

A GENERAL PRACTITIONER'S
GUIDE TO
PHYSIOTHERAPY



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"I have found that the methods of physical medicine in some form or other have their application to nearly every sick person."

Geoffrey Evans, M.D., F.R.C.S.

In a paper to the B.M.A., 22/1/48.

PREFACE

Physiotherapy is now prescribed, in hospitals and in private practices, for an increasing number of patients and, since its earliest beginnings, has come to embrace an ever-growing armamentarium of equipment and skills to treat a steadily increasing range of conditions.

Compared to forty, or even ten years ago, the conditions treated and the methods of treatment have changed radically and it is this booklet's aim to present, in a simple, convenient form, a brief summary of current methods, together with a listing of the more common conditions referred to physiotherapists by medical practitioners.

Following each condition is a suggested method of treatment which it is hoped will provide a rough guide for the doctor who wishes to specify treatment, an attempt having been made to avoid the extremes of a dogmatic treatment routine on the one hand, and a "shotgun" type of treatment on the other. A cut-and-dried treatment scheme for each condition is not tenable, as so many variable factors bear influence, viz. contra-indications peculiar to each method of treatment, the patient's age and general health, his capacity to co-operate in the treatment, the stage of his lesion and recovery from it, whether he is treated at home or at a practice and what equipment is available to the physiotherapist.

Thus any relevant data regarding the patient and his condition which may modify treatment is desirable. Such data may include information as to whether the patient is pregnant or whether, if any form of heat has been ordered, a check has been made with the radiologist following radio-therapy.

The patient must have a note of authority or verbal consent before arranging physiotherapy treatment.

The note should state:

- (1) The diagnosis.
- (2) Any X-Ray comments.
- (3) The treatment required.
- (4) The period of treatment.
- (5) Any concurrent pathology.

A period of one week equals 5 treatments with multiples of 5 for each successive week, but only a maximum of 24 treatments can be authorised by one note. However, a doctor may, on one recommendation, request up to 26 treatments for a period not exceeding 6 months for the following conditions:

- (a) Ante-natal physiotherapy services.
- (b) Psoriasis.
- (c) Asthma.
- (d) Bronchitis.
- (e) Bronchiectasis.
- (f) Pancreatic cystic fibrosis.
- (g) Cerebral vascular accident.

Workers' Compensation Act: Physiotherapy is within the scope of the workers' compensation scheme and can be authorised for a patient even though he may be back at work. This should be noted on the form.

MASSAGE

This is the scientific manipulation of the body's soft tissues and, according to the type of massage used and the way it is given, can be sedative, stimulating or mechanical in its effects. It is particularly effective in treating sprains, subcutaneous areas, scar tissue, adhesions and parts requiring an improvement in circulation.

MANIPULATION

This being a controversial mode of treatment among physiotherapists as well as the medical profession, it will suffice to say that a manipulation is a "joint movement obtained by the application of external forces, which may include gravity, sustained tension or sudden movement, but should require the maximum of skilled technique and the minimum of physical effort."

The general aim of a manipulation is to obtain full-range, pain-free movement of a joint, and this will entail either the breaking of adhesions, the repositioning of a fragment of displaced cartilage or the fractional re-arrangement of joint facet apposition.

It is generally considered advisable to have X-rays taken of the joint(s) before manipulation is given, and if manipulation is the treatment of choice, it should be specifically authorized on the treatment note.

TRACTION

This may be sustained or intermittent, and applied manually or with the use of apparatus. The percentage, duration and regulation of the pull can be varied according to such factors as the patient's condition, age and weight.

It is used for certain types of "disc lesion" and stiff spinal joints where manipulation is impracticable or contraindicated.

EXERCISES

These are strictly "remedial" in character and are carried out in a carefully graded form, with due regard to the patient's age and capacity.

Remedial Exercises are used to:—

- (1) Maintain joint mobility and the elasticity of soft structures while normal activity is temporarily impaired.
- (2) Restore normal muscle strength and joint function with consequent improvement of neuro-muscular co-ordination.
- (3) Teach relaxation.
- (4) Correct faulty posture.
- (5) Teach correct breathing for asthma and other respiratory conditions.

Neuro-muscular facilitation techniques form the most recent advancement in the remedial exercise field, making use as they do of the fact that stimulation must precede movement, and thus employing all the means available to the physiotherapist for applying various forms of stimulation. The techniques evolved make use of stretch, relaxation, resistance, traction and compression, balance and spinal reflexes, all these being used in conjunction with patterns of movement, these patterns consisting of the mass movement of joints and muscles in a diagonal plane around a proximal pivot.

There are five types of exercise which may be prescribed:—

- (1) **Assisted** — given with the use of a suspension frame, water, or by the physiotherapist holding the limb and assisting the movement.

Used when there is gross weakness, in that gravity plus the weight of the limb is too great to allow movement, e.g. Flaccid Paralysis or Frozen Shoulder.

- (2) **Free** — no weight is used other than the limb itself. Useful in all conditions where the range of movement is good and mobility, posture or balance is the object.

- (3) **Resisted** — by using weights, springs, water or resistance given by the operator or the patient himself. Used where strength and endurance plus mobility are the objects, e.g. Post-traumatic and post-operative conditions.

- (4) **Static Movements** — muscle contraction need not necessarily initiate joint movement and the fact that a joint is immobile does not prevent static contractions of the surrounding and controlling muscles.

The advantage of this type of exercise is that the contractility and strength of a muscle may still be maintained and the circulation to an impaired part improved, with a consequent reduction in the length of time taken for the muscle to regain full function. Static holdings are also useful in re-educating a patient's postural reflex.

- (5) **Passive Movements** — the joint is put passively through a range of movement within the patient's pain tolerance. Used where there are stiff joints through disease with no pathology.

SPECIFIC OR VOLUNTARY MUSCLE TESTING

An important aid in the diagnosis and measurement of disorders of function, and a readily-available record of the patient's recovery.

The range, power and endurance of every muscle is determined, compared with a normal muscle and graded by the simple classification shown below:—

- (1) Gravity assisted.
- (2) Gravity eliminated.
- (3) Against gravity.
- (4) Against resistance.
- (5) Full power.

ELECTROTHERAPY

This may be subdivided into various groups:—

- (1) Types of heat and cold.
- (2) Ultra-violet light.
- (3) Low frequency currents.
- (4) Ultra-sonics.

HEAT AND COLD

Heat:—

May be classified as follows, each type of heat being analgesic, improving circulation and producing a reflex relaxation of muscle.

- (a) Short-wave Diathermy:— used when treating deeply-situated structures, i.e. the trunk and larger joints.
- (b) Infra-red and radiant heat:— superficial heating only.
- (c) Wet:— less superficial than (b); very suitable for the home treatment of rheumatoid arthritic hands and feet.
- (d) Mud packs:— similar in effect to (c) and suitable for applying to areas where immersion is impracticable.
- (e) Moist heat:— superficial, but most beneficial for the relief of muscle spasm.

Cold:—

- (a) Ice:— used for pain, muscle spasm and congestion in recent injuries and sprain.
- (b) Cold water:— often given in conjunction with hot water in the form of contrast baths and with showers in hydro-therapy.

ULTRA-VIOLET LIGHT

The main effects on the skin of ultra-violet light are:—

- (a) A latent erythema.
- (b) Pigmentation.
- (c) Stimulation of growth of skin's cells.
- (d) Improved circulation and nutrition.
- (e) Increased resistance to infection.
- (f) Bactericidal.
- (g) Activation of Vitamin D.

Uses:—

Skin conditions, such as psoriasis, acne, alopecia, Herpes Zoster, pyoderma and ulcers;

General Debility;

Respiratory Diseases;

Rheumatic Diseases.

Ultra-violet light may be applied to produce four distinct degrees of erythema, the degree required depending on the condition treated, and on such factors as the patient's skin type and hair colour, his age and the sensitivity of the area to be treated. It is therefore considered inadvisable to recommend the use of home ultra-violet light lamps administered by the patient himself.

LOW FREQUENCY CURRENTS

(a) Faradism: An intermittent current of varying intensity. Produces an involuntary muscle contraction providing the neuro-muscular pathway is intact. Used diagnostically to determine neuro-muscular unity and hysterical paralysis; therapeutically to improve the tone of debilitated muscles.

(b) Sinusoidal: A continuous current of varying intensity, with smaller peaks and smoother than Faradism.

(c) Galvanism:

Continuous — A direct or constant current used principally to introduce ionising substances through the skin into the superficial tissues. The more viscous substances so used are histamine, zinc and lithium. Histamine produces a vasodilatation of capillaries and arterioles and is an effective counter-irritant.

Interrupted — causes contraction of denervated muscle unless there is absolute reaction of degeneration with complete muscular atrophy. Thus it is invaluable in maintaining muscle function after a nerve lesion.

Muscle and Nerve Testing: One of the most important functions of Electrotherapy is in the field of diagnosis.

Because Faradism is appreciated by nerve tissue and Galvanism by muscle, the use of modern equipment enables gradations from a stimulus by a Faradic current to be made so that it is possible to plot the degree of a nerve lesion from Reaction of Degeneration to Absolute Degeneration and the varying stages of recovery and progress. Used in this way, it can be a valuable aid to prognosis.

ULTRA-SONICS

These are sound waves, varying according to the apparatus used from 800,000 to 3,000,000 cycles per second, and are produced by subjecting a quartz crystal to an alternating potential, so that it expands in rhythm with this potential's frequency. When this frequency matches the quartz's natural frequency, the amplitude of the quartz oscillations becomes ten times greater.

The mechanical, thermal and chemical effects are used therapeutically to loosen fibrosis, soften scars and adhesions, increase the absorption of inflammatory products by reducing swelling and oedema in recent injuries, improve nutrition and stimulate healing, and to relieve pain and spasm.

KEY

HYDRO.	Hydrotherapy
I.R.	Infra-red
MANIP.	Manipulation
MASS.	Massage
P.R. EXS.	Progressive Resisted Exercises
N.M.F.	Neuromuscular Facilitation
REHAB.	Rehabilitation
RELAX.	Relaxation
REM. EXS.	Remedial Exercises
S.W.D.	Short-wave Diathermy
TRAC.	Traction
U.S.	Ultrasonics
U.V.L.	Ultra-violet Light
WAX	Wax Bath

A

Abcess: S.W.D., U.S. or U.V.L., according to stage.
Acute Tendonitis: U.S.; Mass.; Rem. Exs.; Strapping.
Acne Rosacea: Local and general U.V.L.
Acne Vulgaris: Local and general U.V.L.
Adhesions: Refer to "Scars."
Alzheimer: Local and General U.V.L.
Amputation: Bandage Maintenance; Rem. Exs.; Walking re-education.
Amputation Neuroma: U.S.
Ankylosing Spondylitis: Breathing and Rem. Exs.; U.S.; U.V.L.; Hydro.
Aortic: Refer to "Sinusitis."
Arteriosclerosis: General S.W.D.; Burger's Exercises; Sinusoidal Baths.
Arthritis: Types listed alphabetically.
Asthma: Relaxation, breathing, postural and mobility exercises; U.S.; U.V.L.
Ataxias: Refer to "Nerve Lesions."

B

Barkache: Refer to primary condition.
Bedsores: I.R.; local U.V.L.
Bell's Palsy: S.W.D.; electrical stimulation; Mass.; Rem. Exs. Bath; Refer to "Abcesses."
Bronchiectasis: Breathing, REM. and postural Exercises; postural drainage.
Bronchitis: S.W.D.; Breathing and REM. EXS.; postural drainage.
Burger's Disease: Refer to "Infarctal Classification."
Burns: Breathing, REM. postural and HYDRO. Exercises.
Bursitis: Ice packs; U.S.

C

Calcaneal Spur: Refer to "Plantar Fasciitis."
Capacities: U.S.; REM. EXS.
Carbuncles: Refer to "Abcesses."
Carpal Tunnel Syndrome: U.S.; Anodal Galvanism; Best plaster in slight flexion.
Cartilage (meniscus injury): Conservative; S.W.D.; U.S.; REM. EXS.; quads P. EXS. Pre- & Post-op; REM. EXS. & P. EXS.
Cerebral Hemorrhage: Refer to "Hemiplegia."
Cerebral Palsy: HYDRO; REM. EXS. (according to type).
Childbirth: General and local U.V.L.; Sinusoidal Current.
Childbirth (Training for): Anis. & Post-natal Exercises.
Chondritis: U.S.; S.W.D.; MANIP.
Combined Degeneration Of The Gomb: REM. EXS.
Coldsores: Cold compresses; Pressure Bandaging; Faradism; S.W.D.; U.S.

D

Deafness (catarrhal): S.W.D.; U.S.
 "Disc Lesion": S.W.D.; MASS.; THAC. and/or MANIP.; HELMEX.
 Distortion (Achalasia): Heat; MASS.; HELMEX.
 Disseminated Sclerosis: for joints; HELMEX.
 Dupuytren's Contracture (Post-op.): LH.; WAX; MASS.; U.S.; HELMEX.; splinting.
 Dystrophias (all types): Breathing & HELMEX.

E

Empyema: Breathing and Postural Exercises.
 Empyema: Breathing and HELMEX.
 Encephalitis Lethargica: Refer to "Parkinson's Disease."
 Epicondylitis (all types): MASS.; MANIP.; U.S.; histamine or rosin ionization; local U.V.L.; splint if necessary.
 Erythema Pernio: Refer to "Chilblains."

F

Facial Palsy: Refer to "Bell's Palsy."
 "Fibrositis": MASS.; U.S.; S.W.D.; Ionization; LH.
 Flat Foot: Refer to "Pes Plano Vulgus."
 Fractures: In plaster: HELMEX, for non-immobilized joints;
 Out of plaster: MASS.; Paraffin; HELMEX.; HYDRO.
 Friedreich's Disease: MASS.; Frank's Exercises; Breathing & HELMEX.
 Frozen Shoulder: U.S.; S.W.D.; arm THAC.; HELMEX.; HYDRO.

G

Gouty Elbow: MASS.; U.S.; Ionization.
 Gout: Iodine Ionization; U.S.

H

Hæmatoma (muscular): Initially: Rest; Cold compresses; Pressure bandaging; Paraffin. Later: S.W.D.; MASS.; U.S.; HELMEX.
 Hallux Rigida: HELMEX.; check footwear.
 Hallux Valgus: Paraffin; HELMEX.; check footwear.
 Hay Fever: Zinc Ionization (before attack expected).
 Hemiplegia: HELMEX.; S.M.F.
 Herpes Zoster (all types): Local U.V.L.; U.S.; Vibration; S.W.D.
 Heuryston's Knee: Refer "Dartals."

I

Impetigo: General and local U.V.L.
 Indolent Wound: General and local U.V.L.; LH.; S.W.D.
 Infantile Paralysis: Refer to "Polio-myelitis."
 Infective Arthritis (later stage): HELMEX.
 Intercostal Neuralgia: MANIP.; S.W.D.; U.S.
 Intermittent Claudication: General S.W.D.; Sinusoidal Baths; Intermittent Venous Occlusion; Burger's Exercises.
 Intervertebral Disc Lesion: Refer to "Disc Lesion."
 Iritis: S.W.D.
 Ischemic Contracture: Check splinting; MASS.; U.S.; HYDRO.; HELMEX.

K

Keratitis (chronic): Zinc Ionization; S.W.D.
 Kyphosis: HELMEX.

L

Laminectomy (Post-op.): Breathing & HELMEX.
 Lichen Planus (acute): U.V.L.
 Lobotomy (Pre- & Post-Op.): Breathing & HELMEX.; Postural Drainage.
 Lordosis: HELMEX.
 Lumbago (back strain): S.W.D.; U.S.; MASS.; HELMEX.
 Lupa Vulgaris: General and local U.V.L.

M

Mastectomy (Radical): Paraffin; U.S.; HYDRO.; Shoulder and shoulder girdle HELMEX.
 Metatarsalgia: Support; Paraffin foot bath; S.W.D.; U.S.; HELMEX.
 Morton's Disease: Refer to "Metatarsalgia"

N

Nasal Catarrh: S.W.D.; U.S.
 Nerve Lesions: Electrical stimulation; HELMEX.
 Neuralgia (Post-Herpetic): U.S.; Vibration; U.V.L.

O

Oedema: Acute: Galvanism; HEMEXS. Chronic: Faradism.
Both Stages: U.S.; MASS.
Orythia: S.W.D.; U.V.L.
Osgood-Schlatter's Disease: MASS.; HEMEXS.
Osteo-Arthritis: S.W.D.; U.S.; MASS.; Local U.V.L.; HEMEXS.
Otitis Media: Acute suppurative: S.W.D. (after incision). Chronic
suppurative: Zinc Ionization; S.W.D.

P

Paget's Disease: S.W.D.; HEMEXS.
Panniculitis: I.P.; Ionization; MASS.; HEMEXS.
Paronychia (Chronic): S.W.D.
Paraplegia: HEMEXS.; daily living activities.
Parkinson's Disease: General S.W.D.; MASS.; HEMEXS.; Posture
and gait Re-education.
Paronychia: S.W.D.; U.V.L.; U.S.
Pelvic Disorders (Chronic): S.W.D.
Periarticular Arthritis: S.W.D.; U.S.; HEMEXS.
Pis Carnis: Faradism; MASS.; HEMEXS.
Pis Plantis-Talpis: Faradism; HEMEXS.
Phantom Limb: U.S.; Vibrator.
Phlebitis: MASS; HEMEXS. (after organization or resolution).
Pityriasis Rosea: U.V.L.
Plantar Fasciitis: S.W.D.; U.S.; Faradism.
Pneumonia (Bronchis & Lobes-): Breathing & HEMEXS.; Postural
Drainage.
Poliomyelitis: Hot packs; HEMEXS.; HYDHO.
Prostatitis: S.W.D.
Psoriasis: Local and/or general U.V.L.

R

Raynaud's Disease: Ionization; Stapedial Current; S.W.D.
Rheumatoid Arthritis (Chronic): S.W.D.; WAS; Ionization;
HEMEXS.; HYDHO.
Rhinitis: S.W.D.; U.S.
Rotator Cuff Lesion: S.W.D.; U.S.; MASS; HEMEXS.; HYDHO.

S

Sacro-Iliac Strain: S.W.D.; U.S.; MANIP.
Salpingitis (Chronic): S.W.D.
Scars and Adhesions: Ionization; U.S.; MASS.
Schwartzmann's Disease: S.W.D.
Sciatica: Refer to primary condition.
Scoliosis: MANIP.; Breathing & HEMEXS.
Sinusitis: S.W.D.; U.S.
Spondylitis (Spinal): S.W.D.; U.S.; MASS.; TLAC.; MANIP.;
HEMEXS.
Sprains: Acute: Contrast baths; Ice packs; U.S.; MASS.; HEMEXS.
Chronic: S.W.D.; U.S.; MASS.; HEMEXS.; HYDHO.
Sudek's Disease: Refer to "Rheumatoid Arthritis."
Sub-Deltoid Bursitis: Acute: Ice packs; U.S.; HEMEXS. Chronic:
S.W.D.; U.S.; MASS.; HEMEXS.
Suprapubic Tendinitis: S.W.D.; U.S.; MASS; HEMEXS.
Syringomyelia: HEMEXS.

T

Talipes Deformis: HEMEXS.
Talipes: MANIP.; strapping.
Tennis Elbow: Refer to "Epicondylitis."
Tenniselbow: U.S.; MASS; Ionization.
Torticollis: Cervical; Passive stretches; HEMEXS. Wry Neck:
S.W.D.; MASS.; MANIP.; HEMEXS.

U

Ulcer (Ischemic): Refer to "Ischemic Wounds."
Ulcer (Varicose): Ionization; U.V.L.; U.S.; BIRGAARD treatment.

W

Warts: Ionization; U.S.
Wry Neck: Refer to "Torticollis."