

## CHAPTER 15

### *Sexual Development*

Puberty - the stage of adolescence in which an individual becomes physiologically capable of sexual reproduction - is one of the most remarkable events in the life span of an individual.

In girls, it can begin as early as eight (one in six girls now compared with one in a hundred forty years ago) or as late as thirteen, but usually between nine and eleven. The first sign is usually development of milk ducts and fat tissues under each nipple, forming a slight protuberance. The areola, the skin around the nipple, widens and both it and the nipple darkens. A growth spurt often occurs at the same time.

The breasts continue to grow larger and fuller, becoming cone-shaped, and the nipple and areola come to project out from the breast, forming a little mound. Growth can be rapid enough to cause purplish or whitish stretch marks on the breasts (and also on the thighs and abdomen). It usually takes about three years to get to this stage.

All this requires the concerted action of many hormones, including gonadal steroids, prolactin and growth hormone.

Hormones also trigger menstruation, which first occurs at this time (between eleven and thirteen), though anywhere from nine to eighteen is not uncommon.

Pubic hair development usually starts after breast development but can occur before or at the same time. The first pubic hairs are darker, longer and curlier than any childhood hair that may grow around the genitals, and they continue to become curlier, thicker, more copious and darker. Usually, they cover much of the mons and the vaginal lips by the age of eleven to thirteen.

The pubic hair continues to get thicker, curlier and darker and to spread more until it becomes the thick, coarse, tightly curled, upside down triangular mass of the adult.

Meanwhile, most girls at this stage of development have been changing their contours, padding their hips, narrowing their waists and widening their pelvises. The carrying angle of the arm and leg forms an angle at the elbow and the knee. The face develops chiefly in its upper sphere, with fat pads enhancing the protuberance of the cheekbones and the eyes glistening and growing further apart.

Inside, interesting changes have also been taking place. The vagina has become larger and its lining thicker, and the ovaries, fallopian tubes and uterus have all increased in size.

By fourteen, most girls are physiologically ready for sex, a fact of which their bodies often remind them by secreting so much vaginal lubrication that they feel almost continually wet.

As with everything else, boys are a bit behind girls - the process for them usually starting around eleven or twelve, though one in fourteen begin as early as eight (up from one in 150 forty years ago) and others at thirteen or later.

The first thing to happen is that the testicles get larger and the scrotal sac becomes looser, more wrinkled, redder and coarser, with blood vessels prominent on the surface, and begins to hang lower.

Then the penis begins to get both longer and wider and the skin of both it and the scrotum deepens in colour. Often, raised bumps looking like pimples appear on the surface of the skin at the base of the penis. Soon, long strands of slightly curly hair begin to push through the skin of the bumps. The hair becomes darker, coarser and curlier as it spreads over a larger area. In some boys, it continues to grow up toward the belly button and out towards the thighs and may also grow around the anus.

Around half of boys experience some breast enlargement around this time, due to some of the male sex hormone, testosterone, being broken down to oestrogen. This usually disappears within a year or two.

By about fourteen, the penis has a well-developed glans (knob). It continually makes its presence felt by becoming erect at such embarrassing moments as when giving a talk in front of a

class, in church, or when in close-fitting swimming gear.

At about this time, his voice begins to deepen due to the enlargement of the larynx (Adam's apple), and eventually breaks.

The average boy is now in the middle of a growth spurt, during which he may grow five or six inches and put on five or six kilos in a year. Muscle build-up and broadening of the shoulders and back, largely dependent on androgens and growth hormone, occur. The carrying angle of the arm and leg is straight. The whole face begins to take on a lupine, muzzle-like quality with protruding cheekbones tapering to a long, straight nose and a large lower jaw.

At around fifteen or sixteen, a boy's testicles begin to create sperm. He can ejaculate semen and frequently does so, either by masturbation, intercourse or 'wet dreams'. He is capable of reproducing and is said to have reached puberty.

By the time he's sixteen, his penis will have more than doubled its childhood size and will be at, or close to, its maximum. On average, the maximum size of testicles and scrotum is reached around seventeen.

According to latest scientific research, the whole process, both in boys and girls, is part of a developmental programme under strict genetic control. Growth factors turn on a gene cluster which produces more growth factors, spurring the relevant parts of the nervous system and hormones into action.

Impressive as they are, these physical changes are not all there is to puberty. The physical changes are associated with a range of psychological changes, such as questioning of identity, achievement of an appropriate sex role and movement toward personal independence, which vary significantly from person to person and from one culture to another. However, even in the most primitive cultures, puberty represents the end of absolute parental dependence and the initiation of greater (and not necessarily welcomed) social responsibilities.

These days we don't go in for the male puberty or initiation ceremonies that are such an important part of tribal life. Most of these are pretty bloody, but few as much so as that of some tribes in central Australia and New Guinea, where the underside of the penis is slit from the point nearest the scrotum for anywhere from an inch to almost its whole length. It has been suggested that this is a male attempt to match the female's first period, and the blood that flows is, in fact, referred to as 'men's menstruation'.

Even without such ceremonies, there are significant changes in personality. As the Italian political theorist, Antonio Gramsci put it: 'Before puberty, the child's personality has not yet formed and it is easier to guide its life and make it acquire specific habits of order, discipline and work; after puberty, the personality develops impetuously and all extraneous intervention becomes odious, tyrannical and insufferable'.

Feminists like Germaine Greer tend to see 'the agonies of puberty' as 'the result of the conditioning that maims the female personality in creating the feminine'. Whether the agonies of puberty males go through is due to similar conditioning or not they do not say.

However, while little (if anything) is known about the influence that hormones may have in shaping and/or initiating puberty's psychological shifts, there is strong evidence that steroid hormones from the gonads and adrenals are recognised by specific receptors in discrete brain areas, thereby affecting neuronal function in various ways. It would not be unreasonable to suspect that a large part of pubertal changes in mood, ways of thinking and social adaptation involves the action of steroid hormones on relevant neurons.

US cartoonist, Jules Feiffer, may have been only half-joking when he said: 'The biggest mistake that men make is that when they turn thirteen or fourteen and all of a sudden they've reached puberty, they believe that they like women. Actually, you're just horny. It doesn't mean you like women any more at 21 than you did at 10.' Whether males begin to like females or not at puberty, they certainly become more sexually aware of, and interested in, them. So too do females become more sexually interested in males. But, whereas men are at their most sexually active and interested in the late teens and through the twenties, women's sexual responsiveness

and interest appears to increase to a peak in the middle thirties. However, while it is all downhill for the male from his peak, women maintain their peak virtually for the rest of their lives.

Over the last forty years, the age at which most people begin the changes which culminate in puberty has been steadily dropping. There is still no clear explanation as to why this is so but nutrition seems to have a lot to do with it, the most rapid declines occurring in populations where there has also been a rapid improvement in nutrition and a rapid increase in average height and weight.

Over the same time period, the age at which most people have sex for the first time has gradually dropped from 22 to 17, with about ten percent having had intercourse by age 12, a third by age 15 and eighty percent of males by age 19. This is probably more due to earlier sexual maturation than to any general moral decline, though the general pervasion of explicit sexual material in our culture may also be involved. The old double standard, in which boys were not discouraged from 'sowing wild oats' while 'nice' girls always said 'no', has also been eroding and the age for first intercourse has dropped for girls as well as boys, though, at any age through high school, some ten percent more boys have had sexual experience than have girls of the same age.

This activity does not in itself seem to cause the participants any serious personal or emotional problems. But there are many serious associated problems. Rates of sexually transmitted diseases have risen sharply among teenagers in the past two decades. One in ten American teenage girls becomes pregnant each year and figures are similar for most Western countries. Most of these pregnancies are traumatic events for both the teenage mother and the teenage father (as well as, often, their families). Another unfortunate fact is that some 10-15 percent of adolescent girls are submitted to at least one episode of coercive sex. The answer to these problems must lie largely in sex education and in encouraging healthy attitudes to sex in adolescents, among them being:

- ? their freedom to acknowledge their sexuality;
- ? their freedom to explore their own bodies;
- ? their freedom to set their own ground rules for sexual experimentation;
- ? helping them distinguish fact from fantasy; and
- ? getting them to accept the consequences of sexual involvement.