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Talking with Kids about Sex and AIDS

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by Jeannette Gaffney and Mickey Kavanagh

Apologia

The problem about teaching AIDS to 5th and 6th graders is that they have not been taught about human sexual development. They need to learn that sexuality is a healthy part of human existence and that the changes they are now or soon will be experiencing are part of growing up. AIDS is so pressing that we need to teach kids about it before we are comfortable talking about sexuality at all. The reason we haven't taught them about sexuality is because it makes us uncomfortable. Since the AIDS virus is transmitted by behaviors with which adolescents often experiment, these young students need to understand the facts about AIDS early enough to influence their ideas about what behaviors are risky before they actually start engaging in these behaviors. They need to understand the facts about sexuality in order to make wise decisions about sex. If they are going to be comfortable, we must be comfortable.

Making teachers and other adults comfortable talking about sexuality and AIDS to pubescent and prepubescent students involves addressing two aspects: objective (knowledge) and subjective (feelings). Sexuality is not just a physical phenomenon. It is a complicated emotional, psychological, and cultural expression of ourselves. Knowledge is acquired from increasing one's information and resources about the topic. Feelings can be explored in many ways. We'll identify and explore the topics which are most difficult for them, which make them uncomfortable.

Talking about anal sex or intercourse or homosexuality or abortion may be difficult for some teachers. It is important to know ahead of time how one might react. It is OK to say, "I'm not the right person to answer that; here is who is." "I feel uncomfortable" or "I don't know but I'll find out." It is not alright to be judgmental.

The teacher needs to be prepared to respond to questions such as that of the 10 year old who wants to know if she is old enough to take the pill. A parent may ask the teacher why she is teaching masturbation. A 12 year old boy asked what makes somebody a faggot. See the appendix regarding questions asked by middle school students in 1987.

One often feels surprised by the questions children ask. At some level, we feel they are too young to know. We each need to think about what we mean. What is the harm we fear? How can we tell if a child is ready to be told? How do we talk about it if the child is not ready? Why should children be given information about human sexuality?

Topics which a teacher may identify as difficult include body parts, sexual acts, cultural bias, a feeling that it is inappropriate to teach young students about sexuality, or the language of sexuality itself.

Language of Sexuality: Body Parts and Functions

Even the language of sexuality is not value free. One schema for understanding sexual language was described by Anna Schildroth. Language about sexuality comes from four sources, according to her: childhood, medical, everyday, and the street.

Names of body parts are not “dirty words.” The easiest way to become accustomed to this concept is to use the words often. In teaching this as a curriculum, the first piece is to teach the parts of the body using formal words. Many kids know and use nicknames or slang terms. Teachers have to be able to accept these terms without a reaction of disapproval. However, as a matter of course, the teacher provides the more adult terminology. Sources for diagrams and charts of body parts will be listed below.

Throughout all teaching and in particular when teaching sensitive material, teacher behavior is a model for student behavior. Don’t say, “yuck.” The more comfortable the teacher is, the easier it will be for students to understand the objective information and to become comfortable themselves both in talking about sexuality and in accepting themselves as sexual beings. The threshold of comfort for all rises with exposure.

The following is an exercise designed to help teachers explore their comfort level.

Exercise for Teacher Preparation

Make a list of body parts and functions and sexual practices. Next to each, write all the slang (or “dirty”) words you know for them. Put an asterisk next to the words you cannot say aloud in front of a class. Identify those words or practices that make you uncomfortable. The discomfort you feel is a value, not a fact. Just because you feel the word “jiz” is disgusting doesn’t mean that semen is disgusting or that people agree with you that “jiz” is disgusting. Different people have different values about different words.

Think about the fact that most swear words have to do with religion, excrement, and sex.

You can practice saying words aloud. Simply knowing what makes you uncomfortable will help enormously. You don’t have to change your values about any words. What is important is that you be able to hear these words from students and talk about the subject without giving away your personal prejudices.

There are some words you have to be comfortable saying, so you may need to practice saying them while you’re driving the car, or with a friend, or in front of the mirror. These words include penis, vagina, vulva, testicles, testes, semen, scrotum, ejaculation, menstruation, breast, intercourse (practice saying what it is), cervical mucus, vaginal discharge, pubic hair, genitals, labia, clitoris, urethra, anus, rectum, hymen, erection, epididymis, vas deferens.

(figure available in print form)

□ It is to be expected that students will be embarrassed and giggly when the unit begins. One activity to use to help everybody get beyond this is described by Lynda Madaras in the *What's Happening to My Body* books.

Each person is given a sheet which has labeled drawings of male and female external genitalia (see below). Each also receives two colored pencils or a box of crayons (using only two colors makes the following directions simpler).

The teacher talks about how uncomfortable most people feel about sexuality, explaining that giggling is a natural reaction but that the group is going to go beyond this discomfort. It is the task of the group to talk about sexuality. Being able to talk about sexuality is a positive goal in itself.

The teacher names body parts and their functions throughout the lesson. She uses as much slang vocabulary as possible, continually repeating the technical terms. She begins to give directions such as: locate the penis in the picture of the male genitalia. Color the penis blue and white striped. While the students are doing this exercise, the teacher talks about that body part and its function: the penis has many names. You have probably heard several like dick, bone, Peter, Jimmy, wang, prick, etc. The penis is made of spongy tissue . We recommend this exercise to those teachers who would feel comfortable teaching it.

For all teachers we recommend that the labeling exercise continue through the external and internal male and female genitalia.

An alternative exercise to teach body parts and functions is to list on the chalkboard as many slang terms as the class can think of. Students can each have their own charts of male and female genitalia to label. (see appendix regarding resources). This exercise can also be done in small groups, with a time limit to create competition. As before, the object is to increase comfort and knowledge.

The purpose of these exercises is twofold: for students to become more comfortable with the terms of sexuality and to identify and label body parts and functions. The following is a list of vocabulary which must be included:

Male	Female
genitalia	vulva
penis	vagina
scrotum	labia (inner and outer)
testicles or testes	ovaries
(testicle or testis)	mons veneris
vas deferens	fallopian tubes
epididymis	
prostate	cervix
urethra	urethra
bladder	bladder
anus	anus
rectum	rectum
pubic hair	pubic hair
glans	clitoris
breast	breast

nipple nipple

(figure available in print form)

(figure available in print form)

Reproductive Anatomy, Physiology, and Fertility

The purpose of this lesson is to make concrete the reproductive organs. All the information needs to be conveyed to students of both sexes. The section on fertility awareness is appropriate for older middle school students whose physical and psychological maturity is more advanced. The unit on fertility awareness was designed to be taught to middle and high school girls by Beth Roth ²

Supplies needed

A large chart showing male and female reproductive organs in which the inside and outside can be seen, such as a cutaway design. These can be borrowed from Planned Parenthood (see bibliography).

a pear	to represent the uterus
a thin drinking straw cut into 3-inch lengths	the fallopian tubes
two almonds in the shell	to represent the ovaries
a toilet paper tube	to represent the vagina
raw egg white, white hair conditioner, white hand lotion, paste	to represent cervical secretions
two walnuts in the shell	to represent the testes
a balloon containing dried peas or beans	to represent the scrotum
string (or insulated wire or string licorice)	to represent the epididymis, vas deferens and the urethra
two small balloons	to represent the internal glands (cowpers & prostate)
a large balloon	to represent the bladder (male & female)
A very dry piece of sponge and a clear plastic container of water	to demonstrate the process of erection
clear cream rinse	to represent semen

The teacher begins, before she introduces the props, by explaining that this is a lesson on reproductive anatomy, physiology, and fertility. Anatomy means the parts of the body. Physiology means how they work. Reproductive means making babies. Fertile means able to grow things. A garden can be fertile. We put fertilizer in gardens to make the soil more fertile. An animal can be fertile. When a person is fertile, it means his/her body is ready to make a baby. When an egg or seed is fertilized, it can begin to grow in a fertile place, like a garden or a uterus. We are going to look at the parts of the body which have to do with reproduction. If the teacher is comfortable, she/he may indicate on her/his own body the location of the sexual organs. Otherwise she/he may use a large classroom chart. As each body part is identified, write the term on the board.

Female (some of us are fancy on the inside).

Directions to the teacher:

Hold up the pear, stem side down. Say, "This pear represents the uterus. They are the same size and shape. The bottom of the *uterus*, where the stem of the pear was, has its own name, the *cervix*, although it is also part of the *uterus*. Holding two sections of the drinking straw to show how they branch out to the sides, the teacher says, "These are the *fallopian tubes*." The almonds represent the *ovaries* at the other ends of the *fallopian tubes*. Hold the toilet paper tube to cover the stem end of the pear. Say, "This is the *vagina*. It is a tube shaped muscle which is squeezed shut most of the time." Squeeze the tube shut.

Referring to the poster or chart, the teacher will show which part of the drawings are represented by which prop, meanwhile talking about the function of each organ. There are three important things about the uterus: (1) it is a muscle which can tighten and relax like other muscles; (2) like a balloon being filled with air, the uterus can expand or stretch around a growing baby; (3) it is where the menstrual blood comes from every month when a woman is not pregnant. The menstrual blood is the uterine lining which was put there by the body to support a growing pregnancy. There are two important things about the fallopian tubes: (1) they are pathways from the ovaries to the uterus; (2) they are where the egg and sperm meet which is called conception, the beginning of pregnancy. If egg and sperm do not meet, the egg lives for one day and then disintegrates. There are two important things about the ovaries (1) they make hormones and (2) they release eggs. The ovaries are egg cartons which store immature eggs. Girls are born with about 400,000 half grown eggs. A mature egg is the size of a pencil dot. At *puberty*, girls begin to *ovulate*. From about age 10 or later to age 60 or sooner, once a month an egg is matured and leaves the ovary. This is called *ovulation*. The age at which ovulation begins is called menarche, the beginning of puberty. The time of the last ovulation is called menopause. Both menopause and puberty are gradual body changes which may take a few years. A girl who uses one egg a month from 10 to 60 will use six hundred eggs in her lifetime.

Ovaries also function as hormone producing glands. Estrogen and progesterone come from the ovaries and cause the monthly female cycle. When the egg is not fertilized, hormones cause the uterus to shed its lining. The lining leaves the body through the vagina, looking like blood. This is known as a period.

Male (Some of use are fancy on the outside)

Now let's look at the boy's body. The chart and the walnuts, string and balloons show the location of the scrotum, the testicles, the epididymis, the vas deferens or sperm duct, and the internal fluid producing glands. The scrotum is represented by a balloon with dried peas in it. The *scrotum* is a sac which hangs outside the body behind the *penis*. After puberty, the scrotum has hair on it. A muscle in the scrotum allows the *testes* to be held closer or farther from the body to maintain the correct temperature for sperm production slightly below body temperature. Holding the mouth of the balloon with one hand, use the other hand as a ring through which the balloon can be raised or lowered. The *testes* (show the walnuts) which are in the *scrotum* have two functions. They make *sperm* and the hormone *testosterone*. The sperm are stored while they mature in the epididymis. The *sperm* travel from the *testes* along the pathway called the *vas deferens* or *sperm duct*. Along the way they pass through several glands which manufacture *semen*, the milky fluid which nourishes *sperm* as they travel. (Use cream rinse or white hand lotion to show what semen looks like. The string can represent the various internal tubes. The smaller balloons can represent the internal fluid producing organs/glands). The *penis* is made of spongy tissue with lots of blood vessels which fill with blood to cause an *erection*. *Erection* is when the penis gets stiff and hard and stands out from the body. *Semen* can only leave the man's body when the *penis* is *erect*. *Urine* can only leave the man's body when *penis* is not

erect . The tube through which *urine* or *semen* pass is called the *urethra* . When the *semen* leaves the body, it is called *ejaculation* . A boy's body begins to be able to release *semen* (ejaculate) at *puberty* (about age 12 to 16). Boys produce and could release *sperm* every day beginning at *puberty* . We say they are always *fertile* . Girls, however, are only fertile for a short time in each *menstrual cycle* . *Fertile* means able to make or begin a baby. *Sexual intercourse* is when the man's penis is placed in the woman's *vagina* . If he ejaculates in or near the *vagina*, *sperm* can travel to the *fallopian tubes* in search of an egg. If they meet, it is called *fertilization* or *conception* , and it is the beginning of a pregnancy.

For a classroom activity, students in small groups can construct and label male and female reproductive anatomy. Each group is given a brown paper bag containing the various props needed. A soda bottle, pipe cleaners, tin foil, Saran wrap, modeling clay, construction paper, styrofoam cups and yarn are other materials which can be included. Each group describes its constructions to the rest of the class.

Fertility

(Using props from the anatomy lesson). This section is designed for girls who have their periods or for older middle school and high school students.

How can a girl know when she is fertile? Every woman can learn to recognize signs that an egg has started to ripen in her ovary. A feeling of wetness around her vagina or on her underpants which is not her period is a signal which she can learn to understand. When the egg starts to mature in the ovary, it sends a hormonal message to the cervix to begin production of fluid. The fluid (discharge) can be like hand lotion or hair conditioner or clear like water or stringy like egg whites or sticky like paste, depending on which part of the menstrual cycle she is in. The texture of the discharge indicates the stage of egg development. Some girls may experience a few dry days after their periods before they begin to notice the wetness which is a sign that the egg is beginning to ripen in the ovary. The discharge begins as a clear watery fluid, which can last a few days. The fluid turns cloudy and thick, like hand lotion or creme rinse as the egg gets closer to ovulation. There is never very much fluid; it is easily wiped away with toilet paper or absorbed by cotton underpants. At the time of ovulation, the fluid becomes clear and stringy like raw egg white. None of these discharges have a bad odor. They are perfectly normal and healthy. If a girl should notice a bad smell or an itching or burning sensation, it tells her that something is wrong and she should have it checked. The "egg white" discharge only lasts for one or two days. When it is gone and ovulation has been completed, some women notice a thick paste like discharge for a couple of days. This is followed by dry days. From the "egg white" days to the beginning of the next period is almost always 14 days. There is a lot of variation from woman to woman and there can be variation in the same woman from month to month. Not everybody has every kind of discharge. The number of days from period to period (the menstrual cycle) varies immensely. Some things which are fairly constant in ovulating (fertile) women are the raw egg white elastic discharge or mucus at the time of ovulation and the 14 day time between ovulation and the first day of the next menstrual period (bleeding).

All of these discharges are made in and by the cervix and come out through the vagina. Their purpose is to assist and nourish sperm to enter the uterus on its way to fertilize the egg. Any time sperm is near the vagina during these slippery days, it is very likely that it will meet an egg.

Chart of External Signs and Internal Changes

Outside		Discharge	Internal
Day of Cycle	Date		
1	9/7	heavy bleeding	Uterus sheds lining
2	9/8	"	"
3	9/9	"	"
4	9/10	light bleeding	"
5	9/11	spotting	"
6	9/12	dry	Egg not yet growing
7	9/13	dry	and uterine lining beginning to rebuild
8	9/14	wet	
9	9/15	watery	Egg ripening
10	9/16	thickened	"
11	9/17	thickened "	
		like lotion	
12	9/18	or conditioner "	
13	9/19	tackier	
14	9/20	stringy—egg	Ovulation
15	9/21	paste, white	Uterine lining being enriched
16	9/22	paste	Egg has disintegrated
17	9/23	dry	
18	9/24	"	Uterine lining continuing to enrichen
19	9/25	"	
20	9/26	"	
21	9/27	"	
22	9/28	"	
23	9/29	"	
24	9/30	"	
25	10/1	"	Uterus stops enriching lining
26	10/2	"	
27	10/3	"	
28	10/4	"	
1	10/5	blood	Uterus begins to shed lining

(figure available in print form)

Some issues to discuss in using these charts follow. Which days are the most fertile, the easiest time to become pregnant? Answer—during and just before the raw egg white mucus, the wet days. Sperm can live up to 3 to 4 days once inside the cervix or uterus while the slippery discharge is there. When are the infertile times? What is the least likely time to become pregnant? The dry days after ovulation. We say least likely and most likely because the menstrual cycle is extremely susceptible to outside influences. Because the next month is never predictable, we cannot safely anticipate ovulation. Blank charts can be provided for those interested in charting their own cycles.

Lesson: Journals

Each student will need a folder in which to keep handouts and a journal. It matters little whether these are teacher-made, store bought, or student provided. It matters greatly that they exist, that each student has his/her folder at every session and that no one except the owner and the teacher have access to them. We suggest that the teacher provide security with a file drawer that students can trust or a similar cache. The teacher needs to assure students that the journal is private and will be returned to the student at the end of the course.

The first journal entry will be a list of technical terms: the names of body parts.. At the end of each session, students should write a brief reaction to material covered that day and any unanswered questions they may have.

A list of new technical vocabulary is to be maintained.

Suggestions for other written assignments are (a) draw from memory and label male and female internal and external genitalia; (2) each student may keep a record at home of his/her own stages of puberty and development or menstrual cycle and cervical mucus; (3) each student can make a list of people to talk to about sexuality; (4) use the journal to stimulate parent-child communication. For example, students might be given an assignment to discuss a specific topic with their parents and write about their conversation in the journal.

It is the teacher's responsibility to be aware of student vulnerability and to provide protection for the privacy of individuals. No one is to be required to expose themselves.

Facts and Values

Talking about sexual acts may make the teacher uncomfortable. Everything about sexuality has two parts which must be separated and addressed: the facts and the values. Adult emotions about sexual acts make it hard for adults to talk about sex. When emotions are communicated with the facts, the information becomes confusing for children, and distracting. Confused children can't assimilate the information and translate it into behaviors affecting their own lives.

The interest of prepubescent children is particularly focused on understanding how the machine of the body works, and what causes the machine to dysfunction, or to have unusual results, such as multiple births.

Preteens want to know about menstruation, sexual intercourse, pregnancy, birth, heredity, miscarriage, abortion, the pill, homosexuality, illegitimacy—essentially everything. They don't however, want to know everything about everything at once. Often their questions are related to their own lives' circumstances ("my cousin did this". . .). Their knowledge so far is from their own circumstances. Wait to answer until it is clear exactly what they want to know. Answer simply and honestly, and then wait, sometimes two weeks, for the second part of the question. Establishing an atmosphere in which questions can be ongoing is the most important part of sex education. The process is much more important than the content.

When a child asks what some sexual practice is, the child wants to know the facts (simple). The adult needs to have already separated their own values about sexual practices from their ability to explain what vocabulary means. This is particularly relevant to teachers who will soon have to teach about AIDS to fifth graders and may have to explain what anal intercourse means. The answer is that the penis enters the rectum instead of the vagina. A natural follow up question will be: Why do they do it? which is not a question of values but about why do they do it when there are other things that people do. The answer is: Because they like it.

Another problem for teachers is related to cultural bias.

Teachers may be concerned about offending parents and usurping their role. In New Haven a city-wide mandate exists for students to be taught about AIDS. Responsible teaching of AIDS cannot occur when the teacher is not prepared to teach sexuality. In fact we believe students in our time and culture to be unprepared for life if they are not educated about human sexual development. Parents who are willing to accept that role will have been talking with their children already. Some parents may be greatly relieved that the school is willing to take on this difficult but important area of education.

It is important to remember that as a teacher your job is not to teach the students your sexual values. That is the parents' job. The teacher's job is to be sure that the students understand the facts. For example, the teacher might explain what the word masturbation means, what the physical aspects are. That people often attach strong values or taboos to masturbation can and should be explained. But the teacher's job is not to teach which values are correct any more that she is to teach how to do it.

In certain instances, a teacher's values may be relevant as an example of universal values. We as a cultural group do not believe that it is a good idea for 12-year-old girls in this society to have babies. In other societies, other values prevail. We also believe that private practice between consenting adults is inviolate.

However, individuals have values which may conflict with the values of society. As these individual values become more widely accepted, we observe a society in conflict. Two examples of heated societal conflict are homosexuality and abortion. A fine line exists between personal and universal values which the teacher must explore in order to teach about sexuality. We know many sexually active people under 16. Yet, we say it is illegal for adults to have sexual relations with people under 16. We say private practice between consenting adults is inviolate, yet certain sexual practices are illegal. Teachers must do homework about how to express these values in a clearly thought out way. The difficulty lies in separating the value from the fact.

Another problem which may impede the teacher is concern about how old a child should be to know what intercourse is. At age 3, children commonly ask where did I come from? They do not want to know about adult sexual practices or emotions. What they want to know is that babies grow inside of mothers. Later they will ask how babies get out. The answer is that the mother pushes the baby out through the vagina. Still later, at about 5, the child will ask how the baby gets into the mother's uterus. The answer is the father puts his penis in the vagina and sperm comes out of the penis. The sperm swim to meet and join with the egg to begin a

baby.

What we fear is that we the adults will do harm to the child by talking to her/him too soon. We fear we are hurrying them, taking away their childhood and innocence. We think they will be shocked by what they hear. We also conversely fear we will impel them into sexual activity at an earlier age. Following are some answers to these concerns. A reaction of shock is unlikely if the information a child seeks is gently given to him/her when he/she asks, and only what is asked. This requires the adult to be a good listener. When the child asks where do babies come from, adults sometimes become anxious thinking they must now explain adult sexuality to a 3 year old. In fact, the child may simply be asking whether the truth is the cabbage patch, the stork, or bought from the hospital. Some children may find it very reassuring to know they have always been “connected” to their mother.

A serious concern to which adults must respond is that we cannot prevent our children from being exposed to sexual messages and topics which are presented on television or that they may learn about from others. An example is the 7-year-old child whose babysitter allowed her to watch a program in which the plot involved date rape. When the child reported this to the mother the next day, she said the sitter had asked her if she knew what date rape was. The child had said yes; it was when a girl’s date forced her to have sex with him. The mother’s reaction was what if the child hadn’t already know about intercourse and had had to learn the facts in a situation of watching a lurid television program inappropriate for her at all with the explanations of a babysitter of questionable judgment.

In an atmosphere of overt sexuality, not explaining the facts can cause much more anxiety in children than the simple truth can cause. Adult secrets can be very scary. The difference between secrecy and privacy is relevant here. We fear harming children because we feel unable to explain at the level of a 5 year old. It is confusing because people are confused.

Even in situations not related to discussions of sexuality, it can be difficult to be aware of the level of cognitive development of a child. Many adults have encountered the frustration of attempting to teach a 2 year old to count objects. Even though she can count to ten by rote, she cannot relate the pattern of words to a series of objects. A 2 year old can know the names of the numbers from one to five long before she can count the number of objects in a group of five or less.

In the same way, children before puberty cannot comprehend cognitively emotional aspects of human sexuality which are beyond their development. They still think very concretely and literally and egocentrically. As their bodies mature, so does their ability to comprehend, but not necessarily at the same rate. A child with a fully developed body may be still intellectually immature, unable to grasp basic concepts such as cause and effect. They won’t be hurt by hearing what they don’t understand or aren’t ready for because they won’t absorb it. It is as though the mind must build a magnetic receptor in order to hold information. Without that receptor, which is created by maturation and experience, the new information, be it object counting, algebra, or adult human sexuality, cannot be retained because it doesn’t make sense. Information in itself is not harmful. The potential for harm is in insensitive presentation, invasive of private space. Misinformation and misunderstanding get corrected by the continued availability of questions and answers.

What we as adults fear is that we will change innocents into sexual people, abuse them in a sense, by exposing them to sexuality too young. In fact, children are sexual from birth at a childish level. If we respond to their cues, their sexuality will continue to develop healthily. A notable exception to children being able to handle what they are exposed to is physical sexual activity and abuse which can have devastating effects and which by nature is coercive.

The key to teaching children about human sexual development is being able to listen well. In anxiety-filled situations adults sometimes tend to say either too much or too little. Some people in applying for a bank loan for example may end up explaining their situation in far greater detail than the banker needs to know. Our anxiety about what is going on interferes with our ability to perceive what actually is going on. This creates bad communication. The adult, instead of listening to the child and understanding the question, is spending that time while the question is being asked thinking about how she/he wants to answer it and about how she/he feels about the question. Communication will be much better if this reflection occurs after the question is asked. Listen to the question: "Where do babies come from?" Then think: "What does she want to know?" (where babies come from) "How do I feel about it?" A little nervous about the next question, but I know the answer to this one, then answer: babies come from mothers' bodies. That may be all she wanted. What a mistake it would have been to have assumed she wanted to know about fertilization of the ovum when what she wanted to know was if the stork brought them. And again we discover that the child's level of maturity, cognitive and sexual development, is helpful to us in our education. If you had made the mistake of explaining about fertilization, the child would have tuned you out. In older children, not hearing the question can also teach the child to feel you the adult do not listen/understand her, that you patronize by giving information which they already know or diminish their respect, pride, ego by not giving the information they have been trusting and bold enough to request. Physically mature students have stronger emotions about sexuality. Their tolerance for discussion may be hampered by their self-consciousness. Those who have had discussions about human sexual development before puberty may find it less difficult to talk about sexuality when they reach an age in which they experience the conversation more personally. Talking about human sexual growth at an early age sets a pattern or standard of acceptance that can continue at a later age. Our strategy is to approach human sexual development as a gradual hormonal process of which psychosocial development is a part. The fewer times we talk about storks and the more times we talk about hormonal processes and the real names of body parts and functions the more comfortable adults and children will be and therefore the less vulnerable the not-yet-adults will be.

Human sexual development begins as soon as human development begins and is a lifelong gradual process controlled by hormones. Hormones stimulate the development of physical and sexual characteristics. Hormones stimulate also psychosocial development.

The human body at peak capacity is a baby making machine operated by hormones. The biological goal of all this development is adult sexuality and procreation. If these capacities are investigated too soon or without forethought, problems can arise: dilemmas of birth control in the smart ones, teenage pregnancy in the immature and denying ones, and disease in the experimenting and rebellious ones.

The more students know about hormones, the more likely they are to delay sexual activity until their cognitive ability catches up to their physical ability.

How Hormones Work

Everything is made of parts or building blocks. The parts of human beings are as follows:

Organs (skin, liver, heart, ovaries, testes)

Bones

Muscles

Blood

Nerve

Body parts are made of cells—skin cells, blood cells, fat cells. Each cell has a membrane which is like the skin. This membrane or wall can be crossed by some things but it prevents other things from getting into the cell. Each cell has three functions: (1) to keep itself alive; (2) to reproduce itself and (3) to do some job to keep the body working (make skin cells, digest food, mature an egg).

In each cell there is a nucleus, which is like the brain of the cell and keeps it functioning. Inside the nucleus of each cell is the computer program or the recipe to follow for each of these functions. The recipes are called the genetic material. It is made up of chromosomes which carry genes. Every cell carries every gene needed for that person's body to live and function. There are two kinds of recipes in the nucleus: DNA which reproduces itself and RNA which directs the cell to make something or do something that is that cell's job. All cells are made of different kinds of molecules and compounds of molecules. Molecules can be fats (lipids), amino acids, carbohydrates (sugars), or nucleic acids.

When amino acids join together, they make proteins, compound molecules. Molecules, like water, are built of elements like hydrogen, oxygen and nitrogen. Water is made of two hydrogen and one oxygen (written as HO). Elements are made of protons, neutrons, and electrons. Things stick together or push each other away because protons and electrons act like magnets. When they pull each other together, they fit snugly like pop-beads.

(figure available in print form)

In this lesson, we're going to talk about how compound molecules make organs work. Particularly, we're going to talk about compounds called hormones. Hormones are responsible for the growth and development of human beings. They are messengers which are made in one part of the body, in glands (pituitary, gonads, adrenal), but not needed or useful there.

Hormones travel through the bloodstream and cause things to happen elsewhere. There are many different kinds of hormones which control and regulate many different activities of the body. Each hormone has its own unique shape. We will focus here on the hormones which affect the growth, development and functioning of the sexual organs. They are GNRH, FSH, LH, EST. Prog., Testosterone.

The glands which are involved in human sexual development are the hypothalamus, the pituitary and the gonads (the sexual organs/glands: testicles in men and ovaries in women).

(figure available in print form)

Let's think about this as a rail system. The blood is the train. Veins and arteries are the *tracks* .

(figure available in print form)

All the glands are factories which make packages of hormones and load them on the train. Glands (like the pituitary) make hormones only in response to orders they receive and read from the hypothalamus. The hypothalamus is the headquarters or central command office for the whole railroad system. It works like a computer, reading messages and keeping track of the amounts of all the different hormone packages everywhere in the system. The hypothalamus changes its orders to the glands based on that information, keeping all the hormones in balance. (This is called homeostasis). Orders come from the hypothalamus in the

form of a hormone.

(figure available in print form)

The messenger hormones get unloaded from the train at the stations (organs). Organs only accept packages which are meant for them. They identify them by their shape which fits exactly into a window (receptor) in the wall of that station (like a pop-bead). Each hormone and each receptor have exactly matching shapes and magnetic pull.

In response to the message, the organ does its job. Part of its job is to act like a gland and make other hormones which are loaded back onto the train and end up causing still other organs to do something and signaling the hypothalamus that they are doing what they've been told. When there is enough of this hormone in the blood (on the train, the hypothalamus (with its computer) reads that message. In answer, it changes its instructions to the pituitary. That makes the pituitary change what it is making and therefore the message which the organs receive.

The Hypothalamus and Human Growth Throughout Life

The hypothalamus works like a computer with a program in place which from before birth causes a steady release of hormones which tell the body to grow. There are two ways in which the hypothalamus gets re-programmed. One is that the brain changes the program based on the input it receives through the senses from outside the body. The other way the hypothalamus is re-programmed is by feedback from other parts of the body: packages of hormones (messages) unloaded at the hypothalamus from the train tell the hypothalamus that there is enough of a specific hormone at a specific organ.

The hypothalamus begins functioning before birth and continues until death. The program changes as the body grows. Until about age 7 to 14, the hypothalamus steadily releases hormones which cause gradual growth and also cause a slow and gradual development of sexual organs and glands. Sometime between 7 and 14, the sexual glands have absorbed enough hormones to begin producing hormones. This is the onset of puberty, a time when sexual and reproductive development are speeded up.

(figure available in print form)

Puberty continues until the child's body grows into an adult body capable of making babies.

Beginning with puberty, the production of sexual/reproductive hormones is increased. At the end of puberty, there is a peak in the quantity of hormones being produced and a very gradual decrease in production of these hormones begins, eventually causing the body to lose reproductive capacity (menopause in women, senescence in males). However, these hormones continue to be produced throughout life.

Let's look now at the way this all works. The hypothalamus loads the train with packages of GnRH (Gonad stimulating hormone). The pituitary receives these packages and in response releases FSH & LH (follicle stimulating hormone-FSH and luteinizing hormone-LH).

(figure available in print form)

In the girl what's in the package now attached to the ovary is telling it to let a follicle grow so that the egg cell inside the follicle will mature. While the egg is ripening, the follicle loads onto the train a new hormone it has been making called estrogen.

(figure available in print form)

Some estrogen causes the development of secondary sex characteristics. These include breasts, pubic hair, widening of the hips, etc.

Some estrogen is unloaded at the uterus telling it to start building a new lining—put down a new, thick carpet.

More and more estrogen goes to the hypothalamus as the egg ripens. When the egg is mature, the hypothalamus tells the Pituitary to send a big shipment of LH (luteinizing hormone) to the ovary.

Estrogen is unloaded at several stations:

(figure available in print form)

This surge of LH will cause the egg to burst out of the follicle (ovulation) and will tell the empty follicle to change its job and start making yet another hormone, progesterone.

Some of the progesterone is unloaded at the uterus, telling it to start making food for a possible fertilization (Company's coming, stock up the larder). As long as the hypothalamus reads the high level of progesterone, it does not order more GnRH.

(figure available in print form)

The corpus luteum, however, only survives 14 days. If no pregnancy happens, it begins to deteriorate and the deteriorating corpus luteum puts out less and less progesterone, which is read by the hypothalamus as a message to start another round (i.e. send out GnRH again) and is read by the uterus as a message that there will be no company this month so throw out the provisions (menstruation).

If no pregnancy happens:

(figure available in print form)

If pregnancy happens, it produces its own hormone (HCG) which acts like LH—keeping the corpus luteum alive to produce progesterone until the developing placenta takes over.

In the girl, the two stimulating hormones act sequentially (that is one after the other) at the same station on the same follicle. The boy's testicle has two stations, each of which unloads a different hormone and performs a different function in response to it: one station (the Sertoli cells) will make sperm, the other (the Leydig cells) will make testosterone hormone. When the stimulating hormones reach the testicles, FSH causes an increase in the number and size of seminiferous tubules which house the Sertoli cells—the sperm-making compartments. As the Sertoli cells grow, they make sperm. In the neighboring compartment, LH is directing the Leydig cells to make testosterone.

(figure available in print form)

Testosterone is used by the Sertoli cells in sperm production. Testosterone causes the body to also change visibly (secondary sex characteristics—body growth, penis growth, facial hair, etc.). The hypothalamus is signaled that the sperm-making factory is operating correctly. The hypothalamus reads the testosterone and, in response, maintains the right amount of stimulating hormone output to keep everything in balance.

(figure available in print form)

The hormones in boys are relatively constant, no stopping and starting every month. There is, however, a cycle of hormone levels which lasts a couple of months in males as well as a daily cycle—more hormones are made during the night than during the day. Boys are always fertile. They have no cycle in which they are more

or less fertile.

Similarities

In the uterus during pregnancy, the male and female fetus have identical genitalia until about the eighth week after conception. Each fetus does have the genes determining whether it will be male or female from the moment of conception. One job of these genes is to determine which hormone to produce—estrogen or testosterone. In response to these hormones, the fetus's genitals which are not yet male nor female but containing general tissue will change into male or female—the tissue closes the opening and shapes a penis and testicles outside the body in a male and it forms an internal vagina, uterus, and ovaries in the female, leaving the opening which is the entrance to the vagina.

(figure available in print form)

The same hormones (GnRH, LH and FSH) stimulate the gonads to develop and produce their own hormones in both males and females. Estrogen, progesterone, and testosterone are produced in male and female bodies. The difference is in the amount of each hormone produced.

Both males and females have cycles. During their lifetimes, both are infertile from birth until puberty. Then females are fertile from menarche until menopause (from age 10-50). Males are fertile from puberty (first ejaculation: sperm) for the rest of their lives, although sperm and hormone production decrease with age. Females have a monthly cycle producing one egg and preparing for pregnancy. They are fertile for a relatively few number of days during each cycle. Males have a 60 day cycle of hormone production: highs and lows in the amount or level of hormone produced, but they are always fertile once their bodies start producing sperm. They have a 72 day cycle for each sperm to reach maturity (activated and capacitated). They have a daily cycle where their bodies are making more testosterone during the night than in the morning. This is especially true in adolescence.

The final similarity we want to emphasize is the emotional swings at the onset of puberty and throughout adolescence which are experienced by both males and females. They feel confusion (on their own part and on the part of adults who are relating to them) about whether they are children or adults. Everyone can cope better with these feelings by learning good communication skills.

Social & Physical Aspects of Puberty

It is normal for kids in early adolescence to have wild emotional swings and to feel out of control. Someone may have hysterical tears because another said something about her/him which they know is not true; long and strong friendships are changing because of peer group pressure; they can be viciously cruel to each other because of establishing a new pecking order—new values—“cool” is infinitely valuable; being with the “in” crowd is more important than an individual friendship. It can be stressful and painful going through it. Things they have valued seem to lose their importance. Their need to challenge authority is felt by parents and teachers alike.

If puberty were only body changes, it would be a snap. The emotional turbulence comes partly from the psychosocial changes in the lives of young adolescents and partly from coping with the experience of their

bodies' changes. It also true that there are receptors in the "feelings center" of the brain which receive the hormones produced at puberty. Thus puberty has physical, social, and psychological aspects.

We want to say to kids: Other people are going through these feelings. It is important to communicate with someone about these experiences and feelings because you will feel better—not as if you are all alone. You will discover that everyone has the same feelings/experience and survives. Even if people say terrible things about you, it doesn't mean you are terrible. Teachers need to believe that even though the tears may be about nothing, they are about real pain.

We want kids to feel safe about their body changes (not dying because of bleeding, not wetting the bed because of wet dreams). The emotional side is just as normal and predictable a part of puberty. We want them to feel they can talk about it the same way they can talk about the physical side.

From kindergarten until puberty, kids hang out with same sex friends. At puberty they have to re-define what is important, finding a way to mesh their same sex society with a two sex society and to mesh platonic relationships with their beginning interest in relating to the opposite sex. One thing that happens is a lot of jealousy and competition—which is different now because of sexual hormones and sexual feelings. It is confusing because there is an almost unconscious knowledge of who's dealing with all this in a "cool" way.

We can't stop it from happening but we can let them know that it is normal and predictable and will pass. The purpose of including this discussion of the psychological, social, and emotional aspects of puberty is to tell kids where it comes from, why it happens, that it will happen, that everyone feels it and that they will survive.

For the boy or girl who matures on the early side of the spectrum, there may be a sense of being big, tall, gawky, a lack of body confidence, a sense of distance from peers, a loss of being part of the crowd.

At the other end of the spectrum, late developers feel left out when everybody else has new mannerisms, opposite sex isn't interested in them; a feeling that they will never catch up. Suddenly at age 15, it all evens out again, everybody's back at the same stage of life again.

One kind of person that kids can look for to talk to about their experiences with is someone who is in the same stage of development, rather than someone who is admired because he/she is so grown up. Another kind of person to look for is someone who has already survived growing up.

Part of the purpose of adolescence is pulling away from parental control—to develop one's own independence. A successful pulling away leaves the adolescent responsible and independent. But pulling away is only half the work (you may know kids who are only rebelling)—the other half is to develop good judgment about what wise decisions are. A child has to follow rules whether or not she/he understands. An adult doesn't have to follow rules because she/he can see the consequences of decisions and actions. An adolescent is moving from being required to follow rules set by adults to somebody who doesn't need rules because they are capable of making decisions considering the consequences of their actions. A 6 year old has to be told to go to the bathroom before a trip, an 18 year old does not. A parent has to do the thinking for a child, an adult can think for him/herself.

Part of this process is to make a few decisions badly and find out what happens—like not doing your homework, not eating breakfast, not getting enough sleep. Some bad decisions, however, can affect your whole life. Riding in a car with a drunk driver may appear harmless compared to peer group ridicule for refusing, but automobile accidents are the leading cause of death and severe, permanent injury (like paralysis

and brain injury) among children. Using drugs is another area of experimentation that can lead to lifelong consequences. Some drugs are physically addictive after one use; some people's bodies react so violently to drugs that the first try can cause severe effects, like heart attacks. Mixing alcohol and some drugs can cause death. Using drugs or alcohol can interfere with your normal judgment about safe behavior.

The whole idea of decision-making means that for every situation there is a choice and that the choice has consequences. Just as adolescents feel ready to make their own decisions about homework, bedtime, and dating before they have mature judgment, young adolescent bodies are capable of having sex and causing pregnancy and catching diseases way before they're really ready and capable psychologically and experientially to handle a sexually transmitted disease or raising a baby. Mistakes should be made on the little stuff. The weight or importance of the decision should be related to the ability of the decisionmaker to live with the consequences. A 4 year old can choose whether to have peanut butter for lunch but not whether to have immunization shots. A 12 year old can decide which friend they'll hang out with but not whether to go to school.

Twelve year olds may feel ready to engage in sexual intercourse but they are certainly not ready to cope with pregnancy and have babies—their bodies are not ready and their minds are not ready. So what is the right age to engage in sexual intercourse? No number can be stated. A person must be mature enough to sustain emotional as well as physical intimacy and responsible enough to cope with the consequences. A 6th grader's feelings get hurt by a friend's rejection. These feelings of vulnerability are intensified when sex enters the relationship. The more intimate the contact, the more susceptible the individuals are to being hurt.

In order to deal with possible consequences, one has to be able to anticipate them and to act in such a way as to control them. This is a stage of cognitive development reached in older adolescence. Part of the work of adolescence is learning how to form relationships with peers which involve communication about feelings.

Adolescents practice the ability to communicate about themselves what their needs and fears are. Good communication is a basic and valuable tool to help cope with growing up: separating from parents, relationships with peers, love/intimate relationships with boy/girlfriends. Good communication can be learned. It involves saying what you mean and listening to what the other person is saying. Feelings are real and valid. Communicating how you feel strengthens a relationship, helps people to know and understand each other.

Problems Related to Sexuality

Problems related to sexuality are exacerbated for children and adolescents who become sexually active. One is pregnancy. Pregnancy is the biological result of penis-vagina sexual intercourse unless people do something to prevent it. Getting pregnant at a young age is stressful to the body and can be harmful to the baby. There is no good solution to a teen becoming pregnant. Although abortion is available, many teens are opposed to it, and it is never an easy or happy experience. Adoption is an option but it means going through nine months of pregnancy, childbirth, and social disapproval of being pregnant and giving up the baby. Having a baby lasts forever. The stress of conflicting roles of being a mother and a teenager is enormous. Being responsible for the decisions and care of an infant, toddler, and child is exhausting.

Pregnancy happens when the sperm and the egg meet (conception) and travel to the uterus (implantation). Birth control (contraception) means preventing pregnancy, i.e. to prevent conception or implantation. There

are several methods:

- (1) Barrier methods (condoms, spermicides, diaphragms, sponges, cervical caps) keep the sperm out of the uterus.
- (2) Hormonal methods (pill, shots, nasal sprays) interfere with the development of germ cells (the sperm or the egg).
- (3) Physical methods (IUD, abortion) interfere with maintaining the pregnancy in the uterus.
- (4) Natural methods (rhythm, fertility awareness) prevent sperm from entering the vagina when an egg is ripe.

For older middle school students, invite a speaker from a health agency to come and talk about each method.

Another problem which can result from sexual activity is illness. Some of these sexually transmitted diseases (STD's) are curable, some are not. Some affect just the pubic or genital areas, others affect the rest of the body as well. STD's are all catchable by contact between mucus membranes (lining the vagina, rectum, mouth, and the urethra). These are called STD's now, they used to be called V.D. or venereal diseases. There are many diseases which are transmitted sexually. Some of the ones you may have heard of are Herpes, Syphilis, Gonorrhea, Crabs, Trichomonas, Chlamydia, and AIDS. Although the symptoms of each may vary, in general they cause itching, smelly discharge, sores, burning sensation while urinating, and redness or soreness of infected area. An exception is AIDS, which has no signs or symptoms for several years after it is caught.

All women have a discharge from the vagina (see lesson on fertility) which is normal and healthy. It does not cause any discomfort or itching. Many women also get infections in the vagina which are not sexually transmitted. The most common one is a yeast infection which causes a thick, white, itchy discharge and can easily be treated by medication.

A person who has contracted an STD can prevent passing it on by going to a doctor for testing and treatment or by using condoms and spermicidal foam when having sex. Testing is done anonymously and confidentially at any doctor's office or clinic, the City Health Department, Planned Parenthood, Hill Health Center, Fair Haven Clinic and hospitals. For the most part, the tests and treatment are simple, painless, can be gotten at low or no cost and without parents' permission.

AIDS is different. It can be caught in the same way as other STD's (by having sex) but it can also be caught by blood-to-blood contact.

It is a very serious disease because everybody who gets it dies of it. There is no cure or vaccine and treatments so far are all experimental . It is caused by a virus called Human Immunodeficiency Virus (HIV).

AIDS

In order to understand how this virus causes disease, we're going to look at how bacteria and viruses work on the cellular level.

A virus is a tiny strand of RNA or DNA with a protective coat around it. It does not need to eat or breathe to stay alive. It cannot reproduce except by injecting its DNA or RNA into another cell. When it enters a cell, it takes over that cell's mechanisms for its own purposes. A virus can live in a human cell or in bacteria because it is a single living cell with a hard cell wall. Bacteria can live in the human body, but don't need the body's mechanisms to reproduce. Many simple organisms float around in the air and reproduce when they settle in suitable conditions. Some bacteria are helpful, some are harmful. Harmful ones are called germs. Germs can cause disease when they settle in the human body and reproduce. Disease caused by bacteria can be cured because antibiotics kill bacteria. Disease caused by viruses cannot be cured; there are no medicines which kill viruses. Since they live inside human cells, killing the virus would mean killing the human cell. The way we recover from viral infections is by our body fighting off the virus. Some diseases caused by bacteria include pneumonia, tuberculosis, diphtheria, typhoid, whooping cough, strep throat, infections in cuts, gonorrhea, syphilis, chlamydia. There are antibiotics which can treat all these. Some diseases caused by viruses are Chicken pox, colds, flu, measles, mumps, rubella, small pox and herpes. Once we are sick with these, we have to wait until we get well by ourselves.

The body's way of fighting off disease is called the immune system. It is how the body defends itself against invading harmful organisms which make someone sick. It is a very complicated system starting with the skin and mucus membranes which keep germs out of the body. Germs which get past these barriers have to deal with the internal immune system. Scientists are working hard to understand the body's immune system. Some of what is known is that there are certain cells in the blood stream called T-cells whose job it is to recognize foreign invaders (antigens—a word which means generates antibodies). When the T cell bumps into an antigen, the T-cell calls for another kind of cell called a B-cell, to make a marker to identify that specific invader. The marker is called an antibody and it matches up exactly with the antigen. They stick together like pop-beads. A third kind of cell is called a macrophage, which means "big eater". The macrophages are everywhere in the body, constantly on patrol, able to cross most barriers. When they find an antigen-antibody pair, they swallow and digest it. Sometimes they swallow the invader before it is marked.

IMMUNE SYSTEM FUNCTION

(figure available in print form)

When AIDS virus enters the body, antibodies are produced to HIV and mark the virus. The macrophages do swallow the pair or the virus alone. But scientists now think that the macrophage do not digest the virus. One theory is that since the virus is able to hide out in the macrophage, it is disguised as a friendly part of the system and escapes the destructive action of the immune system. In fact, it is the macrophages and T cells which are destroyed by the virus. While inside the cell, the virus causes its own RNA to become a part of the cell's DNA so that every time the cell reproduces, it is making a copy of the virus, not of itself. The result is that the macrophages are not able to recognize other foreign invaders and the immune system stops being able to defend the body.

With AIDS

(figure available in print form)

When people talk about the AIDS test, what they mean is a blood test for antibodies to the HIV virus—it means the virus was there, the T-cells recognized it and told the B-cells to make antibodies to it. We do know that the

body is able to make antibodies to HIV but we don't yet know why the immune system is not able to kill this identified invader. Scientists are trying to solve this mystery right now.

The other way the body can fight off disease besides taking medicines to kill the invader is by having a vaccine. A vaccination is a shot of a harmless piece of the disease-causing organism into the body to trigger the immune and make antibodies to mark it, those antibodies will always be available to recognize that antigen and mark it if it is ever introduced into the body again. So a vaccine for polio causes the body to be ready to neutralize the polio virus anytime that it enters the body.

Because so little is known about how the immune system works and how the AIDS virus cripples it, scientists have not yet been able to make a vaccine that can protect against HIV.

After this basic groundwork in how the AIDS virus works, students need to have all the following information about AIDS presented to them . There are a few movies which are appropriate for 5th and 6th grade levels, many for older students. Even younger middle school students need this basic information. The preceding lessons about puberty and human sexuality will prepare students and teachers to talk about the AIDS material with minimal discomfort.

The AIDS virus is very fragile. It cannot live outside the body. That is why you cannot contract AIDS from drinking fountains and door knobs. In the body, the virus lives in macrophages. The greatest concentration of macrophages are found in blood, semen, and cervical mucus.

In order for someone to catch AIDS, these infected cells must enter his/her own blood stream. There are three ways that this virus is transmitted. The first is blood to blood contact. There are many ways that other people's blood can enter the bloodstream. People who use illegal IV drugs often share their needles. The blood of the first person is still in the needle when the second person shoots up. This is a major way that the AIDS virus has been spread. Other ways the virus has been spread by blood to blood contact include blood transfusions and accidents when AIDS infected blood gets into open cuts. Transfusions are now quite safe because donated blood is screened for the presence of antibodies to the AIDS virus. This is a direct blood to blood contact and a very good way to spread it if the first person has the virus.

AIDS can be caught by sexual contact with someone who has the virus. People can pass it to each other by having any type of sexual interaction in which semen or cervical secretions or blood are exchanged.

The third way the virus can be spread is from a pregnant woman to her baby in utero or at birth or possibly through breast milk.

You cannot catch AIDS from Kleenex, toilet seats, chewing on a pencil, a drinking fountain, spitting, eating utensils, insects, shots at the doctors, giving blood, or from urine, tears, sweat, saliva or any kind of casual contact. There is no need to be afraid of people with AIDS because you cannot catch AIDS from them unless you have sex with them or share a needle with them.

A most important piece of information about AIDS is that it takes so many years for someone to know they have it. There are no symptoms of sickness for eight years on the average. A person can have the virus, not know it, not be sick, and still pass it on to someone she/he has sex with or shares a needle with. You can only catch AIDS from someone who has it. The problem is that it is difficult to know when someone has AIDS.

We all need to develop a new respect for other people's blood. Learn not to touch other people's blood. Kids

should not be blood brothers/sisters, share needles for ear-piercing or tattooing or share razors. If somebody has a cut or bloody nose, get an adult or use a cloth, glove, or wad of Kleenex before helping out.

The only certain way to avoid catching the virus is to not do the things that spread it: intimate sexual contact and sharing needles (works) for illegal IV drug use. If people are going to engage in these behaviors, they can reduce the risk of catching the virus by taking certain precautions. Limit the number of sex partners; always use condoms. Use a spermicide which kills the virus too for even more protection. Do not have sex with people who have AIDS.

Remember that no one can tell who has AIDS by looking at them.

Don't use intravenous drugs. If you do, don't share needles.

If you do, clean the needles every time before using them with a solution of bleach and water.

For older middle school students and high school students, there are many good curricula and materials available. See bibliography. It may be appropriate to go into more detail about sexual transmission and means of preventing transmission.

There is a difference in approach with younger middle school kids. We want to emphasize that human sexuality is normal and healthy and the naturalness of puberty. We want to decrease their fears and give them a sense of control over whether they will catch AIDS or not. We must connect all information to the personal and concrete level because they don't have the faculties to grasp abstract ideas otherwise. Young adolescents don't need details about adult sexual practices that spread the virus but rather the concept that the virus can be caught by sexual interaction.

When they decide to have sex they need to know what precautions to take.

However, any subject that comes up can be answered simply and truthfully. If a question is asked about sexual practices, it must be addressed. According to group theory, if someone in a group asks a question, it's not an individual question but something that everyone in the group potentially has.

One problem of teaching about AIDS with young adolescents is our confusion about values we hold which are in conflict. We believe in the importance of education. We also may attach negative value to sexual interaction in adolescents, to homosexuality, or to specific sexual behaviors. Unfortunately kids need the facts in order to protect themselves from AIDS. Sometimes we are unaware that we withhold information because of values. We don't tell our students the clear truth.

Parent-Child Communication

Parents and children can only benefit from communication about sexuality and AIDS as well as about drugs, pressure, success, failure, etc. A child's greatest protection is an available parent. This doesn't mean that all parents feel comfortable talking about sexuality. In fact, many don't. But that should not prevent them from doing it anyway.

Here are some pointers about how to achieve this goal:

- 1) Start early with little pieces;
- 2) Tell the truth;
- 3) Listen to the question which is asked;
- 4) Don't talk about yourself; don't even think about yourself, think about the question;
- 5) Clarify the question by repeating it;
- 6) Start with the simplest concept possible. Find out what the child knows by asking what she/he thinks the answer is. Use as few words as possible. Wait for follow up questions. Think about the way you would answer questions like, How does a car run? You say, with gasoline not by explaining about combustion engines.

Children start asking question about sexuality as soon as they can talk. First questions are usually about anatomy. Three year olds ask, "What does he have on his bottom? or "Where do babies come from?" By age 8 or so, all kids can understand female cycles ("Why are you putting that (tampon) in there?) and how the sperm meets the egg (intercourse). A child who isn't asking questions has gotten the message that it's not safe to ask. In this case, adults need to bring up the subject. Use TV or magazines or what friends say or do to show that you are open to talking about sex before approaching the subject directly with the child. If a parent is really not capable of talking to his/her child, she/he must connect the child to someone who can—a relative, family, friend, school nurse, pediatrician, clergy member, teacher—any adult whom you trust who is comfortable talking about sex.

In lieu of or in addition to a 6 or 10 week course of study in school for the children, you can do an evening program for parents alone or for parents with their prepubescent and pubescent children. We have found that a combination program is successful—two meetings with parents, two with parents and children together. If you only have one night, you must cover physiology and reproduction and AIDS. Important activities include encouraging adults and children to use the vocabulary of sexuality aloud and a situation in which parent and child talk to each other about sexuality: facts & values.

In a parent-child program, you can begin with 1-2 sessions with parents alone. Give them factual information about human sexuality, their own bodies, and the changes of puberty. The purpose is to increase their knowledge, their sense of self-confidence, and responsibility. They come because they want to be involved in their children's sexual education. Many feel a doublebind preventing them from communicating with their child—lack of knowledge and feeling terribly uncomfortable. The program addresses both issues. Show a film about puberty (see bibliography), have questions, practice saying "the words." Focus on distinguishing values from facts, helping them to focus on the things which are most difficult for them to talk about. You can separate parents into groups according to what subjects they don't want their kids to learn about in school. A facilitator can help them verbalize their concerns and clarify their values.

This is followed by 1-2 sessions attended by both parents and children. In the best of all possible programs there will have been a chance for the children to see the film on puberty and ask questions without their parents present. Discomfort is usually reciprocal. Students will have put anonymous questions in a box which

may be answered at the evening sessions. Invite a pediatrician or other health worker to answer the questions at the evening session. This person must be knowledgeable, but more important comfortable discussing sexuality.

After the question and answer session, parents and children are separated. Each group will work on developing skills to facilitate parent-child communication. An activity for the parents is to role play answering the kinds of questions children may ask. In pairs, the parents take turns practicing answering questions such as: “Why do people do it anyway?” or “Can people have sex if they are not married?” Parents are encouraged to answer both the factual and the value parts of the question, but to be sure to separate the two dearly. A second activity for parents is to identify a question or topic which they feel would be difficult to discuss with their child. A third activity is to think of a value about sexuality which they want to communicate tonight to their child.

The students meanwhile have been together in a group also doing an activity about anatomy and physiology (labeling a drawing or putting together a jigsaw puzzle of male and female reproductive organs) or puberty (The Body Clock). They will have had a discussion about why it is hard to talk about sex and ways of speaking and asking questions which encourage communication. Their assignment is to think of a question they want to ask their parent tonight.

When the groups get back together, there will be a brief summary of what each group did. Then each parent-child duo will go to a private corner of the room and carry out their assignment—communication about sexuality.

Activity The Body Clock

To help pre and early adolescents realize that body changes happen in a predictable sequence, have each one fill a number in the circle next to the change described, according to the order in which they think the changes will take place.

Discussion follows and includes:

- (1) Everybody’s body clock is on an individual timer. There is a lot of variation in when people start and how fast their bodies change. This is not an exact schedule of events.
- (2) There is usually the following sequence but for some individuals, it may be slightly different. Emphasize that lots of things are normal.

- (a) *Girls*
 1. Breast growth
 2. Straight pubic hair
 3. Growth of pelvis—hips get rounder
 4. Growth spurt
 5. Curly pubic hair
 6. Menarche—first period
 7. Underarm and coarser body hair
 8. Oil & sweat glands activated

9. Growth of uterus and vagina completed
10. Mood swings accompany the whole time period—put here to foster discussion about how normal they are.

- (b) *Boys*
1. Growth of testes/scrotum
 2. Straight pubic hair
 3. First ejaculation
 4. Growth spurt
 5. Growth of penis
 6. Curly pubic hair
 7. Voice change
 8. Underarm and coarser body hair
 9. Oil & sweat glands activated
 10. Facial hair
 11. Mood swings accompany the whole time period.

3) Discussion Points

- a. Help identify what signs to look for first.
- b. Reassure them that all the changes don't happen at once.
- c. Help girls see what happens before first period and boys see what happens before first ejaculation.
- d. Reassure them that they are or will be reaching physical maturity on schedule for their own bodies.
- e. Stages of development may not be as easily recognized in real life as on the diagram. They are gradual and subtle.

(figure available in print form)

(figure available in print form)

Appendix

Questions Asked by Middle School Students

Why do our emotions get stronger as we grow older?
How old are people when they are fully mature?

After a man's sperm is in a lady why doesn't she get pregnant right then and there?
Why do boys' penises get longer?
Why do boys' shoulders get wider?
If someone has AIDS why can't you freeze them until you have a cure?
If a man gets a woman pregnant how can people tell if its his kid?
When the baby is in the mother how can they tell if its a girl or a boy?
Does a girl's breasts get hard when she sees an imaginary image?
Is it really true that condoms prevent AIDS?
Will I be tall forever?
Why do teenagers feel they can't talk to their parents anymore?
Why are girls always depressed?
Why do girls have to have a period in order to get pregnant?
Why do girls feel more emotional than boys?
Why aren't boys emotional?
Why do girls always feel more emotional than boys?
why aren't boys emotional?
Why do girls always fall in love?
Can you get AIDS by frenching a girl?
Do girls need to have a period to get pregnant?
Can boys contract a disease with a condom?
Why do girls mature faster than boys do?
Why do all boys just want to have sex with girls?
What do you say if you really like the boy and you've been going together for a long time and he asks for sex?
Why do some boys only tell you how they feel when they want sex?
How long does puberty last?
What comes after adolescence?
Do you get AIDS by kissing boys'
I want to know about reproduction and emotions.
Why do girls have their menstruation?
What do boys get at the age of 12 and up?
Why is it that some boys and girls act conceited while puberty?
Why doesn't a boy act like himself when he's going through puberty?
What about if you like a boy how do you attract him or how do teenage girls do that?
Is it normal that you have a chest but you look flat?
Why is pregnancy hard?
Does it hurt?
Can girls have babies if they didn't have their period?
Why do you get the ball in your chest or breasts when they start to grow?
Is there anything that is 100% that will protect a woman from getting pregnant if you have sex?
Why do you feel sick when you have your period?
What happens when a boy and girl have sex but the girl doesn't have her period?
Why is period brown and red?
Why are women more sexually advertised more than men and why are the bodies advertised?
What happens when you get your period?
Why do you get emotional or grouchy when you get your period?

How old or young can you be to get pregnant?
Why do you get emotional?
Why do girls stop being able to have babies>
Why does it hurt when you get your period?
Why does blood come from the vagina?
Dear helper, is it regular to not to want your period?
From I'm not sure.
When does your breast stop growing?
Why does it be bloody and red?
Does puberty come very often and what if you have hair everywhere?
Why do we get periods?
Do male animals have erections?
What are wet dreams?
How do people get pregnant?
How long after you have your period can you have sex without getting pregnant?
Why do people have sex?
What does your first period look likes
Why do girls mature faster than boys most of the time?
How do you know when you're pregnant?
What do you do if you have a lot of hair down below?
Why is hair on your vagina curly?
Why do you sometime look like a 15 year old?
Why do milk come out girl tit?
What will happen when you have sex and your period comes on?
Why does your face break out?
What is the thing that comes out of the boy dick?
Is it true that if young teenager gets pregnant it will stunt her growth?
Can girls have babies if they didn't have their period?
Do girls change faster than boys?
Why do we grow hair under our arms?
Why do girls have to have period?
When do girls start to have their period?
When do you know when your next period is coming?

Notes

1. Schildroth, Anna. Personal Communication; July 1988.
2. Personal Communication with Beth Roth.

Bibliography

Legend

T = for Teacher

P = for Parents

K = for Kids

(T) "AIDS - A Public Health Crisis," *Population Reports* (No. 6), July/August 1986, Series L. Address: John Hopkins University, 624 N. Broadway, Baltimore, MD 21205.

(T) *Adolescent Sexuality in a Changing American Society, Social and Psychological Perspectives for Human Service Professions*, 2nd edition, by Catherine S. Chilman, John Wiley & Sons, NY, 1983.

(T) *AIDS: You Can't Catch It Holding Hands*, by Nikki de Saint Phall, Lapis Press, 1987, San Francisco.

(T) (K) *AIDS Update*, Globe Health Program, by Bartlett, Winchester and Abelson, 1988, Englewood Cliffs, New Jersey 07632, updated every year.

(T) "Children's Sexual Thinking", Report of a Cross-National Study, by Ronald and Juliette Goldman, Siecus Report, Vol X, Number 3, January 1982.

(T) (K) "The Battle Inside Your Body," *Time Magazine*, May 23, 1988, pp. 56-64.

(P) *Early Adolescence What Parents Need to Know*, by Anita M. Farel, Center for Early Adolescence, Suite-23, Carr Mill Mall, Carrboro, NC 27510.

(T) *Contraceptive Technology 1988-89*, Hatcher, RA, et al, Irvington Publishes, Inc., New York, NY.

(T) "Fertility Awareness Method Instruction for Adolescent Girls: A Teaching Model for Sex Education and Implications for Contraceptive Use." Master's Thesis, submitted to the Faculty, Yale University School of Nursing, Beth Roth, May 1987.

(P) *The Family Book of Sexuality*, by Mary Calderone & Eric Johnson, New York, Harper & Row, 1981.

(P) *Growing Pains*, *Sex Education for Parents*, A Newsletter Series, by the University of Connecticut Cooperative Extension Source.

- (K) "Growing Older Facts and Feelings," by Jane Hiatt, Network Publications, a division of ETR Association, 1700 Mission Street Suite 203, P. O. Box 8506, Santa Cruz, CA 95061-8506.
- (K) *Facts About STD's* , by Sol Gordon, Ed-U Press 1983, Fayetteville, NY
- (K) *Facts About Sex for Today's Youth* , by Sol Gordon, Ed-U Press, 1983, Fayetteville, NY 13066.
- (P) "How to Talk to Your Children About AIDS," NGU-SIECUS pamphlet. One copy free—send stamped, self-addressed envelope to: SIECUS, 32 Washington Pl., New York, NY 10003.
- (T) "Hormones and Reproductive Behavior," *Readings From Scientific American* with introduction by Rae Silver and Harvey Feder, W. H. Freeman & Co., San Francisco, CA 94104, 600 Market Street, 1979.
- (T) "The Male Experience of Pubertal Change," by Gaddis and Brooks-Gunn, *Journal of Youth and Adolescence* , Vol. 14, No. 1, 1985.
- (T) *The Hurried Child* , Growing Up Too Fast Too Soon, by David Elkind.
- (T) "Our Immune System, The Wars Within," by Peter Jaret, photos by Lennart Nilsson, *National Geographic* , June 1986.
- (P) (T) "Menarche. Target Age for Reinforcing Sex Education for Adolescents," Ellen F. Soefer, M.D., et al. *Journal of Adolescent Health Care* , 1985; 6; 383-386.
- (P) *Raising A Child Conservatively in A Sexually Permissive World* , by Sol Gordon and Judith Gordon, Simon & Schuster, New York, 1983.
- (T) (P) Planned Parenthood, Resource Library, for films and books and curriculum and pamphlets, charts. 129 Whitney Avenue, New Haven, CT (865-5158).
- (T) *Sexual Interactions* , 2nd Edition, by Allgeier and Allgeier, D.C. Heath & co., Lexington, MA 1988.
- (T) *Sexuality Education, A Curriculum for Parent-Child Programs* , by Brown, et al, Network Publications, Santa Cruz, 1984.
- (T) *Teaching AIDS, A Resource Guide on Acquired Immune Deficiency Syndrome* , Marcia Quackenbush and Pamela Sargent, Network Publications, a division of ETR Association, Santa Cruz, CA, 1986.
- (P) "Talking to Preteenagers about Sex," by Sadie Hofstein, Public Affairs Pamphlet No. 476, 381 Park Avenue So., New York, New York 10016.
- (K) (P) (T) *The What's Happening to My Body? Book for Girls, A Growing Up Guide for Parents and Daughters* , New Edition, by Lynda Madaras with Area Madaras, Newmarket Press, New York, 1987.
- (K) (P) (T) *The What's Happening to my Body? Book for Boys, A Growing Up Guide for Parents and Sons* , New Edition, by Lynda Madaras with Dane Saavedra, Newmarket Press, New York, 1987.
- (T) *AIDS* by Donald Armstrong, Carolina Biology Readers 154, Scientific Publications Department, Carolina Biological Supply Co., Burlington, North Carolina 27215, 1986.
- (T) Curriculum Guides for AIDS Education in Secondary and Elementary School, by Connecticut State Departments of Health and Education

Films about AIDS can be borrowed from the following

Legend

City Health Department (C)

State Health Department (S)

Planned Parenthood (PP)

The Red Cross (RC)

We recommend:

(PP) "What is AIDS" for 4th and 5th graders. Has people dressed up as germs and immune system.

(PP) "AIDS: The Disease and What We Know," also known as "AIDS Alert". For 6th, 7th, and 8th. Has cartoon characters ask and answer questions. The first part shows a doctor talking and is not for classroom use.

(C) "AIDS: Everything You Should Know," narrated by Whoopi Goldberg. Good for 7th grade and up. Has sections on assertiveness and saying no.

(RC) "Don't Forget Sherrie" For 8th grade and up. Story involves high school students in urban setting who have used IV drugs at parties.

(RC) "A Letter from Brian" For high school. California setting. Very good at bringing home the concept that you can't tell who has AIDS. Stresses abstinence.

(C) (S) "The Subject is AIDS" For 7th, 8th and up. Revised version of "Sex, Drugs and AIDS". More emphasis on abstinence.

Films about human sexuality can be borrowed from Planned Parenthood's library. We recommend the following for groups discussing puberty:

1. Human Growth (Part 3)
2. Am I Normal? Dear Diary.
3. A Family Talks about Sex.

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