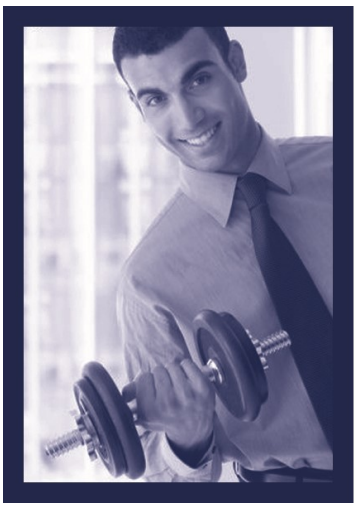


13TH ANNUAL OHIO

Employee Health & Wellness CONFERENCE

Workshop J

Wellness Programming

Promoting Physical Activity, Flexibility & Agility & Musculoskeletal Fitness through Movement Screening

1:30 p.m. to 2:45 p.m.

Biographical Information

Dr. Rick Wickstrom, PT, DPT, CPE, CDMS, President,
WorkAbility Network and WorkerFIT
7665 Monarch Court #109, West Chester, OH 45069
Office: 513-772-1026 Mobile 513-382-5818 Fax 513-672-2552
rick@workability.us

Rick Wickstrom, PT, DPT, CPE is a Doctor of Physical Therapy, Certified Professional Ergonomist, and Certified Health Coach. He earned his Bachelor of Science degree in Physical Therapy from the Ohio State University and completed Ph.D. coursework in Occupational Ergonomics at the University of Cincinnati College of Medicine. As President and owner of WorkAbility Systems, WorkAbility Network, and WorkerFIT, Dr. Wickstrom has consulted in occupational health and ergonomics for over 30 years. He has published many articles and technical papers related to functional capacity evaluation, work disability prevention and ergonomics. Dr. Wickstrom serves as an expert witness on matters concerning the extent of physical disability, fitness-for-duty or job accommodation. His diverse clinical practice includes transitional work-site therapy, functional capacity evaluation, worker accommodation studies, ergonomic job analysis, development of worker fitness screening and transitional work programs, systems development, research, and training. He has invented several products, including the patented Physical Agility Tester, WorkerFIT software, ExamFIT software, Total-Body Dexterity Tester, Ergo-Totes Set and WorkAbility Rate of Manipulation Test. Dr. Wickstrom has dedicated his career to preparing employers and occupational health professionals with skills and tools needed to assess job demands, evaluate worker fitness-for-duty, resolve worker performance barriers, and promote lifestyle behavior changes for physical wellness.

Biographical Information

Dale Bugay, Executive Director
Occupational Accountable Care LLC
5960 Venture Dr. Ste. B, Dublin OH 43017
614-499-1490 dbugay@ohacare.com

Dale Bugay is a recognized industry leader with a distinguished 25+ year career in the integration of risk management and occupational health solutions that have produced objective "win-win" outcomes for providers, employers, employees and claims administrators. Dale is also a frequent guest speaker addressing legislative changes affecting healthcare in the workplace to audiences attending local, state, and national industry events. Dale's contributions to occupational health include:

- Assistant VP, Occupational Health Product Line for metro healthcare system
- National Occupational Health consultant who assisted in developing over 50 programs in 26 states
- Founded Occupational Health Plan, Inc. (OHP) in 1991 that managed 24 hospital-based programs in Ohio
- Incorporated a Workers' Compensation claims service (TPA) for self-insured and insured employers
- Acquired a Managed Care Organization (MCO) that grew to service more than 6,000 employers in Ohio
- Workers' Compensation TPA and MCO acquired by York Risk Services in 2011
- Introduced Occupational Accountable Care, LLC collaborative in 2014

In short, Dale has been on the front lines of the evolutionary process of occupational health managed care and has comprehensive knowledge of the barriers that impact employers, providers, and claims administrators. Foremost, Dale is an established and successful entrepreneur who leverages his knowledge of new legislative actions and market trends with his experience in occupational health to spearhead solutions that control costs, improve quality of care, and streamline administrative processes.

Dale founded and served as president of the Ohio Hospital Association, Society of Ohio Occupational Health Professionals, and served six years on the board of Synergy Workers' Compensation Insurance in Pennsylvania. Dale is a graduate of The Ohio State University and a Licensed Agent through the Ohio Department of Insurance.

Musculoskeletal Health and Wellness

Promoting Physical Activity, Flexibility, Agility & Musculoskeletal Fitness through Movement Screening

Dale Bugay, Executive Director
Occupational Accountable Care, LLC
dbugay@ohacare.com

Rick Wickstrom, PT, DPT, CPE
WorkAbility Systems
rick@workability.us

Seminar Objectives

- Understanding the Musculoskeletal Health problem and solutions
- Measuring program outcomes relevant to Musculoskeletal Health
- ROI Challenges facing traditional wellness
- Evolution of Movement Screening
- Triage to suitable physical activity and safe pain management
- Demonstrate WorkAbility Movement Screen
- Integration with post-offer screening and injury care

Occupational Accountable Care, LLC

Mission: To Develop Occupational Accountable Care relationships between providers, employers and payors to improve the Health and Productivity of Employed Populations

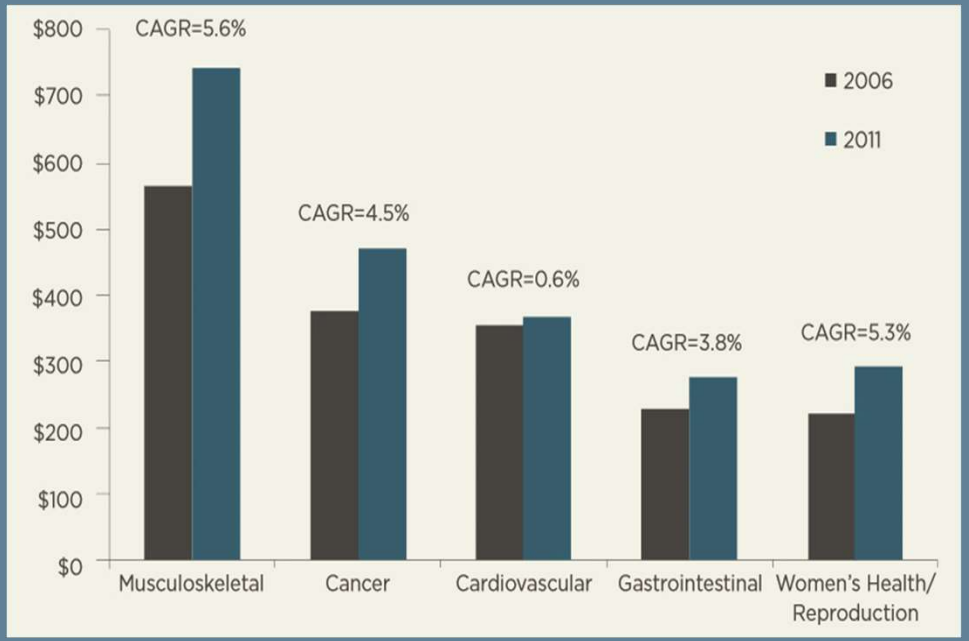
Value Driven Integration

Occupational Accountable Care, LLC

Musculoskeletal Health and Wellness

The Problem ….

"Musculoskeletal conditions are the costliest and most rapidly growing group of diseases."
Truven Health Analytics



Spending PMPY by Major Diagnostic Category

Occupational Accountable Care, LLC

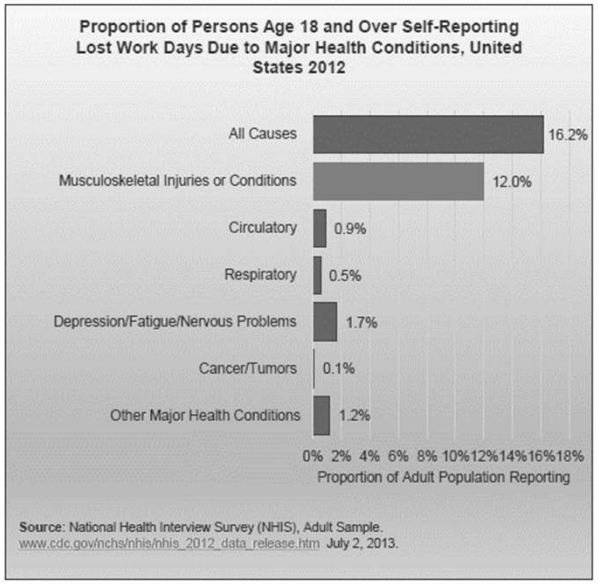
Musculoskeletal Health and Wellness

The Problem ….

Lost Productivity
Musculoskeletal conditions result in 74% of lost work days

A **lost work day** is absence from work due to illness or injury in 12 month period, excluding maternity or family leave

- **1 in 6** persons age 18 and over report at least one lost work day for medical reasons
- **74%** of them cite a lost work day due to a musculoskeletal condition – **1 in 8** persons in the work force



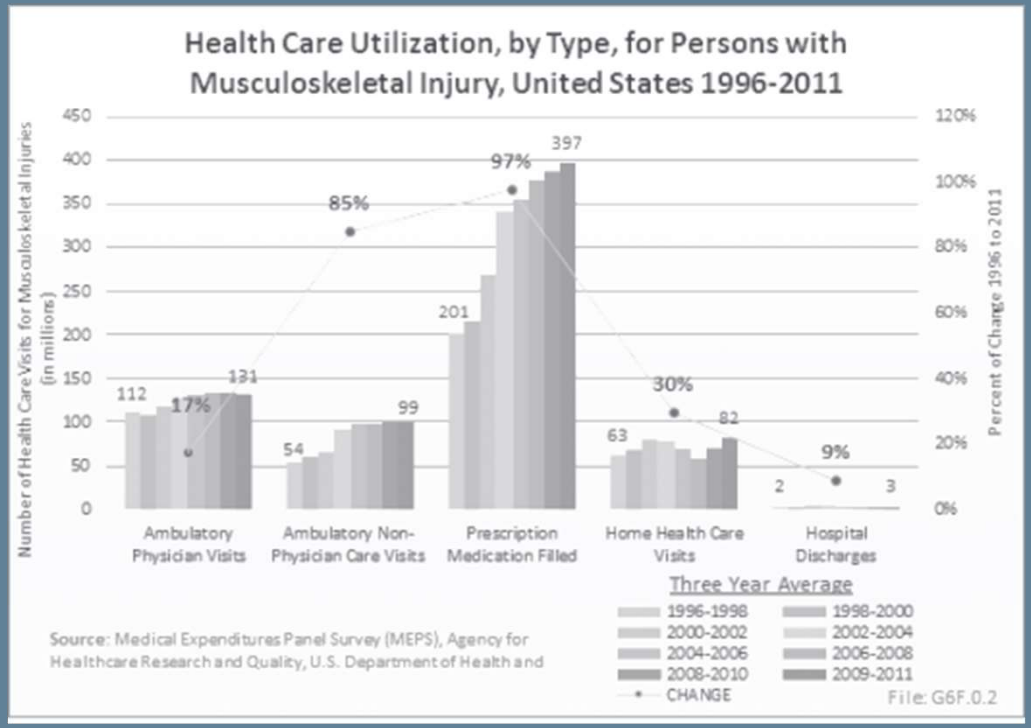
United States Bone and Joint Initiative, the U.S. National Action Network of the Global Alliance for Musculoskeletal Health

Occupational Accountable Care, LLC

Musculoskeletal Health and Wellness

The Problem ….

Musculoskeletal injury treatment had a 97% increase in **Prescription Medications**

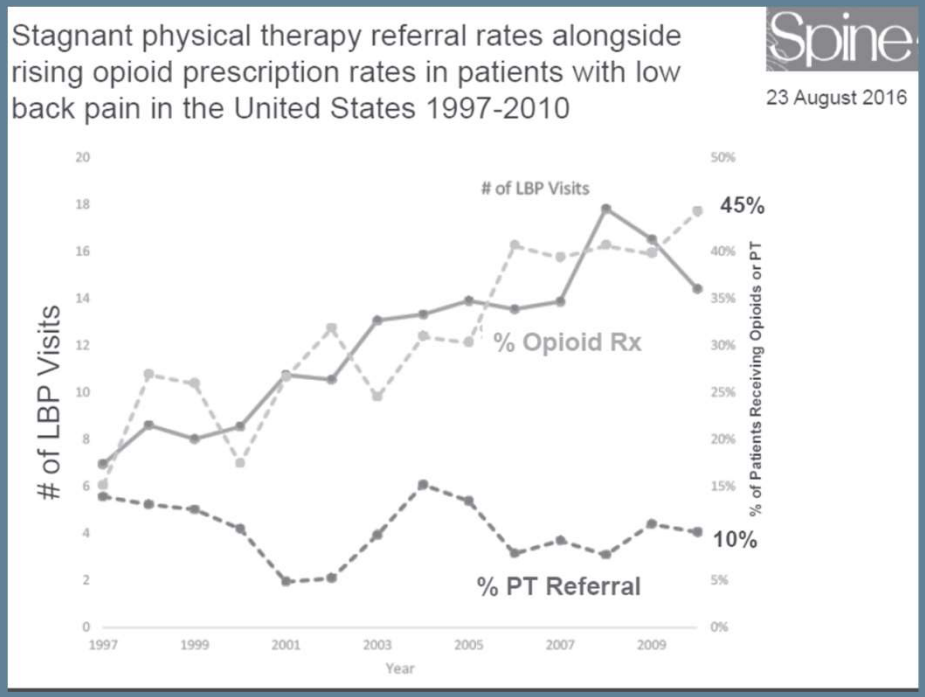


Occupational Accountable Care, LLC

Musculoskeletal Health and Wellness

The Problem ….

Opioid prescription treatment has increased by 45% while Physical Therapy treatment has remained stagnant at 10%



Occupational Accountable Care, LLC

Musculoskeletal Health and Wellness

The Solution….

Integrated Ability Management….

- ✓ Promotes preventive interventions
- ✓ Provides pro-active treatment options
- ✓ Positions a licensed therapist as the "*hands on*" care coordinator

Occupational Accountable Care, LLC

Integrated Ability Management

The Solution …

Prevention :

- Physical Ability Screening
- Ergonomic Job Analysis and Job Coaching
- Stretching and Exercise Program
- On-Site Athletic Trainers

Early Symptom Intervention

- OSHA Musculoskeletal First Aid
- Direct Access Evaluation and Treatment
- Coordinated Care Network
- Progressive Transitional Work Accommodation

Occupational Accountable Care, LLC

Integrated Ability Management

The Solution …

Physical Ability Screening

What:

- 30-Minute Physical Ability Screen
- Establish Baseline Physical Ability
- Identify Impairments and Coaching Exercises

Why:

- New Hire Safety
- Pre-Existing Conditions
- Injury Prevention

When:

- Post Employment Offer
- Return to Work
- Voluntary Wellness Screen

Occupational Accountable Care, LLC

Integrated Ability Management

The Solution …

Ergonomic Job Analysis and Activity Coaching

What :

- Identify Essential Physical Job Demands
- Ergonomic Risk Analysis
- Safe Work Instruction and Training

Why :

- New Hire Safe Job Matching
- Return to Work Capability
- Transitional Work Accommodation
- Supervisor Training

Occupational Accountable Care, LLC

Integrated Ability Management

The Solution …

Job-specific Exercise Program

What :

- Identify posture > movement > strength requirements
- Job-specific warm-up and symptom relieving exercises
- Promote flexibility, comfort and optimal muscle function

Why :

- Improve Employee Moral and Productivity
- Enhance OSHA First Aid treatment options
- Reduce Work-Related Injuries

Occupational Accountable Care, LLC

Integrated Ability Management

The Solution …

On-Site Athletic Training/Therapy

What :

- Part-Time On-Site Athletic Trainer/Therapist
- Voluntary Wellness Movement Screens
- Musculoskeletal evaluations, triage and treatments
- Physical Ability Screening and RTW Assistance

Why:

- Reduce claim frequency, medical cost and disability
- Eliminate time off for medical appointments
- Cost-effective hourly on-site health/fitness services
- Independent health professional consultation

Occupational Accountable Care, LLC

Integrated Ability Management

The Solution …. Early Symptom Intervention

OSHA First Aid for Work Related Musculoskeletal Complaints

1. OSHA has expanded the definition of First Aid treatment to include work-related musculoskeletal evaluations and passive rehabilitation.
2. Employers and injured workers have the option to seek an OSHA First Aid evaluation prior to filing a Workers' Compensation claim.
3. OSHA services can be provided on-site or as outpatient rehabilitation.
4. OSHA services are billed and paid directly by the employer
5. Employers have significantly reduced work related musculoskeletal claims frequency and severity through OSHA First Aid.

Occupational Accountable Care, LLC

Integrated Ability Management

Occupational Accountable Care, LLC

OSHA First Aid Musculoskeletal Evaluation

1. Take a thorough medical history
2. Observe swelling, discoloration, deformity
3. Palpate for physiological tissue changes
4. Circulation & neurological assessment
5. **Assess active movement limitations**
6. Indicated manual muscle or special tests
7. Rule out significant injuries
8. Promote safe work methods and self-management to alleviate symptoms

Integrated Ability Management

The Solution …. Early Symptom Intervention

Direct Access for Non- Work Related Musculoskeletal Injuries

1. Patients can see a licensed Physical and Occupational Therapist without a Physician prescription in the State of Ohio.
2. Direct Access rehabilitation is accepted and billed to the employee health insurance plan.
3. Direct Access has proven to reduce unnecessary medical visits, diagnostics and rehabilitation delays which will save employees and employers medical costs.
4. Work-site, Clinic or Telehealth access for triage, reassurance, activity progression and care coordination with primary care provider

Occupational Accountable Care, LLC

Integrated Ability Management

The Solution .... WC Disability Management ROI Projection:

2017 Workers' Compensation ROI Projection								
ROI Estimate		Conservative		Realistic		Optimistic	
Reduced Frequency		*30%*		*40%*		*50%*	
Reduced Severity		*25%*		*30%*		*35%*	
Total Claims	76	**$ 202,734**	76	**$202,734**	76	**$**	**202,734**
MSK Claims	31	$ 99,169	31	$99,169	31	$	99,169
Reduced Frequency	9	$ 29,751	12	$39,668	16	$	49,585
Remaining Claims	22	$ 69,418	19	$59,502	16	$	49,585
Reduced Severity		$ 17,355		$17,850		$	17,355
Direct WC Cost Savings		$ 47,105		$57,518		$	66,939
Total In-Direct Cost Savings (1)		**$ 235,527**		**$ 287,591**		**$**	**334,696**
IDM Program Cost Estimate		**$ 70,000**		**$70,000**		**$**	**70,000**
Total ROI Estimate		***336%***		***411%***			***478%***

Occupational Accountable Care, LLC

Integrated Ability Management

The Solution ….

- Physical Ability Screening
- **Musculoskeletal Preventative Programs**
- On-Site Athletic Trainer/Therapist
- OSHA Musculoskeletal First Aid services
- Direct Access Option for Non-Work-Related Injuries
- Triage/Care Coordination with Primary Care Provider
- Progressive Return to Work Claims Management Policies

Occupational Accountable Care, LLC

WORKABILITY NETWORK

Promoting Physical Activity, Flexibility, Agility & Musculoskeletal Fitness through Movement Screening

2nd Presenter: Rick Wickstrom, PT, DPT, CPE

Therapy Solutions for Work Performance

Injury Prevention	Early Intervention	Medical Management
Functional Job Analysis	First Aid Measures	Job-Specific Physical Therapy
Worker Fitness Screen	Musculoskeletal Triage	Ergo Accommodation Consult
Work Ready Exercise	Work Activity Coaching	Functional Capacity Evaluation

✓ **Movement screening promotes safety, productivity, physical fitness, and functional healthcare outcomes!**

Challenges Facing Traditional Workplace Wellness Programs

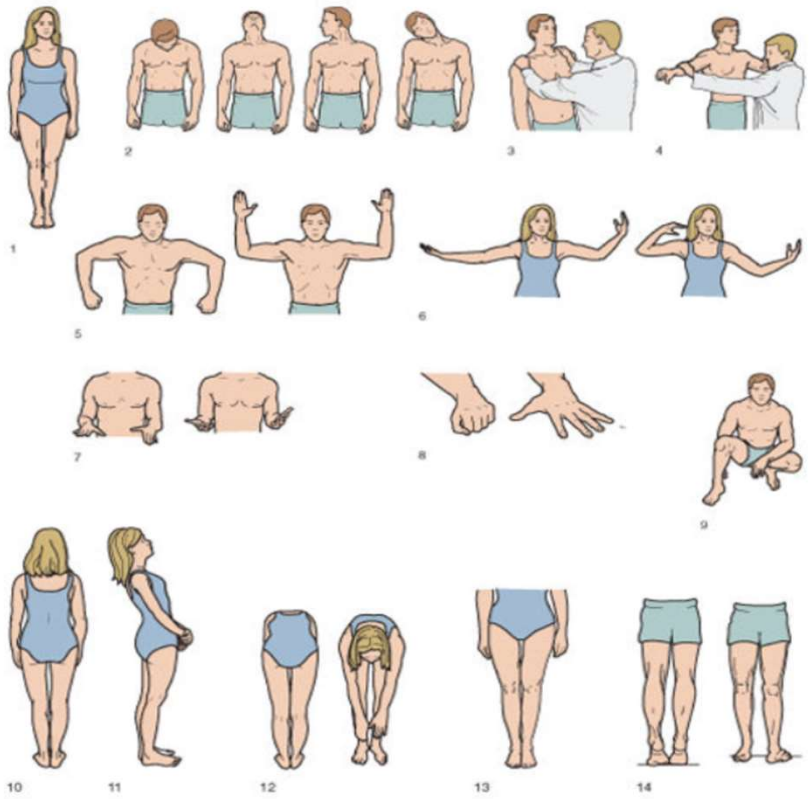
- Traditional programs may include expensive lab biometrics for cardiovascular risk factors, but ignore musculoskeletal risks & physical function
- Baxter (2014) negative ROI after excluding early RTW and injury prevention studies
- Mattke (2013) healthcare savings average $157, but worker incentives may cost up to $50/week
- Do privacy concerns scare some workers away?
- Are wellness program resources being largely consumed by the "Worried Well?"
  - Participants have lower medical expenses & healthier behaviors than non-participants (Jones, 2018)

Workforce Characteristics that have Lower Participation

- Male gender, abnormal BMI, and not having access to a primary care provider (Hall, 2017)
- Fatiguing job demands, low social support and work health program available only during leisure time (Jorgenson, 2016)
- Smaller employers, especially < 100 workers, more reserved with program implementation

Biometrics such as blood lipids, BMI, and computerized health risk appraisals may not appeal to blue collar workers.

2-min. Musculoskeletal Screening Exam Smith DM (1997)



Movements rated as:

- ❑ Normal
- ❑ Abnormal.

Limited validity research

Recommended in sports preparticipation screening guidelines for primary care doctors (Mirabelli 2015)

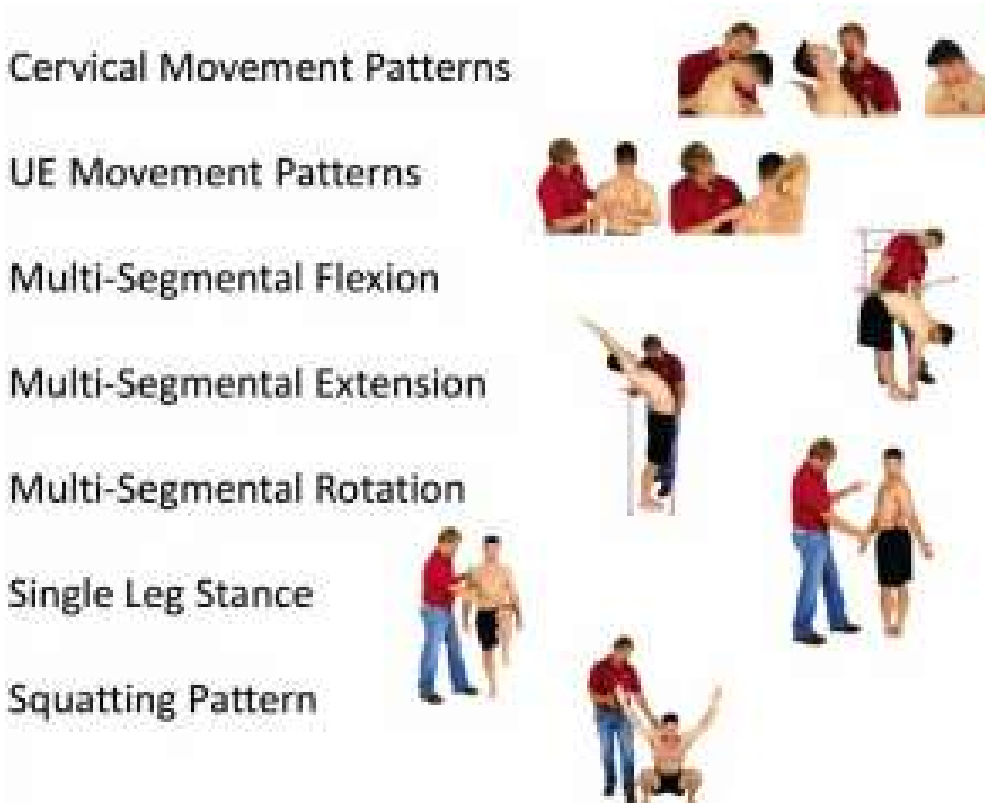
Functional Movement Screen (FMS) (Cook et al, 2010/2014)

Movements rated as:

- ❑ 0 - Painful
- ❑ 1 – Unable to complete movement
- ❑ 2 - Completes movement with compensation
- ❑ 3 – Completes movement correctly

Extensive research in athletes (Moran et al, 2017) does not support FMS Composite Scores for injury prediction

Selected Functional Movement Assessment (SFMA) (Cook et al, 2010)



Movements rated as:

- FN: Functional, Non-painful
- FP: Function, painful
- DN: Dysfunctional, Non-painful
- DP: Dysfunctional, research

Active Movement Screen SM

A quick series of 13 active movements to assess:

- Active Range-Of-Motion
- Balance
- Strength
- Coordination
- Willingness to move
- Identify need for more in depth physical exam or diagnostics before clearance to do physically-demanding tasks or exercise.

Active Movement Screen (AMS)

Client asked after doing movements to identify any areas of pain that limited performance.

Movements rated as:

- ❑ 4 – Normal: Completes movement with good coordination
- ❑ 3- Guarded: Completes movement with minor deficits in mechanics
- ❑ 2 – Fair (completes most of movement with minor deficits in mechanics)
- ❑ 1 – Poor (completes some of movement with major mechanics deficits.
- ❑0 – Unable or Unwilling to perform movement

Functional Movement Tests Used by Rehab Professionals

Functional Mobility Tests

- Timed Up and Go
- Five Times Sit to Stand
- Usual Gait Speed
- Fast Gait Speed
- Maximal Step Length (MSL)

New:

- **Two Square Agility Test (TSAT)**

Hand Dexterity Tests

- Nine-Hole Peg Test
- Grooved Pegboard Test
- Purdue Pegboard Test
- Box & Block Test
- Minnesota Manual Dexterity Test

New:

- **WorkAbility Rate of Manipulation Test**

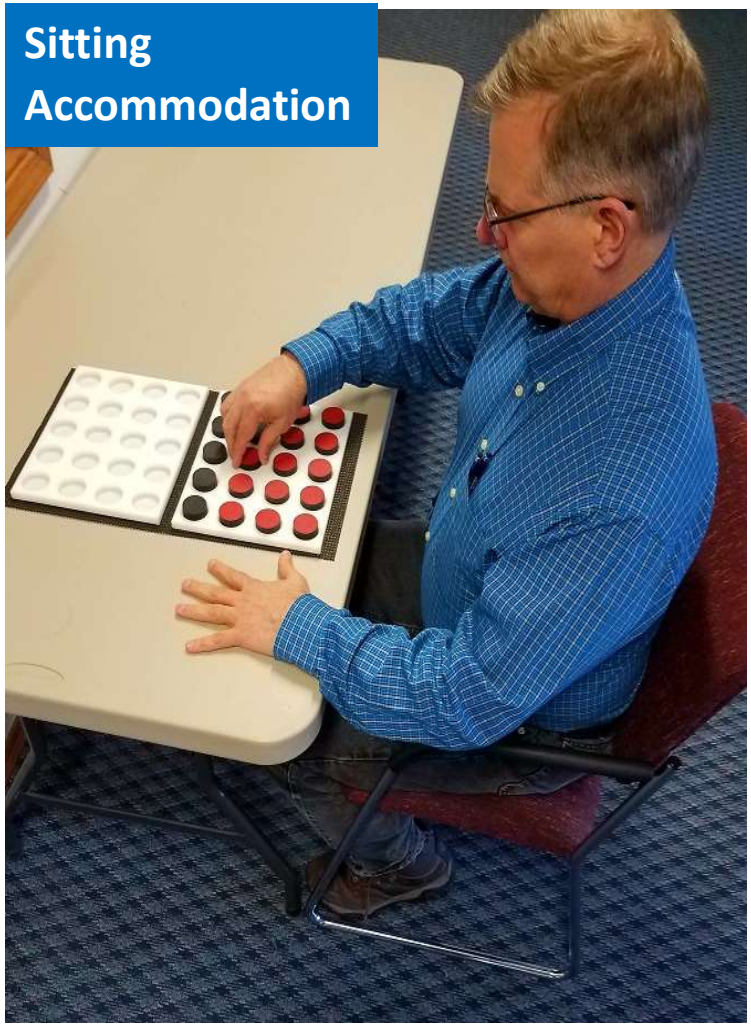
Two Square Agility Test (TSAT)

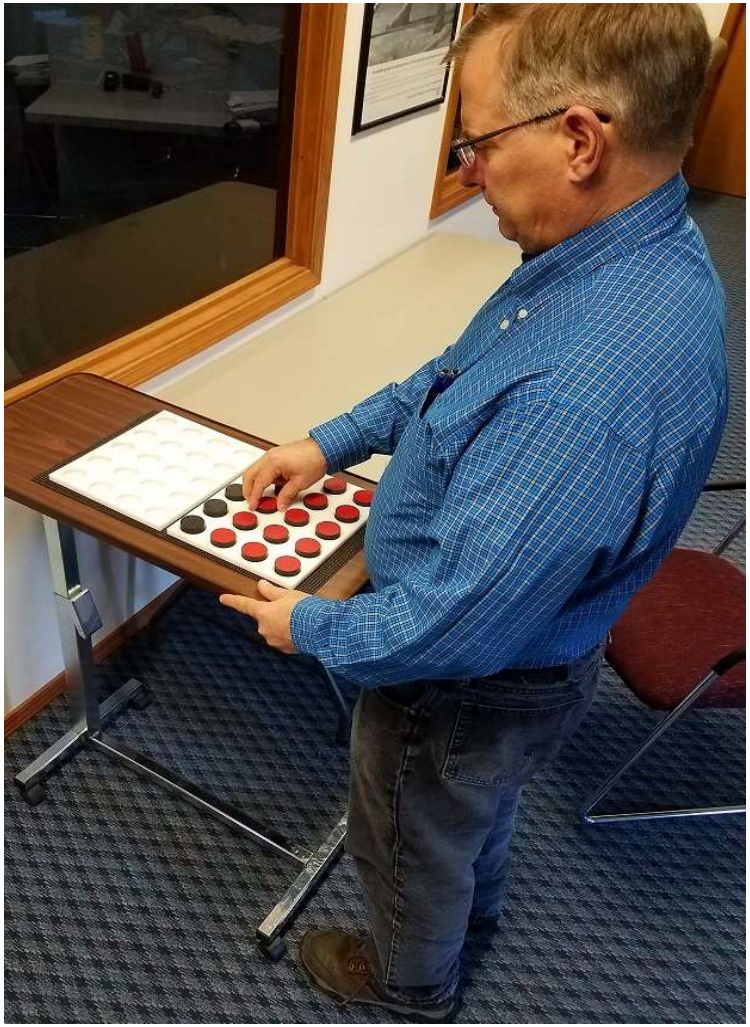
- Timed Test for stepping back and forth quickly across a marked tape for 5 complete cycles.
- Relevant to fall risk and walking speed for task productivity.

Wickstrom et al (2018)

WorkAbility Rate of Manipulation Test (Wang et al, 2017)

Sitting Accommodation





CDC Guidelines for Opioid Use (Dowell et al 2016)

- Clinicians should continue opioid therapy only if there is clinically meaningful improvement in pain and function that outweighs risks to patient safety.
- CDC found no studies to show a long-term benefit to pain and function for opioids compared to no opioids for outcomes at least 1 year later.

Establishing as objective baseline of active movement, agility and finger dexterity performance may be useful to promote wellness, injury recovery and optimum pain management.

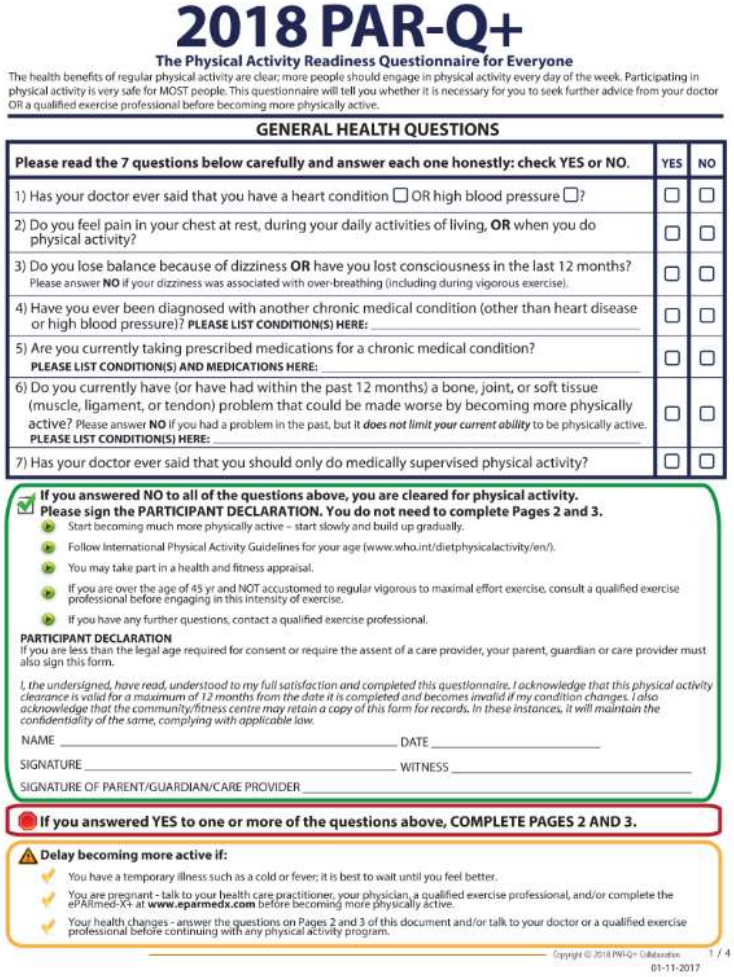
WorkAbility Movement Screen

A "**fun**" screen of musculoskeletal fitness that assesses active movement, agility and finger dexterity to promote suitable physical activity.

- PAR-Q+ The Physical Activity Readiness Questionnaire for Everybody (Bredin, 2013)
- Active Movement Screen (AMS)
- Two Square Agility Test (TSAT)
- WorkAbility Rate of Manipulation Test (WRMT)

Addressing Musculoskeletal Risk Factors informs the worker how to increase physical activity.

PAR-Q+ Physical Activity Readiness Questionnaire



2018 PAR-Q+

The Physical Activity Readiness Questionnaire for Everyone

The health benefits of regular physical activity are clear; more people should engage in physical activity every day of the week. Participating in physical activity is very safe for MOST people. This questionnaire will tell you whether it is necessary for you to seek further advice from your doctor OR a qualified exercise professional before becoming more physically active.

GENERAL HEALTH QUESTIONS

Please read the 7 questions below carefully and answer each one honestly: check YES or NO.	YES	NO
1) Has your doctor ever said that you have a heart condition ☐ OR high blood pressure ☐?	☐	☐
2) Do you feel pain in your chest at rest, during your daily activities of living, **OR** when you do physical activity?	☐	☐
3) Do you lose balance because of dizziness **OR** have you lost consciousness in the last 12 months? Please answer **NO** if your dizziness was associated with over-breathing (including during vigorous exercise).	☐	☐
4) Have you ever been diagnosed with another chronic medical condition (other than heart disease or high blood pressure)? **PLEASE LIST CONDITION(S) HERE:**	☐	☐
5) Are you currently taking prescribed medications for a chronic medical condition? **PLEASE LIST CONDITION(S) AND MEDICATIONS HERE:**	☐	☐
6) Do you currently have (or have had within the past 12 months) a bone, joint, or soft tissue (muscle, ligament, or tendon) problem that could be made worse by becoming more physically active? Please answer **NO** if you had a problem in the past, but it ***does not limit your current ability*** to be physically active. **PLEASE LIST CONDITION(S) HERE:**	☐	☐
7) Has your doctor ever said that you should only do medically supervised physical activity?	☐	☐

If you answered NO to all of the questions above, you are cleared for physical activity.
Please sign the PARTICIPANT DECLARATION. You do not need to complete Pages 2 and 3.

- Start becoming much more physically active – start slowly and build up gradually.
- Follow International Physical Activity Guidelines for your age (www.who.int/dietphysicalactivity/en/).
- You may take part in a health and fitness appraisal.
- If you are over the age of 45 yr and NOT accustomed to regular vigorous to maximal effort exercise, consult a qualified exercise professional before engaging in this intensity of exercise.
- If you have any further questions, contact a qualified exercise professional.

PARTICIPANT DECLARATION

If you are less than the legal age required for consent or require the assent of a care provider, your parent, guardian or care provider must also sign this form.

I, the undersigned, have read, understood to my full satisfaction and completed this questionnaire. I acknowledge that this physical activity clearance is valid for a maximum of 12 months from the date it is completed and becomes invalid if my condition changes. I also acknowledge that the community/fitness centre may retain a copy of this form for records. In these instances, it will maintain the confidentiality of the same, complying with applicable law.

NAME _____ DATE _____

SIGNATURE _____ WITNESS _____

SIGNATURE OF PARENT/GUARDIAN/CARE PROVIDER _____

If you answered YES to one or more of the questions above, COMPLETE PAGES 2 AND 3.

Delay becoming more active if:

- You have a temporary illness such as a cold or fever; it is best to wait until you feel better.
- You are pregnant - talk to your health care practitioner, your physician, a qualified exercise professional, and/or complete the ePARmed-X+ at **www.eparmedx.com** before becoming more physically active.
- Your health changes - answer the questions on Pages 2 and 3 of this document and/or talk to your doctor or a qualified exercise professional before continuing with any physical activity program.

01-11-2017

- Replaces the PAR-Q and AHA/ACSM Preparticipation Screening Questionnaire.
- Reduces barriers to exercise and false positive screenings.

Bredin et al (2013)

WorkAbility Systems
Therapy Solutions for Work Performance

WorkAbility Movement Screen

Group: WorkAbility Center

Worker Name	Birth Date	Age	Gender	Examiner Name	Exam Date
Misty Sample	1/15/1979	39 yr	Female	Rick Wickstrom PT, DPT, CPE, CDMS	7/2/2018

Physical Activity Readiness Questionnaire (PAR-Q+)

- [ ] 1. Diagnosed with heart condition or high BP?
- [ ] 2. Chest pain with rest or physical activity?
- [ ] 3. Balance loss from dizzy/unconsciousness?
- [ ] 4. Diagnosed w/ other chronic health condition?
- [ ] 5. Taking drugs for a chronic health condition?
- [ ] 6. Bone, joint, or muscle problem with activity?
- [ ] 7. Advised to do medically supervised activity?

None

Active Movement Screen

	Right	Left		Right	Left
1. Close hands	4-Normal	4-Normal	8. Single leg stance	4-Normal	4-Normal
2. Flex elbows back	4-Normal	4-Normal	9. Toe walk sideways	4-Normal	4-Normal
3. Elevate shoulders	2-Fair	2-Fair	10. Heel walk forward	4-Normal	4-Normal
4. Extend wrists	4-Normal	4-Normal	11. Step up and over	4-Normal	4-Normal
5. Diagonal neck bend	2-Fair	2-Fair	12. Lunge back to kneel	2-Fair	2-Fair
6. Rotate torso in stand	2-Fair	2-Fair	13. Deep squat down	2-Fair	
7. Diagonal bend over	2-Fair	2-Fair		Pain?	No

Upper Body Score 87.5% **Spine Score** 50.0% **Lower Body Score** 86.4% **Overall Score** 78%

Two Square Agility Test (TSAT)

Method	Practice	T1	T2	T3	Best	CV	M/sec	Rating	Pain?
Vary lead	12.10	8.50	8.60	8.70	8.50 s.	1.2%	1.18 m/s	Low	No

WorkAbility Rate of Manipulation - Turning Test

Stoop	T1	T2	T3	Best	CV	Worker%	Rating	Pain?	No
Right (Preferred)	22.5	21.8	21.5	21.5 s.	2%	95.8%	Medium		
Left	24.0	23.2	22.7	22.7 s.	3%	90.7%	Medium		

Follow-up Recommendations

- ☐ *Keep up the good work!*
- ☑ *Modify physical activity*
- ☑ *Supervised fitness training*
- ☑ *Weight loss management*
- ☐ *Physical therapist consult*
- ☐ *Other health consultation*

Healthy adults aged 18-65 years old are advised to perform moderate aerobic physical activity for at least 30 minutes on 5 days/week or vigorous aerobic activity for at least 20 minutes on 3 days/week.

Exam Certification

Signed electronically by Rick Wickstrom PT, DPT, CPE, CDMS on 7/2/2018

Note: Physically inactive but otherwise healthy asymptomatic persons may begin light- to moderate-intensity exercise without medical clearance per new ACSM exercise guidelines.

Post-Offer Standard Fitness Screen

Wellness Movement Screen

Post-Injury WorkAbility Progress Exam

PAR-Q+ Physical Activity Readiness Questionnaire
Active Movement Screen (AMS)
Two Square Agility Test (TSAT)
WorkAbility Rate of Manipulation Test (WRMT)

BMI, Waist to Height
Blood pressure

- Near vision
- Far vision
- Grip Strength
- Low Lift Test
- High Lift Test

Lifestyle Review
Activity Plan

Assess to Job Demand

- Injury-specific surveys/exam
- Grip Strength
- Low Lift Test
- High Lift Test

Takaways

- Measure FUNctional movement from hire to retire!
  - All new hires should undergo a post-offer fitness screen of BMI, Waist to Height, BP, Movement, Vision, Grip.
  - Workers in MEDIUM or higher jobs should be screening for lifting ability to meet expected job requirements.
  - Routine movement screening to monitor musculoskeletal risks of workers during diet, healthcare & pain programs.
- Movement screen is "fun" and delivers "high value" for a reasonable cost to promote healthy activity.
- Less focus on pain ratings, weight, intrusive health surveys, blood labs (dependency/privacy concerns).
- A pre-injury baseline drives functional outcomes

References

1. Baxter S, Sanderson K, Venn AJ, Blizzard CL, Palmer AJ. The relationship between return on investment and quality of study methodology in workplace health promotion programs. Am J Health Promot. 2014 Jul-Aug;28(6):347-63.
2. Bredin SS, Gledhill N, Jamnik VK, Warburton DE. PAR-Q+ and ePARmed-X+: new risk stratification and physical activity clearance strategy for physicians and patients alike. Can Fam Physician. 2013 Mar;59(3):273-7.
3. Cook G with Burton L, Kiesel K, Rose G, Bryant MF. Movement Functional Movement Systems: Screening, Assessment and Corrective Strategies, Santa Cruz, CA: On Target Publications., 2010.
4. Cook, G., Burton, L., Hoogenboom, B. J., & Voight, M. FUNCTIONAL MOVEMENT SCREENING: THE USE OF FUNDAMENTAL MOVEMENTS AS AN ASSESSMENT OF FUNCTION - PART 1. *International Journal of Sports Physical Therapy*, 2014: *9* (3), 396–409.
5. Cook, G., Burton, L., Hoogenboom, B. J., & Voight, M. FUNCTIONAL MOVEMENT SCREENING: THE USE OF FUNDAMENTAL MOVEMENTS AS AN ASSESSMENT OF FUNCTION-PART 2. *International Journal of Sports Physical Therapy*, 2014: *9* (4), 549–563
6. Dowell D, Haegerich TM, Chou R. CDC Guideline for Prescribing Opioids for Chronic Pain — United States, 2016. MMWR Recomm Rep 2016;65(No. RR-1):1–49.
7. Hall JL, Kelly KM, Burmeister LF, Merchant JA. Workforce Characteristics and Attitudes Regarding Participation in Worksite Wellness Programs. Am J Health Promot. 2017: Sep;31(5):391-400
8. Jones D, Molitor D, and Reif J. What Do Workplace Wellness Programs Do? Evidence from the Illinois Workplace Wellness Study, Accessed 7/8/2018 from http://www.nber.org/workplacewellness/s/IL_Wellness_Study_1.pdf, June 2018.

References

9. Jørgensen MB, Villadsen E, Burr H, Punnett L, Holtermann A. Does employee participation in workplace health promotion depend on the working environment? A cross-sectional study of Danish workers. BMJ Open. 2016 Jun 8;6(6):e010516.
10. Mattke S, Kapinos K, Caloyeras JP, Taylor EA, Batorsky B, Liu H, Van Busum KR, Newberry S. Workplace Wellness Programs: Services Offered, Participation, and Incentives. Rand Health Q. 2015 Nov 30;5(2):7. eCollection 2015 Nov 30
11. Mattke S., Liu H., Caloyeras J. P., et al., Workplace Wellness Programs Study, Santa Monica, Calif.: RAND Corporation, RR-254-DOL, 2013. As of May 1, 2015: http://www.rand.org/pubs/research_reports/RR254.html
12. Mirabelli MH, Devine MJ, Singh J, Mendoza M. The Preparticipation Sports Evaluation. Am Fam Physician. 2015 Sep 1; 92(5): 371-376.
13. Moran RW, Schneiders AG, Mason J, Sullivan SJ. Do Functional Movement Screen (FMS) composite scores predict subsequent injury? A systematic review with meta-analysis. Br J Sports Med. 2017 Dec;51(23):1661-1669.
14. Smith DM, Kovan JR, Rich BSE, Tanner SM. Preparticipation Physical Evaluation. 2nd ed. Minneapolis, Minn: McGraw-Hill Co; 1997;1-46.
15. Wang YC, Wickstrom R, Yen SC, Kapellusch J, Grogan KA. Assessing manual dexterity: Comparing the WorkAbility Rate of Manipulation Test with the Minnesota Manual Dexterity Test. J Hand Ther. 2017 May 10. pii: S0894-1130(17)30092-3.
16. Wickstrom RJ, Wickstrom NE, Smith RL, Dunning KK. Reliability, Concurrent Validity and Normative Comparison of a New Two Square Agility Test to a New Maximum Step Length to Height Method for Workplace Wellness Promotion. 2018. Manuscript submitted for review.