

## MEDICAL AND BIOLOGICAL ASPECTS OF CONTRACEPTION\*

### THE SCIENTIFIC CASE AGAINST RIGID LEGAL RESTRICTIONS ON MEDICAL BIRTH-CONTROL ADVICE

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#### EXTENT OF CONTRACEPTIVE PRACTICE

A FAIR estimate of the average age at marriage of the American female is 24 years. Although her fertility normally persists into the forties, let us generously assume it ceases at 40, leaving 16 so-called "childbearing" years. The human incubation period is nine months. The usually infertile lactation period is not often longer than nine months. Each fertile wife has time therefore to have at least eight children, one every two years. Now, it is commonly estimated that 10% of women are involuntarily infertile.<sup>1</sup> If we assume that 20% of American marriages are even partially physiologically infertile,<sup>2,3</sup> we could expect that 80% of American families would average eight children apiece. Even this is not the case. Nor is it because coitus is not performed. There are few happily married Americans between twenty and forty years of age who do not have intercourse at least once a week. Some other suppressive measures are in force. Gynecologists well know that most American couples use one or another form of contraception. Eastman<sup>4</sup> quotes Pearl as demonstrating that 55% of the married population of the United States practices contraception; Himes' figure is higher—60 to 75%. My experience with both clinic and private patients is that the incidence, for variable periods, of contraception, not including complete abstinence, is of the order of 90%. I include the practice of coitus interruptus, as well as the exercise of periodic continence.

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## INDICATIONS FOR CONTRACEPTION

1. *Economic Inadequacy.* The intelligent American couple is committed to contraception as a means of limiting the number of children to that which can be reared in each family according to the American standard of education and health. We must strive to improve the economic opportunity and security of all, but unless we wish to repudiate the family unit, no mother should produce more children than she and her husband can properly care for. Indeed, if individual Americans had not exercised this limitation of births they would have been forced to do so collectively in some manner, for the patent result of an otherwise geometric increase in population would be most horrible. Fairchild<sup>5</sup> has written:

"With the incidence of death by disease and disaster minimized by the achievements of medical and preventive science, there would have been no alternative to death by violence—purposive, deliberate, managed death."

2. *Genetic Deficiencies.* Offspring are not only undesirable if they cannot be reared in health and trained for self-support because of limited family income, but also if they are not likely to inherit those physical and mental qualities which will fit them for the struggle of life and make of them helpful members of their social group. The comparative infrequency of serious genetic deficiencies does not make of these a weak indication for contraception. Their rising incidence to the grave detriment of our common health is assured by their geometric increase. There are many known inheritable factors which preclude the likelihood of health and happiness of the offspring, or which promise to make of the child an unwarrantable burden on society. These factors, if not suppressed, cause a perilous diminution in the physical and mental vigor of the people as a whole. They include diabetes mellitus, feeble-mindedness, dementia praecox, some manic-depressive psychoses, some forms of epilepsy, of blindness and deafness, and of congenital malformations. Eastman<sup>4</sup> enumerates many other transmissible defects and refers the student to competent authorities for even a more complete list and detailed considerations. While society permits marriages of individuals bearing these

qualities in their genes, it should protect itself by at least making sure that these couples are aware of the best measures known for protection against pregnancy and that any necessary supplies are available to them.

3. *Maternal Disease and Disability.* The desirable number of births in each family is limited, not only by welfare of the offspring, but also by the effect of parturition on the mother. No wife should be expected to bear children unless she can do so without serious threat to her own health and reason. The hazard of childbirth is affected, not only by the mother's intrinsic make-up, but by the socio-economic conditions of her family life. These a sane society will strain to improve, but even when they are optimal, and the best medical science is available, there are still many wives whose physical and mental condition cannot withstand the physiologic demands of pregnancy and delivery. These conditions are well known to medicine and acknowledged by all but a few obfuscated or ignorant laymen. In 1936, the House of Delegates of the American Medical Association accepted the report of the Committee to Study Contraceptive Practices and Related Problems,<sup>6</sup> in which this statement was made:

"Pregnancy is medically undesirable, and may be actually dangerous for the woman who has active tuberculosis, acute or chronic nephritis, some types of heart disease, some psychopathic conditions including recurring puerperal insanity, arteriolar sclerosis, chorea, some types of anemia, especially pernicious anemia, malignant diseases (including the hematopoietic), polyneuritis, recent major surgical or obstetric operations, recent serious illness, phlebitis, recent pelvic infection, pyelitis, traumatic rupture of the symphysis or pelvis which has not healed, and possibly a few other conditions in women who may not be naturally physically capable."

(a) **GREAT MULTIPARITY.** There are times when a mother even without disease should not be required to bear a child. Both Yerushalmy<sup>7</sup> and Eastman<sup>8</sup> have emphasized the mortal danger to the mother of many pregnancies. The chance of a parturient's losing her life after her eighth delivery Eastman found to be almost 1.2%, three times as great as with any of her first five. This is too large a risk for a mother to take who has many chil-

dren to bring up. The risk is made even less justifiable by the fact that the certainty of a healthy child decreases perceptibly with succeeding pregnancies subsequent to the first.<sup>7</sup>

(b) CLOSE SPACING OF OFFSPRING. The exhausting burden to the mother of closely approximated children is obvious to all. Furthermore, the infant mortality studies of Woodbury and of Hughes, both quoted by Eastman,<sup>4</sup> show clearly that babies born at short intervals are much more likely to die in infancy than are those born at intervals of two years or more. Both these factors, i.e., the welfare of the mother and of the child, make it desirable for a mother to be protected from a subsequent pregnancy until the result of the previous one is well established and her own vigor regained.

Nature physiologically protects most mothers from pregnancy during the period of lactation which normally follows parturition. Because human females are required to do so much in modern society that Nature never intended them to do, probably not more than one-third of them are able and willing to nurse their babies for more than a few months. Rightly or wrongly they are no longer physiologically protected in modern civilized society by a nine-months' lactation period, for only by successful nursing are the breasts kept functioning. If progeny are to be properly spaced, other protective measures must be used between the time of delivery, or weaning, and the time that the child is at least nine months old.

(c) REPEATED CESAREAN SECTION. In good obstetric practice it is axiomatic that women should be spared a pregnancy, not only during several months following a severe illness or major operation, but with justice permanently, if they have undergone three Cesarean operations. The womb which has once been opened by abdominal incision is prone to rupture if subsequent delivery is attempted through the vagina. The mother who has borne three children by section should not be exposed to the danger of laparotomy which she has already three times survived.

#### CONTRACEPTIVE MEASURES

I hold no brief for those young or even older husbands and wives who for no good reason refuse to bear as many children as

they can properly rear and as society can profitably engross. Ignorant of the fact that sustained happiness comes only from dutiful sacrifice, such deluded mates are perhaps doing society a back-handed favor. Whatever genetic trait may contribute to the intellectual deficiency which permits them selfishly to seek more immediate comfort, is at least kept from the inheritable common pool, and in time their kind is thus bred out.

We have seen, on the other hand, that not infrequently measures are properly taken to prevent conception. The accepted reasons for suppressing fertility have been listed above. Too large a number of American mates suffer from economic inadequacy during an appreciable part of their reproductive life. While measures are being taken to relieve this actual condition and to remove in individual cases the misapprehension of its fancied existence, the immediate impact of its very frequent real presence cannot be neglected. Furthermore, when we remember that, added to economic insufficiency, disease, and genetic taint, good reasons for suppression of reproduction include such factors as multiparity, delivery without safely prolonged subsequent lactation, and recent maternal illness or major operation, we must admit that, from the public health point of view, there is hardly a married couple who for longer or shorter periods should not properly prevent conception. Dewees and Beebe<sup>9</sup> go so far as to say: "The indication for contraceptive knowledge and advice is, broadly considered, marriage." What methods are available for this purpose?

1. *Surgical Sterilization.* This method is absolute and final. In the male, it involves a trivial operation and one which is of no demonstrated harm to the psychologically adapted individual. Although for the female the procedure causes slightly more risk to health, since it involves invasion of the abdominal cavity, the danger is still inconsiderable. In twenty-nine states there are laws governing the sterilization of inmates of state institutions. Some of these laws are compulsory; others are optional. They are intended to protect the blood of the people, and to save society from the burden of caring for increasing numbers of dangerous or economically incapable members. Outside of state institutions, the operation in many instances is performed by surgeons of high

integrity and laudable purpose at the considered request of individuals who offer what to these surgeons are valid reasons for suppression of fertility, as included in one or more of the three main categories mentioned above. The indications for such permanent mutilation of either male or female are extremely limited and often defy unquestionable identification. Because of the irreversible nature of the procedure and its occasional psychologic implications, and apart from any moral consideration, it becomes less and less advisable to act on these indications as other methods less drastic and final become better understood, more available and efficacious.

2. *Coitus Interruptus (Withdrawal; "Taking-care")*. Questioning of frank and honest couples will convince any physician that the vast majority of copulating males repeatedly modify their act in this way during one period or another and that this method is the chief cause of our controlled birth-rate. Contradicting the vaporizings of arm-chair "sexologists" and the ill-considered generalizations of many careless psychiatrists, common-sense observation, and the more objective findings of reliable investigators, such as Terman,<sup>10</sup> show clearly that, however unesthetic this procedure may be, it is in general physically and mentally harmless to both partners. That it largely diminishes the pleasure of intercourse is an unquestioned fact. True, it requires almost no paraphernalia, and so to those who are unfastidious and for whom pregnancy would be merely a temporary inconvenience, it may be acceptable. More important, however, is its equally unquestioned undependability as a contraceptive measure. The physiology of ejaculation is such as to make this a thoroughly unreliable method for most men to depend upon in case pregnancy should justly be prevented. It is the manifest duty of physicians, with the sanction of society, to make better methods available when called for in the interest of individual or public health.

3. *Periodic Continence*. This involves the suppression of the coital impulse during only the fertile phase of the menstrual cycle. The effectiveness of this method depends clearly on the actuality of an infertile phase in the individual wife and the accuracy of its identification. Much of the physiology of ovulation and menstruation remains obscure, but it can be stated that normally from the

time the menarche, or mature sexual life of the female, is well established until the climacteric is approached, each menstruation is preceded on about day  $14 \pm 2$  (16 to 12) before the first day of the uterine flow, and normally only at this time, by the release of a ripe egg, fertilizable for probably not longer than twenty-four hours. We may say then, that normally the mature female is fertile during only the time extending inclusively from the 16th to the 11th\* day before the first day of her approaching menstruation; or, allowing an interval of 3 days for functional activity of spermatozoa, that coitus can be effective only during the period extending from the 19th to the 11th day before the first day of flow. Unfortunately, the cycle of ovulation is frequently interrupted, sometimes as often as several times a year, in many females who consider themselves "regular," because the ovulatory mechanism is subject to various environmental, as well as intrinsic functional disturbances. This commonly occurs also in recent mothers during the first two or three months after weaning, as well as in females during adolescence and after the age of about thirty-eight. An egg is not always ripened and released on time. Since the periodicity of menstruation is dependent on that of ovulation, when the latter fails, the incidence of the next flow cannot be foretold. But the delimitation of the fertile period depends on the accuracy with which this date can be anticipated. Furthermore, the menstrual cycle commonly varies in length as much as  $\pm 2$  days, and frequently as much as  $\pm 4$ , from the mean. Since one cannot predict whether a given cycle will be short or long, the fertile period must be computed for both, and is thus lengthened by twice the experienced numerical variation from the mean. The period of required sex denial may thus be extended from the basic length of 9 days to as much as 13 or even 17 days. When the flow habitually begins over a range of  $29 \pm 4$  (25 to 33) days after the first day of the preceding menstruation, the shortest likely cycle may be only 25 days long. If, in accordance with current gynecologic usage, the first day of flow is designated as day 1, then in a cycle lasting 25 days, the onset of the next period is on day 26. In like manner, the onset of menstruation in the longest

\* The extra day (i.e., 11 instead of 12 days premenstrually) allows for the probable viability of the egg after ovulation.

cycle (33 days) is on day 34. Now, since as we have said, coitus is effective between the 19th through the 11th days preceding the first day of flow, the fertile period is calculated as follows:

$$\begin{array}{r}
 \text{DAYS} \dots 26 \text{ ----- } 34 \\
 \phantom{\text{DAYS} \dots} 19 \text{ ----- } 11 \\
 \hline
 \text{DAYS} \dots 7 \text{ ----- } 23 \text{ of cycle (inclusive).}
 \end{array}$$

If active menstruation prevails for 4 days, there are thus 21 days out of cycles ranging from 25 to 33 days when coitus is forbidden; i.e., 17 days, fertile period, and 4 days, menstrual flow. Furthermore, in a 25-day cycle, excluding the menstrual days, there are left only 4 days, 2 before the fertile period, and 2 after, when infertility can be expected and coitus considered "safe." This situation may be represented diagrammatically:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
FLOW ...	IN-	FERTILE	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	IN-	FLOW	
FERTILE	FERTILE	FERTILE	FERTILE	FERTILE	FERTILE	FERTILE	FERTILE	FERTILE	FERTILE	FERTILE	FERTILE	FERTILE	FERTILE	FERTILE	FERTILE	FERTILE	FERTILE	FERTILE	FERTILE	FERTILE	FERTILE	FERTILE	FERTILE	FERTILE	FERTILE

Continence throughout most of the menstrual cycle is theoretically feasible. It fails because, somewhat like coitus interruptus, it requires in the careless, ignorant, drunken or otherwise impetuous male, qualities which are missing; and in the female, a low sex drive, plus a degree of attentiveness and of mathematical ability found only in those of high intelligence who are not unduly preoccupied with other pressing domestic affairs. Thus does this much advertised and obviously useful but unwarrantably approved method fail to offer adequate protection in case pregnancy would be tragic for mother, child or society. Furthermore, it is to be considered an unnatural method, for it is during the fertile period that the whole psychosomatic physiology of the healthy normal female is prepared and intended by her primate nature for coitus. This is her "heat."

From what has already been said, however, one must not conclude that for large numbers of healthy women for whom pregnancy would be merely inconvenient, this method of timed coitus is wholly unsatisfactory. On the contrary, for her who habitually flows at fairly regular intervals (although, as we have said, no woman does so unflinchingly), who is intelligent enough to use a

calendar accurately, and whose sex drive, as well as that of her husband, is under perfect control, and in whom none of the indications for justifiable contraception, as mentioned above, are potentially present, this method may for months and sometimes for years be effective and satisfactory. In our selected clinic, where those to whom the method is applicable are carefully supervised, its effectiveness is as of 89 in 100 person-exposure years.<sup>11</sup> For others, and they greatly outnumber such individuals, this method, which has been inadvisably authorized by those who should have been more accurately informed, is tragically uncertain.

4. *Mechanical Methods.* These aim to prevent access of spermatozoa to the uterine canal.

**CONDOM.** One of these devices, the condom, vies with coitus interruptus in frequency of use. It costs more and, although often fragile, it is not quite so unreliable. Its effective use for long-term control requires care and forethought. It is a nuisance at the wrong time and usually detracts from the sensuous pleasure of coitus to both parties. It is favored for occasional and short-term use by the vast majority of married men, and is doubtless the preponderantly favored method in illicit intercourse. If used constantly and with deliberate regard for quality and manner of application, it must be admitted to be a fairly dependable method, even in cases where pregnancy is justly to be avoided. If its effectiveness did not entail attention to quality, money, forethought, a moderate degree of sex control, and a decrease in sensitivity, it would be more generally approved as a protective measure to be used when pregnancy is medically or socially truly contraindicated.

**THE OCCLUSIVE DIAPHRAGM,** or cap, intended to blockade the uterine opening lacks many, though not all, of the disadvantages of the condom. Unlike the latter, it must be fitted to the individual vagina by a trained person. It is probably reliably stated that one of the available types will fit almost any patient. When profiteering is obviated its price will be inappreciable, for its manufacturing cost is minimal and, if properly cared for, it can be used over and over again for many months or even years. If accurately fitted and applied, it does not interfere with the local sensation of coitus in male or female. It requires only a modicum of forethought and its use is esthetically objectionable to only a

negligible few. Because it cannot always with certainty be accurately placed, and because good spermatozoa require only a microscopic strand of hospitable mucus overhanging its edges in which to progress, it is, even with the aid of spermatocidal pastes, not a uniformly infallible preventive. However, in the presence of average intelligence and carefulness, the proper type, used in conjunction with a spermatocidal paste, offers one of the most reliable and least troublesome methods of pregnancy prevention to the largest number of women who should be safeguarded. When occasionally supplemented by other methods, as Dewees and Beebe have shown, it has an accuracy of 94 per 100 person-exposure years. This is more effective than is periodic continence, even in those few who menstruate on a so-called rigid schedule. Its applicability is vastly greater and its use devolves entirely on her who is most intimately concerned with the necessity for prevention of conception. Furthermore it does not impede the sex drive of either mate.

**SPONGE AND SOAP POWDER.** Figures concerning the dependability of the easily used sponge and soap powder are not as yet available. It seems a promising method as far as contraception alone is concerned. As we have made plain regarding other methods, this is not all that is required for acceptability. I am unfortunately not sufficiently informed to discuss it further.

5. *Complete Continence.* This is an incontrovertibly effective method of preventing conception. It means the complete and long-term resistance to the coital urge, if it is to serve as one single method of pregnancy prevention. We have seen that no other method is universally applicable and also without any disadvantage. If there is any harm or undesirability in this admittedly effective method, it should be known, for perhaps, considering all qualities, one or more of the other methods would then appear more worthy of choice. Let us consider this coital urge which it is proposed completely to suppress for variable periods of time, from a few months to all the remaining years of marriage, in order to save the lives or reason of many women, to prevent the birth of defective children and to safeguard the integrity of the good inheritable qualities of our people.

## BIRTH-CONTROL LEGISLATION

### THE FEASIBILITY OF COMPLETE CONTINENCE

1. *The Immutable Biologic Nature of the Coital Urge.* Coitus, of which conception, pregnancy and parturition are the results, is an intrinsic physiologic function of mammals during the mature middle period of their existence. With the acceptance of the organic evolution of man from biologic forms more primitive than he, we also accept the fact that his biologic activity is of the same nature. There are but few in our day, and they of no great repute, who do not recognize this principle as a major revelation of biologic truth. We admit that man's definitive genes stem from the same sources as those of the primitive ancestors of others in his order. Unless we claim mutations which objective science has failed completely to detect, man's fundamental instincts which arise from his genes are therefore identical with those of his more primitive relations. Without this, organic evolution means nothing.

The uniformity of observed sex behavior of primates makes us realize how deeply coital activity is ingrained in somatic physiology. Even though the most primitive races of the family Homi-*nidae* are removed by eons of time from their first human progenitors and are clearly possessed of the highly developed ability to reason which is the outstanding characteristic of *Homo sapiens*, their sex pattern is found to be almost identical with that of the apes, and in many respects with that of the monkey.<sup>12, 13</sup> Unprejudiced observation of so-called civilized man discloses that his fundamental coital pattern, too, is that of the other primates, however his coital behavior may appear to be modified by social and spiritual factors.

When considering the advisability of particular rules to regulate coital behavior in our society, we should contemplate the definitive qualities of our intrinsic coital urge as they are made clear by study of primates as a whole.

As we accept our evolutionary position among the primates, we must admit these genetic qualities of our coital instincts:

(a) We have no well defined periods of alternating sex desire and quiescence.<sup>12</sup>

(b) Our tendency to form long-standing paired attachments is materially modified by the male's susceptibility to tire of a given mate.<sup>12-15</sup>

(c) Both males and females are innately promiscuous, for they will form temporary sex relationships with innumerable mates.<sup>12, 13</sup>

Miller<sup>12</sup> calls attention to another very significant coital quality which is limited to man. The human male, because of the peculiar anatomy of the female pelvis, can force coitus on the unwilling or even unconscious female.

2. *Cultural Modification of Sex Expression.* These proclivities are not always clearly expressed by individual human males and females, not because they are not present in their genetic nature, but only because they are suppressed by strong social or religious taboos.<sup>13, 16, 17</sup> And only in so far as the repressive sanction is felt by the individual to be both true and powerful are these qualities subdued.

3. *Dangers of Inhibition of the Coital Urge.* Suppression of the coital urge directed towards his wife is possible for the intelligent considerate husband aware of a good reason why she should not become pregnant. But the urge is still there, and unless, by appropriate and effective taboos, it can be sublimated into a sexual martyrdom of which few Americans, including all colors and creeds, are capable, it will express itself in any one of the innumerable aberrancies of the primate sex function; for those too are "natural."\* It is unnecessary to enumerate the outlets of sex expression which man in all ages, including our own, has used to release his primal urge when the normal biologic opportunity of coitus with his wife is denied him.

That the tendency to use these outlets is no less real in men and women of today is apparent to anyone who can read even the newspapers.

To demand prolonged continence as the only method of contraception from anyone, who is not stoutly bulwarked by the strongest spiritual sanction is to drive that individual to what society has judged criminal, and which, if practiced by any num-

\* Miller<sup>12</sup> reports only narcissism, psycho-, necro-, and pyrolagnia, of all sex aberrations, as not having yet been reported in the lower forms; and they are probably missing, as he states, only because these animals are not sufficiently imaginative, nor are they masters of fire.

ber of those who should prevent pregnancy for shorter or longer periods, for reasons which have been stated, would disrupt our whole moral order.

To the unprejudiced sociologist it were far better for society, through legally controlled agents, to make available to mates who should not reproduce, for the good reasons stated, those means and methods for the prevention of conception which are best adapted to the individual case. The spiritual value of sex restraint in marriage should not be underestimated, nor its promulgation neglected; neither should it be forced upon those consorts who, although highly intellectual, accord it no spiritual value, nor upon those of limited psychologic potential whose primal instincts are subdued only by fear. Let those who have moral objection to any interference with coitus, except its denial, practice continence, if by so doing they are not driven to release their sex drive into illicit channels. But let the preponderantly more numerous others, who as yet lack the essential moral sanctions, be served not by the bootleggers of contraceptives, nor by their irresponsible selves, but by the legally controlled agents of a society which values religious freedom. Forced domestic continence would easily strip those without spiritual fortitude of their deference to cultural taboo, leaving exposed their naked primate coital instincts. This would not be good for them or for society.

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