WHAT EVERY PHYSICIAN SHOULD KNOW

ABOUT PRESCRIBING PHYSICAL THERAPY

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Any consistently successful use of physical therapy is dependent on accurate prescription and guidance by the physician. For physical therapy as for drugs, the use of the written prescription is essential, The major purposes of written prescriptions in physical therapy are: (1) to instruct the technician in the procedures to be carried out; (2) to insure the physician that his orders will be followed, and (3) to provide an adequate record of treatment given.

Only licensed physicians should be permitted to prescribe. physical therapy. In preparing the prescription, the physician should have a working knowledge of the physiologic effects of the various physical therapeutic procedures. He should be familiar with the indications for and contraindications to their use. It is essential that he know about the training, special abilities and limitations of the technicians who are to carry out his prescriptions, and also what equipment and facilities are available.

Before physical therapy is prescribed, . the following, questions should be considered : (I) has a correct or adequate working diagnosis been established? (2) has physical treatment proved beneficial for the condition diagnosed? (3) what physical therapeutic procedures may be indicated and what procedures may be contra indicated? (4) what results are anticipated? and (5) how many treatments may be needed ?"

The patient's physician should prepare him for the treatment, so that he will understand something of the importance or place of physical therapy in his treatment program, what results are to be anticipated and how soon results may be noted. The physician should discuss the problem of cost with the patient and help him ascertain whether or not he is entitled to assistance from hospitalization or disability insurance.

PITFALLS IN THE PRESCRIPTION OF PHYSICAL TIIERAPY

If the various pitfalls which occur in the prescription of physical therapy are avoided, better results can be anticipated, fewer treatments may be needed and the efficiency of the technician can increased.

An unnecessary delay in starting physical therapy is one of the most common pitfalls. Too often it is anticipated that stiffness of joints or muscular pain will "work itself out" with the help of some inadequate instruction for exercises given to the patient in the office.

The use of a shotgun type of physical therapy prescription is to be avoided. The prescription may call for heat, massage and exercise, when an exercise pro-gram alone would be sufficient.

When patients are not selected with care, poor results from physical therapy will occur. Patients who have hopeless conditions and certain functional complaints benefit little. Most patients whose complaints are primarily functional should not receive physical therapy unless they understand the functional aspect of their problems and the place of physical therapy in their treatment.

A most serious pitfall which too often arises in the prescription of physical therapy is that a technician, with limited medical training, expected or advised by the physician to recommend the procedures to be used in the treatment. In these instances the physician is sponsoring the unethical practice of medicine by technical personnel not qualified or licensed to practice medicine.

When the patient prescribes his own treatment, with the physician permitting the technician to accede to the patient's whims, physical therapy is being exploited.

A vague or muddled prescription will be of little help to the technician.

When the treatments are too infrequent or too few, poor results may occur. Usually, daily physical therapy is indicated. Weekly treatments are of little or no value.

Inadequate follow-up by the physician may be a cause for failure of physical therapy. Reevaluation of the patient's condition and his treatment should be made at regular intervals, and the treatment should be modified as the condition changes.

Last, physical therapy should not be prolonged past the point at which the patient has received maximal benefit. or at which he could continue adequately on a regimen of treatment at home.

ESSENTIALS OF THE PHYSICAL THERAPY PRESCRIPTION

There are certain essentials that should appear in every physical therapy prescription. These include (1) the diagnosis; (2) parts to be treated ; (3) specifications regarding the procedures to be used; (4) special instructions regarding the removal of splints, braces or dressings during treatment, or cautions regarding anesthetic areas; (5) an outline of what home instructions are to be given; (6) the number and frequency of treatments, and (7) the date for reexamination.

The physical therapy prescription should be written by the physician on the physical therapy record sheet given to the technician and later field with the patient's permanent history. In some instances an ordinary prescription blank can be used.

It will be possible to outline only a few of the main principles to be considered in prescribing the physical procedures of thermotherapy, hydrotherapy, massage, electrical stimulation, therapeutic exercise and ultra-violet therapy.

Front the Section on Physical Medicine, Mayo Clinic,
Rcad in a Panel Discussion on Certain- Common Pkoceclures. in Physical Medicine and Rehabilitation heforc the Section on MisCeilaneous Topics at the Ninety-Eighth Annual Session of the American Medical Association, Atlantic City, N. J June 8, 1949.

Thermotherapy.-------When vasodilatation, relief of pain or muscular relaxation is desired, heat may be prescribed as a therapeutic agent. It is often used to prepare a part for massage and therapeutic exercise. The thermotherapy prescription should include (1) the source, such as short wave diathermy or infra-red lamp, (2) the part to the heat is to be applied and (3) the dose in terms of time of application and intensity. In a prescription for short wave diathermy, where numerous methods of application are available, it is desirable to indicate whether an induction coil or drum type of applicator is preferred. If general body heating is desired, this can be simply arranged by prescribing the application of two large luminous heat bakers over the entire body. Other methods for general heat ing include the use of hot packs, the Hubbard tank or the ordinary hot tub bath.

Hydrotherapy.—ln prescribing treatment utilizing the Hubbard tank, the hot tub bath, the whirlpool bath or contrast bath, the physician should indicate the temperature of the water, the duration of the bath and, if the treatment is local, the part to treatment should be applied. In prescribing the use of hot packs, the type of packs should indicated as well as the total time for packing and the number of changes of packs that are expected.

Massage.-------Massage as a therapeutic procedure often is misused. Its physiologic effects are limited. It is a procedure that may be pleasing to the patient, but it is time-consuming for the technician. The use of general body massage as a sedative should be discouraged. The type of massage should be definitely stated ; whether it be stroking, kneading, friction. or percussion, or some combination. The prescription should specify whether the massage should be light or deep, or of a stimulating or sedative type. The part to be massaged should be indicated. The primary contraindications to massage should be constantly kept in mind. It should not be employed in the presence of most psychoneuroses, in obesity as a reducing procedure, over cancerous areas or areas of suspected cancer, over tissue with associated infection, or as a method of strengthening muscles. Massage is of most value to a patient who has flaccid paralysis, arthritic conditions of moderate severity or fibrositis, or who is recovering from sprains and strains.

Electrical Stimulation.---When electrical stimulation of various muscle groups or nerves is indicated, it is essential that the physician prescribing it have complete knowledge of the electrical reaction in the part to be treated. If a partial or complete reaction of degeneration is present, this information should be included in the prescription. The type of current selected will, of course, depend on the apparatus available and on whether the nerve shows a reaction of degeneration. The prescription should include specification of the nerves or muscles to be stimulated, type of current and frequency of oscillations, intensity of current, the approximate number of contractions desired and the frequency of treatments. A faradic current or some form of a modified rapid sinusoidal current may be useful when the nerve supply to the muscle is intact. In a denervated muscle an interrupted galvanic current or a low frequency sinusoidal current may be most useful for obtaining contraction.

Therapeutic Exercise.—A prerequisite for the successful prescription of therapeutic exercise is thorough evaluation of the malfunction. Muscle tests may be indicated ; the status of the bones and joints, as well as the general condition of the patient, should be well recognized. When these facts have been ascertained, the physician can prescribe exercises for the strengthen ing of certain muscles and other exercises for joints and muscles which may need mobilization. The prescription should indicate exercises within the general tolerance of the patient. The type of exercise should be specified; whether it is to be passive, active, active assistive, resistive for muscle strengthening, muscle reeducation,

TABLE 1.—*Sample Prescription* : Therapy for Subdeltoid Bursitis, Acute or Subacute

Treatment *	Time Minutes	Specification* t
Short Wave diathermy...	30	coil or drum, right shoulder
Massage.	10	Light to deep stroking and kneading to right shoulder
Exercise....	10	Relaxed passive; active and resistive: graduated as tolerated, attempting normal range: shoulder wheel and ladder , when tolerated

* Treat twice a day; Physician to be seen after two days. Instructions: (l) heat lamp thirty minutes twice a day for home use; (2) Codman exercises.

TABLE 2.---*Sample Prescription*: Therapy for Colles' Fracture Five Weeks After Reduction, with Shoulder and Hand Stiffness

Treatment	Time, Minutes	Specifications t
Hydrotherapy--------	30	Whirlpool bath. water temperature 110 F. , right arm and hand
Massage..	10	Deep stroking and kneading, right hand, elbow and shoulder; friction : wrist and fingers
Exercise.....	10	Active and assistive: attempt normal range, hand, elbow and shoulder; moderate to shoulder and fingers

* Treat daily for two weeks; physician to be seen after one week. Instructions: (l) contrast baths for hands; (2) active hand and shoulder exercises daily at home.

relaxation or coordination. If resistive exercise is to be carried put, suggestions should be made as to the type and amount of resistance to be used for strengthening certain groups of muscles. If assistive apparatus is to be used, such as a shoulder wheel or shoulder ladder, the exercise bicycle, the powder board or rowing machine, this should be specified. It crutch walking or gait training is to be a part of the exercise program details as to the type of gait should be prescribed and preliminary exercises outlined. For many patients the therapeutic exercise program is one of the most important phases of the physical therapy. However, litany tinies it results in failure. Many times it results in failure. The chief reasons for failure are: (l) too short or too infrequent exercise periods ; (2) improperly prescribed program, (3) lack of care in administering and supervising the exercises, and (4) lack of cooperation and willingness to work on the part of the patient.

Ultraviolet Therapy. ---Ultraviolet therapy occasionally is indicated for certain diseases of the skin. The prescription for ultraviolet light should include the source to be used, such as the hot quartz mercury vapor arc lamp; the dose prescribed should be in terms of the minimal erythema dose. Treatment may be started with 2 minimal erythema doses and increased by 1/2 or 1 minimal erythema dose every other day. The prescription is modified according to the condition being treated, the response of the patient and the original degree of pigmentation of the patient‘s skin. The area to be treated must be specified, and the time for the reexamination indicated.

TABLE 3.---*Sample Prescription: Therapy for Median Nerve and Flesor Tendon Laccration, Right Forearm*

Treatment	Time Minutes	Specifications **
Hydrotherapy ----------	30	Whirlpool bath, right hand and arm: water temperature 104 F, (anesthetic ature 104 F, (anesthetic area right palm)
Massge ----------	10	Stroking and kneading ,right hand and forearm; friction along scar
Electrical stimulation ---	**	Gavanic o low frequency sinusoidal: instrinsic hand muscles supplied hand muscles supprised by median nerve 30 to 50 contracction daily
Exercise ----------	**	Active and assistive: attempt normal range, wrist and hand flexors; and extensors; reeducation: intrincic hand muscles; gentle stretchning for long flexors

* Treat daily: physician to check every other day

** To occupational therapy for activation to encourage use of the fingers

TABLE 4. -----*Sample prescription: Therapy for Acne Vulgaris*

Treatment *	Time	Specifications
Ultraviolet (hot quartz mercury vapor lamp)	2 minimal erythema dosage; increase to 10 minimal erythema dosage	1 exposure, face, neck,anterior part of shest; increase dose by 1 minimal erythema dose at each treatment

* Treat three times weekly; total number of treatments, 15; recheck every two weeks

Illustrative Physical Therapy Prescriptions.—The sample prescriptions (tables 1 to 4) illustrate some of the foregoing principles. In each instance the prescription is brief, would take little time to prepare, and is detailed enough to give the. technician definite instructions regarding the treatment. These are not to be considered as standard or routine prescriptions, or necessarily as ideal prescriptions, for all patients with the conditions listed. Each physical therapy prescription must be individualized and designed to meet the specific needs of the patient.

SUMMARY

Any physician with some fundamental knowledge of physical procedures can prescribe physical therapy satisfactorily for many of the patients seen in ordinary office and hospital practice.

When a physiatrist is not available, the prescription for physical therapy is the responsibility of the patient's physician.

The prescription should be brief and definite and should contain enough detail to instruct the technician adequately regarding the treatment desired.

Success of physical therapy is, in part, dependent on the proper selection of patients, the preparation of an adequate prescription, with provision for a sufficient number of treatments, regular reevaluation of the patient's condition and modification of treatment as the condition changes.

ABSTRACT OF DISCUSSION

ON PAPERS BY DFAVER, T.,1CfiT AND MARTIN

QUESTION : Discuss the use of overhead trolleys and halters in teaching crutch walking to severely disabled persons.

DR. GEORGE G. DEAVER, New York: We do not use the false sense of security and does not develop the proper skills. If a patient is taught the crutch gait best suited to his disability in the proper sequence he will not need the overhead trolley.

QUESTION : Kindly mention a few words about canes, their indication, and collapsible crutches.

DR. GEORGE G. DEAVER, New York : If it is possible. endeavor to have your patient discard crutches for canes, and perhaps he can he taught to free himself from the canes. Never give an amputee with an artificial leg a pair of crutches. We teach our patients how to use his prosthesis in thc parallel bars, and then he is given canes. Once an amputee uses crutches with his artificial leg it is almost impossible to have him give them up. Collapsible crutches are now being developed. Dr, Abram,, son of the Veterans Administration is working on a metal crutch which can be telescoped and carried in a suitcase or placed under a wheelchair. At present there is none that adequately meets our needs.

QUESTION : Do you recommend the use of sawed-off crutches on the mat in preparation for crutch walking? If so, when should their use he taught in relation to the total program?

DR. GEORGE G. DEAVER, New York: in reference to the sawed-off crutches, these are essential for the training of paraplegic patients. Every one of our paraplegic patients is given the conditioning exercises on the mat with the sawed-off crutches to develop strength of the arms and to learn the movement of the crutches. It is important to keep in mind the danger of fracture of the femur in paraplegic patients who are given conditioning exercises on the mat. The great majority of these patients have osteoporosis, and the femur will fracture with little strain and stress.

QUESTION : What quantitative objective tests are recommended for determining effectiveness of mediums employed in kinetic occupational therapy?

DR. SIDNEY LICHT, Cambridge, Mass. : There are several tests which can be used to determine the effectiveness of kinetic occupational therapy, and these have been described in the literature recently. One of these is based on the productive output of the patient which if measured and recorded on successive days will result a graphic portrayal of progress in strength, joint range and coordination.

QUESTION : Should selected occupational therapy follow immediately after treatment in the physical therapy department, the latter lasting an hour? If not, how often and when does occupational therapy fit into the over-all program ?

DR. GORDON M. MARTIN, Rochester, Minn.. I think that is a problem that has to be definitely individualized for every patient. If the patient is hospitalized, the occupational therapy can be given more satisfactorily at some other part of the day than immediately before or after the physical therapy. Usually, it is well for a patient following a strenuous exercising program in physical therapy to have an opportunity to rest before he undertakes the exercises in the kinetic phases of his occupational therapy program.