



Oncology EDGE Task Force on Colon Cancer Outcomes

Authors	Diagnosis/Measures	Type, Search method, number of studies identified/reviewed, study criteria	Findings/ EDGE Ratings	Conclusions and Recommendations
Burgess, F, Galambos, L, Howland, A, Yalamanchili, M, Pfalzer, L, ¹	COLON CANCER: Strength and Muscular Endurance	<p>Type: Systematic Review Search Method: Google Scholar, Ovid, PubMed/MEDLINE, CINAHL, Web of Science, Cochrane Review, PEDro, Scopus, and Clinical Key Studies: 4922 identified; 21 reviewed. Criteria:</p> <ul style="list-style-type: none"> Peer-reviewed publications from 1995 to March of 2014 Published in English Psychometric properties were reported Clinically feasible methods Conducted on adults. Each outcome measure was independently reviewed and rated by 2 reviewers. A single Cancer Evaluation Database to Guide Effectiveness (EDGE) Task Force Outcome Measure Rating Form was completed for each tool, and a recommendation was made using the 4-point Cancer EDGE Task Force Rating Scale. 	<p>Findings: Clinical measures of strength identified: 1) hand grip strength, 2) hand-held dynamometry, 3) isometric strength, 4) manual muscle testing, and 5) trunk flexion strength/lower extremity (LE) dynamometry, along with muscle endurance.</p> <p>Ratings: (4) Highly Recommended:</p> <ul style="list-style-type: none"> None <p>(3) Recommended for clinical use:</p> <ul style="list-style-type: none"> Hand-held dynamometry and hand grip strength using dynamometry <p>(2B) Unable to recommend at this time because of poor psychometric properties:</p> <ul style="list-style-type: none"> Manual muscle testing, isometric strength testing, and trunk flexion/LE dynamometry <p>(1) Unable to recommend at this time because of a lack of psychometric support:</p> <ul style="list-style-type: none"> Muscular endurance testing <p>Isokinetic testing for muscle strength and endurance has been reported in pilot testing in patients with colorectal cancer; however, sample size was small (n = 4) and the clinical utility is poor.</p>	<p>“Using objective hand-held dynamometry for muscle strength testing provides precise measurement to assess baseline status and monitor change among those being treated for colorectal cancer. No measures for muscle endurance in the colorectal cancer population with adequate psychometrics were identified.”</p>

Oncology EDGE Taskforce on Prostate Cancer Outcome Measures

Authors	Diagnosis/Measures	Type, Search method, number of studies identified/reviewed, study criteria	Findings/ EDGE Ratings	Conclusions and Recommendations
Davies, C., Colon, G., Geyer, H., Pfalzer, L., Fisher, M. ²¹	PROSTATE CANCER: Functional Mobility	<p>Type: Systematic Review Search Method: Google Scholar, Ovid, PubMed/MEDLINE, CINAHL, Sports Discus, Web of Science, Cochrane Review, and PEDro. Studies: 38,373 articles found, 87 included Criteria:</p> <ul style="list-style-type: none"> Report psychometric properties Present clinically feasible methods Have adults (preferably male) as participants, Published in the English language Articles published after 1995 through May 2014 	<p>Findings: For 10 walk tests, 5 ADL functional tests, and 7 self-reported community participation measures reviewed in this study, there were seven tests that were highly recommended:</p> <p>Ratings: (4) Highly Recommended:</p> <ul style="list-style-type: none"> 2-Minute Walk Test (2-MWT) and 6-Minute Walk Test (6-MWT) 10-Meter Timed Walk (10- MTW) Timed Up and Go (TUG) 5 times sit to stand (5xSTS) SPPB Physical Performance Battery for Patients with Cancer (PPB) <p>(3) Recommended:</p> <ul style="list-style-type: none"> Assessment of Life Habits (LIFE-H) Functional Independence Measure (FIM) Activity Measure for Post-Acute Care (AM-PAC) 	<p>“Seven tests are highly recommended by the Oncology EDGE Task Force: 2-MWT, 6-MWT, 10-MTW, TUG, 5xSTS, SPPB, and PPB, based on good clinical utility and psychometric properties. Three tests are recommended but lack use in the cancer population: LIFE-H, FIM, and AM-PAC. Further research is needed to establish psychometric properties of other current measures, including validation among PCS, or to develop new assessment tools in the prostate cancer population.”</p>
Harrington, S., Lee, J., Colon, G., Alappattu, M. ¹²	PROSTATE CANCER: Health- Related Quality of Life	<p>Type: Systematic Review Search Method: PubMed/MEDLINE and Ovid, Google Scholar Studies: 163 publications met criteria and were reviewed Criteria:</p>	<p>Findings: The following seven patient reported outcome measures are recommended to assess Health- related quality of life (HRQOL):</p> <p>Ratings: (4) Highly Recommended</p>	<p>“A variety of patient reported outcome measures have been reported in the literature to assess HRQOL in men diagnosed with prostate cancer. Seven measures were found to have satisfactory psychometric properties, as well as good clinical</p>

		<ul style="list-style-type: none"> Publication dates limited to January 1, 1995 and later Outcome measure reviewed comprised of: <ol style="list-style-type: none"> (1) Prostate cancer-specific HRQOL measures (2) General cancer HRQOL measures, and (3) General HRQOL measures 	<ul style="list-style-type: none"> European Organization for Research and Treatment of Cancer Quality of Life Questionnaire—Prostate 25 (EORTC QLQ- P25), Expanded Prostate Cancer Index (EPIC) Assessment of Cancer Therapy-Prostate (FACT-P) UCLA- Prostate Cancer Index (UCLA-PCI) EORTC Quality of Life Questionnaire- Cancer 30, (EOTRC QLQ) Functional Assessment of Cancer Therapy-General(FACT-G) Short Form 36, 12, 8 (SF) 	utility, and are recommended for use by the researchers on this Task Force.”
Fisher, M., Davies, C., Colon, G., Geyer, H., Pfalzer, L. ⁸	PROSTATE CANCER: Clinical Measures of Strength and Muscular Endurance	<p>Type: Systematic Review</p> <p>Search Method: PubMed/Medline CINAHL, Web of Science, Ovid, Google Scholar, Sports Discus, Cochrane Review, PEDro, and Academic Search Premier.</p> <p>Studies: 683 articles found, 30 included in this Review.</p> <p>Criteria:</p> <ul style="list-style-type: none"> Search was limited to articles published after 1995 Studies of tools used to assess strength and muscular endurance were included if they reported psychometric properties, clinically feasible methods, performed on adults, published in English. 	<p>Ratings:</p> <p>4 Highly Recommended:</p> <ul style="list-style-type: none"> None <p>3 Recommended for clinical use:</p> <ul style="list-style-type: none"> Hand grip strength and hand-held dynamometry rated <p>2A Unable to recommend:</p> <ul style="list-style-type: none"> One repetition maximum rated (measure has been used in prostate cancer research however) <p>2B Unable to recommend at this time due to lack of psychometric support:</p> <ul style="list-style-type: none"> Manual muscle testing rated <p>Not recommended:</p> <ul style="list-style-type: none"> Muscular endurance training 	“Utilizing objective dynamometry for hand grip and muscle strength testing provides precise measurement to assess baseline status and monitor change among men treated for prostate cancer.”

Oncology Section EDGE Taskforce: Head and Neck Cancer Outcomes

Authors	Diagnosis/ Measures	Type, Search method, number of studies identified/reviewed, study criteria	Findings/ EDGE Ratings	Conclusions and Recommendations
Spinelli, B., Galantino, M., Eden, M., Flores, A. ²⁰	HEAD & NECK CANCER-related Neck Dysfunction	<p>Type: Systematic Review of Patient Reported Outcomes</p> <p>Search Method: PubMed, PEDro, EBSCO Host, Medline, PsycInfo, and Cochrane Database</p> <p>Studies: 120 outcome measures reviewed using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) model.</p> <p>Criteria:</p> <ul style="list-style-type: none"> Clinically feasible Relevant to the HNC population 	<p>Findings:</p> <p>The following three outcome measures demonstrate strong psychometric properties across multiple patient populations but minimally in the head and neck cancer (HNC) population.</p> <p>Ratings:</p> <p>4 Highly Recommended:</p> <ul style="list-style-type: none"> The Neck Disability Index Northwick Park Neck Pain Questionnaire Neck Pain and Disability Scale 	“Further Research should address the efficacy and appropriateness of these measures of these measures for used in patient populations presenting with cancer-related neck dysfunction for HNC.”
Eden, M., Flores, A., Galantino, M., Spinelli, B. ⁴	HEAD & NECK CANCER-related Shoulder Dysfunction	<p>Type: Systematic Review of Patient Reported Outcomes</p> <p>Search Method: PubMed, PEDro, EBSCO Host, Medline, PsycInfo, and Cochrane Database</p> <p>Studies: 47 outcome measures found of which 16 met the criteria to be reviewed.</p> <p>Criteria:</p> <ul style="list-style-type: none"> Clinically feasible Relevant to the HNC population 	<p>Findings: Out of the 16 outcome measures reviewed, 5 are recommended:</p> <p>Ratings:</p> <p>4 Highly Recommended:</p> <p>none</p> <p>3 Recommended:</p> <ul style="list-style-type: none"> The Disabilities of the Arm Shoulder and Hand (DASH) Neck Dissection Impairment Index (NDII) Shoulder Pain and Disability Index (SPADI) University of Washington Quality of Life (UW-QOL) shoulder sub-scale 	“The DASH, QuickDASH and the SPADI demonstrate strong psychometric properties across multiple patient populations, but have been minimally used in the HNC population. The NDII and UW-QOL were specifically developed for the HNC population but have not been fully tested. Further research should address the efficacy and appropriateness of these measures for use in patient populations presenting with shoulder dysfunction in the setting of HNC”
Galantino, M., Eden, M., Spinelli, B., Flores A. ¹⁰	HEAD & NECK CANCER: Temporomandibular Related Dysfunction	<p>Type: Systematic Review</p> <p>Search Method: Ovid Medline, PubMed, PEDro, EBSCO Host, PsycInfo, and Cochrane Databases</p> <p>Studies: 1068 total articles, yielding 38 outcome measures, 22 of which were included in the systems review</p> <p>Criteria:</p> <ul style="list-style-type: none"> Clinically feasible Patient reported 	<p>Findings:</p> <p>Four measures are recommended for clinical use.</p> <p>Ratings:</p> <p>4 Highly Recommended:</p> <p>none</p> <p>3 Recommended:</p> <ul style="list-style-type: none"> The Graded Chronic Pain Scale 8 20-item Jaw functional limitation Scale TMD Pain Screener 	“A variety of outcome measures have been reported in the literature for individuals with HNC-related TMD. Four measures, the Graded Chronic Pain Scale, 8 and 20-item Jaw Functional Limitation Scale and TMD Pain Screener, are recommended for clinical use by the researchers on this task force although it is important to note psychometric properties specific to the HNC population are lacking.”
Flores, A., Spinelli, B., Eden, M., Galantino, M. ⁵	HEAD & NECK CANCER:	<p>Type: Systematic Review</p> <p>Search Method: databases PubMed, PEDro, EBSCO Host, Medline, PsycInfo, and Cochrane</p> <p>Studies: 11,337 articles, 141 of which were patient reported outcomes and 254 were clinical measures</p>	<p>Findings:</p> <p>No outcome measures for objectively quantifying external edema for the head and neck cancer population can be recommended.</p> <p>Ratings:</p>	“The edema measures included in the review have been tested on HNC patients but have not been rigorously tested due to their novelty. There is need for more research on this topic prior to providing definitive recommendations.”

Quantifying External Lymphedema		Criteria: <ul style="list-style-type: none"> • Studies on humans • Published in English 	Not Recommended	
Oncology Section EDGE Task Force: Breast Cancer Outcomes				
Authors	Diagnosis/Measures	Type, Search method, number of studies identified/reviewed, study criteria	Findings/ EDGE Ratings	Conclusions and Recommendations
Huang, M., Blackwood, J., Croarkin, E., Wampler-Kuhn, M., Colon, G., Pfalzer L. ¹⁵	BREAST CANCER: Balance	Type: Systematic Review Search Method: PubMed, Medline/OVID, CINAHL, Cochrane Review, Web of Science, and PEDro Studies: 683 articles found and 36 included in this review Criteria: <ul style="list-style-type: none"> • Published in English • Between January 1,1995- July 31,2014 • Described balance outcome measures, balance deficits, or interventions to improve physical function in cancer survivors. 	Findings: More studies are needed to support the outcome measures for balance in breast cancer survivors. Ratings: 4 Highly Recommended: none 3 Recommended for Clinical Use: <ul style="list-style-type: none"> • The Fullerton Advanced Balance (FAB) Scale and Timed Up and Go (TUG) 2B Unable to recommend at this time <ul style="list-style-type: none"> • Six outcome measures were rated 2A Unable to recommend at this time <ul style="list-style-type: none"> • Six outcome measures were rated 	“This review demonstrates that there is a lack of research evidence supporting the psychometric properties of outcome measures for balance in breast cancer survivors. No studies have examined cutoff scores of balance assessment tools for detecting fallers in breast cancer survivors. Future research is necessary to identify self-reported outcome measures for assessing balance and fall risks, and to differentiate tools specifically for different practice settings throughout the continuum of cancer survivorship.”
Harrington, S., Miale, S., Ebaugh, D. ¹³	BREAST CANCER: Health Related Quality of Life	Type: Systematic Review Search Method: Medline, PsychINFO Studies: 1,407 articles reviewed, 48 outcome measures identified	Findings: 11 measures are recommended for clinical use by the Task Force Ratings: 4 Highly Recommended: <ul style="list-style-type: none"> • European Organization for the Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ)- Breast 23 • BREAST-Q • Functional Assessment of Cancer Therapy (FACT)- Breast • FACT-B+4 • EORTC QLQ- Cancer 30 • FACT- General • Functional Living Index- Cancer • Ferrans and Powers Quality of Life Index- Cancer Version • Psychological Adjustment to Illness Scale, • World Health Organization Quality of Life • SF- Health Surveys 	“A variety of outcomes measures have been reported in the literature to assess HRQOL in women diagnosed with breast cancer. Eleven measures were found to have satisfactory psychometric properties and recommended for clinical use by the researchers on this Task Force.”
Drouin, J., Morris, G.S. ³	BREAST CANCER: Cardio-respiratory Fitness Tests	Type: Systematic Review Search Method: CINAHL, PEDro, Pubmed (Medline), Cochrane, Science Direct, Hooked on Evidence, Web of Science, Scopus, and Sport Discus databases. Studies: 3837 articles identified Criteria: <ul style="list-style-type: none"> • Female survivors of Breast cancer • Articles written in English 	Findings: Sixty-eight articles met initial criteria, but only five were found that reported useable psychometric data. Ratings: 4 Highly Recommended: <ul style="list-style-type: none"> • None 3 Recommended: <ul style="list-style-type: none"> • None 2A Unable to Recommend <ul style="list-style-type: none"> • Maximal and Submaximal tests (treadmill, cycle ergometer, step, and walk/run tests) were valid and in this population, but are not safe or efficient for use in a clinical setting 	“Further understanding of the psychometric properties of SET used in the breast cancer survivor population is needed in order to make these tests safe, accurate, and clinically useful.”
Hile, E., Levangie, P., Ryans, K., Gilchrist, L. ¹⁴	BREAST CANCER: Chemotherapy-induced Peripheral Neuropathy	Type: Systematic Review Search Method: PubMed and CINAHL Studies: 2500 articles Criteria: <ul style="list-style-type: none"> • English • Studies on humans • 2007-August 2014 • Clinically feasible 	Findings: 11 measures met the review criteria Ratings: 4 Highly recommended <ul style="list-style-type: none"> • Functional Assessment of Cancer Therapy, Gynecologic Oncology Group- Neurotoxicity Scale (FACT/GOG- Ntx) 2 Unable to Recommend at this time <ul style="list-style-type: none"> • The 10 remaining measures 	“The Oncology Section Breast Cancer EDGE Task Force on Clinical Measures of CIPN recommends the FACT/GOG-Ntx during physical therapy screening or assessment of CIPN in breast cancer survivors who have received neurotoxic chemotherapy; however, it is not recommended for use in isolation. Therapists are encouraged to supplement with further tests and measures to capture sensory, motor, and autonomic deficits

		<ul style="list-style-type: none"> addressing the chemotherapy- induced peripheral neuropathy (CIPN) experience published psychometric properties established in survivors of breast cancer 	<ul style="list-style-type: none"> Functional Assessment of Cancer Therapy/ Gynecologic Oncology Group-Taxane (FACT/GOG-Taxane) Chemotherapy-induced Peripheral Neuropathy Assessment Tool (CIPNAT) Rasch-built Overall Disability Scale for Patients with CIPN (CIPN-R-ODS) European Organization for Research & Treatment in Cancer Quality of Life Quest – CIPN 20 Item (EORTC QLQ-CIPN 20) Patient Neurotoxicity Questionnaire (PNQ Taxanes, Cisplatin and Carboplatin version) Modified Total Neuropathy Score (mTNS) Total Neuropathy Score, clinical version (TNSc) 5-item reduced Total Neuropathy Score (TNSr 5-item) Peripheral Neuropathy Scale (PNS) Scale for Chemotherapy-induced Neurotoxicity (SCIN) 	specific to each survivor, along with related activity and participation restrictions.”
Fisher, M., Lee, J., Davies, C., Geyer, H., Colon, G., Pfalzer, L. ⁹	BREAST CANCER: Functional Mobility	<p>Type: Systematic Review</p> <p>Search Method: Google Scholar, Ovid, PubMed/Medline, CINAHL, Sports Discus, Web of Science, Cochrane Review, and PEDro databases</p> <p>Studies: 819 articles found, 211 included in this review</p> <p>Criteria:</p> <ul style="list-style-type: none"> Studies after 1995 Clinically feasible methods Performed on adults Published in English 	<p>Findings: A total of 11 measures recommended for clinical use</p> <p>Ratings</p> <p>4 Highly recommended:</p> <ul style="list-style-type: none"> 6 minute walk test Timed Up and go <p>3 Recommended for clinical use</p> <ul style="list-style-type: none"> 2-Minute walk test 12- Minute Walk Tests 10-Meter Walk test 5 Times Sit to Stand Short Performance Physical Battery Physical Battery for Patients with Cancer Functional Independence Measure for Patients with Cancer Functional Independence Measure (FIM) Assessment of Life Habits; and Activity Measure for Post-acute Care. 	“Many tools are available to assess upper extremity and overall functional mobility skills in women treated for breast cancer. There are currently no tools recommended that assess community participation.”
Perdomo, M., Davies, C., Levenhagen, K., Ryans K. ¹⁷	BREAST CANCER: Secondary Lymphedema	<p>Type: Systematic Review</p> <p>Search Method: Academic Search Premier, Health Source Nursing/Academic, MEDLINE, Ovid, PRE-CINAHL, CINAHL, CINAHL with full text, Psychology and Behavioral Collection, PubMed, Google Scholar, EBSCO host, Sports discus, Web of Science, Web of Knowledge, and Cochrane Databases.</p> <p>Studies: 2114 articles reviewed</p> <p>Criteria:</p> <ul style="list-style-type: none"> Upper extremity Secondary Lymphedema Female adults Breast neoplasm 2001- May 2012 Research prior to 2001 was included if psychometric properties has not been updated 	<p>Findings: The Task Force recommends three measures due to good reliability, validity, and clinical utility.</p> <p>Ratings:</p> <p>4 Highly recommended :</p> <ul style="list-style-type: none"> Circumferential measurement water displacement Bioelectrical impedance spectroscopy (BIS) <p>2A Unable to Recommend at this time due to limited evidence:</p> <ul style="list-style-type: none"> Tonometry Perometry Lymphedema Breast Cancer Questionnaire (LBCQ) self-report tool Visual Analog Scale 	“Breast Cancer EDGE Task Force recommends CM, water displacement, and BIS as routine physical therapy assessment tools for early detection of BCRL and/or to document response to interventions. Perometry is not recommended at this time due to poor clinical utility. Further research is needed to determine psychometric properties for tonometry, the LBCQ, and the Visual Analog Scale. Research is also needed to standardize the diagnostic criteria for each assessment tool to detect early onset of BCRL.”
Price, W., Doherty, D., Adams, A. ¹⁹	BREAST CANCER: Cancer related fatigue	<p>Type: Systematic Review</p> <p>Search Method: CINAHL, PEDro, PubMed, Medline, Cochrane, First Search, Science Direct, Google Scholar, Hooked on Evidence, Web of Science, Scopus, and Web of Knowledge.</p> <p>Studies: 497 articles reviewed</p> <p>Criteria:</p> <ul style="list-style-type: none"> From 2002-2012 Written in English 	<p>Findings: Only 3 measurement tools met the criteria to be classified as highly recommended</p> <p>Ratings:</p> <p>4 Highly Recommended:</p> <ul style="list-style-type: none"> Brief Fatigue Inventory Functional Assessment of Cancer Therapy- Breast cancer subscale Multi-dimensional Fatigue Symptom Inventory Short Form 	“Further studies are warranted to consider the applicability of one or multidimensional measurement tools for screening versus evaluation of CRF.”
Davies, C., Ryans, K., Levenhagen, K., Perdomo, M. ²	BREAST CANCER: Quality of Life and Functional	<p>Type: Systematic Review</p> <p>Search Method: Academic Search Premier, Health Source Nursing/Academic, MEDLINE, Ovid, PRE-CINAHL, CINAHL, CINAHL with full text, Psychology and Behavioral Collection, PubMed, Google Scholar, EBSCO</p>	<p>Ratings: The task force highly recommends two measures based on their psychometric properties and clinical utility</p> <p>Ratings:</p>	“The Breast Cancer EDGE Task Force recommends the FACT-B+4 and DASH questionnaires to assess the quality of life and function in patients with BCRL. The Lymph-ICF and ULL-27 and LYMQOL tools cannot be recommended at this time. Further

	<u>Outcome Measures for Secondary Lymphedema</u>	host, Sports discus, Web of Science, Web of Knowledge, and Cochrane Databases Studies: 96 articles reviewed Criteria: <ul style="list-style-type: none">• Upper extremity• Secondary Lymphedema• Female adults• Breast neoplasm• 2001- May 2012• Research prior to 2001 was included if psychometric properties has not been updated	4 Highly Recommended: <ul style="list-style-type: none">• The Functional Assessment of Cancer Therapy – Breast (FACT-B+4)• Disability of Arm Shoulder and Hand (DASH) questionnaire 2A Unable to recommend at this time <ul style="list-style-type: none">• Lymphoedema Functioning Disability and Health Questionnaire (Lymph –ICF)• Upper Limb Lymphedema Measure (ULL-27) 1 Not Recommended <ul style="list-style-type: none">• The Lymphedema Quality of Life Measure for Limb (LYMQOL)	research is recommended to determine reliability, validity, and clinical utility of these outcome measures.”
Harrington, S., Gilchrist, L., Sander, A. ¹¹	<u>BREAST CANCER: Pain</u>	Type: Systematic Review Search Method: PubMed, PsycINFO Studies: 1120 articles reviewed Criteria: <ul style="list-style-type: none">• April 6,2012- June 1,2013	Findings: Six measures were highly recommended by the task force for use in the breast cancer population. Ratings: 4 Highly Recommended: <ul style="list-style-type: none">• Visual Analog Scale• Numeric Rating Scale• Pressure Pain Threshold• McGill Pain Questionnaire• McGill Pain Questionnaire – Short Form• Brief Pain Inventory and Brief Pain Inventory – Short Form	“A variety of outcome measures were used to measure pain in women diagnosed with breast cancer. When assessing pain in women with breast cancer, researchers and clinicians need to determine whether a unidimensional or multidimensional tool is most appropriate as well as whether the tool has strong psychometric properties.”
Fisher, M., Davies, C., Beuthin, C., Colon, G., Zoll, B., Pfalzer, L. ⁶	<u>BREAST CANCER: Strength and Muscular Endurance</u>	Type: Systematic Review Search Method: Web of Science, Pubmed/Medline, CINAHL, Ovid, Google Scholar, Sports Discus, Cochrane Review, PEDro, and Academic Search Studies: 874 articles found, 22 were included in this review Criteria: <ul style="list-style-type: none">• reported psychometric properties• clinically feasible methods• adults (preferably female)• published in English• publication dates after 1/1/1995	Findings: The use of hand held dynamometry is recommended in muscle strength testing Ratings: 4 Highly Recommended: <ul style="list-style-type: none">• None 3 Recommended for clinical use <ul style="list-style-type: none">• Hand grip strength and Hand Held Dynamometry 2B Unable to Recommend at this time <ul style="list-style-type: none">• Manual muscle test and one repetition maximum 2A Unable to Recommend at this time <ul style="list-style-type: none">• Muscular endurance testing	“Utilizing objective dynamometry for hand grip and muscle strength testing provides precise measurement to assess baseline status and monitor change among women treated for breast cancer.”
Fisher, M Levangie, P. ⁷	<u>BREAST CANCER: Scapular Assessment</u>	Type: Systematic Review Search Method: Academic Search Premier, Medline, CINAHL, PubMed, Sport Discus, and Pedro. Studies: initial search yielded 694 studies of which 59 were reviewed Criteria: <ul style="list-style-type: none">• Clinically feasible test of scapular position or function• Psychometric properties reported• Published in English	Findings: Dynamic movement assessment of the scapula is recommended, however, further information is needed relative to its value in the breast cancer population. Ratings: 4 highly Recommended: <ul style="list-style-type: none">• None 3 Recommended for clinical use: <ul style="list-style-type: none">• Dynamic Motion Assessment	“Measurement of scapular motion remains a challenge and reliable and valid measures must precede further research into scapular problems among survivors of breast cancer.”
Miale, S., Harrington, S., Kendig, T. ¹⁶	<u>BREAST CANCER: Upper Extremity Function</u>	Type: Systematic Review Search Method: PubMed Studies: 131 articles reviewed	Findings: Five outcomes measures are recommended by the Task force for assessing upper extremity function Ratings: 4 Highly Recommended: <ul style="list-style-type: none">• DASH• SPADI• SRQ• PSS 3 Recommended: <ul style="list-style-type: none">• QuickDASH 2B Unable to Recommend: <ul style="list-style-type: none">• Upper limb disability 2B Unable to Recommend (continued): <ul style="list-style-type: none">• Simple Shoulder Test (SST)• Upper Limb Functional Index (ULFI)• Oxford Shoulder Score (OSS) 2A Unable to Recommend: <ul style="list-style-type: none">• 10 Questions by Wingate• Modified Behavioral Rating for Breast Cancer• Shoulder Disability Questionnaire- Netherlands (SDQ-NL) 1 Not Recommended: <ul style="list-style-type: none">• Functional Impairment Test – Hand, and Neck/Shoulder/Arm (FIT-HaNSA)	“Several outcome measures are used to measure shoulder function in people with breast cancer. Further research is needed to determine reliability and validity of these tools specific to the breast cancer population.”

			<ul style="list-style-type: none"> American Shoulder and Elbow Surgeons (ASES) Constant Shoulder Score Flexilevel Scale of Shoulder Function (FLEX-SF) Shoulder Disability Questionnaire – United Kingdom (SDQUK) 	<ul style="list-style-type: none"> Kwan’s Shoulder Problem Scale (KAPS) Mobility Activities Measure UCLA Shoulder Scale Upper Extremity Functional Scale (UEFS) 	
Perdomo, M., Sebelki, C., Davies, C. ¹⁸	BREAST CANCER: Shoulder and Glenohumeral Outcome Measures	<p>Type: Systematic Review</p> <p>Search Method: Academic Search Premier, Health Source Nursing/Academic, MEDLINE, Ovid, PRE-CINAHL, CINAHL, CINAHL with full text, Psychology and Behavioral Collection, PubMed, Google Scholar, EBSCO host, Sports discus, and Cochrane Database</p> <p>Studies: 168 articles were reviewed</p> <p>Criteria:</p> <ul style="list-style-type: none"> English language only 	<p>Findings: Passive goniometry demonstrated superior psychometric properties over active ROM. Muscle length tests were not specifically studies in the patient population with breast cancer. No information for the patient population with breast cancer found regarding accessory motion</p> <p>Ratings:</p> <p>4 Highly Recommended:</p> <ul style="list-style-type: none"> Goniometry, passive range of motion <p>3 Recommended:</p> <ul style="list-style-type: none"> Goniometry, active range of motion Inclinometer, active and passive ranges of motion Assessment of “stiffness” at GHJ Pectoralis major muscle length assessment <p>2B Unable to Recommend:</p> <ul style="list-style-type: none"> Passive range of motion measurements to determine a capsular pattern of GHJ Assessment of end feel based on Cyriax continuum at the GHJ <p>1 Not recommended:</p> <ul style="list-style-type: none"> Latissimus dorsi muscle length assessment test Shoulder internal rotation assessment Shoulder external rotation assessment Pectoralis minor muscle assessment 1 Latissimus dorsi muscle length assessment Supine pectoralis minor muscle test 	<p>“Of the shoulder/ Glenohumeral impairment outcomes included in this study, only passive ROM can be highly recommended as it demonstrated good psychometric properties and has been used in patients with breast cancer.”</p>	

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