



## Impacts of oxytocin (injection) hormone in milch cattle and human being.

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### **Abstract:**

Through my research paper, I want to draw attention to the fact that nowadays a lot of oxytocin hormone is being used by cattle owners and dairy operators for milking animals, which has a bad effect on the health of animals and human beings. If the milk of these animals is used by humans, then it also has some bad effect on their health, Infertility in animals due to removal of milk from oxytocin injection, lack of pregnancy in time, weakness and other types of diseases are arising.

Oxytocin is a neuropeptide hormone, is chiefly synthesized in the hypothalamus gland in brain as 126 amino acid and is transferred to the posterior pituitary after proteolytic activity stimuli. Not only from brain, OT is also synthesized in various other tissues and disulphide bond binding. Oxytocin hormone reaches all parts of the body by mixing with the blood and completing certain physiological activities. organs, including the uterine epithelium, ovaries, testis, vascular endothelium cells and heart. During feeding, the concentration of the hormone oxytocin in the plasma increases, which allows milk to be released.

Therefore, whereby the synthetic oxytocin hormone can be used to secrete milk after child birth. Synthetic oxytocin injections are now being used to milk most dairy animals, which can have fatal consequences. Due to the rapid release of milk through synthetic oxytocin, farmers and dairy farmers in India are using it indiscriminately. In all the mammals OT is secreted endogenously for induction and maintenance of labour at birth process and for milk let down in lactation.

It causes uterine contraction and milk-ejection through promotion of myoepithelial- cell's contraction which surrounds milk alveolus.

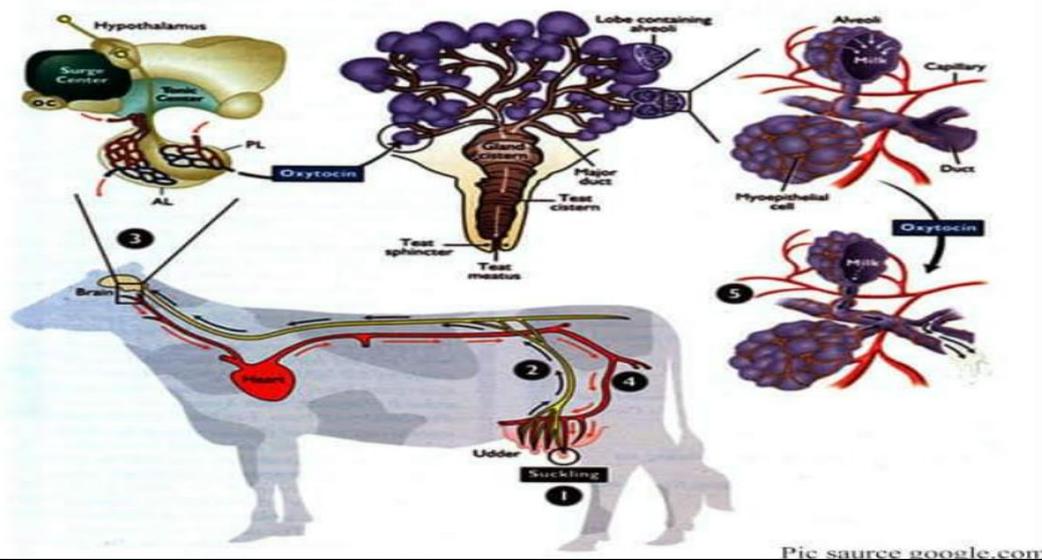
The pituitary gland is a gland through which the hormone oxytocin is released into the blood. Due to this hormone, it is easy to give birth to a child, That's why this hormone is called love hormone. During childbirth, excessive production of prostaglandins causes contraction of the uterus, which leads to easy delivery of the baby. Women who have mild pain during delivery can be promoted by giving synthetic oxytocin The bond between mother and child is strengthened by carrying milk from the duct to the nipple by the hormone oxytocin to nourish the new born. When we go to have a relationship with our partner, at that time also there is a release of the hormone oxytocin, due to which we get go in the depth of love. That's why it has earned the nicknames, "love hormone" and "cuddle hormone." This literature is important to understand the disadvantages of exogenous use of oxytocin in milk industry. It is a study about OT administration and its residual effects. The purpose of writing my paper is that some people can improve and increase their knowledge by reading it.

**Key words:** *Infertility, Pregnancy, Lactation, hormone, Oxytocin, farmer.*

## Full Paper

### Introduction:

Due to the rapid modernization and renewal happening in the society, we are facing many problems, some new diseases and new things are emerging day by day. The way it is increasing, due to that we need more amount of resources and production, due to which we are crossing any limit to increase the production capacity of anything, we are not seeing that Changes in the capacity of this thing can have serious consequences in the future. Man is using new chemicals and catalysts to produce more variety of food items, due to which production is increasing but its quality is being affected greatly. Such as tampering with natural things to produce more quantity of fruits, vegetables and milk can have fatal consequences.



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My topic is also important because milk is known as a complete diet, all the vitamins and proteins are found inside it, which full fills our physical needs and energy and if we mix other chemicals in any milk or milk If the animals are harmed, then the direct effect will be on their body in some way or the other and due to the changes in the body, the same effect can be visible in their milk also.

OT is a peptide hormone released from the posterior pituitary gland. The release of OT from the posterior pituitary is regulated by sensory stimuli rising from the cervix, vagina and the reflux of milk from the mammary glands. Stimulation of the cervix in pregnant animals triggers neural signals to the hypothalamus, causing secretion of OT, and nipple/nipple suction stimulation along the same pathway he releases OT.

It is also known as Pitocin. Large amounts of milk are stored in the alveoli and ducts of the breast and are transported by neuroendocrine reflux through her OT to the cisternal space to produce milk. Oxytocin is released from the pituitary gland upon nipple stimulation. It contracts the myoepithelial cells around the alveoli and ducts of the breast. The milk is then transferred to the ducts, the cisterna of the gland and the nipple . Synthetic OT is used all over the world and in my country (India) approved by the Food and Drug Administration.

It is commonly used to prevent postpartum haemorrhage, termination of treatment, and induction of labour, thereby providing postpartum lactation. This is now increasing daily. In the United States (USA), OT was used in 18.4% of all births, a rate reported as 20% in 2000. OT is injected into animals before or during milking. This removes all residual milk, as not all milk is removed from the breast.

With OT, up to 90% of the milk is removed from the breast during normal pumping . Prolonged use of Exotic OT reduces milk yield. The effect of OT injections on milk yield varies between 10-15.5%. The dose and timing of OT injections control breast milk production. In Pakistan, OT is available over-the-counter at low prices and is widely used for milk production and milk production.

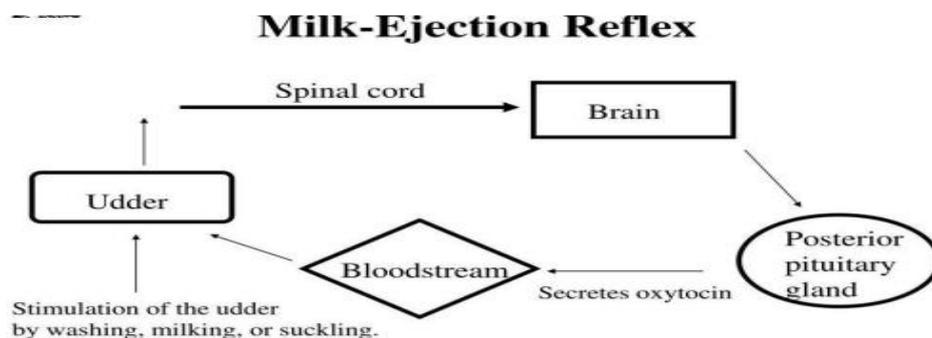


Fig 1: Milk Ejection Reflex

Oxytocin receptors are

This image is taken by [Science for Agriculture and Allied Sector – A Monthly e Magazine](#)

present on smooth muscle cells and myoepithelial cells. Milk is expelled from the milk ducts by contraction of myoepithelial cells. Oxytocin receptors are also present in the myometrium and endometrium, which are activated at the end of pregnancy. The half-life of oxytocin is 2-8 minutes. Basal concentrations of oxytocin decreased during early to mid-lactation, increased during mid- to late-lactation, and increased further during late-to-dry lactation. Benefits of Oxytocin Injections

### Effects on milk production:

Increases milk production. Instead of removing residual milk, glandular milk production increases. Although it is clear that the production loss that occurs with once-daily milking is reduced by having the udder completely drained and free of residual milk during milking, ↑ milking rate is not effective in reducing losses. It turns out not. Exogenous oxytocin injection outside the milking period increases milk yield and improves galactogenesis (maintenance of milk production). Thus, oxytocin influences cell maintenance and breast milk metabolism, in addition to its traditional role of facilitating milk delivery. Using oxytocin to promote milk production can help prevent breast damage and promote breast health, especially if your mammary glands are full of milk.

### Effect on milk composition:

Chronic administration of oxytocin has also been shown to increase the conductivity and SCC (somatic cell count) of milk, and the levels of lactose and K in the systemic circulation.

### Impact on reproductive health:

Oxytocin is involved in the reproductive process causing the uterus to contract. Similarly, oestrogen-dominant myometrium, such as that seen during ovulation and labour, appears to be more responsive to oxytocin, resulting in greater uterine contractions. Release of oxytocin at this point is associated with subsequent uterine muscle contraction and appropriate stimulation, assisting sperm transport into the fallopian tubes during copulation and foetal expulsion at birth. Therefore, it plays an important role in the completion of fertilization and childbirth processes. Oxytocin is also released into the blood during sexual orgasm in both women and men

### Disadvantages of exogenous oxytocin effect on milk production:

Breastfeeding without oxytocin administration appears to become more difficult in animals that are regularly exposed to oxytocin injections as they become accustomed to the drug. But

## Reproductive Effects:

Long-term use of oxytocin injections is also thought to cause fertility problems such as reduced fever symptoms, shorter lactation duration, lower conception rates, and increased embryonic mortality. increased miscarriage rate, decreased fertility potential, delayed placental expulsion time, reduced ovulation interval, reduced postpartum oestrous interval, and calf mortality immediately after calving due to reduced milk supply and quality were also observed.

## Effects on Human Health:

Oxytocin produces the desired effect within minutes, after which it is easily converted to an inactive product. It does not enter the bloodstream in its active form. However, it has been thought that milk containing oxytocin has detrimental effects when consumed by humans. For example, oxytocin, found in milk and dairy products, significantly reduced the age of menarche in girls from 16 to 10 years. Gynecomastia (breast enlargement) is also diagnosed in boys due to the effects of oxytocin. Oxytocin is clearly responsible for imbalanced hearing and decreased vision in children. Pregnant women should avoid such milk or use milk without proper decoction. Use of such milk by pregnant women may lead to miscarriage. Babies can also be born with malformations and low levels of immunity. The use of such milk also increases the risk of bleeding in the mother after childbirth.

## Abuses:

Exotic OTs alter the pH, fat, lactose and protein levels of the milk compared to other animal milks. OT injection in India. Used intramuscularly by farmers without a veterinarian's prescription, it reduces production and fertility in animals. Treatment reduces milkfat content but does not alter fatty acid composition. regular use Buffalo and bovine OT cause reproductive defects: recurrent oestrus, luteal cysts, placental retention, and follicular ovarian cysts. It also prematurely the corpus luteum. Calves fed OT milk have shown delayed puberty, reduced fertility, foetal death, labour difficulties, and miscarriage rates. OT injections have detrimental effects such as breast cancer, cancer growth, hair loss, and growth failure [50]. Vegetable farmers widely used OT in fruits and vegetables, as well as in watermelons, as they believed it would increase yields. In India, it is reported that hundreds of girls are kidnapped and given OT injections to quickly reach puberty, and these girls are forced into prostitution. OT causes a water rush characterized by weight gain, loss of appetite, nausea, and vomiting. It can also affect the uterus, damage to the foetus, and can lead to heart failure, seizures, and even death from an overdose.

## Conclusion

Oxytocin is best known for diluting milk, so using large amounts of oxytocin to increase milk production has detrimental effects in animals. Responses to natural lactation stimuli is reduced. Hormones also cause the cow's uterus to contract, causing severe pain. For these reasons of the widespread unethical use of oxytocin injections, oxytocin is prohibited under Section 12 of the Animal Cruelty Prevention Act (1960). Due to the Food and Consumer Goods Adulteration Act and the Drug Control Act, it cannot be sold without a doctor's prescription. Therefore, judicious use of exogenous oxytocin supplements, along with sound advice on both milk production and animal health issues can help. It adversely affects behavioural stress indices and rectal temperature in local crossbred cattle. Cows do not adapt to injections of oxytocin and saline, and their health deteriorates significantly. We recommend using positive stimulation to induce milk flow while avoiding oxytocin injections as much as possible.

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