Anthem

Medical Policy

Subject: Quantitative Muscle Testing Devices
Document #: MED.00089
Status: Reviewed
Publish Date: 09/27/2023
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Description/Scope

This document addresses the use of specialized devices or equipment that provide quantitative muscle testing.

Position Statement

Investigational and Not Medically Necessary:

The use of quantitative muscle testing devices is considered **investigational and not medically necessary.**

Rationale

Quantitative muscle testing has been used in clinical research to quantify muscle strength and an individual's response to rehabilitation and therapy. However, manual muscle testing is sufficiently reliable for clinical practice. There is insufficient peer-reviewed published scientific evidence that quantitative muscle testing is superior (Choi, 2005; Keller, 2001).

To date, there is insufficient published literature to support the safety and effectiveness of quantitative muscle testing. An updated literature search based on the MEDLINE database through July 2022 did not identify any new articles assessing use of quantitative muscle testing devices to permit reasonable conclusions concerning the effect of testing on health outcomes.

Background/Overview

Various quantitative muscle testing devices or machines have been studied for the use in isometric and isokinetic muscle testing.

The MedX Lumbar and Cervical Extension Machines
These devices are used to provide isometric strength testing, and dynamic and variable resistance training of the muscles of the spine. The lumbar extension machine provides resistance over a full range of isolated lumbar motion (72 degrees) or over a pre-selected limited range. In exercise mode, a compound weight stack provides from 10 to 400 foot pounds of resistance in increments of 1 foot pound. Isometric testing can occur every 3 degrees within the individual's range of motion. During the test, the computer software plots a strength curve that allows a comparison of the individual's strength and range of motion to age and gender matched norms. The cervical extension machine provides isometric cervical extension strength testing and variable resistance training. Isometric testing can be performed every 3 degrees through the normal 126-degree range of motion.

Cybex 6000 Testing and Rehabilitation System
The Cybex 6000 is a floor-based dynamometer that provides positioning and positive stabilization for testing musculature at the shoulder, elbow, forearm, wrist, hip, knee, and ankle. Isokinetic testing can be conducted at speeds from 5-500 degrees/sec. Isometric testing can also be performed. After testing, isokinetic exercises are provided for physical therapy rehabilitation.

IsoTechnologies B200 Dynamometer
This dynamometer allows the professional to control the three-dimensional resistance experienced by the subject as they move through a three-dimensional range of motion. This device can be used in conjunction with the EMG systems to better understand trunk muscle co-contraction strategies during free-dynamic lifts.

Definitions

510k Clearance: The purpose of a 510(k) submission is to demonstrate that a device is "substantially equivalent" to a predicate device (one that has been cleared by the FDA or marketed before 1976). The 510(k) submitter compares and contrasts the subject and predicate devices, explaining why any differences between them should be acceptable. Human data are usually not required for a 510(k) submission; this decision is made at the discretion of the FDA. The FDA does not "approve" 510(k) submissions. It "clears" them.

Isokinetic: A muscle contraction in which the maximum tension is generated in the muscle as it contracts at a constant speed over the full range of motion of the joint.

Isometric: In physiology, denoting the condition when the ends of a contracting muscle are held fixed so that contraction produces increased tension at constant overall length.

Coding

The following codes for treatments and procedures applicable to this document are included below for informational purposes. Inclusion or exclusion of a procedure, diagnosis or device code(s) does not constitute or imply member coverage or provider reimbursement policy. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

When Services are Investigational and Not Medically Necessary:
When the code describes a procedure indicated in the Position Statement section as investigational and not medically necessary.

CPT

97799	Unlisted physical medicine/rehabilitation service or procedure [when specified as isometric or isokinetic testing]

ICD-10 Diagnosis

References

Peer Reviewed Publications:

1. Choi G, Raiturker PP, Kim MJ, et al. The effect of early isolated lumbar extension exercise program for patients with herniated disc undergoing lumbar discectomy. Neurosurgery. 2005; 57(4):764-772.
2. Hutten MM, Hermens HJ. Reliability of lumbar dynamometry measurements in patients with chronic low back pain with test-retest measurements on different days. Eur Spine J. 1997; 6(1):54-62.
3. Keller A, Hellesnes J, Brox JI. Reliability of the isokinetic trunk extensor test, Biering-Sorensen test, and Astrand bicycle test: assessment of intraclass correlation coefficient and critical difference in patients with chronic low back pain and healthy individuals. Spine (Phila Pa 1976). 2001; 26(7):771-777.
4. Levene JA, Seeds RH, Goldberg HM, et al. Trends in isodynamic and isometric trunk testing on the Isostation B200. J Spinal Disord. 1989; 2(1):20-35.

Index

The use of specific product names is illustrative only. It is not intended to be a recommendation of one product over another, and is not intended to represent a complete listing of all products available.

Document History

Status	Date	Action
Reviewed	08/10/2023	Medical Policy & Technology Assessment Committee (MPTAC) review. Updated History section.
Reviewed	08/11/2022	MPTAC review. Updated Rationale and History sections.
Reviewed	08/12/2021	MPTAC review. Updated Rationale and References sections.
Reviewed	08/13/2020	MPTAC review. Updated Rationale and References sections
Reviewed	08/22/2019	MPTAC review. Updated Rationale and References sections.
Reviewed	09/13/2018	MPTAC review. Rationale updated.
Reviewed	11/02/2017	MPTAC review. The document header wording updated from “Current Effective Date” to “Publish Date.” Updated Rationale section.
Reviewed	11/03/2016	MPTAC review. Updated Rationale, References and Index sections.
Reviewed	11/05/2015	MPTAC review. Updated Rationale and References sections. Removed ICD-9 codes from Coding section.
Reviewed	11/13/2014	MPTAC review. Updated References.
Reviewed	11/14/2013	MPTAC review. Updated Websites.
Reviewed	11/08/2012	MPTAC review. Updated Rationale and Websites.
Reviewed	11/17/2011	MPTAC review. Updated Websites.
Reviewed	11/18/2010	MPTAC review. Updated References and Websites.
Reviewed	11/19/2009	MPTAC review. References updated.
Reviewed	11/20/2008	MPTAC review. References updated.
Reviewed	11/29/2007	MPTAC review. References updated. The phrase “investigational/not medically necessary” was clarified to read “investigational and not medically necessary.”
New	12/07/2006	MPTAC initial document development.

Applicable to Commercial HMO members in California: When a medical policy states a procedure or treatment is investigational, PMGs should not approve or deny the request. Instead, please fax the request to Anthem Blue Cross Grievance and Appeals at fax # 818-234-2767 or 818-234-3824. For questions, call G&A at 1-800-365-0609 and ask to speak with the Investigational Review Nurse.

Federal and State law, as well as contract language, including definitions and specific contract provisions/exclusions, take precedence over Medical Policy and must be considered first in determining eligibility for coverage. The member’s contract benefits in effect on the date that services are rendered must be used. Medical Policy, which addresses medical efficacy, should be considered before utilizing medical opinion in adjudication. Medical technology is constantly evolving, and we reserve the right to review and update Medical Policy periodically.

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