

## **Bicycling and Gynecology**

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“WHAT was yesterday the fad of the few, is to-day the pastime of the many.” “It has developed from a salutary athletic exercise into a great social obsession.” “It has displaced the horse, and in woman has, in a measure, replaced the uterus.” It need hardly be said in explanation that these aphoristic remarks refer to bicycling for women. They emphasise three of the ways in which cycling for women may be regarded : it may be looked upon as a form of sport, or as a duty impressed upon woman-kind by omnipotent Dame Fashion, or as a means of gynecological treatment. Doubtless there are some women to whom the bicycle is simply “a time-, labour- and money-saving machine of the rapid transit class”; but they are, I believe, in the minority.

It may, with truth, be said that bicycling by women, like the influenza, took the medical profession by surprise. Physi-

cians, and more especially gynecologists, viewed with a certain amount of alarm the spectacle of numerous fair clients taking to the wheel, and were yet unable to do more than give general warnings and ill-defined counsel. Gradually, however, as it became evident that women were cycling and meant to cycle, a body of professional opinion grew up and it began to be possible to appreciate the benefits of the exercise, to recognise its dangers, and to formulate its contra-indications. During the past three years, and more particularly in 1896, many contributions to the medical aspects of cycling for women have appeared in the professional periodicals of America, France, Germany, and Great Britain. Many of these were wildly laudatory of the new pastime; a few, including one at least by a female physician, were strongly antagonistic; and some attempted to form a fair, an unbiassed, and a moderate estimate of the hygienic worth of cycling for women. Further, the subject has been fully and seriously discussed in the French Academy of Medicine, in the *Société de médecine publique et d'hygiène professionnelle*, in the Washington Obstetrical and Gynecological Society, the Boston Obstetrical Society, the New York Obstetrical Society, and in the College of Physicians of Philadelphia. The result is that it is possible to give now in the form of a digest a consensus of medical opinion upon the advantages of bicycling for women, its dangers and disadvantages, its contra-indications and the precautions which must be taken in order to obtain in any given case a maximum of benefit with a minimum of risk.

### *Advantages of Bicycling for Women.*

The many advantages of bicycling for women which have been claimed by writers on the subject, may roughly be classified as general, medical, and gynecological or obstetrical in their nature. Indirectly, of course, any general or medical benefit which is thus obtained is also of value from the gynecological standpoint.

1. *General advantages.*—One of the most evident of the general advantages that a woman derives from cycling is exercise in the open air; and inasmuch as the transit is rapid the open air that is enjoyed is not that of town but of country. Even in a large town a cyclist can soon reach the country dis-

tricts. It is more, however, than a simple exercise; it is at least a recreation also, if it be not a very satisfactory form of sport. It is, to most women, an exhilarating pastime which walking for the sake of exercise cannot be said to be, save under exceptional circumstances. Further, bicycling has succeeded in doing what walking never accomplished: it has broken up the sedentary habit of the sex. Tennis and golf have also been successful in bringing about this consummation, but they both require special surroundings and equipment and are not so generally available. Horse-back riding, perhaps, is the most directly competitive form of exercise; but bicycling has two advantages over it in its more moderate cost and in the better posture assumed by the rider. Even if women were to ride on horse-back astride and so get rid of the spinal rotation and unsymmetrical development which follow the use of the side-saddle, there would still remain the financial difficulty and conventionality would be needlessly shocked. The differences between the posture on horse-back and on a properly constructed bicycle are well brought out photographically in Dickinson's monograph (15).

Another very important advantage which has directly proceeded from the use of the bicycle by women has been much needed alterations in dress. What dress-reformers have unsuccessfully striven for years to achieve, has been quickly brought about by bicycling, tennis, and golf, but more especially by bicycling. We may not all agree with Baudouin (6) when he says a special dress is necessary for cycling, or homologate his order—"pas de corset et culotte bouffante, sans cela, pas de bicyclette"; but all will admit that it is a good thing for women that cycling has made the fashionable corset ("the child of the devil," Nash, 34) an impossibility, and has modified the dress even if it have not, in this country, brought into vogue the puffed breeches ("culotte bouffante"). In place of the tight-fitting corset, the woman-cyclist wears, with great advantage to herself, one with short pliable busks, and with the sides low and made with elastic, or adopts the "Ferris" or the "equipoise" waist. She has, perforce, to abandon high-heeled shoes, constricting garters, and loose drapery; and she soon finds the benefits of a short, weighted skirt, lined with a glazed material in front, and of hygienic underwear. In some countries the skirt has been abandoned for "knickers" or "bloomers," but not always with

marked advantage ; and it seems to be of doubtful utility to push "reform" so far.

Advantages, less important perhaps than the two which have been referred to, have also been claimed for cycling for women. It has, for instance, been asserted that it gives more stable nerves and greater self-reliance, and the lady cyclist who successfully runs the gauntlet of the Strand or Fleet Street may with justice lay claim to clear-headedness, and to personal confidence and dexterity of no mean order ; but the beginner will be well advised to postpone such feats, and ride near the kerb, slowly, and in the less crowded thoroughfares. Enthusiasts tell us that cycling is better than anything else for "breaking up morbid trains of thought," and for "taking a woman away from herself" ; and so long as it does not take her away too long from her household duties and other inevitable responsibilities, no great objection need be taken to the assumption. Again, it has been claimed that for the girl who has to go some distance every morning to her business, the bicycle is a better mode of transit than the bus, car, or train, and under reasonable weather conditions this is perfectly true. Finally, Madame Gaches-Sarrante (24) extols bicycling for the moral rôle which it may play in society, it being an exercise which husband and wife can take together !

2. *Medical advantages.*—It has been claimed for cycling for men that it not only keeps a man healthy, but that it also makes an unhealthy man sound ; and if we are to believe the medical practitioner, who is also an enthusiastic cyclist, the number of diseases which contra-indicate the exercise is very small. In fact, the contra-indications apparently vary inversely with the enthusiasm of the cycling doctor. The same purely medical advantages may be claimed for cycling for women. It is unnecessary here to enter into such questions as the advisability of cycling for women with heart disease or pulmonary troubles ; but there are certain morbid states that have an indirect bearing upon the special maladies of women, and whether patients' suffering from such may, or ought to, cycle, is a matter of some moment. There seems to be no doubt whatever that chronic constipation, so common in women of all ages, is vastly benefited by cycling, it being always understood that the exercise is taken in moderation ; and through improved regularity of the rectal evacuations, liver troubles disappear,

and dyspepsias, even of long standing, show amelioration (41). In anæmia, also, and in chlorosis (39), the almost universal testimony is marked improvement from moderate cycling upon a suitable machine. With regard to hæmorrhoids, opinions differ; some (*e.g.*, Macnaughton-Jones, 27) regarding their existence as a contra-indication to cycling; others (*e.g.*, Theilhaber, 43) having found in some instances benefit (probably from diminution in constipation), and in others, increased discomfort. In functional nervous disorders, and especially in the protean and intractable neurasthenia, cycling for women has been found to be of benefit (*e.g.*, Azoulay, 13); but in all such cases the special requirements of the patient should be taken into consideration, it being conceivable that some neurotic women might be made not better but rather worse by the practice. It is scarcely safe to affirm, as some have done, that cycling is suitable in all the cases in which massage used to be recommended (27, 34); neither does it do good in all forms of insomnia. It is highly spoken of by Fauquez (21) in the treatment of obesity, especially when that occurs in plethoric, lithæmic women (19). J. Müller (32) has found that cycling in 72 per cent. of the cases observed caused temporary functional albuminuria, but he does not anticipate that the exercise will produce chronic nephritis; manifestly, however, it could not be recommended in patients already suffering from renal mischief.

3. *Gynecological Advantages.*—The introduction of bicycling for women was soon followed by the discovery that there were several gynecological troubles which were greatly benefited by it, and the medical profession, instead of proscribing the exercise, began to prescribe it to patients suffering from minor pelvic ailments. The limits of indication have been quickly widened, till now it appears almost as if the gynecological panacea had been found. At anyrate, the reading of the paper of Fauquez (21) suggests such a conclusion. He divides the indications for cycling into two groups—those in which it is recommended, and those in which it may be permitted. Here is his list:—

It is to be recommended in :

1. Uterine congestion ;
2. Amenorrhœa, in relation with arrested development of uterus or ovaries, with anæmia, chloro-anæmia, digestive troubles, neurasthenia, chronic diseases, physical or moral shocks, chills, falls, etc. ;

3. Dysmenorrhœa of the nervous type ;
4. Dysmenorrhœa with congestion of the uterus and ovaries.
5. Vicarious menstruation ; and
6. Fibroid tumours, after the termination of the hæmorrhagic period.

It is to be permitted in :

1. Mechanical dysmenorrhœa, congenital or acquired, and in membranous dysmenorrhœa ;
2. Uterine displacements (prolapse, flexions, and versions) ;
3. Chronic metritis with *post-partum* or *post-abortum* subinvolution, which is no longer painful and which is in process of cure, but with moderation ; and
4. Leucorrhœa in anæmic, chloro-anæmic, and delicate women.

Theilhaber (43), without enumerating so many indications, yet names not a few, including amenorrhœa from defective uterine development and nervous dysmenorrhœa in young girls and sterile women. Uterine displacements in the non-gravid do not form a contra-indication, and he has seen improvement follow its use in prolapsus uteri, probably from a better tone in the muscles. In cases of endometritis cycling seemed to do neither harm nor good, but theoretically it was contra-indicated in the hæmorrhagic form. The same general testimony in favour of bicycling in cases of moderate uterine displacements and imperfect development was borne by sixteen out of eighteen female physicians who were interrogated on the subject by C. W. Townsend (44). A remarkable case was that of a young married woman with retroflexion of the uterus and prolapsed ovary, with adhesions, dysmenorrhœa, and pain on walking. She learned to ride a bicycle and used it all summer with the exception of the menstrual periods, riding thirty and forty miles a day at times. Examination then showed that the inflammation had entirely subsided, menstruation caused her very little pain, and the displacement, although still present, was not so sharply defined (44). W. S. Playfair (39) has reported the case of a lady with tender swollen ovaries who could not take carriage exercise and yet was able to cycle without any bad results; and Norris (41) speaks of benefit in cases of lacerated perineum, relaxed pelvic floor, and uterine retrorsions even when a pessary was being

worn. Prendergast (41) and Nash (34) anticipate that cycling by women will be followed by easier confinements and the birth of healthier children ; but they think the risk of accidents is too great to make the exercise justifiable in pregnancy, although Nash notes three cases in which it was persisted in up to the sixth month of gestation with good results. Finally, Gaches-Sarrante (24) does not regard salpingitis or chronic salpingo-ovaritis as contra-indications to cycling, and considers it as better than Swedish massage in chronic peri-uterine inflammation. Such are the gynecological troubles in which cycling has been found to be beneficial, and while in some instances (*e.g.*, amenorrhœa of chlorosis and menorrhagia of constipation) it is easy to account for good results, in others it is more difficult. It will, however, be easier to form a just opinion after a perusal of the alleged dangers of bicycling for women.

### *Dangers and Disadvantages of Bicycling for Women.*

The dangers and disadvantages of bicycling for women may, like the advantages, be divided into general (including moral), medical or surgical, and gynecological. It has to be borne in mind that while a few writers see dangers in all cases, most recognise their presence only when the exercise is indulged in immoderately or upon a faulty machine.

1. *General disadvantages.*—E. D. Page (36), C. C. Mapes (30), Teresa Bannan (5A), and others, comment at some length upon the baneful effects which cycling by women has had upon the relations between the sexes. It is stated that the pastime has done much to break down the barrier of reserve between young girls and men, to lead to a free and easy *cameraderie*, to the rapid forming of undesirable acquaintanceships, and to consequent immorality, and even to seduction. Manifestly, however, these dangers are not peculiar to the use of the bicycle, and their existence has even been questioned. There can scarcely be many who regard cycling as “degrading women.” Another disadvantage which has been dwelt upon is the risk of accident in crowded thoroughfares (4), and it is too true that many sad fatalities have occurred ; but women ought not to ride in busy streets till they have obtained complete control of the machine, and they ought not to attempt the descent of hills

till they can back-pedal. If ordinary precautions be taken, the risks of accident will not be great, and it may be left to the Insurance Companies to determine whether these risks of violent death are not more than counterbalanced by the prospects of healthful living which the exercise engenders.

It has been advanced as a disadvantage that cycling does not develop all the muscles, but only those of the thighs and legs, and that the other muscles waste, especially if excessive riding be indulged in (36). This is not quite true, for the body muscles and those of the arms do come into play to a certain degree, although, of course, the chief work is accomplished by those of the lower limbs. It has also been stated that bicycling was like using the sewing-machine, and would have like evil effects upon health and development. "As well compare mountain climbing with exercise in a tread-mill," writes Townsend (44), and Dickinson (15) has pictorially represented the differences between the two exercises. The essential differences may be arranged in parallel columns (44):—

*Bicycle.*

Out of doors.  
Mental recreation.  
Body erect (or should be).  
Increased circulation.  
Vision not concentrated.  
Exercise consisting of sweeping movements of legs and thighs, together with the use of all body muscles in swaying motion of balancing, together with more or less use of arms.  
Exercise demands deep inspirations.

*Sewing-machine.*

Indoors.  
Monotonous task.  
Body bent over.  
Stasis in lower limbs and pelvic organs.  
Eyes fixed on fine points.  
Exercise limited to restricted movements of legs.  
Exercise so slight that deep inspirations not required.

The reform in dress, which some have regarded as an advantage of cycling, has been, curiously enough, cited as a disadvantage by others (36), and the reasons given are that the reform is not a real but only a temporary one, the corset, etc., being resumed in the evening, and that the garments worn when on the wheel are unsuitable.

As to the moral dangers which have been ascribed to cycling from the production of perineal and vulvar pressure (27, 30, 31), and which have been specially emphasised by Dr Teresa Bannan (5A), perhaps the best summary of the matter is contained in the following statement, made by Verchère (13) at a meeting of the *Société de médecine publique*



*et d'hygiene professionnelle*: "Quant aux sensations voluptueuses qui peuvent se produire, elles n'apparaissent que lorsque la femme le veut bien." With a proper saddle, and with avoidance of the "scorching" posture, the risk of such dangerous developments is reduced to a minimum (14, 15).

2. *Medical and surgical dangers*.—It is unnecessary to do more than mention that there have been reports of the occurrence of sudden deaths from pre-existing heart lesions, and of the development of exophthalmic goitre, dilatation of the heart, dysentery, appendicitis, renal hæmorrhage, dementia, hæmorrhoids, hysterical seizures, hernia, etc., etc. Manifestly these are in most cases the results of overdoing it, of racing, and of cycling upon very badly constructed machines, and all these practices ought to be left severely alone by women cyclists.

3. *Gynecological dangers*.—T. R. Evans (20) has dwelt upon the harmful effects of the bicycle upon the girl's pelvis. He deplors the fact that the girls of the present day walk too little and so do not mould the pelvis for the purposes of parturition, and he sees in cycling an exercise which will aggravate instead of ameliorating this wrong state of matters. The ischial tuberosities will be pressed upwards and inwards and the diameters of the pelvic outlet will thus be diminished, while the pressure upon the perineum will cause condensation and atrophy thereof, and so add "atrocious" pains to the second stage of labour and liability to rupture. There will arise increased need for instrumental deliveries, for symphysiotomy and coeliotomy, and placenta prævia will be predisposed to. Of course these dangers will not threaten the fully formed woman but only the young girl with the immature pelvis. The need for an age-limit in cycling is evident, and will be referred to immediately; but even in the case of girls riding at too early an age it does not necessarily follow that pressure on the ischial tuberosities will cause pelvic contraction, for direct pressure ought neither to approximate them nor to force them apart (17). Of course the use of a *badly constructed* saddle will easily result in such harmful effects. It is probably for the same reason (*i.e.*, badly constructed saddles) that the occurrence of minor vulvar traumatism has been rendered possible. The cases of vulvitis (8), of erythema, abscess, and hæmatoma (1), of coccygodynia (27), and of

ulceration and bruising of the vulva, frequency of micturition, and leucorrhœa (41) which have been put on record, will nearly all be found to be readily explained by too long rides upon saddles that are too narrow and are provided with a high pommel or peak in front.

Soon after the introduction of cycling for women several of the French gynecologists (13) spoke warningly of the pelvic congestion which might thus be produced. Damain especially referred to this, and Stapfer said, "Je crois que la bicyclette est un exercice congestionnant chez la femme"; but, as has already been shown, moderate cycling has rather tended to cure chronic pelvic congestion than to produce it. In seven cases of retroversion of the uterus, Pinard (13) discovered the exciting cause in bicycling and consequently forbade its use by women who had a tendency to uterine retrorsions. It has also been accused of re-exciting a cured inflammation of the uterus and appendages (37), of causing anteflexion of the uterus and inflammation of the ovaries (44), of setting up menorrhagia and metrorrhagia (3), and of leading to cystitis, uterine prolapse, and leucorrhœa (27, 41). In two cases of uterine myomata noted by Theilhaber (43), bicycling was followed by a large increase in the size of the fibroids; and an instance of rupture of the hymen from a fall on the pommel has also been recorded (3). Several miscarriages have been traced to cycling (37, 43, 44), and, as will be noted immediately, the exercise ought not to be indulged in during pregnancy, and ought to be quite forbidden where miscarriages have occurred in preceding gestations. One of the most curious ill results (of the *post hoc* order) for which cycling has been blamed, was the birth of a malformed infant by a woman who had cycled during her pregnancy (Leroy des Barre, 13).

The enumeration of the preceding dangers and disadvantages of cycling for women goes to prove the necessity for the recognition of the contra-indications which exist thereto, and for the adoption of the precautions which have now to be named.

### *Contra-indications.*

Most medical men, whether cyclists or not, will agree with E. B. Turner (45) when he asserts that the following conditions form absolute contra-indications to cycling: (1) pregnancy, (2)

menstruation, (3) the three months following parturition, and (4) before the age of seven years. Further, the morbid states of the heart, lungs, kidneys, and brain, which contra-indicate other forms of muscular exercise, will also preclude cycling. Most writers are agreed that acute pelvic inflammation, recent displacements of the pelvic organs, fibromyomata, ovarian cysts, and hæmatoceles, form distinct contra-indications to cycling; but it may be well here to give the list of gynecological troubles which Fauquez (21) has drawn up, and in the presence of which the exercise must be abandoned. It is as follows: (1) amenorrhœa, in connection with pulmonary phthisis, cancerous affections, diabetes, and organic diseases of the heart or kidneys; (2) metrorrhagia, or excessive menstruation; (3) inflammation of the uterus and its appendages; acute metritis, painful chronic metritis, hæmorrhagic or purulent endometritis, salpingitis, ovaritis, salpingo-ovaritis, perimetritis, pelvic cellulitis, and pelvic abscess; (4) pelvic hæmatocele, and uterine fibroids during the hæmorrhagic period; and (5) in vulvitis and vaginitis before complete cure has been effected. With regard to certain other gynecological affections, such as minor degrees of prolapse, chronic pelvic inflammation, subinvolution, and uterine retroversions and anteversions, medical opinion is not yet fully formed; in instances such as these named, the gynecologist ought to make a complete survey of each individual case, and form his own opinion thereupon. This, however, seems to be certain: that women wearing a well-fitting pessary are not debarred from cycling. Women of advancing years, especially if near the menopause, should be extremely careful with regard to this form of exercise (27).

### *Precautions.*

In order that cycling women may obtain a maximum of benefit from the exercise with a minimum of risk, it is not only necessary that the contra-indications be known and observed, but it is also essential that certain precautions be adopted. The family practitioner, as well as the gynecologist, must be prepared to give advice worth having on these matters. The doctor has to add to his already almost encyclopedian knowledge an acquaintance with the details of bicycles and bicycle seats, of gearings and the like, if he would keep abreast of the times and satisfy his

fair clients. The precautions for ladies cycling may be summed up in one sentence—The exercise must only be indulged in upon a suitable machine, in a suitable dress, and in a rational manner. To begin with the last-mentioned precaution. No woman ought to overdo cycling—she ought not to ride to the point of exhaustion. Racing, record-breaking, and scorching ought to be not even thought of; they are “physiological crimes” (22). A woman who has been in the habit of walking two or three miles daily over an easy road ought not suddenly to attempt to cover thirty or forty miles up hill and down dale daily on a bicycle. She may, to begin with, cycle about three times the distance she has been in the habit of walking; later, this may be increased as she finds she is able for it, always stopping short of exhaustion. Most of the evil results which have arisen from cycling have been due to the dangerous tendency to do too much riding, or to do it too quickly. With regard to the dress of the woman cyclist, enough has already been said (under the heading of the advantages of bicycling) to show that the shortened skirt and the modified corset constitute a costume at once hygienic and modest, and that it is not necessary to have recourse to “bloomers” or the divided skirt. The necessity of suitable woollen or flannel underclothing should be emphasised. Perhaps the most important precautions are those associated with the choice of the bicycle. The machine ought to be a good one, and ought to be fitted with pneumatic tyres, the drop frame, satisfactory brake, and the other equipments which go to make a “lady’s safety” thoroughly deserving of the name. Whether or not a spring frame is necessary to prevent jolting (12) is not a question of very great importance; but it is essential that the seat be suitably placed and be adapted to the anatomy of the female pelvis. It should be brought well forward, and when the cyclist is erect in the saddle her heel should touch the pedal when lowest, her foot being in the horizontal position (34). The commonest faulty position is having the saddle too low and too far back; on the other hand, the saddle too high, is also wrong, causing overstretching of the knee and ankle, which is very tiring. A perpendicular dropped from the hip socket should pass through the centre of the pedal, and with the foot at the lowest point the knee should be slightly bent (15). Most saddles have been made too narrow, the cyclist being thus

compelled to ride on the perineum instead of on the ischial tuberosities, and in many instances the pommel or peak has been too high (8, 41). The saddle should be broad enough to support the two ischial tuberosities, and it should have no central ridge, but rather a groove. In such saddles as the "Christy" and the "Pattisson" these essential characteristics are secured; in the former by placing two cushions for the ischia upon a flat metal plate, and in the latter by complete bifurcation of the seat, with an adjustable interval. Further, the gearing of the bicycle ought not to be too high; a wheel geared to 53 or 56 inches is high enough for most women, anything higher greatly increases the strain, both in going up and in riding down hill (41). Finally, the machine ought not to be too heavy. Nash (34) writes: "The first woman in Washington who publicly rode a wheel weighed 80 lbs., and her wheel 60 lbs.; soon she weighed 120 lbs., and the wheel 23 lbs."

If the precautions which have been stated be taken, and, if the contra-indications be observed, there seems to be little doubt that cycling by women will be productive of much benefit, and that this method of making "unstable equilibrium stable by progressive motion" may yet turn out to be what it has already been stated by some enthusiasts to be, viz., one of the greatest and most health-giving inventions of the nineteenth century.

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