

AN
INAUGURAL DISSERTATION

ON

Physical Education

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BY

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OF

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To
John B Sindsley, M.D.
Professor of Chemistry and Pharmacy
This dissertation is respect-
fully inscribed in -
testimony of unfeigned
respect for his
talents and
moral worth.

By

The Author

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That what ever affects the health and vigor of the body may be regarded as an object of education, and in this point of view the whole treatment of infancy, childhood and youth in respect to health whether its continuance 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 shamefully neglected were they generally educated with a specific view of filling some of the most important relations of domestic life, the next race or that

which follows would without
example be wise and good.
A female can not, 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

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But dissipations 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 viciate its juices
During pregnancy women should
be careful as regards their dress
Tight clothing is very injurious
producing compression of the
different vessels, general derangement

of the system and sometimes abortion. Early marriages act powerfully against the progress of physical education, some women marry before they have arrived at that bodily vigor and maturity of mind which would insure their offspring health and a foundation upon which they could build their moral and intellectual education. Be silent for two years is some where 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 foetus in utero and have mentioned the manner in which the mother should conduct

herself in order that she might
 be delivered of a healthy and vigo-
 rous child. Now it would be
 impossible for the various organs
 of this child to be strengthened and
 invigorated regardless of physical
 education. The things concerning
 us most in physical education
 are (namely) A 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

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Oxygen as Twenty 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~~ for respiration. If the air is filled with impurities or changed in any way the result must invariably 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 because Carbonic acid in a

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

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of the most violent inflammato-
ry affections are after produ-
ced by inattention to this very
circumstance. If they are
too weak or young 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 five or six weeks, -

Children should not be
subjected to variations of tem-
perature 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 lodged at an early period. The beneficial effects arising from exposure of the body to external air are not appreciated by some. In the first place the body receives air containing a due proportion of oxygen which can not 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 within doors is better than no exercise but it can not give that bracing and invigorating effect that

exercise in the open air
 does When Children have
 properly gone through
 the process of hardening
 they cannot exercise in
 pure air too much with
 proper precaution The consti-
 tution by this means will
 be ~~improved~~ beyond all
 expectation, as the requisition
 of physical ^{health} should be 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 upon and near
the surface of the body
this process is called pers-
piration. 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 but

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 excrementitious matter from the surface of the skin. Every one should remember the old maxim, Cleanliness is next to Godliness. There is a great deal of ~~the~~ truth 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 disease.

Scrophula one of the most loathsome diseases we know 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 their bodies 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 bodily organs and powers. Tepid bathing has some strong advocates they recommend it as a valuable remedy in cases where the constitution is weak and manifestations of Consumptive tendencies, but we are not concerned in the recovery of health therefore we shall only mention the means of invigoration

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Cold bathing requires caution when a child has Ph^{si}thical 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 no 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 Variable
Climate & considerable
attention should be
paid to the nature and
degree of clothing, until
a sufficient degree of hardi-
ness has been acquired to ren-
der it unnecessary. A child
in the winter should be well
clothed with woollen sub-
stances which are non con-
ductors of heat and prevents
the escape of it from the body
Slight dresses in the winter
with abrupt changes from
warm garments in the mor-
ning to thin in the evening
constitutes one grand cause
of the unhealthiness of the

female sex, who unhappily
 for themselves live in the
 walks of fashion. Accommo-
 date 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 chillness 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 period of
 infancy the limbs should
 have full play nothing
 tight should be confined
 around the body or extremities

Modern fashion so much coincides with the sound dictates of physical education that I will not enlarge upon it. Neatness and simplicity of dress should be brought about by parental coercion enforced by parental example and instruction.

Next claims our attention this is important and interesting to all. Food for children should be nourishing but not stimulating and as plain as possible. But little can be said 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.

There 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 shocks me to see parents so regardless of the bodily as well as the moral health of their children as to let them engage in such deleterious -

habits. The true way to prevent
 an early taste for stimulating
 drinks is not to make a direct
 prohibition but keep them
 away from where liquors
 are used and give them
 simple food and drink.
 No one has a natural taste
 for liquors but it is soon-
 acquired. Fermented liquors
 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 education while
 it gives health and vigor

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Secures also strict temperance
and moderation in all
kind of animal gratifications
Now the work of moral and
mental culture may be
commenced and pursued
with steadiness and success.

Exercise

A sound state of the body depends
very much upon the exercise of
the muscular system. The beneficial
effects desired from exercise in
pure air has long since been
promulgated to the world by
Galen and Hippocrates. This propo-
-sition is so well supported
by extensive observation that
it would be useless for me
to adduce the arguments of

he uses in striking the anvil
are much better developed and
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 so 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 improve 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 depends. Youths may exercise their various limbs in various ways, by running, jumping, riding and dancing. Dancing is one of the most healthful and exhilarating exer

That the despotic power of fashion will permit young ladies to enjoy; and I think they should embrace every opportunity of giving themselves the full benefit of this means of health. Parents should never allow their children to exercise their bodies immediately after a meal because then the energies of the system are required to perform the digestive function. The muscles should be freely exercised 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.

but

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 are; so far as exercise is concerned. This becomes more obvious when we examine the brain and find it to be composed of the same material that the animal system is

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nourished by the same blood
and regulated by the same
vital laws. When the muscular
system is over exercised it
becomes emaciated. This is
equally true in regard to
the brain. Parents 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 application.
As I have above stated the
body should be the first
object of education if na-
ture be reversed the mind
will eventually suffer for

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it as well as the body It would
be an easy matter for skillful
parents to make prodigies of
their children, but the judicious
will never attempt it. Many
have sunk into a premature
grave through the unnatural
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 ancients
 had some knowledge in
 regard to the injurious -
 effects of over tasking the brain
 Their old proverb was
 Apollo does not always
 keep his bow bent. We often
 also see 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 im-
 probabilities and sooth their
 fancies until they are almost
 transformed into a non-

descript. Some attention should
 be paid to this morbid sensi-
 bility while young. An individ-
 -ual should never enter
 upon a mental application
 soon after eating such is
 the connection between
 the stomach and brain
 that they react upon each other
 the consequences being
 indigestion and nervous
 diseases. It is proper to com-
 mence mental exertions
 in the early part of the day
 and stop some time before
 retiring for bed for the
 vascularity set up requires
 some time to subside. The
 idea of gaining wisdom

by burning the mid-night
oil is more political than
profitable Physical education
concerns us more than
intellectual culture for it
would be impassible for the
latter to progress without proper
attention to the physical
system The mind is depen-
dent upon the body for
it's nutriment and it cannot
be supplied regardless of
physical laws and regulations
Therefore physical education
powerfully contributes to the
intellectual and moral improvement
as well as to the happiness and
usefulness of an individual

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