AN INAUGURAL DISSERTATION
ON

Physical Education

SUBMITTED TO THE
PRESIDENT, BOARD OF TRUSTEES AND MEDICAL FACULTY
OF THE
University of Nashville,
FOR THE DEGREE OF

DOCTOR OF MEDICINE.

BY

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OF

Tennessee

March 1857
JOHN YORK & CO.,
BOOKSELLERS AND STATIONERS,
NASHVILLE, TENN.
To

John B. Lindsley, M.D.
Professor of Chemistry and Phormy

This dissertation is respectfully inscribed in

Testimony of unfeigned

respect for his

talents and

moral worth.

By

The Author
that whatever affects the health and vigor of the body may be regarded as an object of education, and in this point of view the whole treatments of infancy, childhood and youth in respect to health whether it's continuous or restoration, might properly come under the head of physical education. Mothers are much concerned in the physical education of their offspring. The most important object of female education is most showfully neglected while they generally educated with a specific view of filling some of the most important relations of domestic life, the new race or that
Which follows would without example be wise and good. A female cannot, unless she has some idea of physical education, train up her offspring in that way which would give them the greatest probability of being vigorous and healthy, and lay the best foundation for intellectual and moral excellency. Parents should not regard their children as mere play-things but as an important charge committed to their hands, whose fortune in this world and the world to come depends much upon their management. Some children are provided with parents who know nothing.
But dissipation and amusements incapable of helping them either by instruction or example. A pregnant woman, should abstain from all intemperance, dissipation and fond fancies which would have the least tendency to disturb the burden which she carries. The husband should also be careful at this critical period. He should ward off all turbulent passions which would have a tendency to disturb the vegetation of the germ and violate its injuries. During pregnancy women should be careful as regards their dress. Tight clothing is very injurious producing compression of the different vessels, general deasrement.
of the system and sometimes abortion. Early marriage act power-
fully against the process of physical education, some women
many before they have arrived at that bodily vigor and maturity
of mind which would insure this offspring health and a
foundation upon which they could build this moral and
intellectual education. Be silent
for two years is some. When mentioned
as the advice of a young lady to her lover, this is wholesome advice
and should be observed both by
males and females. We commenced
with the sorts in which another
mentioned the manners in
which the mother should conduct
herself in order that she might be delivered of a healthy and vigorous child. Now it would be impossible for the various organs of this child to be strengthened and invigorated rigorously of physical education. The things concerning us most in physical education are (namely) 1. sufficient quantity of pure air, cleanliness, clothing, diet, and a sufficient amount of exercise to the various organs of the system. As these are of paramount importance I shall give them a separate consideration.

Pure air appears to be of chief consequence in physical education. Common air is composed of two gases, namely,
Oxygen is twenty parts, Nitrogen as eighty parts in a hundred with a minute addition of Carbonic acid. This is air in its pure state and such is the state in which we require it for respiration. If the air is filled with impurities or changed in any way the result must inevitably be an injurious one. In close rooms where there is a fire, and several Candles and many persons at the same time consuming the oxygen of the atmosphere, the oxygen is soon exhausted and the rooms are charged with Carbonic acid which proves deleterious to life.
greater proportion than it is found in the atmosphere will not support life. It would be impossible to preserve and regulate health in rooms not well ventilated or exposed to noxious vapours of any kind. Rooms designed for the habitation of infants should be well ventilated. I do not mean that a current of fresh air should rush upon them all the while, for nothing would be more injurious but that they should be kept in a temperature that is refreshing and invigorating. Infants should never be confined in warm and ill ventilated rooms for some
of the most violent inflammatory affections are often produced by inattention to this very circumstance. If they are too weak or going to exercise in the open air, let them exercise in the air of the different rooms. An infant may be kept in a temperature of about sixty degrees for the first six or six weeks. Children should not be subjected to variations of temperature on account of the extreme susceptibility of the mucous membrane that lines the nostrils and air passages. If this is not prevented a foundation
for Asthma may be relied at an early period. The
beneficial effects arising from exposure of the body to other
air are not appreciated by some. In the first place, the
body receives air containing a due proportion of oxygen
which cannot be had in rooms constantly inhabited
again this pure air drives off the superfluous heat
and has a salubrious effect upon the various organs
of the system. Exercise with
in doors is better than no
exercise but it cannot
give that bracing and
invigorating effect that
exercise in the open air. When children have properly gone through the process of hardening they cannot exercise in fine air too much with proper precaution the constitution by this means will be benefited beyond all expectation, as the requisition of physical force to the chief object of the first period of education the parent should embrace every opportunity of giving his child the full benefit of this means of health.

Cleanliness

I shall in the next place
Speak of the beneficial effects of cleansing the body. There are but few parents who understand this means of giving health and vigor to their offspring. There is an important process constantly going on below and near the surface of the body. This process is called perspiration. This fluid is secreted by the perspiratory glands which are situated near the surface of the skin. The above mentioned fluid consist of water certain salts and animal matters which do not evaporate as the water does.
tends to form a crust which should be removed by artificial means. There is nothing in physical education of more importance than a proper attention to the removal of this experimental scab from the surface of the skin. Every one should remember the old maxim, cleanliness is next to godliness. There is a great deal of whining in this in a moral point of view as well as in a physical point of view. A want of cleanliness renders our bodies susceptible to infection, while a proper attention to this requisite gives us security against diseases.
Scrofula one of the most loathsome diseases which is often produced by filth and bad air. Some argue that it is not caused by inattention to the body, but propagated by hereditary transmission. But I firmly believe that this disease may be acquired, and that filth and bad air are the prolific causes of it. Personal cleanliness and cleanliness in the apartments in which children live should be most strictly enforced. No day should pass without washing this date. They should be early accustomed to this if the
design be to give them health and strength. Bathing is the most convenient way of freeing the body of its excrementitious matters. Bathing not only removes the filth but it gives strength, health, and vigor to the body, organs, and powers. In short, bathing has some strong advocates; they recommend it as a valuable remedy in cases where the constitution is weak and manifestations of consumption tendencies. But we are not concerned in the recovery of health. Therefore, we shall only mention the means of invigoration.
Cold bathing requires caution when a child has pathological tendencies. It would be rash to expose it to cold water let it be bathed in water of a medium temperature. Before bathing it is proper to attend to the stomach and muscular system as beneficial effects are derived from bathing while digestion is going on. The muscular system should be excited previous to bathing either by friction or moderate exercise. If this be done the child will receive the full benefit of the bath provided the water is not too cold.
Clothing in our various climates considerable attention should be paid to the nature and degree of clothing, until a sufficient degree of comfort has been acquired to render it unnecessary. A child in the winter should be well clothed with woven substances which are non-conductors of heat and prevent the escape of it from the body. Light dresses in the winter with abrupt changes of warm garments in the morning to thin in the evening constitute one grand cause of the unhealthiness of the
female are, who in many places for themselves live in the walks of fashion. Accommodate the dress to the seasons of the year. The employment of flannel under the linen is of great service when there is a tendency to chillnips and perspiration provided the flannel does not increase this tendency. But it should be changed often and special attention paid to the invigoration of the system from the first signs of infirmity. The limbs should have full play nothing tight should be confined around the body or extremities.
Modern fashion so much coincides with the sounder dictates of physical education that I will not enlarge upon it. Neatness and simplicity of dress should be brought about by parental care and enforced by parental example and instruction. Diet should claim our attention. This is important and interesting to all. Food for children should be nourishing but not stimulating and as flavor as possible. But little can be done in regard to the quantity of food provided, it be of the proper kind. Some distinguished writers.
say that vegetable food is the best for children. While others contend that animal food is the best. With plenty of pure air and exercise there is but little room to be apprehensive of injurious effects from milk and meat. This is one thing in the physical education of children that should be closely attended to, and that is to prevent them from acquiring the habit of drinking intoxicating liquors. It is shocking to see parents disregard the bodily as well as the moral health of their children as to let them engage in such delusions.
habits. The true way to prevent an early taste for stimulating drinks is not to make a strict prohibition but keep them away from where liquor is used and give them simple food and drink. No one has a natural taste for liquor but it is soon acquired. Fermented liquor act with peculiar severity on the tender constitution of a child. They stunt its growth and debilitate the system generally. With proper care a child will keep his temperate habits until it attains old age. Physical exercise while it gives health and vigor...
Sensus also strict temperance and moderation in all kind of animal gratification. Now the work of moral or mental culture may be commenced and pressed with steadiness and success.

Exercise

A sound state of the body depends very much upon the exercise of the muscular system. The beneficial effects derived from exercise in pure air has long since been promulgated to the world by Galen and Hippocrates. This proposition is so well supported by extensive observation that it would be useless for one to address the arguments of
He uses in striking the snow are much better developed and are more able to sustain a weight than any of his other muscles. The exercise of children should be regular and in pure air. Their muscles should not be called into action suddenly nor continued long. When called into vigorous exercise, exercise is indispensable to the education of the physical system; for it is well known that the system requires exercise as much as it does food. If we desire to have a strong limb we must exercise that limb, if we wish to have a strong
and vigorous frame. We must exercise that frame. It is by these means that we can reinforce and sustain our physical organization. The waste caused by exercise must be replaced by food. If there is a deficiency in this important requisite, the blood will soon cease to give invigoration to the parts upon which increased health and strength depend. Youths may exercise their various limbs in various ways, by running, jumping, riding and dancing. Dancing is one of the most healthful and exhilarating
That the alimentic power of
fashion will permit young
ladies to enjoy; and I think
they should embrace every
opportunity of giving them-
selves the full benefit of this
means of health. Parents should
never allow their children
to exercise their bodies imme-
diately after a meal because
then the energies of the system
are required to perform the
digestive function. The mus-
cles should be freely exer-
cised during the day and
permitted to rest at night
for the natural inclination
of the frame is the rest at
night while all nature repose.
Mental Exercise.
I have endeavoured to explain the laws and regulations by which exercise may be serviceable to the physical system. I shall now proceed to show that the same rules hold good respecting the mental faculties. These are organically connected with the brain. The brain being an organized part is subject to the same laws as the other parts of the body, so far as exercise is concerned. This becomes more obvious when we examine the brain and liver. It is to be composed of some material that the animal system is
nourished by the same laws and regulated by the same vital laws. When the muscular system is over-exerted it becomes emaciated. This is equally true in regard to the brain. Points should be very careful respecting the mental applications of their children. It should be regular and light at the beginning if they wish to lay a foundation for health and future applications. As I have above stated, the body should be the first object of education. If nature be reversed, the mind will eventually suffer for...
It as well as the body. It would be an easy matter for skilful parents to make prodigies of their children. But the prudent will never attempt it. Many have sunk into a premature grave through the immature development of their mental faculties. This is often the case among those who make knowledge the chief aim of life. Alexander Nicoll, a Professor of Hebrew at Oxford, of whom it was said that he might have walked to the walls of China without the aid of an interpreter, died at the age of thirty-six through the effects of that intense
Study which so effectually
but so uselessly had given
him distinction. The one era
had some knowledge in
regard to the injurious-
effects of over tasking the brain.
Thus the old proverb was
applied: 'wise and always
keep his bow bent.' No other
also be injurious effects arising
from disuse of the brain.
There are many persons who
never train their mental
faculties, but sit in the
corner and build castles in
the air, muse upon the
probabilities and so forth. This
shows that they are almost
transformed into a mon-
Respect. Some attention should be paid to this morbid sensibility while young. An individual should never enter upon a mental application soon after eating such as the connection between the stomach and brain that they react upon each other the consequences being indigestion and nervous elusiveness. It is proper to commence mental exertions in the early part of the day and stop some little time before retiring for bed. The vasoconstriction set up requires some time to subside. The idea of gaining wisdom
by burning the mid-night oil is more painful than
profitable. Physical education concerns us more than
intellectual culture; for it would be impossible for the
latter to progress without proper attention to the physical
system. The mind is dependent upon the body for
its nutrition and it cannot be supplied regardless of
physical laws and regulations. Therefore physical education
pawefully contributes to the
intellectual and moral improvement
as well as to the happiness and
usefulness of an individual.

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