

RESEARCH ARTICLE

Manual muscle testing and hand-held dynamometry in people with inflammatory myopathy: An intra- and interrater reliability and validity study

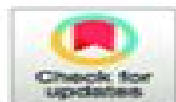
Pierrette Baschung Pfister^{1,2,3}, Eling D. de Bruin^{4,5,*}, Iris Sterkeke⁶, Britta Maurer⁷, Rob A. de Bie⁸, Rued H. Knols¹

1 Directorate of Research and Education, Physiotherapy Occupational Therapy Research Center, University Hospital Zurich, Zurich, Switzerland, **2** Department of Health, Institute of Physiotherapy, Zurich University of Applied Sciences, Winterthur, Switzerland, **3** Functioning and Rehabilitation, CAPRI Care and Public Health Research Institute, Maastricht University, 6200 MD Maastricht, The Netherlands, **4** Department of Health Sciences and Technology, Institute of Human Movement Sciences and Sport, ETH Zurich, Zurich, Switzerland, **5** Division of Physiotherapy, Department of Neurobiology, Care Sciences and Society, Karolinska Institutet, SE-141 83 Huddinge, Sweden, **6** Nursing and Allied Health Professions Office, Physiotherapy Occupational Therapy, University Hospital Zurich, Zurich, Switzerland, **7** Department of Rheumatology, University Hospital Zurich, Zurich, Switzerland, **8** Department of Epidemiology, CAPRI Care and Public Health Research Institute, Maastricht University, 6200 MD Maastricht, The Netherlands

* eling.debruin@hest.ethz.ch

Abstract

Manual muscle testing (MMT) and hand-held dynamometry (HHD) are commonly used in people with inflammatory myopathy (IM), but their clinimetric properties have not yet been sufficiently studied. To evaluate the reliability and validity of MMT and HHD, maximum isometric strength was measured in eight muscle groups across three measurement events. To evaluate reliability of HHD, intra-class correlation coefficients (ICC), the standard error of measurements (SEM) and smallest detectable changes (SDC) were calculated. To measure reliability of MMT linear Cohen's Kappa was computed for single muscle groups and ICC for total score. Additionally, correlations between MMT8 and HHD were evaluated with Spearman Correlation Coefficients. Fifty people with myositis (56±14 years, 76% female) were included in the study. Intra- and interrater reliability of HHD yielded excellent ICCs (0.75–0.97) for all muscle groups, except for interrater reliability of ankle extension (0.61). The corresponding SEMs% ranged from 8 to 28% and the SDCs% from 23 to 65%. MMT8 total score revealed excellent intra- and interrater reliability (ICC>0.9). Intrarater reliability of single muscle groups was substantial for shoulder and hip abduction, elbow and neck flexion, and hip extension (0.64–0.69); moderate for wrist (0.53) and knee extension (0.49) and fair for ankle extension (0.35). Interrater reliability was moderate for neck flexion (0.54) and hip abduction (0.44); fair for shoulder abduction, elbow flexion, wrist and ankle extension (0.20–0.33); and slight for knee extension (0.08). Correlations between the two tests were low for wrist, knee, ankle, and hip extension; moderate for elbow flexion, neck flexion and hip abduction; and good for shoulder abduction. In conclusion, the MMT8 total score is a reliable assessment to consider general muscle weakness in people with myositis but not for



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Abbreviations: IM, inflammatory myopathy; DM, dermatomyositis; PM, polymyositis; MMT, manual muscle testing; MMT8, short version of the of the

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Validity and Reliability of Manual Muscle Testing Lam-Quynh Nguyen, 2005 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 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 text's relevance for today's clinician An eBook version included with print purchase provides access to all the text figures and

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Guidelines for Chiropractic Quality Assurance and Practice Parameters Scott Haldeman, David Chapman-Smith, Donald M. Petersen, 2005 The first ever practice guidelines by and for the profession These proceedings are the result of the landmark Mercy Center Consensus Conference in which chiropractic practitioners in the academic clinical political and regulatory sectors met to reach agreement on standards of practice producing guidelines for practice that provide a major step toward addressing the needs of the patient and assuring

the quality and acceptance of chiropractic health services This publication represents the greatest consensus ever achieved by the profession and is a must have for every chiropractic student and practitioner

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Fundamentals of Musculoskeletal Assessment Techniques M. Lynn Palmer,Marcia E. Epler,Marcia F. Epler,1998 Organized by region this text provides the fundamentals of evaluation and examination techniques of the musculoskeletal system Each region begins with step by step instructions for goniometry manual muscle testing muscle length joint accessory motions and special orthopedic tests Special discussions of posture and gait analysis are also included New in this edition is a chapter on Assessment of Pain The discussion on the Spine has been expanded to three chapters Cervical Thoracolumbar Spine and Sacroiliac Joint Compatibility BlackBerry OS 4 1 or Higher iPhone iPod Touch 2 0 or Higher Palm OS 3 5 or higher Palm Pre Classic Symbian S60 3rd edition Nokia Windows Mobile Pocket PC all versions Windows Mobile Smartphone Windows 98SE 2000 ME XP Vista Tablet PC **Physical Examination of the Shoulder** Ryan J. Warth,Peter J.

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Energetic Kinesiology Tania McGowan, Charles Krebs, 2013-12-01 Energetic Kinesiology is an emerging field internationally in the Complementary Health Sciences gaining more and more scientific support and recognition This fully referenced textbook describes the field and explains the techniques upon which it is built It covers the underlying principles the methods and scientific support for the efficacy of Energetic Kinesiology It also offers a unique history of Energetic Kinesiology based on the first hand experience of Charles Krebs who knew most of the originators of Energetic Kinesiology techniques personally The book is a unique well illustrated single source of a vast array of information research and clinical knowledge in a format that is both accessible and practical to clinicians and students

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