

Exercise, Physical Capability, and the Eternally Wounded Woman in Late Nineteenth Century North America

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During the latter part of the nineteenth century, arguments about women's limited physical and mental capacity and the centrality of reproduction for understanding women's bodies defined medical views of women's health and the productive boundaries of their lives. Ostensibly basing their views upon new scientific evidence, influential medical practitioners, many of whom were men, utilized pseudo-scientific theories about the effects of the reproductive life cycle upon women's physical capabilities to control the life choices of middle class women and set limits upon their activities.

Though women were held to be victims of their reproductive apparatus in general, the onset of menstruation and its recurring cycle were believed to be the cause of particular handicap. Women's limited physical achievements as compared to men were increasingly ascribed to the burden placed upon them by their reproductive apparatus, especially menstruation. The onset of menses at puberty was considered an illness to be weathered only with particular care. For the next thirty years of life's pilgrimage, women were advised to treat themselves as invalids once a month, curtailing both physical and mental activity during the "catamenial week" lest they succumb to accidents, disease and loss of fertility.

The widespread notion that women were chronically weak, and that they had only a finite amount of mental and physical energy due to the recurring fact of menstruation had a strong effect upon the medical profession's attitude and consequently the public's attitude toward female exercise and participation in sport. Furthermore, these attitudes have continued to persist throughout the twentieth century despite accumulating scientific and medical evidence that menstruation need not affect physical performance.

Wells, in a recent summary of the scientific literature related to exercise and menstruation, notes that misinformation and traditional views concerning the menstrual function are still major blocks to the active participation of girls and women in competitive sports. Until quite recently, for example, the International Olympic Committee believed that sports training and competition were detrimental to proper reproductive functioning in women and used these beliefs

to delimit female participation in certain sports.¹ Female athletes and feminists have worked hard to dispel such myths.²

This paper explores how longstanding propositions about women's capacity for sport and strenuous exercise developed in response to late nineteenth century physician's interpretations of biological theories about menstruation. In issuing popular medical advice to middle class women in the last three decades of the nineteenth century, establishment physicians on both sides of the Atlantic promoted a theory of menstrual disability that contributed substantially to a deepening stereotyping of women as both the weaker and a periodically weakened sex. In their professional and popular writings, and in their medical practice, these physicians disseminated widely their understandings of the menstrual function and offered their notions of the therapies and lifestyle behaviors which were required to help women cope with the "illness of menstruation" and its baneful and limiting effects upon female physical capabilities.

Looked upon as an "eternal wound," an illness, and as a shortcoming, menstruation came to be seen as a process which required certain kinds of moderate physical activity, suitable exercises in the open air, and the kind of sport which would be appropriate for physical renewal. Perceived as a pathological condition, however, it necessitated the exclusion of women from vigorous and competitive sports and from any physical exertion which the medical experts considered overtaxing. Thus, though certain requirements for exercise were among the most frequent prescriptions for the recurring drain of menstruation, constraints were imposed with increasing regularity upon the extent and nature of female participation in exercise and sporting activities. Medical advice concerning exercise and physical activity came to reflect and perpetuate understandings about women's "abiding sense of physical weakness" and the unchangeable nature of her physical inferiority.

Increasingly, medico-biological arguments concerning menstruation were generalized to buttress the special position of establishment physicians as arbiters of female physical behavior, hence legitimizing their claim that women had special needs for constant medical guardianship. With this mandate, doctors could render judgments as to who was physically fit and who was not (these judgments carrying with them implications of being fit or unfit for particular tasks, physical activities and certain types of sports).

A study of how medical reasonings about the menstrual function developed to define and delimit the parameters of female physical activity is instructive in understanding the shaping of scientific and popular thought by a dominant

1. Christine L. Wells, *Women, Sport, and Performance: A Physiological Perspective* (Champaign, Illinois: Human Kinetics Pub., 1985).

2. See, for example, M. Ann Hall and Dorothy A. Richardson, *Fair Walk Towards Sex Equality in Canadian Sport* (Ottawa: The Canadian Advisory Council on the Status of Women, 1982); Carole A. Oglesby, ed., *Women and Sport. From Myth to Reality* (Philadelphia: Lea and Febiger, 1978). Mary C. Boutillier and Lucinda Sangiovanni, *The Sporting Woman* (Champaign, Ill.: Human Kinetics Pub., 1983).

G. Pfister has described how, in Germany, female doctors and athletes have had to battle against prejudice and discrimination generated by the scientific assertions of male physicians that the female body was naturally inferior. "The Influence of Women Doctors on the Origins of Women's Sports in Germany," *Medicine and Sport*, 14 (1981). 58-65.

group of physicians operating within the technical and ideological framework of their era. For many perceived disorders, the labelling of disease or disability, the delimiting of disease characteristics and the choices made among possible therapies depend heavily upon social and professional convention (and/or convenience). Furthermore, “there are complex ambiguities in the application of medical models and practices to chronic disorders and especially to normal processes.³ In their attempt to root views of womenkind in biology, late nineteenth century regular medical practitioners played the role of human engineers, conditioning middle-class females to view their normal menstrual function as pathological, thus, distorting their perception of their own vigor and physical abilities.

Theories of Menstruation: Myth, Magic, and Science

The widespread notion that women were rendered imperfect, less whole and physically disabled due to the recurring fact of menstruation was not a fiction of the nineteenth century but had deep roots in magical, religious and medical mythologies. Menstrual taboos are among the most inviolate in many societies. Indeed, few taboos “evoke as forceful and as universal a response as those surrounding menstruation.”⁴

The cyclical character of menstruation has generated a particular set of longstanding beliefs. Primitive society connected the rhythm of menstruation with the cycles of the moon, the seasons and the rhythm of tides. Many ancient legends developed explanations to relate the cyclic occurrence of the moon with the recurring menses. Fluhman, in his treatise on menstrual disorders, noted the persistence of the saying in ancient treatises, “luna vetus vetulas, juvenes nova luna repurgat” [The old moon repurifies old women, the new moon (repurifies) young women.]⁵ Aristotle considered the moon to be female since “the menstrual flux and the waning of the moon both take place towards the end of the month, and after the wane and the discharge, both become whole again.”⁶ Centuries later, one of King George II’s physicians explained that “the ancients observed, and everyone knows, how great a share the moon has in forwarding those evacuations of the weaker sex, . . . in countries nearest the equator where we have proved lunar action to be strongest, these monthly secretions are in much greater quantity than in those near the poles where the force is weakest.”⁷

3. Eric Holtzman, “Science, Philosophy and Society,” *Innerrntional Journal of Health Services*. 11:1 (1981), 125.

4. Menstrual taboos are discussed by Elaine and English Showalter in “Victorian Women and Menstruation,” *Victorian Studies*. 14:1 (1970), 83-89; Vern Bullough and Martha Voght. “Women, Menstruation, and Nineteenth-Century Medicine,” *Bulletin of the History of Medicine*. 47:1 (Jan.-Feb. 1973), 66-82; Janice Delaney, Mary Jane Lupton and Emily Toth, *The Curse: A Cultural History of Menstruation* (New York: E. P. Dutton, 1976); E. Novak, “The Superstition and Folklore of Menstruation,” *Johns Hopkins Hospital Bulletin*, 27 (1916).

A major national study on menstruation, *The Tampax Report*, published in 1981 notes that menstruation still remains a taboo subject for most Americans. Of the 1,034 men and women interviewed by a Research Consortium, most of them thought that menstruation affected women physically and emotionally, and one third believed that women should restrict their physical activities. *The Tampax Report* (New York: Tambrands, 1981).

5. C. Frederic Fluhman. *Menstrual Disorders, Pathology. Diagnosis and Treatment* (Philadelphia: W. B. Saunders, 1939), 18.

6. Aristotle, quoted in R. Crawford. *The Lancet*, 2 (1915), 1331.

7. Richard Mead, *The Medical Works* (Edinburgh, 1765); Some nineteenth century physicians remained

Many traditional beliefs reflected a fear of the powers of menstrual blood, where the menstruating woman, albeit weakened, was also seen as a contaminating agent.⁸ Thus, many taboos developed around female contact with food and with people (especially men). Sometimes seen as a healing agent, menstrual blood was more often believed to have destructive powers or bring bad luck. Contact with it, said Pliny the Roman, “turns new wine sour-hives of bees die-to taste it drives dogs mad and infects their bite with an incurable poison.”⁹ Many primitive societies thus excluded menstruating females from public life especially from food gathering and preparation chores so that they would not contaminate members of the tribe.

Taboos also extended to intercourse during menstruation. In the Judeo-Christian Scriptures, the rule was underscored in Leviticus, “And if a woman have issue, and her issue in her flesh be blood, she shall be put apart seven days: and whoever toucheth her shall be unclean until the even.”¹⁰ Christianity clung to the Old Testament belief in the imperfect nature of woman that was believed to be, in part, a consequence of the menstrual flow.¹¹

Thomas Aquinas described woman as “defective and misbegotten”, a result of a defect in the active power (of the male seed) or some external influence such as a moist south wind.¹² To the early monks, woman was impure as a result of the pollution of menstruation and was forbidden to take communion in the early Christian churches. Orthodox Jews insisted upon Niddah, a minimum of 12 days separation of wife and husband during and after the menses with strict prohibitions about food handling and other intimate practices.¹³

convinced that climate affected menstruation, especially the age of menarche. According to the research of Dr. Pye Henry Chavasse, girls in warm climates menstruated at 10 or 11 but those in Russia might wait till they were 20 to 30 years old, and even then only menstruate a few times a year. Pye Henry Chavasse, *Woman as a Wife and Mother* (Philadelphia, 1871). 90-91.

8. See Freud, for example, who saw in man's fear of blood an ambivalence toward women as both sacred and cursed, both pure and unclean. Devereux discusses examples of the central theme of the psychoanalytic approach to menstruation which is the menstruating woman as “witch” possessing special dangers and powers. He concludes that taboos on menstruation reflect women's real power as propagators of men (G. Devereux, “The Psychology of Feminine Genital Bleeding,” *The International Journal of Psycho-Analysis*, 31(1950), 252-253. Bruno Bettelheim, in *Symbolic Wounds* (Glencoe, Ill.: The Free Press, 1954) discusses psychoanalytic interpretations of male envy and fear of female menstruation and the taboos and ceremonies which developed around these beliefs. Psychoanalysts have contributed to notions that menstruation is a monthly neurosis fraught with numerous psychic fears. According to Karen Horney, man devalues woman's functions in order to keep her out of his domain, creating an ideology that will keep him powerful and her inferior. By viewing the menarche and menstruation as problematic, the male can see the female as biologically incapable of assuming positions of power (Karen Homey, “The Problems of Feminine Masochism,” *Feminine Psychology* (N.Y.: Norton, 1967).

9. Caius Plinius Secundus, *Natural History*. trans. H. Rackham(Cambridge: Harvard University Press, 1961) Book 7, 549.

10. Leviticus 15:19 (New Revised Standard Translation).

11. Mary Douglas explains that much of Leviticus is taken up with outlining the physical perfection (completeness) required in being holy and, therefore, blessed. The idea of holiness was given an external, physical expression in the wholeness of the body, such as a perfect container. Natural functions producing bodily waste, especially menstruation, degraded this notion of completeness and rendered women somehow less able to conform to the holiness essential for gaining God's blessing. Thus, a polluting person was always seen as marginal, and a source of weakness to the social unit. *Purify and Danger: An Analysis off the Concepts of Pollution and Taboo* (Boston: Routledge and Kegan Paul, 1966).

12. *Basic Writings of St. Thomas Aquinas*, ed. Anton C. Pegis (New York: Random House. 1948), 880.

13. Though Orthodox Jews believe these laws to have originated from the time of Adam and Eve, when Eve was punished by God with menstruation and pain in labor for bringing mortality to Adam (Genesis Rabbah 17: 13), and to be underscored in the writings of Leviticus, a book, “*Baraita de Niddah*.” published by a heretical Jewish sect in 1890, reinforced a number of traditional taboos concerning menstruation. (See Cora Goldberg Marks, “In

Ideas about the contaminating possibilities of menstruating women increased their currency during the nineteenth century. John Elliotson wrote in 1840 that it was very useful to regard menstruating women as unclean, for they could not cure meat at such a time.¹⁴ Thirty-eight years later, the *British Medical Journal* published an extensive correspondence concerning whether a menstruating woman could contaminate the food she touched. One contributor extended the argument to oppose medical education for women: "If such bad results accrue from a woman curing dead meat whilst she is menstruating, what would result, under similar conditions, from her attempt to cure living flesh in her midwifery or surgical practice?"¹⁵

Scientific and medical theories of menstruation were strongly colored by these traditional beliefs. Two general propositions tended to dominate medical thought about menstruation. On the one hand, the condition was seen as a regular release of accumulated excess blood and body impurities—a form of purification. The second proposition related to the reproductive process. During pregnancy, the accumulated blood was believed to be used as a nutritive source for the fetus—this being the contribution of the woman to reproduction. Aristotle observed that menstruation was the outward sign of female inferiority, a result of the passive part played by women in reproduction. The active male was believed to be able to transform matter with heat to produce semen; the colder female could not transform matter, hence had to discharge the residue of useless nourishment from her blood vessels each month unless she was pregnant. Thus, noted Aristotle, the menses must be a substance intended to nourish the fetus, and this was the only contribution of the female to reproduction.¹⁶ Hippocrates and Pliny shared the same belief, one which persisted for centuries. Pliny wrote that "women who do not menstruate are incapable of bearing children because it is of this substance that the infant is formed. The seed of the male, acting as a sort of leaven, causes it to unite and assume a form, and in due time it acquires life and assumes a bodily shape."¹⁷

Other theorists agreed with the unique need of women to periodically shed extra blood, though for different reasons. In the second century A.D., Galen believed that menstruation consisted of fluids accumulated from leading an idle life, which were thus regularly evacuated for the body's relief.¹⁸ Soranus felt that both men and women generated surplus matter; women eliminated it as menses, men through athletics.¹⁹ Smellie, in 1766, concurred that "the cata-

Purity and Love. An Introduction to the Jewish Attitudes Towards Marriage," *Lifestyles*, 13 (1986). 98-106.

14. John Elliotson, *Human Physiology*, 5th Ed. (London. 1840), 770-771.

15. W. Storey, *British Medical Journal* (1878), 324. The correspondence columns of the *Journal* debating menstruation and contamination. are discussed in detail in Ronald Pearson, *The Worm in the Bud. The World of Victorian Sexuality* (London: Penguin Books, 1969).

16. Aristotle, *On the Generation of Animals*, trans. A. L. Peck (London: Heinemann, 1943), 2, 4, 185.

17. Cajus Plinius Secundus, *Natural History*, 7, 13.

18. Fluhman, *Menstrual disorders*, 19. Galen, quoted by John Freind, *Emmenologia*. Trans. Thomas Dale (London: 1729), 19,67.

19. Soranus. *Gynecology*, trans. Owsei Temkin (Baltimore: Johns Hopkins University Press, 1956), 23.

menia is no more than a periodic discharge of that superfluous blood which is collected through the month."²⁰

Medical theorists later focused upon the mode of evacuation. Avicenna, an 11th century Arab physician, suggested that menstrual blood was eliminated through the womb because that organ had been the last formed and was, therefore, the weakest.²¹ His idea was further developed in the seventeenth century by Regnier de Graaf, who likened the escape of blood from the weakened uterus to fermented wine or beer seeping out of a defective barrel.*

The demonstration of the graafian follicle by Dr. Graaf and others was predicated upon the notion that ovulation occurred at the time of conception. Subsequently, a number of physicians began to suspect that ovulation may be a spontaneous process and that menstruation was intimately connected with the ovarian function. In 1793, Dr. John Beale Davidge, a prominent Maryland surgeon, wrote a dissertation citing evidence to support his belief that the menstrual flow was a secretion of the uterus under the control of the ovaries. In 1812, John Power of London further enunciated the relationship between menstruation and specific changes in the ovaries, and studies of the ovulation process appeared increasingly in print in the first half of the nineteenth century.²³

By 1865, Pfluger was arguing that the development of the graafian follicle produced an irritation of the ovarian nerve leading to a reflex stimulation which resulted in simultaneous ovulation and menstruation.²⁴ Pfluger's theory that nervous stimulation triggered menstruation was widely accepted by American physicians in the last three decades of the nineteenth century despite a number of studies which suggested that such a view might be mistaken.²⁵ Graaf's theory of ferment, or "vehement effervescence" lay the basis for the Stephenson wave theory which was expounded in 1882. Stephenson, a physician, understood menstruation to be related to cyclical waves of vital energy, shown in the body temperature, daily urine and pulse rate. In his view, menstruation coincided with changes in the average body temperature and sought the weakest exit (the womb) when excessive nutritive material and vital energy were not required for reproduction.²⁶ Stephenson's theory also explained vicarious menstruation, for he believed that if there was an obstruction anywhere in the body, the resulting wave would be thrown to the weakest part of the system. G. Stanley Hall later used Stephenson's theory to explain why every trouble in a woman demanded special attention to the pelvis.²⁷

Stephenson based his wave principle on the experimental findings of Mary Putnam Jacobi and John Goodman, a Louisville physician, which were essen-

20. W. Smellie. *A Treatise on the Theory and Practice of Midwifery*, 5th Ed. (London: 1766).

21. Fritz Vosselmann, *La Menstruation, Legendes. Coutumes, et Superstitions* (Lyon, 1935), 16-17.

22. Regnier de Graaf, *Histoire Anatomique des Parties Genitales de L'homme et de La Femme* (Paris: 1699).

23. John Power. *Essays on the Female Economy* (London: Burgess & Hill, 1831); R. Lee, *Diseases of the Ovarian. Encyclopedia of Practical Medicine*. (1834), 225; C. Negrier, *Recherches sur les Ovaries* (Paris: 1840).

24. E. P. F. Pfluger, *Ueber die Bedeutung und Ursache der Menstruation* (Berlin, 1865).

25. J. Williams, *Obstetrical Journal of Britain and Ireland*. 3 (1875-76), 496.

26. W. Stephenson, *American Journal of Obstetrics*, 15 (1882), 287-294.

27. G. Stanley Hall. *Adokscience* (New York: D. Appleton & Co., 1904), 1:487.

tially a reformulation of Galen's plethoric theory.²⁸ Goodman claimed that menstruation was presided over by a law of monthly periodicity, a menstrual wave which affected the entire female and rendered her periodically unstable and liable to serious derangement.

Mary Putnam Jacobi explained that women experienced a rhythmic wave of nutrition, such nutritive material being expelled in menstruation when not used for reproduction. This caused a perturbation of the economy periodically and could lead to hysteria.²⁹ Though she criticized those who considered menstruation to be a morbid circumstance, she did report evidence that because of it women might be unfit to bear the physical fatigues and mental anxieties of such activities as obstetrical practice.³⁰ Dr. King went further than Goodman to view menstruation as a totally abnormal process, associated with civilization and logically, therefore, an interference with nature.³¹ Dr. King maintained that menstruation must be unnatural since, though conception occurred at that time, the intercourse necessary to cause conception might cause gonorrhoea in the male. Dr. Gardner, author of *Conjugal Sins*, similarly warned that menstrual blood was corrupt and virulent, threatening an unwitting penis with "disease, excoriations and blenorrhagias."³² John Cowan predicted that the fetus might be damaged should intercourse take place at menstruation. "Do not, I pray you, . . . do this unclean thing . . . while a new body is being developed."³³ King's cure for the menstrual disease was to repress it altogether through continual pregnancies, since in her primitive state woman was constantly conceiving and menstruation was therefore rare.

Such views, taken together, helped cement the picture of the female as somehow "driven by the tidal currents of her cyclical reproductive system, a cycle . . . reinforced each month by her recurrent menstrual flow."³⁴ Each month, for a woman's thirty year pilgrimage, menstruation was seen to present itself as a trauma—a morbid and unnatural activity, a disease requiring specific therapies.³⁵ It was a circumstance over which woman had little control, yet which shaped her personality and physical ability to respond to life's demands. As Dr. Van de Worker explained, women's limited physical achievements as compared with men were due to the fact that the menstrual cycle handicapped her, rendering her periodically susceptible to accidents and hysteria.³⁶ Men-

28. J. Goodman, "The Cyclical Theory of Menstruation." *American Journal of Obstetrics*, 11: 67 (1878), 3-44; Mary Putnam Jacobi, *The Question of Rest for Women During Menstruation*, Boylston Prize Essay of Harvard University for 1876 (New York: G. P. Putnam's Sons, 1877).

29. Mary Putnam Jacobi, "Hysterical Fever." *Journal of Nervous and Mental Disease*, 15 (1890), 373-388.

30. Quoted by Mary Jacobi from an address to the Obstetrical Society of London in 1874, reported in the *British Medical Journal*, 16 (January, 1875).

31. A. F. A. King, "A New Basis for Uterine Pathology," *American Journal of Obstetrics*, 8 (1875), 242-43.

32. Augustus Kinsley Gardner, *Conjugal Sins: Against the Laws of Life and Health and Their Effects Upon the Father, Mother and Child* (New York: J. S. Redfield, 1870), 17, 145-146.

33. John Cowan, *The Science of a New Life* (New York: Cowan and Co., 1871).

34. Carroll Smith-Rosenberg, "Puberty to Menopause: The Cycle of Femininity in Nineteenth-Century America." in *Disorderly Conduct: Visions of Gender in Victorian America* (New York: Alfred A. Knopf, 1985), 183.

35. W. W. Bliss, *Woman and Her Thirty Year Pilgrimage* (New York: William M. Littell, 1869).

36. Ely Van De Worker. "New Basis for Uterine Pathology," *American Journal of Obstetrics*, 8 (1875-76), 242-243.

struation, some physicians warned, could drive a woman temporarily insane.³⁷

Not until 1896 was the reflex nerve irritation theory refuted by Westphalen who began to describe the cyclical changes in the uterine lining and the continual process of building up and breaking down of that lining. Important discoveries about the endocrine function in menstrual physiology came only after 1900, when the cycle of changes in the endometrium and the role of ovarian hormones in triggering the cycle became more clearly understood.³⁸

Explaining Menstrual Disability

Though clearly hampered by a lack of knowledge about the precise functioning of the menstrual system, late nineteenth century physicians developed a remarkably elaborate set of explanations and accompanying prescriptions to offset what they insisted were the deleterious effects of recurring menstruation. Neglect of the ramifications of the periodical function was considered by Dr. Edward Clarke to be the principal source of disease among the women of the land—its repression or over production to be equally fatal to health.³⁹ Michelet referred to the menstrual function as “the cause of the whole drama.”⁴⁰ Hayes called it “an internal wound, the real cause of all this tragedy.”⁴¹

Underlying the perceived need to regulate girls’ and women’s behavior during menstruation was an overriding concern of the age with order and with scarcity. The anxieties of physicians (and other health advisers) were demonstrated through constant reference to the need to obey the laws of nature lest loss of control, disorder and disease follow. Perceived as a discrete energy field, the body was believed to contain a certain amount of vital energy. If energy was used in one direction, then less would be available for another. Consequently, scarce energy had to be husbanded for the particular needs of mind and body. Furthermore, one’s quota of energy for the lifespan had to be spent carefully. Since what you spent in one period of life was bound to be missed at another, energy had to be carefully apportioned. Any overuse could well be billed to future generations who would have to pay for it out of their own limited supply. This belief in a limited energy pool was a kind of “mercantilism of self” for, “in the great economy of nature, force answers to force and everything must be paid.”⁴² “Nature,” warned Herbert Spencer, “is a strict accountant . . . and if

37. Edward Tilt, *The Change of Life in Health and Disease*, 4th ed. (New York: Benningham and Co., 1882), 16, 39, 94-95; and, *On the Preservation of the Health of Women at the Critical Periods of Life* (London, 1851); P. J. Moebius, *Über den Physiologischen Schwachsinn des Weibes* (1908); P. S. Icard, in *Lo Femme Pendant la Période Menstruelle* (Paris, 1890), was widely quoted as stating, “The menstrual function may induce sympathetically a mental state varying from a slight psychosis to absolute irresponsibility.”

38. R. Leonardo, *History of Gynecology* (New York: Froben, 1944); see also, F. B. Robinson, *New York Medical Journal*, 53 (1891), 73, 273; and E. Novak, *Menstruation and Its Disorders* (New York: D. Appleton & Co., 1921). New theories did not mean, however, that medical opinions were quick to cast off traditional ideas. *The New York Times*, on March 28, 1912 commented, “No doctor can ever lose sight of the fact that the mind of a woman is always threatened with danger from the reverberations of her physiological emergencies.”

39. Edward H. Clarke, *Sex in Education; or A Fair Chance for Girls* (Boston: James R. Osgood and Co., 1873), 37-38.

40. Jules Michelet, *L'Amour* (New York, 1859). He stated, “Woman is forever suffering from cicatrization of an interior wound which is the cause of a whole drama.” p. 48.

41. Albert Hayes, *Physiology of Women* (Boston: Peabody Medical Institute, 1869), 84-85.

42. J. S. Jewell, “Influence of Our Present Civilization in the Production of Nervous and Mental Energy,” *Journal of Nervous and Mental Disease*, 1 (Jan. 1874), 70-73, quoted by Anita Clair Fellman and Michael

you demand of her in one direction more than she is prepared to lay out, she balances the account by making a deduction elsewhere.”⁴³

The writings of Herbert Spencer were enormously influential in explaining the particular physical disabilities of women. Spencer was perhaps the supreme ideologue of the Victorian period, reflecting the dominant ideas and values of the middle class.⁴⁴ His prolific writings were widely disseminated and his influence extensive. In North America, his main forum was the *Popular Science Monthly*, a serious and widely read journal that was initially founded as a spokesperson for his ideas.⁴⁵ In his numerous books and articles, Spencer carefully delineated the relationship of women to evolutionary theory and the social and physical energy scheme. His argument went as follows. Men were always physically stronger than women. Though primitive women had more nearly approached the physical status of civilized men, the progress of evolution had freed them from the necessity of hard physical work. In the process, they had lost their physical strength, for the Lamarckian mechanism decreed that disease developed when organs were not used.⁴⁶ Though males and females both needed physical strength for growth and development, girls developed more rapidly than boys and used up their available strength quota faster.⁴⁷ Thus, not only did they start with less strength and lose it more quickly, women were subsequently “taxed” with the special energy demand necessitated by menstruation and reproduction. This tax was a biological one and a social one for women were obliged to pay the price for the preservation of society. It was a “reproductive sacrifice” which was bound to limit individual development, but which could only be seen as a requirement for the fitness of the race.

Thus, Spencer set up the central argument against female emancipation by

Fellman, *Making Sense of self: Medical Advice Literature in Late Nineteenth Century America* (Philadelphia: University of Philadelphia Press, 1981), 70-71.

43. Herbert Spencer. *Educarion: Intellectual, Moral and Physical* (London: Williams and Norgate, 1861), 179.

44. For a discussion of Spencer's views on women and biological determinism. see Louise Michele Newman (ed.), *Men's Ideas/Women's Realities: Popular Science, 1870-1915* (New York: Pergamon Press, 1985), 1-11; Sara Delamont and Lorna Duffin, eds., *The Nineteenth Century Woman: Her Cultural and Physical World* (London: Groom Helm, 1978); John S. Haller and Robin M. Hailer, *The Physician and Sexuality in Victorian America* (Urbana: University of Illinois Press, 1974).

45. E. L. Youmans started *Popular Science Monthly* in part to bring Spencer's ideas to America. See Robert C. Banister, *Social Darwinism: Science and Myth in Anglo-American Thought* (Philadelphia, 1979); and Susan Sleeth Mosedale, “Science Corrupted: Victorian Biologists Consider the Woman Question.” *Journal of the History of Biology*, 11:1 (Spring 1978), 9.

46. The Lamarckian mechanism explained that the use of an organ resulted in its development. and disuse resulted in its degeneration over time. Due to prolonged disuse. women lacked a number of abilities that men had developed, especially abstract thought and reason. Female brains were thus marred by disuse and Darwin considered “catch up” to be impossible for the female since the male was advancing so rapidly. Woman, in short, was less completely evolved than the male, and was likely to remain so for male traits were strengthened by use somewhat differently than were those of the female. Charles Darwin, *The Descent of Man and Selection in Relation to Sex*, 2nd ed. (Akron: Werner, 1874), 576-577. This kind of reasoning, David Ritchie noted in 1890, was tantamount to shutting up a bird in a narrow cage and then pointing out that it was incapable of flying (David Ritchie, *Darwinism and Politics*, 2nd ed. (London: Mosedale, 1890; reprinted. New York: Charles Scribner's Sons, 1909), 68-69.

47. A note in *Popular Science Monthly*, 17 (July 1880), 431, suggested that M. G. Delaunay had advanced the opinion that precocity was a sign of biological inferiority and that in all domestic animals the female was formed sooner than the male. Furthermore, the precocity of organs and organisms was in an inverse ratio to the extent of their evolution. See, also, G. Delaunay, “Equality and Inequality in Sex,” *Popular Science Monthly*, 20 (Dec. 1881).

elucidating the conflict between self-development and reproduction. To social theorists of his ilk, self development for females could only mean self-sacrifice and this meant spending their cachet of physical and mental energy at the motherhood bank. There simply was not enough vital force left over from the demands of the reproductive system for women to develop their intellects.⁴⁸

Though such arguments explained why women were particularly subject to energy limitations, boys and men too were often warned of the dangers of excessive or imbalanced use of physical and mental activity. In their case, intellectual activity was not considered a drain upon the physical energy of the male. What could debilitate was excessive sexual vigor, and the deliberate loss of sperm which lead to mental disability and disease.⁴⁹ Women, however, were believed to have constitutions which demanded a reverse kind of caution in balancing the energy supply for they were at the mercy of the physical demands of their reproductive physiology. Parsons has argued that late 19th century physicians also considered males as extensions and victims of their reproductive systems, equating at times the prostate with the uterus.⁵⁰ Certainly, the loss of seminal fluid was considered to be as detrimental to body and brain as was the loss of blood.⁵¹ Also, certain energetic exercises were thought to be provocative of masturbation, and hence loss of vital fluid; "those in which the whole weight of the body [is] sustained by the hands" would be better excluded from the gymnasium, said Dr. Howe.⁵² However, males could use force of will to prevent loss of fluids, while females could not. A lifestyle of self-denial could turn away weakness and disease from the male whereas women's loss of blood was spontaneous and ungovernable and was required for the sake of the race.

The constant emphasis upon the need for race betterment at this time tended to focus the physician's spotlight upon the menstrual disability theory. A woman who consumed her vital force in brain work depleted the amount of energy required by the reproductive system, especially during menstruation or pregnancy. Male physicians felt there could be no competition between the pursuit of culture and the demands of nature. Women could not do two things well at the same time. "We would rather err on the safe side and keep the mental part of the human machine back a little, while we would encourage bulk, and fat and bone and muscular strength . . . this applies to the female sex . . . more than to the male (since) women's chief work (is) to the future of the world."⁵³

Since a woman's chief function was motherhood, the laws of nature demanded that, not only must a bountiful supply of energy be reserved for the demands of the reproductive system, but that more energy still must be

48. Susan Sleeth Mosedale, in "Science Corrupted . . ." analyses Spencer's and other's arguments about the mental and physical capacity of women.

49. Ben Barker-Benfield, "The Spermatic Economy: A Nineteenth Century View of Sexuality," *Feminist Studies*, 1:1 (Summer, 1972), 45-74.

50. Robert Ultzman, *The Neuroses of the Genito-Urinary System in the Male, with Sterility and Impotence* (Philadelphia, 1890), p. 11. See, Gail Pat Parsons, "Equal Treatment for All: American Medical Remedies for Male Sexual Problems, 1850-1900," *Journal of the History of Medicine*, 32 (January 1977), 55-71.

51. G. B. H. Swayze, "Spermatorrhea," *Medical Surgery Report*, 33 (Philadelphia: 1875), 61.

52. Joseph W. Howe, M.D., *Excessive Venery, Masturbation and Continence* (New York, 1883), 63-66.

53. T. S. Clouston, "Female Education," 2 (1884).

earmarked to compensate for the monthly drain of energy imposed by menstruation. As Dr. A. Hughes Bennett explained it, even under the best of circumstances, the frequently recurring processes of menstruation rendered a woman “specially liable to derangements of her general health—under adverse conditions she is almost certain to fall a victim.”⁵⁴ Dr. Taylor concurred in *A Physician’s Counsels to Women in Health and Disease*: “We cannot too emphatically urge the importance of regarding these monthly returns as periods of ill health, as days when the ordinary occupations are to be suspended or modified . . . every woman should look upon herself as an invalid once a month since the monthly flow exaggerates any existing affection of the womb and readily rekindles the expiring flames of disease.”⁵⁵

Notions of menstrual disability became widespread in both Europe and North America. Dr. Tilt was an eminent and widely read authority in England. “For thirty years,” he wrote in *The Lancet*, woman is “thrown into a state of haemorrhagic and other orgasm every month.”⁵⁶ At such time, explained a supporting authority, they are “unfit for any great mental or physical labor. . . . They suffer under a languor and depression which disqualify them for thought or action.”⁵⁷ Michelet, in *L’Amour*, explained that for a period of 15 or 20 days out of 28, the woman was “not only an invalid, but a wounded one. It was woman’s plight to ceaselessly suffer love’s eternal wound.”⁵⁸ From Germany, Dr. Runge insisted that “since a woman needs protection during menstruation all demands on her strength must be remitted. Every month for several days she is enfeebled, if not downright ill.”⁵⁹ G. Stanley Hall summed up many of the arguments in his monumental treatise, *Adolescence*. At this time, he said, “they can do less work with mind and body (and) make less accurate and energetic movements.”⁶⁰

Though women had to expect to be disabled by menstruation for thirty of their best years, the onset of menarche was believed to be a time of particular physical stress and crisis. At this time, the entire developing female organism was thrown into turmoil. Adolescence was the period of maximum growth when all energies were to be conserved rather than dissipated. Puberty for boys marked the onset of strength and enhanced vigor; for girls it marked the onset of the prolonged and periodic weaknesses of womanhood. George Austin warned girls that at the time of the appearance of menstruation, special dangers awaited, all of them due to their sexual functions.⁶¹ J. H. Kellogg wrote repeatedly that

54. A. Hughes Bennett, “Hygiene in the Education of Women,” *Popular Science Monthly*, 16 (February 1880), 521.

55. W. C. Taylor, M.D., *A Physician’s Counsels to Woman in Health and Disease* (Springfield: W. J. Holland and Co., 1871), quoted in Barbara Ehrenreich and Deidre English, *Complaints and Disorders: The Sexual Politics of Sickness* (New York: The Feminist Press, 1973), 21.

56. Dr. Tilt, *The Lancet*, 11(1862), 480, quoted by Lorna Duffin, “The Conspicuous Consumptive: Woman as an Invalid,” in Delamont and Duffin, *The Nineteenth Century Woman*, 32.

57. J. McCrigger Allan, “On the Real Differences in the Minds of Men and Women,” *Anthropological Review*, 7 (1869), cxviii.

58. Jules Michelet, *L’Amour* (New York, 1859), 48.

59. Max Runge, *Das Weib in Seiner Geschlechtliche Eigenort*, (1900), 3.

60. G. Stanley Hall, *Adolescence* (New York: D. Appleton and Co., 1904), 1:472.

61. George L. Austin, *Perils of American Womanhood, or a Doctor’s Talk with Maiden, Wife and Mother*

the first occurrence of menstruation was a very critical period in the life of a female, each recurrence rendering her “specially susceptible to morbid influences and liable to serious derangements.”⁶² Nineteenth century physicians recalled Hippocrates’ analysis that “nubile virgins, particularly about the menstrual periods, are affected with paroxysms, apoplexies.”⁶³ Many were sure that the onset of menarche made a girl ripe for disease, and that special precautions were absolutely necessary.

“To Be” is greater than “To Do” : Lifestyle prescriptions for coping with menstrual disability

The protection of pubertal girls from excessive mental and physical activity at the time of menarche became a veritable campaign among the proponents of menstrual disability. Girls of the better classes, said Thomas Emmett, in a widely quoted medical textbook, should spend the year before and two years after puberty at rest. Each menstrual period should be passed in the recumbent position until her system becomes accustomed to the new order of life.⁶⁴

John Thorburn feared “disproportion between development of muscle and of nerve in women.” Agreeing with Emmett, he insisted that girls should do hardly any steady work for the three years surrounding puberty. Furthermore, they should “plan to lie fallow about a quarter of the time.” “Girls,” he continued, “should develop the dignity and efficiency of going slow.”⁶⁵ The best of medical specialists, said G. Stanley Hall, agreed that a girl should be “turned out to grass” and allowed to withdraw from other activities to “let nature do its beautiful work of inflorescence.” “Periodicity, perhaps the deepest law of the cosmos, celebrates its highest triumphs in woman’s life.” Once regular menstruation was established, he added, “the paradise of stated rest should be revisited in the monthly sabbath.” Idleness should be actively cultivated, and woman, realizing that “‘to be’ is greater than ‘to do’ should step reverently aside from her daily routine and let Lord Nature work.”⁶⁶

Hall’s volumes on *Adolescence* underscored widespread medical concerns about the appropriate lifestyle behavior of girls and young women. In a variety of public arenas he carried on the campaign that “every girl should be educated,” not to become self-supporting but, “primarily to become a wife and mother.”⁶⁷ Education for the adolescent girl should consist of courses in “heroology”—the teaching of the noble lesson of service to the collective soul of the people wherein women, as bearers of the race, would become the conduit through which “mansoul” might some day become a “supermansoul.” Since

(Boston: Lee & Shepard, 1883), 150.

62. J. H. Kellogg, *Plain Facts for Old and Young* (Burlington, Iowa: I. F. Segner, 1889), 183.

63. Robert Barnes, “Lumleian Lectures: The Convulsive Diseases of Women,” *The Lancet*, 1 (1873), 514.

64. Thomas E. Addis Emmett, M.D., *The Principles and Practice of Gynecology* (Philadelphia, 1879), 21.

65. John Thorburn, M.D., *Female Education from a Medical Point of View* (Manchester, 1884).

66. G. Stanley Hall, *Adolescence*, 1, 618, 639.

67. G. Stanley Hall, “The Ideal School Based on Child Study,” *The Forum*, 32 (February 1902), 35.

68. Clarence J. Karier. “G. Stanley Hall: A Priestly Prophet of a New Dispensation,” *Journal of Libertarian Studies* (Spring, 1983), 54.

the efficient functioning of the reproductive system was the *raison d'être* of woman's existence, efforts to explain and prescribe appropriate adolescent female activities were considered critically important. Hall used the fact that American girls had their first menses, on average, at 14 years of age, rather than 15½ in Europe, to support medical claims that American girls must be too precocious. This precocity he blamed upon "mentality and nerve stimulation" resulting especially from inappropriate female education.⁶⁹ He thus strongly buttressed the popular medical feeling that "there are, in the physiological life of women, disqualifications for continuous labor of the mind."⁷⁰

The precise physiological disqualifications of young women were elaborated most clearly by Dr. Edward Clarke in 1873. His treatise on Sex and *Education* (which ran through 17 editions in 13 years) mounted a major attack upon the educational and professional aspirations of late nineteenth century middle class women, and his chief weapon was the theory of menstrual disability. "Let the fact be accepted," he declared, "that there is nothing to be ashamed of in a woman's organization, and let her whole education and life be guided by the divine requirements of her system." Clarke, a professor of medicine at Harvard, was convinced that girls between 12 and 20 should concentrate solely upon the physiological development of their reproductive system. Energy expended upon mental activity (i.e. female education) at this time could only lead to a depletion of the energy required for full physical development. Mental activity during the catamenial week destroyed feminine capabilities and might well interfere with ovulation and arrest reproductive development. Studying forced the brain to use up the blood and energy needed to get the menstrual process functioning efficiently. Indeed, Clarke warned, if a girl "puts as much force into her brain education as a boy, the special apparatus will suffer."⁷¹

Clouston went further, attributing stunted growth, nervousness, headaches, hysteria and insanity to overstimulation of the female brain.⁷² Maudsley drew upon Clarke's portraits of the ill-effects of education upon young women to describe the girl who "enters upon the hard work of school or college at the age of 15 or thereabouts, when the function of her sex has perhaps been fairly established; ambitious to stand high in class she . . . (allows) herself no days of relaxation or rest paying no attention to the periodical tides of her organization, unheeding a drain that would make the stroke oar of the University crew falter. . . . in the long run nature asserts its powers (she) leaves college a good scholar but a delicate and ailing woman, whose future is one of more or less suffering."⁷³ Dr. Kellogg agreed. "There is no doubt," he said,

69. G. Stanley Hall, *Adolescence*, 1:478.

70. Silas Weir Mitchell, *Lectures on Diseases of the Nervous System Especially in Women* (Philadelphia: Lea Bros. and Co., 1885), 15. (Dr. Mitchell was famous for his rest cures for women who had become, he claimed, nervous and hysterical due to improper lifestyles. For an excellent analysis, see Ellen L. Bassuk, "The Rest Cure: Repetition or Resolution of Victorian Women's Conflicts?" *Poetics Today*, 6:1 (1985), 245—257.)

71. Edward H. Clarke, *Sex in Education or a Fair Chance for the Girls* (Boston: J. R. Osgood, 1873).

72. T. S. Clouston, M.D., "Female Education from a Medical Point of View," *Popular Science Monthly*, 24 (December 1883), 322—333.

73. Henry Maudsley, "Sex in Mind and Education," *Fortnightly Review* 15 (1874), 475.

“that many young women have permanently injured their constitutions while at school by excessive mental taxation during the catamenial period.”⁷⁴

Though there were a number of immediate objections to its implications, the menstrual disability theory of Clarke and his physician contemporaries in Europe and North America became widely accepted. Julia Ward Howe was a leading critic of Dr. Clarke’s thesis. “Despite Dr. Clarke’s prominent position in this community,” she wrote in a collection of essays by leading public figures, “we do not feel compelled to regard him as the supreme authority on the subjects of which he treats.” In her effort to disprove his thesis that you cannot feed a woman’s brain without starving her body, she pointed instead to the powerful influence of climate upon the health of American women, as well as a young female’s particular need for special guardianship. “Many young women,” she insisted, “are periodically kept from all violent exercise and fatigue so far as the vigilance of elders can accomplish this . . . [but] . . . a single ride on horseback, a single wetting of the feet . . . may entail lifelong misery . . . I have known of repeated instances of incurable disease and even of death arising from rides on horseback taken at the critical period.”⁷⁵ Thus educators, she explained, should not shoulder all the blame for exacerbating female weakness, yet she and many other critics of Clarke did not take issue with the notion that the periodic function should be regarded as a potentially debilitating condition requiring specific lifestyle prescriptions.

Instead, in light of a number of studies pointing out the excellent health of many college women, they attributed the problems of menstrual disability, more to a school or household regimen which did not provide sufficient rest and careful exercise during menstruation, than to the actual physical drain of studying.⁷⁶ W. LeC. Stevens collected data from the Presidents of Cornell, Michigan and Wesleyan that suggested that education need not be unfavorable to the health of women if proper care was taken.” The resident physician from Vassar, for example, claimed that all possible precautions were taken not to overtax Vassar girls during the critical period. All students

are carefully instructed regarding precautions which are periodically necessary for them . . . they are positively forbidden to take gymnastics at all during the first two days of their period . . . they are also forbidden to ride horseback then; and . . . strongly advised not to dance, nor run up and down stairs, nor do anything else that gives sudden and successive . . . shocks to the trunk. They are encouraged to go out of doors for quiet walks or drives, or boating and to do whatever they can to steady the nervous irritation.⁷⁸

Arguments about the ramifications of menstrual disability theory upon

74. H. Kellogg, *Plain Facts for Old and Young* (Burlington, Iowa: I. F. Segner, 1882), 83.

75. Julia Ward Howe, ed., *Sex and Education: A Reply to Dr. Clarke’s Sex in Education* (Boston: Roberts Brothers, 1874), 8, 15, 18-19.

76. The Association of Collegiate Alumnae, *Health Statistics of Women College Graduates* (1885). See also Leta Stetter Hollingworth, *Functional Periodicity: An Experimental Study of the Mental and Motor Abilities of Women During Menstruation* (New York: Columbia University, 1914) and John Dewey, “Health and Sex in Higher Education,” *Popular Science Monthly*, 29 (March 1886), 606–615.

77. W. LeC. Stevens, *The Admission of Women to Universities* (1883).

78. Alida C. Avery, “Testimony from Colleges (Vassar, 1873),” in Julia Ward Howe, *Sex and Education*, 193.

adolescent education took a similar tack in England. Though rebuking Henry Maudsley for his exaggerated conclusion that women could not compete with men since “for one quarter of each month during the best years of life (they were) . . . more or less sick and unfit for hard work,” Dr. Elizabeth Garrett Anderson did encourage teachers to protect adolescent girls from mental and physical fatigue and from violent activities such as long walks, riding, dancing, or lifting heavy weights. Instead, she advocated gymnastics, active games, daily baths and other hygienic reforms for girls in schools in order that their physical condition might be improved.⁷⁹

Thus, the onset of menarche brought the adolescent girl and her guardians face to face with the need to concentrate upon the regulation of her menses and the honing of her reproductive capacity. Indeed, said Dr. Wilson, such is the tendency of most American girls . . . towards functional disorders, that to inaugurate a proper hygiene that should lead to healthy and vigorous womanhood in most cases needs nothing less than medical supervision.⁸⁰ While vigorous activity was frowned upon, and periods of rest strongly encouraged, a certain amount of healthy exercise was definitely indicated. Physicians elaborated a detailed regimen for young women consisting of an appropriate blend of rest and restorative exercise. As Dr. Henry Ling Taylor explained, the problem presented to the physician lay in deciding, “not merely the prescription of exercise but rather such proportioning and contrasting of the muscular activity to periods of rest that the total result [would] be beneficial.”⁸¹

Clearly, the argument for physical activity had to be carefully construed. On the one hand, definitions of femininity and the menstrual disability theory implied a lack of physical vigor and robustness, and a recurring energy drain which prevented participation in education and hard labor. On the other hand, the development of physical strength and health was a necessary attribute of a robust and potentially productive mother.⁸² There was a difficulty, then, says Rosenberg, of providing the appropriate regimen to smooth the path taken by the dependent, fragile child en route to the demanding responsibilities of motherhood.⁸³ Some experts, such as Dr. Kellogg, advocated a more active, vigorous childhood including outdoor play and exercise for young girls. An

79. Elizabeth Garrett Anderson, “Sex in Mind and Education. A Reply,” *Formightly Review*, 15 (1874), 503.

She and other female physicians such as Mary Jacobi did attempt to counter the belief that rest was necessary or even desirable for women who menstruated normally. Mary Putnam Jacobi, *The Question of Rest for Women During Menstruation* (New York: G. P. Putnam, 1877).

Clelia Mosher pointed out that “the tradition that women must be incapacitated at periods strongly tends to increase the idea that efficiency is impaired.” Clelia Mosher, “Normal Menstruation and Some of the Factors Modifying It,” *Johns Hopkins Hospital Bulletin*, (April—May, June 1901).

80. J. T. Wilson, M.D., “Menstrual Disorder in School Girls,” *The Texas Sanitarium* (June 1885).

81. Henry Ling Taylor, M.D. “Exercise as Remedy,” *Popular Science Monthly*, 48 (March 1896), 626.

82. The female role in reproduction, note Ehrenreich and English, required stamina and if you counted in the activities of child raising and running a household, it required full-blown energetic health. Barbara Ehrenreich and Deidre English, *For Her Own Good. 150 Years of the Experts' Advice to Women* (New York: Doubleday, 1979), 134. Such stamina appeared to many physicians in the latter part of the nineteenth century to be palpably lacking among white, angle-saxon, middle-class American women. They pointed to an alarming drop in the birth rate among the ‘native stock’ and challenged women to do their duty and improve their health or accept a “new rape of the Sabines” to save the race. See, for example, G. Stanley Hall, *Adolescence*, 2:561—647.

83. Carroll Smith-Rosenberg, “The Hysterical Woman: Sex Roles and Role Conflict in Nineteenth-Century America,” in *Disorderly Conduct*, 658.

active tomboy would surely develop the physical health for future motherhood through boyish sports, he reasoned, yet the carefree romping and vigorous activity had to cease at puberty. Appropriate activity could then be obtained in the kitchen, the washroom, and the garden which was "nature's gymnasium" for adolescent girls.⁸⁴ Rest and carefully regulated exercise were to be the norm in the abrupt transition from activity to relative passivity. The sportive competitiveness which could be encouraged in childhood was to give way to selfless femininity. Indeed, after puberty, women were never to compete, for to do so would challenge the whole notion of complementary spheres of influence and competence. Nor were they to be encouraged to assert mastery "in such masculine areas as physical skill, strength and courage."⁸⁵ "Certain games, like football and boxing, girls cannot play," said Hall.⁸⁶ Rather, girls were to be primed to understand that from puberty on, all bodily strength was to be dedicated to the ceaseless routine of maternity and caring for others—most notably, husband and children. From this time until they were forty years old, said Miss Hardaker, twenty per cent of their energy had to be diverted for the maintenance of maternity and its attendant functions.⁸⁷ Indeed, every time menstruation occurred, a period of comparative repose, mental and bodily, was to be sought.⁸⁸

Menarche, then, abruptly ushered girls toward their natural vocation, at which stage they "were exempted from the necessity of engaging in violent exercises."⁸⁹ Bodily changes associated with the time of menarche also dictated an alteration in exercise prescription. At puberty, said Dr. Roberts, the "pelvis alters its shape . . . and the effect. . . is to bring the knees closer together, and to produce a weak-kneed condition and awkward running gait peculiar to women. Much walking or standing should be avoided and short but vigorous gymnastics exercises substituted, and when possible the recumbent position assumed."⁹⁰

Clouston summed up the general attitudes of the establishment medical profession toward physical education for adolescent girls. The right kind, he explained, is "that which hardens the muscles, adds to the fat, softens the skin, enriches the blood, promotes but does not overstimulate the bodily functions."⁹¹ To exercise the muscles, romping and play, especially out of doors, were the perfect answer.⁹² Gymnastic exercises, if well selected and propor-

84. J. H. Kellogg, *Ladies' Guide in Health and Disease* (Des Moines, 1883), 188. For a discussion concerning the integration of tomboyism with a traditional view of women's domestic role, see Sharon O'Brien, "Tomboyism and Adolescent Conflict: Three Nineteenth-Century Case Studies," in Mary Kelley (ed.), *Woman's Being. Woman's Place: Female Identity and Vocation in American History* (Boston: G. K. Hall & Co., 1979), 351-372.

85. Carroll Smith-Rosenberg, "The Hysterical Woman," 212.

86. G. Stanley Hall, *Adolescence*, 1:615.

87. M. A. Hardaker, "Science and the Woman Question," *Popular Science Monthly*, 20 (March 1882), 581.

88. John Thorburn, M.D., *Female Education from a Physiological Point of View* (London, 1884).

89. Felix L. Oswald, M.D., "Physical Education," *Popular Science Monthly*, 19 (May 1881), 23.

90. C. Roberts, M.D., "Bodily Deformities in Girlhood," *Popular Science Monthly*, 22 (January 1883), 324.

91. T. S. Clouston, M.D., "Female Education from a Medical Point of View," (1), *Popular Science Monthly*, 24 (Dec. 1883), 227. Clouston echoed Clarke that physical education for girls was to be stressed only as it connected with the duties of maternity.

92. T. S. Clouston, M.D., "Female Education from a Medical Point of View" (2), *Popular Science Monthly*.

tioned, would promote muscular development, grace and vigor, but were easily carried to extremes where they could break down the constitution.⁹³

Dr. Madison Taylor proposed that the “enfeeblement, so common among pubescent girls should be combated by romping, ball, beanbags, battledore, hoops, running, golf, tennis, bicycling, self-bathing in cold water, deep breathing exercises once or twice a day rather than by systematic physical culture.”⁹⁴ Especially appropriate, reminded Alice Tweedy, were “homely gymnastics,” or in other words, housework.⁹⁵

To develop fat, “that most essential concomitant of female adolescence,” the blood needed enrichment by good nutrition. “Fat is to the body what fun is to the mind” explained Clouston. It is “an indication of spare power for future use.”⁹⁶ Though physicians did not understand the exact relationship between the onset of menarche and a critical level of body fat, they did worry about “anorexia scolastica,” a debilitating thinness and weakness that they believed to result from too much mental stimulus, especially during menstruation.⁹⁷ They were also acutely aware of the linkage between the body changes of puberty and chlorosis, a common form of anemia named for the greenish tinge that marked the skin of young women.⁹⁸ Chlorosis was linked variously to poor diet, lack of exercise, lack of fresh air, impoverished blood and mental effort.⁹⁹ The menstrual function was almost always implicated. Its derangement resulted in anemic and chlorotic girls, some of whom manifested amenorrhea, while others appeared to show increased blood volume which was interpreted as a promise of fecundity.¹⁰⁰ Loss of strength and appetite were the most frequently reported symptoms of the condition and medical guides noted that common characteristics of chlorotic girls included menstrual problems, a distaste for meat in any form and a low tolerance for physical activity.¹⁰¹ Physicians prescribed a combination of rest, moderate exercise in the fresh air, blood and

24 (January 1884), 320.

93. Henry Ling Taylor, M.D., “Exercise as a Remedy.” *Popular Science Monthly*, 18 (March 1896), 630. As Nathan Allen put it, “stated, and out of door and not excessive physical culture had a normative influence upon the monthly function.” “The Education of Girls as Connected with Their Growth and Physical Development,” *Sanitarian* (1879).

94. J. Madison Taylor, M.D. “Puberty in Girls and Certain of its Disturbances,” *Pediatrics* (July 15, 1896).

95. Alice B. Tweedy, “Homely Gymnastics,” *Popular Science Monthly* 40 (February 1892).

96. T. S. Clouston, M.D., “Female Education” 2, (1884), 323.

97. M. G. Van Rensselaer, M.D., “The Waste of Woman’s Intellectual Force,” *Forum* (1892), 616. Although S. Weir Mitchell admitted he did not understand the relationship between fat and health, gaining weight, he felt, improved the blood and made the skin ruddy, which was a certain sign of physical health. *Wear and Tear, or Hints for the Overworked*, 4th ed. (Philadelphia: J. B. Lippincott & Co., 1885).

98. R. P. Hudson, “The Biography of Disease: Lessons from Chlorosis,” *Bulletin of the History of Medicine*. 51 (1977), 440—463; A. C. Siddall, “Chlorosis: Etiology Reconsidered,” *Bulletin of the History of Medicine*, 56 (1982), 254—260; T. Clifford Allbutt, “Chlorosis,” in *A System of Medicine*, T. C. Allbutt, ed. (New York: Macmillan, 1905); R. L. Tait, *Disorders of Women* (Philadelphia: Lea, 1889).

99. Joan Jacobs Brumberg, “Chlorotic Girls 1870—1920: A Historical Perspective on Female Adolescence,” in Judith Walzer Leavitt, ed., *Women and Health in America* (Madison: The University of Wisconsin Press, 1984), 188.

100. L. Warner, *A Treatise on the Functions and Diseases of Women* (New York: Manhattan, 1875); J. Madison Taylor, M.D., “Puberty in Girls and Certain of its Disturbances.” *Pediatrics*, (July 15, 1896).

101. E. L. Jones, *Chlorosis: The Special Anemia of Young Women* (London: Balliere, Tindall & Cox, 1897); Allbutt, “Chlorosis.”

nerve remedies, iron pills and the eating of red meat to combat what they perceived to be the crisis evoked by the establishment of periodicity.¹⁰²

Lifestyle prescriptions for the adolescent girl thus took the form of a set of signposts, erected to assist her in coping with the passage from girlhood to womanhood that had been initiated by menarche. "Puberty for a girl," said G. Stanley Hall, "is like floating down a broadening river into an open sea . . . [where] . . . the currents are more complex and the phenomena of tides make new conditions and new dangers."¹⁰³

The metaphorical use of tides and currents in relation to the periodic crises of menstruation was indicative of the generalized fear, at the end of the nineteenth century, that the order and well-being of society was being threatened by waves of uncontrollable elements—among them, demands by the "new woman" to break out of the "separate sphere" that had been defined for her. Establishment physicians saw themselves as being in a special position to stem the tide of female demands for higher education, entrance to the professions, and new bodily freedoms such as birth control and competitive sporting activities, by invoking the authority of science to assert a broader form of control over women's bodies and their regular functions. "We must not abet woman as a sex in rebelling against maternity, quarreling with the moon, or sacrifice wifehood to maidenhood."¹⁰⁴ must protect them from being "dashed to pieces on the rock of childbirth, . . . ground on the ever-recurring shallows of menstruation."¹⁰⁵ We must warn them of "the effeminacy of wealth, the new woman movement and foeticide."¹⁰⁶ We must not countenance these women who "strive to theoretically ignore and practically escape the monthly function."¹⁰⁷

Summarizing the scientific findings that had contributed to "our modern knowledge of women," Hall repeatedly underscored established medical opinion that women's periods must be more respected and reiterated the role that physicians must assume as medical guardians, almost moral directors of the intimate, personal behavior of females.¹⁰⁸ Thus, the same mechanistic, closed model of a finite store of nervous energy used by physicians to explain physical and mental health and disease served equally to account for incidences of

102. As many commentators on nineteenth century nutritional practices have noted, it was not surprising that Victorian adolescents eschewed, or were not offered red meat for the link between animal flesh and rampant sexuality had been well-established by numerous physicians, and health reformers. See, for example, John S. Haller and Robin M. Haller, *The Physician and Sexuality in Victorian America* (Urbana: University of Illinois Press, 1974); James C. Whorton, *Crusaders for Fitness: The History of American Health Reformers* (New Jersey: Princeton University Press, 1982); Bullough and Voght, "Women, Menstruation and Nineteenth Century Medicine."

103. G. Stanley Hall, *Adolescence*, 1:507—8.

104. Grant Allen, "Plain Words About the Woman Question," *Popular Science Monthly*, 36 (December 1889).

105. George J. Engleman, "The American Girl of Today. The Influence of Modern Education on Functional Development," President's Address, *American Gynecological Society*, 25 (1900), 8—45.

106. Havelock Ellis, M.D., *Determination of Puritan Stock and Its Causes* (New York: 1894).

107. G. Stanley Hall, *Adolescence*, 1:609

108. John Chynoweth Burnham, in "Psychiatry, Psychology and the Progressive Movement," *American Quarterly*, 12 (Sept. 1960), 457-465, discusses how the role of many doctors had expanded by the end of the nineteenth century to become "moral directors of their patients." See also the Hallers, *Physician and Sexuality* for a broader discussion of male medical guardianship.

fragility and disorderliness in social and moral affairs,¹⁰⁹ To many late nineteenth century American doctors, increasingly anxious about the tensions of American life, the golden key to the desired state of equilibrium was moderation. Excess was morally and physiologically foolhardy. Energy-discharging activities must always be compensated for by energy conserving ones. Activity must be countered with rest and relaxation; indoor work must be balanced with activity in the open air, and so on. "With a peculiar appropriateness," says Rosenberg, "science provided a vocabulary and a sense of imagery to express and support these beliefs, and from among them, physicians selected those scientific plausibilities which fitted most conveniently into their professional paradigm."¹¹⁰

Thus, those who supported most staunchly the theory of menstrual disability were the most uneasy about the dangers of feminine excess, whether it be in study, professional work or in sports and exercise. Not necessarily considering themselves conservative in their attitudes toward women, they nevertheless were quite convinced that medical evidence demonstrated the physiological undesirability of strenuous and prolonged exertion in mental and physical activities. "When we thus look the matter honestly in the face," said Maudsley,

it would seem plain that women are marked out by Nature for very different offices in life from those of men, and that the healthy performance of her . . . special functions renders it improbable she will succeed, and unwise for her to persevere, in running over the same course at the same pace with him. For such a race she is certainly weighted unfairly women cannot rebel successfully against the tyranny of their organization. This is not the expression of prejudice nor of false statement, it is the plain statement of a physiological fact.¹¹¹

Sporting activities, just as educational pursuits, had to be compatible with female physiology and always focused upon health and balance rather than the recklessness of unregulated competition. The demands of periodicity were monthly reminders that nineteenth century women could not, and should not play the game like men.¹¹² The burgeoning demands of the "new woman," at the end of the century, however, suggested that, in athletics as well as in other endeavors of the male sphere, women were not wholly committed to the notion that they were eternally wounded.¹¹³

109. In their analyses of the medical advice literature of the late nineteenth century, the Fellmans note that "a general sense that the world outside is coming undone is frequently related to the haunting fear that the body and the mind are fragile structures. The imperiled body is both metaphor and ideological focus." Fellman, *Making Sense of Self*, 138.

110. Charles E. Rosenberg, "Science and American Social Thought," in David D. Van Tassel and Michael G. Hall, eds., *Science and Society in the United States* (Illinois: The Dorsey Press, 1966), 139.

111. Henry Maudsley, M.D., "Sex in Mind and in Education," *Fortnightly Review*, 15 (1874), 468.

112. James Wharton has described the debate about the medical consequences of athletics for men and the effect it had upon the formation of public attitudes toward strenuous exertion and competitiveness in sport. Those physicians fearful about the squandering of bodily reserve power by young men in their battle for victory pointed to cardiac hypertrophy, emphysema and kidney damage, and insanity. (James C. Wharton, "Athlete's Heart: The Medical Debate Over Athleticism, 1870-1920," *Journal of Sport History*, 9:1 (Spring 1982), 30-52).

The debate over athlete's heart, however, was well over by the time of World War I. The debates about the medical implications of female sport, especially during menstruation, have been more enduring.

113. See, for example, Carroll Smith-Rosenberg, "The New Woman as Androgyne: Social Disorder and

Epilogue

Paradoxically, one hundred years after the heyday of the menstrual disability theory, current research studies are adding new grist to traditional anxieties that vigorous exercise might indeed be harmful to the female's reproductive function under certain circumstances. Evidence associating endurance-type exercise with changes in the menstrual cycle and ovulation disruption is accumulating.¹¹⁴ Studies explain that the teenager who begins an intensive physical exercise program prior to normal menarche may experience a delay in the onset of her first period of several years. Furthermore, amenorrhea and infertility appear not to be unusual among female ballet dancers, gymnasts, cross country skiers, swimmers and distance runners. Physicians and exercise physiologists demonstrate that to achieve optimum performance, many female athletes go to extraordinary lengths to reduce their body fat stores with severe consequences to their general and reproductive health.¹¹⁵ Indeed, the relationships between exercise, body fat, and the onset and persistence of menstruation are being explored from a variety of disciplinary viewpoints, due, in part, to an alarming increase in the incidence of pathogenic weight control behaviors among girls and women.¹¹⁶

There is a growing fear that young females, especially athletes, in pushing back the frontiers of corporeal existence in a quest for self-identity and distinctiveness, may close off options available to normally functioning females

Gender Crisis, 1870—1936," in *Disorderly Conduct* and Donald J. Mrozek, *Sport and American Mentality, 1880-1910* (Knoxville: The University of Tennessee, 1983).

114. American College of Sports Medicine, "Opinion Statement on the Participation of the Female Athlete in Long-Distance Running," *Medicine and Science in Sports and Exercise*, 4: 11 (1979), ix-xi; Jerilyn Prior and Yvette Vigna, "Reproductive Responses to Endurance Exercises in Women: From Corsets to Shin Splints," *Comedian Women's Studies*, 4:3 (Spring, 1983), 35-39; R. Bloomberg, "Coach Says Running Affects Menstruation," *The Physician and Sports Medicine*, 5:9 (1977), 15; E. Dale, D. H. Gerlach, & A. L. Wilhite, "Menstrual Dysfunction in Distance Runners," *Obstetrics and Gynecology*, 54 (1979), 47-53; B. Schwartz, D. C. Cumming, E. Riordan, H. Selye, S. S. C. Yen, & R. W. Rebar, "Exercise-associated Amenorrhea: A Distant Entity?" *American Journal of Obstetrics and Gynecology*, 141 (1981), 662-670.

115. Recent studies show that menarche occurs at a significantly later age in the American female athlete than in her non-athletic counterpart. R. M. Malina, W. W. Spirduso, C. Tate, A. M. Baylor, "Age at Menarche and Selected Menstrual Characteristics in Athletes at Different Competitive Levels and in Different Sports," *Medicine and Science in Sports*, 10, (1978), 218—222; Robert M. Malina, Albert B. Harper, Henrietta H. Avent, and Donald E. Campbell, "Age at Menarche in Athletes and Non-athletes," *Medicine and Science in Sports*, 5 (1973), 11—13; M. P. Warren, "The Effects of Exercise on Pubertal Progression and Reproductive Function in Girls," *Journal of Clinical Endocrinology and Metabolism*, 51, (1980), 1150-1157; J. H. Wilmore, C. H. Brown, and J. A. Davis, "Body Physique and Composition of the Female Distance Runner," *Annals of the New York Academy of Sciences*, 32 (1977), 764-776; J. L. Cohen, P. B. May, C. S. Kim, and N. J. Ertel, "Exercise and Amenorrhea in Professional Ballet Dancers," *Clinical Research*, 28:1 (1980), 23.

116. Lionel W. Rosen, Douglas B. McKeag, David O. Hough, Victoria Curley, "Pathogenic Weight-Control Behavior in Female Athletes," *The Physician and Sports Medicine*, 14:1 (January, 1986), 79-86; N. J. Smith, "Excessive Weight Loss and Food Aversion in Athletes Simulating Anorexia Nervosa," *Pediatrics*, 66 (July 1980), 139—142. The suppression of menstruation is a distinguishing feature of anorexia nervosa which is a phobic fear of fat. It is known that the initiation of menses depends upon the attainment of critical body weight and composition, and that a lack of food and/or a large energy drain of habitual physical activity delays menarche. Rose E. Frisch and Janet W. McArthur, "Menstrual Cycles: Fatness as a Determinant of Minimum Weight for Height Necessary for Their Maintenance or Onset," *Science*, 185, (September 1974), 942-949. Thus, fat and the female reproductive system cannot be separated physiologically, for the art of starvation not only promises control of the shape that distinguishes the female body, but leads to a cessation of menstruation as well. See, for example, Noelle Caskey, "Interpreting Anorexia Nervosa," *Poetics Today*, 1—2 (1985), 259—273; and Kim Chermin, *The Obsession: Reflections on the Tyranny of Slenderness* (New York: Harper and Row, 1981).

and damage their reproductive health for the sake of fitness.¹¹⁷ Within this anxiety do we hear perhaps the echo of Dr. Clouston's warning rebounding? "Women," he wrote in 1884, "have a peculiar power of taking out of themselves more than they can bear. All should carry a reserve to meet emergencies and not use up all their power and thus rob future generations."¹¹⁸

117. Frans de Wachter, "The Symbolism of the Healthy Body: A Philosophical Analysis of the Sportive Imagery of Health," *Journal of the Philosophy of Sport*, 11 (1985), 56-62.

118. T. S. Clouston. "Female Education From a Medical Point of View," *Popular Science Monthly*, 24 (1884), 319-334.