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Notes on hydrotherap

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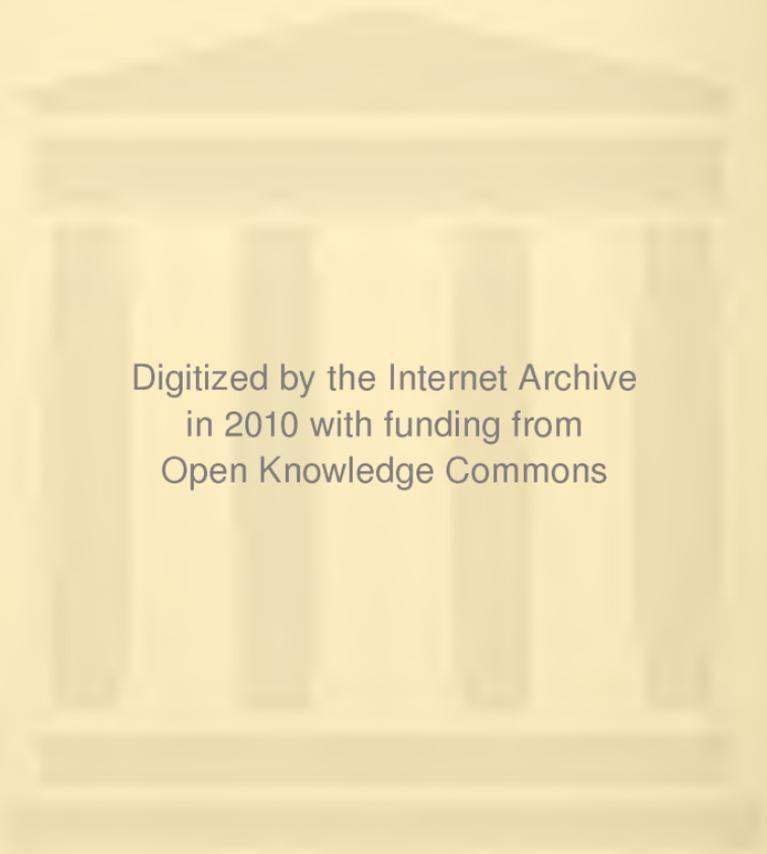
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## NOTES ON HYDROTHERAPY.

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There is no other remedy which so much requires a correct application as does water. It is for this very reason that it has sometimes grown into disfavor among physicians, because of its being applied in a haphazard way by lay persons, who, having seen remarkable effects produced by it, and who, being guided by their ignorance rather than by any knowledge of the subject, imagine they can achieve the same results.

The proper use of water is based on a correct knowledge of physiology and upon how the forces involved in its use act upon the human body.

It is necessary that the profession should adopt Hydrotherapy as an integral and useful portion of therapeutics. Its uses should be understood, as well as its principles.

External stimuli are heat and cold, mechanical impression, electricity and chemical substances.

The stimuli applied in the use of baths and douches are thermal, mechanical and chemical; the mechanical being the friction employed in conjunction with the application of the water and the impact of the water; the chemical, principally the salts which are added to the water.

This stimulation produces diverse changes in the animal economy.

Saturation of the nerve endings with moisture, brought about by the absorption of water by the skin, or by the prevention of water being given off from the skin, produces a quieting effect on the nervous system.

Water also acts by adding or subtracting heat.

The tendency of modern therapeutics is to limit the use of drugs and to make more use of natural methods. The principle involved is sound. The action of drugs is followed in many instances by a harmful reaction: natural remedies acting in a physiological way, do not, when properly applied, produce such a harmful reaction, and are in this respect superior.

For the giving of douches, special apparatus is necessary for regu-

lating temperature and pressure, and the best results are obtained by trained attendants; but above all careful supervision of baths is required that they may be adapted to the peculiar needs of each patient.

There are certain indications for the giving of special forms of baths, but the reactive capacity of each patient must be learned, and this often can be obtained in no other way than by the application of water.

For the purpose of acquiring knowledge as to the reactive capacity of the patient it is often necessary or expedient to begin hydrotherapeutic treatment by *a simple ablution or washing*. This ablution or washing, by lowering the temperature of the water each time it is given, may also be used to train the reactive power of the patient.

*A general ablution* is a procedure which may be next tried.

From the latter to *half-bath* or *wet-sheet rub* and *douches* is a short step. These latter procedures may be varied to suit the individual needs of each patient. The temperature, the duration and the mechanical factor, the rubbing or the pressure under which the douche is applied may be very different for the same procedure.

At the University of Vienna, a full chair is given to Hydrotherapy, which Prof. Winternitz has held for 40 years, and his endeavor has been to rescue Hydrotherapy from empiricism, and to place it upon a rational physiological basis.

Baruch in this country, has done good work. His hydiatic institute in New York, affords the profession of that city the opportunity for having an exact hydrotherapeutic prescription filled. The Orthopedic and German Hospitals in Philadelphia have the means of giving different sorts of baths and douches. Boston for the last four years, has had an establishment under the able management of Doctor Joseph H. Platt, where hydiatic prescriptions of all sorts can be carried out. The Shepherd and Enoch Pratt Hospital at Towson has now a complete hydrotherapeutic plant, and Doctor Brush in his last report, says it is accomplishing much good.

All physicians recognize that there are certain classes of cases, for which Hydrotherapy is suited. The difficulty has been that there has been no means at hand to apply this treatment.

St. Agnes' Hospital is now able to supply this need. Physicians

may send their patients there to receive hydrotherapeutic treatment, without their remaining in the hospital.

There are a number of baths, the forms of which have become classical. As they are given here, Winternitz' and Baruch's textbooks on Hydrotherapy are followed. The directions for the Nauheim Bath are taken from the article by C. N. B. Camac, M. D., in the Johns Hopkins' Bulletin for May, 1897.

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## ABLUTION OR WASHING.

### REQUISITES.

Several vessels containing water.

1. Containing water 80-50°, temperature prescribed, for face.
1. Containing water, temperature prescribed, for body.
1. Containing water 5° lower than temperature prescribed for body, for cooling towels used.

Towels for wet rubbing and for drying patient.

METHOD.—Dry pack previously or not.

Wash patient's face beforehand, gradually decreasing the temperature each time. Have special vessel for this purpose.

Have at least two vessels of water, one 5° cooler than that prescribed. The cloths or towels to be placed in the cooler water when taken from the patient,

Part by part is uncovered, washed, dried and covered up again. One can thus cool each part more or less, or stimulate more or less energetically by rubbing.

A certain order should be followed; namely:—arms, chest, abdomen, back, and legs.

The washing must be done rapidly, wrapping the part in a wet cloth or towel and rubbing; then either wrapping in a dry cloth, or when the part is very warm, again applying a wet cloth and rubbing. One must always end by drying and more or less rubbing.

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## GENERAL ABLUTION.

The patient stands in 12 in. of water at 95°-100°, and is rapidly washed down with the hands, having water at 50°-80°, according to prescription, poured upon him with the hand, or from a vessel, accompanied by gentle friction. Dry according to directions.

## HALF BATH.

### REQUISITES :

Cap or towel for head.

Small vessels for throwing water.

Tub containing 6 to 8 inches of water of temperature prescribed.

Sheet or two *large* towels for drying.

Six to eight inches of water are drawn in a tub, having the temperature prescribed.

The head and face are bathed with water, and a wet cap is placed upon or a wet towel around the head.

The patient is then placed in the tub, and by means of a small vessel, the nurse, standing behind the patient, throws the water over the patient's back and neck, and even upon the head, when the nervous centers are affected, e. g., in delirium, somnolence, coma. At the same time the nurse rubs the shoulders and back.

While this is going on, the patient is usually told to rub the lower limbs, and to rub and throw the water upon the front part of the body. If the patient is not able to do this, a second nurse must do it.

After a short time the patient can take a recumbent position in the tub, or when very weak can take this position from the beginning of the bath.

The pouring of the water is now stopped or confined to the front part of the body. The nurse now rubs the whole body vigorously under water. The patient again sits up, and the water is again poured upon the head, neck and back, the back and shoulders being rubbed at the same time. This routine is repeated as many times as is necessary to consume the length of time that is prescribed for the bath.

Remove the patient from the tub. Wrap in a sheet or towels and dry by rubbing. If the towels are used, put one around the trunk and upper extremities, and the second around the lower extremities.

If the patient is too weak to stand, put to bed at once, and dry in bed by rubbing.

From the time of Priestnitz, this bath, in acute and chronic diseases, has been modified in this way, that during the time of the bath, the

temperature is lowered somewhat by the addition or running in of cold water.

This bath is in some ways similar to the form of the bath to which the name of Siemsson is applied.

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## WET-SHEET RUB.

### REQUISITES :

Sheet two by three yards.

Wet cap or towel for head.

Dry towels.

Water temperature prescribed.

**METHOD.**—The whole bath should be given quickly. A linen sheet, a cotton one will do if you cannot get a linen one: an old table cloth without patches is better than a cotton sheet. The sheet should generally be two yards wide by two and a half to three yards long: a very large person requires three yards, and if the person is short of stature a yard and a half will do for the width, but for ordinary purposes, three yards by two yards are the proper dimensions.

Shake out the sheet and pleat on the long dimension, and then fold and dip in water of the temperature indicated, and wring out more or less. If you wish to reduce temperature you would not wring it out so much as when you do not have this indication to meet.

The patient's face should have previously been washed, and a wet cap put on the head, or where the hair is long, a wet towel bound around the forehead. This is a necessary precaution to prevent too great a flow of blood to the head.

The sheet is applied in the following manner: The nurse stands at the right side of the patient and holds the folds of the sheet in the right hand. It is applied first, under the right arm, then across the chest, under the left arm, across the back, over the right shoulder, across the chest, over the left shoulder and tucked in about the neck. It is shoved in between the knees and the patient is then rubbed down, the hand passing over the sheet, till the sheet feels equally warm all over. *The rubbing should be done in long rapid strokes.*

Remove the sheet and dry thoroughly with towels.

## ABLUTION IN FEVER CASES.

*(Improperly called sponge bath.)*

### REQUISITES :

- Several basins. One large. One small.
- Bath glove or linen wash-cloth. Two.
- Rubber sheet.
- Bath Blanket.
- Linen sheet.
- Water of proper temperatures.

This bath consists in the application of water by the hand, or covered by a bath glove, or holding a linen wash-cloth.

The sponge is to be avoided, because it does not produce sufficient friction and discourages reaction.

METHOD.—Several vessels with water of the proper temperature must be within reach. In acute febrile affections with temperatures above 101°, an oil cloth or rubber sheet is laid upon one side of the bed, covered by a blanket, and upon this a linen sheet or table cloth, one half reaching over the edge of the bed (I think an ordinary cotton sheet as good). The patient is now placed upon the sheet, his face is bathed with water from 60°-70°, beginning with the higher temperature, and on each application reducing it two or more degrees.

The chest and arms, the back, abdomen and lower extremities are successively bathed by freely applying water. This is far superior to sponging, which chills by evaporation, while the gentle shock of the impact of the water applied in this way, accompanied and followed by gentle friction, arouses the peripheral nerves, and thus stimulates the entire system by its reflex agency.

Another method for enhancing the antifebrile effect, is the placing of wet linen towels (always without fringe), successively over the chest, abdomen, back and upper extremities, followed by gentle friction and patting over the towel.

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## THROAT BANDAGE.

Although this compress is probably more frequently applied than any other, it is remarkable how little its rationale is understood and how imperfectly it is applied.

When intended for the treatment of tonsillitis, and other pharyngeal

affections, the throat compress should be applied as follows:

METHOD.—A piece of old linen, of sufficient length to reach from below the ear on the one side to the same point on the left, is folded into a bandage of four layers. A piece of flannel, eight by twenty-four inches, provided with a slit for each ear, is also made ready. These bandages are fitted by actual measurement to the patient's head, so they may pass under the chin from ear to ear.

The linen compress bandage is now wrung out of water 60°, and laid upon the middle of the dry flannel bandage. While the wet bandage is placed under the chin, the flannel bandage is unrolled from the top of the head (the right ear being made to protrude through the slit), and then passed under the chin to the left side, where the left ear is allowed to protrude (the slit being longer than is actually needed, to insure perfect apposition of the bandage and prevent pressure on the ear). The entire bandage is now drawn over the head and secured by pins.

Two sets of bandages are required,—one being allowed to dry while the other is in use.

In children and restless patients, additional security is afforded by a circular turn around the head, forming a bandage to which the throat compress may be pinned.

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### NAUHEIM BATH.

The course consists of six baths, the first and second being simply with salts, calcium chloride and sodium chloride: the third, fourth, fifth and sixth contain carbonic acid as well as these salts.

|             |              |              |                  |                         |
|-------------|--------------|--------------|------------------|-------------------------|
| Bath No. 1. | —Sod. Chlor. | 4 lbs.,      | Calcium Chloride | 6 oz.                   |
| “           | 2.           | —Sod. Chlor. | 5 “              | Calcium Chloride 8 “    |
| “           | 3.           | —Sod. Chlor. | 6 “              | Calcium Chloride 10 “   |
| “           |              | Sod. Bicarb. | 6 oz.,           | Hydrochlor. acid 7 “    |
| “           | 4.           | —Sod. Chlor. | 7 lbs.,          | Calcium Chloride 10 “   |
| “           |              | Sod. Bicarb. | 8 oz.,           | Hydrochlor. acid 12 “   |
| “           | 5.           | —Sod. Chlor. | 9 lbs.,          | Calcium Chloride 11 “   |
| “           |              | Sod. Bicarb. | 1 lb.,           | Hydrochlor. acid 1 lb.  |
| “           | 6.           | —Sod. Chlor. | 11 lbs.,         | Calcium Chloride 12 oz. |
| “           |              | Sod. Bicarb. | 1 lb.,           | Hydrochlor. acid 2 lbs. |

Each bath consists of 40 gallons of water.

The directions to nurses in giving baths are:

1.—Understand from the doctor the following points:

- A. Strength of bath to be given.
- B. Temperature of bath.
- C. Length of time the patient is to remain in the bath.

Note:—Give the bath in the morning unless otherwise ordered.

2.—Attend to the following points carefully:

- A. Give bath on an empty stomach.
- B. Note time from the moment patient is immersed to that when he is taken out.
- C. Allow the patient to make as little exertion as possible; assist him in every way.
- D. A sheet may be drawn over the tub, but not around the patient.
- E. Be sure the entire body is immersed.
- F. Keep the finger on the pulse the entire time the patient is in the bath.

Danger signals:—

Cyanosis (bluing of the face).

Dyspnoea (difficult breathing).

Apnoea (gasping).

Inappreciable pulse.

On the appearance of any of these symptoms take the patient out of the bath immediately, put him to bed and keep him as quiet as possible.

Friction while in the bath is not necessary, but if the fingers and toes become bluish, the extremities may be rubbed slightly towards the trunk. Friction should be cautiously employed; when the patient is out of the tub, rub him to a glow; give him a glass of milk or a cup of bouillon and allow him to rest for an hour.

Dr. Schott says:—"The method of administering the baths is of the greatest importance. It is advisable to begin with a 1 per cent. salt bath containing one one-thousandth of Chloride of Calcium, freed from gas and at a temperature varying from 92°-95° F., the bath lasting from 6 to 8 minutes. The course of treatment should be interrupted by frequent intervals of one day. The temperature of the bath should, if possible, be gradually lowered, while the proportion of solids in solution and the duration of the bath are gradually increased. At a latter stage it is permissible to proceed to baths containing carbonic acid. The temperature may then be rapidly lowered."

Examples of prescriptions which may be given:

Dry pack until skin is warm and cutaneous vessels dilated.

Wet mitt friction, using water 60°.

Repeat daily, reducing temperature of water 2° each treatment, until 40° is reached.—*Kellogg*.

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Dry pack until skin is warm.

Cold towel rub; temperature of water 60°.

Repeat daily, lowering temperature of water 1° each treatment, until 40° is reached.—*Kellogg*.

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Hot air cabinet nearly to point of perspiration.

Wet sheet rub; temperature of water 70°.

Repeat daily, lowering temperature of water 1° each day until 60° is reached.—*Pratt*.

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Hot air cabinet to point of perspiration.

Half bath; temperature of water 70°; duration one minute.

Repeat daily, lowering temperature gradually to 60° and increasing length of bath to three minutes.—*Pratt*.

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Hot air cabinet to point of perspiration.

Circular douche 105°-110°-90°, two minutes.

Fan and jet douche to entire body 90°-80°, pressure 10 pounds, one minute.

Lower minimum temperature 2°, and increase pressure 2 pounds each treatment, until a temperature of 60° and a pressure of 30 pounds are used.—*Pratt*.

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Hot air cabinet to perspiration.

Circular douche 95°-80°, thirty seconds.

Spray douche 70°, 30 pounds, five seconds.

General massage ten minutes.

Reduce temperature of spray douche 1° daily.—*Baruch*.

Hot air cabinet, fifteen to twenty-five minutes.

Circular douche, 105°-110°-90°, two minutes.

Jet and fan douche, 90°-85°, one minute, pressure 10 pounds.

Repeat two or three times weekly, increasing pressure 2 pounds and reducing terminal temperature 2° each treatment until pressure of 30 pounds and temperature of 60° are reached.—*Pratt*.

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Hot air cabinet, fifteen to twenty-five minutes.

Dry pack, thirty minutes. Rest in bed one hour.—*Matthes*.

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Baking machine to affected joint, temperature 90° C., one hour.

Spray douche 70°, 15 pounds pressure, ten seconds.

Repeat daily, increasing temperature of local hot air bath 2° daily until temperature of 130° is reached.—*Pratt*.

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Hot air cabinet to point of perspiration.

Circular douche 105°-90°, two minutes.

Rain douche 86°-80°, forty seconds, pressure 10 pounds.

Oil rub.

Reduce final temperature of rain douch 1° and increase pressure 1 pound until temperature of 60° and pressure of 20 pounds are reached.—*Pratt*.

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Hot air cabinet to point of perspiration.

Circular douche 105°-110°-100°, two minutes.

Spray and jet douche to entire body, pressure 15 pounds, 70°, twenty seconds.

Repeat daily, raising pressure 2 pounds, and reducing, temperature of cold douche 2° each treatment until pressure of 35 pounds, and temperature of 60° are reached.—*Pratt*.

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Hot air cabinet to perspiration.

Circular douche 105°-95°, two minutes.

Jet douche to abdomen 75°, thirty seconds.

Spray douche to entire body, 75°, ten seconds, pressure of 12 pounds.

Abdominal massage.

Repeat daily, increasing pressure 1 pound and lowering temperature 1° each application until 25 pounds and 60° are reached.—*Pratt*.

Hot air cabinet to perspiration.

Circular douche 105°-95°, one minute.

Jet douche to abdomen, 10 pounds, 86° raised gradually to 120°, fifteen to ten minutes.

Fan douche to abdomen, then to dorsal region, 13 pounds, 60°, fifteen seconds.

General jet douche, 70°, five seconds.

Repeat daily for gastralgia.—*Beni-Barde*.

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Hot air cabinet almost to perspiration.

Circular douche 105°-95°, one minute.

Small jet douche to course of colon, alternate 60° and 115°, fifteen seconds each, pressure 15 pounds, one or two minutes.

Fan douche to chest and back 75°, ten seconds.

Repeat daily for constipation, increasing 2 pounds each treatment, until 20 pounds are used.—*Pratt*.

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Hot air cabinet until cutaneous vessels are dilated.

Wet sheet rub.

Sitz-bath, temperature 70°, ten minutes.

Simultaneous hot foot bath, temperature 110°.

Repeat daily, increasing duration gradually to twenty minutes and lowering temperature to 50°.—*Pratt*.

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Hot air cabinet to perspiration.

Circular douche 105°-95°, one minute.

Ascending douche 60°-70°, two to three minutes, 5-10 pounds pressure.

Rain douche 105°, thirty seconds.

Fan douche to entire body, ten seconds, 15 pounds, 70°.—*Pratt*.

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Hot air cabinet to point of perspiration.

Circular douche 105°-90°, two minutes.

Jet and fan douche 90°-85°, 15 pounds, one minute.

Jet douche to spine 75°, fifteen seconds.

Lower minimum temperature 2°, and increase pressure 1 pound each application until pressure of 35 pounds and temperature of 50° are reached.—*Pratt*.

Hot air cabinet until cutaneous vessels are dilated. Remove before perspiration begins.

Circular douche 95°-85°, one half to one minute.

General fan douche 80°, 20 pounds, ten to twenty seconds. Dry rapidly.

Walk in the open air until somewhat fatigued.

Repeat daily, reducing minimum temperature 1° each treatment.

Once during week allow patient to perspire five minutes in cabinet.—*Baruch*.

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Hot air cabinet almost to point of perspiration.

Circular douche 95°-85°, one half to one minute.

Fan douche to back, 75°, 30 pounds, five seconds.

General fan douche 78°, 30 pounds, fifteen seconds.

After several days, substitute jet douche for fan douche to back, lower temperature of general fan douche 1° daily.—*Baruch*.

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Hot air cabinet to beginning perspiration.

Circular douche 25 pounds, 95°-80°, one minute.

Jet douche to back, 30 pounds, 75°, five seconds, daily reduced 1°.

Friction. Walk in open air.—*Baruch*.

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Hot air cabinet to beginning perspiration.

Circular douche 10 pounds, 105°-92°, three minutes.

General fan douche, 10 pounds, 85°, fifteen seconds.

Walk slowly in the open air.

Repeat daily, increasing pressure and lowering temperature until 15 pounds and 80° are reached.—*Pratt*.

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Hot air cabinet to point of perspiration.

Change cold compresses to head frequently.

Circular douche 100°-90°, two minutes.

Scotch or alternate jet douche to legs and feet, 15 pounds.

Repeat daily, increasing pressure 1 pound each application, until 30 pounds are borne.—*Pratt*.



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