**NAME: BEN HORSFALL BOBBY**

**DEPARTMENT: NURSING**

**MATRIC NUMBER: 18/MHS02/055**

**COURSE: PHYSIOLOGY**

**Question**

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

At coitus, human sperm are deposited into the anterior vagina, where, to avoid vaginal acid and immune responses, they quickly contact cervical mucus and enter the cervix. Cervical mucus filters out sperm with poor morphology and motility and as such only a minority of ejaculated sperm actually enters the cervix. In the uterus, muscular contractions may enhance passage of sperm through the uterine cavity. A few thousand sperm swim through the uterotubal junctions to reach the Fallopian tubes (uterine tubes, oviducts) where sperm are stored in a reservoir, or at least maintained in a fertile state, by interacting with endosalpingeal (oviductal) epithelium. As the

time of ovulation approaches, sperm become capacitated and hyper activated, which enables them to proceed towards the tubal ampulla. Sperm may be guided to the oocyte by a combination of thermotaxis and chemotaxis. Motility hyper activation assists sperm in penetrating mucus in the tubes and the cumulus oophorus and zona pellucida of the oocyte, so that they may finally fuse with the oocyte plasma membrane. Knowledge of the biology of sperm transport can inspire improvements in artificial insemination, IVF, the diagnosis of infertility and the

development of contraceptives.

**FACTORS THAT FACILITATE SSPERM TRANSPORT IN THE FEMALE REPRODUCTIVE TRACT.**

**SEMEN**

* Alkaline secretions from prostate gland into semen
* Prostaglandins cause myometrial contractions

**FEMALE REPRODUCTIVE TRACT**

* Oestrogen and oxytocin cause myometrial contractions
* Oestrogen facilitate the production of watery mucus in the cervix.

**CAPACITATION**

Sperm must undergo capacitation in the female reproductive tract prior to fertilizing egg.

* Occurs after the sperm membrane becomes more fluid via the removal of cholesterol and removal of proteins and carbohydrates from the membrane that may otherwise block sites that bind to zona pellucida
* A change in membrane potential that permits Ca2+ to enter the sperm via a voltage-gated mechanism to facilitate vesicle release for the acrosome reaction
* Phosphorylation of numerous proteins needed in fertilization.