

FAMILY LIFE - GRADE FIVE PARENT INFORMATION



**Frederick County Public Schools
Frederick, Maryland**

HOME CONNECTIONS
Communicating With Your Young Adolescent
About Human Development

The information your student receives during the Fifth Grade Family Life Unit is based on national research and consultation with school nurses, health educators, parents, fifth-grade students, and medical professionals. It is designed to provide students with a broad overview of the beginning stages of puberty. You will have an opportunity to review all of the materials and preview the videos used during instruction and your permission is required for your student to participate.

Upon completion of the lesson participating students will receive a gender appropriate Kit that includes a guidebook about growing up and personal care samples. Students are encouraged to share this information at home.

When your student returns home after participating in the Family Life unit consider asking one or more of the following questions to facilitate communication:

- You learned the names for the female/male reproductive system today, do you have any questions about the parts you learned, or what they do?
- What did you learn about how puberty affects personal hygiene?
- What are some of your new hygiene responsibilities now that you are an adolescent?
- Some people are uncomfortable learning about the opposite gender's body. Why do you think that is? Why is it important to learn about others?
- I noticed that many girls are taller than the boys in your class. Is it hard for the boys to accept this? Do you ever talk about it with your friends? Do you think this will change by the time you are in high school?
- I understand you've learned how important it is to eat a balanced diet. Could you help me make some good choices for the grocery list?
- I remember having complexion problems when I was about your age. How can you help your complexion stay healthy as your body changes?
- I know your body is changing right now and I'm sure you might have mixed feelings about what is happening. Do you have any concerns you would like to talk about?

Girls:

- Some girls will start menstruating / or wearing a bra this year and some won't. What would you tell your friend that isn't menstruating / or wearing a bra if she is worried about it?
- Do you have any questions about feminine products?
- It is normal to feel different or uncomfortable during menstruation. If this happens, how can you help yourself feel better?

Boys:

- What are some of the common signs of puberty in boys? Why do these changes happen?

- As your body changes through puberty, you may notice your testicles and penis getting larger. You may find that you get an erection for no reason. Does this concern you?
- Every boy starts puberty at a different time, according to his own internal timetable.
- Do you think about that much?
- Tell me something you learned about puberty today that surprised you.

Be a Good Model. Young people learn more from what you do than from what you tell them to do. Practice what you preach about caring, responsibility, intimacy, and honesty.

Be Informed. Young adolescents will ask questions about body changes, about interest in the opposite sex, and about sexuality in general. While it is normal to not have all the answers, it is important to know where to find them!

Help Young Adolescents Feel Good About Themselves.

- Be generous with sincere praise.
- Accept questions and comments of all types; provide answers without ridiculing your young adolescent.
- Help young people discover what they can do well.

Help Your Young Person Make Choices. Provide young people with ways to be both independent and responsible. Remember that young adolescents still need structure, limits, adult guidance, and support, along with opportunities to make choices on their own.

Be Willing to Discuss What You Think About Sexuality. Be honest and straightforward about your values (what you think is right and wrong), but avoid lecturing or demanding that your children agree with you. Lectures and threats usually prevent meaningful communication, convey lack of respect, and tempt rebellion.

Be Prepared for Disagreements. Your young teen will question what you believe to be right and wrong about sexuality. This is normal. Be open in discussing your attitudes about human growth and development. Listen to disagreements, but be firm about your beliefs. Be honest about the values you hope they will hold on to.

Be Direct. Without preaching or name-calling, tell them about the sexual messages they may give in the way they behave, dress, or talk.

Remember - You are Important to Your Child. What you believe is right and wrong is important to your young adolescent.

Share your values with your child and talk about why you hold these values important.

Discuss the importance of proper personal hygiene and grooming emphasizing:

- Regular bathing
- Hand Washing
- Dental needs
- Hair care
- Deodorant use
- Shaving

Discuss emotional, physical, and psychological changes your child may be experiencing as he or she moves into puberty. Remember, just because your child does not ask questions, does not mean he or she doesn't have them.

Answer your child's questions when asked. Responses should be brief, appropriate and honest. Proper names for various body parts, organs and functions should be used.

Be available and willing to talk with your child about Family Life.

Remind your child that the physical and emotional changes they are experiencing are normal. Encourage your child to continue communicating with you if any questions should arise in the future.

You are your child's best source of information and support as they experience this exciting, yet challenging time of life.

Resources for Parents

Websites:

<http://www.pgschoolprograms.com/>

www.teachingteens.com

This is an interactive website which provides factual information regarding physical and emotional changes which take place during puberty.

www.iwannaknow.org/puberty

This website is from The American Social Health Association and explains the physical and emotional changes of puberty.

www.playtextampons.com

This is an interactive website for girls about menstruation and other changes during puberty.

www.puberty101.com

This is a website for teens to find information about their physical development.

www.plannedparenthood.org/teenissues/teenmainhtm/Boys_and_puberty.html

This is a website for boys about the physical changes that take place during puberty.

www.kidshealth.org/parent/growth/growing/understanding_puberty.html

This is a website for parents about children's health.

Books:

Madaras, Lynda. *The What's Happening to My Body? Book for Girls: A Growing Up Guide for Parents and Daughters.* Rev. ed. New York: Newmarket Press, 1987. This book is designed for parents and daughters to read together. It discusses physical and emotional changes during puberty and helps answer questions about emerging sexuality.

Madaras, Lynda. *The What's Happening to My Body? Book for Boys: A Growing Up Guide for Parents and Sons.* Rev. ed. New York: Newmarket Press, 1987. This book is designed for parents and their sons to read together. It answers questions about changes that occur during puberty. Anecdotes and true-life experiences are contained in the book.

Bourgeois, Paulette. *Changes in You and Me: A Book About Puberty Mostly For Boys.* Andrews McMeel Publishing, 1994. A book about puberty in boys recommended for ages 9-12.

Bourgeois, Paulette. *Changes in You and Me: A Book About Puberty Mostly For Girls.* Andrews McMeel Publishing, 1994. A book about puberty in girls recommended for ages 9-12.

The following information is supplied to teachers during training for this unit. Teachers have been provided this information as a resource when responding to student-initiated questions. Teachers are permitted to only address questions that are relevant to the scripted lessons that they are responsible for delivering. Any questions about this practice should be directed to the Office of Elementary Health and Physical Education.

TEACHER RESOURCES

Teacher Web Resources

www.teachingteens.com

<http://www.beinggirl.com/>

www.nasn.org

www.nih.gov

www.ama-assn.org

www.whealth.org/teachers/guide/puberty

www.frombirthtopuberty.com

<http://www.pgschoolprograms.com/> - (This is the site the *Always Changing* video used in the Fifth grade Family Life unit comes from.)

Always Changing

Background Information for Teachers

Introduction

When girls and boys reach puberty, they are interested in what is happening to their bodies. They wonder why these changes occur and want to know what is normal. The physical development during puberty comprises only one aspect of growth and development during the time of life known as EARLY ADOLESCENCE. An understanding of early adolescent development can help you provide answers to students' questions about pubertal development and alleviate many common concerns young girls and boys have about their growing and changing bodies.

Early adolescence is a time of rapid and dramatic change. Young adolescents experience physical, cognitive, social, and emotional changes that pervade their lives and often confuse them. A brief discussion of these aspects of development is useful to better understand the changes that occur during early adolescence.

Physical Development

Changes in physical appearance are the most striking aspects of physical development. Other changes also take place as young people become capable of producing children. Most of us who work with young adolescents will notice growth in height and weight. While many will notice the subtle changes in contour and shape, young adolescents will also experience internal changes. During early adolescence, the body begins to produce the hormones necessary for pubertal development and the reproductive system matures.

Cognitive Development

The development of advanced intellectual processes or cognitive development begins during early adolescence. Between the ages of 10 and 15, many young people begin to develop the ability to think abstractly and reflectively. Younger children think concretely. Young adolescents may think about "what might be" instead of "what is." They begin to develop the ability to understand metaphors and abstract mathematical concepts and to reason about ideals like justice, religion, or love. Those who work and live with young adolescents will notice some of the behaviors linked to these new cognitive abilities. For example, young teens may question accepted rules and may argue whether rules are reasonable and fair. They may question others' beliefs and values because they are able to comprehend that not everyone thinks the same way they do about social or moral issues. Young people start to see the future in terms of years, so they may relate their interest and present circumstances to the roles they will play as adults. These cognitive abilities develop slowly, so your students may behave in ways that show both abstract and concrete thought.

Socioemotional Development

Young adolescents begin to learn new social skills as they expand their social world. They also learn to cope with the excitement and confusion that accompany the changes of early adolescence. In expanding their social world, young people begin to learn how to develop and maintain close, mutually supportive relationships with others their own age. This social skill is essential for a normal, socially competent adult and is cultivated by involvement in a group. In addition to close relationships with friends, relationships with family and other adults are necessary for healthy development. Although young adolescents look to peer groups for companionship and for guidance in some aspects of behavior, such as dress, hairstyle, and entertainment, they look to their families for affection, identification, values and decision-making. Young adolescents frequently seek the company of other adults, such as teachers, relatives, club leaders or neighbors, who serve as role models or advisers.

During early adolescence, young people want more autonomy in dress, curfew, selection of friends, or how they spend their free time. They are not seeking complete independence but rather limited independence with a voice in determining specific rules and limitations. Young adolescents often appear quite absorbed by their experiences, appearance and behavior. They tend to feel that an “imaginary audience” notices and passes judgment on their actions and appearance. Therefore, they must look and act like their peers. It is painful to be “different.”

Experiencing Puberty

Growth in physical development, cognitive abilities, social skills and emotional maturity does not occur at the same rate. For example, early physical developers do not always demonstrate early intellectual and socioemotional growth.

Young adolescents change at different rates, according to highly individual internal “clocks.” A 12-year-old who looks like a young woman is as “normal” as peers who are just beginning to mature physically, and a 13-year-old concrete thinker is as normal as peers who are capable of abstract thinking. You should emphasize that every individual is unique in terms of physical, intellectual, social, and emotional development.

Most young adolescents are pleased by the body changes (or the expected body changes) that make them look more adult. At the same time, they are concerned about whether their bodies are “normal.” A young girl may be convinced that something is wrong with her if her developmental timetable, or even her feelings, are different from those of her friends. A girl who develops early may delight in being the first one who has to wear a bra or she may be self-conscious about her womanly body. Some girls worry because they have not begun to menstruate while their classmates already have their periods; others may not be the least concerned. A young boy may be convinced that he has a medical problem if he doesn't start puberty with his friends. A boy who develops early may be proud of his physical development or he may feel embarrassed because he looks so different.

There is a wide range of possible reactions and responses to growing up; all of them are normal. It is easy to talk about the events of puberty in an academic fashion until we think back to our own adolescence and remember how pimples, a nose that was too big, breasts that would not grow, or lack of athletic prowess seemed to turn all of life sour.

Early adolescence is a period of great change and growth, altering the expectations that others hold for adolescents. When adolescents begin to show signs of physical growth, adults tend to expect more mature social and emotional behavior. Adjusting to dramatic body changes and altered (and sometimes conflicting) expectations from others makes young adolescents especially vulnerable to bouts of low self-esteem, moodiness, and intense emotionalism.

As they pass through puberty, young people see themselves differently when they look in the mirror, live with their new bodies, and experience adults' altered expectations. Because young adolescents are more self-conscious, they view themselves and their relationships in a new way.

Young adolescents are a challenging group because they are so variable, both as individuals and as a group. As they grow accustomed to body changes, gradually master new cognitive abilities, learn "adult" social skills, and cope with these changes, individual young adolescents may feel, act, and want to be treated like children one minute and grown-ups the next. They are drawn to people who like and respect them for who they are right now and who respond sensitively to both their present joys and confusion and their dreams and worries about the future.

Educators can help students develop healthy attitudes about the changes that occur during puberty. You can build an environment that enhances self-esteem and encourages student discussion. You can supply accurate information so that students have a solid foundation on which to build healthy attitudes. The materials in this unit will help you attain the following goals:

- To help students understand the changes that young adolescents experience and to help them develop positive attitudes toward these changes;
- To acquaint students with the major events of puberty for both females and/or males;
- To reassure students that the changes they experience are normal and healthy; and
- To allay some of the common concerns young adolescents have about growing up.

A. Information for Educators – Puberty

The following information is adapted, with permission, FROM LIVING WITH 10 – TO 15-YEAR-OLDS: A PARENT EDUCATION CURRICULUM. Rev. E. 1989. Center for Early Adolescence, University of North Carolina at Chapel Hill, suite 211, Carr Mill Mall, Carrboro, NC 27510.

Puberty is commonly yet incorrectly used as a synonym for adolescence. It is properly used to refer only to the physical changes that occur during adolescence. Three kinds of

physical changes occur during this period of life: 1) the adolescent growth spurt, 2) the development of primary sex characteristics, and 3) the appearance of secondary sex characteristics.

The Growth Spurt

During puberty the growth rate accelerates. In three years, girls will grow an average of 10 inches. Boys will grow an average of 3 ½ inches per year during the GROWTH SPURT. Physical growth is not always uniform. For example, limbs tend to grow before the trunk of the body, and the chin or nose may grow before the rest of the face.

One look at almost any group of young adolescents provides ample evidence of the normal variation in physical development among the age group. Watching adolescents go through the growth spurt illustrates the dramatic and rapid changes that occur during early adolescence.

Primary Sex Characteristics

During puberty the reproductive system matures. The changes necessary to prepare girls' and boys' bodies to produce children are called PRIMARY SEX CHARACTERISTICS. For girls, the marker event is the beginning of menstruation. For boys, the marker events are genital growth and the first EJACULATION. There is a wide variation in the ages at which these events begin to occur for individual girls and boys.

Secondary Sex Characteristics

SECONDARY SEX CHARACTERISTICS are those changes that make boys and girls look like mature men and women. Breast development and the addition of body fat are such characteristics for girls. These developments change the contour and shape of the body. Boys' voices deepen and their shoulders broaden. Both boys and girls develop body hair and body odor.

Children learn early in life to compare themselves with their peers. Making comparisons is seldom greater than at puberty, as young people begin to develop secondary sex characteristics. While all girls and boys follow the same general patterns of development, there are many normal individual variations in the onset and rate of growth.

On the average, the first signs of approaching puberty for girls appear around the ages of nine or ten when many girls develop breast buds. This is followed by the appearance of pubic hair and ancillary hair. A marked growth spurt in height and weight follows, and the reproductive organs begin to mature. The percentage of fat tissue increases as hips and thighs fill out and body contours become more rounded. Within two or three years following the initial signs of puberty, the first menstrual period begins.

In comparison, the male maturation process begins at a later age, usually around 11 or 12. Male growth is also marked by the maturing of the reproductive organs, the appearance

of pubic and body hair, and an increase in height and weight. Boys as well as girls are often preoccupied during the initial stages of puberty with the physical benchmarks of development – a natural reaction to dramatic change!

Hormonal Changes at Puberty – Female & Male

During puberty, the physical changes of the body involve the hormone system. Hormones are chemical substances that affect growth and change in cell activity. Three physical structures involved in the production of the necessary hormones for pubertal development in girls are the HYPOTHALAMUS, the pituitary gland and the ovaries. In boys, these structures are the hypothalamus, the pituitary gland, and the testicles.

The hypothalamus, a nerve center in the brain, releases chemicals into the bloodstream. The bloodstream carries the chemicals to the pituitary gland, an organ situated near the hypothalamus. In girls, the pituitary gland produces hormones that stimulate the growth of the ovaries. The ovaries, the glands of the female reproductive system that store egg cells, then produce the hormone estrogen and release it into the bloodstream. Estrogen is responsible for many of the changes that occur during puberty. For example, increases in estrogen lead to breast development, changes in the shape and contour of the body, and the maturation of the reproductive system. Estrogen sparks the release of the hormone called progesterone. Progesterone helps the lining of the uterus thicken and prepare itself to nourish a fertilized egg.

In boys, the pituitary gland produces hormones that stimulate the testicles to produce the hormone testosterone. Testosterone is responsible for most of the changes of male puberty. For example, increases in the level of testosterone lead to the development of body and facial hair, the growth of the reproductive organs, the production of sperm, the changes in the shape of the body, and the change in the voice.

Other hormones also contribute to development during puberty. For example, adrenal hormones affect the development of muscles and bones, the growth of hair, and the changes in the skin.

Personal Care for Young Adolescents

As girls and boys go through the growth spurt, they experience other changes that accompany the increase in height and weight. They may have unbounded energy at times but seem tired or lazy at other times. Their movement may be uncoordinated or clumsy. They may experience aching muscles and tension. Their appetites may increase. You should inform students that these occurrences are normal.

Rapid growth and development creates the need for more careful attention to nutrition, exercise, and relaxation. The following tips may help your students manage their personal care needs.

- It is especially important during early adolescence to focus young girls' and boys' attention on a balanced diet and good eating habits because many young teens do not have the kind of schedules that accommodate a healthy diet. Young adolescents should choose foods from the basic food groups; meats, fruits and vegetables, breads and grains, and dairy products, with limited amounts of fats, oils and sugars. Eating three balanced meals each day and selecting healthy snack items such as fruits will ensure that the body has the necessary nutrients it needs.
- If weight is a problem, young adolescents should consult a doctor. They should be discouraged from trying "fad" diets or dieting on their own.
- Physical activity is important during this time. Encourage a regular program of exercise such as aerobics, walking, and/or individual or team sports.
- Young adolescents also need time for relaxation and rest. Too much activity can be harmful to growing bodies.

As young adolescents go through puberty, glands and hormones become more active. Active sweat glands produce different body odors. The change in oil glands may produce other complexion problems. Girls and boys will develop pubic hair and underarm hair while the hair on their arms and legs grows.

Increased glandular and hormonal activity creates the need for more careful attention to cleanliness and grooming. The following tips may be useful to your students.

- A shower or bath using warm water is recommended. Hair should be shampooed as often as necessary to keep it clean.
- Frequent cleansing of the face with soap and water will help keep complexion problems under control. However, some adolescents overreact and should be cautioned not to wash their faces too frequently or to scrub too hard since this may aggravate the condition.
- Adolescents with severe skin problems should be encouraged to see a dermatologist or family doctor for individualized advice.
- For young girls, with the appearance of hair under the arms and on the legs, the question of shaving may arise. For young boys, shaving will be of interest with the appearance of facial hair. You might suggest that young adolescents discuss these questions with their parents, who can provide guidance on removing hair.

Understanding the Changes of Puberty – Female Information for Teachers

Young people need the biological data that explain the physical changes that occur during puberty. First, you can provide basic information on the structure and function of the internal and external parts of the reproductive anatomy in both females and males. Second, you can provide basic information on the structure and function of the hormone system that affects pubertal development. A clear understanding of the reproductive anatomy and hormone system is important if students are to develop well-informed attitudes about their own growth and development.

The Female Reproductive System

The reproductive system consists of the parts of the body involved in reproduction. Reproduction is the process of producing a species of life whether in humans, animals, or plants.

The Major Events of Female Puberty

The major events of puberty in females include the beginning of breast development, the appearance of pubic hair, the beginning of the growth spurt, and menarche.

Development usually follows a characteristic sequence, yet the age at which each individual girl experiences these physical changes varies. Students may be concerned about their development. You can reassure them by stressing that the changes of puberty begin when the time is right for each individual girl.

Breast Development

The sequence of changes in puberty for girls usually begins with the onset of breast development. Breast development corresponds to the level of estrogen in the bloodstream. The level of hormone production differs for each individual girl and partially explains why the onset and rate of growth varies considerably. Breast development can begin about age $8\frac{3}{4}$, with the average age of onset about 11.

Breast development can be divided into five stages. During Stage 1, the girl's breast is flat and the nipple is raised. In Stage 2, the breast bud, a small mound of tissue under the nipple, appears. The nipple and areola, the skin surrounding the nipple, stand out, grow larger and darken. The breast bud grows in Stage 3, thus the breasts become more full and round. In Stage 4, the nipple and areola form a mound on top of the breast tissue. Some girls do not go through this stage. Whether girls do or do not show the features of Stage 4, all reach full maturity in Stage 5.

Girls proceed through the developmental stages at different rates. Some girls reach full breast maturity six months after the breast bud appears. For others, it may take six years. The average span of development from Stage 2 to Stage 5 is four and one-half years.

Pubic Hair Development

The second major event of puberty is the appearance of pubic hair. As with breast development, the development of pubic hair occurs in stages. In Stage 1 no pubic hair growth is apparent. Fine, silky pubic hairs grow along the midline of the outer labia in Stage 2. Stage 3 features hair growth that extends upward and sideways from the midline. In Stage 4, the hair begins to cover the mons pubis, the layer of tissue that protects the pubic bone. The adult stage or Stage 5 consists of the growth of hair into a wider area. During development, pubic hair gradually thickens and may become curly and coarse.

Girls may begin to develop pubic hair about age 9, with the average age of development occurring about age 11. You should remind students that girls go through these stages at different times.

Growth Spurt

Both girls and boys go through the adolescent growth spurt. Girls hit their peak growth rate about two years before boys do, at about age 12. Girls also gain weight during this growth phase. It is crucial, in this era of widespread eating disorders such as anorexia and bulimia, that educators explain that some weight gain is normal and healthy and is not a sign that a girl will be fat or an indication that she should start dieting. Girls reach the peak of weight gain about six months after the peak in height growth. Structurally, girls' hips widen (in comparison with the broadening of boys' shoulders). It may allay a girl's anxiety about this growth spurt to know that boys will catch up in a year or two, and that the growth spurt often signals imminent menstruation.

Menarche

Sometime between the ages of nine and sixteen, most girls undergo physical changes that are part of the female maturation process. One of these changes is the beginning of MENSTRUATION. MENARCHE, as it is called, is a milestone in a young girl's life. It is a normal, healthy event, marking the biological shift from childhood to adulthood. As an educator, you are in a unique and vital position to encourage and promote the development of positive and healthy attitudes about menstruation. The average age for menarche is 12. The usual range of menarche extends from 10 $\frac{3}{4}$ - 15 $\frac{1}{2}$ years, however it is entirely normal though unusual, for a girl to experience menarche as early as 9 or as late as 16.

With the onset of menstruation, a girl becomes aware of her emerging identity as a female capable of reproduction. Her understanding and acceptance of her new identity will be greatly influenced by the feedback she receives from peers, educators, and most importantly, her parents.

Many young girls happily anticipate the arrival of menstruation as an event to be celebrated. Some then feel let down when life continues just as it did before with no

acknowledgment of new status. You can remind your students that this event is special to young girls.

Most girls easily incorporate into their daily lives the physical changes that occur at menarche. Others may feel as if they have no control over the changes they are experiencing, especially since the menstrual cycle is often erratic at first. Historically, blood was associated with illness, so treating the prospect of a monthly period as a regular and normal part of life may require a new way of thinking. It takes time for young people to get used to the changes of puberty. Remind students often throughout this unit that menstruation is a natural, normal, healthy function of the female body.

Understanding Menstruation

Young adolescents want to know the facts about their growing and changing bodies. Many of the questions young girls ask reflect their lack of experience: “When will it happen to me?” or “What will it feel like?” or “Are tampons safe?” However, students may not ask pertinent questions, such as “Why do females menstruate?” and “Why does it happen once a month?” So it is important to answer these questions, providing the basic foundation for understanding menstruation.

In order for students to understand the process of menstruation, they need to be aware of the external parts of the female anatomy and the internal parts of the female reproductive system. Then students can be introduced to how and why menstruation occurs. Young people will need time to fully understand this information.

Female Anatomy and the Reproductive System

The REPRODUCTIVE SYSTEM consists of the parts of the body involved in REPRODUCTION – the process of producing a species of life.

The following review of the female anatomy provides basic information that may facilitate understanding and classroom discussion. Young students need simplified explanations. To introduce students to the female anatomy, you may wish to mention terminology and emphasize descriptions to simplify the presentation. You can review the precise anatomical terms in subsequent activities as understanding develops.

External Anatomy

A discussion of the external female anatomy can begin with the MONS PUBIS, a mound of fatty tissue that covers and protects the pubic bone. During PUBERTY, pubic hair begins to grow on and eventually cover the mons. Below the mons lie the soft folds of skin, called the LABIA. Pubic hair grows on and in front of the larger folds, called the outer labia. Between these larger folds of skin, there are smaller folds of skin, called the inner labia. The labia protect the parts of the body that lie between them. The labia protect the CLITORIS, a small sensitive organ located at the top of the inner labia, as well as openings leading inside the body.

Three openings connect the outside of the body to the inside. Two of these openings are covered by the labia. Urine exits the body throughout the first opening called the URINARY OPENING. This opening is connected to the URETHRA, which is the tube that carries the urine from the bladder to be discharged from the body.

The second opening, called the vaginal opening, leads into the VAGINA, a part of the internal reproductive system. In some girls, it is covered partially by tissue, called the HYMEN. Together, the mons pubis, the labia, the clitoris, the urinary opening, and vaginal opening comprise the area called the VULVA.

Behind the folds of skin and toward the back of the body is the third opening, called the ANUS. This opening connects with the rectum and is the pathway for feces to exit the body.

Internal Anatomy

A number of organs located inside the body in the lower abdomen comprise the reproductive system. A tube-shaped passageway, called the vagina, leads from the outside of the body to the UTERUS. The uterus is a muscular organ about the size and shape of an upside-down pear. The narrow end of the uterus, called the CERVIX, has a small opening that connects with the vagina. An unborn baby grows in the uterus when a woman is pregnant. Connected to the right and left sides of the uterus are two thin tubes, called FALLOPIAN TUBES. Near the end of each tube, there is a small gland about the size of a

walnut where thousands of tiny egg cells, or OVA, are stored. This gland is called an OVARY. Eggs are present at birth and mature during puberty.

Always Changing – Female

The Process of Menstruation

With an understanding of the external and internal female anatomy, students are better able to comprehend descriptions of how and why menstruation occurs.

A small gland located in the base of the brain, called the PITUITARY GLAND, triggers menstruation. The pituitary gland produces chemicals that act like messengers, traveling in the blood to the ovaries.

Inside the body, the reproductive system begins to function. One of the ovaries releases an egg cell, which is smaller than a grain of salt. It enters the nearby Fallopian tube and travels toward the uterus that has a special lining of blood and tissue, called the ENDOMETRIUM. This lining grows thick as the uterus prepares to receive the egg cell.

If the egg cell is united with a male sperm cell – a process called FERTILIZATION – it will enter the uterus, attach itself to the lining, and begin to develop into a FETUS. The lining supports the growth and development of the fetus. If the egg cell is not fertilized, the lining of the uterus is not needed. Both the lining and egg cell dissolve and flow out of the uterus, through the vagina, and out of the vaginal opening. This discharge is the MENSTRUAL FLOW. When the lining is completely removed from the uterus, the flow stops.

The menstrual flow feels wet and may appear like a thin or thick fluid. It can look pink, or red like blood, or brownish. Sometimes girls experience a heavy flow, while for others the flow is quite light. Most often the flow patters off after the first two or three days. Young girls sometimes worry about growing weak from loss of blood during menstruation. The facts are that the average loss of blood during each period is two to four ounces. This is an insignificant amount when considering that there are at least 120 ounces of blood in the body, and new blood is constantly being produced. The blood and tissue discharged as menstrual flow are no longer needed by the body.

The days when the menstrual flow is leaving the uterus are called the MENSTRUAL PERIOD. Menstruation is the process by which the lining of the uterus is shed periodically as menstrual flow. It usually occurs about once a month, except during pregnancy. The length of each menstrual period varies from person to person, as does the amount of menstrual flow. Usually a period lasts from three to five days, though variations from two to eight days are common.

The Menstrual Cycle

Proper to the twentieth century, the complex function of the female reproductive system remained a mystery. Today we know that female development and the menstrual cycle are controlled by the delicate balance of hormones produced by glands in the body.

Hormones are chemical messengers transported in the bloodstream that are directed at various parts of the body and cause specific reactions. Stimulated by hormones from the pituitary gland, the ovaries produce the hormone ESTROGEN, which plays a major role in stimulating the physical changes of puberty, including the onset of menstruation. A second hormone, PROGESTERONE, is produced by the ovaries when ovulation occurs. From menarche to menopause, the rhythmic patterns of the female cycle are controlled by these hormones.

Phases of the Cycle

Each time a girl gets her period, a new cycle begins. The cycle usually lasts about 28 days, but the length of the cycle varies. The menstrual cycle is divided into four parts: the menstrual phase, the pre-ovulatory phase, the event of OVULATION, and the post-ovulatory phase.

- The menstrual phase begins the cycle. This phase is the menstrual period. During this time, the lining of the uterus leaves the body as menstrual flow.
- When your menstrual period is over, the pre-ovulatory phase of the cycle begins. The lining of the uterus is thin, and one of the ovaries is getting ready to release an egg cell. The lining of the uterus gradually thickens prior to ovulation.
- Ovulation is “the event” when one of the two ovaries releases an egg cell.
- During the post-ovulatory phase of the cycle, the egg cell travels through the nearest Fallopian tube and into the uterus. Meanwhile, the lining of the uterus continues to grow thick with blood and tissue. If the egg isn’t fertilized by a male sperm cell, the lining will come away from the wall of the uterus and disintegrate.
- As it starts to leave your body, the whole cycle begins again with the menstrual phase, or menstrual period.

Hormonal Changes and the Menstrual Cycle

The changes that occur during each phase of the cycle are directly related to the rise and fall of the hormones estrogen and progesterone in the bloodstream. During the menstrual phase, while the lining of the uterus is being shed, the level of both hormones is very low. When the post-menstrual phase, while the lining of the uterus is being shed, the level of both hormones are very low. When the post-menstrual phase begins, estrogen is released by the ovary whose egg cells are maturing. This rising estrogen level helps to stimulate the growth of a new lining in the uterus.

Ovulation generally occurs about 14 days before the onset of the next period, although this may vary with each individual and each new cycle. Usually only one egg cell is released, but occasionally two or more may be released. Following ovulation, the ovary begins producing the hormone progesterone, which causes the lining of the uterus to become thick with blood and tissue. If the released egg cell is fertilized in the Fallopian tube, it implants itself in the uterine wall, where embryonic growth begins. If fertilization does not occur, the egg disintegrates. Estrogen and progesterone levels decrease, causing the lining to slough off and leave the uterus.

The answer to the question, “Why do women menstruate?” is that the uterus and its lining are biologically designed to support the growth of a baby. Ovulation and menstruation do not occur during pregnancy since the lining of the uterus is needed at that time for fetal development. When conception does not take place, the uterine lining is shed in the process of menstruation. The question, “Why does it happen once a month?” relates to the fact that menstruation is a continuing or cyclical process controlled by the body’s hormones. Most things controlled by nature have a rhythmic pattern to them. However, the menstrual cycle may be disrupted or delayed for a variety of reasons.

Irregular Cycles

During the first year or two following menarche, a girl may have her period at irregular intervals. Once a pattern is established, the cycle may range from every 21 days to every 40 days, though 28 to 30 days is average.

Young girls are often concerned about having irregular cycles. If their periods are delayed for several weeks or months, they begin to wonder if they are normal. The body needs time to develop a regular pattern. A change in environment or routine or any emotional stress or illness may upset the cycle, causing the period to begin later or earlier than expected. A young girl may become overly apprehensive about an exam at school. One girl may be excited about a forthcoming trip or vacation, or she may be distressed about moving to a different town. Another girl may have gained or lost weight in a short period of time. Yet another may be in training for a sports program, gymnastic team, or ballet class, requiring intensive exercise. All of these situations can disrupt a regular menstrual cycle.

It is also common for young girls to menstruate without ovulating for the first few years after menarche. This may explain why some teens that do not experience cramps or premenstrual discomfort following the onset of menstruation suddenly begin to do so after menstruating for several years. The release of progesterone following ovulation may contribute to these symptoms.

Girls can acquire an understanding of their own cycles by keeping a personal calendar and marking off the days when their period occurs. After several months, they will have some idea of how long each period lasts and the length of their cycles. This knowledge will provide girls a sense of familiarity with the changes that occur in their bodies during the reproductive years.

Vaginal Secretions

Beginning at puberty, girls may begin to notice a slight secretion or discharge from the vagina. Since adolescents are highly sensitive to the changes occurring in their bodies, they will want to know if these secretions are normal.

Vaginal secretions are normal; resulting from increased hormone levels in the blood and are experienced by most females. The amount and appearance of the secretions vary.

After menstruation, the discharge may appear as a sticky white or clear substance. Around the time of ovulation, it becomes more abundant and slippery in appearance, like raw egg white.

If a girl notices that a discharge is somehow different from her normal discharge, she should consult her doctor. Vaginal secretion that is excessive or discolored, that has an unusually strong or offensive odor, and/or that is accompanied by burning, itching, or irritation may indicate that a problem exists. She should tell her mother or primary care giver, and see her family physician.

Personal Care and Menstrual Protection

Menstrual Protection Products

Today, girls and women can choose from a wide variety of menstrual protection products to suit their individual needs. Girls will value knowing what options are available to help them manage their periods.

MENSTRUAL PROTECTION products fall into two basic categories: those that are worn externally, outside your body, and those that are worn internally, in the vagina.

External Protection

A wide variety of self-adhesive sanitary pads that adhere to undergarments are available. For a heavy flow, usually the first two days of the menstrual period and for overnight. There are super-maxi pads. Regular maxi-pads, thin maxi-pads, and shaped maxi-pads are designed for a moderate or medium menstrual flow and girls can use them anytime during their period. Many girls like the thin maxi-pads because they are comfortable for active lifestyles. Other girls like a shaped fit because it fits their bodies better and is more comfortable.

For girls with a lighter flow, mini-pads, which are small and comfortable, can be used. Girls can also use mini-pads at the end of their period when the menstrual flow is usually lighter or tapering off.

Many girls experience a daily discharge which begins about one year before the first menstrual period. A panty shield can be worn daily to protect panties from this wetness. A panty shield is also a good back up to a tampon.

Internal Protection

Tampons are a different form of menstrual protection since they are inserted into the vagina. Unlike sanitary pads, a tampon should be used only during menstruation and should not be worn other than when you have your period. Girls should choose the lowest absorbency necessary to control the menstrual flow. Before using a tampon, girls should read all the information found in the product package – especially the product insert that explains how to insert a tampon properly, and contains information on menstruation and about Toxic Shock Syndrome.

There are two kinds of tampons: those with applicators and those without applicators. The applicator tampon features a slim cardboard or plastic plunger that helps to insert the tampon into the vaginal canal. Naturally inserted tampons are inserted by guiding the tampon into place with the tip of the index finger and allows the girl to place the tampon where she wants it. Additionally a naturally inserted tampon begins to absorb the menstrual flow as it is being inserted, which helps prevent staining and leaking. Girls cannot feel the tampon when it is properly positioned inside the body. Nor can the tampon

become lost – a common question asked by many young girls – since the cervix blocks its movement beyond the vaginal canal. The muscles of the vaginal walls hold the tampon securely in place.

A young girl should have a clear understanding of both her external and internal anatomy in order to insert tampons properly. She must be able to identify and locate the vaginal opening, and should follow the package directions for correct insertion.

Some girls are embarrassed by purchasing menstrual protection products. Since menstruation happens to all girls and women and since boys and men know about it too, there is no reason to be embarrassed or secretive about buying products. This is an important message to communicate to your students.

In 1980 TOXIC SHOCK SYNDROME (TSS) was found to be associated with the use of tampons during menstruation. When discussing tampons with your students, consider giving information about TSS. To avoid frightening young girls unnecessarily, do not include a discussion of TSS in the initial presentation(s) of menstruation, but rather reserve the topic for later. It is important that your students realize TSS is a rare disease (6 to 17 cases per 100,000 menstruating females each year), and that you are not trying to frighten them but rather to educate them.

Personal Hygiene

While good hygiene practices are important at all times, the need for more careful attention to personal cleanliness before and during menstruation will contribute to a girl's comfort and confidence. Once menstruation begins, the body's production of both oil and perspiration may increase during the days before the period is due. A review of good diet and hygiene practices can be found in Unit II.

Proper hygiene and the use of menstrual protection products are subjects of keen interest to young girls. This information is seldom included in other health-related classes and may or may not be discussed adequately at home.

The following tips can be helpful for girls as they begin to develop personal care habits.

- Girls should gently cleanse the external genitalia with soap and water as part of their daily bathing to help eliminate odor.
- Following each toilet use, girls should wipe the genitals from front to back to avoid the spread of bacteria from the anus to the vulva. They should wash their hands before and after using the bathroom and whenever changing menstrual protection.
- Underwear should be changed daily. Some physicians recommend cotton panties or those with a cotton crotch because of cotton's superior absorbency. If undergarments become soiled during menstruation, presoaking in cold water will help loosen stains.
- Girls should change sanitary pads every three or four hours, or as often as needed, to feel comfortable and to prevent odor from forming. Odor develops when the menstrual flow leaves the body and comes in contact with air. Tampons should also be changed

as needed – about every three to four hours or sooner – to avoid undergarment stains resulting from a tampon reaching its maximum absorption level. However, do not leave it in more than six hours. Read the package insert for directions. Many girls use a panty shield with a tampon. Also, girls should not forget to remove a tampon. A forgotten tampon may cause an odor or may lead to irritation or possible infection.

- Girls should wrap pads and tampons in toilet paper and place them in the wastebasket or disposal container. Tampon applicators, unless they are biodegradable, should also be wrapped in tissue and thrown in the wastebasket.
- Young girls should plan for their menstrual protection needs when away from home. Special purse cases for menstrual pads are available, and a supply of products can be stored conveniently in a school locker. Many girls carry a pad in their purses at all times. Using a light protection product, such as a panty shield or mini-pad, can help prevent staining on days when the period is expected, when flow is light or when wearing tampons.
- For many girls there is a pre-menarcheal discharge that occurs up to a year before the first menstrual period. This discharge is very common and normal. A panty shield may be worn daily to protect underpants from this wetness.
- Girls should be encouraged to ask for help and to discuss their personal care needs with a parent, teacher, physician, school nurse, or other adult.

Premenstrual Discomfort

Most girls do not experience premenstrual discomfort, however the following is provided in case you receive specific questions.

Most girls never experience any cramps or discomfort, maybe just a few occasional twinges. These twinges are usually just muscular contractions of the uterus. They are felt in the lower abdomen on the first or second day of the menstrual cycle. Encourage your students to exercise and stay fit. The most important thing is to encourage them to have a good attitude and not be worried or concerned about getting their periods, because it's perfectly normal and healthy. If a girl does get bad cramps or some other kind of discomfort, she should see her physician.

Some girls may also experience headaches, depression, nausea, backaches, bloating, constipation, swollen breasts, a slight weight gain, acne, or sudden mood swings, etc. These symptoms may appear seven to ten days before the menstrual period begins, and in some cases have been linked to vitamin deficiencies, nutritional problems, and hormonal imbalance.

Girls who experience premenstrual symptoms may be able to alleviate some of the symptoms by eating a well-balanced diet, eliminating caffeine and sugar, and/or supplementing their diet with vitamins. Girls should consult a doctor if their symptoms persist or become severe.

DYSMENORRHEA is the medical term for painful menstrual cramps. Cramps are usually caused by contractions of the uterus that begin about 12 to 24 hours before menstruation.

Normally they can be relieved by heat application (a warm bath or heating pad) or by medication. Routine exercises designed to strengthen the muscles of the pelvis may help to prevent or minimize cramps.

Problems in Menstruation

The following conditions may indicate that a problem with menstruation exists and should always be discussed with a physician.

- Periods that are consistently irregular and unpredictable after more than two years of menstruation may indicate that a problem exists. A menstrual pattern usually begins to appear at this time.
- Menstrual flow that is excessively heavy (MENORRHAGIA) or prolonged, lasting more than the individual's usual number of days, should be reported to a doctor.
- A doctor should be consulted if severe premenstrual discomfort or cramps (dysmenorrhea) prevent normal functioning for a prolonged length of time.
- The absence of menstruation of more than several months after menses is established may indicate a problem with menstruation. This is known as SECONDARY AMENORRHEA. While irregular cycles are common during the early menstrual years, a medical checkup is advisable if menstruation stops after a cycle is established. (Note: The sexually active teen should be aware that even one missed period is cause for a checkup.)
- The failure of menstruation to begin by age 17 is referred to as PRIMARY AMENORRHEA. About 95% of all girls have begun menstruating by age 16. Thus, a physical examination is advisable if menarche has not occurred by age 17.
- Any bleeding from the vaginal area that occurs between periods should be discussed with a doctor.

Understanding the Changes of Puberty – MALE Information for Teachers

Young people need the biological data that explain the physical changes that occur during puberty. First, you can provide basic information on the structure and function of the internal and external parts of the reproductive anatomy in both females and males. Second, you can provide basic information on the structure and function of the hormone system that affects pubertal development. A clear understanding of the reproductive anatomy and hormone system is important if students are to develop well-informed attitudes about their own growth and development.

The Major Events of Male Puberty

The major events of puberty in males include the enlargement of the testes, the growth of the penis, the appearance of pubic hair, and the beginning of the growth spurt. Development usually follows a characteristic sequence, but the onset and rate of growth varies. You can help students understand that these changes occur when the time is right for each individual boy.

The Male Reproductive System

During puberty the male reproductive system matures, making it possible for young males to produce children. Boys begin to produce SPERM or spermatozoa, which are microscopic cells containing half the material needed to create a child. For conception to occur, a sperm penetrates the female ovum or egg that is released during ovulation.

External Anatomy

The two main parts of the external sex organs, or GENITALS, are the PENIS and the SCROTUM. The most obvious genital organ is the penis, which is made up of the shaft and the head or glans. The glans is covered by the foreskin which is sometimes removed at infancy by a surgical procedure known as CIRCUMCISION. The small opening in the center of the glans is the urinary opening where urine and SEMEN are released.

The scrotum is a loose sac of skin and muscle that lies under the penis. The scrotum houses two TESTICLES, the organs where sperm cells are produced. The scrotum regulates the temperature of the testicles in order to make sperm.

Internal Anatomy

In order to understand the structure and function of the internal parts of the male reproductive system, it is important to understand that the system is designed to produce, store, and transport sperm to an egg in a woman's body.

The testicles, or testes, contain chambers, or tubules, where sperm is produced. The testicles also produce the hormone TESTOSTERONE that causes most of the changes in males during puberty.

The EPIDIDYMIS, a storage compartment composed of tiny tubes, lies behind and is attached to each testicle. These tubes store the sperm cells while they mature.

Each testicle connects to a tube called the VAS DEFERENS or sperm duct. The mature sperm move toward the main part of the body through the vas deferens. The tube widens, at which point it is called the AMPULLA. Sperm cells are stored in the ampulla until ejaculation.

At the end of the ampulla are two small sacs called SEMINAL VESICLES. These vesicles contribute to the production of semen, a white sticky fluid that carries and nourishes the sperm. From here, the fluid and sperm cells flow into the ejaculatory ducts that connect the seminal vesicles with the opening of the urethra in the PROSTATE GLAND. The prostate gland adds more fluid to the production of semen.

The semen carries the sperm through the urethra. The urethra is a tube in the center of the penis, sheltered by soft tissue. The semen and sperm are then released from the urinary opening during ejaculation.

Since urine and semen travel through the urethra and are released from the urinary opening, some students may wonder if boys can urinate and ejaculate at the same time. These functions cannot occur concurrently. During ejaculation a small valve between the bladder and the urethra closes, preventing urination.

Always Changing - Male

Growth of Testes

The sequence of changes in puberty for boys usually begins with the enlargement of the testes. This development may start as early as 9 ½ years of age, with the average age about 12 years. Some boys may notice that the testicles have grown; others may not. At this time, the scrotal sac loosens, grows longer, and deepens in color.

Growth of the Penis

During puberty, the penis will grow longer and wider. This growth may start as early as 10 years of age or as late as age 14, but the average age that growth begins seems to be at about 12 ¼ years. As the penis grows, its skin will deepen in color.

About one year after the growth of the penis begins, usually between the ages of 11 and 15, boys may experience their first ejaculation. Ejaculation is the process by which semen is ejected from the penis. Before a male ejaculates he gets an ERECTION. Blood fills the tissue inside the penis so that the penis stiffens and becomes thicker and longer. When a male ejaculates, muscles contract and push semen into and through the urethra.

An ejaculation usually occurs as a result of sexual arousal or excitement. However, it may occur involuntarily. An ejaculation that happens while a boy is asleep is called a NOCTURNAL EMISSION, or wet dream. These occurrences are normal.

Appearance of Pubic Hair

At puberty boys will notice hairs at the base of the penis. Some may detect pubic hair as early as 9 ½ years of age or as late as age 14. During this developmental stage, pubic hair may gradually darken and may become more curly and coarse.

When pubic hair begins to grow, boys may worry about small bumps that may appear at the base of the penis and on the scrotum. These bumps are normal. Boys will soon notice tiny hairs growing through the bumps. There may be other bumps as well, but these will consist of oil and perspiration, a sign that the perspiration glands are active. These bumps are also normal.

Growth Spurt

The growth spurt may start as early as 11 ½ years of age and as late as 16 years. Most boys on the average, begin around the age of 14. Some boys grow 2 ½ inches a year during this growth period. Others may grow as many as 5 inches a year. Boys will also gain weight during puberty, so it is important to stress good diet, nutrition and exercise at this time.

Boys will change in other ways during the growth spurt. The shape of the face will change, shoulders will broaden, and body strength will increase.