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Goals and Outcome Measures

This document contains a sample list of treatment goals along with possible outcome measures. Goals represent what you wish to achieve with the patient. Outcome measures/markers represent the methodology that you will use to see if the goals have been met. For example, if the treatment goal is reducing or eliminating pain, an mVAS might be the outcome tool used to track the patient's response. Improving *how* a person walks (e.g., stride length, general posture, arm swing) may be a stated treatment goal. Gait analysis, i.e., observing for specific changes which you wish to promote, could be a method used to gage improvement or to suggest an endpoint of care.

In this document, goals and their outcome measures are grouped as follows:

- **Based on symptom relief.** Achieving and measuring symptom relief is an important patient-centered goal. *However, it should not be the sole aim of therapy nor the only source of outcome measures. (See pages 2-3)*
- **Based on improving specific activity intolerance, improving ADL/work related function.** Improving the patient's function, especially as it relates to regular activities, is considered one of the most important goals and should be specifically monitored with appropriate outcome measures. (See pages 3-5)
- **Based on improving physiological/biomechanical function.** This domain is most useful for directing therapy and setting intermediate goals along the therapeutic path. *Rarely will these be ends in themselves. (See pages 6-12)*

How to use this document

The purpose of this document is to aid the practitioner in choosing both short term and long term goals of care and then having tools to systemically monitor how patients are doing. Be sure to consider goals and outcomes from all three categories.

- It is critical that the patient be involved in establishing the FINAL goals of therapy.
- Short term and intermediate goals are *more often set by the practitioner* (in conjunction with the patient) and are used as milestones to direct treatment and motivate the patient.
- Short term goals (along with their companion outcome measures) should change throughout the course of a management plan. The acute phase goals should not be the same as during the second week of a rehab program or the fourth week of a rehab program.
- It is important not to overwhelm the patient or the management plan with too many goals or outcome measures at any one time. Clinical skill is necessary to choose a few goals which carry the highest likelihood of the greatest therapeutic impact.
- As a general principle, always include at least some goals and outcome measures that relate to the patient's activity intolerance and work limitations.

1. GOAL: Symptom relief

The following are examples of common symptoms and methods for measuring symptom improvement.

Goal	**Outcome measures**
DECREASE pain	• VAS or m-VAS (*required in clinics, see CSPE protocol*) • verbal pain scale (0-10) • track use of analgesics • McGill pain questionnaire
Goal	**Outcome measures**
DECREASE TERRITORY/DISTIBUTION of pain	• track pain centralization (patient report or pain diagram)
Goal	**Outcome measures**
CHANGE QUALITY of pain	• track change of quality of pain (e.g., sharp pain dulls in a rib subluxation)
Goal	**Outcome measures**
DECREASE OTHER SYMPTOMS (e.g., dizziness, nausea, tinnitis)	• measure degree of unpleasantness of the symptom using the m-VAS • measure severity of the symptom on a modified VAS or m-VAS (e.g., change anchor terms to “no dizziness” and “most dizziness imaginable”) • use specific symptom questionnaires
Goal	**Outcome measures**
change in DURATION of symptoms	• monitor percentage of the day that the patient is symptomatic (by patient recall or diary) • monitor length, number of symptom-free periods (by patient recall or diary)
Goal	**Outcome measures**
change RECURRENCE RATE of symptoms or RECURRENCE RATE of peak intensity	• monitor frequency, duration of episodes/peak intensity (by patient recall or diary) • monitor length, number of symptom-free periods (by patient recall or diary)

2. GOAL: Improve specific activity intolerance; improve ADL-related function

This is perhaps the most meaningful type of goal. It relates to a patient's ability to perform work or other real life tasks. It generally corresponds to a "disability." ***Note: Whenever possible, this type of goal and outcome measure should be part of WSCC treatment plans.*** The following is a list of examples for various regions of the body. (See also Appendix 1: Specific Work-Related Activities.)

NECK CONDITIONS

Goal
decrease effect of neck problem on ADL's/ work/ recreation

Outcome measures
- Neck Disability Index (NDI) (available in clinics)
- patient report of pain severity (mVAS) *while performing a specific activity* (e.g., turning head while driving)
- practitioner *observes* repetitions of a specific activity which is/was aggravating for the patient (tracking number of repetitions/degree of pain/quality of movement)

TMD

Goal
chew without pain

Outcome measures
- monitor ability to eat progressively harder foods (patient recall)

SHOULDER CONDITIONS

Goal
decrease effect of shoulder problem on ADL's

Outcome measures
- activity questionnaires: DASH, Simple Shoulder Test (see appropriate CSPE protocols)
- patient report of severity of pain (mVAS) *while performing a specific activity*
- patient performs multiple repetitions in front of the practitioner and pain or difficulty is scored

LOW BACK CONDITIONS

Goal
improve LBP patient's ADL's

Outcome measures
- activity questionnaires: Revised Oswestry (see CSPE protocol), Roland Morris
- patient report of severity of pain (mVAS) *while performing a specific activity*
- practitioner observes repetitions of a specific activity which is/was aggravating for the patient, tracking number of repetitions/degree of pain/quality of movement

(**SPECIAL NOTE**: work release to return to a specific work/sports activity might depend on the patient's ability to perform x number of repetitions on 2-3 sequential visits, pain-free)

Goal
improve a patient's ability/mechanics of RISING FROM A CHAIR

Outcome measures
- chair rise test: discomfort measured (mVAS) and quality of movement scored (pass/fail) by practitioner (see Osteoporosis Pathway)

Goal
improve ability to SIT or DRIVE without symptoms

Outcome measures
- length of time or distance
- severity of pain while sitting or driving (mVAS)

Goal
improve ability to WALK without symptoms

Outcome measures
- length of time or distance
- severity of pain while walking (mVAS)
- Timed Up and Go test (for geriatrics) (See Osteoporosis Care Pathway)
- ability to walk without assistance (cane, crutches, etc.)

Goal
improve ability to LIFT

Outcome measures
- lifting weight consistent with work demand painlessly and with good form

Goal
improve ability to WORK IN A STOOPED POSITION

Outcome measures
- wall sit/slide test (see special appendix of Osteoporosis Care Pathway)
- progression through squat track (see Lumbar Stabilization protocol)

ANKLE CONDITIONS

Goal
ability to WEIGHT BEAR

Outcome measures
- observe gait for ability to walk without a limp (pass/fail)

Goal
an athlete with an ankle sprain to RETURN TO PLAY

Outcome measures
- ability to run a figure 8 smoothly and without pain
- ability to stand steady on involved leg with eyes closed

GENERAL CONDITIONS (not regionally specific)

Goal
improve fibromyalgia patient's ABILITY TO SLEEP

Outcome measures
- track number of hours of sleep (patient recall or diary)
- reduction in sleep aides
- improved feeling of being rested (mVAS).

Goal
improve fibromyalgia patient's ABILITY TO BE ACTIVE

Outcome measures
- activity tolerance (mVAS for pain or fatigue)
- length of time patient can be generally active or perform specific activities.

3. GOAL: Improve physiological/biomechanical function

Improving physiological/biomechanical function generally relates to removing specific "impairments." These impairments generally revolve around the issues of range of motion, flexibility, strength, endurance, control, and overall quality of movement.

For some of the goals listed below, there is evidence suggesting that physiological improvement *does* correspond to overall improved outcomes (e.g., improved low back extensor endurance appears to correspond with improved low back "health," by decreasing the likelihood of first time low back pain or recurrence). However, many studies have suggested that there appears to generally be a tenuous relationship between improvements in specific biomechanic or physiological measurements (such as ROM) and the final goals of symptom relief and return to work. Nonetheless, most practitioners continue to see a role for tracking these sorts of changes, particularly for patients with *chronic* or *recurrent* conditions. Some practitioners suggest that in these conditions, physiological/biomechanical change may *precede* actual symptom relief and may be more useful than monitoring pain itself.

In addition, physiological goals often drive the step-by-step process of choosing therapies. For example, decreasing hamstring tightness and increasing hip flexion may be an intermediate objective. The practitioner may think that promoting such a physiological change will have an impact on symptoms or symptom recurrence and so home and office interventions are chosen accordingly. Using a SLR test and either measuring the angle or appreciating a change in end feel could be the outcome measure/marker used to determine the end-point for that intervention. Furthermore, setting and achieving goals such as increasing range of motion or improving endurance may motivate the patient toward better compliance with an exercise or home care program.

Whenever possible, practitioners should choose outcome measures which would satisfy all of the following criteria: quantifiable, valid, reliable, and with normative data. However, few available methods fulfill all four criteria. In clinical practice, a wide variety of measurement tools are used. Some are quantifiable; others are based on observation and are rated as "pass/fail." Note: "pass/fail" tests in many cases are more reliable than quantifiable tests. Many of the methods listed on the following pages have not been subjected to strenuous investigation to determine their true clinical utility, but nonetheless appear to be reasonable and useful.

The following is a list of examples organized by region.

NECK CONDITIONS

Goal	Outcome measures
improve cervical AROM	• inclinometer or visualize
improve deep neck flexor STRENGTH	• Janda neck flexion test (chin poking suggests weak deep flexors) • Jull test (hold for 4-10 seconds) • dynamometric measure of neck flexion (with chin tucked)
improve GRIP STRENGTH	• Jamar dynamometer (see CSPE protocol) • monitor number of grip repetitions of a standardized object (e.g., squeezing a balloon filled with flour, a hand ball, etc.)
increase deep neck flexor CONTRACTION SPEED	• Jull test with quick release (pass/fail) • response to wobble board push (pass/fail based on being able to maintain a chin tuck)
improve KINESTHETIC AWARENESS AND PROPRIOCEPTION of the cervical joints	• ability to reposition head to target with eyes closed (e.g., align tongue blade with practitioner's fingers)

TMD

Goal	Outcome measures
improve JAW OPENING	• three fingers (vertically stacked) • tape measure (for opening, protrusion) • monitor symmetry of opening • monitor for synchronous opening

SHOULDER CONDITIONS

Goal
improve glenohumeral AROM

Outcome measures
- goniometer or visualize

Goal
improve patient's ABILITY TO REACH

Outcome measures
- mark and measure reach up a wall from a standing or sitting position

Goal
improve SCAPULAR STABILITY

Outcome measures
- shoulder abduction test: observe motion during shoulder abduction (see Scapular Training protocol)
- push up test: observing for winging or early retraction (see Serratus Anterior protocol)

Goal
improve GH ABILITY TO WITHSTAND IMPINGEMENT LOADS

Outcome measures
- reduction of pain with empty can test, Hawkin's-Kennedy, and/or impingement sign

THORACIC CONDITIONS

Goal
improve HYPERKYPHOSIS

Outcome measures
- measure distance of EOP (on skull) from the wall
- measure curve with a flexible architect's ruler

LOW BACK/LOWER EXTREMITY CONDITIONS

Goal
improve lumbar AROM

Outcome measures
- inclinometer or visualize

Goal
RELAX/ LENGTHEN psoas

Outcome measures
- amount of thigh extension based on modified Thomas test (visualized or measured with goniometer, should be 10 degrees)
- quality of end feel based on modified Thomas test

Goal	Outcome measures
RELAX/ LENGTHEN calf muscles	• observe ability to maintain heel on floor while doing a squat • measure range of dorsiflexion with goniometer • visualize range of dorsiflexion
Goal	**Outcome measures**
RELAX/ LENGTHEN rectus femoris	• measure/ visualize distance of heel to buttock • modified Thomas looking for change in knee angle (knee should "relax" into 90 degrees of flexion), palpating for quality of end feel • hip abduction movement pattern (look for premature flexion)
Goal	**Outcome measures**
increase lumbar extension ENDURANCE	• static or repetitive extension tests, recommended (normative values available, see CSPE protocol, Low Back and Leg Endurance Tests) • length of time a patient can hold the Superman position on an exercise ball (normative values not available) (see Lumbar Stabilization protocol, prone track) • isokinetic machines (e.g., Cybex) (not available in WSCC clinics)
Goal	**Outcome measures**
increase abdominal STRENGTH	• repetitive sit up test (normative values available, see CSPE protocol, Low Back and Leg Endurance Tests) • Janda curl up test (qualitative test for recruitment) • abdominal contraction method for osteoporosis (see special appendix, Osteoporosis Care Pathway) • number of sit ups (athletic norms).

Goal	Outcome measures
increase lower extremity STRENGTH and ENDURANCE	• repetitive squat test (normative values available, see CSPE protocol, Low Back and Leg Endurance Tests) • sit/slide wall test (recommended, see Osteoporosis Care Pathway) • manual testing of individual muscles • isokinetic machines (e.g., Cybex) or cable tensiometer (not available in WSCC clinics)
Goal	**Outcome measures**
FACILITATE/ STRENGTHEN g. medius	• observe shift with single leg standing (greater than 1 inch lateral shift, grade pass/fail) • observe ability to hold one legged bridge, keeping pelvis level • manual muscle test • observe sequence during Janda's leg abduction test. • observe speed of contraction, by sudden drop from abducted position.
Goal	**Outcome measures**
FACILITATE/ STRENGTHEN g. max	• manual muscle test • progression along the bridge or squat track while engaging the g max (see Lumbar Stab protocol, bridge or squat tracks) • number of "donkey kicks" in the quadruped track (keeping good form, g. max engaged) (see Lumbar Stab protocol, quadruped track) • sequence of muscle firing in Janda's hip extension test (see Soft Tissue 2 notes) • speed of contraction by dropping extended thigh (in a prone patient) and seeing how fast they can catch it and how long they can hold it. • repetitive squat test (see CSPE protocol) or Wall sit/slide (see special appendix of Osteoporosis Care Pathway).

Goal	Outcome measures
STRENGTHEN calf muscles	• number of toe raises • manual muscle test • isokinetic machines (e.g., Cybex) or cable tensiometer (not available in WSCC clinics)
Goal	**Outcome measures**
improve CONTROL of pelvis and lumbar stabilizers	• observe ability to maintain neutral pelvis in a variety of position (may measure with blood pressure cuff in supine position (see protocol Lumbar Stabilization Program, neutral pelvis) • observing ability to do a smooth, symmetrical pelvic clock on exercise ball • observe ability to withstand a challenge on a rocker board
Goal	**Outcome measures**
improve BALANCE	• one legged stand (recommended, see Lumbar Stabilization protocol, standing track for normative values) • observe ability to progress through the Lumbar Stabilization protocol, standing track

KNEE CONDITIONS

Goal	Outcome measures
PREVENT ATROPHY of quads in knee case	• observe VMO for atrophy • girth measure (3 and 6 inches superior to the patella)

ANKLE/FOOT CONDITIONS

Goal	Outcome measures
CORRECT OVERPRONATION syndrome	• static observation for flat foot • observe for poor pronation during gate

GENERAL CONDITIONS (not regionally specific)

Goal
reduce visible SWELLING/EDEMA

Outcome measures
- observation (qualitative estimation, i.e., "increased" or "decreased")
- tape measure (e.g., mid cervicals for neck swelling, mid patellar for knee)

Goal
resolve SUBLUXATION COMPLEX

Outcome measures
- degree of restriction/quality of end feel (stick figure—placing 1-3 slash marks)
- degree of spasm (e.g., mild, moderate, severe)
- monitor number of subluxations
- tenderness of joint (static or motion) using Tenderness Grading Scale (see CSPE protocol)
- monitor change in pain referral pattern when palpated

Goal
eradicate TRIGGER POINT

Outcome measures
- tenderness Grading Scale (see CSPE protocol)
- resolution of jump sign, twitch sign, or pain referral with palpation
- change in size or number of trigger points

Goal
decrease SOFT TISSUE TENDERNESS

Outcome measures
- tenderness Grading Scale (recommended, see CSPE protocol)
- algometer (see CSPE protocol)

Goal
prevent progressive NEUROGENIC WEAKNESS (e.g., disc herniation with weak dorsiflexion)

Outcome measures
- manual muscle testing (consider repetitive or sustained, see CSPE protocol Muscle Testing)
- repetitive toe/heel raises (up to 10)
- dynamometer (for target muscles) (not currently available in clinics except for hand grip)
- isokinetic testing (e.g., Cybex) (not available in clinics)

Appendix 1: Specific Work-Related Activities

This chart, derived from the Dictionary of Occupation Titles (DOT), lists specific activities associated with the work place and suggests various outcome measures that can be used to track improvement of particular muscles and joints. Identifying which particular activities the patient has trouble with or which constitute important components of their job can be useful. The activities themselves can be rated by patients as to the level of pain or difficulty. In addition, the activities can be broken down into biomechanical components.

DOT													
Standing			Gastrocnemius	Soleus		Modified Thomas			Knee flexion	Repetitive arch-up	Static	back endurance	
Walking			Gastrocnemius	Soleus		Modified Thomas	SLR		Knee flexion	Repetitive arch-up	Hip-ROM	Static back endurance	
Sitting							SLR	Repetitive sit-up	Repetitive arch-up		Hip-ROM	Static back endurance	
Lifting	Repetitive Squat	L-ROM	Gastrocnemius	Soleus		Modified Thomas	SLR		Knee flexion	Repetitive arch-up	Hip-ROM	Static back endurance	Grip Strength
Carrying													
Pushing													
Pulling													
Climbing	Repetitive Squat	Gastrocnemius		Soleus		Modified Thomas	SLR		Knee flexion	Hip-ROM			
Balancing	Repetitive Squat	L-ROM	Gastrocnemius	Soleus	C-ROM	Modified Thomas	SLR	Repetitive sit-up	Knee flexion	Repetitive arch-up	Hip-ROM	Static back endurance	
Stooping	Repetitive Squat	L-ROM	Gastrocnemius	Soleus		Modified Thomas	SLR	Repetitive sit-up	Knee flexion	Repetitive arch-up	Hip-ROM	Static back endurance	
kneeling	Repetitive Squat	Gastrocnemius		Soleus		Modified Thomas	SLR		Knee flexion	Hip-ROM			
Crouching	Repetitive Squat	L-ROM			C-ROM	Modified Thomas	SLR			Repetitive arch-up	Hip-ROM	Static back endurance	
Crawling						Modified Thomas	SLR		Knee flexion	Hip-ROM			
Reaching	L-ROM												
Handling													Grip Strength
Fingering													Grip Strength

L-ROM, lumbar range of motion; C-ROM, cervical range of motion; SLR, straight leg raise; Hip-ROM, hip range of motion

Primary Author
- Ronald LeFebvre, DC

Compiled by
- Brad Donahoe, DC
- Shannon Grant, DC
- Chris Lord, DC
- Tracy Mendel, DC
- Charles Petersen, DC
- Brad Pfeiffer, DC

Reviewed and Adopted by CSPE Committee

- Laura Baffes, DC, CCSP
- Owen Conway, DC
- Daniel DeLapp, DC, DABCO, LAc, ND
- Lorraine Ginter, DC
- Owen T. Lynch, DC
- Steve Oliver, DC
- Ravid Raphael, DC, DABCO

Also Reviewed by

- Mitch Haas, DC
- Jim Gerber, DC
- Rich Gillette, PhD
- Lester Lamm, DC
- Cathy Cummins, DC
- Charles Novak, DC
- John Taylor, DC