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(*Reprinted from The American Journal of Physiologic Therapeutics, Chicago, January, 1911; pp 264-271.*)

PHYSIOLOGICAL MEASURES IN THE THERAPEUTICS OF NERVOUS DISEASE.

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The purely empirical concept of disease and its treatment which formerly was so general is responsible for the relegation to charlatans of many useful measures which were not taught formerly in the medical schools.

Now, it should be manifest that all disease and all treatment should be regarded in terms of departure from correct function, and all remedies should endeavor to restore healthy function. When the cause of disease can not be removed, its consequences may sometimes be offset. The drugs which do this are often deleterious otherwise, either by interfering with nutrition, disturbing metabolism or poisoning the nerve or muscle cells.

One can not object on these grounds to the regulation of bodily functions known as Physiologic Therapeutics, for only obtuse empiricists will do serious harm in using agencies which are nature's own. The number of such men diminishes in proportion to the opportunities for receiving instruction in the nature of the processes which occur in the body in health and disease. In other words, the only safeguard against harmful treatment of disease is a knowledge of living function in health and disease.

This consideration is particularly pertinent as regards the diseases of the nervous system, for in no branch of medicine has there been applied so little of the penetrating intelligence and clarity of view which now distinguishes work in many other fields. But recent neurological labors have supplanted confusion by precision; and the processes at the root of many nervous perturbations become clearer every day. The so-called auto-intoxications, the disturbances of the internal secretions, the serious effects of purely psychological attitudes, and the rôle of the infections have each contributed to eliminate from nosology such an *olla podrida* as Beard's neurasthenia and such a vague and largely artificial disorder as was hysteria as formerly conceived.

Of a thousand "nervous" cases, about eight hundred were at one time classed as "functional," and were relegated to a purely empirical therapy. No attempt was made to penetrate the pathogenesis of these conditions. But they were shot at with a blunderbus in the hope that one of the missiles might bring down the morbific agent.

Hence, the general insistance upon *all* the elements of a course of treatment, which comprised rest, massage, exercises, baths, electricity, occupation, encouragement and that unprescribable quantity—the personality of the physician. This often succeeded where the pharmaceutical blunderbus had failed. It is small wonder, for the pharmaco-dynamics was applied in the very direction to do most injury to the patient; for instance, the giving of bromides to patients whose agitation was in reality due to impaired efficiency of the cerebral cortex; the giving of strychnine in fatigued states, where cells required rest and not whipping; the producing of sleep by narcotics, when the need was oxizdation rather than stupefaction; the prescribing of so-called anti-spasmodics in cases of which the pathogenesis was purely psychical and where the physical results were best treated when most ignored.

But of the physiological means, none in itself was out of harmony with the needs of the organism even in health; oxidation was stimulated by baths and massage; fatigue was diminished by rest; tranquility of mind was given by abstraction from cares; intoxication was diminished by an appropriate diet, etc. Only the cause of the disease escaped attack: the patients were not taught the reason of their illness, nor how to live in the future; hence relapses were frequent.

To avoid the discredit of such failures, the pathogenesis of every case should be kept in mind during its treatment. Thus, it is folly to prescribe a course of eliminative baths and electrical calmatives to a patient whose symptoms clearly arise from an ill-balanced dietary. The proper treatment is to remove the cause by prescribing a proper diet, and to teach the patient how to keep well by controlling his food. Again, douches to the spine and static electricity are not only useless, but even tend to perpetuate the disorder of a patient whose symptoms have a psychological source. Still worse, a so-called rest cure may be of the greatest injury to a patient whose mind is obsessed by some trouble which is the cause and not the effect of the physiological break-down for which advice is sought.

In the space allowed me, it is impossible to discuss even the generalities of neurological pathogenesis. It is a study in itself, and its determination in each case comprises a large part of the art of the neurologist.

The rest of the paper will be devoted to a short consideration of the applicability to nervous disease of individual physiological measures.

Diet.

(1) *Proportions.* Imperfect metabolism creates many neurotic conditions. Hence the exchanges should be studied in each case. An

exacerbation of phobias and emotional agitation is often determined in a psychasthenic patient by a series of meals, especially in the evening, of which the proportion of protein is too great. On the other hand, too low a protein ratio produces a psychasthenic depression in the patients. The stimulus to oxidation afforded by exercise should both precede and follow any large intake of protein by such patients; so their chief meal should be at mid-day.[2]

In all patients susceptible to intoxication, the saline element of the food should be abundant, and fruit should be a main part of the dietary. This also aids in preventing the constipation which so often aggravates the neurasthenic symptoms of these patients, giving rise to lethargy and aboulia. Fibre and cellulose should be abundantly taken also. The giving of large amounts of fat and proteins to these patients is not to be recommended, for it is tolerable only when specially compensated by the repose, freedom from care and physical measures of the Weir-Mitchell treatment, and that only for a time: while the stresses of life soon put an end to the tolerance of what was not at all necessary. When required, weight can be gained less rapidly and more permanently by a properly balanced ration.

(2) *Purity.* In these days of adulteration, the greatest care cannot be taken to obtain food neither coarse nor impure. The slow intoxication by foods decomposed in storage must be injurious to many patients; and the addition of preservatives is to be still more strongly deprecated.

(3) *Flavor.* As Pawlow has shown, rapidity of gastric flow is greatly influenced by enjoyment. As it is the gastric juice which destroys the organisms of fermentation, any delay in its secretion must be detrimental to patients with feeble digestions or of poor nutrition. Hence the food should be tastefully prepared and flavored, when the demands for this are not inconsistent with physiological well-being; as, for example, by the craving for pickles, salt, mustard, pepper and spices in excess. As important to many susceptible individuals are the service, surroundings and company at meals, for it is well known that displeasing *affects* inhibit the flow of digestive juices.[3]

Exercise.

This is of paramount importance for the rectification of disturbed function. I need not speak of Fraenckel's exercises for restoring locomotion in tabetics. These are in reality reëducation rather than pure exercise. I wish, however, to emphasize the importance of persistant exercises in the treatment of paralysis:

(a) Even in the lower neurone palsy of poliomyelitis, the perseverance in movements makes a great difference in the functional capacity of

a paralyzed limb. Again, in hemiplegia, the patient is often surprised at the capacity gained by exercising a limb he believed to be useless.

(b) The exercises required for reëducation of aphasics may be included here. The physician will nowhere find need of more intelligence and perseverance. His success will be proportional to these qualities.

(d) The abnormal movements known as tics, *e. g.* torticollis, generally require for their suppression a series of exercises to be taught and directed by the physician and practiced by the patient.[4] Mere empirical prescription of these will, however, fail; for the cure depends upon the understanding of the pathogenesis of the disorder, and upon the physician's placing the patient under conditions and seeing that he carries out the instructions to prevent its recurrence.

(e) The same considerations apply to the exercises required for the removal of stammering and writer's cramp and the occupation neuroses. In these conditions, it is even more important that the patient himself comprehend the pathogenesis of his disability. Psychoanalysis will reveal this to the physician, who can then instruct the patient. In a forthcoming paper, I describe the means by which three cases of this kind were restored to industrial efficiency, thanks to the discovery of the pathogenesis by psychoanalysis, and the removal through this of the difficulties which hindered the exercises needed for reëducation.

I need not insist upon the power of proper muscular exercise in aiding metabolism by promoting digestion and elimination, and of its effect in aiding the cardiac *vis a tergo*. It is most important when depletion and fatigue are greatest, a fact rarely realized in nervous affections, although in cardiac disease there is so brilliant an example of the benefits of graduated exercise. Frequently the neglect of proper exercise is responsible for the failure of treatment otherwise well ordered towards remedying an affection of the nervous system.

Massage.

To remove catabolic substances stagnating in the lymphatics, massage is perhaps the most powerful means; in this way it stimulates nutrition. But besides this, it has a soothing effect, perhaps through stimulating afferent nerves. It has no power of restoring dead tissue, and its power of removing exudates is accounted for by directly hastening the circulation through the veins and lymphatics of the part, and the indirect effect of this upon the arteries supplying the part and upon the rest of the body. In lower neurone paralysis, it has no direct influence upon the restoration of structure; and it merely compensates for the normal stimulus given by the movements of the limb to the lymphatic and venous circulation.

The squeezing of the muscles in massage is easier borne and can be more easily graduated in painful peripheral affections than can ac-

tive muscular contractions; but gradualness and a very fine touch are essentials. Furthermore, the operator should work *en rapport* with the patient, so that the inevitable pain should not reach the limit of endurance. The recovery of sciatica, even when it is due to a definite neuritis, is sometimes greatly accelerated by the stimulus to nutrition and the dispersal of microscopic exudates by skilful massage, firm and deep, although gentle. Some of the successes of osteopaths are probably due to the freedom with which they massage painful regions. I do not advocate, however, anything like the indiscriminate use of massage in painful conditions.

Baths.

The indiscriminate prescription of hydrotherapy in neurotic states has done much harm; and yet no measure has a more beneficial influence than a bath when prescribed in the proper situation. The calming influence of the warm bath in agitated mental states extends even to the insane. It should not be forgotten, however, that the effect of a bath is a physical one, and it should never be used for its so-called "suggestive" effect. The systematic use of the cold douche in treating hysteria is a barbarism. It is true that a cold douche may stimulate the attention; but it does so towards the unpleasant sensation of the douche and not toward the matter which causes the morbid symptoms. It is thus, if anything, harmful to the patient's mind; and this is hardly compensated for by any benefit to his body. The cold bath is indicated in certain neurotic states of which indolence is a feature; but it should be prescribed with the definite indication for removing lethargy, and should be supplemented by other methods with the same end in view.

I need not enter into the eliminative effects of warm baths, for they are well known; and I am not satisfied that the application of dry heat by air or electricity has any particular advantages over hydrotherapy in this or other respects, except perhaps when intense heat is required in a circumscribed region.

The use of the bath to minimize tension and strain of the muscles in the course of the meningitis of poliomyelitis must not be forgotten;[5] and the suspension of the body in water, too, greatly facilitates the first feeble movements during recovery from that disease.

Electricity.

This has been the agent of more bunkum and charlatanry than all other physical agents combined. Even now, one hears apologies for the psychic effect of imposing apparatus. That it has a psychic effect is true; but it is the psychic effect of the quack. It is not an effect aimed at the origin of the disease, but to impress the patient with the power of the remedy, and to delude him into the idea that

he must be receiving benefit from so wonderful an agent. When his intelligence is thus obfuscated, he can be made to believe anything. A parallel is found in the procedure of a Christian Scientist, who by the mysterious agency of immortal mind wipes out of the patient the consciousness of every inconvenience which conflicts with that conception.

Electricity, like other remedies, should be used only with a clear object conformable with its physical properties. One of the most useful of these objects is the maintaining of life in muscles which would otherwise degenerate on account of injury or disease of peripheral motor neurones which supply them. Such are cases of poliomyelitis and of trauma of peripheral nerves. In each of these, the life of the muscles should be maintained by galvanism[6] for perhaps a year, until it is ascertained what cells or fibres are definitively destroyed, and which of them can be restored to function. I can not speak from experience of the ability of galvanism to promote nutrition other than by the excitation of contractility; but many authorities believe that its intelligent application fosters regeneration of the tissues.

Rest.

I need not urge the utility of this much-used measure, I wish, however, to animadvert upon the prescription of rest until a clear diagnosis has shown that it is required. A false belief in one's own inability or exhaustion is a common defense against responsibilities requiring effort. A rest cure only perpetuates this antisocial attitude. The real need is reëducation and training to bear the task. Isolation may render this training easier in these cases; but it is rarely necessary and its merit consists of the removal from influences which would counteract the healthy tendencies to be aimed for.

Occupation.

All kinds of diversions have been prescribed in order to assuage the mental sufferings of nervous patients. These are only of temporary benefit; sometimes indeed they are injurious in keeping the patient's attention upon his health. When diversion from preoccupaiton is required, it is best procured by means of tasks to be performed rather for themselves than for health's sake. Productive and remunerative work is even better than hobbies in this respect. Many a patient has been pulled from the slough of despond by urgent material or social necessity. Indeed so often is this the case, that it was formerly thought erroneously that only the rich became "neurasthenic."

To impose work without discrimination would be harmful to some patients. Merely automatic performance does not meet the

needs of people who are beset by care, grief or anxiety. Work must be done with interest if it is to be therapeutic. The skill of the physician lies in adapting the task to the patient's capabilities and needs in this respect and increasing it with the growth of these until industrial or social capacity, partial or complete, is regained.[7]

Psychic Measures.

A thorough analysis reveals, as the cause of many neurological perturbations, notions of the world and one's own relation thereto, at great variance with fact. The frequent conflict of these with things as they are induces a train of disagreeable or painful feelings. These are sometimes suppressed into a melancholic or paranöic attitude towards the environment or towards oneself. Sometimes, on the other hand, the false beliefs are manifested in such disorders of the body as dyspepsia, genital difficulties, cardiac weakness, disorders of sensation and movement, and so on. Many of these conditions are legitimately named hysteria, in that the mental mechanism by which they arise and disappear may be described as suggestion, a hysterical symptom only being one "susceptible of production by suggestion, and of removal by suggestion—persuasion."

Affections originating in this way usually come early to the doctor; and the fact that many of them become chronic is due to his failure to appreciate this psychological mechanism. It is not enough to declare that a condition is hysterical, neurotic or psychic, unless the exact mode of psychogenesis is discovered. It would be as reasonable to expect intelligent treatment without this as to expect it from an internist whose diagnosis did not extend beyond such terms as heart disease, kidney disease, lung disease, or of a surgeon who is satisfied with a declaration of tumor, fracture, dislocation, without any examination concerning the nature or distribution of the disorder.

Even when the reprehensible and rarely successful effort to deceive the patient is not made (a treatment which can not be too strongly condemned), blundering attempts at suggestion by doctors ignorant of psychopathology are most injurious. They serve only to make the patient believe that psychotherapy is mere assurance, and that no one can comprehend their disease any more than they themselves can.

Real psychotherapy begins not by encouragement, but by enlightenment. The patient learns from the physician to understand himself; and the only physician who can teach him is the one versed in psychopathology. Encouragement should not be gained directly from the physician, but should come from the patient's own appreciation of his improvement and by his learning the fact that his affection is not so peculiar as he believed. I can not attempt to set forth here

even the principles of psychotherapy. The interested reader is referred elsewhere.[8]

Conclusions.

Let us conclude by naming the three factors comprised in this difficult art, and giving the parallel of surgery in illustration. The surgeon requires first, a minute knowledge of anatomy and pathology; secondly, the good sense to apply this knowledge clinically; thirdly, acquaintance with and a practice of technical advances in his art.

The psychotherapeutist requires first, a minute knowledge of psychology and psychopathology (I exclude here all metaphysical notions, which unfortunately are rife in much which has been written on psychological medicine); secondly, the acumen to use this knowledge clinically in diagnosis; and thirdly, an acquaintance with and the practice of technical procedures as they improve. The first and third of these requisites can be gained by any one; it is in the power of using the second that the highest qualities are required. In this art, physiologic therapeutics finds its highest expression; for in this more than any other, it penetrates to the cause of a patient's disturbance.

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REFERENCES.

1. Diagnosis of Neurasthenia, *Archives of Diagnosis*, Jan., 1909.
2. Treatment of Tabes, *Medical Record*, April, 1909.
3. Nervous Dyspepsia, *Journal of Abnormal Psychology*, Feb., 1909; *Old Dominion Journal*, Nov., 1908.
4. Tics and Spasms, *Monthly Cyclopedia and Medical Bulletin*, Jan., 1910; *Southern Medical Journal*, Aug., 1909.
5. Report of New York Committee, Monograph Series, 1910.
6. Poliomyelitis, *Virginia Semi-Monthly*, Aug. 25th, 1910; *Monthly Cyclopedia*, Nov., 1910.
7. See Carroll and Hall, *Journal A. M. A.*, 1910.
8. Requisites for Treatment of Psychoneuroses, *Monthly Cyclopedia*, 1909; Psychoprophylaxis in Childhood, *Journal Abnormal Psychology*, 1909; The Nature of Hysteria, *International Clinics*, 1908; Cases of Hysteria, *American Journal Medical Sciences*, Sept., 1910, etc.