

PHYSICAL EDUCATION FOR GIRLS IN THE
SECONDARY SCHOOLS.

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Education is generally divided into moral, mental and physical education. In this paper physical training shall be treated not only as a part of education but as a basis for the cultivation of the higher mental and moral qualities.

Physical education means much more than gymnastic exercises as is commonly thought. From whatever side we look upon it, be it the hygienic or the educative, we must provide more and more motor opportunities for the growing child if our education for service is to be a success. The more complex education becomes, and the more the child lacks opportunities for motor experiences which formerly existed in the home and the environment, the more important motor education becomes, if intellectual progress is to be maintained. Physical education has at least three important school functions: the hygienic, the general educational, and the physical training. The demands of hygiene are met if we provide plenty of muscular activity, fresh air and sunshine, and wholesome food. Physical training is necessary because counter-influences must constantly be exerted in order to prevent rounded shoulders, distorted spines, cramped chests, and imperfections of hearing and eyesight, which are the effects of certain conditions which exist incident to school life that are injurious to the development of the child. In a general way physical training may be said to be "the regulated practice of muscular exercises under conditions that are conducive to the health of the organism and to develop and discipline its motor powers." There are three general requirements

which are essential in preparing an adequate and scientific system of physical education; first, there should be an adaptation to the stage of physiological development; second, there should be an adaptation to the individual, taking into consideration his physical and mental condition as well as his personal needs; and third, there should be an adaptation to the sex.

In order to understand physical training one must have a clear idea of the aims in view, the means to be used that is the equipment, and the method or policy to be pursued.

The aims of physical training may be considered under four general heads; hygienic, educative, recreative and remedial.

In considering these aims in respect to the needs of girls during the high school period, the hygienic aims of physical training takes into consideration the normal proportions of the human body so as to conform to the normal growth and development. The first need is for health and vigor, for which reason exercise should be taken out-of-doors and those chosen which increase vitality and have to do with functional health as well as health of mind. These would include all the great motor activities of walking, running, throwing, skipping, jumping, and whenever practicable, climbing and swimming. It is especially desirable that exercises be chosen which will strengthen the muscles of the abdomen, waist and back, for it is in these muscles that women are weak, probably due to inheritance and partly to custom in dress. The teacher in physical training must be acquainted with the ordinary agents of health such as exercise, food, sleep, clothing, etc., so as to advise the student how he can

conform to regular laws of health through educative habits. It is the business of the teacher to know the nature, temperament and inheritance of the individual in order to know what course to prescribe for him. Each girl should have a physical examination on entrance into school and every school should keep a record of measurements and tests etc. The physical condition of girls can very often be traced back to simply the fact that the ordinary agents of health have been neglected. It is often the case that girls in high school have too intense social life where late hours and loss of sleep rob the body of strength even faster than severe study. The body not only needs sleep, but the dietary should be abundant, plain and varied. as nutrition is the first law of health and happiness. The girl's mode of dressing is also an important rule of health, clothing should be sufficiently warm to prevent the heat generated by the body from being too rapidly lost, also sufficiently loose to allow unimpeded muscular action whether voluntary or involuntary. Girls should be educated to wear clothing suitable to time and place. Girls should take exercise that is judicious, that is that which gives strength, that is that in which the parts exercised are not too steadily on the strain, and that which is regular. There should be cultivated the hygienic habits of simple deep breathing at all times, an erect carriage of the head with the thorax held at its greatest height permitting free play and proper functioning of internal organs.

The educative aims of physical training consist in the formation of right habits of action by proper training of nerve centers. It includes not only those things which count for present efficiency,

but strives to cultivate those special powers of mind and body which are used in later life. It is this training for complete and successful living which makes all such work truly educational. Such a training of nervous system giving physical control is especially desirable in girls whose emotional nature makes them liable to yield to weakness along this line, interfering with and preventing a well balanced nature. The Spartan idea of physical training was educational, the girls were trained in running, jumping, hopping, throwing the discus, hurling the javelin, and even wrestling, but the aim was to enable them to become the mothers of hardy warriors and patriotic citizens. The education was conducted in public and with a wide freedom that was regulated strictly by law. The superiority of women thus educated was displayed with singular success in every respect; they were tall, strong, of vigorous health, nearly all were beautiful, they were more faithful wives, stronger mothers, wiser domestic rulers, and they were superior not only in physical strength but in mental vitality as well. Girls should be taught how to perform the simple daily activities of life with ease and grace, and in a manner conducive to health. These include a good carriage of the body at all times, going up and down stairs with lightness and an erect carriage, walking with a free swing of the leg, graceful rising and sitting and good posture while sitting.

The recreative physical training aims to affect the mental strain of prolonged school work. Play is the form of exercise which most appeals to young children, it is activity for its own sake. During high school stage play need not be neglected but carried on into basket ball, tennis, etc., group games played with sides. Here

complex and precise movements are required, the body gains a symmetrical development. If one organ for instance the heart or the lungs is undersized or weak it has to work the hardest to meet the requirements of the body and receives the largest share of the exercise, it is stimulated to grow faster and thus overtakes the rest. Many expend too much energy and gradually as the girl plays more, she learnt to suppress this, to economize and concentrate energy. This is one of the earliest and best lessons in self control for the girl. Play furnishes best mental training, the sense organs are all alert, attention focused on one point, thinking, willing and doing are united. This is a good way to train the will power, viz.. close attention to one thing. The conception of fair and unfair play is almost the first genuine and spontaneous moral distinction which a child makes. Play is the best form and kind of physical training because it gives the most enjoyment. Joy is exercise, promotes growth as readily as sunlight does. We should make of play a study for the girl loses her shyness and self consciousness in the game and we should encourage the girl to form such habits of play and other forms of recreative exercise that she will not outgrow them as she grows older. What we need is not to crowd out play or its spirit but somehow to get more of the enthusiasm and zest of the playground into the work.

Remedial physical training aims to restore disturbed functions and correct physical defects and deformities. The former is taken care of by medical gymnastics and this should be under supervision of a doctor. Correct ^{ive} gymnastics takes care of the latter, here one tries to improve the drooping head, round shoulders, etc., so as to produce a graceful carriage of the human body. The high school period is a good time for one can most effectively work to change

bad posture.

The aim of physical training is to improve the functional capacity of the important organs, to increase the general nutrition of the body and to correct deformities so as to help the individual to grasp a larger and fuller life. Thus the aim whether it be employed for hygienic, recreative, educational or remedial ends is to foster a normal development of the human body.

The means for carrying out these various aims may be divided into the following classes: free exercises, gymnastics, athletic sports, developing appliances or medical gymnastics. In free exercises no apparatus is used, this class includes calisthenics aesthetic movements, running and various forms of dancing. Under this head one may place military work. The importance of this work is shown by the results which are obtained, the head is erect, the chest is in a better position, the movements of the body are decided and regular, and the girl is more apt to show the results of the discipline in better mental work.

Gymnastics may be divided into two groups, light and heavy gymnastics. Under the former head are included such exercises as are performed with dumb bells, Indian clubs and wands. Drills must not however be given until the girls have mastered the fundamental principles of free gymnastics. The drill should be given with some purpose in view rather than an aimless line of exercise. Drills should be given that will tend to draw the shoulders back to place, to widen and deepen the chest, to develop the muscles of the waist and back. Under heavy gymnastics are included such equipment as parallel bars, ladders, vaulting horses, etc., these however occupy a place in college gymnasium rather than high school.

Athletic sports in a general way includes all exercises which are performed in the open field. Under this heading one may place tennis, football, basket ball and base ball etc., these are games of skill which call for hard and careful training, these exercises cannot be indulged in by girls the same as boys, they must be modified so as to meet the organic necessities of the former. For girls these athletic games must not have as their aim the development of certain skill in that one line but attention must be paid to their recreative and health value. Under head athletic sports one may place games. About the period of adolescence there is a tendency to prohibit games, this is the time when girls mostly need games, they are receiving a social education at this period and play is an important factor for the development of this instinct, through play they develop a sympathetic interest in and an understanding of their play fellows. Games may often succeed where other activities of the school fail for they can be used to develop mentality and character by means of a discipline which other pedagogic methods do not possess. Girls may go through life less wearily and monotonously if she has had some of this play spirit infused within her.

Developing appliances or medical gymnastics consist of chest weights, chest expanders and developers and rowing machines. These however do not occupy a place in the average American high school gymnasium, their place is in the well equipped college gymnasium.

In order that the various agencies employed in physical training should produce the desired results, they must be judiciously chosen and with some knowledge as to their general and specific application to different individuals at different times and under different conditions of life. Certain general principles can be agreed upon that will guide one in making an intelligent selection of exercises. Exercises should be divided into those tending to give strength, as exercises with chest weights, dumb bells, Indian clubs; those tending to give quickness, as running, jumping and tennis; those tending to increase the power of endurance as rowing and swimming; those requiring attention and varied responses to commands, as Swedish gymnastics, military tactics and many calisthenic drills; and those which tend to make one supple and graceful, as the different varieties of dancing and aesthetic movements. Exercises which appeal to the muscles of the trunk and limbs, because they do exert a direct influence upon the heart, lungs and skin and upon the fundamental portions of the nervous system, constitute the core or rather the bulk of every rational and well approved system of physical training. The nervous system is a field of education, education whether mental or physical, to be natural, safe and effectual, should be conceived and ordered so as to conform with the laws which determine the normal growth and development of the nervous system. Exercises are not given with the aim of growing immense packs of muscles, but to develop parts of the body weakened or ill nourished; to harmonize the several organic and all the motor and local functions, to put the essential apparatus in working order. Some of the results of muscular exercise

are--muscles act directly or indirectly upon the lungs in that when exercise is indulged in, the quantities of air inhaled and of carbonic acid exhaled are much increased. Exercise increases the action of the heart. after exercise the heart quiets and returns to its normal pulsations. This is an important feature which should be watched when any form of exercise or gymnastics are taken up and if the pulse rises to one hundred and twenty beats per minute or more, the exercise for the time should cease. The skin is affected because of muscular exercise, the perspiration is doubled, the result is beneficial as perspiration cleanses the body of poisons and makes the blood flow more freely. The effect of exercise on the brain is shown by the fact that most valuable mental qualities and powers are best attained through muscular exercise. An easily exhausted body means a brain incapable of strong and prolonged effort. Digestion is improved by exercise, the appetite increases, great care must be taken in eating substantial food, eat it slowly and not eat too much or too fast and drink nothing during meals. Thus all exercises improve the organism and it is possible therefore to make such a selection of exercises as will greatly improve the physical condition of all these important parts of the body.

The important question is not what is best to give our pupils in order to accomplish certain results, but how to induce them to undertake physical training as they do other forms of school and college exercises. Now arises what method or policy one ought to pursue in managing them so as to preserve the good and reduce the evil to a minimum. Then the question comes shall the practice of physical training be left optional, shall attendance at the gymnasium

be required, shall a physical work be made a part of the regular school curriculum? If physical exercise is left optional, those who most need it will not take enough of it while those who are not especially in need of it are apt to devote more time to it than is necessary or consistent with the performance of other school duties. Physical training ought not to be left optional but attendance at the gymnasium required and made a part of school curriculum. Credit must be given for the kind, nature and amount of work done, for if not the students are likely to enter into the exercises with a half hearted spirit, and thus comparatively little good would result, as they need this moral and physical enthusiasm behind them. Some people would say that the girls have the hours after school for exercise, but do they use this time in such a way. too a good proportion of our girls when they leave high school go into their own homes and out into the business world rather than go to college. This is a fact which every educational district ought to consider as the health of woman is more important for welfare of race than that of man. For whenever the intellect is overworked at the expense of the body the physiological level is lowered and thereby the intellectual level, for sooner or later generations physiologically enfeebled will find their cerebral power impaired. Laws of heredity are inevitable. the legacy of impoverished organs to children means a lowering of mental capacity in the more or less near future. Physical training on account of its value as an agency for promoting bodily health and mental development is entitled to recognition in the school curriculum. Inasmuch as physical training lies at the basis of human education

and enters of necessity into the mental and moral training of all children and youth, those who control educational policy and the conduct of educational affairs should see to it that mental training is not pursued to the neglect or detriment of bodily training, that each kind of training should be given in appropriately fitted places by thoroughly trained and well qualified teachers. Physical exercise must be given in moderate doses just the same as three meals a day, it must be systematic, a portion of each day spent in school should be given up to physical training, thus we are placing mental and physical exercises on the same plain and are rewarding every honest and faithful attempt toward physical improvement with the same recognition that we bestow upon the efforts to improve the mind.

With the girl the period of evolution or immaturity is of great importance in education, since the formal education of the great majority of girls ceases before maturity is reached. There is no doubt that as compared with boys, girls are in even greater need of all the benefits which are to be derived from a wisely planned, thoroughly executed, and complete course in physical education. When we consider that the foundations of the health of women are being laid, women who are to take as never before an **active** part in the world's work, and that the strength of a later generation depends on the vitality of the girl who is to become the future mother it is time that the physical welfare of girls be looked after. It is known that following a period of preparation beginning at about the age of nine or ten a gradual change comes into the life of the girl. As compared with boys' training should

be from a somewhat different view point, bearing in mind that it is girls with all the potentialities of future women, whose lives we are influencing. We should strive to know the mind and soul of the girl, which requires rare discernment, great sympathy and appreciation. Thus it is with a forever changing, growing and increasingly complicated organism that the teacher bearing the physical welfare of the girls in charge, at this period when training is most influential for good or evil viz. the period of immaturity has to contend with. This is the period of accelerated growth in height and weight. The muscles play the leading part in the increase of the weight of the body. Motor coordinations attain a higher degree of development than was possible before, though they are not fully perfected till adolescence is fully established. The establishment of puberty exercises a profound effect on the development of the body, mind and character. This is the most critical period in a girl's life, if physical education be neglected or misdirected during this time, if it be mistakenly deferred to a more convenient season, it cannot accomplish its perfect work, either as regards the promotion of health or the development of the motor functions of the brain. The school can lay the foundation for a healthy and clean womanhood, and manhood, therefore laying the basis upon which to build a true, clean, wide awake active young city. Modern civilization and education are bearing harder upon the girl than the boy and the system of "muscles unexercised" and "brains under hard labour" is still more disastrous for women than for men. Woman is above all an instrument of nature's selection, because of the qualities or defects she transmits to her children, thus this period in a girl's life between ten and fifteen years of age needs special attention. It is not a period

of immediate danger, nor one of great essential or unavoidable weakness, although it is one of diminished vigor and requiring care, attention and hygienic conditions. Suitable gymnastics are very useful and in fact are positively necessary. The constitution of the girl is susceptible to disease at this period, many die of consumption at this age. There is a great change going on in this organism at this period which increases the amount of waste in the blood, this waste must be radically and steadily removed by organs in an undersized trunk. This has to be removed, first oxidized by an abundant supply of air absorbed by the blood at the lungs. Hence the great importance of a large lung capacity. Pubertal metamorphosis should not be hastened, nature should be allowed to follow its course, the development of the girl is too crowded. The crisis may be delayed somewhat and to a great advantage of the girl by sufficient open air, muscular exercise, and by avoidance of undue nervous stimulations and excitement. The pubertal period is characterized by very rapid growth in height and by readjustment or rebuilding of all the organs of the body. This results in a large amount of waste which threatens to poison the blood, depress the nervous system and to lower the tone of vitality throughout the body, hence rise of morbidity. Morbidity remains high in case of girl, health during these years requires great attention, proper care and exercise during early years of high school period would delay and mitigate its rise and hasten its fall. Muscular movements react directly or indirectly upon the brain as well as upon the heart and lungs. An easily exhausted body means a brain incapable of strong and prolonged effort. Poor blood betrays itself in poverty or dullness of thought and in lack

of clearness of expression. Many most valuable mental qualities and powers are best attained during these years of immaturity. In both sexes physical equilibrium is the foundation of mental equilibrium especially if we consider the means and the race. We must therefore develop body and mind at the same time. The health of the woman is more important for welfare of race than that of the man. Whenever the intellect is overworked at the expense of the body the physiological level is lowered and thereby the intellectual level, for sooner or later generations physiologically enfeebled will find their cerebral power impaired. Laws of heredity are inevitable, the legacy of impoverished organs to children means a lowering of mental capacity in the more or less near future. As far as the race is concerned a cultured intellect based upon a bad physique is of little worth, since its descendants will die out in one or two generations, conversely a good physique, however poor the accompanying mental endowments is worth preserving, because, throughout future generations the mental endowments may be indefinitely developed. Thus for the good of the race it is the duty of the high school which is the people's school to see that the girls develop body and mind at the same time. Some girls are so conscientious in their work or rather overambitious that they are at the close of the school year physical wrecks. Teachers in a way have to crowd work upon the girl because most high schools have a reputation to sustain, public demands that it satisfy the requirements of the college for admission, whether these requirements are reasonable or not. Physical training can wait other things must be studied whether profitable or not. Thus the teachers have to

encourage this plan and we find the brain developed at the expense of the body.

Girls are physically weaker than men. This is on account of the work of reproduction which is placed upon her. All women may not become mothers but every woman has the physical constitution of a mother and her weaknesses are not functional alone, but structural as well. The nutritive and nervous systems are more or less taxed by the sexual organs during their development. Many girls may not feel the need of rest and relaxation during the menstrual period but it imposes a tax on the whole organism which she will feel later. During this period light games are better than the least mental strains. Correlations of sexual and nutritive systems maintained chiefly by nervous system, maintains the balance, if the nervous system is overtaxed the sexual system suffers. Excessive brain work will derange the functions of reproduction, not because of any disturbance of relations between the brain and sex systems, but simply by disturbance of nutrition. The human race suffers because it has broken away from laws of instinct and not yet learned to obey the laws of which a higher pain development has imposed. No exercise of intelligence can enable a woman to violate the laws of life without suffering the consequence. There is nothing in peculiarity of sex that necessarily tends to development of diseases either mind or body. Therefore there is no reason why with a proper system of physical and mental training we could not develop the most efficient race.

Exercise helps a girl in more ways than by improving her health. This however is most important and is sufficient in

itself to enlist a girls interest. In addition it will improve her appearance. The Greeks recognized this importance, their education sought physical perfection primarily. The sculptured masterpieces of that age are today recognized as ideals of physical beauty, proportions and expression. Give any girl a clear complexion, glowing with health, bright eyes, lustrous hair, or body vigorous and alert, a personality glowing through and through with vitality and she will have charm no matter what her features may be. All these attractions result from good health. One cannot have beauty of body without health. Not only for health's sake but for higher reason of growing to perfect stature of womanhood. Physical training also plays a part in development of personality, for personality is a compound of soul, mind and body.

The aesthetic value of gymnastics should form an important place in the curriculum for the girl. Physical training aims not only to make the girl physically strong but to impart grace and the ability to control one's body. By gaining flexibility and control of every part of the system our movements become harmonious and we are truly graceful. By means of this flexibility and control we avoid function tentation, and so vital energy or nerve force is economized. By harmonious action we may be continually accumulating vital force instead of drawing upon reserve capital. The aim should always be flexibility and control, to bring the body into subjection to higher nature and make it expressive of real personality. Music is especially good as to walk to music, gain a rythm and flow into walk that can be obtained in no other way. Gymnastic dancing provides good hygienic muscular exercise, educates the neuro-muscular

system and affords a valuable form of relaxation for nervous system. Folk dances are among the simplest and most natural forms of gymnastic dancing. They may be used in several ways for physical training purposes, many dances are good exercises inasmuch as they require vigorous muscular contraction frequently repeated. These dances add grace and control however crude they may be, for the girl they often give a spirit of poise that is essentially good (poisture) in its best form. One of the benefits derived from the so called grace movements is the fact that it overcomes the self consciousness in girls, also it imparts grace to the human body, it in other words brings out the feminine qualities in the human body.

Physical training should receive the same recognition as intellectual training and the school board should provide rooms to be used for this purpose just as they provide recitation rooms. Each school should have a room large enough and fitted out especially for this purpose. Certain periods of the day should be set for this exercise which should be under direction of a teacher of physical training. Girls should be required to come regularly to this class. they should come dressed in suitable loose clothing, so as to derive the proper benefit from the exercise. The equipment of this room should keep in mind the needs of the pupils and the means of the school board. As to importance wands are suggestive first then Indian clubs and lastly dumb bells, ladders, rings, chest weights etc., are added if sufficient means are available.

If such a plan should be put in every high school we would find the girls growing stronger day by day and eventually we would have an American people of high vitality.