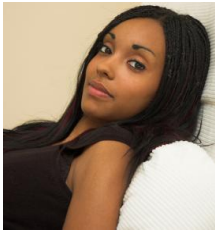


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By: Stefan Anitei, Science Editor



Stress Induces Sterility in Both Women and Men

Naked mole-rats could now provide further explanation

It is well known that stress can indeed suppress reproduction in humans. Researches showed that stress-reducing therapy made women regain their fertility. Scientists at Emory University in Atlanta, Georgia, found cognitive behavior therapy alone was enough to restore periods in some women. High levels of stress hormones in women can provoke irregular ovulation and also fallopian tube spasm in women and low sperm count in men. The difficulty of trying to conceive can - in itself - raise the stress level, resulting in a vicious circle. Sometimes, women trying to conceive a child by IVF can later fall pregnant naturally, when the stress cause had disappeared. Now, researchers studying African naked mole-rats have achieved new clues on how stress can induce infertility in humans. Dr Chris Faulkes of the University of London found that stress induced by the queen female (these rats have a social organization similar to that of the bees!) stopped ovulation in the female workers and lowered the sperm count on male workers. "A better understanding of what is going on in naked mole-rats could lead to a better understanding of the mechanisms involved in some stress-related infertility in humans and other mammals," said Faulkes. The tiny, blind, hairless subterranean rodents live in social colonies of 100-300 animals in the semideserts or dry savannas of Africa, but only the "queen" mole-rat reproduces, suppressing fertility in both the females and the males around her by bullying them. These females and males form a cast of sterile workers, just like in social insects (bees, ants or termites). "The queen exerts her dominance over the colony by, literally, pushing the other members of the colony around. She shoves them to show who's boss," explained Faulkes. "That the stressful domination reduces fertility hormone levels-effectively suppressing puberty in young mole-rats, lowering sperm counts in males and even turning off the female ovulatory cycle . The queen also seems to exert control over the breeding males, so that concentrations of their testosterone are suppressed except when she is ready to mate," he added. This way, almost all the individuals of the colony can direct their energies towards foraging for food in a tough environment, ensuring the survival of the whole community, instead of wasting energies in mating and reproductive behavior. "Social suppression of reproduction in marmoset monkeys is very similar to that in naked mole-rats, and as these are primates the applications to understanding human stress-related infertility aren't so far fetched. In humans, we know that various kinds of stress - physical and psychological - can affect fertility. Stress and fertility areas of the brain are closely related in most mammals, so careful comparisons of mole-rats to humans could reveal how genes, environment, up-bringing and culture contribute to human infertility," said Faulkes. "There is no doubt that both being diagnosed with fertility problems as well as undergoing fertility treatment is incredibly stressful. It is important that we look at all factors which might affect fertility and possibly impact on the success of any treatment," said Clare Brown of Infertility Network UK.