

## Human Sterilization - Biological Procedure for Family Limitation

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### Abstract

On the one hand, sterilization in practice is most commonly linked with the removal of microbes and biological organisms in biomedical laboratories and operating rooms in hospitals. In a medical clinical sense, sterilization means a medical intervention by which people are denied the possibility of procreation. This means that the people over whom this medical intervention is performed can not become parents.

Here it should be said that there are people who are naturally sterile or they have become sterile by some kind of disease. Thanks to the scientific achievements of modern medicine, sterility today is not a special health problem. On the other hand, sterilization represents a multidisciplinary combination of different areas that have a huge impact on human health as a whole. This paper is based on sterilization as a medical intervention by which people are denied the possibility of procreation.

**Key words:** *Man; Woman; Sterilization*

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### Introduction

Sterilisation is like a magic wand that eliminates and removes all microbes and biological organisms [1]. Sterilisation is used to create germ free environment and products, reduce the risk of microbial infections, food spoilage, or environmental decontamination, for the ultimate promotion or preservation of health. Sterilisation is basic to the processing of pharmaceuticals, vaccines, manufacturing of medical devices and hygiene products, food processing and many other fields.

Sterilisation is not achieved by sorcery or some wild imaginings, but by an understanding of the sterilisation of healthcare products and items that require more than following standards and guidelines and may involve a field of investigation requiring complementary disciplinary aspects of biology, chemistry, engineering, mathematics, medicine, quality control and physics. Sterilisation can be a complex mixture of technology and materials, and/or confounding product design, microorganisms and ecology that require the expertise of microbiologists and sterilisation technologists.

In the eyes of the lay person, sterilisation may be a specialty associated with reproduction and not within the world of the hospital and its mystique of microbial contamination control. Sterilization involves the termination of the ability to produce children [2]. Sterilization

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may be the desired result of a surgical operation or the incidental consequence of an operation to remove a diseased reproductive organ or to cure a malfunction of such an organ. When the reproductive organs are not diseased, most sterilizations are effected by vasectomy for males and tubal ligation for females.

### Methodology

About 5% of women over the age of 30 and about 20% of women under the age of 30 years complain about their decision. Men who complain about sterilization are less (about 5%) and they are more in younger age. This paper want to familiarize couples with advantages and disadvantages of sterilization as one of the possibilities of organizing a their common life.

### Fertility

Successful fertilization depends on a number of different factors in which oocyte and sperm quality are critically important [3]. In non-rodent mammalian species, the sperm's centriole-centrosome complex is essential for nucleating and organizing the sperm aster, zygote aster, first mitotic apparatus and all subsequent mitoses during embryo development.

After sperm incorporation, the sperm's centriole-centrosome complex recruits centrosomal proteins from the oocyte, a process that involves dynein functions to help transport of oocyte-derived centrosomal proteins along microtubules to the centrosome core structure. Pathologies in the sperm's centriole-centrosome complex or oocyte-derived centrosome defects can lead to fertilization failures or developmental abnormalities.

Data on conceptions link data on legal abortion and fertility, but to understand trends in the level and outcome of such conceptions, we require some knowledge of aspects of family building not covered so far [4]. The relationship between contraceptive behaviour and marital fertility can be explored by reference to data on family size preferences, unwanted pregnancy and contraceptive effectiveness. An understanding of fertility outside marriage requires some knowledge of trends in extra-marital sexual behaviour, alongside data on contraception and abortion.

Further issues arise over the question of childlessness where involuntary "biological" factors may be crucial. Responses to involuntary infertility may involve medical treatment or the "planning" of a family in the positive sense of adoption or various forms of artificial reproduction.

It's hard to imagine a more "biosocial" research arena than the study of human fertility [5]. Human biology provides the means for reproduction and defines the way in which it occurs, while human actors and the social worlds they occupy exercise considerable control over whether and when they have children. Thus, it is somewhat surprising that this critical interplay of biology and behavior has been so seldom the focus of research.

It harnesses the thinking of geneticists and biologists with that of demographers, psychologists, economists, and anthropologists to seek answers about the biosocial processes that influence fertility, answers that cannot emerge from research that focuses on the biological or the social alone. It is a welcome, and important, milestone towards the development of a fully interdisciplinary approach to the science of human fertility.

### Family Planning

Three groups - the family planning establishment, the feminist movement, and the "profamily movement" - have long-standing interests in some or all of the areas germane to family planning work: the legalization of contraception and abortion; the government's role as provider of social services; the proper design of health care services; and, perhaps most significantly, the public management of sexuality [6].

Each of these groups has articulated a certain version of what family planning should be (or not be, in the case of the profamily movement). Each, more to the point, would like to see its principles put into practice by those at the front lines of family planning. One might describe these three groups as “competing” for the loyalties of clinic-based workers.

Contraception had frequently been seen as a male responsibility involving abstinence, withdrawal or the use of a condom (sheath) which many men disliked [7]. Women had to put their trust in their husbands to limit their families. Previously, women had to visit doctors or hospitals for birth control advice and many women, especially those from the working class, found this medicalisation of contraception frightening and off-putting.

Family planning is an integral part of the health care of women [8]. By age 45 years, more than half of all American women will have had an unintended pregnancy and 3 in 10 will have had an abortion. Recognition of the potential for improved access to family planning services presents an opportunity to improve maternal mortality rates, population growth, and the status of women in society.

### Reasons for Sterilization

In contrast, there has been a very great increase in the number of patients requesting sterilisation as a means of family limitation [9]. The reasons for this may be primarily economic. In developed countries the strain of raising a large family is increasing, and women are demanding greater social freedom and a sexual life free from the chance of pregnancy. The pressure of world population problems, relaxation of legal restrictions and reduced risk of anaesthetic and operative complications have combined to encourage physicians to comply with this demand.

In many countries there is now little objection to sterilisation on request provided the patient has a full understanding of the implications, and equivocation or potential for psychiatric complications can be excluded. Although physician and patient must accept the irreversibility of the procedure it would be purblind to deny that both may have some knowledge of recent developments in procedures for reanastomosis of the fallopian tubes.

For some, unresolved anxieties may result in phobic avoidance of sexuality (another reason for delayed childbearing) [10]. Others may bypass the whole question of reproduction by opting for sterilisation, and/or other defensive psychological measures. Yet others show obsessional determination to control reproduction. Propelled by a blind need to disprove childish anxieties, some people manically dice with danger.

Women seeking permanent contraception in the late 1960s confronted several barriers [11]. These included the ambiguous legal status of sterilization, which led some doctors to refuse to perform the surgery for fear of litigation, and age/parity restrictions, which barred young women with small families from obtaining the desired surgery. The high cost of and medical risks associated with tubal ligation also stymied many women.

By the early 1970s, advances in surgical technology reduced the costs and the risks of tubal ligation, making the surgery more accessible and attractive to women. Until this time, tubal ligation was open abdominal surgery that required general anesthetic, and several days in the hospital, and included a six-week recuperation period. This changed when physicians revolutionized the technology of female sterilization by introducing laparoscopic methods that significantly reduced the cost and duration of surgery and minimized the medical risks involved, effectively making the procedure safer, more affordable, and less disruptive to women's lives and health. The combination of the AVS's (Association for Voluntary Sterilization) campaign, women's changing expectations of their contraception, and advances in surgical technology intersected to transform sterilization from a procedure associated with eugenics to one of the most popular methods of contraception in the country.

Many couples determined to prevent unplanned pregnancy via surgery found that while tubal ligation was out of reach, vasectomy was not. Most vasectomies were performed in physicians' offices, outside the purview of hospital administrators and policies like the 120 rule, and were far less expensive than tubal ligation. Hundreds of thousands of couples intent on limiting family size turned to vasectomy as a "solution" to their contraceptive problems, and in doing so, granted men a rather unprecedented responsibility for birth control. Likewise, as public concern about overpopulation grew in step with a swelling population control movement, men of all ages concerned about the problem chose to be sterilized as a political act, as a way of "doing their part" in the struggle to limit population size and environmental "dangers" caused by large numbers of people. Of course, men have used condoms for centuries, but condoms do not alter the body's chemistry or physicality like the Pill and IUD (Intrauterine Device) do, and as such do not involve the same levels of commitment and risk that women who use these methods assume.

The increasing use of vasectomy signaled both a new trend in contraceptive decision making between couples and the medicalization of male contraception. Since the 1930s, physicians dispensed the most effective methods of female contraception (the diaphragm, the Pill, and the IUD), while the most popular method of male birth control, the condom, remained available in drugstores and without a prescription. As vasectomy gained popular and medical support, men found themselves following women and turning to physicians for help controlling their reproduction. Men who had a vasectomy also assumed a historically female responsibility for birth control. Having adopted a method that was nearly foolproof, these men released their partners from the duty of employing contraception and the worry that it might fail.

### **Sterilization Process**

In the United States, sterilization is the most popular method of birth control for couples who want no more children [12]. Although sterilization is reversible in some instances, reversal surgery in both men and women is costly, complicated, and not always successful. Therefore, patients should be counseled carefully before sterilization and should view the procedure as permanent.

The sterilization procedure for men is called a vasectomy because the vas deferens ducts that carry the sperm from the testes are cut and fused or tied together [13]. For women, the procedure is called tubal ligation because it blocks the fallopian tubes, which carry the ovum from the ovaries to the uterus. There are two methods of tubal ligation: minilaparotomy and laparoscopy. The first requires a doctor to make an incision in the abdomen and then draw out the fallopian tubes to be tied together. The second, more recent method requires much smaller instruments with video technology that allow doctors to fuse the fallopian tubes with an electric current (or a band/clip) without opening the abdominal cavity.

The Essure System is a third option for female sterilization approved by the FDA in 2002, and it does not require extensive surgery. Doctors use a catheter to implant a small metal implant in the fallopian tubes that creates scar tissue that blocks the ovum as effectively as if they were cut. Women must wait three months for the tissue to form and until placement is confirmed by an X-ray. Women should expect that the final results of both surgical and nonsurgical tubal ligations are permanent. Although microsurgical technique may reverse both vasectomy and tubal ligation procedures, the rates of success are so low that men and women must treat them as irreversible.

### **Sterilization and Abortion – Methods of Birth Control**

No method of sterilisation is completely free of reported failures [14]. Probably the commonest reason for failure is that the wrong structure has been operated upon, usually the round ligament or the ovarian ligament. An essential precaution is that the tube is positively identified by looking for its fimbrial end which is quite unlike any adjacent structure. This is especially true during laparoscopy, when the view is necessarily more limited. It is generally considered that failures occurring within the first six months of sterilisation are more likely to be due to operator failure, whereas those occurring at more than two years after the operation are more probably due to natural causes.

Though still clouded by shame, secrecy and misunderstanding, abortion is as old as humanity and probably occurs in all cultures [15]. Throughout recorded history women have resorted to induced abortion to terminate unwanted pregnancies, regardless of religious or legal sanction and often at considerable risk. Voluntary regulation of family size was one of the earliest features of most human social groups, frequently implemented by abortion and infanticide.

The worldwide legal status of abortion ranges from complete prohibition to elective procedures at the request of the pregnant woman. In the wake of a growing awareness of population and environmental concerns, socioeconomic development, and recognition of the rights of women to control their own fertility, and aided by technological innovations, abortion has gradually emerged from an aura of social ambivalence.

In many jurisdictions, abortion has been, or continues to be, prohibited unless legal exceptions apply [16]. A notable exception to this approach can be found in the United States, where women have a constitutional right to privacy that encompasses the right to terminate a pregnancy (at least until viability, when the state's interest becomes compelling). However, in many jurisdictions where no such right is recognized, lawful abortion has historically been tethered to assessments of the danger posed by the pregnancy to the life or health of the woman.

Although this "maternal health" exception has been interpreted as broad enough to encompass abortion for serious fetal abnormalities, some jurisdictions have created a distinct exception to permit abortion to avoid the risk of "serious handicap." The impetus for such an exception has resulted from the tremendous recent advances in prenatal diagnosis. Although such advances have enabled these abortions to take place earlier in pregnancy, they have also enabled doctors to detect serious conditions only diagnosable later in pregnancy. Because these abortions sometimes occur after viability, arguments about "serious handicap" as a regulatory concept tend to converge upon arguments about the status of the fetus as birth approaches.

Legally induced abortion represents a medical service that, for example, in the Republic of Croatia provides in health institutions within the national public health system, and in private medical institutions which provide their services on the market of medical services [17]. Whether there is a medical institution of the state system or a private institution, the cost of a medical procedure abortions are not covered by health insurance, but they should be paid from personal funds. This fact clearly shows that this is a medical service that was provided to women for financial compensation and therefore falls within the scope of legislation regulating relations in the market.

### Conclusion

Surgical sterilization in women consists of lining of the tubal ligation, and in men of vasectomy. Science says that there are no significant long-term adverse effects, and the tubal ligation in women reduces the risk of ovarian cancer. The probability of short-term complications of vasectomy is twenty times smaller than in the case of tubal ligation.

After the vasectomy, it can reach the swelling and the pain of the scrotum, which usually retreats after one or two weeks. The tubal ligation is followed by complications in 1 to 2 percent of cases, with severe complications usually resulting from anesthesia. None of these methods provides protection from sexually transmitted infections. After sterilization it is no longer possible to have children.

About 5% of women over the age of 30 and about 20% of women under the age of 30 years complain about their decision. Men who complain about sterilization are less (about 5%) and they are more in younger age. Because of that, it is important to think well of it before decision on sterilization.

Although some peoples were complained for the decision to sterilization, it should be said that they are not all lost in the end. Modern medicine says that re-opening of procreation can be established, but its effectiveness is considerably reduced. The decision on sterilization is a very important decision in the life of individuals because their decision will mark they life.

The decision on sterilization should be made arbitrarily, without the pressure of the partner, the family or the environment. From a legal point of view, the patient undergoing the sterilization process should be given consent for the operation. The procedure can be performed without the knowledge of a partner, but according to the rules of good practice, medicine and law recommend the informing and consent of both partners.

Modern medicine is becoming more and more developed every day and can do a lot to make it possible for people to have a normal and quality life. Human sterilization is one of the important issues in this area. Couples considering sterilization as one of the options that should ease their life should first and foremost be familiar with the advantages and disadvantages of sterilization from a medical point of view. Since law is one of the areas that also treat sterilization, couples should be familiar with the legal aspects of this issue.

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