

# MANUAL MUSCLE TESTING PROCEDURES

## Key to Muscle Grading

|                      | Function of the Muscle   | Grade |    |        |
|----------------------|--|-------|----|--------|
| <b>No Movement</b>   | No contractions felt in the muscle   | 0     | 0  | Zero   |
|                      | Tendon becomes prominent or feeble contraction felt in the muscle, but no visible movement of the part | T     | 1  | Trace  |
| <b>Test Movement</b> | <b>MOVEMENT IN HORIZONTAL PLANE</b>  |       |    |        |
|                      | Moves through partial range of motion  | 1     | 2- | Poor-  |
|                      | Moves through complete range of motion   | 2     | 2  | Poor   |
|                      | <b>ANTIGRAVITY POSITION</b>  | 3     | 2+ |        |
|                      | Moves through partial range of motion  |       |    |        |
| <b>Test Position</b> | <i>Gradual</i> release from test position  | 4     | 3- | Fair-  |
|                      | Holds test position (no added pressure)  | 5     | 3  | Fair   |
|                      | Holds test position against slight pressure  | 6     | 3+ | Fair+  |
|                      | Holds test position against slight to moderate pressure  | 7     | 4- | Good-  |
|                      | Holds test position against moderate pressure  | 8     | 4  | Good   |
|                      | Holds test position against moderate to strong pressure  | 9     | 4+ | Good+  |
|                      | Holds test position against strong pressure  | 10    | 5  | Normal |

# Manual Muscle Test Scoring

**Gerard A. Malanga, Kenneth Mautner**



## **Manual Muscle Test Scoring:**

Handbook of Neurologic Rating Scales, 2nd Edition , Rating scales are used daily by everyone involved in the management of patients with neurologic disease and in the design and management of neurologic clinical trials Now there is a single source for the wide range of scales used in specific neurologic diseases and neurorehabilitation You will refer to this volume constantly The first edition of the Handbook of Neurologic Rating Scales quickly became an invaluable reference work on the increasing array of scales for measuring neurologic disease In the brief few years since the first edition the importance of this book has only increased New Chapters Include Scales On Generic and general use Pediatric neurology and rehabilitation Peripheral neuropathy and pain Ataxia HIV AIDS And instruments for diagnosing headaches Formal measurement of the effects of neurologic disease and of treatment effects beyond the description of changes on the standard neurologic examination is a relatively recent development Controlled clinical trials and outcomes research are at the heart of modern information based medicine and neurologic scales are essential tools in clinical trials designed to provide this information A Resource for Clinical Trials The Handbook of Neurologic Rating Scales provides a resource for clinicians and clinical investigators in the broad field of neurology and neurologic rehabilitation to help them evaluate the clinical trials literature by providing information on the scales being used evaluate and select appropriate and efficient scales for clinical trials and outcomes research and provide information that will help them to develop new scales or measures or to improve existing ones A Resource for Evaluating Disease Status Outcomes research is playing an increasingly important role in clinical management and neurorehabilitation and these also depend largely on measurement of disease status and change In this era of managed care neurologists must produce outcomes data demonstrating the effectiveness of neurologic care if the specialty is to survive and certainly if it is to thrive Even effective therapies are likely to fall by the wayside if studies to prove their effectiveness are not done Comprehensive and Standardized Information on All Scales Each chapter in this volume contains the scales of importance and in current use including a sequence of scale descriptions and specific scales in a standard format as well as a summary and recommendations indicating which scales are most useful for specific purposes and whether a combination of scales is particularly useful or if better scales are needed Each entry notes the purpose for which the scale was developed and its current uses if they differ from those for which it was developed a detailed description of the scale information about validation such as Does the scale have face validity i e does it appear to measure what it purports to measure how and by whom the scale is administered the time needed to administer and score the scale the scale itself or when the scale is proprietary or too long for inclusion a description and key references special considerations including unusual measures needed to obtain a valid score or problems in administering the test in specific patients advantages or what makes the scale good or useful Disadvantages or what makes the scale difficult to use or impairs its reliability key references including the original publication of the scale and its validation Downloadable PDFs of the scales

contained in the Handbook of Neurologic Rating Scales are included with the purchase of this book The password to download the files can be found in the book itself

**Musculoskeletal Assessment** Hazel M. Clarkson, 2000 Completely revised and updated this edition presents the principles and methodology of assessing both joint range of motion ROM goniometry and manual muscle strength for the head neck trunk and extremities Each chapter is devoted to a separate anatomical region and provides knowledge of pertinent surface anatomy and deep anatomy Excellent photography and illustrations enhance comprehension of techniques and serve as a self learning tool New to this edition New vertical format second color added to line art 200 new photographs detailed coverage of ROM and muscle length assessment and measurement for each body region comprehensive coverage of end feels for each joint motion and chapter relating assessment methods to treatment techniques and activities of daily living A useful resource for assessment and treatment

Musculoskeletal Assessment Hazel Clarkson, 2020-07-20 Develop the skills needed to proficiently evaluate a patient's present functional status and create effective range of motion and muscle strength goals This updated fourth edition of Hazel Clarkson's *Musculoskeletal Assessment Joint Range of Motion Muscle Testing and Function A Research Based Practical Guide* offers a straight forward student friendly approach to learning the clinical evaluation of Joint Range of Motion ROM Muscle Length and Manual Muscle Testing MMT Now in striking full color the fourth edition provides the right amount of detail students need to prepare for effective practice Each chapter is devoted to a separate anatomical region to help Physical Therapists and Occupational Therapists in training hone their understanding of pertinent surface and deep anatomy The clear narrative outlines the steps taken in the assessment techniques and interpreting the results and is enhanced by a strong art program with meticulously created color illustrations and photographs that demonstrate patient and therapist positions and instrument placement

*Daniels and Worthingham's Muscle Testing - E-Book* Marybeth Brown, Helen Hislop, Dale Avers, 2013-01-25 A practical handbook on evaluating muscular strength and function Daniels and Worthingham's *Muscle Testing Techniques of Manual Examination and Performance Testing* 9th Edition makes it easy to understand and master procedures in manual muscle testing and performance testing Clear illustrated instructions provide a guide to patient positioning direction of motion and direction of resistance In addition to muscle testing of normal individuals and others with weakness or paralysis this edition includes new coverage of alternative strength tests and performance tests for older adults and others with functional decline such as the inactive and obese Written by educators Helen J Hislop Dale Avers and Marybeth Brown this classic physical therapy reference now features an Evolve companion website with video clips demonstrating key muscle testing techniques Drawings and arrows along with clear written directions make it easy to understand and perform muscle testing procedures allowing you to assess deficits in strength balance and range of motion More than 600 illustrations clearly show testing sequences muscle anatomy and muscle innervation Video clips of over 100 muscle tests on the Evolve companion website demonstrate the art and technique of muscle testing in a clinical setting

Details of muscle anatomy and innervation help in linking muscle topography with function Helpful Hints and Substitutions boxes provide additional tips and highlight muscle substitutions that may occur during a test to ensure greater accuracy in testing A constant reference number clearly identifies each muscle in the body indexed in the Alphabetical List of Muscles by Region as well as in the Ready Reference Anatomy Manual on Evolve to speed cross referencing and help you quickly identify any muscle NEW chapters on performance testing cover functional strength testing in older adults and those with functional decline and testing muscle performance in various clinical settings NEW chapters on manual muscle testing address when to use manual muscle testing the limitations of manual muscle testing and alternatives to manual muscle testing UPDATED references for each chapter include the most current evidence based information NEW An Evolve companion website helps you hone your manual testing skills with video clips of over 100 muscle tests and with the Ready Reference Anatomy Guide

**Springer Handbook of Medical Technology** Rüdiger Kramme,Klaus-Peter Hoffmann,Robert Steven Pozos,2011-10-02 This concise user oriented and up to date desk reference offers a broad introduction to the fascinating world of medical technology fully considering today s progress and further development in all relevant fields The Springer Handbook of Medical Technology is a systemized and well structured guideline which distinguishes itself through simplification and condensation of complex facts This book is an indispensable resource for professionals working directly or indirectly with medical systems and appliances every day It is also meant for graduate and post graduate students in hospital management medical engineering and medical physics Management of Spinal Cord Injuries Lisa Harvey,2008-01-10 Combining 25 years of clinical research and teaching experience Dr Lisa Harvey provides an innovative 5 step approach to the physiotherapy management of people with spinal cord injury Based on the International Classification of Functioning this approach emphasises the importance of setting goals which are purposeful and meaningful to the patient These goals are related to performance of motor tasks analysed in terms of 6 key impairments The assessment and treatment performance of each of these impairments for people with spinal cord injury is described in the following chapters training motor tasks strength training contracture management pain management respiratory management cardiovascular fitness training Dr Harvey develops readers problem solving skills equipping them to manage all types of spinal cord injuries Central to these skills is an understanding of how people with different patterns of paralysis perform motor tasks and the importance of different muscles for motor tasks such as transfers and bed mobility of people wheelchair mobility hand function for people with tetraplegia standing and walking with lower limb paralysis This book is for students and junior physiotherapists with little or no experience in the area of spinal cord injury but with a general understanding of the principles of physiotherapy It is also a useful tool for experienced clinicians including those keen to explore the evidence base that supports different physiotherapy interventions **Daniels and Worthingham's Muscle Testing - E-Book** Dale Avers,Donovan J. Lott,Marybeth Brown,2024-02-06 Daniels and Worthingham s Muscle Testing 11th Edition offers the clear information

needed to master procedures and enhance clinical decision making in manual muscle testing and performance testing Comprehensive discussion of the value of strength testing with clear illustrated instructions provide a detailed guide to patient positioning clinician instructions and application of skill In addition to updated muscle testing of normal individuals and others with weakness or paralysis this edition includes updated information on alternative strength and performance tests for all adult populations Updated comprehensive coverage for muscle dynamometry and ideal exercises enhances this texts relevance for today s clinician An eBook version included with print purchase provides access to all the text figures and references with the ability to search customize content make notes and highlights and have content read aloud Drawings and arrows along with clear written directions make it easy to understand and perform muscle testing procedures to assess deficits in strength balance and range of motion More than 500 illustrations clearly show testing sequences muscle anatomy and muscle innervation Content on the muscle dynamometer and muscle dynamometry data introduces you to muscle dynamometry including muscle dynamometer methods and results with each muscle Ideal exercises for selected muscles thoroughly explain procedures based on the literature Chapter on functional performance testing covers functional strength testing in older adults and those with functional decline and testing muscle performance in various clinical settings Chapter on strength testing for active populations includes a variety of tests appropriate for many settings with reference data for comparison Chapters on manual muscle testing address how to enhance the reliability and validity of manual muscle testing and other practical considerations of manual muscle testing Details of muscle anatomy and innervation help in linking muscle topography with function Clinical Relevance and Substitutions boxes provide additional tips and highlight muscle substitutions that may occur during a test to ensure greater accuracy A constant reference number clearly identifies each muscle in the body indexed in the Alphabetical List of Muscles by Region as well as in the Ready Reference Anatomy chapter in the eBook included with print purchase to speed cross referencing and help you quickly identify any muscle Updated content throughout provides the most current information needed to be an effective practitioner Updated references ensure content is current and applicable for today s practice NEW eBook version included with print purchase provides access to all the text figures and references with the ability to search customize content make notes and highlights and have content read aloud Plus the eBook includes video clips and bonus Ready Reference Anatomy and Assessment of Muscles Innervated by Cranial Nerves content

**Muscle and Sensory Testing - E-Book** Nancy Berryman Reese, 2020-04-21 NEW Techniques of Functional Muscle Testing chapter includes completely revised content to give you a strong foundation of testing techniques UPDATED Expanded clinical notes and case vignettes challenge you to apply your knowledge to real world situations and think creatively about clinical problems UPDATED Consistent chapter layout by joint and muscle system allows you to easily locate important information UPDATED References throughout the book enable you to quickly find the most up to date sources on specific topics UNIQUE 185 Video clips on the companion Evolve website reinforce your understanding of key

techniques such as muscle tests handheld dynamometry pediatric handheld dynamometry sensory and neurologic testing proper patient and clinician positioning and force application      **Orthopedic Clinical Examination** Michael P.

Reiman, 2016-01-28 Orthopedic Clinical Examination With Web Resource provides readers with fundamental knowledge for developing proficiency at performing systematic orthopedic evaluations Michael P Reiman who is internationally respected for his teaching clinical practice and research focused on orthopedic assessment and treatment methods presents an evidence based guide on the examination process for various parts of the body The text takes a structured approach moving from broad to focused that guides clinicians in examining each client and condition The text presents specific components of the examination in the same sequence ensuring repetition and improved consistency in learning Screenings are used early in the examination sequence not only to determine the appropriateness of performing an orthopedic examination but also to rule out other potential pain generators and thereby narrow the focus of the examination Orthopedic Clinical Examination emphasizes evidence based practice and therefore focuses on tests that are clinically relevant providing students and clinicians with the most appropriate testing options rather than listing tests with no regard for their clinical value Both treatment based and pathological based diagnostic styles are covered in detail so that readers will gain a thorough understanding of both approaches and be able to implement them separately or in tandem In addition to musculoskeletal testing the text provides information on including subjective history observation diagnostic imaging systems and neurological screening and performance based measures in each examination The text is organized into five parts and is structured such that readers will first acquire requisite knowledge about anatomy and the examination process before advancing to acquiring specific examination skills Part I presents information about the musculoskeletal and nervous systems as well as tissue behavior and healing Part II introduces the principles of the examination sequence Parts III and IV present the region specific examination sequence for evaluating clients including specifics on analyzing the head spine and extremities Each chapter in these two parts covers the anatomy of the region various types of injuries that occur specific tests and measures that can be used and cross references to specific case studies for further review Part V highlights additional considerations that may be necessary for special populations during the examination process Orthopedic Clinical Examination includes learning tools that enhance comprehension and engagement Full color photographs and illustrations demonstrate anatomy patient conditions and clinician positioning to serve as a visual reference and ensure proper testing techniques A library of 50 videos found in the web resource provides students with visual demonstrations of assessments and treatments Color coding graphics throughout chapters help readers quickly discern whether evidence supporting the reported finding is ideal good or less than good Overviews of common orthopedic conditions for each body region are in the 12 applied chapters Twenty four case studies guide users in the proper questions to ask and steps to take in conducting examinations Links to abstracts of articles provide additional clinical learning scenarios For instructors an image bank test package and instructor

guide with activities aid in teaching and testing students The web resource and ancillaries are available at [www.HumanKinetics.com](http://www.HumanKinetics.com) OrthopedicClinicalExamination With Orthopedic Clinical Examination current and future clinicians will gain the knowledge and confidence they need in performing examinations and making diagnoses in clinical settings

**Campbell's Physical Therapy for Children Expert Consult - E-Book** Robert Palisano, Margo Orlin, Joseph Schreiber, 2016-12-20 NEW Revised chapter on motor development and control now closely examines the when how why and what of developing motor skill and how it contributes to effective physical therapy NEW Chapter on children with autism spectrum disorder ASD covers the characteristics of ASD the diagnostic process program planning and evidence based decision making for children with ASD NEW Chapter on pediatric oncology addresses the signs and symptoms of pediatric cancers the most common medical interventions used to treat these diseases the PT examination and common therapeutic interventions NEW Chapter on tests and measures offers guidance on how to effectively use tests and measures in pediatric physical therapy practice NEW Extensively revised chapter asthma offers more detail on the pathology of asthma the primary and secondary impairments of asthma the impact on a child's long term health and development pharmacological management and more NEW Revised chapter on the neonatal intensive care unit better addresses the role of the physical therapist in the neonatal intensive care unit UPDATED Full color photos and line drawings clearly demonstrate important concepts and clinical conditions that will be encountered in practice NEW Expert Consult platform provides a number of enhancements including a fully searchable version of the book case studies videos and more NEW Revised organization now includes background information such as pathology pathophysiology etiology prognosis and natural evolution and medical and pharmacologic management as well as foreground information such as evidence based recommendations on physical therapy examination strategies optimal tests and measurement interventions patient caregiver instruction and more NEW Additional case studies and videos illustrate how concepts apply to practice

**Handbook of Sports Medicine and Science** Yves C. Vanlandewijck, Walter R. Thompson, 2016-06-01 Part of the esteemed IOC Handbook of Sports Medicine and Science series this new volume on Training and Coaching the Paralympic Athlete will be athlete centred with each chapter written for the practical use of medical doctors and allied health personnel The chapters also consider the role of medical science in the athlete's sporting career and summarize current international scientific Paralympic literature Provides a concise authoritative overview of the science medicine and psycho social aspects of training and coaching disabled and Paralympic athletes Offers guidance on medical aspects unique to the training and coaching of Paralympic athletes Endorsed by both the International Olympic Committee IOC and the International Paralympic Committee IPC Written and edited by global thought leaders in sports medicine

*Daniels and Worthingham's Muscle Testing, First South Asia Edition E Book* Dale Avers, Marybeth Brown, 2018-11-13 Daniels and Worthingham's Muscle Testing First South Asia Edition E Book

**Biomarkers and Clinical Indicators in Motor Neuron Disease** Pierre-Francois Pradat, Peter Bede, 2020-01-24



*Canine Sports Medicine and Rehabilitation* M. Christine Zink, Janet B. Van Dyke, 2013-02-19 Canine Sports Medicine and Rehabilitation offers a gold standard comprehensive reference on all aspects of sports medicine and rehabilitation for all dogs Written by an outstanding group of leaders in the field the book covers topics ranging from biomechanics exercise physiology nutrition and common orthopedic conditions of the canine athlete to in depth rehabilitation and integrative therapies for all dogs Each chapter includes case studies and numerous color images to demonstrate the concepts discussed Encompassing basic science and integrated veterinary and physical therapy approaches Canine Sports Medicine and Rehabilitation is a complete resource for veterinarians physical therapists veterinary technicians and anyone interested in working with canine athletes or in offering rehabilitation therapy in their practice Controlled Clinical Trials in Neurological Disease Roger J. Porter, Bruce S. Schoenberg, 2012-12-06 The evaluation of the efficacy and safety of a clinical tool be it a diagnostic technique a preventive methodology or a therapeutic intervention is an important responsibility of physicians The history of medicine is characterized by the authoritarianisms of teachers and of organizations giving way to the clinical experience of physicians authoritarian dictum was replaced by case report and then by case series As physicians learned to substitute the analysis of data for the inconsistencies of dictums and anecdotes the problems of the case series as an investigative tool became more evident patient selection criteria measurements of outcome significance of results and extrapolation of conclusions to the community of patients In response to these issues the methodology of the controlled clinical trial has evolved and with it the instruments of study design and of biostatistics as aids to study design and data analysis The medical surgical armamentarium has evolved from being dependent solely upon the observations and conclusions of a skilled clinician to being constructed upon the systematic collection and evaluation of data by a team of skilled clinicians and their statistical colleagues this is the controlled clinical trial During the past two decades the evaluation of clinical approaches to prevention and therapy has become particularly important to clinicians concerned with nervous system dysfunction There has been and continues to be an explosion of information from the basic neurosciences and from the application of biotechnology to the nervous system Musculoskeletal Physical Examination E-Book Gerard A. Malanga, Kenneth Mautner, 2016-07-27 From an interdisciplinary author team now including orthopedic surgeons PM R specialists and primary care and sports medicine experts the second edition of Musculoskeletal Physical Examination An Evidence Based Approach educates physicians on how to give the most thorough physical examinations by understanding the why behind each type of exam In depth coverage of today's newest tests and techniques keeps you current in practice and a new section titled Author's Preferred Approach guides you through difficult areas of examination Provides complete coverage of every musculoskeletal physical examination Easy to use tables summarize and compare the evidence for specificity and sensitivity of each test for each condition Utilizes over 200 illustrations to clearly depict each test Expert Consult eBook version included with purchase This enhanced eBook experience allows you to search all of the text figures images and

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**Computer Vision - ECCV 2014 Workshops** Lourdes Agapito, Michael M. Bronstein, Carsten Rother, 2015-03-19 The four volume set LNCS 8925 8926 8927 and 8928 comprises the thoroughly refereed post workshop proceedings of the Workshops that took place in conjunction with the 13th European Conference on Computer Vision ECCV 2014 held in Zurich Switzerland in September 2014 The 203 workshop papers were carefully reviewed and selected for inclusion in the proceedings They were presented at workshops with the following themes where computer vision meets art computer vision in vehicle technology spontaneous facial behavior analysis consumer depth cameras for computer vision chameleon looking at people pose recovery action interaction gesture recognition video event categorization tagging and retrieval towards big data computer vision with local binary pattern variants visual object tracking challenge computer vision ontology applies cross disciplinary technologies visual perception of affordance and functional visual primitives for scene analysis graphical models in computer vision light fields for computer vision computer vision for road scene understanding and autonomous driving soft biometrics transferring and adapting source knowledge in computer vision surveillance and re identification color and photometry in computer vision assistive computer vision and robotics computer vision problems in plant phenotyping and non rigid shape analysis and deformable image alignment Additionally a panel discussion on video segmentation is included

*Physical Therapy for Children* Suzann K. Campbell, Robert J. Palisano, Darl W. Vander Linden, 1994 Ce livre rassemble des connaissances fondamentales sur le développement moteur de l'enfant Il traite également de la physiopathologie et la rééducation dans les atteintes musculo squelettiques neurologiques et cardiopulmonaires en pédiatrie

Mind-Brain Plasticity and Rehabilitation of Cognitive Functions: What Techniques Have Been Proven Effective? Katuscia Sacco, Benedetto Sacchetti, 2017-05-25

Cram Session in Manual Muscle Testing Lynn Van Ost, 2024-06-01 When all you need is a basic understanding of manual muscle testing When concise and illustrative examples of manual muscle testing techniques will provide exactly what the rehabilitation professional needs look to Cram Session in Manual Muscle Testing A Handbook for Students Clinicians for quick and at your fingertips facts Cram Session in Manual Muscle Testing A Handbook for Students Clinicians by Lynn Van Ost is a succinct and descriptive quick reference that provides the rehabilitation professional with a very basic approach to various manual muscle techniques Organized in a head to toe format Cram Session in Manual Muscle Testing A Handbook for Students Clinicians takes user friendly and efficient learning to a new level What is in your Cram Session Photographs depicting each manual muscle testing technique Breakdown of each body region covered Sections

include average range of motion prime movers accessory muscles patient positioning muscle grading for each movement and substitutions Over 200 photographs Cram Session in Manual Muscle Testing A Handbook for Students Clinicians is an informative well organized handbook for all students and clinicians in physical therapy occupational therapy athletic training orthopedics or any allied health professional who treats musculoskeletal disorders

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