

REVIEW

Cosmetic perfumes vs. human pheromones (natural chemical scents) of the human female and male in signalling and performing context of their sexual behaviour

Zaviacic M¹, Sisovsky V¹, Zaviacic T²

Department of Pathology, Faculty of Medicine, Comenius University, Bratislava, Slovakia. milzav@chello.sk

Abstract: Scent communication in man is undoubtedly of importance, although it is unconscious, rather than active, as compared to subhuman primates. Besides human sexual life it also affects a number of further characteristics of human life and its infrastructure including the mother-child relationship, creation of the odour basis of the family with the possibility to identify the family members solely by their odour as well as other parameters investigated thus far.

Pheromones have effect upon the selection of a suitable partner of the opposite sex (or of the same sex in homosexual partners). The formation of specifically significant responses during communication between the two sexes, first of all in sexual life and its manifestations, may also be influenced by pheromone-based perfumes or classical cosmetic perfumes, as far as they are selected and used appropriately. The situation is much easier if the partners are of the olfactory type where for both partners the mutual olfactory parameters are the most attractive for their sexual life and its parameters, which significantly contributes to the quality of their overall coexistence (Ref. 29). Full Text (Free, PDF) www.bmj.sk.

Key words: cosmetic perfumes, human pheromones, pheromone-based perfumes, human sexual behaviour.

Concise characteristics of the cosmetic perfumes and their role in human life

The dependence of parameters of human sexuality on the olfactory characteristics of humans are mentioned in the ethnographically written books by Robert T. Francoeur (1), Catherine Blackledge (2) and other authors listed in our latest study (3), but also in our previous publications (4, 5).

Some secretions of the scent glands of mammals (*Mammalia*) have been in use as basic components in human perfumes since long. As examples may be mentioned secretions of the perianal glands of certain African, Asian, and Siberian animals (*Viverra*, *Civettictis*, *Moschus moschiferus*). The pheromones of subhuman mammals in the cosmetic industry have specific properties. They are rather used as fixatives or as vehicles to ingredients of the perfume odour, however, their own pheromone effect is employed to a lesser extent (6).

Current knowledge in this field began to develop in the 40s last century, when the German expert in perfume industry, Paul

Jelinek, divided the odours into four groups that can easily be combined with each other. In his opinion these four basic odours are of refreshing, erotising, exciting, and narcotising nature. For instance, the basis of refreshing perfumes are aliphatic aldehydes and, similarly, also other perfumes are characterised by relatively exactly defined sources, as referred to in another of our publications (5 Zaviáčič *et al.* 2008 and the references listed therein). The cause that certain perfumes are attracting one's attention while others, on the other hand, are not, is attributed to volatile oils and to the respective components of the perfumes. Antierogenic effects have been reported in sage, coriander, silver fir, camphor, mint, lemon balm, creeping thyme, cypress, eucalyptus, and rosemary. In contrast, erogenic effects are known in amber, jasmine, cinnamon, civet, Roman chamomile, clove, ylang-ylang, vetyver, velvet tuberose, santal wood, and among the rare substances they are viola leaves, mimosa, castoreum, fleur d'orange, musk and rose. Narcotising effects have anise, nutmeg and mace, and star anise (7).

On the whole, three groups of perfumes are currently discussed in general. The first group comprises six wood scents, the second consists of six citrus scents, and the third group is a combined group made up of wood and citrus odours (8).

It can be historically documented that perfumes played and still have been playing an important role in human life. Mainly in the past, when the hygienic requirements were not so high as today, the perfumes with their odour offered a possibility to conceal the smell of the unclean human body. Even later, when in

¹Department of Pathology, Faculty of Medicine, Comenius University, Bratislava, Slovak Republic, and ²Helios Klinikum GmbH, Frau-Mutter-Kind-Zentrum, Erfurt, Germany

Address for correspondence: M. Zaviacic, MD, DSc, Dept of Pathology, Faculty of Medicine, Comenius University, Bratislava, Slovak Republic, Sasinkova 4, SK-811 08 Bratislava 1, Slovakia
Phone: +421.2.59357588, Fax: +421.2.59357592

civilised societies the high and regular hygienic standards became an important part of lifestyle, the perfumes have not lost their significance. Besides overt positive properties, we currently also witness extraordinarily intensive advertisements of a number of perfumes by the cosmetic industry. This results in their massive purchasing and usage in exceedingly large amounts. In the end, this unfavourably affects the natural mechanisms of action of human pheromones in the olfactory communication between male and female as well as in other activities of the human sexual behaviour.

Pheromones of the human female and male, their sources and function

Pheromones, sexually attractive scents (9, 10, 11), are natural chemical substances that send signals towards the opposite sex. They elicit very strong responses and reactions chiefly in sexuality, in their manifestations, and in other parameters characterising the behaviour of the opposite sex (12). In monozygotic twins the odour of their pheromones is identical to that extent that even a police dog is unable to distinguish between the two individuals (13).

The source of pheromones in both sexes are mainly the apocrine sweat glands, in contrast to the eccrine sweat glands that do not play such a role. They are located mainly in the axilla and on the external genitals. In the female they are located on the *labia majora pudendi* and on *mons Veneri*, in the male they can be found chiefly in the anal and perianal region (*scrotum, perineum*). With respect to the anatomical characteristics of genitals in both sexes it is not surprising that in the female the *vulva* and its anatomy ensure a higher production of pheromones and their easier action than in man, not only in the axilla and the genitals, but also in the auricular channel, beneath the ears, around the nipples, in the umbilical region, thus also these regions are individually a source of large amounts of pheromones. In the civilised man in whom the genitals are hidden under the underwear and cloths, an easier communication of axillary pheromones is enabled directly during the summer season when this part of the human body, especially in the female, is naturally more exposed and is easier accessible to follow-up of olfactory signals. However, it should be stressed that the current fashion of axillary and genital depilation, mainly in the female, strongly reduce the presence of pheromones in these regions, thus the spectrum of their action is negatively affected in both sexes. It is surprising that the situation in this field is so far advanced that women, but also men (mainly in the homosexual community of gays) with normal axillary and pubic hair are shown only exceptionally, largely in older retro-shots on PC. The preferred, for present-day PC users the attractive predominance of representatives of both sexes are those with removed axillary and pubic hair.

In the past, people living in primitive societies – but also today, under conditions of natural co-existence between man and Nature, the individuals of *Homo sapiens* may get into a more intensive contact with the signals existing in the scent communication in higher primates including also man. An evidence of the

role of pheromones viewed this way may be the published observations from certain Pacific islands where the natural odour of the human body is considered erotising, chiefly if it originates from the female genitals. In southern New Guinea the axillary odour acquires an exceptional communication and social significance. To demonstrate the friendly feelings towards the visitors to this territory, the aborigines wipe out sweat from the visitor's armpit, smell it, and subsequently spread it over their chest (14). An identical ritual has been observed among gorillas where the male touches the female's genitals and armpits – more intensively if the female is in oestrus – he smells it, and spreads the scent over his chest (15).

In man, the importance and uniqueness of natural and artificial scents (odours) in his life, first of all sexual life, has long been a controversial field, even though as early as in the early 60s there were authors (16, 17, 18) who stated that the perception of scents and odours in man is as important as in the subhuman primates, though it may be – and largely is – rather unconscious. Although in man the perception of odours and scents is more discrete as compared to subhuman primates, it remains firmly fixed in human memory and this, in this context, entitles to refer to “olfactory memory”. Man is capable of identifying olfactorily the individual members of his family.

Women are able to perceive mainly musk-like scents and odours more sensitively and more strongly than men, first of all if they are in their fertile period, and during ovulation, when this ability attains its peak as compared to menopause (13). It has been known for more than 30 years that women very attractively and intensively respond to the male pheromone androstene, in contrast to the male himself in whom no such favourable response to this pheromone exists, or even this pheromone elicits an unfavourable aversion in him. In the human male this pheromone occurs in the axillary sweat produced by apocrine glands of the armpit, but was also found in his urine. This might also explain certain specificities in differential behaviour of some nurses while collecting urine from male and female patients.

The significance of scent communication via pheromones in man may support some interesting observations regarding synchronisations of the menstrual cycle among women working or living together over long periods of time and influencing each other by their pheromones (1, 19). Yet more interesting may be the observations supporting the significance of man in this scent communication. The pheromones of the male have been shown to intensively affect the functions of the female genitals. *Coitus*, besides its basic role played in reproduction, also elicits the release of characteristic scent substances (pheromones) first of all from the genitals of the females that are otherwise, during non-coital activities, largely less involved and in the female produce lesser amounts of these scent substances as compared to her axilla. Absorption of pheromones during the coital physical contact between man and woman results later in the regulation of basic functions of the female genitals (20).

Women who have sexual intercourse at least once a week usually have a more regular menstrual cycle, fewer problems with infertility, and a milder menopause as compared to women with

a more sporadic coital rate or if this sexual activity is completely absent. Relationships between regular sexual life and the reproductive cycle of the woman have repeatedly been discussed by Cutler (21).

The olfactory sensitivity is one of the most important properties of communication between mother and child (22). It is known that the neonate, from the very beginning of his life, prefers the milk of his mother to that from an alien nurse, doing this solely on an olfactory basis. These olfactory bonds between mother and child are long-lasting and their duration exceed the breast-feeding period in the child's life and can repeatedly be demonstrated (13). Very soon these olfactory parameters became part of the odour basis of the family (see "the family scent") when the mother, solely on the basis of odours, can safely identify the cloths of her baby, and an identical situation of safe cloth identification appears in the male (father) as far as it is him who lives continually with the baby from the very beginning of the baby's life (23).

Pheromone-based perfumes, their sources, and significance to man and the sexual life of the human male and female, or their homosexual partners

Currently the cosmetic industry pays great attention to pheromone-based perfumes, mainly due to their significant financial attractiveness. Their list shown here is far from being complete because it has been relatively quickly completed by new pheromone-based perfumes, thus the basic assortment has a fast turnover (24).

Among the characteristic male pheromone-based perfumes can be mentioned P6, P6 mega, and P6 super. They should ensure success among women. Another male pheromone-based perfume is Human eph, representing the unique combination of a pheromone with a volatile oil. Farther, another male pheromone-based perfume is Passion men, one of the traditional products containing small amounts of androstene, and a high concentration of copulin. The male Feromax (Pheromax Pheromone) has the same composition as that of the women and comes to the marked in a most prestigious container.

Likewise, interesting is the assortment of pheromone-based perfumes produced for women. One of the latest, prepared using a novel formulation, contains di-propylene glycol, essential oils and SD 40-B, representing a unique combination of a pheromone with a volatile oil. According to the advertisement, also Pheromone Passion is to ensure the woman success during her intimate meeting with her partner, or during business negotiations. The ladies' pheromone-based perfume Pheromax Pheromone contains a pheromone and copulin at an extremely high concentration and is an exceptionally valuable pheromone-based perfume marketed in a luxurious aluminium container.

The role of pheromone-based perfumes is usually the compensation for the individual's set of pheromones, or to provide pheromone substances to the male or the female sex in form of a perfume in cases when the natural pheromone production in the male or the female is for any reason low or is totally absent.

They contribute to the favourable response of the opposite sex, in homosexual individuals of the same sex, in creating sexual contacts, and in making the quality of sexual life of both sexes better during cohabitation, in particular in cases when the partners are of the olfactory type with all the specificities that characterise them. Besides subjective positive anamnestic information from male and female individuals using pheromone-based perfumes, there also exist objective, statistically significant data on improvement of the socio-sexual behaviour of man after their usage. Besides the frequency of coitus, they also concern the ritual of the joint sleeping of partners, increased petting activities, as well as kissing frequency between them (25, 26, 27). Sexually attractive pheromones isolated from the axillary secretion (sweat) from sexually active fertile women were used in the chemical synthesis of a new pheromone. This resulted in interesting observations also in menopausal women. During a 6-week administration, like in fertile women, the petting and kissing frequencies increased, however the frequency of masturbation did not increase after the administration of this new pheromone (28).

References

1. **Francoeur RT (Ed)**. *Becoming a Sexual Person*, 2nd Ed. New York; Macmillan Publishing Co; Toronto; Colliere Macmillan Canada, 1991: 677 pp.
2. **Blackledge C (Ed)**. *The Story of V. Opening Pandoras Box*, 1st Ed. London; Viedenfeld-Nicolson, 2003: 322 pp.
3. **Zaviacic M, Sisovsky V, Palkovic M, Zaviacic T, Ablin RJ, Whipple B, Holecová M, Kováčiková Z**. Ethological-sexual characteristics of some subhuman primates as compared to selected parameters of human sexuality: the role of scent signalisation among animals and the scent communication of humans in their sexual behavior. *Sexuológia/Sexology* 2008; 8(2): 7–15.
4. **Zaviacic M, Whipple B**. Female ejaculation, The Human Female Prostate and The Human Female Sexuality: Specific Components of Female Sex Biology. *Sexuológia/Sexology* 2001; 1: 12–18.
5. **Zaviacic M, Zaviacic T, Sisovsky V, Palkovic M, Whipple B, Ablin RJ**. Functional Morphology of Woman's Genital Tract and Female Genitals of Some Subhuman Primates: Signification of These Informations for Comparison of Sexuological Parameters. *Slov Gynecol Porod* 2007; 14: 8–15.
6. **Berliner DL, Jennings-White C, Lavker RM**. The human skin: fragrances and pheromones (Review). *J Steroid Biochem Molec Biol* 1991; 39: 671–679.
7. <http://www.sexus.cz> (11.7.2008)
8. **Jellinek JS**. A note on odor complexity. *Chemical Senses* 1990; 15: 491–493.
9. **Stoddart DM (Ed)**. *The scented ape: The Biology and Culture of Human Odour*. London; Cambridge University Press, 1990.
10. **Poran NS**. Cyclic attractivity of human female odours. *Advanc Biosci* 1994; 93: 555–560.
11. **Vroon P, van Amerongen A, de Vries H. Smell (Eds)**. *The Secret Seducer*. New York; Farrar, Straus, Giroux, 1994.
12. **Stedman's Medical Dictionary**. 25 International Ed. Baltimore; Williams and Wilkins, 1990: 1784 pp.

- 13. Veselovský Z (Ed).** Ethology. Biology of Animal behaviour. Praha; Academia, 2005: 408 p.
- 14. Money J, Musaph H (Eds).** Handbook of Sexology. Elsevier — North-Holland Biomedical Press, 1977.
- 15. Keverne EB.** Pheromones and sexual behavior. 413—428. In: Money J, Musaph H (Eds). Handbook of Sexology. Elsevier — North-Holland Biomedical Press, 1977.
- 16. Fitzherbert J.** Scent and sexual object. Brit J Med Psychol 1959; 32: 206—209.
- 17. Fabricant N.** Sexual functions and the nose. Amer J Med Sci 1960; 239: 156—160.
- 18. Sokolov JJ, Harris RT, Hecker MR.** Isolation of substances of human vaginal secretions previously shown to be sex attractant pheromones in higher primates. Arch Sex Behav 1976; 5: 269—274.
- 19. McClintock M.** Menstrual synchrony and suppression. Nature 1971; 229: 244—246.
- 20. Stern K, McClintock MK.** Regulation of ovulation by human pheromones. Nature 1998; 392: 177—179.
- 21. Cutler WB.** Lunar and menstrual phase locking. Amer J Obstet Gynecol 1980; 137: 834—839.
- 22. Eibl-Eibesfeldt I (Ed).** Die biologie des menschlichen Verhaltens. München; Piper, 1986.
- 23. Porter RH.** Olfaction and human kin recognition. Genetica 1999; 104: 259—263.
- 24. <http://www.eroticstore.cz/feromony>** (16.6.2008)
- 25. McCoy NL, Pitino L.** Pheromonal influences on sociosexual behaviour in young women. Physiol Behav 2002; 75: 367—375.
- 26. Cutler WB, McCoy NL, Friedmann E.** Pheromonal influences on sociosexual behavior in men. Arch Sex Behav 1998; 27: 1—13.
- 27. Winman A.** Do perfume additives termed human pheromones warrant being termed pheromones? Physiol Behav 2004; 82: 697—701.
- 28. Friebely J, Rako S.** Pheromonal influences on sociosexual behaviour in postmenopausal women. J Sex Res 2004; 41: 372—380.

Received December 20, 2009.

Accepted May 5, 2009.