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FOR IMMEDIATE RELEASE

**ARMY-BAYLOR RESEARCHERS MAKE HUGE STRIDES ON SOLDIER MEDICAL READINESS
MP3 (Military Power, Performance, and Prevention) Trial**

In an effort to address the Army Surgeon General's #1 priority, reducing the number of "medically not ready" Soldiers, a combined team of Army and university-based researchers have begun testing a physical performance and injury risk screening process currently used by many college and professional athletic teams, for potential application in the military. The purpose is to develop a time-efficient, annual screening process that can be proven to help keep today's warrior athletes healthy and available for deployment.

Currently, almost half of all non-deployable Soldiers have suffered preventable musculoskeletal injuries. Published studies on specific athletic screening and corrective programs in the private sector have shown that those at risk of injury can be identified, potentially keeping thousands of Soldiers injury-free, ready for deployment, and saving healthcare costs.

"The Army has decided to add physical therapists to the Brigade Combat Teams. One of the goals of the Brigade Physical Therapist is to treat injuries when and where they occur. Although early access to physical therapy will help enhance Soldier readiness – the ultimate goal is to find a way to prevent injuries before they exist. The MP3 screening tool is designed to identify those at highest risk for injury – so we can do just that." LtCol Deydre Teyhen, Principal Investigator of the MP3 Trial.

The MP3 research team is comprised of faculty and students from U.S. Army-Baylor University Doctoral Program in Physical Therapy and researchers from The University of Evansville and Duke University. They have begun the process of screening over 1750 Soldiers using newly developed, hand-held technology that aids in the speed of the assessment. Typically, a comprehensive screening of this type would take about 90 minutes for each individual. The MP3 system improves the efficiency allowing for screening of 35-40 Soldiers in less than 90 minutes. Once assessed, each soldier's data, expressed in a "score", is securely transmitted to a computer that uses an algorithm to determine whether they are at risk for a musculoskeletal injury, and, if so, to what degree. Previous research has shown that the risk scores are related to actual injuries in athletes and the military population. If a Soldier is found to be at risk of injury, prescribed corrective steps are then taken under the supervision of an Army physical therapist to help decrease risk factors.

"Brigade Physical Therapists have a limited amount of time to conduct both patient care and injury prevention projects. Therefore, the use of this hand held technology system helps physical therapists conduct injury risk screening effectively and accurately, in a short period of time. While monitoring injury rates within the Brigade, physical therapist can also correlate these screening scores to identify injury trends at the platoon and company level. Commanders truly appreciate pro-active measures to improve the overall unit medical readiness. This technology will benefit everyone in the Brigade." Capt Leigh Anne Swafford, a 1st Cavalry Division Physical Therapist.

As a start to the study, 247 soldiers have been screened at Fort Sam Houston. The next phase of the study will include 1500 Soldiers that will be screened and be tracked to for one year to record relationships between risk levels and injuries.

The U.S. Army-Baylor University Doctoral Program in Physical Therapy is located at Fort Sam Houston in San Antonio, TX. It is currently ranked #5 in the U.S. News and World Report for physical therapy programs across the nation. It is also the home of the Center for Physical Therapy Research which is focused on preventing and treating musculoskeletal conditions.

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Additional facts on the MP3 Trial:

BACKGROUND:

1. The #1 priority identified by the Army Surgeon General is the Soldier Medical Readiness Campaign (SMRC). The main goal of the SMRC is to reduce the number of medically not ready Soldiers in the Army.
2. Medically not ready Soldiers represent 69% of Forces Command (FORSCOM) non-deployable population and musculoskeletal injuries comprise 45% of the medically not ready population.
3. College and professional athletes receive a pre-season screening to help identify injury risk. Potentially, these screening tools can be applied to the Military to identify Soldiers at risk for injury. If we can identify those at highest risk for injury – we can generate an injury prevention program to help mitigate those risks.
4. Currently the military does not have a standardize program to screen Soldiers for injury risk.

TECHNOLOGY SOLUTION DEVELOPED AT FT SAM HOUSTON:

1. Researchers at the Graduate School, Army Medical Department Center & School have developed and automated an injury prediction screening tool to help achieve the Surgeon General's goal of reducing the number of medically not ready Soldiers in the Army.
2. A graphical overview of the technology solution developed for the DoD is attached (Appendix A).
3. A review of the literature led to the identification of both objective field expedient tests and survey questions that help predict injury risks. The field expedient tests include measures of movement quality (Functional Movement Screen), balance (lower quarter Y-Balance test), trunk stability (upper quarter Y-Balance test), power (6M hop test, triple cross-over hop, single leg vertical jump), mobility (closed chain dorsiflexion), and foot structure and mobility.
4. These tests are currently used by collegiate and professional athletes.
5. All of these tests have been automated using hand held computers (Motorola MC75) and netbooks to allow military units to easily collect the data.
6. Once the data is collected computerized algorithms determine injury risk using a color coded system:
 - a. Red = Substantially Increased Injury Risk
 - b. Orange = Moderately Increased Injury Risk
 - c. Yellow = Slightly Increased Injury Risk
 - d. Green= Normal Risk
7. Soldier Report: The Soldier then receives a report that highlights his/her injury risk, provides education/training, and individual exercises based on their performance on the tests.
8. Unit Report: The Unit gets a summary report of the unit's risk for injuries. This report can be easily used to develop physical readiness training programs that help mitigate injury risk.
9. Medical Report: The medical team gets a summary report of the test performance that will allow the Soldiers performance on these tests to be tracked throughout a career and can assist with treatment programs if a Soldier does become injured.

INITIAL RESULTS:

1. At Ft Sam Houston, 247 service members were screened with this new technology.
2. The technology developed was designed to help make the screening process more efficient for the DoD. Initial analysis demonstrated that the technology developed created a time savings of 20-30 minutes/screening of 20 Soldiers.
3. It takes about 1 hour for a single Soldier to complete all of the screening stations and a group of 35 Soldiers can be screened in about 90 minutes with a staff of 12.
4. The screening of 247 service members identified high risk Soldiers and provided referrals to medical and physical therapy services.

MILITARY APPLICATION:

1. The Army has started to field physical therapists as organic assets for the Brigade Combat Teams. Although their primary mission will involve evaluating and treating Soldiers with musculoskeletal injuries, they are also tasked with implementing evidence-based musculoskeletal injury prevention screening and mitigation strategies.
2. The Army currently lacks the capability to perform individualized musculoskeletal screenings for large groups of Soldiers.
3. Based on our ultimate goal of screening 50 Soldiers/hour with an ancillary staff of 10 individuals, the platform developed in this proposal would allow for the entire Brigade (~3,500 Soldiers) to be screened with a time cost of

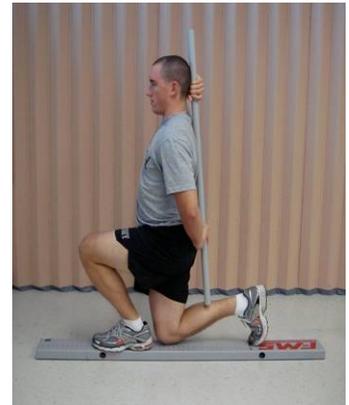
only 6-8 hours/month. This would allow for annual musculoskeletal injury screening; similar to how the Army screens for vision, hearing, dental, and immunizations.

4. Currently the algorithms used to determine injury risk are based on evidence from collegiate and professional athletes. The next step is to determine how those algorithms need to be adjusted for those in the military. Specifically, at Ft Lewis we are going to study 1,500 Soldiers over a 1 year period. We will track their results on these tests, what they do for the military, and injury rates. We will use this information to determine how the algorithms can be improved to predict injuries. We suspect that we can make the screening even more efficient by determining which tests are required based on what you do for the military.

RESEARCH TEAM:

1. The research team consists of:
 - a. Faculty from the U.S. Army-Baylor University Doctoral Program in Physical Therapy
 - b. Doctor of Physical Therapy Students from the U.S. Army-Baylor University Doctoral Program in Physical Therapy
 - c. Researchers from the University of Evansville and Duke University
 - d. Contract researchers
2. Collaborations with Move2Perform LLC
3. Names available upon request

FUNDING: This study is funded through the Army Medical Department Advanced medical Technology Initiative (AAMTI) from the Telemedicine and Advanced Technology Research Center (TATRC), Medical Research and Materiel Command (\$239,547).



Appendix A:

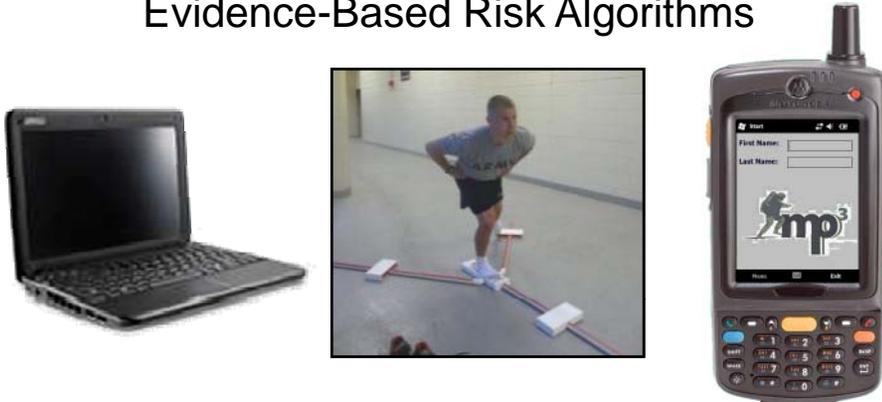
Military Power, Performance, & Prevention



PI: LTC Deydre Teyhen, PT, PhD

Org: U.S. Army Medical Department Center & School

Efficient & Automated Data Collection Evidence-Based Risk Algorithms



Surveys + 8 evidence-based screening tests
Ultimate goal: screen 50 Soldiers/hour

Soldier Report & Virtual Coach Risk Level, ±Referral, Education, Exercise

Medical Record

- Automated 2-page report
- Summary of findings
- Associated risk
- Referral
- Exercises prescribed
- Educational classes

MEDICAL RECORD-SUPPLEMENTAL MEDICAL DATA
For use of this form, see AR 40-40, the proponent agency in the Office of the Surgeon General.

REPORT TYPE: Military Power, Performance, & Prevention (MPP) - Injury Prevention Screening Results

DATE: 11/11/11

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Demographics:
 Gender: Male Height (in): 70
 Weight (lbs): 210 Previous Rx of Injury: Yes
 BMI (units): 30.3 Currently in Pain: No
 Smoking History: No Years of Smoking: 00K (P), 0000000 Years

Y Balance Test- Lower Quarter:

Reach	Left (cm)	Right (cm)	Difference (cm)	RISK
Anterior	67.8	67.8	0	Normal risk
Posterolateral	104.8	102.9	1.9	Normal risk
Normalized Composite	86.5 (NLI)	83.5 (NLI)	0.2 (LI)	Increased risk

Y Balance Test- Upper Quarter:

Reach	Left (cm)	Right (cm)	Difference (cm)	RISK
Medial	95.3	95.3	0.0	Normal risk
Lateral	87.3	86.1	1.2	Normal risk
Suprolateral	75.8	89.9	0.9	Normal risk
Normalized Composite	84.9 (NLI)	89.8 (NLI)	1.1 (NLI)	Increased risk

Functional Movement Test:

Test	Left	Right	Asymmetry	Final Score	RISK
Deep Squat	2	2	0	2	Increased risk
Heel Step	2	2	0	2	Normal risk
In Line Lunge	2	2	0	2	Normal risk
Shoulder Mobility	2	2	0	2	Increased risk
Straight Leg Raise	1	1	0	1	Normal risk
Push-Up	2	2	0	2	Normal risk
Rotary Stability	2	2	0	2	Normal risk
Composite (23 points)	-	-	-	12	Increased risk
Asymmetry Present	-	-	1	-	Increased risk

REVIEWED BY (Signature & Title): _____ DEPARTMENT/SERVICE/CDL: _____ DATE: _____

PATIENTS IDENTIFICATION (Do not write unless given, remove this page from medical record):
 LAST NAME, FIRST NAME, MI: _____
 RANK, U.S. ARMY (Service): _____
 DOB: _____
 20'XXX-XX XXXX (SSN): _____

DA FORM 4700 1 MAY 10



Unit Report & Prevention Strategies Summary risk factors/level & mitigation

myinjuriyrisk The Science of Injury Prevention

Unit Name: Kansas Reserve
 Summary of Risk Screening Complaints: 1000/1000/1000/1000
 Number of Soldiers Screened: 1000

For questions about this report:
 Unit Information for POC: _____
 Name & Title of POC: _____
 Phone Number and E-mail Address: _____

Injury Risk Summary Report:
 A musculoskeletal screening process has been designed to help determine your unit's injury risk. Injuries are difficult to predict and current research suggests injury risk is multifactorial. We synthesized a variety of evidence based factors to categorize each soldier's individual risk. Here is the breakdown of the unit's injury risk.

Unit's Overall Injury Risk

- Substantially Increased Injury Risk (20%)
- Moderately Increased Injury Risk (24%)
- Slightly Increased Injury Risk (32%)
- Normal Risk (24%)

Movement (Coordination)	Deficits
Trunk Strength	N (00%)
Balance	N (00%)
Power	N (00%)
Mobility	N (00%)

Recommendations:
 Each individual in your unit has been given a personalized program to help reduce their personal risk. A well designed unit physical training program that incorporate all aspects of fitness (balance, power, endurance, agility, mobility, and strength) can help prepare your unit for the physical requirements while preventing injuries. Your unit's physical therapist along with your unit's exercise experts can use these results to develop strategies to increase performance while preventing injuries.

Injury History of your unit and current unit reported condition:

Lower Back Pain	History of Injury	Self-Reported Condition
484 (14.4%)	75% 100%	75% 100%
Upper Back/Neck Pain	50 (1.5%)	85% 100%
Hip	25 (0.8%)	85% 100%
Knee	328 (9.9%)	45% 100%
Leg/Foot/Ankle	250 (7.5%)	45% 100%
Shoulder	145 (4.5%)	85% 100%
Elbow/Wrist/Hand	62 (1.9%)	85% 100%

54 of the 1,299 Soldiers had a History of stress fracture
 100 of the 1,299 Soldiers have had surgery for a musculoskeletal condition

Other important information:
 N(%) report that their job requires high physical demands between 75-100% of the time.
 N(%) report that while deployed (or in the field) that they routinely are required to carry over 100 lbs. of load.
 N(%) report their fitness level as "inactive"
 N(%) report that they have only been exercising routinely for < 1 year.

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