "**S**" for **STD**. On the back of one index card, write the letter "**A**" for **abstinence**. On the backs of **two cards**, write the letter "**M**" for **monogamy**. On the back of one index card write the letter "**C**" for **condom**. On the back of all remaining cards write the letter "**U**" for **unprotected**. Discreetly explain to the student with the "A" card to not shake anyone's hand and with the "M" card to only shake hands with another "M" card holder. Have all students mingle around the room, swapping signatures on the lined sides of the index cards with three other people in the room. They may sit down after their card has three signatures, except for the students with the "A" and "M" cards. Continue the discussion in the same way, but first reveal what the letters stand for on the back of everyone's card.

After testing each cup, follow with a discussion of the following points.

Could you tell – just by looking – which cups were infected? If students mention they could smell the vinegar, ask if they can always smell an STD. In some cases, STDs do cause an odor due to bacteria, but many STDs have no symptoms so you would not be able to smell them.

Who did not exchange water during the exercise? How did it feel not to participate? Explain that this represents abstinence. *Abstinence is the only 100% sure way not to get an STD. How did the other students respond to the abstinent students? Were they pressured, ignored, left out, etc.?*

Who exchanged fluids with only one other person? Note the two students who exchanged fluid only with each other. Explain that these two students represent monogamy. *Monogamy is when both people in a relationship agree they will only have sex with each other and not other people.* Ask if their test results showed an STD. Explain that when couples know they do not have STDs because of testing, they can reduce their risk by agreeing not to have sex with other people. Ask the two: *What did it feel like to deny others who wanted to exchange fluid with you?*

For the cup with the plastic wrap on it, explain that this represents using a condom during sex. **How did the “condom” work to protect the student from transmission?** Remind students that using condoms correctly or consistently will provide **excellent** protection against the STDs that are transmitted through fluids (such as gonorrhea, chlamydia, and HIV), but **won’t** provide as much protection against STDs that are transmitted skin to skin (such as herpes and HPV). If skin to skin contact happens and the condom doesn’t happen to cover the part of skin that’s got an infection, the STD can be spread.

How did it feel to be “tested”? *Were you uncomfortable knowing that others could see the results of your test? Would a promise of confidentiality be important in deciding whether or not to be tested for HIV or other STDs?*

Risk reduction: Remind the class that only one cup was originally infected, but through exchanges with multiple cups, the infection was transmitted to those not ever in contact with the original source. *What would have happened if they shared fluids with only one other person? How about if it were with five other people?*

3. Explain why teens are at greater risk of STDs.

First of all, most teens do not think they are at risk of an STD.⁴ Ask class why they think teens may be at greater risk for STDs than older people. Take a variety of responses. The truth is there are several reasons. You may read these or summarize them in your own words.

- *About 1 in 7 high school students has had four or more sex partners during their life.⁵ In a high school of 1,000 kids, that’s about 140 people who’ve had four or more partners. The more partners a person has in his or her life, the greater the risk of contracting an STD. (Of course, that means that 6 in 7 have had fewer partners or none.)*

- *About 1 in 3 sexually active high school students did not use a condom during last sexual intercourse.⁶ Condoms help lower the risk of STDs. (Of course, that means 2 in 3 DID use a condom.)*
- *A little more than half of people aged 15-19 has had oral sex with someone of another sex.⁷ (Of course, that means that almost half have not.) But the point is not everyone realizes that STD germs can spread from mouth to genitals or vice versa.*
- *People are more likely to engage in high-risk behaviors, such as unprotected sex, when they're under the influence of drugs or alcohol⁸. About 1 out of 5 high school students who've had sexual intercourse during the past three months drank alcohol or used drugs before their last sexual intercourse.⁹*
- *Teens are less likely to be married or in a long-term monogamous relationship than adults and are more likely to have a concurrent sexual relationship. A concurrent sexual relationship is when a person is having sex with more than one person at the same time. Concurrent sexual partnerships are risky because they make it easier to spread HIV and other STDs.¹⁰*
- *Teen girls' cervixes are not fully developed and the cells are especially susceptible to STDs.¹¹*
- *The frequency of sex can increase a person's chances of getting an STD. When people have more sex, they are at greater risk for getting a sexually transmitted infection. Also, the more sex their partner has (or has had in the past) or the more partners they've had can increase a new partner's risk of infection.*

4. Explain concurrent partners using **STD Risk and Vulnerability Visuals 1-3**

Concurrent partners are when a person is having sex with more than one person in the same period of time. It is risky behavior because it opens people up to sexual "networks" where STDs can spread more quickly than if people are abstinent or with a monogamous partner.

In the following visuals white figures represent people with STDs. The lines connecting figures indicate that those two people have had sex.

Show **STD Risk and Vulnerability Visual 1: How STDs Spread - Abstinence or 1 Monogamous Partner**. Explain that the white stick figure represents someone who has an STD. The single dark stick figures represent people being abstinent. The figures with only one line between them represent monogamous partners – where each person only has sex with the other partner and no one else. These stick figures can represent people of all genders.

Show **STD Risk and Vulnerability Visual 2: How STDs Spread - 1 or 2 Concurrent Partners**. Explain that once people start having sex with multiple partners at the same time, called concurrent partners, their risk of getting an STD increases. The white figures have STDs.

Show **STD Risk and Vulnerability Visual 3: How STDs Spread - 2 or 3 Concurrent Partners**. Explain that increasing the number of concurrent partners makes you more susceptible to STDs if someone in the network has one.

5. Lead risky behavior activity:

We just talked about how and why teens are at greater risk for STDs than other age groups of people. In this activity, we will look at which behaviors are riskier than others in terms of getting an STD or HIV.

Explain that there are four signs on one wall of the classroom. Explain that they mean risk of acquiring an STD or HIV due to a certain risk behavior. Distribute one *Risk Behavior Card* per student.

Ask every student to silently read his or her card and stand near the sign they feel represents the risk of acquiring an STD or HIV for the behavior listed on their card. Tell them to talk to their neighbors near the sign and arrange themselves so their behavior is either more or less risky than the person next in line. They should be in descending order from most risky on one side to least risky on the other. Another option is to ask students to tape their cards under the signs, with the riskiest behaviors near the top and less risky behaviors near the bottom.

Starting at the *Bigger Risk* side of the room, ask each student to read the card aloud. Tell students to listen if they think anyone is out of order. After each student has read, ask students to help you rearrange the line so that it is consistent with medical fact. Now point out any misconceptions or add any facts you think are necessary to explain why some behaviors are riskier than others.

Use this chart as a rough guide for risky behaviors. If applicable, the riskier behaviors are at the top of the chart. There are notes about certain risks after the table. Some of these risks could possibly be in other columns, depending on extenuating circumstances.

A Bigger Risk	A Risk	A Smaller Risk	No Risk
<ul style="list-style-type: none"> ● Sharing needles to inject drugs ● Receiving a blood transfusion before 1985 in the US ● Having vaginal or anal sex without a condom ● Breastfeeding from a mother with HIV 	<ul style="list-style-type: none"> ● Drinking beer or doing drugs at a party ● Having oral sex without a condom or dental dam ● Dating someone who is a lot older ● Spending time with a boyfriend or girlfriend at home when no adults are there ● Sharing a toothbrush or razor ● Piercing or tattooing with a needle someone else already used 	<ul style="list-style-type: none"> ● Having vaginal or anal sex with a condom ● Giving first aid and CPR ● Having sex with a monogamous partner ● Kissing (open mouth) 	<ul style="list-style-type: none"> ● Abstaining from sex and drugs ● Being with someone who is crying, coughing, or sneezing ● Donating blood ● Receiving a blood transfusion after 1985 in the US ● Kissing (closed mouth) ● Getting a mosquito bite ● Touching doorknobs, toilet seats, dishes, glasses ● Going to school with a person who has an STD or HIV ● Being in water with people who have HIV such as pools, hot tubs or showers

Explanatory Notes – Teacher Background

A Bigger Risk

- **Sharing needles to inject drugs:** Blood transmission is the easiest way to spread HIV and Hepatitis B and C.
- **Breastfeeding from a mother with HIV:** A mother can use HIV medication to lower her viral load and formula to feed her baby.
- **Having vaginal or anal sex without a condom:** Anal sex is riskier than vaginal sex and in both cases, the receptive partner is at more risk than the insertive partner.
- **Receiving a blood transfusion before 1985 in the U.S.:** This is when the US started routinely testing blood for HIV. Blood transfusions are *still* risky in parts of the world where donors and donated blood are not as carefully screened, due to the cost of screening.

A Risk

- **Dating someone who is a lot older:** Older partners are more likely to try to convince younger partners that they should not use condoms,¹² and it could be harder to assert yourself with someone older whose opinion might seem more valid than your own or whose respect for you might be low.
- **Drinking beer or doing drugs at a party:** Alcohol and drugs alter judgment and have been shown to decrease condom use.¹³
- **Having oral sex without a condom or dental dam:** The risk of oral sex is less than unprotected vaginal or anal sex. The risk depends on the disease, but in most cases, the receptive partner is at greater risk of acquiring an STD than the insertive partner. If a person already has an STD, it's easier for him or her to get HIV from an infected partner. Chlamydia, gonorrhea, syphilis, herpes, HPV, and HIV can all be transmitted during unprotected oral sex. HPV and herpes may not be stopped by using a condom or dental dam because they are spread by skin to skin contact. Oral-anal contact is definitely a risk for Hepatitis B with an infected partner.^{14,15}
- **Spending time with a boyfriend or girlfriend at home when no adults are there:** “Two-thirds (68%) of 16 to 18-year olds who reported a first sexual experience in [one study] said that they first had sexual intercourse in their family home, their partner's family home, or a friend's house.”¹⁶
- **Using a razor or a piercing or tattooing needle someone else already used:** Because razors can have blood on them, they should not be shared, since both Hepatitis and HIV are blood borne. “A risk of HIV transmission does exist if instruments contaminated with blood are either not sterilized or disinfected or are used inappropriately between clients. CDC recommends that single-use instruments intended to penetrate the skin be used once, then disposed of. Reusable instruments or devices that penetrate the skin and/or contact a client's blood should be thoroughly cleaned and sterilized between clients.”¹⁷

A Smaller Risk

- **Having vaginal or anal sex with a condom:** “Latex condoms, when used consistently and correctly, are highly effective in preventing the sexual transmission of HIV, the virus that causes AIDS. In addition, consistent and correct use of latex condoms reduces the risk of other sexually transmitted diseases (STDs), including diseases transmitted by genital secretions, and to a lesser degree, genital ulcer diseases. Condom use may

reduce the risk for genital human papillomavirus (HPV) infection and HPV-associated diseases, e.g., genital warts and cervical cancer.”¹⁸

- **Having sex with a monogamous partner:** Both people must test negative for STDs first and then trust each other that neither has had sex with anyone else in the months before they were tested and that neither is having sex with other people outside the relationship. This is placed in a risk category, because sometimes people lie about their histories, their test results, or sex with other people outside the relationship. How *much* risk that entails is a judgment call ... it would be OK to call it “a risk” rather than “a smaller risk.”
- **Giving first aid and CPR:** Current CPR recommendations stress the chest compressions over to mouth to mouth resuscitation, but barriers are available to prevent mouth to mouth contact if the victim is bleeding. When providing first aid wound care, universal precautions should be followed by wearing latex gloves.

No Risk

- **Abstaining from sex and drugs:** The only 100% sure way to avoid STDs.
- **Being with someone who is crying, coughing, or sneezing:** These can spread coughs and colds, not STDs.
- **Donating blood:** There is no risk whatsoever.
- **Receiving a blood transfusion after 1985 in the U.S.:** All blood is tested thoroughly in the US and most other nations.
- **Kissing (closed mouth):** There is no risk from this kind of kissing.
- **Getting a mosquito bite:** Mosquitoes transmit many diseases but not HIV or other STDs.
- **Touching doorknobs, toilet seats, dishes, glasses:** STDs and HIV do not survive for long on surfaces. “CDC studies have shown that drying of ... high concentrations of HIV [in blood] reduces the amount of infectious virus by 90 to 99 percent within several hours. Since the HIV concentrations used in laboratory studies are much higher than those actually found in blood or other specimens, drying of HIV-infected human blood or other body fluids reduces the theoretical risk of environmental transmission to that which has been observed—essentially zero.”¹⁹
- **Going to school with a person who has an STD or HIV:** Casual contact like what people have in a classroom, on a basketball court, or in the lunchroom will *not* spread STDs or HIV.
- **Being in water with people who have HIV such as pools, hot tubs or showers:** Plantars warts (a kind of HPV) and athlete’s foot do transmit from locker room floors and shared shower floors, so wearing sandals is recommended. But there are *no* known STD infections spread by these environments.

6. Conclude the lesson by summarizing critical points.

Ask students to write one thing that they learned from today’s lesson in their notebook.

Wrap up the lesson by restating these key points:

- Anyone who has unprotected sex is at risk of contracting an STD or HIV.
- Not having sex is the only 100% sure way not to get an STD or HIV.
- STDs do not get passed by casual contact. But when people get too casual about protecting themselves, like drinking or using drugs, not using condoms, or having sex with concurrent partners, then STDs can spread.

There is no recommended homework for this lesson.

Related Activities for Integrated Learning

BIOLOGY

Students can research individual STDs to make posters to hang in the class or in the halls. Ask them to find things like common and scientific names, history, current prevalence and incidence, modes of transmission, treatment / cure if any, and prevention. The CDC STD website has excellent fact sheets to get them started: <http://www.cdc.gov/STD/>

MATH

Have students access data at the most local level data is available, i.e., county or state, about STDs among teenagers. Ask students to prepare a PowerPoint presentation showing meaningful graphs and charts using local STD data. For example, students can show the progression of chlamydia infection over the past five years or a pie chart showing what infections make up the local STD infection population, or teen STD infection rates vs. the population of the school or county or state.

LANGUAGE ARTS

Another title to consider: is *Fade to Black* by Alex Finn, winner of the 2009-2010 Iowa High School Award. ISBN-10: 0060568399; ISBN-13: 978-0060568399. This is the story of an HIV-positive high school junior, the teen who attacks him with a baseball bat and the young person who witnesses the attack. It's told from all three teens' perspectives. Have students discuss bullying, discrimination, and stereotyping of people with HIV and other STDs and compare that with bullying, discrimination or stereotyping they have experienced or witnessed. It is important for teachers to know that this book does contain a few slurs, including the words spic and homo and the term PW, which implies the word pussy-whipped.

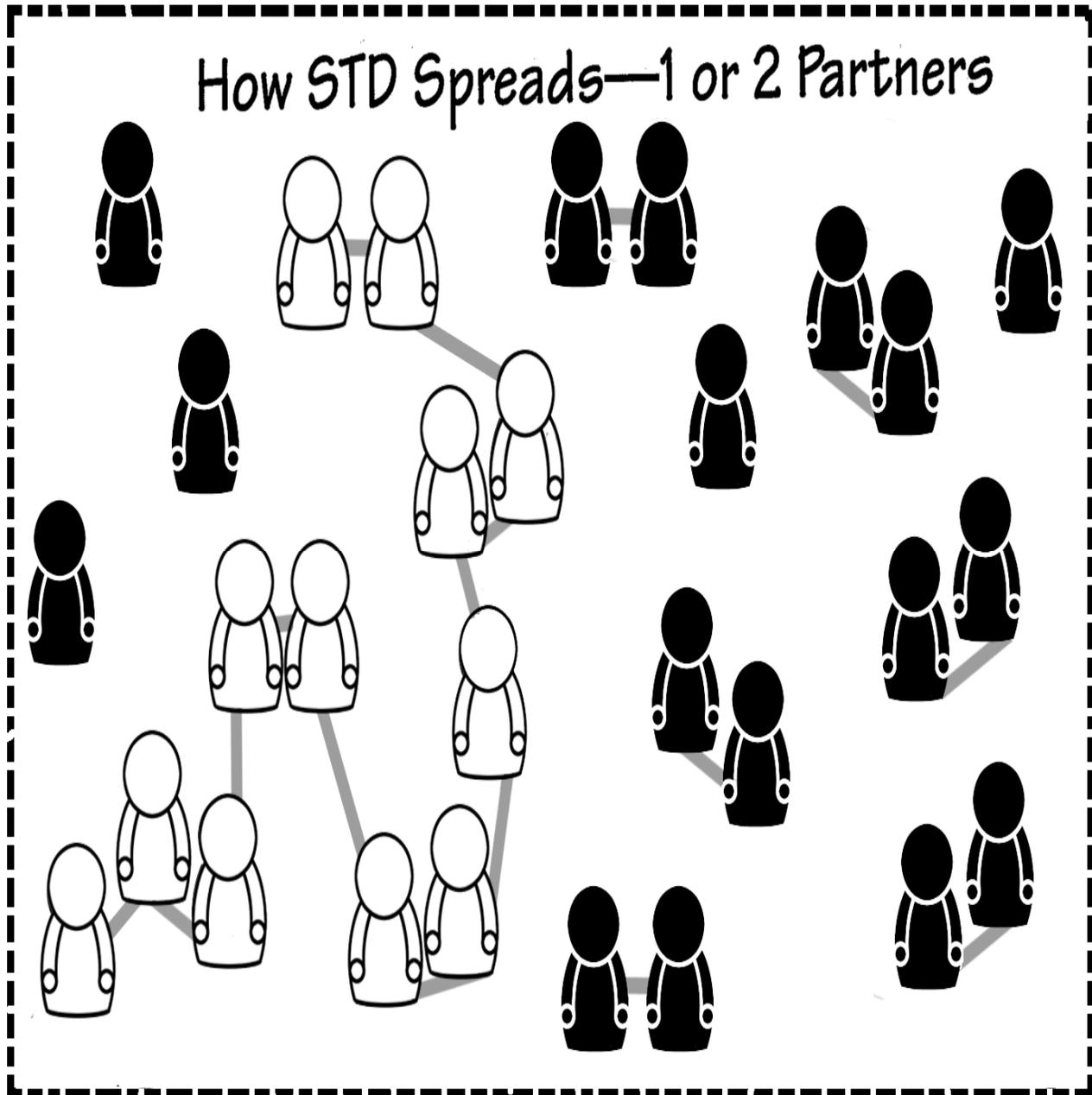
HISTORY

Show the film *The Sensei*, a remarkable 2008 film (released on DVD in 2010) set in the 1980's by Writer/Director D. Lee Inosanto, niece of Bruce Lee. A fast-paced martial arts film, it weaves a (fictional) story of bullying and violence rooted in racism, misogyny, homophobia and AIDS-phobia. At the same time it shows the human capacity to outgrow one's biases. Have students discuss the ways in which ignorance about the spread of HIV contributed to the bias various people exhibited. Have them write about their own biases and their own journeys to overcome them in comparison to those explored in the film. <http://blog.thesenseimovie.com/>

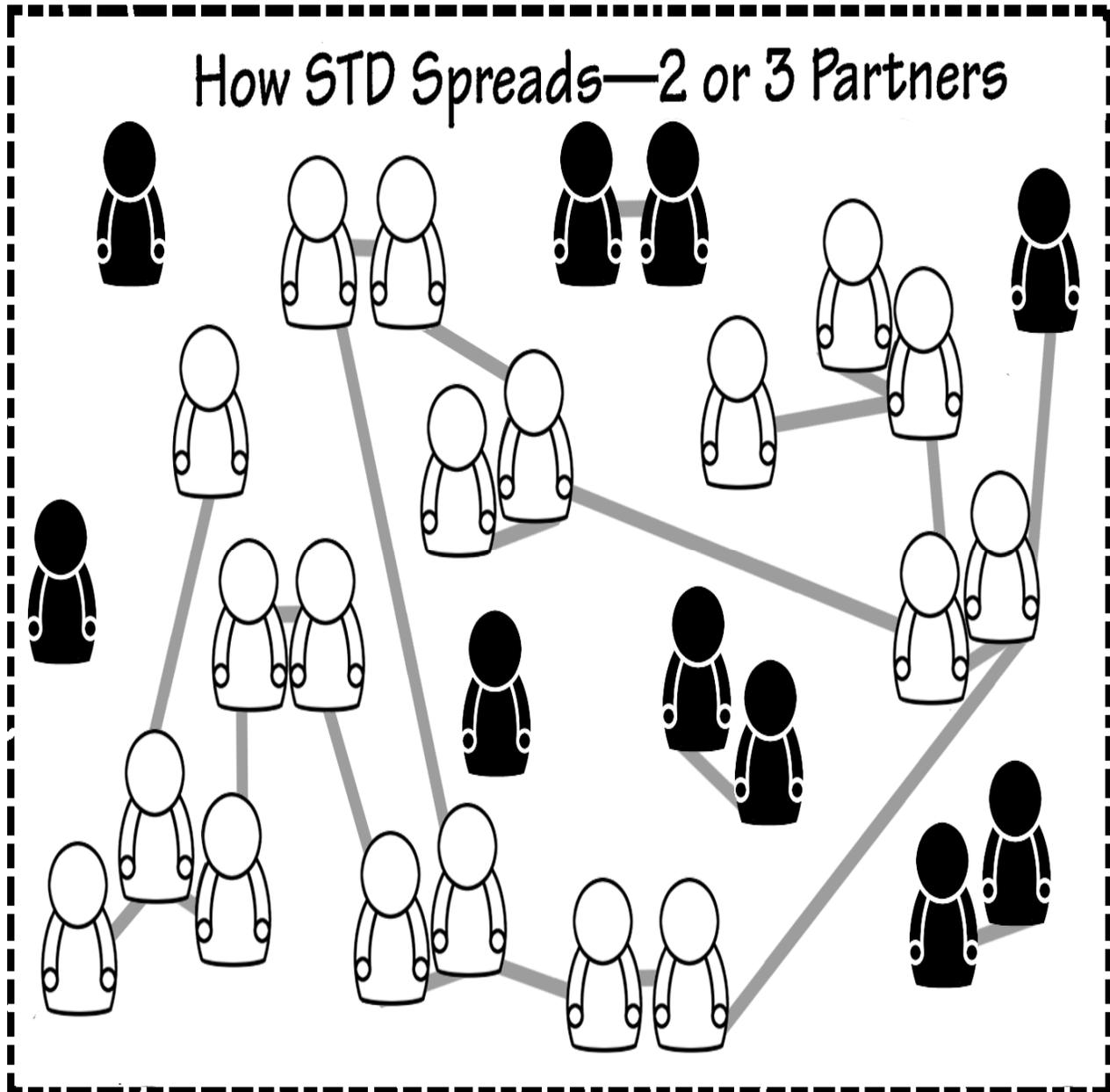
STD Risk and Vulnerability Visual 1



STD Risk and Vulnerability Visual 2



STD Risk and Vulnerability Visual 3



Risk Sign #1

**A
Bigger
Risk**

Risk Sign #2

**A
Risk**

Risk Sign #3

**A
Smaller
Risk**

Risk Sign #4

**No
Risk**

Risk Behavior Cards



Sharing
needles to
inject drugs



Dating
someone who
is a lot older

Drinking beer
or doing drugs
at a party



Having oral
sex without a
condom or
dental dam

Having vaginal
or anal sex
with a
condom



Abstaining
from sex and
drugs

Having sex with a monogamous partner



Donating blood

Being with
someone who
is crying,
coughing, or
sneezing

Receiving blood transfusions after March 1985 in the US

Kissing
(closed
mouth)



Getting a
mosquito bite

Touching
doorknobs,
toilet seats,
dishes, glasses

Going to school with a person who has an STD or HIV

Breastfeeding
from a mother
with HIV



Having vaginal
or anal sex
without a
condom

Being in water
with people
who have HIV
such as pools,
hot tubs, or
showers

Spending time
with a
boyfriend or
girlfriend at
home when
no adults are
there

Receiving a blood transfusion before March 1985 in the US

Sharing a razor



Giving first aid or CPR

Piercing or
tattooing with
a needle
someone else
already used

Oral sex using a condom or dental dam

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