MEDICAL PRACTICE

Aspects of Sexual Medicine

Normal Sexual Response

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It is customary, because convenient, to describe the cycle of sexual response in the human male and female separately. In fact, like the anatomy of their respective genital tracts, the underlying similarity is more impressive than the apparent differences.

Physiological Response

In each sex the physiological response to sexual stimulation may be divided into four phases—excitement, plateau, orgasm, and resolution. There are innumerable variations in both sexes, usually appertaining to the length of time occupied by the different phases. Here the difference between male and female response is most significant and of greatest clinical importance. The response in the male is characterized by a refractory period immediately after orgasm, during which further stimulation produces no reaction. No similar refractory period is seen in the female.

EXCITEMENT PHASE

The excitement phase may develop from a great variety of stimuli involving any or all of the senses. They are often very individual and may range from a particular piece of music to an intimate touch. For a given individual or couple there is usually a predictable graduation of response. In relation to tactile stimuli, for example, there would probably be an increasing response for both the man and female from the touch of the

hair, the kiss, the caress of the woman's breasts, the stroking of the thighs and the external genitalia themselves, and ultimately contact between penis and vulva.

The excitement phase occupies most of the time in the cycle of human sexual response. In the man, particularly if inexperienced, it may last as short a time as 40-60 seconds, while in the inexperienced woman it may develop over as many minutes. In the more controlled man the response may be prolonged, while in the more responsive woman the excitement phase can be much shortened. In the compatible couple, each with knowledge of the other's responses, there will often be a simultaneous progress through the excitement phase.

During the excitement phase there are a series of extragenital reactions common to both male and female. There is a skin flush, spreading from the epigastrium upwards over the breasts and neck and ultimately to the face. It is rather more marked as a rule in the woman. The breasts increase in size, and the nipples become erect and the areoli wrinkled as the underlying muscle contracts. Again these changes are very much more obvious in the female. Tachycardia and a rise of blood pressure in both sexes tend to parallel the rising excitement, and there is some evidence too of increased tone in the voluntary muscles, particularly in the rectus abdominis and intercostal muscles.

The characteristic genital reactions in the woman include vasocongestion of the clitoris, with erection, elongation, and increase in the diameter of the shaft. Exudation from the vaginal epithelium lubricates the vagina early in the excitement stage, while later there is distension of the middle and upper vagina. Vasocongestion occurs, and the pink colour of the epithelium gradually changes to a dusky purple. The labia majora and minora become congested. Like the clitoris the labia majora are composed of erectile tissue, and with the congestion they become raised, move away from the mid-line, and open the introitus.

In the male the corresponding genital changes include a rapid erection of the penis. This may be lost and regained several times if the excitement stage is deliberately prolonged in order to facilitate the response in the female. There is a contraction of the

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cremaster muscle with thickening of the scrotal skin, a simultaneous elevation of the testes towards the perineum, and shortening of the spermatic cords.

PLATEAU PHASE

During the plateau phase the extragenital reactions develop further. The erection of the nipples is more pronounced, the breasts increase in size, and the skin flush deepens and becomes more extensive. The heart rate increases perhaps to 100-150 beats a minute; the systolic blood pressure rises by 10-50 mm Hg, and the diastolic pressure by 10-20 mm Hg. In addition there is a slight though noticeable increase in the rate and depth of respiration.

The changes observed in the external genitalia of both male and female continue and become exaggerated during this phase. The clitoris becomes retracted against the symphysis pubis, the length and diameter of the vagina increase further, and the engorgement of the labia causes the introitus to gape. The uterus commonly rises out of the true pelvis, with consequent tenting of the vaginal vault. Finally there is a little secretion from Bartholin's glands, which increases the lubrication of the vulva. In the man there is further increase in the length and diameter of the penis. By this time it may be double its size in the flaccid state. Cowper's glands produce a pre-ejaculatory emission of mucoid fluid similar to the product of Bartholin's gland. The testes reach their maximum elevation and are increased in volume by about 50% over their initial unstimulated size.

ORGASMIC PHASE

The orgasmic phase is the shortest of the four but characterized by great physical activity. There is involuntary contraction and even spasm in some muscle groups, thrusting movements of the pelvis in both male and female, involuntary contraction of the rectal sphincter, an increase in respiratory rate to 40 or more per minute, a tachycardia which may approach 180 per minute, a rise in systolic blood pressure by 50-100 mm Hg, and a simultaneous rise in diastolic pressure by 20-50 mm Hg.

In the female the orgasmic response seems to depend on rhythmic contractions of the vagina and uterus. The external cervical os gapes open. In the male expulsive contractions pass along the length of the penile urethra, involving the prostate and seminal vesicles. As a consequence there is ejaculation of a seminal fluid, which varies both in volume and in content from one individual to another and in the same individual from time to time. In general the volume of seminal fluid increases during the first three to four days of continence and the pleasurable feeling associated with orgasm is greater, the greater the volume of the ejaculate.

RESOLUTION PHASE

The length of the resolution phase differs a great deal between the sexes, the female genital reactions being most noticeably slow to be reversed. The changes in the nipple and areola are quickly lost in both sexes, but in the woman the breast volume returns to normal only after 5-10 minutes. The muscle spasms cease rapidly, and heart rate and blood pressure quickly return to normal. The blushing of the skin disappears very quickly and there is widespread perspiration, most noticeable on the front of the chest and forehead.

In the female the clitoris very quickly returns to its normal position but relaxation may take up to 5 minutes. Relaxation of the vaginal walls is rapid, but the return to a normal pink colour may take 10-15 minutes. The uterus soon returns to its normal position, but the external cervical os continues to gape for about 30 minutes, during which time the cervix would normally lie in the pool of seminal fluid in the posterior fornix. The labia minora and majora become flaccid after 5-10 seconds,

but the vasocongestion may take as many minutes to resolve.

In the male the penis rapidly becomes flaccid, but the final return to normal size may take some minutes. The testes very quickly return to normal size and descend to lie low in a relaxed scrotum.

In both sexes the length of the residual phase is influenced by the degree of the orgasmic reaction. When this has been an overwhelming release the involution is most rapid. Involution is usually completed only after all sexual stimulation ceases. During this period, reapplication of stimuli in the female can induce another orgasmic experience, though if the previous experience has been profound this is usually difficult to achieve. In the male there is a refractory period, the length of which varies upwards of 60 seconds, depending on the nature of the initial orgasm. The more complete the first reaction the longer is the refractory period. When more than one orgasmic reaction occurs it is generally observed that the later orgasm is the most satisfying to the woman, the initial ejaculation the most pleasurable to the man.

Clearly the physiological response to sexual stimulation is a complex one. It depends essentially on the autonomic nervous system, through which vasocongestion is brought about, and through which contractions of involuntary musculature are achieved. For this reason accidents which injure the autonomic pathways and drugs such as hypotensive agents which influence the function of the nerves and upset the balance between sympathetic and parasympathetic action may influence sexual performance.

Psychological Response

For both man and woman the sexual response is psychological as well as physiological, and neither experience can be considered outside its social context. The relative importance of psychological, physiological, and social factors differs between the sexes, differs from one individual to another, differs in the same individual from time to time, and is heavily influenced by cultural factors. The whole cycle of response is thought to develop from the basic drive facilitating reproduction, and to some extent this origin is responsible for the difference between the male and female response.

In women the psychophysiological nature of the sexual response is most complicated and the influence of social factors most important. In the majority of cases the complete female response is achieved within the context of a close, usually heterosexual, interpersonal relationship. It requires stability if not total security in the relationship and social acceptance, or better still positive approval, is important. Self-esteem, particularly the thought that her total person and not simply her external genitalia are the object of attraction, is also an important element in determining the nature of the female response to sexual stimulation.

Clearly the demand for a stable, harmonious, loving relationship is influenced by a need to provide for the material and psychological needs of children which develop as a result of the sexual relationship. In a very real sense pregnancy, delivery, lactation, and the care given to the newborn baby are part of the female sexual response, and provision for them may be essential if complete satisfaction is to be achieved from intercourse.

For the woman the pleasure of intercourse may be experienced at several levels. Initially there is satisfaction at the thought of being able to stimulate sexual excitement in the man. In a good relationship there is satisfaction in giving and in receiving a most intimate confidence; there is a physical pleasure in the response of the excitement phase; there is the intense physical sensation of orgasm accompanied by a loss of overall sensory acuity, a loss of self, a merging with the partner; and finally there is the sense of relaxation, the release of tension, and disappearance of vasocongestion.

In men the sexual response is also psychophysiological.

Psychological factors are rather less important than in women, and social factors are different and of less importance. Basically this is because the needs of reproduction can be satisfied by the man by the simple act of ejaculation into the vagina. There is no absolute needs to make provision for offspring, though the social desirability of children having two parents and of fathers being responsible for mother and children do in most cultures apply constraints.

The pleasure of the male, like that of the female, can be experienced at different levels. There is satisfaction at being found sexually acceptable and in a loving relationship a pleasure at being able to elicit a sexual response. There is pleasure during the excitement stage and the intense visceral sensation of orgasm at the time of ejaculation. As in the woman this is accompanied by a loss of sensory awareness, a merging of personality with that of the partner, followed by a relaxation as deep as the climax was intense.

The foregoing description of human sexual response is given

in the most general terms. The individual variations in both psychological and physiological response are almost incredible. Provided this is remembered and care taken to elicit the normal pattern of response in any partnership, this understanding of the normal response serves as a satisfactory basis for the appreciation of the commoner sexual problems.

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Hospital Topics

Identification of High Risk Labours by Labour Nomogram

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Summary

The labour stencil representing the expected cervimetric progress of normal labour was used in 741 consecutive spontaneous labours to identify high-risk labours which needed oxytocic stimulation. Uterine contractions were stimulated if progress extended two hours past the nomogram, which resulted in shorter labours, fewer instrumental deliveries and caesarean sections, and babies with higher Apgar scores than in those dysfunctional labours which were not stimulated. According to the protocol used 36% of primigravid and 13% of multi-gravid labours needed acceleration. The remaining patients did not need any oxytocic interference during the first stage. This selection of patients is important to prevent a major obstetric advance being abused and discredited at a time when the profession and public are questioning the safety of active labour.

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Introduction

Oxytocic stimulation of inert labour has become accepted obstetric practice; it results in shorter labour, a decreased incidence in caesarean section and second-stage instrumentation, and improved maternal and neonatal conditions at the end of labour.¹⁻³ Some workers⁴ have used partograms to achieve these aims. Philpott's partogram⁵ aids the recognition of abnormal labour by clarifying recordings, and can indicate the correct timing of oxytocic stimulation by the use of "alert lines" and "action lines" based on cervical dilatation. These lines were constructed from data obtained from the slowest 10% of African primigravidae. Friedman's sigmoid curve of labour⁶ is a valuable pictorial representation of normal labour progression, but it is inadequate for the management of individual patients because it starts at the undefinable time of the onset of labour at zero centimetres and the latent period is of varying length. These factors obscure the position of an early assessment of cervical dilatation along the slope.

The confusion surrounding the time of onset of labour can be resolved by using the time of admission in labour as the starting point.^{3, 7} In a large study of normal spontaneous labour no patients entered hospital at a dilatation of zero centimetres, and 63% of normal primigravidae and 86% of normal multi-gravidae entered hospital at a cervical dilatation of 3 cm or more when the latent phase had been completed.⁸

Using the patient's admission as the reference point, we have constructed curves showing cervical dilatation times of normal labour for varying dilatations on admission. These data have been converted into a stencil to be used in conjunction with graphic records to give an early indication of patients with inert labour.⁹ A retrospective evaluation of this nomogram showed that it could separate patients with normal labour from high-risk patients with dysfunctional labour destined to result in an abnormal outcome.¹⁰ We report here a prospective study of the routine clinical use of the labour nomogram in two centres.