

The science of sexual intimacy

By: June Cheong

Sex - it's all in your head, really.

Contrary to popular belief, sexual arousal starts in your brain, not in the nether regions.

Of course, hardwired into the human being's DNA is the instinct to have sex, which is Nature's canny way of propagating the species. The brain and private parts must then work in sync.

'There's a mind component however,' said Dr Peter Lim, the president of the Society Of Men's Health and a private andrologist.

'If a medicine is given to knock off the paraventricular nucleus - the brain's sex centre - you'll have no sex drive,' he said.

To put it simply, the act of romantically sniffing each other - or even looking at an erotic image - sends sensory impulses to the paraventricular nucleus, stimulating your sexual urges. The brain's reward system, the ventral tegmental area, also encourages having sex by inducing feelings of pleasure.

It is especially true for men.

'A man's most important sexual organ is his brain, not his penis,' said Dr Ng Kok Kit, a consultant in the department of urology, andropause and men's health clinic at Changi General Hospital.

It is a little different for women.

Beyond sexual impulses and hormonal influences, women require love, friendship and emotional intimacy from men before they get aroused sexually, said Professor Ganesan Adaikan, a clinical sexologist with the department of obstetrics and gynaecology at National University Hospital.

What drives men and women to have sex

Libido, or the sex drive, is primarily driven by hormones.

Testosterone - present in both sexes - is the hormone that causes most of the changes in a boy's body during puberty. It is also what drives both men and women to have sex.

Oestrogen, together with luteinizing hormone (LH) and follicle-stimulating hormone (FSH) - both stimulate the development of sexual organs in both sexes - is what causes a girl's body to mature and is necessary for maintaining a woman's libido.

This is why kids turn into sex-starved teenagers when puberty hits and hormonal levels are ramped up.

Men peak sexually between their teens and 20s, urologists and andrologists told Mind Your Body. Women usually enter their sexual prime when they are in their early 30s.

Dr Michael Wong, the president of the Singapore Urology Association and medical director of Singapore Urology & Fertility Centre, pointed out that testosterone in a man usually stays high until he hits 40.

Dr Brian Yeo, a consultant psychiatrist in private practice, explained the consequences of men starting out early in life with high testosterone levels: 'There's this thing with young men about how many women they've bedded. It's easier for men to have sex without emotional bonds.'

'There are a lot more men searching for commercial (paid) or consensual sex than women. It's due to testosterone and the man's cultural background and upbringing.'

After 40, a man's testosterone level drops between 1.2 per cent and 5 per cent every year.

'Testosterone production declines with age and, with that, a man's libido will drop. Frequency of intercourse and masturbation will decline too,' said Dr Gan Tek Kah, a general practitioner from Singapore Men's Health Clinic.

Some 50 per cent of men aged 50 and above will have some degree of erectile dysfunction while 20 per cent of men older than 60 years have low testosterone levels, which may lead to loss of sex drive, erectile dysfunction and lethargy, among other symptoms.

However, sperm is produced and replenished constantly so men can be fertile into their 60s or 70s.

That is how it is with men - they generally peak early and fizzle out gradually.

Women, on the other hand, hit their sexual stride in their late 20s or early 30s before their libidos crash after the age of 40 or menopause.

Dr Peter Chew, a senior consultant obstetrician and gynaecologist at Peter Chew Clinic For Women, said: 'Sex can still be there after menopause but it declines with age. Women can still desire sex but they won't have sex so often.'

Asked whether older folk can still have sex, Dr Yeo said: 'It's a slow burndown. It's possible to have sex but its frequency will not be as high as when you were a teenager. And your positions may have to be more conservative.'

Cocktail of chemicals

When a couple have sex, their bodies go through four phases: excitement, plateau, orgasm and resolution.

Excitement, the first stage, is when desire and arousal occur.

This is what happens in a man: He receives stimulation, which can range from the visual (in the form of an attractive partner) to the tactile (in the form of touch and stroking), and his brain sends out signals to his penis via the spinal cord.

Neurochemicals like endorphins are produced and circulated in the whole body. Nitric oxide is produced by nerves in the penis and expands blood vessels there, enabling the spongy tissue of the penis to be filled with blood and thus becoming erect.

In the woman, signs of sexual arousal include secretion of vaginal fluid and erect nipples. A cocktail of chemicals, including oxytocin and dopamine, are released in a woman's body throughout sexual intercourse.

The couple enters the plateau phase when sexual stimulation is more intense and orgasm is imminent. Breathing gets heavy and heart rates shoot up, and the lovers may experience sex flush, or red spots on the skin.

Dr Christopher Chong, an obstetrician, gynaecologist and urogynaecologist from Chris Chong Women And Urogynae Clinic at Gleneagles Hospital, said: 'Sex hormones like testosterone, oestrogen and oxytocin are increased. This can cause a woman's breasts to swell and her womb to contract.' The womb contracts so as to suck in sperm for fertilisation.

As orgasm approaches and with increased blood flow to the vaginal area, a woman's clitoris swells and the inner lips of her vagina thicken while the outer lips flatten.

Orgasm marks the sexual climax, comprising a series of involuntary muscle contractions accompanied by a sudden release of endorphins and a feeling of euphoria.

In the man, orgasm involves rapid rhythmic contractions of the prostate, urethra and the muscles at the base of the penis, followed by the ejaculation of semen through the tip of the penis.

Dr Ng said: 'Men usually have a single orgasm. Some men may report multiple orgasms but it's probably because they did not ejaculate completely the first time round.'

In the woman, rhythmic muscular contractions in the uterus, outer vagina and anal sphincter occur and may spread through her body.

Initial contractions may occur at intervals of one second or less and subsequent ones may be spaced further apart. A mild orgasm can have three to five contractions while an intense one usually counts 10 to 15 contractions.

After the orgasm, the body returns to its normal, unaroused state. Some women may experience several more orgasms before calming down.

After ejaculation, the man enters a refractory phase, where the penis becomes flaccid and he cannot be sexually stimulated any further. Depending on the man's age, physical fitness and libido, the refractory period can range from 15 minutes to one day.

A study last year found that satisfactory sexual intercourse - from penetration until ejaculation - for couples lasts from three to 13 minutes.

The survey, which looked at the ideal length of time to have penetrative sex, was conducted by 34 American and Canadian sex therapists.

The time does not count foreplay and the therapists rated sexual intercourse that lasts from one to two minutes as 'too short'.

Professor Adaikan said a couple is at the peak of their love and intimacy, and hence sexual desire, between three months and two years into their relationship.

Asked how he would define 'good sex', Dr Adrian Wang, a consultant psychiatrist at Gleneagles Medical Centre, said: 'Sex is not just for reproduction, it's an expression of love and commitment.'

'However, men tend to see sex on a more basic, primal level and find the physical aspects of sex more gratifying. Women tend to emphasise more on the emotional and psychological components.'

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<http://health.asiaone.com/Health/Men%2527s%2BMatters/Sexual%2BHealth/Story/A1Story20090723-156640.html>