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Department: Nursing Science

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Assignment

Discuss the factors facilitating the movement of sperm in the female reproductive tract

Sperm cells are introduced into the female reproductive tract by the penis of the male during sexual intercourse. About 2-3mls of semen is ejaculated into the vagina close the cervix, contained in this ejaculate are about 300 billion sperm cells of this billions of sperm cells, only a few millions of sperm cells get into the cervical canal. This is about 3% of the ejaculated sperm cells. Only about 0.1% gets to the uterus amounting to a few thousands of sperm cells. Half of this will go to the empty fallopian tube while the other half goes to the fallopian tube containing the ovulated egg. In about 30-60 minutes after ejaculation, about a few dozens of sperm cells get to the ovum in the ampula of the oviduct.

Factors facilitating the movement of sperm in the female reproductive tract include:

1. The alkaline secretions from the prostate gland into the semen help to create an alkaline environment in the acidic vagina to protect sperm in the vagina
2. Prostaglandins present in the semen and also in the female reproductive tract, facilitates muscular contraction to help the movement of the sperm towards the oviduct
3. Estrogen and Oxytocin secreted in the female help to assist myometrial contraction in order to facilitate the upward motility of sperm towards the oviduct

4. Estrogen facilitates the production of a watery mucus in the cervix during the timing of ovulation to allow easy passage of sperm
5. In the female reproductive tract, sperm undergoes capacitation, this occurs after the sperm membrane becomes more fluid ensuing the removal of cholesterol and glycoprotein from the membrane in order to expose the zona pellucida binding site. There is a change in the sperm membrane potential that permits calcium to enter the sperm to facilitate vesicle release or acrosomal reaction. Also during capacitation of sperm, there is phosphorylation of numerous proteins needed in fertilization.