

# Free research paper on reversible inhibition of sperm under guidance risug vasalg...

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## **Introduction**

When choosing about a topic that falls in line with the human sexuality and protected sex, one tends to think what would contribute to our global community in totality. A concept is only powerful if it is presented clearly and its application is interpreted effortlessly.

Numerous scientists around the world have failed to crack the accurate formula of a Male Reversible Contraceptive. This does not show the right attitude towards innovation, but it does look like a clear challenge.

Currently estimated to be beyond six billions, the world population is anticipated to double in the next four decades. The projected growth is likely to trigger severe congestion that will have an untoward effect on the planet's ecological health. According to a recent study conducted by the U. N., majority of men in several nations are willing to contribute to family planning by taking charge of their fertility (Tulsiani et al). Nevertheless, the currently

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available traditional contraceptives for men are either irreversible or have greater failure rates. Hence, the contraceptive prerequisites of hundreds of thousands of men go unfulfilled each day leading to millions of unwanted or unplanned pregnancies, and millions of abortions. Since the invention of oral contraceptive for women more than fifty years ago, there have been tremendous amount of collaborative attempts by researchers/ scientists and pharmaceutical companies to increase the power and availability of contraceptives to women who want to safely shape their reproductive physiology. But in case of men, the contraceptive options remain unchanged in several years and are still restricted to condom usage and withdrawal method or undergoing a minor surgery called vasectomy which prevents the secretion of spermatozoa on ejaculation (Jha et al).

Indeed, the first two approaches are associated with comparatively greater typical-usage failure rates, while the last technique is highly irreversible and not recommended for younger patients. Regardless of continual efforts globally, we may still be far from offering safe, effective and affordable male contraceptives that will help both men and women to enter into family planning.

Many potential targets exist for a male reversible contraceptive. A human sperm is produced inside the testes and proceeds through the vas tubule, travelling across numerous secretory vessels on its way, that supply nutrients. The problem lies in the quantity of mature sperm produced on daily basis thereby making it more difficult to target male reproduction as compared to the one egg developed once in a month of the female cycle.

However, one can target: hormones controlling spermatogenesis, halt sperm production, decrease movement or binding capability to the egg.

Throughout several years, scientists have attempted to target nearly all of the areas stated previously.

Use of cannabis blocks sperm development based on conventional Peruvian Male Contraception.

The cotton plant produced *Gossypium* stops spermatogenesis but leads to increased levels of calcium in the blood and is shows erratic irreversibility in some males.

Wet heat technique can be applied for 45 minutes every day for 21 days to achieve 6 months worth of birth control; but it's a lengthy and painstaking method. Another method is use of Oleanic acid.

Furthermore, hormonal based techniques contribute to significant depression rates among men and other severe side effects related to them.

Today, the only methods of contraception undertaken by men are condoms, surgeries or the highly unreliable withdrawal method. Here, a reversible male contraceptive would prove incredibly effective and would be highly beneficial in global health care. For such products to be marketable, they must be easily available and inexpensive to manufacture (Jha et al). The development of a polymer that can be injected to cover the inner surface of vas deferens and handicap the sperm as they travel across is currently underway.

## **Reversible Inhibition of Sperm Under Guidance details:**

RISUG, short for Reversible Inhibition of Sperm Under Guidance, has been invented by Dr. Sujoy Gula in India, and is currently halfway through the Stage 3 clinical trials. Also termed as Vasalgel, RISUG is a viscous polymer injected into the vas deferens to form a coat on its inner lining. Once the coat is formed, the polymer actively disables sperm so as to prevent them from binding to the egg, thereby avoiding pregnancy. The method lasts for minimum 10 years. Vasalgel is by far a promising birth control technique for men, which is more easily reversible in comparison to Vasectomy. This revolutionary method is said to be 100% effective in clinical tests and is void of any controversial hormone therapy.

## **Working of Vasalgel**

The process starts with a non-toxic polymer or gel being injected above the scrotum instead of making a slit as seen in a vasectomy procedure. The polymer, as a security system, coats the inside surface of the vas deferens i.e. the tube through which the sperm pass above the scrotum. This coating action disables or weakens the sperms as they pass through the tube so as to weaken them to fertilize an egg. In one hour's time, the drugs generate an electrical charge that neutralizes the spermatozoa's electrical charge, thereby restricting it from penetrating the ovum. The outcomes are same as that of vasectomy however with added benefits such as its simplicity, pain-free treatment and easy reversibility. To restore fertility, the patient can be injected with another injection that will simply flush the polymer out of the system.

## **Findings of RISUG experiment:**

After experimenting RISUG on more than 250 participants, Dr. Guha confirmed that this treatment has negligible side effects apart from the slight swelling on scrotum in some men instantly after they were injected, which only lasted for a few weeks (Borgobello).

Low manufacturing cost and simpler marketability makes RISUG offer an affordable and long-term remedy to unwanted pregnancies in growing countries. Moreover, in developed nations, this technique would provide women a reliable permanent option, free from the several side effects of consuming long-term birth-control medicines, while also greatly decreasing the count of abortions. On the other hand, it would offer men an easier and trouble free solution from condoms and a winsome alternative to vasectomy (Giford).

Researchers suggested that if RISUG can be proven to be safe, secure, effective, and reversible, then men would find no reason to opt for vasectomy.

At present, RISUG is passing through upgraded clinical trials in India wherein several patients have been successful in using it for above 15 years.

Parsemus, a small foundation in the United States has bought the rights in a bid to commence RISUG trials as a move to further develop it for the global market. Parsemus aims at introducing Vasalgel to the U. S. market by 2015, as an attractive alternative to Vasectomy with clinical trials already underway.

However, RISUG would not prove to be a winner for pharmaceutical companies; since RISUG is a low-cost one-shot lifetime contraceptive that

doesn't need monthly prescriptions.

There are concerns whether or not RISUG can be a solution for protection against the spread of STDs. Nonetheless, studies are underway to test if it can be effectively used as an anti-HIV agent since it is believed that the styrene maleic acid can drop pH to a level where the HIV semen can be destroyed (Giford).

Previous studies have demonstrated that once the Vasalgel has been discarded from the patient's body, the sperm retain their original quality and return to normal conditions.

### **RISUG vs. Vasectomy:**

RISUG is claimed to be more beneficial than commonly used contraception methods, Vasectomy, in a couple of ways. Firstly, vasectomy involves making a small incision in the scrotum while the surgeon cuts one or both of the vasa deferentia. This will disallow the sperm to enter the seminal flow. As discussed above, in RISUG technique, the patient is given only a polymer gel injection called Vasalgel straight into the vas deferens rather than making an incision. The gel is layered on the tube surface and eventually kills any sperm wiggling by (McGeehon).

Second advantage is that RISUG gives immediate results and save patients time within which they become infertile. However, vasectomy may take up to 90 days to discard sperm out of the system. RISUG takes effect instantly with the best result seen after just 3 days (72 hours). Furthermore, a single shot of Vasalgel will last for minimum 10 years, with some patients witnessing the effect for 15 years. Reversing process of RISUG is simple and

straightforward. If a man wishes to conceive again, the original process can be voided by merely clearing out Vasalgel by injecting dimethyl sulfoxide. This compound is bio-acceptable and utilized in the medical treatment of several conditions. Reversing process of vasectomy is cumbersome where the patient needs to undergo medical operation to get his severed vas deferens reconnected (McGeehon).

## **Conclusion and Recommendation**

RISUG can be used in conjunction with other types of administration and lower levels of long-term nutrient supplies to provide beyond contraception as an advantage.

There are enormous options emerging and it is high time that every nation tries to utilize this potentially incredible and state-of-the-art technology. Men must be given the equality of choice as far as contraception is concerned. In order for Vasagel to be sanctioned and used outside of India, scientists must initiate clinical tests in those nations. However, researchers have begun formal toxicological studies in the U. S this year, anticipating having the treatment available by 2015.

Every country could make a difference and this powerful technology can be applied far and wide as a rescuer for overpopulation issues globally and promoting social equality. There can be no mission nobler than this one.

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