

**birth
control
handbook**



Birth Control Handbook

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introduction

I.

The Birth Control Handbook was one of the first major publications to seriously challenge the much posited "Population Explosion" theory. In the introduction of the revised edition (September 1969) we suggested: "The Population Explosion is only a threat to the supremacy of white nations which today, as in the past, are raping the Third World for wealth, resources and human potential. The Population Explosion is the natural increase of the black, brown and yellow peoples of the world and therefore brings out fear in the world's white minority, a minority that has, through the ages, exploited all other races with a ferocity and viciousness incomparable to any other human injustice."

Reaction to that statement from the establishment press and right-wing doctors was immediate. To our critics, and more importantly to our supporters, we promised more of the same in this edition.

As most people realize, the world is rapidly heading into a crisis situation. America tenuously maintains a false affluence and attempts to impose "law and order" on an increasingly dissident population. The only hope for American capitalism is to hold its great resources, its neo-colonies in the Third World, against the increasingly frequent wars of national liberation. In Southeast Asia, American scientists and the military have developed the perfect population control method: massive murder of "Oriental human beings". After returning from Southeast Asia, Professor Noam Chomsky explained: "It is important to understand that the massacre of the rural population of Vietnam and their forced evacuation is not an accidental by-product of the war". The theory behind American strategy, is stated by Samuel Huntington, chairman of Harvard's Government Department, when he says that the NLF is "a powerful force which cannot be dislodged from its constituency so long as the constituency continues to exist." Chomsky comments that the American answer to a people's war is to eliminate the people. (**Ramparts**, Aug. 1970).

Aside from bombs, napalm, and defoliants, Ame-

rica also relies on more subtle birth control methods to control the population of non-white people. One problem American scientists are running into is the unwillingness of many people to control their fertility to suit their white oppressors. The obvious solution to this dilemma is the development of non-voluntary contraceptive methods or sterilization programs. In an article printed in **Science** (Oct. 24, 1969), Carl Djerassi, president of Syntex Research, states: "... in developing countries, the 2 year dropout figure with IUD's or with the steroid oral contraceptives exceeds 50 percent... I am not convinced that any better results can be obtained with any method which requires a conscious act of conception control. For the populations of these developing countries it will be necessary to develop a procedure which produces, by a single administration of a birth-control agent, indefinite (but reversible) sterility..." Actually, such a chemical contraceptive is already being applied to non-white women in Third World nations. Injections of 150 mg. of a potent synthetic progesterone produce infertility for 8 to 24 months, and in some susceptible women, sterility is permanent. Women receiving this "contraceptive" are told that the drug is 100% effective for only 3 months. Scientists are using Third World women for experiments with various mechanical and chemical sterilants. Djerassi realizes that such experimental programs, supported by companies such as his own, might be suspect: "... it takes little imagination to predict what kind of major issue can develop from such a state of affairs, in which preliminary trials on human beings, under the auspices of technically advanced countries, are performed first in developing countries", and: "Even within the United States, some of the economically deprived black inhabitants of our urban ghettos attribute genocidal motives to family-planning programs in their areas."

These, "economically deprived black inhabitants" are correct in suspecting genocidal motives. A new and growing group in the United States, called "Zero-population" supports forced sterilization programs in Third World Nations. Commenting on an Indian government proposal to sterilize all males with 3 or more children, Paul Ehrlich, author of the **Population Bomb** and chief spokesman for

Z-pop says: "We (the U.S. government) should have applied pressure on the Indian government to go ahead with the plan. We should have volunteered logistic support... Coercion? Perhaps, but coercion in a good cause." James Ridgeway, editor of **Hard Times** describes Ehrlich's proposals as "therapeutic counter-revolution".

The majority of people in the world are starving. The real cause of this starvation is unequal and unscientific distribution of wealth between the "developed nations" and the "underdeveloped nations". Ehrlich, his Z-pop-ers and all the other "neo-Malthusian bullshitters" are supposedly blind to the grain rotting in North American grain elevators, the farmers being paid not to grow food, the milk being dumped into the ground, the pigs being shot and buried. Never once do they mention that only in respect of the laws of capitalism can food be destroyed in a starving world. The Z-pop movement suggests that people are starving because they dare to be alive, if they were not alive they would not starve. The solution that they suggest is genocide.

America realizes that Third World liberation movements are devoted to freeing their people from the strangulation hold of American neo-colonialism, and to an equitable redistribution of wealth. The next ten years are critical to liberation movements, and America is using every weapon in its fascist arsenal to combat them. The population control movement, supported by the Rockefeller and Ford foundations, is a weapon of imperialism. Let us not see the Z-pop-ers as youth devoted to a cause, intent on "saving the world"; for in reality, they are the dupes of the American monster pursuing a systematic genocidal program.

II.

The distortion of history is not new, but distortion of the history of women is a particular phenomenon. Women are usually considered sufficiently insignificant to omit from historical accounts; therefore any actions of women considered important enough to misrepresent, demand further investigation.

For most people, the name Margaret Sanger brings to mind a kind of Florence Nightingale image the frail young nurse (suffering from TB) who, after saving a woman from a butchered abortion only to see her die from a later attempt, devoted her life to the dissemination of birth control information. Books printed a bit closer to her time express admiration of her courage more strongly, even recording her willingness to go to jail for her cause, but the overall impression is still far from the truth.

Margaret Sanger, anarchist and active member of the American Socialist Party, published one of the first journals of women's liberation, called **Woman Rebel**, which contained articles on political questions and on sex education. This journal and her pamphlet on **Family Limitation** were banned from the U.S. mails under the Comstock Law. Instead of facing trial for "obscenity", she chose to flee the country to continue her work.

Margaret Sanger saw contraception as a prerequisite to the liberation of women. For her, voluntary motherhood would imply "a new morality

- a vigorous constructive, liberated morality which would prevent the submergence of womanhood into motherhood. It would set its face against the conversion of women into mechanical maternity". This basic freedom would in turn be the "keynote of a new social awakening".

The birth control movement has been so co-opted that it not only ignores but often betrays many of the goals which its founder had envisioned. The humiliating treatment of non-married and young women who ask for birth control information is unjustifiable. The condescending attitude of male gynecologists toward women cannot be tolerated further. The general state of ignorance on all medical matters, but especially contraception is perpetuated by the medical profession to its financial advantage. Such gross irresponsibility would be unthinkable in a profession sincerely committed to the alleviation of human suffering, but it is perfectly consistent with a profession committed only to the maintenance of its status and income.

The issue of contraception still contains radical potential - what was true in Margaret Sanger's day has not changed much. The quality of medical attention any woman receives is determined by her husband's or father's social class, not by her own needs. While politicians academically debate the laws, their wives and mistresses are breaking them.

The implications of effective contraception are important in the redefinition of women. Woman's sexuality must no longer be considered secondary to man's. If bearing children becomes an option, certainly the role of socializing children can be seen as a matter of choice as well. The independence to choose one's function within the society, rather than within the home is understandably frightening to many women. Such fears must be transformed into constructive action to oppose the forces of sexism. From the understanding of one's own oppression as a woman comes a better understanding of the oppression of others also enchained in master-slave relationships.

The Birth Control Handbook is produced not as a favor to an irresponsible medical profession nor as a favor to men who want an easy but "safe" lay, but as a political act. Organizations distributing the Handbook have a responsibility to continually raise the issues of women's liberation whenever dealing with birth control. All women have a responsibility to themselves and to their sisters to consider seriously how the politics of women's liberation relate to their own lives - relationships with men, attitudes toward children, status at work, attitudes towards establishment politics and institutions, and most importantly, their relationships with other women.

Margaret Sanger is only one of many heroic women whose devotion to the liberation of her sisters goes unrecorded. It is time to write our own history and to create a future adequate to our needs.

Women interested in the Women's Liberation Movement can contact the editors of the Handbook for information about action in their locality.

anatomy

Female reproductive structures

The female external genital organs, which are given the general name, **vulva**, include the following:

Mons veneris: This latin term describes the cushion of fat over the pubic bone which, from puberty on, is covered with pubic hair.

Labia majora: The folds of fat tissue on either side of the vaginal opening. are called the labia majora or "major lips". In children, the labia majora completely cover and protect the genital organs; in mature women, the lips remain apart. The skin, covered with pubic hair, becomes moist and delicate closer to the vaginal opening.

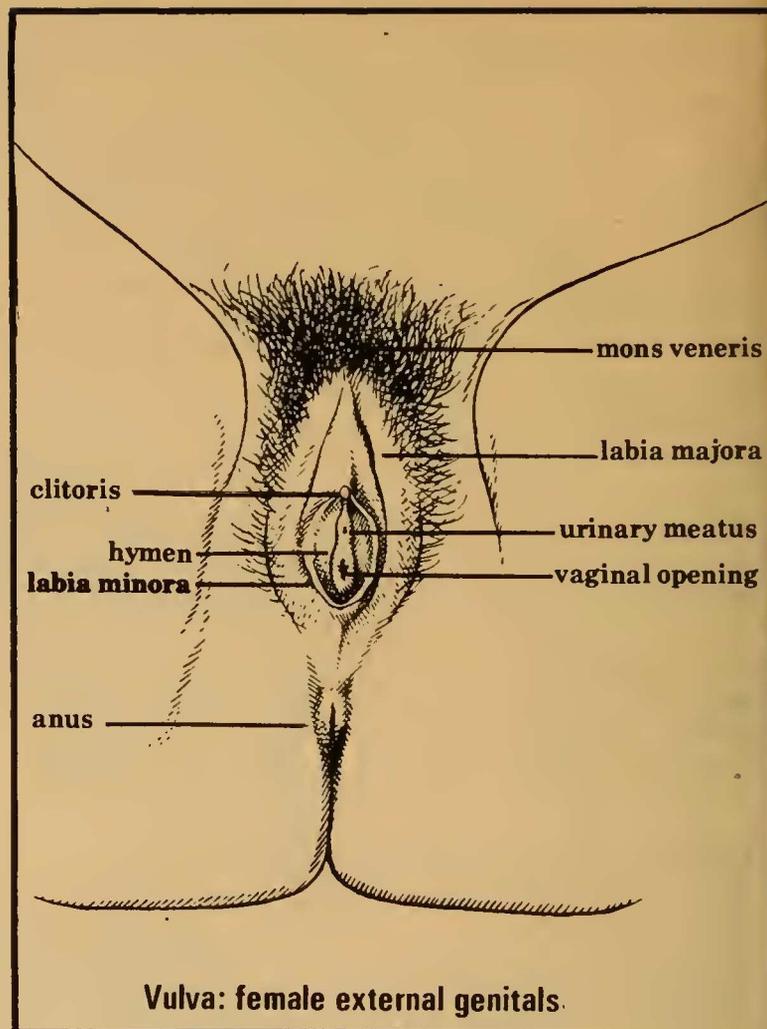
Labia minora: The "small lips" or labia minora are folds of sensitive, reddish tissue between the labia majora. When a woman is sexually excited, these small lips become slightly erect. They join in front forming the **prepuce** which covers the clitoris.

Clitoris: The clitoris, the most sexually sensitive of the female genitals, is located in front of (above) the urethral opening, and is partially covered by the prepuce. A homologue of the penis, the clitoris responds to stimulation by becoming slightly enlarged and erect.

Urinary meatus: The meatus, found between the clitoris and the vaginal opening, is the opening of the urethra through which urine is released from the bladder.

Bartholin's glands: The purpose of these two small glands, situated in the labia minora on either side of the vaginal opening, is not clearly understood. They release only a drop or two of mucus when a woman is highly excited sexually.

Hymen: This elastic membrane, also called the "maidenhead", is found at the vaginal entrance projecting from the vaginal wall. In most women, the hymen does not block the vaginal opening completely, allowing the menstrual flow to pass through. Rupturing of the hymen (loss of virginity) can be painless or quite difficult, and slight bleeding often occurs. Some women have the hymen broken medically before attempting sexual intercourse.



Vulva: female external genitals.

The internal female reproductive parts are:

Vagina: The vagina, located between the bladder and the rectum, is about 4 or 5 inches long. Normally its elastic walls touch each other but they stretch considerably during intercourse and even more during childbirth. When a woman is excited, lubricating mucous secretions pass directly from blood vessels in the vaginal wall into the vagina. Although externally the vagina is highly sensitive, the internal end has little sensitivity. The vagina ends in pockets about the cervix: those in front and back of the cervix are called the **anterior fornix** and **posterior fornix** respectively; those to the sides are called **lateral fornices**.

Uterus: The womb or uterus lies between the bladder and the lower intestine. Before the first pregnancy, it is about 3 inches long and 2 inches across at the widest point, and its thick muscular walls practically touch each other. After each pregnancy, the uterus remains slightly enlarged as does the cavity within it. Normally the top triangular portion bends slightly forward, and the lower portion points down and back toward the spine. When the top bends too far forward or backward, the condition is known as **anteflexion** or **retroversion** respectively. This can cause problems during pregnancy, abortion and with

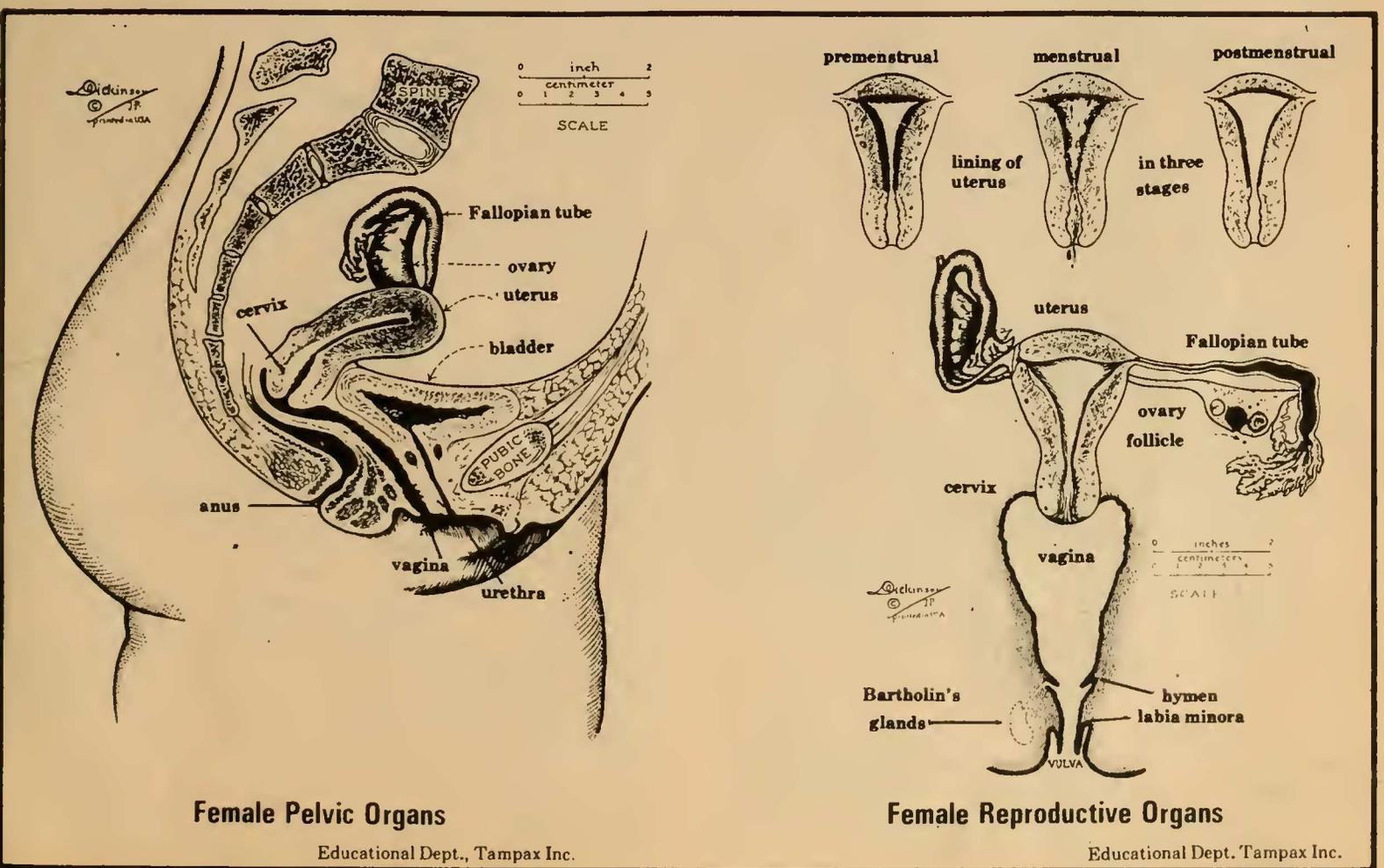
certain birth control methods. Internally the uterus is lined with a thick spongy tissue called the **endometrium** which is cast off as the menstrual flow once every 28 days if pregnancy does not occur. The lower part of the uterus which extends into the vagina is called the **cervix**. The muscular cervix contains the cervical canal which serves as a passage between the uterus and vagina. The opening of the cervical canal into the vagina, the **external os**, is round before the first pregnancy, and slit-shaped afterwards. The opening into the uterus is called the **internal os**.

Fallopian tubes: The two Fallopian tubes (oviducts) are attached high on either side of the uterus, and extend about 4 inches toward an ovary. At ovulation, a suction-like mechanism draws the egg toward the tube's fringed end; then rhythmic tubal contractions move the egg toward the uterus. Union of egg and sperm (**conception, fertilization**) occurs within the tube, which is less than 1/2 an inch in diameter.

Ovaries: The two ovaries (female **gonads**) lie on either side of the uterus. At birth, 100,000 to 600,000 immature egg cells (**ova**) each within a follicle are embedded deep within the body of the ovary. After puberty, the follicles move toward the ovarian surface; each cycle, several follicles develop but only one releases an egg ready for fertilization. The oval-shaped ovaries also release hormones which affect ovulation and development of the endometrium.

The Gynecological Examination

After puberty, a woman should have an annual gynecological examination. The doctor begins this routine medical procedure by questioning the woman about her medical history, and that of her immediate family. Of special interest are: the nature of her menstrual cycle, experiences with or plans for pregnancy, and use of birth control. The woman is then left alone in the examining room to undress completely, and is given a disposable robe to wear. The nurse records the woman's height, weight, blood pressure and draws a sample of blood for analysis. While the woman sits on the table, the doctor examines her head, neck, breasts, back, lungs, heart and abdomen. Then, the woman lies down and rests her legs in stirrup-like supports. A sheet placed over her lower body for the sake of modesty still affords the doctor adequate access to the vaginal area. For many procedures, the doctor inserts a metal speculum into the vagina to hold the vaginal walls apart. Cells for the **Pap test**, a routine procedure to detect cervical cancer, are obtained by gently scraping the cervix. An "internal" or pelvic examination is done by inserting two fingers of a surgically gloved hand deep into the vagina, and, with the other hand on the lower abdomen, feeling the reproductive organs.



Female Pelvic Organs

Educational Dept., Tampax Inc.

Female Reproductive Organs

Educational Dept., Tampax Inc.

Male reproductive structures

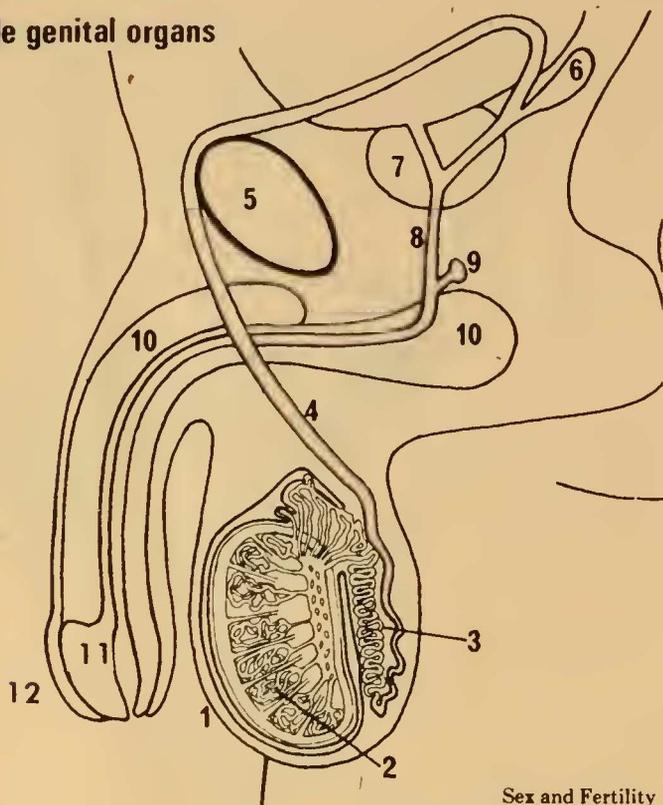
The penis and scrotum are the only parts of the male reproductive system which are external; the other structures rest within the lower pelvic area. **Scrotum:** The scrotum, a two-chambered sac lying behind the penis and between the legs, carries and protects the two testicles or testes. In sexually mature males the skin of the scrotal sac is wrinkled and covered with the pubic hair. The scrotum normally hangs loosely away from the body so that a temperature below normal body temperature is maintained in the testicles. This lower temperature is necessary for the production of sperm cells. In cold weather muscles in the scrotal wall contract to bring the testicles closer to the warmth of the

Testicles (testes): The two testicles are made up of tiny sperm-producing tubes called **seminiferous tubules**, and male hormone-producing cells called **interstitial cells**, lying between the tubules. At puberty, the tubules begin to produce millions of sperm cells continuously. Sperm production can continue until a man is eighty or ninety years old.

Epididymis: The seminiferous tubules lead into an oval cushion of tissue called the epididymis which is connected to the upper part of each testicle.

Vas deferens: The tubules making up the epididymis carry sperm cells into a single tube called the vas deferens (spermatic or seminal duct). The **spermatic cord** which consists of the vas tube intertwined with nerve and muscle fibers and blood vessels, can contract to pull the testes into the safety of the body.

Male genital organs



Sex and Fertility

1 scrotum, 2 seminiferous tubules, 3 epididymis, 4 vas deferens, 5 pubic bone, 6 seminal vesicles, 7 prostate gland, 8 urethra, 9 Cowper's glands, 10 erectile tissue, 11 glans, 12 foreskin.

Ampulla (seed reservoir): Each vas deferens leads upward from a testicle into the pelvis, passes around the urinary bladder and enlarges just before the prostate gland to form the ampulla. Contractions of muscles in the walls of the vas deferens push sperm cells into the ampulla. Each ampulla is about an inch long and less than an inch wide.

Seminal vesicles: Attached to the bottom of each ampulla is a gland called the seminal vesicle. These glands secrete a thick yellowish substance necessary for the survival of sperm cells and important in the composition of the final seminal fluid.

Prostate gland and urethra: The two vas tubes join within the prostate gland and enter the urethra. The urethra is a tube which carries urine from the bladder to the opening of the penis. The prostate gland produces a white alkaline fluid which mixes with sperm cells and the secretions of the seminal vesicles during ejaculation. This prostate gland secretion makes up the majority of the final seminal fluid, also called the ejaculate. Muscle tissue covering the prostate gland contracts during ejaculation forcing semen through the urethra and out the penis. The number of sperm in each ejaculation varies greatly in different men. An average ejaculation contains 350 million sperm cells.

Cowper's glands: These two small glands join the urethra as it leaves the prostate gland. Cowper's glands secrete a few drops of colorless alkaline mucus during sexual excitement.

Penis: The penis is a tubular organ made up of three bodies of erectile tissue which stiffen or "erect" when filled with blood. Physical or mental sexual stimulation causes the penis to engorge with blood and to become erect. The adult male penis is normally about $3\frac{1}{4}$ to $4\frac{1}{4}$ inches long; however, when erect it is usually 6 to $7\frac{1}{2}$ inches long and about $1\frac{1}{2}$ inches wide. Since the female clitoris and not the vaginal barrel is the center of female sexual sensitivity the length or width of the erect penis has little effect on the amount of pleasure a woman receives during sexual intercourse.

The skin covering the penis is loose and can move back and forth. At the base of the penis, this skin is covered with pubic hair. One body of erectile tissue expands at the top of the penis to form the glans. At birth, the glans is covered with the foreskin, which is routinely removed in many North American hospitals. The removal of the foreskin of male babies which is a Jewish and Moslem ritual, is called circumcision. Circumcision prevents the accumulation of smegma, a waxy secretion which forms below the foreskin. Uncircumcised men must pull back the foreskin and wash away accumulated smegma regularly. The glans of the penis, whether or not it is covered by the foreskin, is highly sensitive to sexual stimulation.

The urethra, which carries urine and, during ejaculation, semen, ends at the tip of the penis at the slit-like opening called the meatus.

hormones and the menstrual cycle

The **endocrine system** consists of various ductless glands and tissues, which release chemical substances called **hormones** directly into the blood stream. Because all hormones are interrelated, it is necessary to consider them in terms of hormonal interactions and balances, rather than individual substances. Hormones significantly affect all body functions; in fact, the endocrine system is considered a control mechanism for the entire body.

The **pituitary gland**, located at the base of the brain, is the most important endocrine gland. The pituitary apparently regulates action of all other endocrine glands. **Follicle Stimulating Hormone (FSH)** and **Luteinizing Hormone (LH)** released by the pituitary, affect the ovaries (female gonads) and thus are known as **pituitary gonadotropins**.

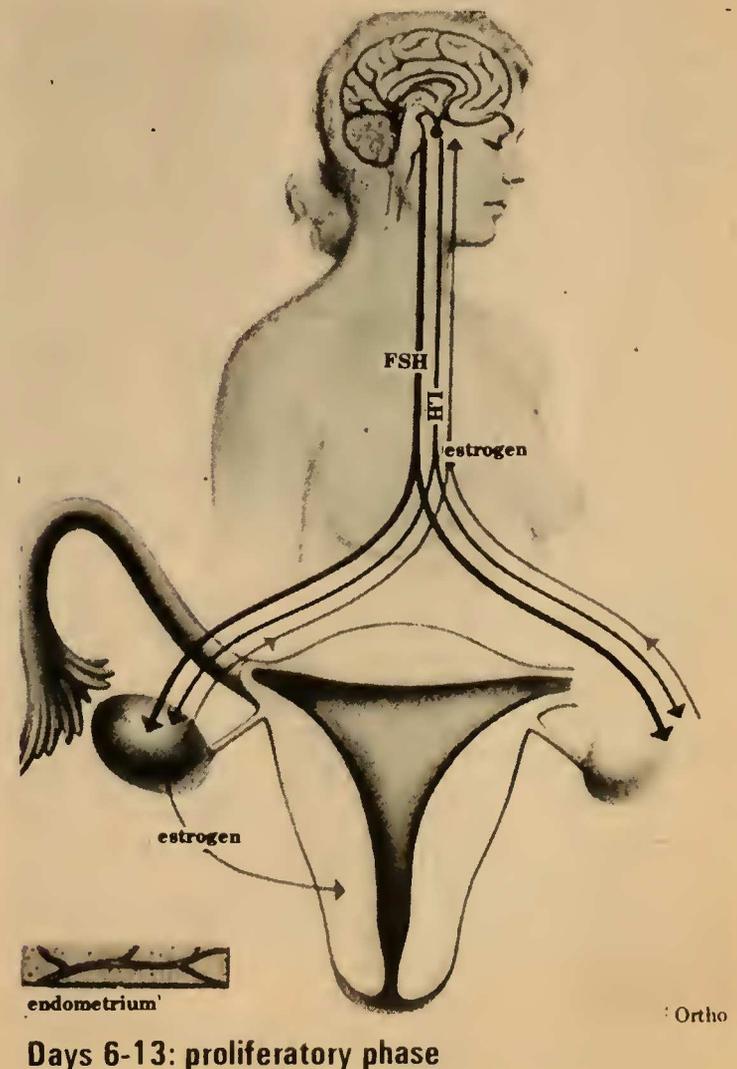
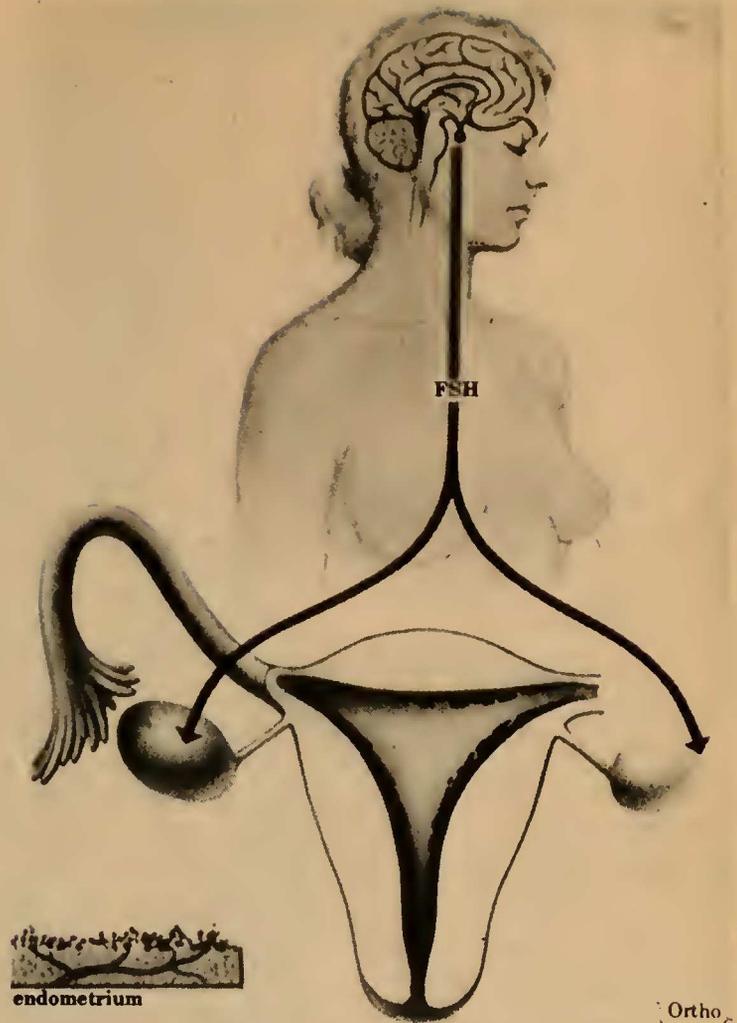
The gonads of each sex are also considered endocrine glands. The ovaries release sex hormones called **estrogen** and **progesterone** which play a major role in ovulation and in the cyclical development of the uterine lining.

Puberty is the general term for all the physical and psychological changes a girl undergoes between the ages of 11 and 17, including the appearance of pubic hair, breast development, and distribution of fat tissue, especially about the thighs and hips. The first menstruation or **menarche** is only one of these many changes, stimulated by the production of pituitary gonadotropins.

The average menstrual cycle lasts approximately 28 days. Some women have consistently longer or shorter cycles; others, especially young women, have cycles which vary in length. The menstrual cycle can be influenced by a change in climate or emotional stress. The first day of the menstrual flow is considered the beginning or day 1 of the menstrual cycle.

Day 1 - day 5: menstrual phase

The cycle begins with the shedding of the developed endometrium as the menstrual flow. Total blood loss during menstruation is about 2 to 4 ounces; most of the flow is fluid but occasional blood clots appear when the flow is heavy. The "period" lasts 3 to 7 days, usually heavy at first and tapering off at the end.





André Giguère

Three days before Thursday, maid's day off, they met in their special place, the bench beside the pond in the park. Lisa was shy but determined to be straight and honest as was her nature.

"I can't do it with you."

"Aren't your parents going away?"

"It's not that. Last night I got the Curse."

She touched his hand with pride.

"Oh."

"Don't be sad. We had a long talk. I told her about us, too. You see, I've got to act like a lady now. Girls have to act older than boys."

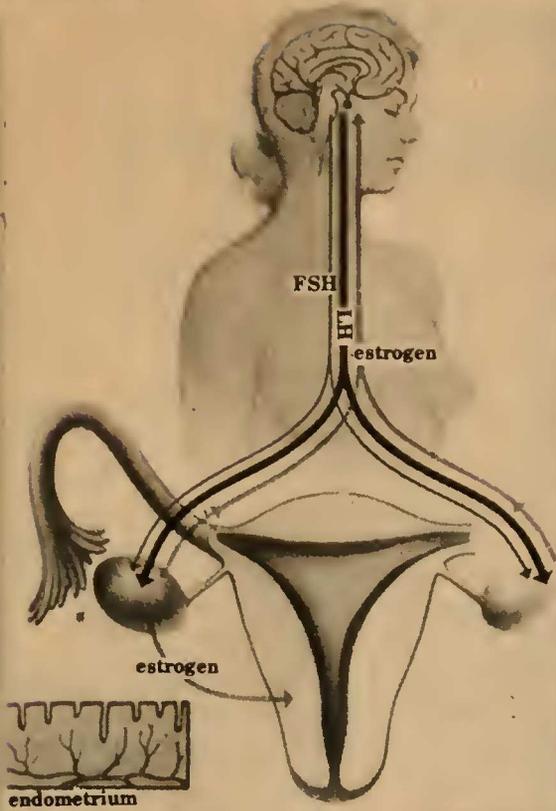
"Who's sad?"

She leaned back in the bench and took his hand.

"But aren't you happy for me!" — she laughed — "that I got the curse? I have it right now!"

- Leonard Cohen
The Favorite Game

Day 14: ovulation



Women use either external sanitary napkins or internal tampons to absorb the flow. A napkin (pad) is attached to a belt which holds it in place against the vulva. Napkins should be changed regularly since blood gives off an unpleasant odor when exposed to air. Internal tampons are held in the vagina by muscles at the vaginal opening. When inserted correctly, tampons cannot be felt. Tampons should be changed as often as the flow necessitates. Women with the hymen intact (virgins) can use tampons without difficulty. When the flow is extremely heavy, two tampons can be used at once. The second is inserted beside the first, and the strings should be tied together. Some women prefer to use a tampon and sanitary napkin to absorb a very heavy flow.

There is no reason whatsoever to prohibit sexual intercourse during menstruation.

During menstruation, the hypothalamus (brain structure which controls involuntary body functions) stimulates the growth of several ovarian follicles each containing one egg, on the surface of each ovary. FSH also stimulates the developing follicles to secrete estrogen.

Day 6 - day 13: proliferatory phase

Estrogen released by the follicles causes the endometrium to proliferate and induces changes in the cervical mucus which permit easier movement of sperm into the uterus. Estrogen also suppresses the pituitary's secretion of FSH. At about the 12th day, the pituitary begins to secrete Luteinizing Hormone (LH). One follicle develops more extensively than the others, protruding from the surface of the ovary.

Day 14: ovulation

Ovulation is the release of one ovum (egg) from the protruding follicle. When the pituitary gonadotropins, FSH and LH, are in a particular ratio, the

tip of the follicle becomes transparent and thin. A sudden increase in the amount of circulation LH causes the thinnest area on the follicle's surface to rupture, releasing the egg. The fringed end of the Fallopian tube draws the egg into the tube.

Movement of sperm through the cervical mucus is easiest at this time, due to estrogen-induced nutrient and alkaline levels.

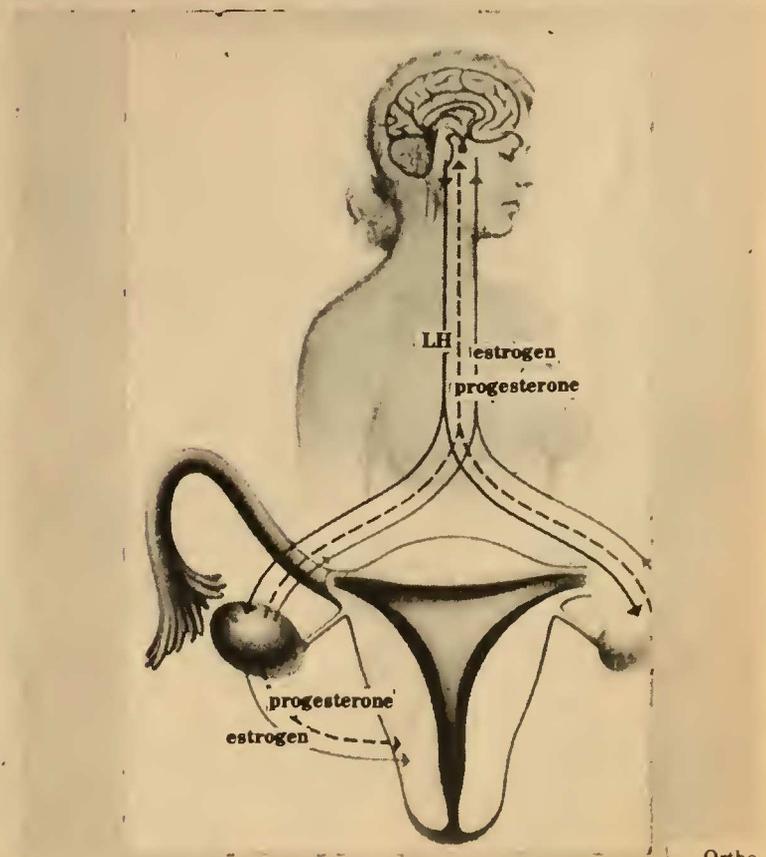
Once the egg has been released, LH stimulates the ruptured follicle to become a hormone-secreting gland called the **corpus luteum**.

Day 15 - day 25: secretory phase

Immediately after ovulation, the corpus luteum (yellow body) secretes progesterone which, along with estrogen released by the ovaries, stimulates further development of the endometrium. The endometrium becomes a rich bed of blood vessels and tissues in preparation for implantation of a fertilized egg. Estrogen and progesterone also affect the pituitary gland: both hormones block its production of FSH, and progesterone alone blocks the production of LH.

If the egg is fertilized, the placenta takes over the production of progesterone, blocking the release of pituitary gonadotropins, which in turn prevents the release of another egg throughout pregnancy.

If fertilization does not occur, the corpus luteum starts to degenerate about day 25. Its cells are reabsorbed and replaced with normal ovarian tissue. As a woman gets older, reabsorption is not complete and scar tissue from the corpus luteum remains on the ovarian surface. Follicles which began to develop but did not rupture are also reabsorbed by the ovary.



Days 15-25: secretory phase

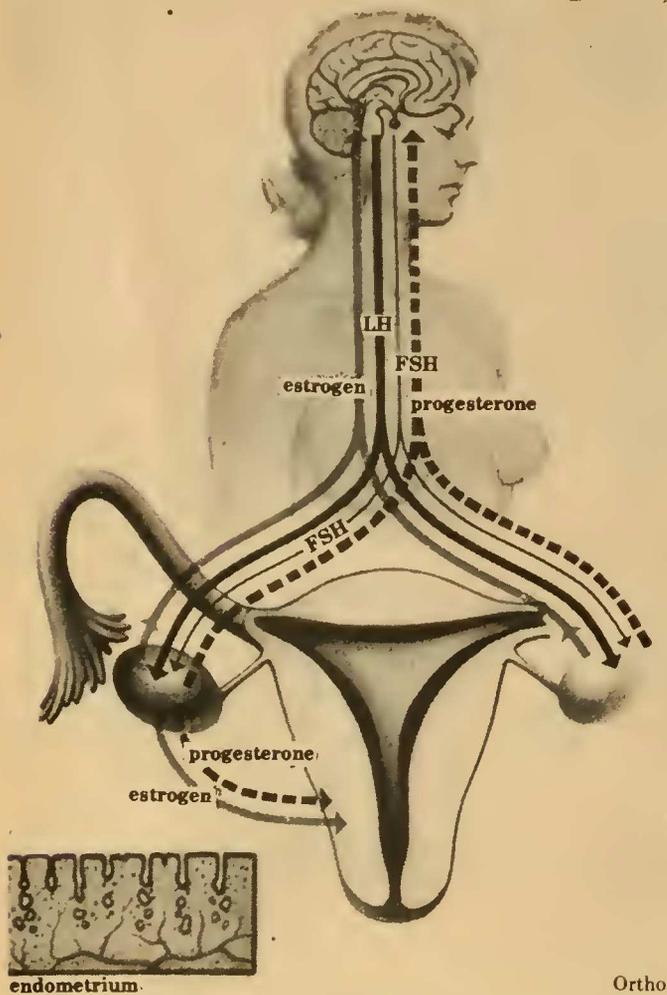
Day 26 - day 28: secretory phase (premenstrual)

Degeneration of the corpus luteum reduces the secretion of estrogen and progesterone. This low hormonal level causes the contraction of blood vessels leading to the endometrium, thus reducing the flow of blood to the tissue. The tiny veins and arteries of the endometrium break down, releasing blood, thus marking the beginning of the menstrual flow. The low hormonal level also stimulates the secretion of FSH by the pituitary gland, causing the whole cycle to begin again.

The climacteric (change of life)

The cycle described above continues, except during pregnancy and breastfeeding until the climacteric when the ovaries begin to fail. **Menopause** or the end of menstruation, the most noticeable event of the "change of life", occurs between the ages of 45 and 50. The process is gradual as ovulation becomes more irregular and infrequent. Once ovulation stops, progesterone is no longer released. Estrogen production is greatly reduced. Women under the care of a gynecologist usually receive hormonal "replacement therapy" for the rest of their lives.

Many women suffer from minor to severe depression and irritability during the change of life. Because western women are forced to compete as sexual objects, and are allowed no meaningful function within society, such problems take on an exaggerated importance. There is no reason why the climacteric should affect a woman's ability to function fully both mentally and physically or to enjoy sexual intercourse.



Days 26-28: secretory phase: (premenstrual)

Sexual intercourse

The ability to enjoy sexual intercourse (coitus, "making love", copulation, "having relations", "having sex", etc.) develops with knowledge of the human body and with experience in social and sexual relations with others. The pleasure of sex without fear of pregnancy or moral sinfulness continues to be denied, especially to women, because of the repression of such knowledge and experience.

Most couples engage in some form of sexual foreplay - kissing, caressing, teasing, - before beginning sexual intercourse. Almost any part of the body is sensitive to sexual stimulation, but especially the thighs, buttocks, breasts, nipples, neck and ears. Both partners can enjoy oral-genital contact.

When sexually aroused, the man's penis and the woman's clitoris become hard and erect, due to the engorgement of the tissue with blood. The woman's vaginal walls separate, expand, and become moist with mucus. To begin coitus, either partner guides the man's erect penis into the vaginal opening. Saliva is always available as a lubricant if the vagina is too dry for comfortable intromission. Together, the man and woman move their bodies in such a way that the clitoris and the penis are stimulated, not necessarily simultaneously.

Female orgasm

Whether a woman comes to orgasm (the climax) through masturbation, manipulation, or coitus, the physiologic response is the same. Sexual sensitivity is centered in the vulva, specifically the clitoris, and not the vaginal barrel which contains many times fewer nerve endings. Stimulation of the clitoris causes engorgement of blood vessels in the genitals, and a general neuro-muscular tension. Other body changes in this **excitement phase** include: increased rate of breathing and of heart beat, breast enlargement, erection of nipples, upward movement of the uterus, and expansion of the vaginal walls. Sometimes a sexual flush (temporary skin rash) appears.

At the **plateau phase** of excitement, these changes are accelerated, and, without distraction, the woman soon reaches orgasm - the pleasurable release of tension in the genitals and throughout the entire body. The vaginal walls especially near the opening, contract rhythmically. The uterus contracts pushing the cervix further into the vagina.

As the tension is released, the body begins to return to its normal condition (**resolution phase**); but, if stimulation continues before sexual tension drops below the plateau level, the woman can "come" again almost indefinitely. Women can experience long orgasms or a rapid series of orgasms without a return to the plateau phase.

Male orgasm

Male orgasm also involves the release of neuromuscular tension throughout the body. In the plateau phase when orgasm seems inevitable, the contents of the ampulla, seminal vesicles, and prostate gland combine to form the final seminal fluid. Muscles surrounding the urethra as it leaves the bladder contract so that urine cannot be released.

During orgasm, the semen is forced out the tip of the penis through the urethra. The first muscular contractions are strong and their rhythm is the same as the woman's vaginal contractions. The amount of ejaculate released influences the strength (but not necessarily the pleasure) of the orgasm. Other body changes are similar to those in women including muscles spasms, sexual flush, and a light film of perspiration.

During the resolution phase after orgasm, the body changes disappear, at first suddenly, and then slowly taking up to several hours. The penis loses much of its erection, and a short time span (the **refractory period**) must pass before a man can have another orgasm.

Positions

The many imaginative positions for making love fall into one of two classifications: face to face, and intromission from behind. In face to face positions

(to mention only a few), either partner can lie on top of the other, both can lie on their sides, one can sit over the other who is lying down, or both can stand or sit. When intromission occurs from behind, the man can lie on top of the woman, the woman can sit back on the man's lap, the woman can crouch while the man kneels behind her, etc. Each position has its advantages and disadvantages such as: freedom of movement, depth of penetration of the penis, and stimulation of the clitoris. If a woman wishes to become pregnant, the couple should have intercourse face to face with the man on top.

Rupturing the hymen (loss of virginity) should be done in a position in which both partners can easily control their movements. The hymen should be stretched gradually with gentle but constant penetration of the penis. Slight bleeding and some pain is common; however, some women feel no discomfort at all.

There is no reason for prohibiting sexual intercourse during menstruation. The erect penis blocks the flow during intercourse, and a disposable cloth placed on the sheets can prevent possible staining when the man withdraws his penis. Some women have a slightly heavier flow after intercourse due to contractions of the uterus during orgasm.



conception

The union of egg and sperm (**fertilization**) is a highly complex process, the mysteries of which have yet to be fully understood. The following description of the fundamentals of conception is necessarily superficial.

Sperm

Sperm cells, produced in the seminiferous tubules of the testes, are moved by muscular contractions through the vas deferens for about three weeks until the mature cells reach the ampulla. Secretions from the prostate gland and seminal vesicles add both bulk and energy to the sperm cells, creating the final seminal fluid.

Each sperm cell consists of a head, mid-piece, and tail. The head contains 23 chromosomes responsible for the hereditary characteristics from the father. The mid-piece and tail are made up of coiled fibers which contract and expand to move the sperm cell along.

An average of 350 million microscopic sperm cells are released in one ejaculation. The life span of sperm within the female genital tract is approximately 48 hours.

The egg

Follicle Stimulating Hormone (FSH) released by the pituitary gland at the beginning of a woman's cycle, stimulates several ovarian follicles to grow. About the 12th day, the pituitary begins to release Luteinizing Hormone (LH) as well. When FSH and LH are in proper balance, one of the follicles ruptures, releasing an egg which is soon picked up by the fringed end of the Fallopian tube.

The nucleus of the egg cell contains 23 pairs of chromosomes; as the egg matures, 1 chromosome from each pair is retained, and the other is discarded in a cluster called the polar body. The nucleus and the nourishing cytoplasm are surrounded by a thicker membrane, the zona pellicuda. Smaller cells from the ruptured follicle cling to its surface. Some of these cells are brushed off by hair-like cilia within the Fallopian tube as muscular contractions move the egg toward the uterus. If the egg is not fertilized within 24 hours of ovulation, it degenerates and passes out the body unnoticed.

Changes of the uterus

As the ovarian follicles develop, estrogen is released by the ovaries. After ovulation, progesterone is released by the corpus luteum, the scar tissue on one ruptured follicle. Both hormones stimulate the endometrium (uterine lining) to "proliferate", preparing the lining to nourish a fertilized egg after implantation. If implantation does not occur the lining is shed as the menstrual flow.

At the time of ovulation, mucus in the cervical canal becomes more plentiful, thinner, and richer in nutrients, so that sperm cells can pass easily into the uterus.

Fertilization

During sexual intercourse, millions of sperm cells are ejaculated high into the woman's vagina, near the alkaline environment of the cervix. Many sperm "swim" in the wrong direction; others are killed by the acid condition of the vagina, and still others are trapped in the folds of the vaginal walls. Those that pass through the cervical canal are moved toward the Fallopian tubes primarily by muscular activity of the uterus. Some sperm enter each Fallopian tube, only one of which holds an egg.

Fertilization occurs in the Fallopian tube. The first sperm cells to reach the egg release a chemical which dissolves cells adhering to the zona pellicuda. Once the egg is exposed, one sperm cell bores through the cell membrane to the center of the cell. A second chemical reaction prevents any other sperm from entering the egg.

As the fertilized egg (gamete) is moved down the Fallopian tube, the nuclei of the sperm and egg fuse together to form one nucleus with 46 chromosomes. These chromosomes reproduce themselves and the cell divides in two. This division process continues until the gamete is a cluster of tiny cells, each with 46 chromosomes. Fats and other substances of the egg cell provide it with nourishment for 3 days as it travels down the tube to the uterus.

Nidation

For several days the egg cluster or **blastocyst** floats freely in the uterine cavity. About six days after fertilization, the blastocyst attaches itself to the endometrium, and buries itself by chemically dissolving a bit of endometrial tissue. Blood surrounds the cluster and nourishes it. Nidation (**implantation**) is complete by the 12th day after fertilization. One mass of cells from the blastocyst soon develops as the growing embryo; others become nutritive structures such as the placenta.

Implantation often does not occur at all, and the fertilized egg degenerates.

Determination of pregnancy

Usually, a woman first suspects that she is pregnant when her menstrual period is overdue. The length of pregnancy is always calculated from the first day of her **last** menstrual flow; thus, if a woman is ten days late, and normally has her period every 28 days, she is considered 38 days or 5½ weeks pregnant.

A woman whose period is late but who does not wish to be pregnant should continue to use some kind of contraception until pregnancy has been confirmed by a doctor.



The two kinds of pregnancy tests both attempt to detect the presence, within urine, of a hormone called chorionic gonadotropin. This hormone is released in increasing amounts by the placenta, so that by the 6th week of pregnancy (when the period is 2 weeks overdue), some chorionic gonadotropin appears in the pregnant woman's urine. In the "biological test", some of the woman's urine is injected into a laboratory animal such as the rat or rabbit. If chorionic gonadotropin is present, it causes a certain reaction (such as ovulation) in the animal. Such a reaction is defined as a positive result, meaning that the woman is pregnant. This test takes at least six hours. In the "chemical test" a test chemical is added to a sample of urine. The presence or absence of a chemical reaction determines if the test is negative or positive. The chemical test takes only 2 to 20 minutes. Both tests are highly accurate but false positives and especially false negatives do occur. Pregnancy tests are not accurate for pre-menopausal women. Hospital laboratories are often more accurate than drugstores in their tests. Hospital tests are also much less expensive.

For a positive confirmation of pregnancy, a woman should see a gynecologist for an internal examination. Private doctors are expensive, but family planning centers, university health services, and hospital gynecological clinics are more reasonable. Women under 18 can often get cooperation at the adolescent clinic of a children's hospital.

Several signs of early pregnancy which a doctor or paramedical specialist can detect during an internal examination are: darker color of the vulva and vagina, softness of the uterine isthmus (area between the cervix and uterine body), softness of the cervix, and size of the uterus.

If the doctor is not positive of the diagnosis or suspects that the woman is not pregnant, the woman can be given synthetic progesterone, either orally or by injection, which raises the hormone level in the woman's blood stream. If the woman is not pregnant, the following drop in the hormonal level causes withdrawal bleeding. **Such pills cannot abort a fetus:** they can only bring on a late period. These pills cost approximately \$3 at reputable pharmacies.

oral contraceptives

Few scientific achievements have had greater social impact than the development of the oral contraceptive. The Pill is presently used by approximately 18.5 million women, about 8.5 million of whom live in North America. The Pill is the closest thing to the "ideal contraceptive" available, and its popularity reflects a changing social and political mood of a whole generation of women.

The oral contraceptive is 100% effective when taken as instructed, relatively "safe", easily reversible, and in the control of the woman; however, use of the Pill does present certain difficulties. Taking one pill every day is a nuisance, appreciated by few not taking oral contraceptives. Minor annoying side effects are common, although transient, in the first three months of use. Most importantly, the oral contraceptive constitutes an endocrinological insult to the female body which in rare instances can lead to serious disease and even death. Nevertheless, on the basis of available scientific findings, the editors of this publication are convinced that the benefits of oral contraception outweigh its dangers. Accepted human activities such as pregnancy and childbirth, or even travel in automobiles carry much greater risks to health and life. Many drugs used more commonly than oral contraceptives, such as aspirin or penicillin, are potentially more dangerous than the Pill; however, relief of pain and combatting infection are accepted as important in our society. Until recently, contraception, with its gifts of sexual freedom and physical health for women, has not been appreciated

as an important medical achievement.

In the beginning of this century, Margaret Sanger, one of the greatest fighters for the liberation of women, wrote, "No woman can consider herself free until she can determine the number of children she will have". In the winter of 1950 Margaret Sanger convinced Dr. Pincus to accept a grant of \$2,100 from the fledgling Planned Parenthood Federation which she had founded. Millions of dollars of corporation money soon went to research executed by Pincus and a colleague, John Rock; nevertheless, credit for the initiation of the first research project goes to one of the most noble women of this century, Margaret Sanger.

Pincus and Rock experimented with synthetic estrogens and progesterones, and eventually produced "Enovid" for the G.D. Searle Company. Originally, Enovid contained 10 mg. of a synthetic progesterone called norethynodrel and as much as .22 mg. of synthetic estrogen called ethinyl estradiol. In 1956, Rock, Pincus and a third doctor, Celso Garcia, selected 265 Puerto Rican women "from the low income population living in a housing development project in a slum clearance area" for the first significant human trials. Officially, Puerto Rican women were chosen because of their "high pregnancy rate"; in fact, these poor, non-white women were used as Guinea pigs since G.D. Searle hesitated to test such potent medication on white American women. Ironically, during the tests these women received better medical attention than they had ever had.

The Puerto Rican tests revealed that Enovid prevents pregnancy, and that women do not drop dead after ingesting norethynodrel and ethinyl estradiol. By 1960, on the basis of scanty scientific information, the United States Food and Drug Administration (FDA) authorized the G.D. Searle Co. to market Enovid.

By the end of the first Pill decade, 8 pharmaceutical companies had entered the profitable oral contraceptive market, and more than 20 brands of the birth control pill were produced.

Description

There are two kinds of oral contraceptives: the **combination pill** and the **sequential pill**. A series of the combination oral contraceptive consists of 21 (20 in some brands) identical pills each containing synthetic estrogen and progesterone. A sequential oral contraceptive series is made up of two different kinds of pills. The first 11, 14, 15 or 16 pills (depending on the brand) contain only synthetic estrogen, and the next 10, 6, 5, or 4 pills contain a combination of estrogen and progesterone.

Synthetic hormones stimulate the same body reactions as do natural hormones. There are 2 kinds of synthetic estrogen and 9 different synthetic progesterones. The two estrogens, **mestranol** and **ethinyl estradiol**, have almost identical properties; however the effects of ethinyl estradiol are more highly localized at the reproductive system. For example, ethinyl estradiol has less effect on glucose tolerance than does mestranol. Although ethinyl estradiol is probably the better estrogen, mestranol is used more commonly. Mestranol is used in: Enovid, Ortho Novum, Norinyl (including Norquen and Noriday), C-Quens, and Ovulen. Ethinyl estradiol is used in: Norlestrin, Provest, Oracon, Ovrul, and Demulen.

The quantity of estrogen in each pill is more important than the kind. Several years ago it was discovered that not more than .05 mg. of estrogen in each pill is necessary to ensure 100% contraceptive effectiveness. Also, when such "low dose estrogen pills" are used, risks of serious complications are significantly reduced. In December 1969 the British Committee on Safety of Drugs officially recommended that brands of oral contraceptives containing more than .05 mg. of estrogen should not be used. In the words of the British Medical Journal, British pharmaceutical companies "were quick to take the hint", and withdrew from

the market all combination pills containing more than .05 mg. of estrogen. American pharmaceutical companies have produced low dose brands, but have refused to withdraw high dose pills from the market.

Most synthetic progesterones are produced by chemically changing the synthetic male sexual hormone, testosterone. Depending on the chemical process used, the resulting progesterone is either **estrogenic** or **anti-estrogenic**. With estrogenic progesterones, at least some of the hormone is changed by the body into estrogen. Norethynodrel, the progesterone component of Enovid, is the only commonly used estrogenic progesterone. Estrogenic progesterones should not be used since they introduce unnecessary estrogen. On the other hand, anti-estrogenic synthetic progesterones, like natural progesterones, counter the effects of estrogen. The anti-estrogenic qualities of synthetic progesterones add to the contraceptive effectiveness of the Pill.

Depending on the kind and quantity of synthetic hormones used, a particular brand of combination pills can be estrogenic or anti-estrogenic. All low dose combination pills are distinctly anti-estrogenic, which counteracts side effects and complications related to estrogen (most side effects are estrogen-related). In contrast, sequential pills are distinctly estrogenic; not only do all sequential pills contain more than .05 mg. of estrogen in each pill, but the anti-estrogenic effect of progesterone is absent for most of the 21 pill cycle. Also, in contrast to combination medication, sequential oral contraceptives are not 100% effective, with reported failure rates of 1% to 2% annually. In Britain in 1966, sales of sequential pills made up only 3% of the total sales of oral contraceptives. In North America, where the Eli Lilly Company has maintained a strong promotional campaign for C-Quens (the original sequential pill) the various brands of sequential pills have not lost as much of their market. Sequential oral contraceptives should be ordered off the market. **Women taking sequential pills (C-Quens, Oracon, Ortho Novum SQ, Ovex, Miniquen, Secrovin) should see a gynecologist and ask for a change of prescription.**



How the Pill works

A healthy woman who is not pregnant or breast feeding menstruates approximately once every 28 days. Soon after menstruation begins, the hypothalamus (part of the brain) stimulates the pituitary gland to secrete a hormone called Follicle Stimulating Hormone (FSH) into the blood stream. FSH stimulates the growth of several ovarian follicles, and the secretion of estrogen by these follicles. A few days after the first release of FSH, the pituitary also begins secretion of Luteinizing Hormone (LH). Around the 14th day of the menstrual cycle, a sudden increase of LH secretion causes one follicle to rupture and release an egg. After ovulation, the ruptured follicle changes into a gland called the corpus luteum which begins to secrete progesterone. As the quantity of estrogen and progesterone increases in the blood stream, the pituitary secretes less FSH and LH.

If the egg is fertilized, the corpus luteum as well as the placenta secrete large quantities of progesterone throughout pregnancy. Estrogen and progesterone block the pituitary's secretion of FSH and LH, and ovulation cannot occur during the nine months of pregnancy. Overlapping pregnancies are thus prevented.

The oral contraceptive mimics the body's defences against pregnancy by creating a hormonal "pseudo-pregnancy" within a woman's body. Each pill of a series contains enough estrogen and progesterone to block secretion of FSH and LH, thus preventing ovulation.

In addition, progesterone causes secondary changes which make pregnancy unlikely even if the pituitary "escapes" the effects of the synthetic hormones. Progesterone causes the cervical mucus to become thick and impenetrable, preventing sperm cells from entering the uterus. Progesterone also disrupts the cyclic growth of the uterine lining, making it unreceptive to a fertilized egg. Since sequential oral contraceptives are primarily estrogenic, secondary progesterone-dependent effects are not produced, resulting in the 1% to 2% failure rate of sequential pills.

Medical examination and prescription

Oral contraceptives, like all potent medication, must not be used by certain women. Proper medical screening can spot women for whom oral contraception would pose unacceptable risks.

A complete medical history must be taken before prescribing an oral contraceptive. Questions which must be asked include:

1. Does the woman have, or has she ever had: a blood clotting disease such as thromboembolism, thrombophlebitis, pulmonary embolism, "stroke", retinal thrombosis; migraine headaches; heart disease or defect; endocrinological disease or disorder such as thyroid dysfunction or diabetes; liver disease such as jaundice; kidney disease; asthma; epilepsy; or any significant psychiatric problem such as severe depression?

2. Is there any inheritable disease in the woman's family? Has the woman's mother ever had any form

of cancer, migraine headaches, high blood pressure, or varicose veins? If the woman has any sisters, similar information about their medical histories can be relevant.

3. Has the woman ever been pregnant? How many times? How many live babies, abortions or miscarriages has she had? Has the woman had complications during pregnancy, such as toxemia, varicose veins, or liver disease?

4. At what age did the woman have her first menstrual flow? What is the average length of her menstrual cycle and of the flow itself? Does she experience cramps, fluid retention, breast swelling and tenderness, or mood changes before, during and/or after menstruation?

Women who have or who have had: thromboembolism, thrombophlebitis, pulmonary embolism, a "stroke", retinal thrombosis, heart disease or defect, severe endocrine disorder, recurrent jaundice of pregnancy, or any form of cancer must not take oral contraceptives. The synthetic estrogen delivered by the Pill can worsen existing conditions of these diseases or increase a woman's susceptibility to a relapse.

Women who have had: mild endocrine disorder, liver disease such as jaundice, or kidney disease can take the oral contraceptive if: (a) an endocrine disorder is well under control, (b) kidney or liver disease is completely cured.

Women who have or who have had: migraine headaches, high blood pressure, varicose veins, asthma, epilepsy, any significant psychiatric problem, or diabetes can take an oral contraceptive, provided that they are closely supervised medically, and that periodic tests are taken to ensure that the Pill's estrogen is not worsening their condition. If the Pill causes migraine headaches to become more severe or more frequent, the woman must stop taking the medication. If high blood pressure or varicose veins are adversely affected by oral contraception, the woman must stop taking the medication. If fluid retention occurs as a side effect to the Pill, asthma or epilepsy can be adversely affected. For women with asthma or epilepsy, diuretics can be prescribed, and only anti-estrogenic pills should be used. Women with existing psychiatric problems must be followed by a psychiatrist while taking oral contraception. Women with minor depression before menstruation often find their symptoms relieved while taking the Pill. Pre-diabetic women, or women with active diabetes should have an annual or semi-annual glucose tolerance test, and should use an oral contraceptive containing ethinyl estradiol as its estrogenic component.

Once the medical history is taken, the doctor performs a general and a gynecological physical examination. The woman's blood pressure and weight must be recorded, samples of blood and urine must be taken, and a careful breast examination and a Pap test (for cervical cancer) must be performed.

A doctor has a variety of brands to choose from when prescribing oral contraceptives. The following brands are the best available: Ovrul, Ortho-Novum 1/50, Norinyl 1, Norlestrin, and Demulen. All

contain .05 mg. of estrogen and 1 mg. or the equivalent of progesterone (Ovral contains .25 mg. of a particularly potent progesterone). If a woman suffers exceptional symptoms of natural estrogen excess (nausea, vomiting, fluid retention and breast tenderness) during pregnancy or before menstruation, the doctor may suggest a pill containing a larger quantity of progesterone. Norlestrin 2.5, and Provest contain more than .1 mg. of progesterone but not more than .05 mg. of estrogen.

All women taking oral contraceptives should have an annual gynecological examination, including a Pap test.

Personal use of the Pill

Most oral contraceptives are taken in a series of 21 pills. This produces a convenient "three weeks on, one week off" cycle of medication.

To begin taking the Pill, a woman must wait for a menstrual flow. Counting the first day of her flow as day 1, the woman takes the first pill of a series on day 5. One pill is taken at about the same time daily for 21 days. The woman counts 7 days after taking the last pill. On the 8th day, she takes the first pill of her next series. Thus, if a woman takes the first pill of her first series on a Tuesday, she takes her last pill of that series on a Monday, and takes the first pill of the next series on the Tuesday of the following week. The "starting day" (i.e. the day that the first pill is taken) is the same day of the week for every series.

Some oral contraceptives come in 28 day series. The first 21 pills contain the synthetic hormones. The last 7 pills are placebos - pills that contain nothing other than sugar. A woman taking a 28 pill series takes one pill every day, beginning a new package the day after taking the last (28th) pill.

If one pill is forgotten it should be taken as soon as it is remembered, even if this means taking two pills on the same day. If taking the pill is incorporated into routine daily activities (e.g. "waking up", "supper", "going to bed") a woman is less likely to forget a pill. If a combination pill is forgotten for not more than 24 hours, the chances of pregnancy are close to zero. If more than one combination pill is forgotten, or if one sequential pill is forgotten, the forgotten pills should be taken when remembered and another contraceptive method should be used for the rest of the cycle.

Most birth control pills are packaged in "blister envelopes". Each pill is enclosed in an individual blister of clear plastic on a small cardboard sheet. The blister envelope is contained in a plastic container with rows of holes in the bottom. To obtain a pill, the woman pushes down on the plastic blister, and the pill pops out of the hole in the bottom of the package. Most package designs include a calendar mechanism in the package which makes it possible to tell at a glance if the day's pill has already been taken.

The combination Pill provides 100% contraceptive protection from the first pill of the first series.

If a woman is changing her brand of pill from a higher dose of estrogen to a lower dose, another birth control method should be used for the first 2 weeks of the first low dose series.

Reversibility of contraceptive action

The oral contraceptive is easily reversible. When pregnancy is desired, the woman finishes a pill-series, and does not start another series. Sixty to 75% of women who stop taking the Pill to become pregnant achieve their aim within three cycles of the last pill, and 90% become pregnant within one year. The pregnancy rate is the same in women who have never taken oral contraceptives and who are attempting to become pregnant.

Babies born to women who have used oral contraceptives are not affected by the medication.

In a small, undetermined percentage of women who stop taking the Pill, ovulation and menstruation are delayed for a month or two, and in some reported cases, for as long as a year. This condition of post-Pill amenorrhea (lack of menstruation) has been named the "oversuppression syndrome". Amenorrhea following discontinuation of the Pill is more likely to occur in women who have irregular menstrual cycles before using oral contraception. The probable cause of post-Pill amenorrhea is a lingering, oversuppression of the hypothalamus by the Pill's synthetic progesterone. Almost all cases of oversuppression disappear by themselves without medication. If amenorrhea continues for more than 6 months, cortisone acetate or clomiphene citrate (brand name: Clomid) is used to bring on ovulation and menstruation. Clomid is highly effective if there is enough natural estrogen in the bloodstream. If the level of estrogen is low, skull X-rays are taken to make sure that a coincidental tumor does not exist, and supplementary human gonadotropins are then given to induce ovulation.

Prolonged post-Pill amenorrhea responds quickly and easily to treatment with Clomid, or, if necessary, human gonadotropins. It is unlikely that the incidence of oversuppression increases in women taking oral contraceptives for prolonged periods. The practice of discontinuing oral contraception every 2 years to determine if ovulation occurs spontaneously is medically useless and often results in unwanted pregnancy.

Side effects

Oral contraceptives are potent medication and induce many body changes other than the suppression of ovulation.

A side effect is any reaction or body change unrelated to the purpose for which a drug is taken. For the sake of consideration, side effects are listed below in three classifications: nuisance side effects, metabolic changes, and serious complications.

Nuisance effects

Most nuisance effects induced by oral contraception are related to estrogen. Such effects are common during the first 3 cycles of medication while the body is adjusting to the new hormonal

Estimates of risk of death to women in England 1966		AGE	
	20-34	35-44	
Annual death rate per 100,000 healthy, married, non-pregnant women from pulmonary cerebral thromboembolism:			
Users of oral contraceptives.	1.5	3.9	
Non-users of oral contraceptives.	0.2	0.5	
Annual death rate per 100,000 total female population from:			
Cancer.	13.7	70.1	
Motor accidents.	4.9	3.9	
All causes.	60.1	170.5	
Death rate per 100,000 maternities from:			
Complications of pregnancy.	7.5	13.8	
Abortion.	5.6	10.4	
Complications of delivery.	7.1	26.5	
Complications of the post-birth period from:			
Thromboembolic disease	1.3	4.6	
Other complications	1.3	4.6	
All risks of pregnancy, and post-birth period.	22.8	57.6	

levels, and they usually disappear by the 4th cycle. If any side effect persists for longer than 3 cycles, or becomes severe, the prescribing doctor should be consulted.

The majority of women taking low-dose oral contraceptives do not experience any side effects, or are bothered only by minor, transient effects. Psychological factors play a large part in the incidence of minor effects. If any side effect is expected, it is almost certain to appear.

Nausea sometimes accompanied by vomiting or stomach cramps is the Pill's most common side effect. If it occurs, nausea appears within a day or two of the first pill taken, and recurs at the beginning of the following cycle. Such side effects can be avoided by: a. taking the daily pill after a full meal; b. taking the pill just before going to sleep; or c. taking the pill with a glass of milk or a mild antacid.

Fluid retention can occur as a result of estrogen's effects on the body's retention of salts. A general "bloated feeling", cramping or swelling of the legs, breast discomfort, rapid weight gain, and generalized itching are minor symptoms of fluid retention. Fluid retention can adversely affect migraine headaches. If a woman experiences severe headache, dizziness, and blurry or double vision shortly after starting the Pill, she should immediately consult the prescribing doctor, and stop taking the medication.

Fluid retention is harmless except to women with migraine headaches, epilepsy, high blood pressure, vascular disease, or heart defect or disease. Fluid retention can be alleviated by a low salt diet, restricted water intake and, if necessary, a diuretic.

Chloasma is the rarest of estrogen-related nuisance effects. Chloasma, also called the "mask

of pregnancy" appears as "giant freckles" on the face. Pill related chloasma is more common in women who experience chloasma during pregnancy, and in women frequently exposed to strong sunlight.

Leukorrhea is an estrogen-related, harmless, white or clear, excessive vaginal discharge. If vaginal discharge becomes bothersome, a gynecologist should be consulted.

Estrogen deficiency and progesterone excess side effects occur if a Pill is too highly anti-estrogenic for a particular woman. Such side effects include: mood changes, including depression and changes in sexual desire; increased appetite and weight gain; fatigue; decrease in amount and duration of menstrual flow; oily scalp and skin (sometimes leading to acne); changes in facial or body hair distribution; and breast enlargement. Progesterone related side effects, although usually minor, either remain constant or become worse with each successive cycle. A doctor should therefore be consulted. Recent evidence suggests that mood changes including depression might also be estrogen-related. Estrogen seems to cause a deficiency of a vitamin called pyridoxine. Recent experiments indicate that pyridoxine-replacement therapy significantly improves cases of Pill-related depression.

Breast enlargement is the most common progesterone-related side effect. After an initial size increase, breast size remains constant until the Pill is discontinued, at which point the breasts return to normal size.

If a woman is taking a Pill that delivers more than 1 mg. of progesterone daily, progesterone-related side effects can usually be eliminated by switching to an oral contraceptive with less progesterone (not to a Pill with more estrogen).

Breakthrough bleeding and spotting (bleeding between periods) are the only common progesterone-deficiency side effects. If they occur, such bleeding episodes usually disappear by the fourth cycle. In persistent cases a pill with a higher dose of progesterone can be prescribed.

Metabolic effects

The biochemical activities which keep all organisms alive are collectively called metabolism. The oral contraceptive causes more than 50 biochemical changes within the female body. Similar biochemical changes occur during pregnancy, and most are not noticeable; however, in susceptible women, pregnancy-related and Pill-related metabolic changes can cause disease, and in rare cases, even death.

Insulin production and glucose tolerance can be adversely affected by estrogen produced naturally during pregnancy or delivered by the Pill. Insulin is a hormone necessary to the body's digestion of sugar. A low level of circulating insulin leads to a disease called diabetes mellitus. The Pill does not cause diabetes, but it may aggravate an existing condition of low glucose tolerance. Diabetes is a hereditary disease, and a woman whose blood relatives have diabetes should have a glucose tolerance test before starting the Pill, and an annual test while taking the medication.

Liver function is affected by pregnancy and by the Pill. In susceptible women, the hormones of pregnancy can cause "recurrent jaundice of pregnancy". The oral contraceptive can induce a similar disease process. In one year, about 1 woman in 10,000 Pill-users experience jaundice, which is characterized by extreme itchiness and a yellow discoloration of the skin, fingernails and eyes. Jaundice responds well to therapy.

Fat metabolism is altered by estrogen of pregnancy or of the Pill. Estrogen causes an increase in the amount of fat and fatty proteins circulating in the bloodstream. This is a potentially dangerous effect, especially if maintained for long periods, since an increase in circulating fats such as cholesterol is associated with an increased incidence of atherosclerosis, a vascular disease in which arteries are clogged with layers of fat.

To date, increased incidence of atherosclerosis has not been found in women taking the Pill. Further research is necessary.

Lactation is adversely affected by the Pill. Women who intend to breastfeed should not use oral contraception immediately after child-birth.

Serious complications

Certain metabolic changes in women taking the Pill can lead to serious complications, and even death. The incidence of such complications is very low.

Thromboembolism: The various kinds of thromboembolism are diseases in which an unnecessary clot forms within a blood vessel, obstructing the flow of blood and starving body tissues. Thromboembolism can have serious and even fatal consequences. During pregnancy, estrogen causes an increased level of blood clotting chemicals (called "factors") within the blood serum, creating a condition of hypercoagulability. Blood loss during and after childbirth is greatly reduced by the blood's increased capacity to coagulate.

Hypercoagulability also increases a woman's susceptibility to thromboembolism. Estrogen delivered by oral contraception causes increased susceptibility of the same magnitude.

In 1968 three English scientists, M.P. Vessey, R. Doll and H.W.H. Inman presented carefully collected statistics evaluating risks of fatal and non-fatal thromboembolism to women taking oral contraceptives. The excess death rate from thrombo-

embolism was estimated to be 1.3 per 100,000 users aged 20 to 34 and 3.4 per 100,000 users aged 35 to 44. It was also estimated that 47 women in 100,000 users are admitted to hospital every year for non-fatal thromboembolic disease. Among non-users of the Pill, only 5 in 100,000 are admitted every year. When corrected for error, this reveals a nine times greater risk of non-fatal thromboembolism for Pill-users.

A recent paper, prepared by the same scientists, reveals that the excess death rate is significantly reduced in women using only low dose preparations (pills containing not more than .05 mg. of estrogen).

An American study organized by Philip Sartwell of the U.S. Food and Drug Administration, and presented in the 1969 FDA report on the Pill, reveals findings which are approximately the same as the British ones. The Sartwell study also indicates that high dose and sequential pills provide additional risk.

These findings are not in themselves very frightening. Many daily activities carry far greater risks of injury or death. The risks of Pill-related thromboembolism are analyzed by Dr. D.M. Potts, Medical Secretary of the International Planned Parenthood Federation (London) who writes:

The risk of death from thromboembolic disease can be evaluated in two ways. Firstly, it can be reviewed against a medical background. Nearly every effective drug has a disease and even a death rate when used on a large scale, and the Pill is no exception. When a woman engages in sexual intercourse she takes a calculable risk with her life either as a result of possible pregnancy or as a result of procedures she adopts to prevent or interrupt pregnancy. The chart below sets out this risk in women of different ages.

Deaths following the use of IUDs are only beginning to be assessed but it seems likely that they will be as frequent as those with the Pill. When allowance is made for the higher failure rate of IUDs, use of the Pill in both younger and older age groups proves to be associated with a lower death rate than any other procedure. In other words, a woman who takes oral contraceptives has more chance of being alive one year later than her sisters who choose to have a baby or use some other form of contraception (assuming a failure rate for other methods).

Secondly the Pill can be looked at in its social context. For many women there is no alternative

RISK OF DEATH WITH VARIOUS CONTRACEPTIVE METHODS

Method	Pregnancies	Women age 20-34 years (1,000,000 users/year)			Women age 35-44 years (1,000,000 users/year)		
		Deaths due to pregnancy	Deaths due to method	Total	Deaths due to pregnancy	Deaths due to method	Total
IUD	30,000	7	unknown		17	unknown	
Oral contraceptives	5,000	1	13	14	3	34	37
Diaphragm	120,000	27	0	27	69	0	69
Safe period	240,000	55	0	55	135	0	135
Pregnancy	1,000,000	228	-	228	576		576

form of contraception that offers the degree of effectiveness, acceptability and convenience which the Pill offers. Many aspects of social behavior carry a much greater risk. Tobacco and alcohol, which society demands for its comfort and pleasure, are associated with a very heavy mortality and morbidity and their consequences constitute a significant part of medical practice. From the point of view of the health of society it would be more justifiable to have oral contraceptives in slot machines and restrict the sale of cigarettes to a medical prescription.

The Pill and vascular disease: Estrogen causes blood pressure increase in susceptible women.

There are several recorded cases of "stroke" in women taking the Pill. A stroke is the rupture of a blood vessel leading to or from the brain. High blood pressure increases the chance of stroke. Severe, debilitating headache is a stroke symptom. If severe headache is experienced while taking the Pill, a doctor should be consulted to rule out the possibility of stroke.

Although a significant relationship has not yet been demonstrated, it is believed that risk of stroke is increased, probably only slightly, in women taking the Pill.

The Pill and cancer: Massive doses of estrogen have been used in gynecology for more than 30 years. No increase in any form of cancer as a result of this medication has been observed.

Estrogen of pregnancy produces cellular changes in the cervix, which look very much like cellular changes of early cervical cancer. After pregnancy, the cervical cells regain their normal appearance. The Pill induces similar cellular changes, and some scientists believe that the oral contraceptive increases the risk of cervical cancer. On the other hand, the Pill might provide a protective effect against uterine and breast cancer.

On the basis of presently existing information, no definite conclusions can be reached as to the effects of oral contraception on the incidence of cancer.

Oral contraception carries distinct sexual connotations, and any consideration of the Pill's risks is complicated by the existing social ethic which views sexuality, and especially female sexuality, as evil. All potent medication carries risks of disease and death, but the thing that marks the Pill for special consideration is the freedom of sexual choice that it provides to women.

Some women's liberation groups have adopted an "Off the Pill" position, demanding that the oral contraceptive be withdrawn. A better course of action, already taken up by some, is to demand development of an even safer contraceptive method, and to attack the giant pharmaceutical corporations for their incredible profit margins, racist experimental programs and medically unacceptable marketing standards.

A special publication on the Pill, for distribution through women's liberation groups, is being prepared by the editors of this publication.

condom

The condom, a sheath worn on the penis during sexual intercourse, is a widely used, effective, mechanical contraceptive. The condom is also known as: "prophylactic", "rubber", "safe", "French letter", or simply "contraceptive".

Most condoms manufactured today are made of thin, strong latex rubber; condoms made from animal membrane are also available. Rubber condoms are approximately 0.0025 inches thick, 1 inch wide and 7 inches long. At the open end of the sheath the rubber is thicker, forming an elastic ring which keeps the condom from slipping off the penis. The condom is either plain-ended or tipped with a "teat" meant to receive and hold ejaculated semen. There are no "sizes" for condoms, since all are considerably elastic.

Skin condoms, produced from sterile animal membrane, first appeared in England during the eighteenth century. Since the development of the latex rubber process in the 1930's, skin condoms have been largely replaced by the cheaper and equally effective, rubber sheaths. The principal advantage of skin condoms is that natural membrane is a better conductor of heat than a film of rubber, and therefore interferes less with sensation.

Skin condoms are packaged in plastic or aluminum capsules containing water, glycerine and a preservative. Rubber condoms are packaged in paper envelopes, cardboard boxes or aluminum foil. Most rubber condoms are sold dry and powdered; but at least one company distributes lubricated rubber condoms sealed between strips of aluminum foil.

Association of the condom with prostitution and prevention of venereal disease has resulted in a reluctance on the part of many men and women to use this birth control method. In addition there exists a widespread misconception that the condom is an unreliable contraceptive when compared to other methods. In fact, statistics reveal that when properly used, the condom is as effective as the diaphragm and jelly method.

The condom method of birth control does have an important inherent disadvantage - it is a contraceptive used by the male partner alone. If the male sexual partner is reliable, and both man and woman accept this contraceptive method, there is no problem; however, not all men are trustworthy, and certainly not at all times. Since it is the woman who bears the consequence of unwanted pregnancy, women are more likely to appreciate the importance of using some form of contraception during all acts of sexual intercourse.

The mechanical nature of the condom also provides potential problems. Some men and women do not like using a "device" during sexual intercourse, claiming it disrupts spontaneity. If this is the sincere feeling of either partner the condom should be avoided. On the other hand, many men and women incorporate unrolling of the condom into the enjoyable routine of sexual foreplay.

Many men claim that the condom dulls sexual pleasure. Physiologically, this claim is highly questionable. Modern condoms are extremely thin and transmit sensation very well. Men who insist that the condom interferes significantly with sexual sensation are usually refusing to accept responsibility for birth control.

The condom does have several important advantages: it is harmless, very simple to use, and easily available. If the male sexual partner is willing to take on the responsibility of contraception seriously, the condom is the best birth control method for occasional or unexpected sexual intercourse.

Aside from contraception, the condom does provide some protection against venereal diseases such as syphilis or gonorrhea.

The condom is probably the most commonly used mechanical contraceptive in North America. Eight hundred million to one billion condoms are sold every year in Canada and the U.S.

Since 1938 the United States Food and Drug Administration (FDA) has supervised the manufacture of condoms. FDA enforcement and automated manufacturing and testing techniques contribute to the maintenance of very high quality levels.

Use

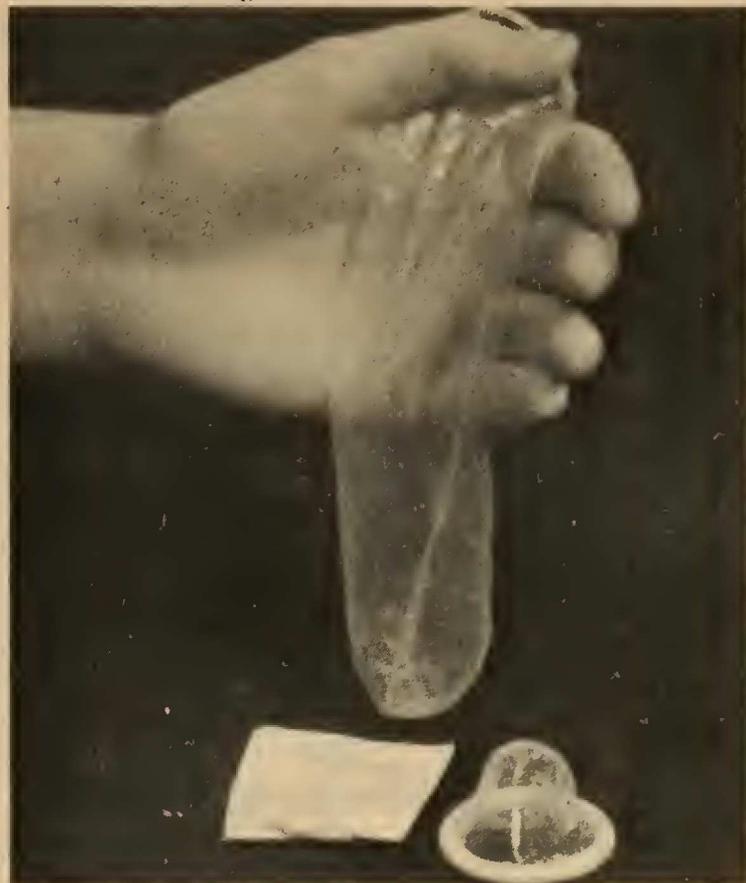
The condom must be worn throughout sexual intercourse since pregnancy can result from an early, unexpected ejaculation. If the condom is not pre-rolled, it should be rolled just before use. The condom should not be completely rolled up - a half an inch should be left at the closed end to receive ejaculated semen. If the condom being used is already rolled when purchased (most rubber condoms are pre-rolled), it should be unrolled half an inch. The condom is then unrolled over the erect penis. The half inch space left at the end of the condom (or the "teat", if the condom has one) should be squeezed while unrolling, so that air is not trapped in the closed end. If the man is not circumcised, he must pull back the foreskin before unrolling the condom. Properly unrolled, the condom covers the whole penis, with the half inch extension (or "teat") hanging limply at the end. Care must be taken not to tear the condom with finger nails, rings or any rough object.

When inserting the penis the male should avoid catching the extension or teat on the outside of the vagina, since it is possible to thrust a hole through the side of the sheath if the tip becomes caught.

Occasionally there is insufficient moisture in the vagina to allow for easy entry of the penis, especially if it is covered by a dry rubber condom. Forcing the penis into a relatively dry vagina can be uncomfortable and irritating for the woman. Such problems can be avoided by the use of an artificial lubricant

or a pre-lubricated condom. A commercial spermicidal preparation (contraceptive foam, cream or jelly) is a good lubricant to use, since it also provides contraceptive protection. Other non-greasy jellies, such as surgical jelly, can also be used. Of course, saliva is the most readily available and cheapest lubricant of all. **Vaseline or any kind of petroleum jelly or oil should never be applied to rubber condoms**, since these materials destroy rubber. Unless a pre-lubricated condom is used, the lubricant is applied to the outside of the sheath after it has been unrolled onto the penis.

Following male orgasm and ejaculation, there is always a partial or significant loss of erection. As long as the upper open end of the condom remains tight against the penis, sexual intercourse can continue; however, if loss of erection is significant and the condom does not fit firmly against the penis, semen can leak out of the open end, or the condom can slip off the penis, into the vagina. In such cases, the male partner should hold the upper part of the condom tight against the base of his penis, and withdraw from the vagina.



If the condom slips off the penis, it should be removed from the vagina immediately, with the open end held tightly closed.

The condom is removed by stretching the ring at the open end and pulling down. The condom should be checked immediately after removal. If for some reason the condom has burst, the woman should immediately insert an applicator-full of vaginal spermicide into her vagina, or, if that is not available, douche with water. In such clear-cut cases of contraceptive failure, pregnancy can be avoided if the woman takes a large dose of the female hormone estrogen shortly after intercourse. Such an after-the-fact contraceptive is commonly used for special cases - such as women who have been raped. Although not all gynecologists are familiar with this

use of estrogen, many emergency clinics in large city hospitals have estrogen available for this purpose. Estrogen in high doses is a potent drug and cannot be administered casually.

Some doctors suggest that the condom should always be used in combination with a vaginal contraceptive foam, cream or jelly. This extra precaution reduces the chances of conception should the condom break; however, condoms bought from drug stores or pharmaceutical companies can be assumed to be reliable.

Years ago doctors suggested that all condoms be tested before use. Blowing the condom up like a balloon was the most commonly suggested test. Considering present-day quality control maintained by reliable manufacturers, such testing by the user is likely to do more harm than good. With modern condoms, the number of sheaths damaged during testing is usually greater than the number of defective condoms found.

Good quality condoms can be used several times. If the condom is to be reused, it should be dropped into a bedside glass of water after removal from the penis. As soon as is convenient, the condom should be carefully washed in warm soapy water. Rubber condoms should be dried and powdered with cornstarch. Skin condoms can be kept in a mild solution of household boric acid and water. A condom that is

reused should be tested for leaks before each use.

If the condom is not to be reused it can be flushed down the toilet.

Condoms should never be kept in a wallet or pocket since the combination of moisture and heat provided by contact with the body deteriorates and eventually rots the condom. Condoms are best kept in the small cardboard containers in which they are usually sold. Without excessive heat or moisture condoms can be stored for up to two years.

Both rubber and skin condoms are meant to cover the entire penis. Another kind of condom, called the "tip condom" or condom cap, covers only the glans of the penis. Tip condoms should never be used since they are likely to slip off after male orgasm.

Cost

Condoms should be bought only from drug stores, pharmaceutical companies or family planning agencies. Those sold in men's washrooms, gas stations or from peddlers are likely to be of inferior quality. Condoms can be bought by anyone, without a prescription.

The most common drug store price is \$1.25 for 3 rubber condoms. Lubricated rubber condoms cost about \$1.50 for 3. Skin condoms can cost \$1.00 or more each. Rubber condoms bought in quantity from manufacturing companies or family planning associations cost 25 to 35 cents for 3.



intrauterine devices

The effectiveness of an intrauterine (within the uterus) device to prevent conception has been known for over 2000 years. Hippocrates, the ancient Greek doctor described a device which was inserted into a woman's uterus through a hollow lead tube passed through the cervix (entrance to the womb). For centuries Arabian and Turkish camel drivers inserted small round pebbles into the uteri of their camels before going into the desert to prevent the camels from becoming pregnant during the long journey.

In this century, Grafenberg, a German doctor, reported in 1930 of his use of an intrauterine contraceptive device made of silkworm gut, wound into a ring and inserted into the uterus. Grafenberg's major contribution was the development of a device with a structure such that it remained only in the uterus and was not continuous with the cervical canal or vagina. Similar devices used in the beginning of the 20th century had structures which led into the uterus from the cervical canal. Grafenberg claimed that such structures served as ladders for the upward movement of bacteria from the vagina into the uterus. Devices with such "bacterial ladders" caused a great deal of infection and discomfort for many women.

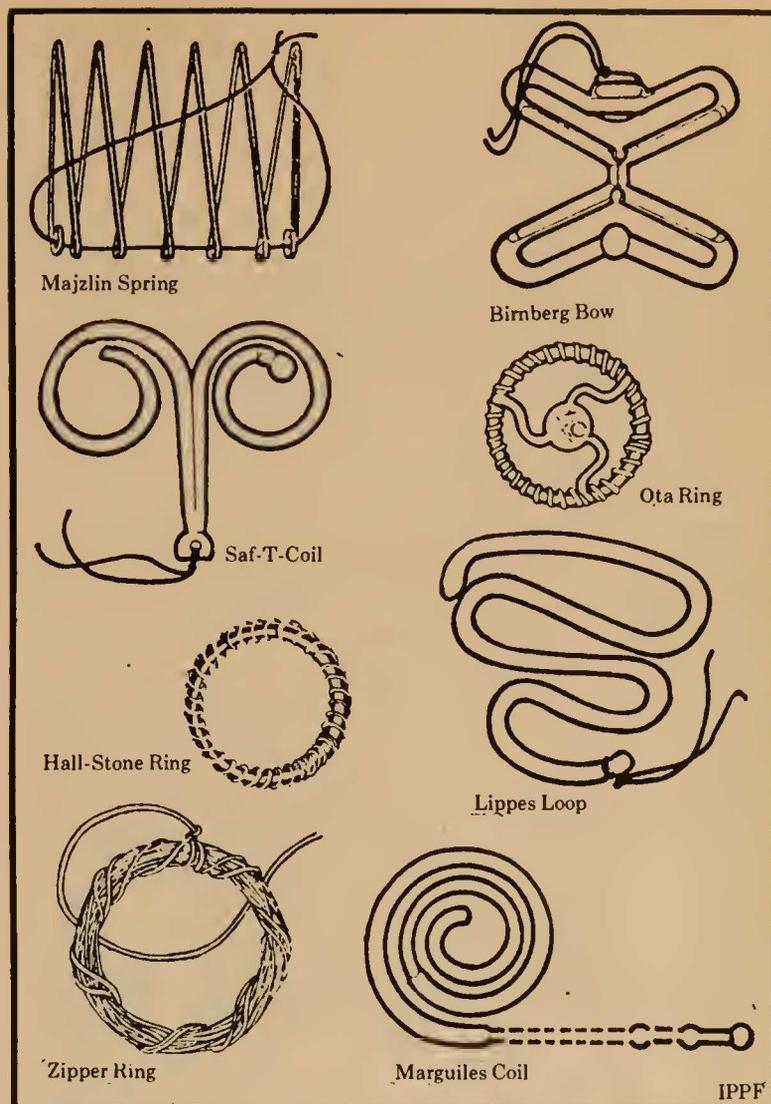
Because of complications with devices other than the Grafenberg ring, intrauterine contraception was neglected, until in 1959, two doctors working independently reported considerable success with modifications of the original Grafenberg device. Only recently have doctors begun to devote serious attention to IUD's (or IUCD's). It took many years for the medical profession to forget its prejudice against anything lying within the uterus even though reports on the Grafenberg ring made it clear that infection was not a common complication.

Description

Today there are three basic kinds of IUDs: closed devices such as the Hall-Stone ring, the Ota ring, the Zipper ring, the Birnberg bow, and other modifications of Grafenberg's original design; more recently developed open devices such as the Lippes loop, the Margulies coil and the Saf-t-coil; and closed-plane devices such as the Majzlin spring and the Dalkon shield. The open devices and the closed-plane IUDs are safer and easier to insert. Closed IUDs should no longer be used.

Some different IUDs are illustrated above.

Most of the modern, safer devices, except the Majzlin spring, are made of flexible plastic. The new synthetic plastics are being used for various kinds of human surgery and repair as well as for IUDs since the body does not react to their presence. The



malleability of plastics provides an additional advantage - IUDs made of such materials can be straightened out and threaded into very thin **introducers** (inserters) which can then be inserted into the uterus through the cervix with little or no pain. The malleability of plastic also allows for great latitude in design and may prove very useful in evolving the "ideal design". The plastic tube molded into the IUD design usually has a core of metal salts so that if the position of the device must be determined exactly, an X-ray will reveal the IUD (X-rays only show the presence of dense structures such as bone, metal, or metal salts, but not plastic itself).

Although there is much disagreement as to which is the best IUD available, the Lippes loop (size D, a little more than 1 inch across) is the most widely used. The Lippes loop is preferred because of low expulsion, pregnancy and side effect rates associated with its use. The more recently developed Saf-t-coil and Majzlin spring are both about as safe and as effective as the loop. Very recent research claims that the newly introduced Dalkon shield might be the best IUD of all, however much more research must be done before the shield can be accurately evaluated.

Insertion of the device

The insertion of an IUD is usually a simple, rapid, and more or less painless procedure. After a general physical examination, the

woman lies back on the examining table with her legs in stirrup-like supports, so that her vaginal area is exposed, and her thighs are apart. With a special instrument (speculum) the vaginal walls are gently separated and the cervix is exposed. A cancer smear test (the Pap test - routine in all gynecological examinations) is made by scraping the cervix gently (cells picked up are later examined under a microscope). The doctor has previously determined whether the **pelvic organs** (uterus, bladder, rectum) are normal and whether the uterus is angled forward or backward. A sterile **uterine probe** (see diagram) is then carefully passed into the uterus to ensure that the cervical canal is not obstructed and to recheck the uterine position. As the diagram shows, the IUD is threaded into a sterile plastic introducer (if it has not already been "loaded"). The loaded introducer is inserted through the cervical canal and is advanced to the lowermost portion of the uterus, just beyond the entrance of the triangular slit-like cavity. Sometimes it is necessary to grasp the cervix with an instrument to steady it before inserting either the probe or introducer. As the cervix is grasped the woman feels a pin-prick sensation, however pain is rarely experienced. Pressure is put on the plunger of the introducer and the IUD is pushed into the uterine cavity where it regains its original shape. The introducer is withdrawn leaving two nylon threads which are connected to the device, protruding into the upper vagina. The threads are trimmed so that only an inch or two remains beyond the cervix.

An IUD can be inserted at any time during the menstrual cycle, but it is best introduced on the first day of a menstrual period. This has several advantages: the most important is that insertion at that time can not interfere with an early or unsuspected pregnancy since if the woman is still menstruating, she has not yet ovulated that month and cannot be pregnant. Also insertion of the IUD may cause a slight amount of bleeding from the uterus, and this spotting is not an additional problem during menstruation. In addition the cervical canal is open wider during menstruation than during other parts of the woman's cycle.

As soon as the IUD is inserted, it begins to prevent conception. If a woman is changing from birth control pills to an IUD, she may be advised to take the pills for one month longer, since most accidental pregnancies which occur with the IUD, begin during the first month of use. Also, continued use of oral contraceptives reduces the amount of menstrual bleeding or spotting which may be increased during the first month of IUD use.

If the nylon appendage connected to the IUD is properly trimmed, neither the male nor the female is at all aware of the device during coitus.

Insertion of IUDs for women who have not had children

After a woman has a child, miscarriage or abortion, her uterus remains slightly enlarged and her cervix slightly dilated permanently. Many doctors refuse to insert an IUD into the smaller, tighter uterus of a **nulliparous woman** (never been pregnant)

because of severe pain which often occurs during and immediately after insertion. Some research is presently being done with various drugs meant to reduce the pain of insertion for nulliparous women. Many if not most women who have never been pregnant also experience some pain from cramps for the first few days after IUD insertion. This pain is sometimes not more severe than that experienced from normal menstrual cramps; in some other cases it can be accompanied by fainting or be so severe that removal of the device is necessary. All nulliparous women have a greater tendency to expel the device spontaneously from their uterus. Failure rates of the IUD are also significantly higher for nulliparous women.

Removal

Removal of devices with nylon "tails" is simple. The doctor pulls gently on the threads extending into the vagina, and the device usually slips out easily. Women should not attempt to do this themselves since occasionally the cervical canal is obstructed or the IUD is lodged in the uterine wall, and an unskilled tug could cause injury. For devices without an appendage, the doctor inserts a small blunt hook into the uterus, catches the IUD, and pulls it out.

Expulsion and required removal of IUDs

The muscles of the uterus run in two different ways (diagonally and transversely) and when the uterus contracts it does so in a rhythmical way. These contractions cause the IUD to be pushed out of the uterus of certain women. At present there is no sure way of knowing which women are likely to expel the device.

Between 10 and 12 percent of all women who receive IUDs spontaneously expel the device in the first year of use. Most expulsions occur in the first 3 months that the device is in the uterus. Expulsions of the IUD usually occur, if at all, during menstrual bleeding. Women using IUDs should check the surface of their menstrual tampons or pads to ensure that the device has not been passed out with menstrual blood. If the IUD has a nylon appendage, the woman should check for its presence after each period and at least once a week. If the nylon thread or beads cannot be felt, the doctor should be consulted and another method of contraception should be used until a new device can be inserted.

If a woman expels an IUD from her uterus she can have another one inserted. The chances that this same woman will expel the device again are very high - 50% of women who receive a second IUD expel it from their uterus.

The Lippes loop, because of its design compresses easily and is least likely to be pushed out of the uterus by a single muscular contraction.

Beyond the 10%-12% of women who spontaneously expel the IUD, another 8% to 10% of women have the device removed because of troublesome side effects which are described below.

Side effects

Minor side effects to the IUD are common but not serious. Usually, these side effects disappear after the first month or two of use, however all side effects

should be reported to the doctor who inserted the IUD.

Side effects include: minor or severe pain similar to pain from menstrual cramps; irregular bleeding during the month (spotting); and very heavy menstrual bleeding for the first few cycles after insertion. The extra heavy bleeding for the first few menstrual cycles following insertion seems to be a common experience. It should be reported to the doctor but it is not serious. Sometimes drugs are prescribed to lessen the bleeding. Pelvic pain and irregular or extra-heavy bleeding account for most of the 8% to 10% of IUDs which are removed either as a result of the doctor's decision or the insistence of the patient.

Serious complications

Pelvic Inflammatory Disease PID - (any infection of the pelvic organs) occurs as a complication to the IUD in 2% to 4% of women wearing a device. Usually, an incident of IUD - related PID is a relapse of some previously existing infection, such as gonorrhea. In such cases, the insertion of an IUD is enough to weaken the natural defences of the uterus, and bacteria which had been kept in check multiply and cause clinical signs of infection. Commonly used IUDs are sterilized before distribution, and sterile techniques are maintained by most doctors during insertion, to reduce the risk of PID. If PID occurs in a woman wearing an IUD, it can usually be treated without removing the device. Women who have had a pelvic infection previous to IUD insertion can safely use a device but must make sure that the infection has been totally eliminated.

Once in approximately 2,500 IUD insertions, the device does not remain in the uterus, but goes through the uterine wall into the abdominal cavity. Such **uterine perforation** is usually the result of error on the part of the inserting doctor or technician; however, some IUDs are pushed through the uterine wall by contractions of the uterine muscles themselves. Whatever the cause, complete perforation of an open device, with the IUD itself floating freely

in the abdominal cavity, is not dangerous. Since the body does not react to the IUD, it is usually left where it is. If however, a closed device perforates, there is a risk that it will catch a loop of one of the intestines and obstruct the passage of food or waste material. (This is why closed devices are no longer used). Surgery is always performed to retrieve a closed IUD, should it perforate. Similar surgery must be performed if an open device perforates only half-way, leaving a dangerous, rigid "hook" protruding through the uterine wall.

There have not been any cases reported of cervical or uterine cancer occurring as a result of IUD use. On the basis of presently available information, it can be said that IUDs do not cause cancer.

Should an IUD fail and a woman become pregnant with a device still in place, there is no danger to the baby. Usually the device is left in the uterus and is only removed when the baby is delivered. There are no reports of abnormalities in babies born to women with IUDs in place.

How the IUD works

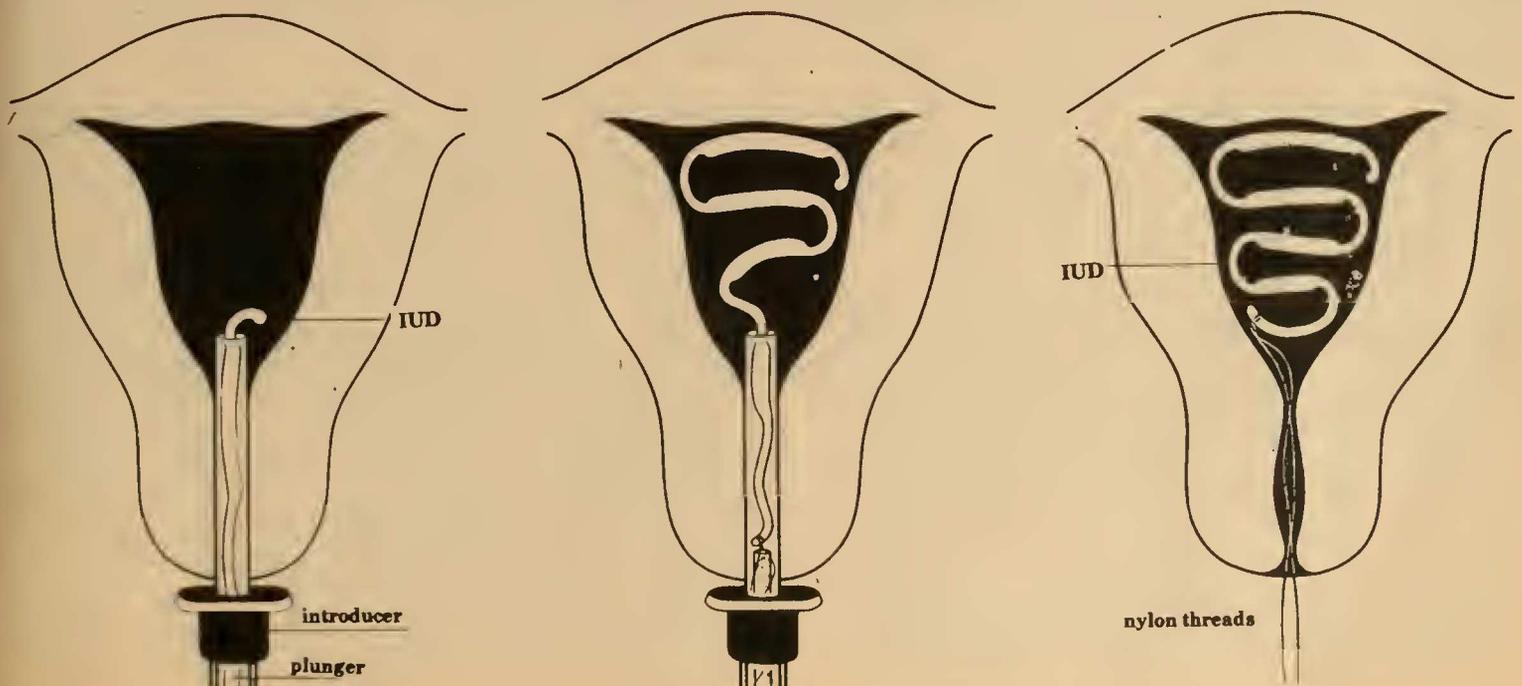
Many conflicting theories have been suggested in attempts to explain the contraceptive action of the IUD. The exact mode of action is still not understood.

One widely accepted theory suggests that the IUD interferes with the dynamic muscular balance of the cervix, uterus and Fallopian tubes. It is suggested that sperm transport up into the tubes and ovum transport down toward the uterus are disrupted by the IUD's effects on uterine and tubal muscles.

Another group of explanatory theories concentrates on cellular changes in the uterine lining, the endometrium. If the cyclic development of endometrial cells is disrupted, implantation of a fertilized egg is impossible.

One group of theories is primarily biochemical, and suggests that when an IUD is present, the uterine environment is chemically hostile to a fertilized egg.

A recently presented theory suggests that abnormally high concentrations of **macrophages** develop



within the uterus when an IUD is present. Macrophages are normal body cells which attack "invading" cells such as bacteria, by **phagocytosis**. (A phagocyte is a cell, such as a white blood cell, that can "swallow" another cell, and thus destroy it). Macrophages normally do not exist within the uterine cavity, and their presence might destroy a fertilized egg.

IUDs do not cause early abortion nor do they prevent pregnancy by creating a low-grade infection in the uterus.

Effectiveness

The efficiency of the IUD is considerably less than the oral contraceptive pill. At best, only 1.5 to 3 women out of 100 become pregnant during the first year after insertion of the IUD. Failure rates tend to decline with further years of use. Many doctors report a contraceptive failure rate of much higher than 3.0. With some devices, up to 8 or 9 women out of 100 become pregnant during the first year after the IUD is inserted.

IUDs are most effective for women who have had several children, and are older than 30 years of age. Age is the more important factor. For example, in one study on the Lippes loop, 5.7% of women 15-24 years old at time of insertion became pregnant within the first year. In the same study, only 4.7% of the women 25-29 years old, and 2.9% of women 30-34 years old became pregnant in the same time period.

Women who must not become pregnant should not rely on the IUD unless abortion is an acceptable and available option.

Acceptability

Considering the 10% to 12% of women who expel the IUD within one year after insertion, the 8% to 10% who must have it removed in that same period, and the 2% to 3% (at least) who become pregnant, the IUD is an acceptable method of contraception for only about 75% of women in the first year. Acceptability goes down to about 50% within 5 years. For those women who can use the IUD, it is probably the best method available - it is safe, easy to use, cheap, does not require repeated action (like taking a pill daily) and does not interfere with the act or enjoyment of sexual intercourse.

With the advent of statistically significant reports linking oral contraceptives with an increased incidence of death and disease from thromboembolic illness, some women have strongly advocated the use of the IUD in preference to the Pill. Failure rates for the IUD of 1% to 2%, and a naive belief that the IUD is "harmless" have been repeated over and over again.

It is absurd to believe that the pharmaceutical and plastic corporations producing IUDs have any more concern for the lives of individual women, than do the pharmaceutical corporations producing the

Pill. The IUD is neither harmless nor as effective as the manufacturing companies claim. It is not possible at this point to determine exactly how many women die as a direct result of IUD use (possibly from perforation); it is known however, that many women die during or after normal pregnancy (about 300 per million pregnancies), and that some women using an IUD become pregnant. As a result of contraceptive failure, 30,000 to 80,000 pregnancies occur every year in 1,000,000 IUD users. Thus, in 1,000,000 women using the IUD for one year, 9 to 24 women die as a result of pregnancy, and beyond these deaths, an undetermined number of women die as a result of criminal abortion.

Reversibility

The contraceptive effect of an IUD is completely reversible. When the device is removed the woman can have children again.

The IUD and genocide

The IUD is cheap to manufacture, easy to insert, and in large scale terms is very effective. Not more than 8 to 9 women out of 100 will become pregnant during the first year of use. Women who do not use any contraceptive method usually do get pregnant within one year - 90 women in 100 will become pregnant in one year if they do not try any method to control their fertility. Since the growth of large populations in nations of the Third World (Africa, Latin America, parts of Asia, etc) represents a threat to the power and world dominance of such countries as the United States, considerable attention is being directed at the IUD by these nations. Scientists, working with grants from such organizations as the Population Council, a "private American foundation", supported by the Ford Foundation, John D. Rockefeller III, and other private donors, are attempting to develop more effective IUDs which can be inserted by only semi-skilled personnel. By advocating "voluntary sterilization" and use of the IUD, the governments of the United States, Britain and other western powers are attempting to control by contraception the numbers of non-white people, just as white people from Europe eliminated large numbers of red Indians by importing European diseases for which the Indian had no antibody (immunity) resistance. One important characteristic that the IUD shares with sterilization is that the effectiveness of the method cannot be controlled directly by the individual woman who carries the IUD in her uterus. Both sterilization and IUDs are used much more extensively in countries other than the western nations. Of the 8 million IUDs used, only 1 million are carried by U.S. women. In contrast, of the 18.5 million pill users in the world, at least 8.5 million live in the U.S. and an additional .5 to 1 million in the United Kingdom.

Large scale use of contraceptive measures, applied to women who may not want to control their fertility, approaches genocide and ceases to be birth control.

diaphragm and jelly

The diaphragm and spermicidal jelly method is a relatively popular and effective mechanical form of contraception.

The soft rubber diaphragm with a spring rim is fitted as a mechanical barrier to the cervix, preventing sperm from entering the cervical canal; the front end fits snugly behind the pubic bone, the dome covers the cervix and the back end rises into the posterior fornix, a small pocket behind the cervix. A spermicidal preparation (cream or jelly) smeared on the surface of the device acts as a chemical contraceptive; it kills sperm which pass the diaphragm rim or remain in the folds of the vaginal wall. Some doctors question whether the device actually blocks the cervix or merely serves as a platform for the spermicide. Even so, it is always fitted as a barrier to the cervix.

Medical examination and prescription

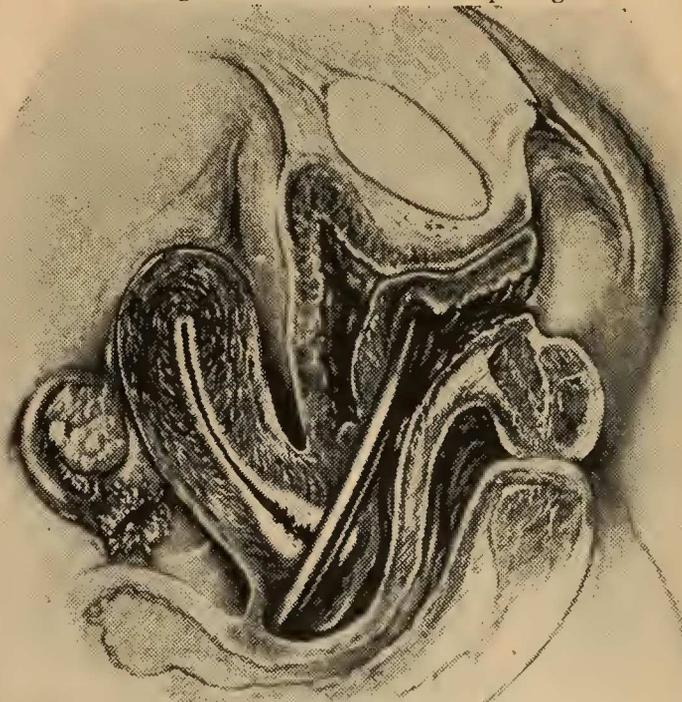
Each woman must be individually fitted for the diaphragm by a gynecologist or a family planning clinician. Non-prescription, "one size fits all" diaphragms should not be trusted. A virgin (woman with hymen intact) can be fitted for a diaphragm; however, sexual intercourse stretches the vagina slightly, and she should be refitted shortly after her first act of intercourse. Fitting should be checked at least every two years and after any of the following circumstances: childbirth, miscarriage, any operation (surgery), and a gain or loss of more than ten pounds.

The doctor must perform an internal pelvic examination to choose the size and type of diaphragm most suited for an individual woman. The woman is asked to examine herself internally so that she learns to recognize the edge of the pubic bone and the cervix, important for proper fitting. Then, the doctor inserts a sample diaphragm and asks the woman to examine it in place. She should be able to recognize the cervix through the rubber and the position of the front rim. The woman removes the

device by hooking her finger under the front rim, and pulling down and out.

The woman then learns to insert the device herself. A teaspoonful of spermicidal jelly or cream is smeared on the upper surface of the diaphragm (dome up or down, depending on the woman's anatomy). Spermicide must not be placed on the rim since this increases the possibility of displacing the diaphragm during coitus. With one hand, the woman squeezes the diaphragm into a long narrow shape. With the other hand holding the vaginal lips apart, she inserts the compressed device into the vagina until the far rim passes the cervix. She then pushes the front rim up behind the pubic bone and checks that the cervix is completely covered.

Plastic or metal inserters facilitate insertion, especially for women who have short fingers or dislike handling themselves. The diaphragm is hook-



Manual of Contraceptive Practice

Correct position with rim behind cervix and caught under pubic bone

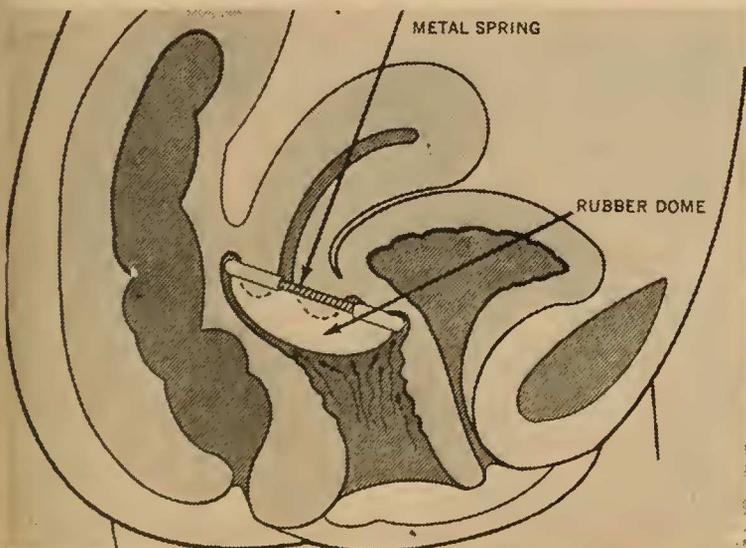
ed to notches on a rod which the woman inserts into the vagina. When she twists the rod, the device is released. Most inserters have a blunt hook at one end for removal. The rod is hooked to the front rim of the device which is then pulled down and out

Use

The diaphragm is most easily inserted while crouching, squatting, lying down, or standing with one foot raised.

The diaphragm may be inserted not more than two hours before sexual intercourse. If more than two hours goes by before coitus, an applicator full of spermicide should be inserted into the vagina, or the device should be removed to place more spermicide on the diaphragm's surface. A woman can walk around, bathe, or urinate with a diaphragm in place but she should recheck its position after a bowel movement.

After an act of sexual intercourse, an additional application of cream or jelly must be inserted into the vagina by means of an applicator before each additional coitus.



Mechanical action of diaphragm

Ortho

The diaphragm must remain in place for at least six hours after the last act of sexual intercourse, and can be left in place as long as 24 hours. A facial tissue or towel can be used to absorb any fluid leakage from the vagina. Spermicidal creams and jellies do not stain. After removal, the device should be washed with mild soap and water, dried, and powdered with corn starch.

Douching is unnecessary but if desired must be postponed at least six hours after intercourse.

Occasionally the woman should examine the diaphragm for holes and cracks, especially near the rim. Filling the device with water and checking for leaks, or holding the device to the light are two good tests.

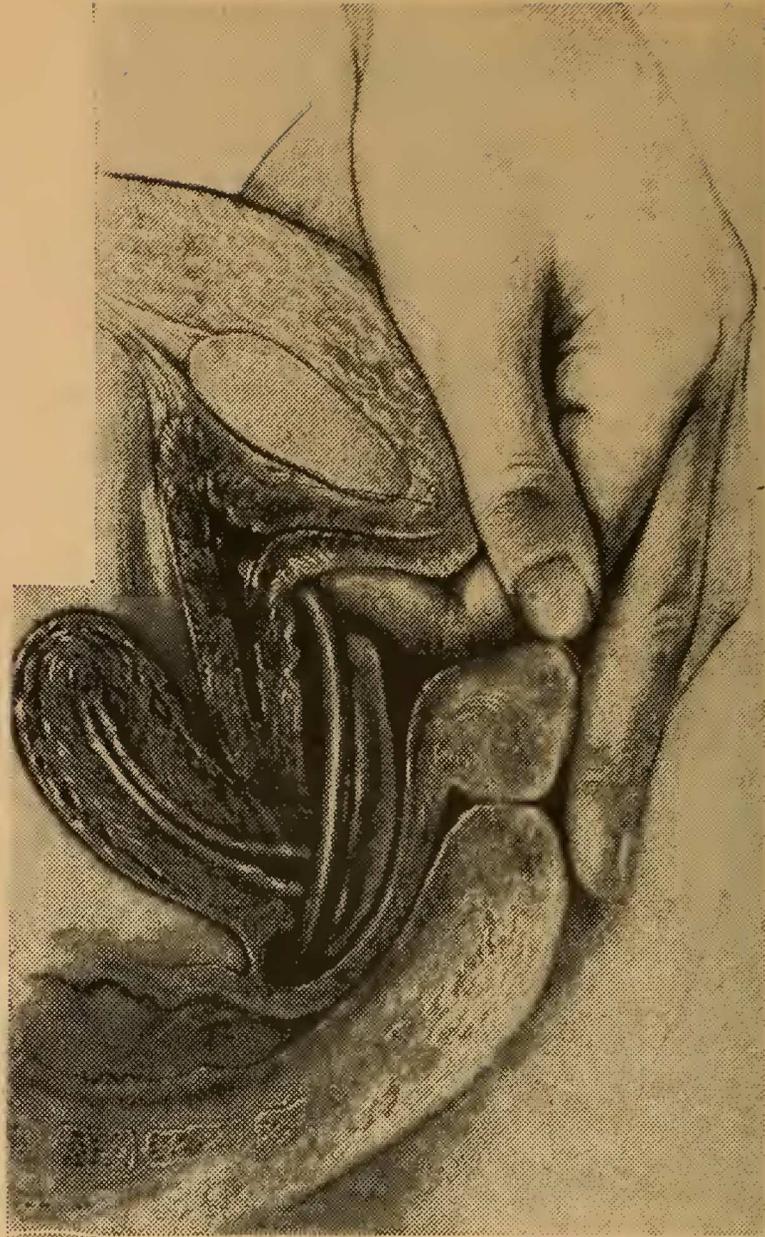
The diaphragm can be used during menstruation; however, conception is highly unlikely at that time.

If positioned correctly the diaphragm cannot be felt by either sexual partner during coitus. Diaphragms made of plastic are available in case of an allergic reaction to rubber. Also, the brand of spermicide should be changed if either partner is allergic to the kind being used.

The diaphragm is ineffective if left in a dresser drawer or purse, however, human frailty is not the only reason for its potential failure. The device can slip out of position for a number of reasons: improper fit, cream on the rim, expansion of the vaginal walls during sexual stimulation, and frequent insertions of the penis. The diaphragm is much more easily displaced in coital positions where the woman is above the man.

Cost

The cost of fitting a diaphragm by a private doctor is about \$15 to \$25, and considerably less at a hospital or family planning clinic. The device itself, which is obtainable only by prescription costs about \$4. A tube which contains about 20 applications costs approximately \$3.



Manual of Contraceptive Practice

"Front rim" test of fit

vaginal spermicides

The insertion of a sperm-killing chemical into the vagina before sexual intercourse is an ancient contraceptive practice. More than 3,500 years ago an unknown Egyptian writer suggested a mixture of honey and acacia tips (a vegetable gum) as a vaginal spermicide. Through the ages different preparations of harmless substances have been used as vaginal contraceptives.

Today, several simple-to-use vaginal contraceptives are available. These contraceptive preparations are made up of two components: a spermicidal (sperm-killing) chemical and a harmless, bulky base. The spermicide kills sperm cells deposited in the vagina and the base mechanically blocks the cervix,

so that even if some sperm cells are not killed, they cannot enter the cervical canal.

In Canada and the United States only three forms of vaginal spermicides are readily available: foams, creams and jellies. Spermicidal foaming tablets and spermicidal suppositories are also marketed but are more difficult to obtain, especially in Canada. Neither foaming tablets nor spermicidal suppositories are as effective as the least effective of the foams, creams or jellies, and therefore should not be used.

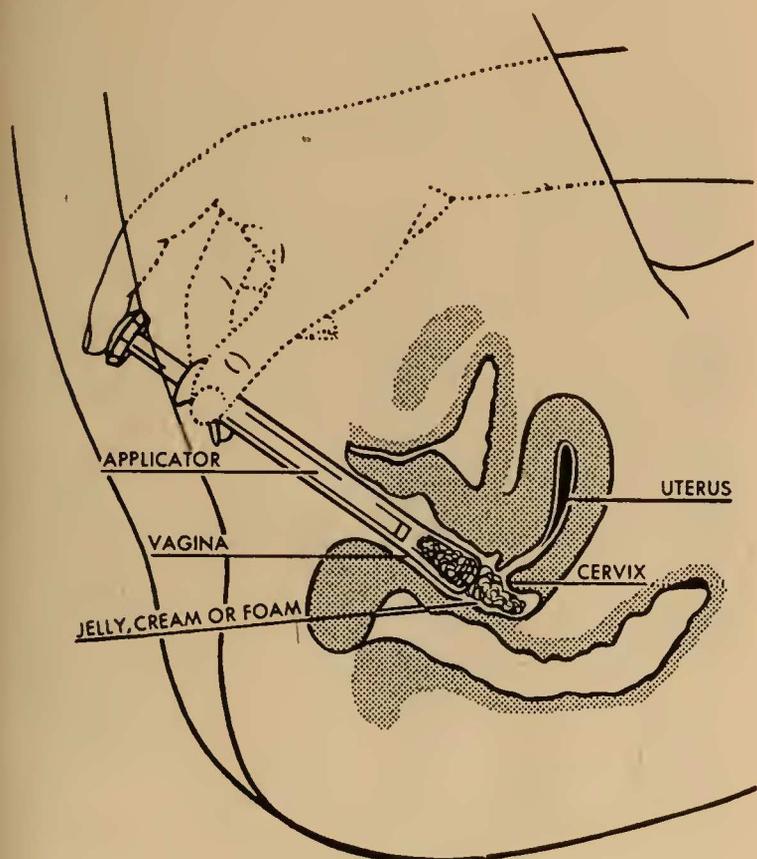
The spermicidal foams are more effective in preventing pregnancy than either the creams or jellies. Once inserted into the vagina, the foam spreads quickly and evenly over the cervix, and forms an effective barrier. The creams, and especially the jellies, often fail to spread properly over the cervix and are therefore more likely to fail as contraceptives.

"Messiness" is another problem more often associated with the creams and jellies than with the foams. Many women complain of leakage or dripping from the vagina during or after sexual intercourse while using cream or jelly.

The contraceptive foams are packaged under pressure in aerosol cans or vials while the creams and jellies come in tubes. A special applicator is sold with the can or tube of spermicide.

Two brands of vaginal foam are marketed in North America, and their brand names, "Delfen" and "Emko", have become synonymous with "contraceptive foam". Since vaginal foams are both easier to use and more effective, there is no reason why creams or jellies should be used at all.

All vaginal spermicides have a high failure rate and should not be used by women who must not become pregnant. The vaginal spermicide contraceptive method is not as effective as the diaphragm and jelly or the condom.

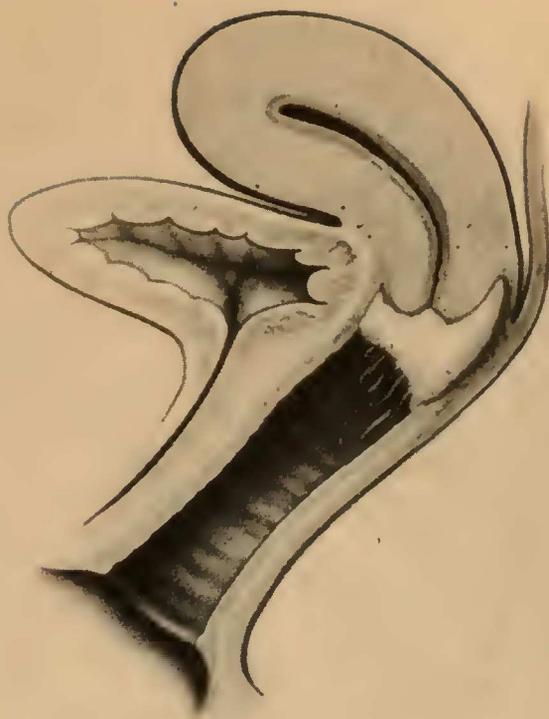


Application of spermicidal preparation

On the other hand, vaginal spermicides have several advantages. The preparations are harmless, can be obtained from almost any drug store without prescription, do not involve a "device" such as a diaphragm or condom and are easy to use properly.

Use

To use the contraceptive foam, a woman first shakes the can or vial and then fills the applicator by pushing the open end of the applicator tube down onto the nozzle of the container. As the foam rises in the tube of the applicator the plunger is pushed up. When the plunger has risen to the top of the tube, the applicator is full. The woman lies down and gently pushes the applicator into her vagina as far as it will go. The woman then pulls the applicator back (out) half an inch and pushes down on the plunger.



Contraceptive action of foam

Ortho

As can be seen in the diagram, withdrawing the applicator half an inch from the end of the vagina positions the open end of the applicator close to the cervix. When the plunger is pushed, the foam flows out of the applicator next to the cervix.

Applicators which come with creams or jellies can be screwed onto the mouth of the tube. The applicator is filled by squeezing the tube. Otherwise, creams and jellies are used in the same way as foams.

Foams, creams or jellies must be inserted not more than one hour before sexual intercourse. If more than one hour elapses between the insertion of a vaginal spermicide and sexual intercourse, another applicator-full of spermicide must be inserted.

If the woman gets up from bed or goes to the toilet



Foam and applicator

Birth Control and Love

after insertion of a vaginal spermicide but before sexual intercourse, another applicator-full of spermicide must be inserted.

Leaking from the vagina before, during or after sexual intercourse can be controlled by pressing a facial tissue or clean towel against the vaginal opening. Vaginal spermicides do not permanently stain clothing or sheets.

If a douche is desired, it must be delayed for at least 6 hours. Not all sperm cells deposited during sexual intercourse come into contact with the spermicide immediately, and many sperm can live on in the vagina for several hours after the male's ejaculation. Douching cannot remove all the sperm cells from the vagina, but it does dilute and remove most of the spermicidal preparation. In any case, douching is not necessary after use of a vaginal spermicide, since the natural cleansing processes of the vagina are sufficient. (Except for certain medical purposes, douching is **never** necessary).

After sexual intercourse, the woman can get up or go to the toilet without affecting the contraceptive action of the spermicide.

After use, the plastic applicator should be dropped into a bed-side glass of water and should be washed eventually in warm soapy water. If the spermicide dries within the applicator, it hardens and sticks to the sides. If this happens, the applicator can be soaked until the spermicide softens. Since the applicator is made of soft plastic, it cannot be boiled.

Side effects

Some men and women are allergic to one or several brands of vaginal spermicides. If allergic irritation occurs a doctor should be consulted and the brand of spermicide changed.

Vaginal spermicides cannot cause cancer or any other diseases.

Should a vaginal contraceptive fail, the baby is in no way affected by the spermicide.

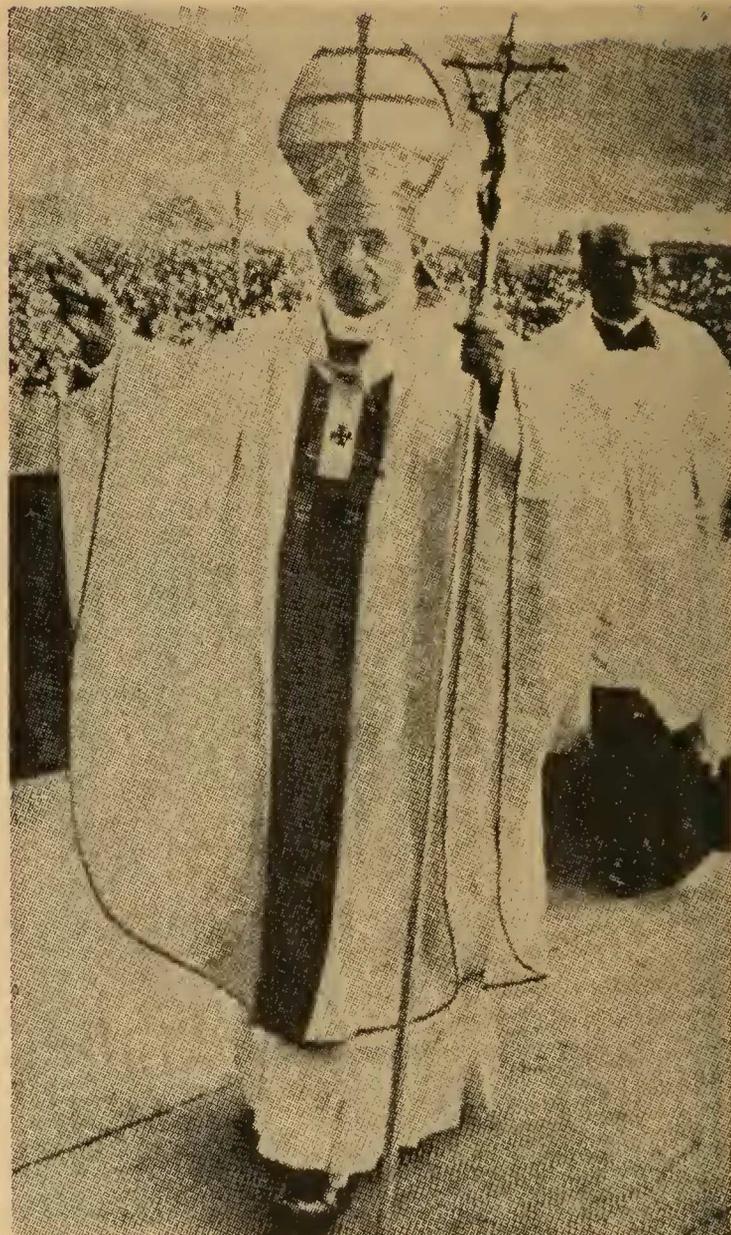
Cost

In Canadian and U.S. drug stores contraceptive foam "kits" (including applicator) are sold for \$4.00 to \$4.50. Refills of the foam alone sell for about 50 or 60 cents less than the complete kit. A can or vial of contraceptive foam contains about 20 applications of the preparation.

Vaginal creams and jellies are less expensive - selling for about \$2.50 for a complete kit. There are about 25 applications in a tube of cream or jelly.

Contraceptive foams, creams and jellies can be obtained at lower prices from discount drug stores, hospital pharmacies and family planning centers.

rhythm



If, then, there are serious motives to space out births, which derive from the physical or psychological conditions of husband and wife, or from external conditions, the Church teaches that it is then licit to take into account the natural rhythms immanent in the generative functions, for the use of marriage in the infecund periods only, and in this way to regulate birth without offending the moral principles which have been recalled earlier.

— From Encyclical Letter of Pope Paul VI *Humanae Vitae*.

The rhythm method (periodic continence, safe period, Ogino method) is simply the abstinence from sexual intercourse each cycle on those days when a woman is most likely to become pregnant. Used alone, it is **not an effective birth control method**, but it is helpful in determining the possibility of pregnancy in case of failure of another method.

Women who must not become pregnant should not rely on this method. Also, it should not be used by women who have irregular cycles, especially for any of the following reasons: age (under 22 or approaching menopause), recent miscarriage or childbirth, breastfeeding, or emotional problems. The rhythm method should be attempted only under the guidance of a doctor or family planning advisor.

To be successful, the rhythm method must be accepted by both the woman and her regular sexual partner, if she has one. Otherwise resulting frustration can threaten the relationship, or a sexual encounter may be imposed on the woman when she should abstain. Women whose sexual experiences are sporadic should not depend on the rhythm method, since the fertile period and a particular unexpected opportunity may frequently coincide.

Use

To calculate the **fertile period** when pregnancy is most likely, a woman must consider several factors: approximate time of ovulation, life span of sperm cells, and life span of the egg. Ovulation occurs at the middle of the cycle, usually about 14 days before the onset of the next menstrual flow. Therefore conception is least likely at the beginning and end of a woman's cycle, and most likely at mid-cycle. Sperm can survive in a woman's body for about 48 hours after ejaculation; the egg lives only about 24 hours after ovulation. Therefore, a woman using the rhythm method must not have sexual intercourse from 2 days before the earliest chance of ovulation until one day after the latest possible chance. This fertile or "unsafe" period can be calculated in several ways.

THE RHYTHM METHOD

HOW TO FIGURE THE "SAFE" AND "UNSAFE" DAYS

LENGTH OF SHORTEST PERIOD	FIRST UNSAFE DAY AFTER START OF ANY PERIOD	LENGTH OF LONGEST PERIOD	LAST UNSAFE DAY AFTER START OF ANY PERIOD
21 DAYS	3RD DAY	21 DAYS	10TH DAY
22 DAYS	4TH DAY	22 DAYS	11TH DAY
23 DAYS	5TH DAY	23 DAYS	12TH DAY
24 DAYS	6TH DAY	24 DAYS	13TH DAY
25 DAYS	7TH DAY	25 DAYS	14TH DAY
26 DAYS	8TH DAY	26 DAYS	15TH DAY
27 DAYS	9TH DAY	27 DAYS	16TH DAY
28 DAYS	10TH DAY	28 DAYS	17TH DAY
29 DAYS	11TH DAY	29 DAYS	18TH DAY
30 DAYS	12TH DAY	30 DAYS	19TH DAY
31 DAYS	13TH DAY	31 DAYS	20TH DAY
32 DAYS	14TH DAY	32 DAYS	21ST DAY
33 DAYS	15TH DAY	33 DAYS	22ND DAY
34 DAYS	16TH DAY	34 DAYS	23RD DAY
35 DAYS	17TH DAY	35 DAYS	24TH DAY
36 DAYS	18TH DAY	36 DAYS	25TH DAY
37 DAYS	19TH DAY	37 DAYS	26TH DAY
38 DAYS	20TH DAY	38 DAYS	27TH DAY

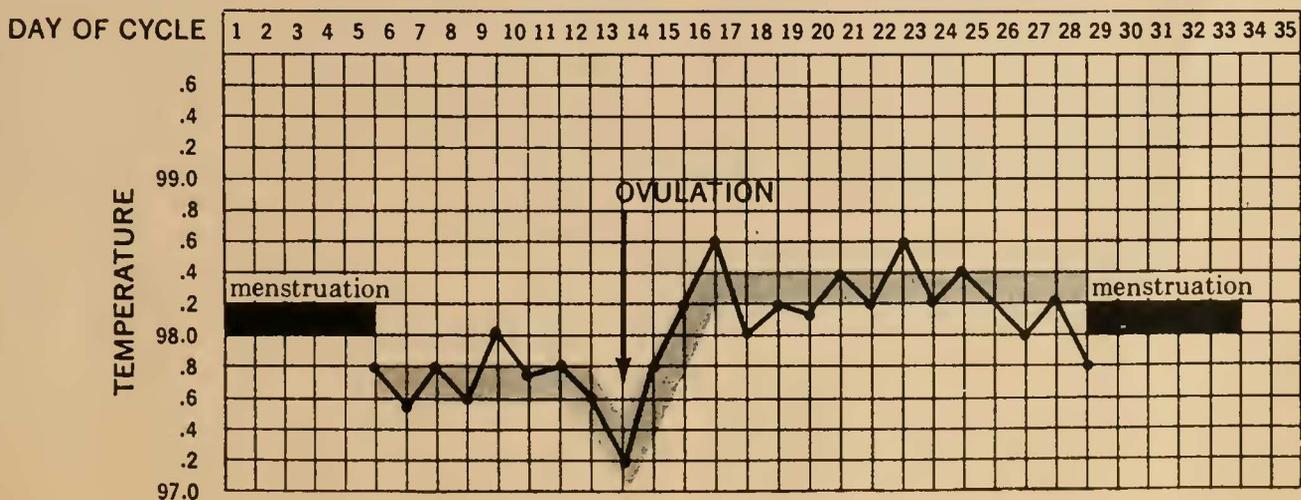
Time-Life

The calendar method

This method of calculation assumes that ovulation occurs approximately 12 to 16 days before a woman's next menstrual flow. Also, intercourse must be prohibited 2 days before this 5 day span and 1 day afterwards to account for sperm and egg survival. For a woman with a regular menstrual cycle, the total period of abstinence (**theoretical fertile period**) is always 8 days long.

Most women are not always regular; the length of the cycle varies one or several days in either di-

Basal Body Temperature during the menstrual cycle



rection. In order to use the rhythm method without error, a woman must first keep a record of her menstrual cycle for 8 months, using some other birth control method at this time. Marking the first day of the menstrual flow as day 1, a woman records the length of each cycle. After doing so for 8 cycles, she calculates the unsafe period for the 9th cycle as follows: subtract 19 from the length of the shortest cycle to find the first unsafe day; and subtract 11 from the longest cycle for the last unsafe day. A woman must not have intercourse from the first to the last unsafe day. The chart above calculates the fertile period for cycles of varying lengths.

A woman must continue to record the length of each cycle and base her calculations on the **most recent** 8 cycles. Thus, the unsafe period for the 10th cycle is based on the shortest and longest cycles between the 2nd and 9th cycles; for the 11th, it is based on those between the 3rd and 10th cycles; and so on.

The temperature method

A woman's body temperature is higher during the second part of her menstrual cycle. Progesterone, released by the corpus luteum after ovulation, causes a rise in body temperature. Also, a temperature drop occurs about 48 hours before ovulation, although this drop is not always as noticeable as the following rise. Thus temperature change as an indicator of ovulation can be used to determine the unsafe period.

Since body temperature also varies with daily activity, a woman takes her temperature before getting out of bed or beginning any activity each morning. This is known as the **basal body temperature** (BBT). Special thermometers with fine gradations are available for this purpose.

To familiarize herself with her typical cycle, a woman records her basal body temperature daily as shown in the chart for at least six months beforehand. She notes any other factors, such as a cold or restless night, which might affect the morning's temperature. She continues recording the BBT as long as she uses this method.

The **absolute fertile period** is calculated from day 5 of the cycle (onset of menstruation is day 1) until 3 days after the rise in basal body temperature. This is the unsafe period when sexual intercourse is prohibited, according to the temperature method.

Calendar-temperature method

The absolute fertile period calculated by the temperature method can be quite long, depending on a woman's cycle. The combination of the calendar and temperature methods often shortens this unsafe period. Also, if the basal body temperature is affected by other factors such as illness, a woman can rely on the calendar method for that cycle if she has kept an accurate menstrual history. In the combined method, the first unsafe day is calculated from the shortest cycle (using the chart provided); and the last unsafe day is the third day after a noticeable rise in the basal body temperature.

coitus interruptus

Coitus interruptus, also known as "withdrawal" or "being careful" is the oldest method of birth control still commonly used today. Withdrawal is mentioned in Genesis, the first book of the Old Testament, written about 3,000 years ago.

Coitus interruptus is difficult to use properly and has a very high failure rate. Women who must not become pregnant should not rely on their partner's use of this contraceptive technique.

Use

"Coitus interruptus" means interrupted sexual intercourse - a good description of this contraceptive technique. When coitus interruptus is used, sexual intercourse continues until just before the male orgasm. When the male feels his ejaculation coming on, he withdraws his penis from his partner's vagina and external genitalia before ejaculating.

It is important that the male withdraws his penis completely and ejaculates **away** from his partner's vagina. Sperm cells can move on their own, and if deposited anywhere between the labia majora (external vaginal lips) they may be able to continue up the vagina and into the uterus. Contrary to common belief, more than just one particular woman has become pregnant while still virginal. The hymen need not be broken before pregnancy can occur.

Sexual intercourse can be resumed after the male's ejaculation, if the male can maintain an erection. The tip of the penis should be carefully wiped, and if the man is not circumcised, the foreskin should be withdrawn and the penis wiped again.

As a contraceptive technique, coitus interruptus has several inherent defects. Most importantly, it is the male partner alone who determines the contraceptive effectiveness of the method. Not all men are trustworthy, and few can be depended upon at all times. The assurance, "I'll be careful" means nothing to a woman who knows that her partner will not physically suffer the consequences should a "mistake" occur.

Not all men are physically able to use coitus interruptus successfully. Effective coitus interruptus involving withdrawal before ejaculation, requires the man to be aware of when ejaculation will occur; however, complete ejaculation in a single emission (one powerful gush) is the ejaculatory pattern in not more than 50% of men. The other half of the male population usually expels semen sporadically or in a slow stream. Whether such men are aware of the

exact moment when semen first begins to escape, or whether they feel only the last portion of the ejaculation is not known.

Aside from ejaculatory pattern, men differ as to timing of ejaculation. About 50% of all men ejaculate within 2 to 5 minutes after the beginning of sexual intercourse, while the other 50% can continue coitus for 5 to 20 minutes before reaching orgasm. Men who ejaculate within 5 minutes of the beginning of coitus have more difficulty withdrawing from the vagina properly.

Both men and women face still another physiological obstacle when attempting to use withdrawal. As orgasm approaches, men and women experience mild to extensive loss of consciousness during which coital movements lose their voluntary character. This condition can last several seconds, and a conscious action such as withdrawing the penis can be impossible. If intercourse continues uninterrupted for too long, one or both of the sexual partners may slip into this semi-conscious stage, and forget about withdrawal.

Side effects

For many years some doctors, especially those who opposed birth control in general, warned of possible ill effects of coitus interruptus. Modern medical and statistical research has revealed that coitus interruptus is physically harmless.

Psychologically, on the other hand, withdrawal can lead to problems, especially for women. In Western societies most women take longer to reach orgasm during sexual intercourse than their male partners. Therefore, coitus interruptus often involves interruption before a woman can reach orgasm. If the male partner can maintain an erection after ejaculation, sexual intercourse can be resumed; however, not all men can or want to continue coitus. Withdrawal thus often means frustration for the woman unless masturbation or clitoral manipulation brings the woman to orgasm.

Aside from the simple factor of timing, the woman may fear, often justifiably, that the male will not withdraw his penis before ejaculating. Concentrating on the possibility of an unwanted pregnancy is not conducive to sexual enjoyment and orgasm.

Men can also experience psychological or sexual problems related to coitus interruptus. If the man sincerely wants to protect his sexual partner from pregnancy he may find himself in a constant state of fear throughout the sexual act, afraid that withdrawal at the right time will not be possible.

For all the problems associated with coitus interruptus, this contraceptive technique is not without its advantages. Withdrawal costs nothing and is always available. The consistent use of coitus interruptus does reduce the frequency of pregnancy. Even so, given the existence of cheap, easily available mechanical, chemical and hormonal contraceptives, coitus interruptus should no longer be considered a valuable birth control alternative.

other methods

So-called contraceptive methods which are, for all practical purposes, ineffective need not be considered extensively by this handbook. These methods include: immediate post-coital douching, total self-restriction of female orgasm known as "holding back", prolonged nursing, and coitus reservatus.

There are serious drawbacks to use of the douche as a contraceptive method. If there is to be any possibility of effectiveness for conception control, the douche must be used immediately after intercourse — an unpleasant interruption for the woman. More significantly, at that time, the pressure of the douche might easily force concentrated sperm into the cervical orifice; sperm could very well continue and effect fertilization. On the other hand, if the pressure of the douche is inadequate to distend the vagina, sperm remain untouched in the vaginal crevices. For these reasons the douche should not be considered a contraceptive method, and must not be used for conception control.

It should be noted that too frequent douching is harmful since it destroys protective bacteria in the vagina.

The strong coal tar "feminine hygiene" disinfectants should never be used. If not mixed properly, they will burn the tissues.

It is a relatively common belief that if the female partner "holds back" and does not permit herself to achieve orgasm during coitus, pregnancy is impossible. This belief is based on the misconception that women, like men, ejaculate in orgasm a substance that is necessary for fertilization. While it is true that there is a release of fluids when a woman reaches sexual climax, these fluids simply facilitate the swimming movement of sperm. In the partial absence of these secretions (absence is never complete), sperm can still reach the Fallopian tubes and fertilize an egg. There have been many pregnancies in women who have never had orgasm.

There is no truth to the belief that as long as a woman is nursing a baby she cannot conceive. Because of hormonal balances, during early months of breast feeding ovulation may be delayed, but this protection does not last long, nor is it reliable.

The practice of coitus reservatus is similar to coitus interruptus (withdrawal). The essential difference is that whereas in coitus interruptus the male partner does not allow himself to achieve orgasm and ejaculate within the woman's body, in coitus reservatus there is no ejaculation. The male does not withdraw, but remains in sexual contact during the female partner's orgasm and gradually his erection subsides. Such control for an hour or longer, it has been reported, requires training; further it is highly probable that some sperm will escape through the erected penis even though the male partner does not ejaculate. The control that is necessary for utilization of coitus reservatus as a contraceptive method cannot be maintained by many men. The same psychological and physiological arguments against coitus interruptus are directed against coitus reservatus.

effectiveness

The pregnancy rate for any period of time during which a particular birth control method is used is an expression of the failure rate of that method. The **Pearl formula** is a standardization of contraceptive failure rate.

$$1300 \times \frac{\text{total number of conceptions}}{\text{total months of exposure}} = \text{failure rate per 100 woman years of exposure}$$

The above formula assumes that ovulation occurs 13 times a year, thus providing 13 chances for conception. Thirteen is multiplied by 100 to provide an easily definable "per cent" figure - thus 1300. "One hundred woman years" standardizes the pregnancy rate in terms of the number of times conception is possible during a year's period of exposure. The formula assumes regular heterosexual contacts, no intervening pregnancies or periods of breast feeding, and ovulation during each menstrual cycle. Thus, if 60 women use one contraceptive method for 10 months, and five conceptions occur, the formula would reveal a failure rate of:

$$13 \times \frac{5}{600} = \text{almost } 11\%$$

Two different failure rates are often provided for each contraceptive method, "theoretical failure rates" and "clinical failure rates". The theoretical failure rate reveals the effectiveness of a method if it is used absolutely consistently and according to instructions. The clinical failure rate states the effectiveness of a method used under average conditions by average people. The theoretical rate can be accurately determined for only two contraceptive methods - the Pill and the IUD. With the Pill, it is possible to objectively determine if a woman has taken one pill every day for 21 days in a cycle; and with the IUD it is similarly possible to objectively determine if the device is in place in the uterus. Since all other contraceptive techniques are not totally divorced from the sexual act, it is not possible to make objective observations as to the consistency or accuracy of personal use.

In the chart, theoretical failure rates and clinical failure rates are presented only for the oral contraceptive and the IUD. For all other methods, only clinical rates are provided. Listings are approximations, and are subject to great variation. A listing should be read:

" pregnancies in 100 women using the method for 1 year".

When considering the meaning of effectiveness statistics it should be remembered that the most important variable is "individual failure". Oral contraceptives can be 100% effective; however this is meaningless if a woman forgets to take 1 or more pills. Similarly, the condom theoretically provides

Method	Theoretical failure rate	Clinical failure rate
Oral contraceptive (combination pill)	0	.05
IUD	1.5 - 8	1.5 - 8
Condom		10 - 15
Diaphragm and jelly		10 - 20
Vaginal spermicides		15 - 25
Rhythm method		15 - 30
Coitus interruptus		20 - 30

100% protection against conception. The chart above reveals, however, that an average failure rate for the condom is 10 to 15 per year. In terms of effectiveness, the main difference between the oral contraceptive and the condom is that the former provides many fewer opportunities for individual failure than does the latter.

When choosing a contraceptive method, personal beliefs, preferences and hang-ups must be considered, since they affect "individual failure". If a woman is afraid of the oral contraceptive, it is likely that she will "forget" a pill every so often. If a man believes that a condom dulls sexual sensation, or if he really does not care whether or not his partner becomes pregnant, he may occasionally "forget" to wear the sheath.



André Giguère

new methods

The Pill is only an interim solution to the problem of hormonal contraception. Although the oral contraceptive appears safe for the vast majority of users, it does constitute an endocrinological insult which can lead to side effects, disease, and, in rare cases, even death. Several experimental contraceptive devices and drugs, some of which are described below, may eventually replace the Pill.

The continuous progesterone pill ("mini-pill")

Estrogen is responsible for most side effects associated with the Pill. Experiments are being performed with an oral contraceptive which contains only .05 mg of a potent synthetic progesterone in the daily pill. One pill of a progesterone oral contraceptive series is taken every day, in contrast to the 3 weeks on, 1 week off regimen of the estrogen-progesterone pill. The "minipill" eliminates side effects and endocrine changes caused by estrogen. Unfortunately it is associated with another set of side effects resulting from the absence of estrogen. Estrogen as a component of the combination Pill regulates the user's cycle, and helps prevent ovulation. When progesterone is used alone as an oral contraceptive, menstrual cycles are disrupted, and ovulation still occurs.

Chlormadinone acetate (CA) is the most commonly used progesterone in minipill preparations. CA is highly anti-estrogenic, and causes localized changes in the genital tract making conception unlikely. When a woman is taking a continuous progesterone contraceptive, mucus in the cervical canal becomes thick and impenetrable to sperm. Progesterone also disrupts the cyclical development of endometrial cells, making the whole endometrium unreceptive to a fertilized egg. Even so, pregnancies do occur in women taking the progesterone-only pill. Although scientists working for pharmaceutical companies claim otherwise, the minipill's failure rate is at least 5 to 6 a year.

To be effective, the minipill must be taken at the same time every single day without fail. To forget even one pill can expose a woman to pregnancy.

The minipill is unacceptable to many women because of its high failure rate and high incidence of extremely irregular menstruation. If these problems can be eliminated, the minipill might replace the estrogen-progesterone preparations.

Several chlormadinone acetate preparations have already been on the market in England and Canada. These pills were withdrawn in England because longterm tests revealed the development of breast nodules (tumors) in female dogs given CA for several years. The significance of these findings is questionable, since dogs metabolize sex hormones differently than do humans or monkeys. Breast nodules have not been observed in monkeys treated with CA, nor are the breast nodules discovered in bitches clearly cancerous. Further experiments will probably result in the return of CA products to the general market.

The "morning after" pill

An effective "after the fact" oral contraceptive has been available for several years. If a woman takes a large dose of natural estrogen called stilbestrol within 24 hours of an unprotected act of sexual intercourse, implantation of the fertilized egg (if there is one) is disrupted. Stilbestrol is given to victims of rape, but can be obtained in simple cases of unplanned and unprotected intercourse, or in clear cases of contraceptive failure (e.g. ruptured condom).

The "morning after" pill as it now exists, usually causes severe vomiting and nausea. Also, use of large doses of estrogen is presently being avoided.

Progesterone injections

Injections of 150 mg. of a potent, long acting progesterone have been used as a contraceptive technique for several years. Unlike the progesterone only pill, the injection method is usually 100% effective. The synthetic progesterone used probably causes an oversuppression of the hypothalamus, blocking the secretion of LH. It can take 12 to 21 months after a progesterone injection for the hypothalamic suppression to wear off, although 100% protection against conception is only provided for 3 months. Many scientists believe that in some cases hypothalamic suppression induced by progesterone injection may never wear off, leaving a woman sterile.

Progesterone injections have not been widely used in Canada and the U.S. The majority of experiments have been performed on non-white, poor women, living in Third World nations. Since the possibility of permanent infertility is rarely explained to such women, experiments with progesterone injections often constitute non-voluntary chemical sterilization programs.

The progesterone injection technique is associated with a high incidence of extremely irregular menstruation. If this side effect, and the possibility of sterilization can be eliminated, the injection technique would be a good contraceptive.

Silastic implantations

Another progesterone-only contraceptive technique being experimented with widely on Third World women involves the implantation, under the skin, of a tiny plastic "pillow" filled with progesterone. Silastic, used in making the pillow, releases progesterone at a slow continuous rate. To implant the plastic capsule, which is about as big as a pencil tip, a small area of skin on the inside of a woman's arm is locally anesthetized. A large bore needle carrying the capsule is then injected leaving the capsule under the skin. The capsule can be removed in a similar way.

Side effects associated with this method are similar to those complicating use of progesterone injections.

Silastic intravaginal-ring

This is a highly promising method. A silastic

ring, of about the same diameter as a diaphragm, and filled with a synthetic progesterone, is inserted into the vagina on the first day of menstruation. When properly placed, the ring cannot be felt by the woman or her sexual partner. The ring is left in the vagina for 21 days and the progesterone which is absorbed into the blood stream through the vaginal walls, has a localized effect on the genital tract. After 21 days, the woman removes the ring, and menstrual-like bleeding begins a few days later. Preliminary reports on this method indicate low side effect levels and regular menstruation.

The once-a-month pill

A more convenient form of the combination oral contraceptive is under investigation. A form of ethinyl estradiol (estrogen), which is picked up from the digestive system and stored in fat cells, is used in combination with a long acting synthetic progesterone. Effectiveness of this pill appears to be high and side effect levels low; however, the hormonal balance of this pill is estrogenic. Anti-estrogenic oral contraceptives are associated with a lower incidence of metabolic changes and serious complications, and so the future of this method is questionable.

Pill for men

Experiments with several non-hormonal drugs used to prevent sperm production have not yet been very fruitful.

Vaccinations

When the body is "invaded" by a toxic chemical or disease organism (e.g. bacteria) white blood cells and specialized blood serum chemicals attack the invader. In the course of the subsequent biological battle, the body's defences become specialized against the particular invading chemical or organism. This specialization process, called the development of immunity, is highly complex and hardly understood. If the same chemical or organism attacks again, specialized "antibodies" carried by the blood serum, destroy the invader without exhibiting disease symptoms.

It may be possible to immunize ("vaccinate") a woman against a particular man's sperm. Sperm cells are actually invading bodies; however, they are not normally attacked within the female body since they do not, under normal circumstances, induce immunization. If a woman could be immunized against sperm, antibodies would attack and destroy sperm cells when they enter the Fallopian tubes.

Not all antibodies are maintained for the whole life of the organism. For example, smallpox antibodies "wear out" in a few years, and booster shots are needed to redevelop immunity. Vaccination against sperm need not be permanent, and various techniques could be used to determine when re-immunization is necessary. If the vaccination method can be perfected, it would be preferable to hormonal contraception.



André Giguère

sterilization

Sterilization, a surgical procedure for the permanent prevention of conception, is usually advised in the following situations: when another pregnancy could endanger a woman's life or health; when the parents have already produced a child with an inherited nervous or physical disease, such as hemophilia; where physical, mental or emotional factors prevent the couple from caring for the child properly; when a couple considers their family complete and wishes absolute protection from further pregnancy. Hospital policy varies on this question, however age of the woman is usually a decisive factor.

female sterilization

There are four possible surgical methods to sterilize a woman. An **oophorectomy**, the removal of the ovaries, is never done because of the importance of the chemical hormones they produce.

Hysterectomy, or removal of the uterus is of course a complete barrier to pregnancy but is advised only if the uterus itself is diseased. The ovaries themselves are generally left in place in the younger woman. Many doctors disapprove of hysterectomy as a sterilizing procedure on two grounds: it involves major abdominal surgery with all the implications therein, and the early loss of the uterus can have bad psychological effects.

In general, unless diseased, the complete removal of the Fallopian tubes, called a **salpingectomy**, has been given up in favor of a more simple technique, commonly known as "tying the tubes".

The most common method of sterilization, **tubal ligation**, which involves tying off the Fallopian tubes, effectively prevents the egg from reaching the uterus, and the sperm from travelling into the tube. Through a small incision on the abdominal wall the tubes are brought into view, are cut and the ends tied.

The operation may be performed within twelve hours after normal delivery, when the uterus is enlarged and therefore the tubes are easily reached. After **caesarean section** the operation is done immediately after repairing the uterine incision.

In both cases the procedure hardly lengthens the hospital stay. When a woman has not been pregnant for several months, an interval sterilization may be performed abdominally, as discussed above, or

by making an incision in the vagina through which either a tubal ligation or hysterectomy can be done.

Tubal ligation is a highly successful operation with a failure rate of about one in 250 (somewhat higher when done after caesarean section). Less than 50% of the attempts at reversibility have been successful.

Until improved methods allow for greater reversibility, the operation must be considered permanent.

Male Sterilization

Sterilization may be performed on the male in two ways. **Castration**, removal of both testicles, is never done on normal individuals because it produces impotence and eliminates sexual desire, as well as affects secondary masculine traits. It is considered only in the case of serious diseases such as cancer or tuberculosis.

The most common method of male sterilization, an operation known as a **vasectomy**, has no effects on a man's sexual desire or virility, except perhaps to enhance it by relieving him from fears of having another child. The operation involves severing the vas deferens thereby preventing the passage of sperm from the testicles to the penis. Since the contribution of the testes accounts for only about 1/10 of the volume of the total ejaculate, the actual quantity of seminal fluid is not appreciably diminished.

A small incision is made in the upper and lateral region of the scrotum, directly over the spermatic cord. The cord itself is cut and the vas deferens is separated from the blood vessels and nerves. Two ligatures are put a small distance apart around the vas deferens and the portion between them is cut out. The incision is closed with sutures and a temporary dressing applied. The entire operation done either in a hospital or doctor's office takes approximately 20 minutes. Men are sometimes advised to wear a suspensory for a few days to hold the testicles up so that traction on the wound is not painful.

Male sterilization cannot be depended on for contraception for the first three weeks after vasectomy, during which time sperm produced before the operation may still be present in the semen. After this time a semen specimen is examined under a microscope to check for the complete absence of sperm. In about 1% of the cases the severed ends of the vas deferens grow together and continue to transport sperm. Therefore it is advisable to have a semen specimen examined about every six weeks for the first six months after which such precautions are no longer necessary.

Attempts to restore fertility after a vasectomy have been successful in only about 50% of cases. Reversible methods are being sought such as use of a silicon injection which hardens to form a removable plug.

Sterilization operations were performed by Nazi doctors on Jews in World War II. Today, the United States legal system manages to sterilize "welfare mothers" (usually black people) who have had illegitimate children. In Delaware a Senate committee recommended that welfare mothers with 2 or more illegitimate children should be sterilized. In New York, judges offer women the choice - either be sterilized or receive no more welfare.

Like the IUD, sterilization is used more extensively in Third World nations. Since male vasectomy is a quick, simple operation, it is considered invaluable in the control of Third World populations. In India where vasectomies are performed in train stations, 5,500,000 have been "voluntarily sterilized". Pakistan is initiating a program to sterilize 50,000 men a month

abortion



There are only 4 safe medical abortion procedures. The first two, **dilatation and curettage (D. & C)**, and **vacuum curettage** are used until the 12th or 13th week of pregnancy; after this time either the saline technique or hysterotomy, both of which require a hospital stay must be used.

Dilatation and Curettage

Before beginning a D. & C. the doctor (or paramedical specialist) conducts an internal examination to verify the pregnancy and check the angle of the uterus. A speculum holds the walls of the vagina apart throughout the operation. A uterine sound is passed through the cervical canal into the uterus to ensure that the canal is not blocked, and to estimate the measurements of the uterus.

A local anesthetic is sufficient to block pain occurring during the operation. The most commonly used form, the **paracervical block** is also used frequently during childbirth. The chemical (xylocaine or carbocaine) is delivered by injection at the back of the vagina behind the cervix. The injection itself is not painful. Nerves leading from the cervix are numbed by the anesthetic, and sensation from the uterus and especially the cervix is "blocked" before it reaches the spine. Since a local anesthetic does not affect other body functions, the woman should eat normally before the operation to avoid fainting.

The cervical canal must be dilated (widened) to permit the introduction of surgical instruments. This can be done in a number of ways. In the traditional method, the doctor passes a series of increasingly larger polished metal rods (Hegar's dilators) into the cervical opening. The first is about the width of a thin soda straw, and the last is about the width of a finger. The cervical tissue stretches more easily in women who have had children. Although the anesthetic blocks severe pain during cervical dilation, women sometimes feel cramps similar to menstrual cramps. Dilation of the cervical canal can also be accomplished by an instrument with two rounded tips which are inserted into the canal; by applying pressure to the handle, the tips separate, causing the tissue to stretch. This expansion technique takes only several seconds but occasionally it is more uncomfortable than Hegar's dilation.

Once the canal is dilated the doctor inserts a **curette** (surgical instrument with spoon-like tip) into the cavity of the uterus to scrape loose the embryo and placenta. Loosened portions of embryonic material are removed from the uterus with a long surgical grasping instrument called an **ovum forceps**. The entire operation takes about 10 to 15 minutes.

Vacuum curettage

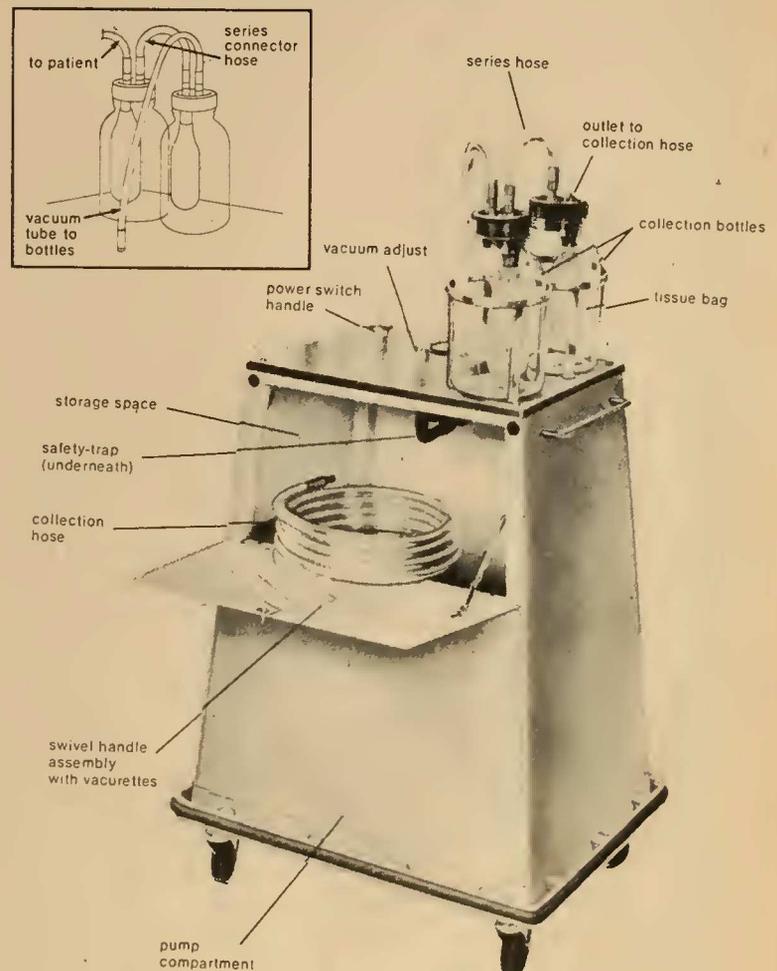
This modern method of abortion, also called **uterine aspiration**, was first developed in China.

It is quickly replacing the D. & C. as standard procedure since it is quicker, involves less blood loss, less risk of uterine perforation, and requires less anesthetic.

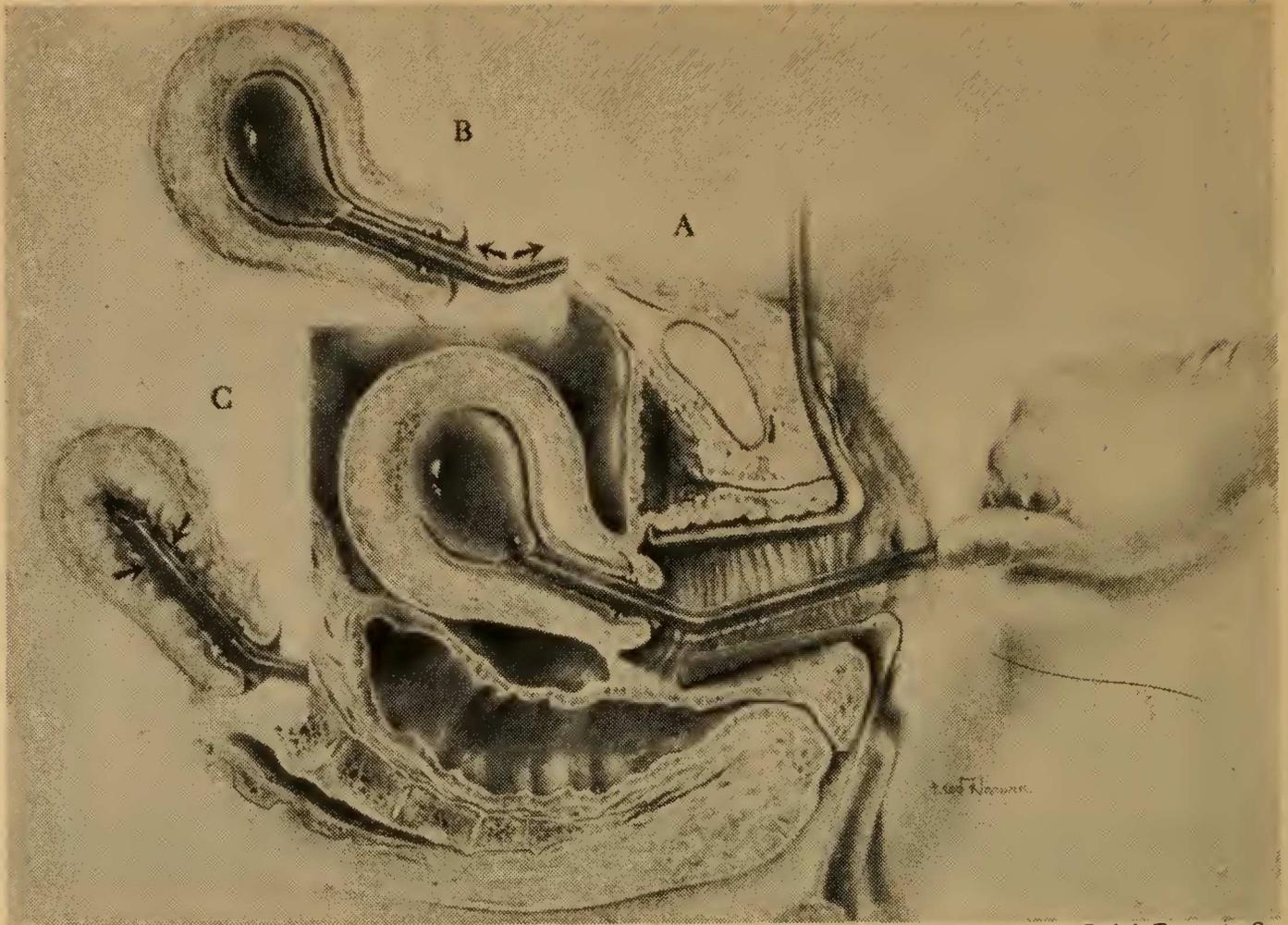
Preparation for vacuum aspiration is exactly the same as that for a D. & C., including the internal examination, paracervical block, and cervical dilation. Some doctors prefer to dilate the cervix with a "vibrodilator" which attaches to some vacuum operating units. Vibration of a soft metal cone held in the cervical canal dilates the canal almost instantly to an exact size; however, many doctors continue to use one of the older methods of dilation since the vibrodilator makes a loud noise which can be upsetting to the patient.

Once the canal is dilated, the doctor inserts a hollow tube called the **vacurette** into the uterus until it touches the amniotic sac. The vacurette is connected by transparent plastic tubing to a collection bottle. The vacuum pressure is turned on for 20 to 40 seconds, and the doctor observes the passage of fetal and placental tissue into the collection bottle. When the uterus is emptied, the doctor feels a slight tug on the vacurette. In order to ensure that no placental tissue is left in the uterus, the doctor goes over the uterine lining with a curette as in a D. & C. This is especially important in pregnancies close to the 12 week limit, and when the uterus is positioned abnormally.

Operating unit for vacuum curettage.



Berkeley Tonometer Co.



Berkely Tonometer Co.

Vacuum curettage: A. vacurette inserted through cervical canal; B. suction turned on, material flows through tubing; C. empty uterus "tugs" on vacurette.

Recuperation from vacuum curettage is almost immediate. Some women want to lie down for a few minutes, others have cramps similar to menstrual cramps, and still others feel perfectly normal. Women who get up from the operating table too quickly sometimes faint.

A woman will have menstrual-like bleeding for a day to a week after an abortion. She may use either pads or tampons, whichever she prefers.

The first real menstrual flow begins 3 to 6 weeks after the abortion. Since it is difficult to tell exactly when she becomes fertile again, a woman must consider herself subject to another pregnancy immediately, and begin to use some form of birth control. A woman who wishes to go on the Pill should consult a gynecologist and obtain a prescription before the operation. She may take the first pill of a series within 5 days after the abortion; otherwise, she must wait until her next menstrual flow.

A woman must not douche after an abortion. The cervix remains slightly dilated and a douche can force fluid into the uterine cavity.

Other than the restriction on douching, there is nothing that a woman cannot do after an abortion. Some women wish to rest for an hour or two; others go about their everyday business without interruption. There is no restriction on sexual intercourse so long as proper birth control measures are taken.

Some doctors automatically prescribe anti-

biotics such as penicillin after an abortion; others who do not believe in such prophylactic treatment give antibiotics only if a woman shows signs of infection, since it is more difficult to cure infection which develops despite antibiotics. Fever, and pain in the pelvic area are symptoms of infection. Infection after a properly performed abortion is fairly simple to cure; however, it is serious. If fever, pain, or uncontrollable bleeding occurs after an abortion, a woman must see a doctor or go to a hospital emergency clinic immediately.

Intra-amniotic hypertonic saline ("salting-out")

This method of inducing miscarriage, used after the fourteenth week of pregnancy, requires a hospital stay of several days. A small area of skin a few inches below the navel is locally anesthetized. A long needle is inserted through the abdominal wall and into the uterine cavity. Several ounces of amniotic fluid are withdrawn and replaced with an equal quantity of a strong saline (salt) or glucose (sugar) solution. This solution kills the fetus and prevents the release of placental hormones. Within 24 to 48 hours the woman goes into labor and miscarries.

Hysterotomy (miniature caesarean section)

Hysterotomy involves major surgery with a hospital stay of about one week. An incision is made in the abdominal wall just above the pubic bone. A second incision is made in the uterine wall, and the fetus and placenta are removed. Both incisions

are carefully repaired. Some doctors insist on delivery by caesarean section for all pregnancies after a hysterotomy, since the uterine wound can rupture due to labor contractions. Hysterotomy is quickly being replaced by the simpler "salting out" method.

Prostaglandins

Prostaglandins are a group of chemically related fatty acids found in human seminal fluid. The use of certain prostaglandins to terminate pregnancy is still in experimental stages. The drug is delivered intravenously for up to 24 hours. Since prostaglandins stimulate smooth muscle tissue, uterine contractions begin and eventually expel the fetus and placenta. This technique seems promising, especially after the 12th week, and may eventually replace the saline abortion technique.

Women should not confuse this technique with offers from unscrupulous "abortionists" for injections to induce abortion. At the moment no such injection or pill exists.

Availability of abortion

Archaic and oppressive laws continue to prevent all but rich women in North America from obtaining abortions on demand. Nevertheless, there are several radical and liberal groups who have taken on the responsibility of finding legal or illegal abortions for all women. Usually these groups have three options: helping women through the red tape and humiliation of applying to a hospital board; finding qualified illegal abortionists; and arranging the abortion in a state where legal process is simple. Such groups concentrate their energies in different areas, depending on their political perspective, and on the particular abortion situation in their community. Referral through the Women's Liberation Movement is probably the quickest and least traumatic. Radical or community clinics and the occasional student health service are also quite cooperative. The Clergymen's Council on Abortion and family planning agencies vary greatly in each community: in some places these groups do referrals but in others they have not gotten past talking about it.

DANGER

There are only 4 methods of abortion which can be considered safe. Competent, medically trained abortionists, whether they are acting legally or not, never use methods described below. These methods involve extreme pain and can lead to permanent disability, infection, or death:

Oral Means:

- Ergot compounds - overdose is poison - can cause fatal kidney damage
- Quinine Sulphate - can cause deformities in fetus or death to mother
- (Estrogen - useless)
- (Castor oil - useless)

Nothing that is swallowed can cause abortion without also causing death or severe disability to the mother

Solids inserted into uterus:

- | | |
|---------------------|------------------------|
| ● Knitting Needles | ● Catheters |
| ● Coat Hangers | ● Gauze (packing) |
| ● Slippery Elm Bark | ● Artists Paintbrushes |
| ● Chopsticks | ● Curtain Rods |
| ● Ballpoint Pen | ● Telephone Wire |
| ● Pastes | |

Common danger of perforation of womb and bladder - death from infection or haemorrhage.

Fluids inserted into uterus:

- Soap suds
- Alcohol
- Potassium Permanganate
- Lye
- Lysol
- Pine Oil

Severe burning of tissues - haemorrhage - shock - death

Air pumped into uterus:

Collapse from gas emboli in the blood stream. Sudden violent death.

Injections into Uterine Wall:

- Ergot
- Pitocin
- Sodium Pentothal

Other Means:

Vacuum Cleaner - connected to uterus - not to be confused with vacuum aspiration - is fatal almost immediately - extracts uterus from pelvic cavity.

● Physical exertion such as lifting heavy objects, running etc is useless.

● Falling down stairs - severe injury to mother but no abortion.

Butcher abortions are deadly - only doctors or other specially trained personnel can safely use one of the 4 methods of abortion - all other methods can cause death but rarely induce abortion

If you have used on yourself or have allowed to be used, any of the above methods of abortion go to the nearest hospital immediately.

The new Canadian abortion law has been in effect for over a year, but the availability of abortion goes unchanged. The law only legitimizes the few abortions which hospitals have been permitting all along. In effect, the law allows for abortion if a continued pregnancy would threaten the life or health of the women. "Life or health" is defined by a board of three doctors, all of whom are usually male. The interpretation of the law to justify abortions which male doctors consider justifiable and to prevent those of which they disapprove borders on absurdity. For example, the law does not permit abortion for possible fetal malformations. Nevertheless, many doctors believe that a woman who is exposed to German measles during the early months of pregnancy should be aborted, since her baby is likely to be born deformed. The formal reason given for such an abortion is "possible or existing anxiety to the woman due to potential fetal abnormalities". Yet the same doctors refuse to grant abortions to women who simply do not want a child be the reason social, economic, physical, emotional or political.

The Canadian law requires approval of a three member hospital board on each abortion case; but the law does not demand that every accredited hospital establish such a board. Also, by law the procedure must be performed in a hospital: up to the third month this is medically unnecessary, and serves only to put the cost of abortion beyond the means of many women.

The doctors who send desperate women away without granting a legal abortion seem to have no qualms about treating these same women in the emergency clinic for the results of self-induced or butcher abortions. Some of these women die, others are permanently sterile, and many undergo experiences too brutal and horrifying to be believed.

The situation in the United States is not much better. In the majority of states, abortion is legal if pregnancy threatens the life of the mother. Twelve states (Colorado, California, Georgia, Maryland, New Mexico, North Carolina, Arkansas, Kansas, Oregon, Wisconsin, Hawaii and New York) have liberalized their laws to a certain degree. The first five require the approval of a hospital board. Some always include a residency requirement whereas others demand it only in cases of rape or incest (since crimes have to be proven according to state law). The New York law, passed by only one vote, is considered the most liberal of American abortion laws.

The existence of such laws does not make it easy to obtain an abortion in these states. Where hospital boards exist, there is a strong conservatism maintained, to prevent the hospital from acquiring a reputation as an "easy" place to get an abortion. Doctors who are intimidated by their superiors hesitate even to bring a case to the board. In New York, where the law does not demand hospitalization, many county medical boards have come out against office procedures for obvious financial reasons. (Costs which vary from \$100 to \$400 for the abortion itself are increased to \$600 to \$800 by hospital char-

Statistics

Statistics for illegal abortion are developed on the basis of population, hospital records, total number of births, death from post-abortive complications, questionnaires etc. Some of the most carefully developed and most widely accepted figures are listed below. Statistics for legal abortion, such as performed in Communist countries and in Japan are from hospital records.

General:

In the world: at least 30,000,000 abortions every year.

At least 4/5 of all abortions are performed on married women.

Canada:

At least 100,000 illegal abortions every year.

At least 20,000 admissions to hospital for post abortive complications - at least 1,000 of these cases result in severe disability or death.

United States:

At least 1,000,000 illegal abortions every year. Four out of five legal abortions are performed on private patients, not clinic patients. Nine out of ten legal abortions are performed on whites, not Blacks.

Where abortion is legal:

Bulgaria: between 1962 and 1964, 67,000 legal abortions without a single death.

Czechoslovakia: between 1962 and 1964, 140,000 legal abortions without a single death.

Hungary: between 1962 and 1964, 358,000 legal abortions with 2 deaths.

Japan: 1,500,000 legal abortions every year performed by more than 20,000 specially licensed technicians.

ges). These boards have also recommended an earlier cut-off point than is provided in the law after which abortions will not be performed. Due to the shortage of adequate medical facilities in New York, the backlog for abortion has become critical. Many women are forced to wait until they are more than 3 months pregnant, and therefore must undergo the more complicated and expensive procedures for advanced pregnancies.

None of these problems is accidental, nor can we expect them to be solved without a radical restructuring of the entire medical profession, indeed, of the whole society. The number of doctors trained each year is controlled by the American Medical Association; thus a shortage of doctors maintains the high income of the members of the profession. Para-medical staff who could easily be trained to do abortions and many other routine medical procedures would tend to demystify the god-like image of the doctor. To date, there is no program for the training of para-medical staff in the numbers required to meet the needs of the people. The prohibitive costs of all medical procedures determine the quality and amount of medical attention a person will receive, regardless of that person's needs. The emphasis on curative rather than pre-

venereal disease

Syphilis

Syphilis, the most dangerous form of venereal disease, is an acutely infectious disease, invading every system of the body. If treated it can be cured; if not, it can be disabling and fatal. The **treponema pallidum** is a **spirochaete** (coil-shaped organism) which initiates the syphilitic condition. It is extremely sensitive to drying, heat, mild antiseptics, and soap and water. Moisture is essential to its survival and therefore it flourishes in areas such as the mouth, genitals and anus. **SYPHILIS IS ONLY TRANSMITTED THROUGH INTIMATE SEXUAL OR PHYSICAL CONTACT. SYPHILIS IS VERY RARELY TRANSMITTED BY OBJECTS SUCH AS TOILETS, TOWELS, CUPS, CUTLERY, ETC.**

Symptoms

The primary stage of syphilis usually shows itself about three weeks after exposure to infection; however a range of up to 90 days is recognized. It is characterized by a **chancre** or sore on either the genital organs, the anus, or in some women on the cervix. The treponemes penetrate microscopic breaks in the skin. The sore develops where **white blood corpuscles** pack the infected areas so tightly that by cutting off the blood supply, they kill the local tissue. Chancres which appear in the mouth are usually acquired by kissing a person with secondary sores. The sore is neither painful nor itchy, and often goes unnoticed. **It may disappear after several days whether or not the disease is treated.** The early disappearance of such sores deludes many infected individuals about the serious nature of their condition. A person with primary syphilis is highly infectious to other people.

If untreated, syphilis progresses to its second stage. The numerous symptoms of this stage often imitate those of other common diseases, and therefore they are often misinterpreted or unnoticed. They include: sores in the mouth; sore throat; skin rash; enlarged glands, particularly about the genitals; swollen joints; fever; headache; pain in bones and joints; and patchy balding. If left untreated, secondary symptoms tend to come and go for about four years. As in the primary stage, the disappearance of such symptoms is no indication of cure, and the individual is still highly infectious.

If the patient is not treated, the disease enters a **latent** (hidden) state giving no visible symptoms of its presence. During the early part of this stage the patient may suffer an infectious relapse with the reappearance of sore and rash. However, the latent state may last anywhere from five to fifty years. As the disease progresses, the patient loses his infectiousness to others, as the disease "goes underground".

ventative medicine ensures business for the medical profession but does little to improve the quality of life for all people.

Abortion as a medical problem is complicated by the chauvinism expressed and perpetuated by the medical profession. So long as male doctors see women as breeders with no other useful function within society, women will continue to be denied control of their own bodies. The fact that a husband or parent (depending on the woman's age and marital status) must grant permission for abortion and many other medical procedures is merely a reflection of the ownership of women's minds and bodies by men.

Poor women, especially black women, suffer the worst humiliation at the hands of male doctors and their hospital boards. These woman are commonly "offered" abortion - with the stipulation that they must accept sterilization as well. The rationale that such measures are necessary to alleviate the population crisis is merely a cover for racist genocide. The children of the rich exploit and pollute the resources of the earth, not the children of the poor.

The struggle for justice on the abortion issue will not be complete until abortion becomes just another medical procedure available free to all women whenever necessary.



André Giguère

Late syphilis, the fourth stage may manifest itself in any body system, however the cardio-vascular and nervous systems are the most common targets. Syphilis attacks the heart in many ways: the treponemes destroy the elastic fibers of the wall of the **aorta** causing **aneurysms** (stretched sacs) to develop; the valve between the **left ventricle** and the aorta may be destroyed, causing the heart to enlarge in muscle power and capacity to compensate for its inefficiency; and inflammation of the mouths of the **coronary arteries** can diminish the blood supply to the heart muscles. Any one of these conditions may prove fatal. Syphilis of the nervous system also takes one of many forms: when the coverings of the brain and the blood vessels are involved, paralysis may develop in varying degrees, from one eye muscle to half the body. If the substance of the brain or spinal cord is involved, a type of paralysis of the legs called **tabes dorsalis** may develop with complications such as impotence and urinary difficulties. When the effects of syphilis are concentrated on the brain substance, **general paralysis of the insane** may follow. Symptoms may develop slowly or suddenly, and may lead to extreme mental and physical deterioration, and death.

Diagnosis

Diagnosis of syphilis is a very difficult process. The treponema pallidum do not lend themselves to staining for microscopic observation, nor can they be grown on a biochemical media in the laboratory. At the primary stage of syphilis, the blood tests are negative, that is, they show a normal condition. For these reasons knowledge of the social background (whether or not the individual has engaged in casual sexual relations with someone who is likely to be or possibly may be infected, and whether or not there is a family history of the disease) is of utmost importance to the doctor. If the primary sores are still present, fluid from them may be examined by special microscopic techniques, in order to establish a diagnosis.

During the second stage, blood tests designed to determine whether a person has developed reactions characteristic of the disease, become more effective. However one negative blood test is not enough assurance that the individual is not infected. A second should be taken within a few weeks whether or not any symptoms remain. Microscopic examination of fluid from swollen glands may yield some information also.

During latency, only repeated positive blood tests will confirm the disease. Infection may be masked (resulting in a negative test) if the person is undergoing anti-biotic treatment for some other reason. A second test is always necessary.

In the fourth stage, both tests of blood and cerebrospinal fluid and microscopic examination of tumor tissue are effective.

Syphilis may be contracted **congenitally** (from birth). For this reason all pregnant women are tested for syphilis. If treated early in pregnancy, the mother can be cured and the baby will be born normal. Otherwise, the baby may be born dead or diseased. Much depends on the extent of the mother's infection.

Blood donors, are always tested for venereal disease.

Treatment

Treatment for all stages of syphilis involves an injection of various dosages of **penicillin**. Sometimes a single injection is sufficient; however a series of two injections may be advised. It is important that the treatment be followed by at least two negative blood tests in order to make sure that the treatment is complete. **THE EARLY STAGES OF SYPHILIS CAN BE COMPLETELY CURED.** Even in late syphilis, the destructive processes can be stopped, and some improvement may be made in the individual's condition.

Free clinics for the treatment of venereal disease are maintained in all cities in Canada. It is important that people cooperate with the medical staff in naming sexual contacts if necessary. Strict confidence is usually maintained. **SYPHILIS IS A HIGHLY INFECTIOUS, DANGEROUS DISEASE. IT IS IMPORTANT THAT ALL SEXUAL CONTACTS OF AN INFECTIOUS INDIVIDUAL BE REACHED FOR MEDICAL ASSISTANCE.**

Gonorrhoea

Gonorrhoea is essentially a disease of the linings of the genito-urinary organs. The **gonococcus** organism spreads immediately below the surface of these linings. It is highly sensitive to drying, change in temperature, and weak antiseptics. Like syphilis, **GONORRHEA IS TRANSMITTED THROUGH INTIMATE SEXUAL CONTACT. IN ADULTS IT IS NOT TRANSMITTED BY CLOTHING, TOWELS, TOILETS, ETC.** On the other hand, the eyes of new born babies and the immature sexual organs of small girls are terribly susceptible. Gonorrhoea can spread through a nursery faster than measles.

Female Symptoms

The **incubation** period (time after contact until the disease can be detected) for gonorrhoea is from two days to three weeks. In women, the urethra and cervical canal are first infected. Most women are unaware of these symptoms, however some experience discomfort when urinating or have a slight vaginal discharge. If the woman is not treated, various complications may arise. The glands in the genital area may become very swollen and painful. The infection may spread up the urethra to the bladder causing **cystitis**, a condition where urination becomes more frequent and painful. Inflammation of the rectum, called **proctitis**, is not uncommon. The most serious complication however, is inflammation of the Fallopian tubes, called **salpingitis**. In the acute form, the woman may have no prior symptoms before becoming acutely ill with low abdominal pain on one or both sides, perhaps vomiting and fever. Subacute forms involve similar but milder attacks over several months. Menstruation may be erratic in length of cycle and amount of flow. If not treated a chronic state develops in which the Fallopian tubes become twisted with scar tissue. If both tubes are affected, complete sterility may result.

Male Symptoms

The symptoms of gonorrhea in the male are more annoyingly obvious. At first a burning sensation may be felt when urinating, and then a discharge of yellow pus from the urethra is noticed. This discharge is highly infectious, and bacteria may be carelessly transferred to the eyes. If untreated, the infection spreads to the bladder causing cystitis, to the seminal vesicles, or to the epididymis. (Refer to male anatomy). Infection of the epididymis can be very serious, causing a hard tender swelling in the scrotum. When healing takes place, the scar tissue may block the passage of sperm from the testicles, rendering the man sterile.

In both male and female, the gonococci may reach the blood stream and cause a form of arthritis or inflammation of the joints. Babies born to women with gonorrhea may develop serious eye infections. In past, such infection was a common cause of child blindness. Therefore as a preventive measure, the eyes of every new born baby are treated with silver nitrate solution or penicillin drops. Early therapy saves the child's eyesight.

Diagnosis

Gonorrhea can be diagnosed in three ways: microscopic examination of discharge from potentially infected organs; use of laboratory cultures of the bacteria taken from a discharge; and a blood test. It is important that more than one test be taken whether or not the first has been negative. Blood tests for gonorrhea are almost useless: however the more accurate blood test for syphilis is often given at the same time in case the patient may be infected with both diseases at once.

Treatment

Treatment of gonorrhea usually involves one or two injections of penicillin. The dosage of penicillin has increased over the years as various strains of the bacteria develop a level of resistance to the drug. An example of this, a strain of gonorrhea called Vietnam Rose, has developed this resistance when prostitutes near military bases attempt to protect themselves from the disease by taking low doses of antibiotics. These drugs may not be strong enough to kill the bacteria, and an environment is provided in which the bacteria can adapt to varying levels of chemical presences. Different antibiotics are constantly being tested and tried to keep in check this ancient scourge of mankind.

VD is just a disease. If you need treatment, go to a doctor. You have the right to proper medical attention, for syphilis, gonorrhea, or any other health problem.

bibliography

The following is a highly selected bibliography of recent medical articles. For a complete list of scientific articles and publications referred to by this publication, please contact the editors. Abstracts of all medical articles included in complete list is available to groups doing research on the Pill or IUD.

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