

Is there controversy over differences in erotic arousal between males and females?

When considering a purported controversy such as the differences in erotic arousal between human males and females, the examination of structural brain differences may play a role in deciding to support or refute such an assertion. Sex differences in the hypothalamus and other limbic structures are thought to be the basis of sex differences in sexual arousal and copulatory behavior in both sexes. The mammalian hypothalamus contains a number of structurally sexually dimorphic structures presumed to be involved in sexual behavior, such as the sexually dimorphic nucleus of the preoptic area (SDN-POA) where sexual differentiation of the human SDN-POA occurs after four years post-natally. This is due to a decrease in both volume and cell number in women, whereas in men volume and cell number remain unaltered up to the fifth decade, after which a marked decrease in cell number is observed as well. The strongest sex difference has been found in the hypothalamic lateral and medial mamillary nuclear (MMN) bodies which are well known to be involved in several aspects of sexual behavior, among them arousal of sexual interest. In most hypothalamic areas that contain androgen receptor staining, nuclear staining in particular is less intense in women than in men. (Swaab, 2005). In addition, according to a plethora of endocrinological studies on the physiological area of the sexual drive, androgens have been found to affect female libido (Stuart, Hammond & Pett, 1987); however, the majority of such studies have been based on the amount of total testosterone, and not on the fraction of circulating testosterone unbound to sex hormone-binding globulin, or SHBG (Schreiner-Engel, Schiavi, White & Ghizzani, 1989). Sherwin (1987, cited in Schreiner-Engel et al., 1989) found that

ovariectomized women who had a low total testosterone count versus SHBG-ratio reported significantly less arousal compared to women with medium and high ratios. For pre-menopausal females with regular cycles, a decrease in sexual arousal has been reported when progesterone levels are elevated during the luteal phase of the menstrual cycle (Bullivant, Sellergren, Stern, Spencer, Jacob, Menella & McClintock, 2004). Thus, male capacity for initial sexual arousal may be greater than for females if seen from a cerebrostructural perspective, from sex hormone receptor distribution differences in the brain, and from gonadal activity.

Masters and Johnson (1966) reported that aside from obvious anatomic variants, human males and females are “homogeneous in their physiologic responses to sexual stimuli” (p. 285). In their quadriphasic human sexual response cycle of excitement, plateau, orgasm and resolution, similarities rather than differences in objective physiological responses to sexual stimuli were emphasized. Differences appeared largely in the timing of the responses. As an example, the researchers found that there was turgidity or tumescence in the nipples of both males and females, although the increase in nipple diameter rather than in nipple length develops late in excitement or early in plateau phase, but not before the plateau phase is well advanced for the human male. The same temporal differences were observed in the male and female sex flush, which originates over the epigastrium and spreads over the anterior chest wall in both sexes. In addition, with the exception of the forearms and shoulders, the flush is rarely seen in the male other than in the primary sites of epigastrium, chest, neck, face and forehead, whereas in the female, said flush may spread over the thighs, arms and even the low back and buttocks. Tachycardia developing during arousal has been described in both sexes; parallel blood

pressure elevation in response to sexual arousal has also been recorded. There is a secondary vasocongestive response to the excitement phase level of sexual tension that is identical for both sexes in their genitals. In the male, the scrotal integument thickens and the scrotal sac elevates. In the nulliparous female, the labia majora elevate and flatten against the perineum, whereas in the multiparous female, the labia separate from the midline and thicken from venous congestion. And while penile erection has been observed to occur in less than 10 seconds for the sexually responding male under 40 years of age, the comparable pre-menopausal female response to the onset of sexual stimulation is transudate vaginal wall lubrication in 10-30 seconds from onset of stimulation. Independent of the findings of Masters and Johnson, however, researchers have surmised that slower female arousal patterns stem from low blood flow to the clitoris. Evidence for this hypothesis has never been found, since there has been no reliable method of measuring physical changes within the clitoris during arousal (O'Connell, Sanjeevan & Hutson, 2005).

In their landmark reports of sex histories of over 16,000 individuals, Kinsey, Pomeroy, Martin & Gebhard (1948, 1953) reported that men are sexually aroused far more easily and frequently by visual stimuli than women. Based on this voluminous research data, Kinsey drew the conclusion that this is a characteristic difference of females in general. Subsequent to ideological shifts within the field of human sexuality, there have been significant trends in the literature to minimize sex differences in visual arousal. Kinsey's research results have been attributed to the sexual repression of women prior to the Sexual Revolution, and to Kinsey's reliance on retrospective reporting instead of laboratory findings of immediate measurements. In addition, feminist psychologists and sex researchers such as Leonore Tiefer (1991) have questioned

Masters and Johnson's human sexual response cycle and the trend of equalizing male and female arousal at the expense of women's feelings of inadequacy. Symons (1979) remarked that as long as any differences in male and female arousal was felt to be detrimental to women, experiments would continue to be designed and interpreted to emphasize similarities rather than demonstrable differences. Nevertheless, several valid studies have indicated that both men and women usually experience sexual arousal when they voluntarily expose themselves to erotic stimuli. Despite these findings, Symons cautioned that these laboratory conditions may not necessarily have mirrored natural conditions. While male and female research subjects respond sexually under experimental conditions, sex differences in motivation for arousal in every day circumstances have not diminished, and that the market for female pornography is minuscule. In response to these claims which have been construed as androcentric among feminists in particular, there is a different market of *erotica* explicitly designed for female arousal, and distinguished from male pornography in its disavowal of depicting women's bodies as "depersonalized objects" (Boston Women's Health Book Collective, 1998). Money and Ehrhardt (1972) suggested that although males and females may respond with equal arousal to erotic images, they do so differently. The researchers hypothesized that while the male subject identifies the female in the visual image as "the sex object" with which to copulate, the female subject is aroused by the same image because she subjectively identifies with the female as an object to whom men respond sexually. Support for this interpretation can be found in Heiman's (1975, cited in Symons, 1979) experiments with college students listening to audiotaped descriptions of various male-female human interactions. Both men and women responded most strongly to the descriptions of erotic activities in which the female was

the sexual aggressor and in which descriptions focused on the female's body rather than the male physique. But it is the result of exposure to control tapes that may be more significant in assessing differences in male-female arousal; the male response to a non-erotic control tape was stronger than the strongest female response to an erotic tape. Since explicit pornography and even tapes describing erotic interactions are artificial stimuli and do not represent ordinary interactions between men and women, these results may bolster the notion that there are significant differences in the way males and females construct arousal cues. A more recent study using thermal imaging technology for the first time ever to measure sexual arousal rates confirmed that there was no statistically significant difference in the amount of time it takes healthy young men and women to reach peak arousal (Kukkonen, Binik, Amsel & Carrier, 2007). Thermal imaging, or thermography, is infrared imaging using thermographic cameras that detect radiation emitted by objects based on their temperature. During the arousal experiment, male and female subjects watched separate sexually explicit films obtained from the Kinsey Institute and determined to be sex-specifically arousing. Subjects watched the images through special video goggles to minimize distractions. As the subjects responded, the research team monitored body-temperature changes to within a 100th of a degree from a computer in another room. Both the men and the women began showing arousal within 30 seconds. Males reached maximal arousal in 664.6 seconds and females in 743 seconds, which was not deemed statistically significant. In studies of traditional and preliterate societies, cross-cultural evidence suggests that the tendency of human males to become sexually aroused by the sight of females, especially female genitalia, and to engage in significant efforts to view said genitalia and other parts of the female body if concealed, simply has no parallel among human

females and is largely incomprehensible to women. Anthropological data emphasize the likelihood of male sexual arousal in the presence of exposed female genitalia (Symons, 1979). Ford and Beach (1951) maintained that there were no societies in their sample where females were permitted to expose their genitals unrestrictedly, and they hypothesized that covering female genitalia served to prevent accidental exposure that could provoke arousal and male sexual advances. From an evolutionary adaptational standpoint, selection may have favored male abilities to evaluate reproductive value through visual cues, particularly since females no longer are estrous and ovulation is concealed. The ability to become aroused quickly, indiscriminately and with minimal amount of cues may have favored male sexual selection and reproductive fitness, while conversely, females whose investment in offspring is significant would only be distracted by indiscriminate arousal from male genitalia. Hence, there is no corresponding benefit for females in sexual arousal from efforts to view male genitals. The "controversy" regarding male-female arousal may be summarized as follows: Men and women differ less in their processing of physiological and psychological arousal than they do in how they negotiate sexual activities and in the dynamics of the sexual relationships they are motivated to seek (Symons, 1979). Thus, although a woman may become aroused when viewing pornography in controlled conditions, she is unlikely to spontaneously react with indiscriminate arousal at the sight of unknown males displaying their genitalia.

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