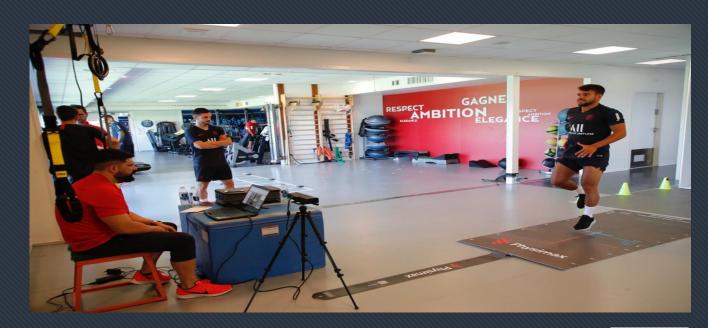
# Vivo 7 Sports Physimax Presentation







# Physimax Overview – For Performance & Injury Prevention

- Physimax Technologies has developed a solution designed to track and improve musculoskeletal (MSK) wellness and performance through objective, data-driven analysis of the athletes musculoskeletal condition.
- Using marker-less computer vision and machine learning analysis, Physimax MSK Snapshot is automatically
  generated by analysing the athlete's body movement patterns, scoring muscle performance (mobility, stability,
  strength, and movement control) according to evidence-based body movement protocols.
- The company's cloud service automatically measures and scores these protocols and provides data-driven, population-specific, comparable scores accompanied with actionable, personalized workout programs.
- Physimax Technologies is the choice of many elite organizations, including NBA teams, MLB teams, professional
  football/soccer teams, NCAA University/ college teams, U.S. Military units, top healthcare providers, and
  professional academies, and has been validated by top U.S. academic institutes as having a proven effect in
  reducing injury risk and expense.



# **360 Cycle For Players**



#02

Learn
(Output):
Gain Immediate
MSK condition
Insights





#01

Testing (Input)

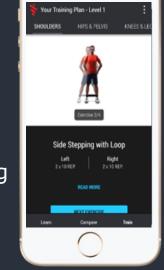
Measure and capture athlete's MSK (Muscular-skeletal) Snapshot



#03

Train (improvement process)

recommended individualized training program







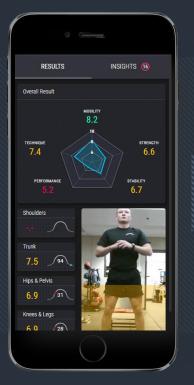
# Digital Musculoskeletal Monitoring & Optimization

#### Capture



Self-Test with Mobile App or 3-D Infrared Camera Test

#### Score



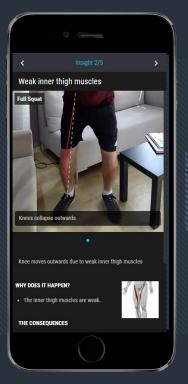
Personal scores compared to relevant Population

#### Compare



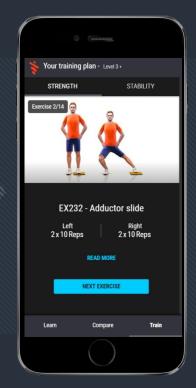
Compare yourself to Friends/peers

#### Learn



Insights identifying risk factors

#### Train & Track



Actionable Workout Program; Track progress



### 1. Test Battery – Capture MSK Data

**Landing Error Scoring System** 

Single Leg Squat
Lunge test (dorsiflexion)

Single Leg Vertical Drift hop

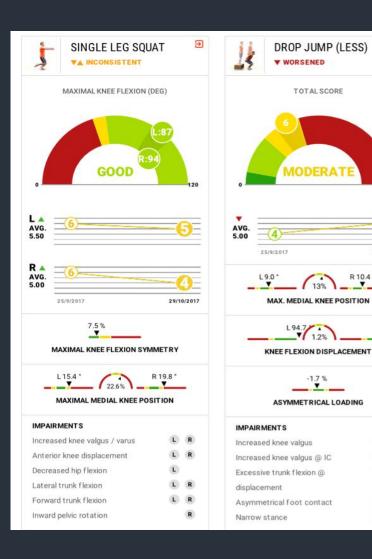
Shoulder Rotation
CMJ & R-CMJ
Double/OH Leg Squat
Single Leg Hop

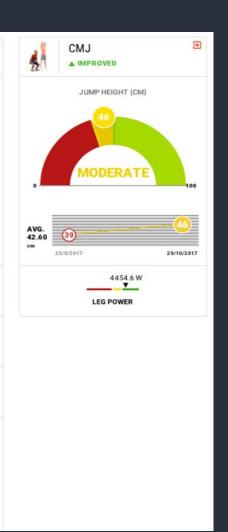




### 2. Quantify MSK Data and Insights

Objective scoring of injury risk level; Tracking players' progress





29/10/2017

R 93.6°

L R

L R

L R

L R

L R

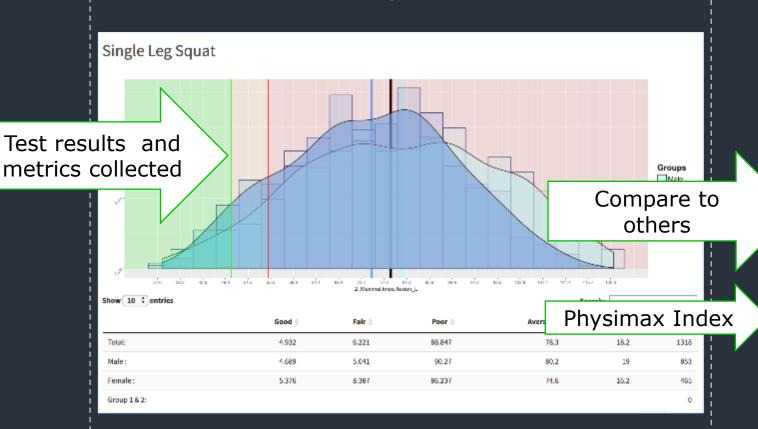


# 3. Segmented Comparative Scoring: Data-analytics tool for players' MSK capabilities

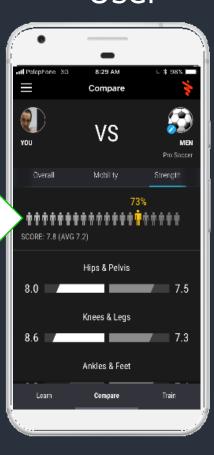








#### User

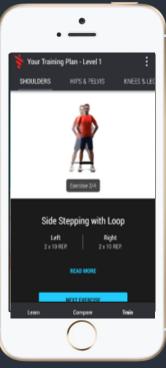




# 4. Individualized Training Program Time-Efficient Training

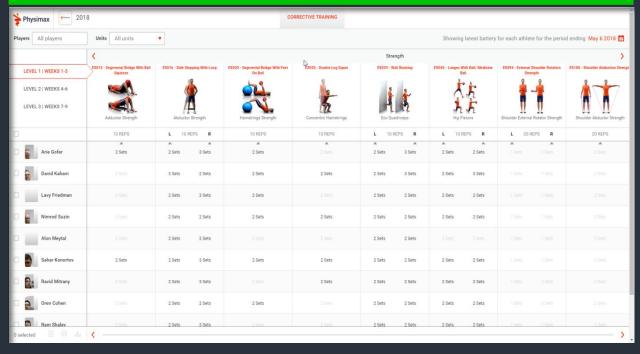
#### Personal Program





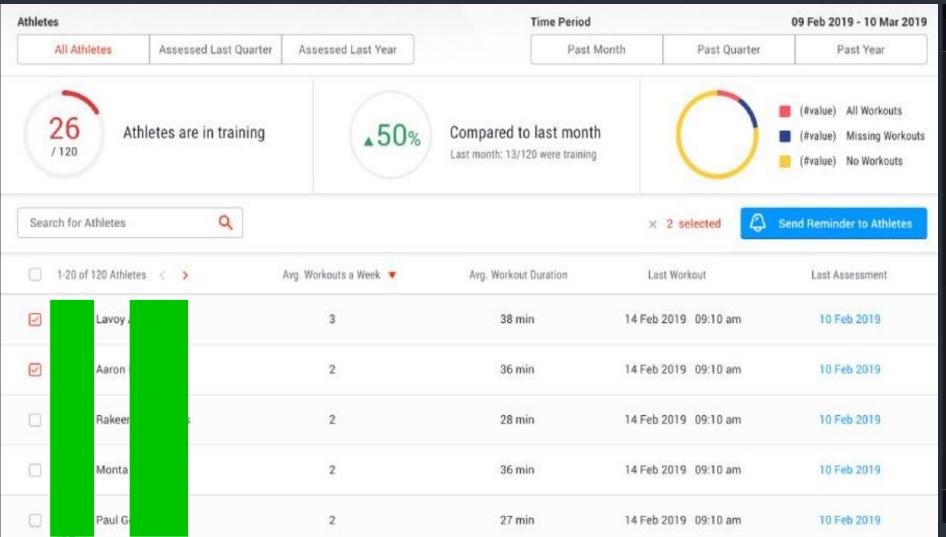
#### Expert view

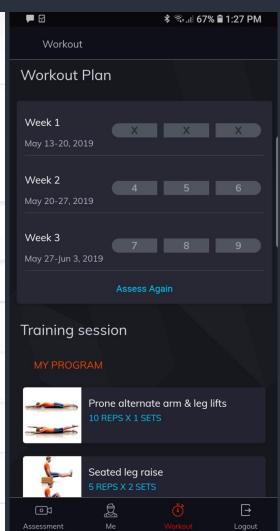
#### Individualized and Aligned with team routine





# 4. Tracking Personal Workout Compliance



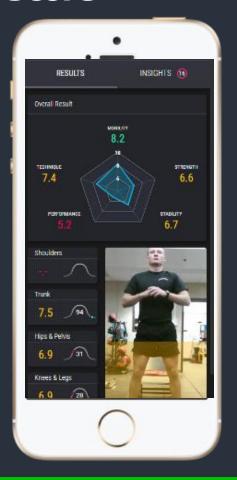




# Musculoskeletal Routine Scoring & Highlights

R112.2°

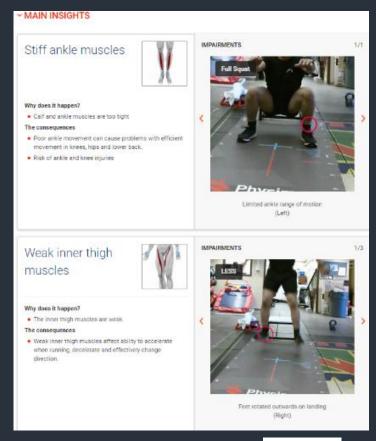
#### **End User** Score



**Expert Dashboard** 



**Insights** 





### Youth or Adult - "Train Like a Pro"

Scalable (No need for Hardware), all via mobile App

Any place any time: On field, In Gym, At home
— Self assessment
(COVID -19) No touch,
No wearables

Engaging

Large database of youth soccer players & youth Athletes

Same concept as for Elite teams/players

Keep the coach/staff in the loop

Managed in the team level (Including compliance)

Affordable!



# **What Physimax Users Say**

Physimax deepens in-house performance analysis with an easy-to-use tool that we can use anytime, anywhere. We are also able to track the player's progress and readiness on a regular basis

Bruno Mazziotti Head Physiologist









Head Physiologist Brazil National Team



# What Physimax Users Say

Physimax's analytics take our training to the next level, using the latest scientific methods to analyze and monitor players. This saved us precious time in our prevention workouts and let to 30% less non-contact injury

Juan Torrijo Navarro Head Fitness Coach





Former Head Fitness Coach Valencia CF



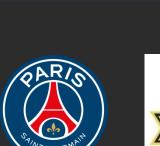
Head Performance Chongqing Lifan FC







Kylian Mbappe (PSG) going over his Physimax scores

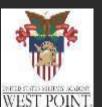






















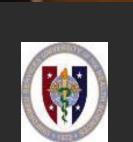














## What Physimax Users Say



Indiana Pacers Our medical and performance staff unanimously chose Physimax as our go-to-solution to deepen inhouse performance analysis with an easy-to-use tool that we can use anytime, anywhere



Director of Sports Performance



University of Maryland Physimax helps us quantify athletes in a systematic way that is not taxing our staff or athletes. Athletes get more information about themselves to make individual decisions, coaches get more information about their team and their readiness. That's just exciting for everybody.



Dr. David Klossner Associate Athletic Director / Sports Performance



### **Collaborative Research Partners**



Timothy Muantel,
 PhD Musculoskeletal
 Injury Research Lead at
 Walter Reed National
 Military Center



Prof. Darin Padua
 Chair, Department of
 Exercise & Sport Science
 at University of North
 Carolina, Chapel Hill





 Barnett Frank, PhD
 Director of performance & sport science at Utah Jazz



Walter Reed

National Military Medical Center



Prof. Lindsay

 Distefano Head,
 Department of
 Kinesiology at University
 of Connecticut





• Ken Cameron, PhD
Director of Orthopedic
and Sports Medicine
Research at Keller Army
Hospital, Military
Academy, West Point.
Author in US Bone &





Prof. Steve Marshall
Director of UNC's Injury
Prevention Research
Center, an
epidemiologist





## Physimax Impact in pro, collegiate sports

**Lower Extremity Injury Risk** 



Proven ROI – UMD: "0 non-contact knee injuries, 0 non-contact ankle injuries"



60% Reduced Injury risk

Pro/collegiate athletes' population in high injury risk according to LESS score





### **Proven Impact: ROI, LE Injury Prediction**



#### **Injury Prediction Capacity:**

Poor Physimax scores
-> 3x more Lower Extremities injuries



#### **FEATURED ON:**

















#### **Players' Availability**

NBA's #1 Team – Salary Dollars saved to Injuries





# Validated Technology by Top Academies, Military

Scoring vs. Human Experts 2015 Motion Analytics vs. Vicon 2017 Overuse-Injury Prediction 2017



Prof. Darin Padua UNC Sports Sciences



#### **Used for** research by:













### Scientific Papers about Physimax Reliability

Journal of Athletic Training Volume 52, October 2017

Sports Biomechanics, 2018

### Automated Quantification of the Landing Error Scoring System With a Markerless Motion-Capture System

Timothy C. Mauntel, PhD, ATC\*; Darin A. Padua, PhD, ATC\*; Laura E. Stanley, DPT, PT, SCS\*; Barnett S. Frank, PhD, ATC\*; Lindsay J. DiStefano, PhD, ATC†; Karen Y. Peck, MEd, ATC, CCRP‡; Kenneth L. Cameron, PhD, MPH, ATC‡; Stephen W. Marshall, PhD§

\*Department of Exercise and Sport Science, The University of North Carolina, Chapel Hill; †Department of Kinesiology, University of Connecticut, Storrs; †Department of Orthopaedic Surgery, Keller Army Community Hospital, West Point, NY; §Injury Prevention Research Center, The University of North Carolina, Chapel Hill.

#### Journal of Athletic Training Volume 52, June 2018

Difference in Lower Extremity
Injury Risk During Basic Combat
Training Between Military
Recruits With High and Low
Quality Movement Patterns
Cameron KL, Miraldi SFP, Peck KY,
Posner MA, Eckard TG, DiStefano
LJ, Marshall SW, Padua DA: Keller
Army Hospital, United States
Military Academy, West Point, NY;
University of North Carolina,
Chapel Hill, NC; University of
Connecticut, Storrs, CT

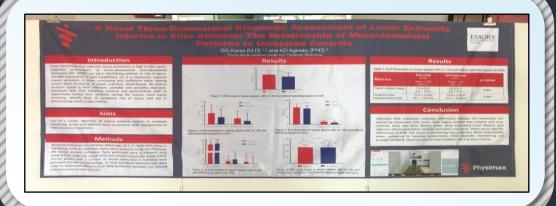
Validation of a Markerless Motion Capture System Trunk and Lower Extremity Joint Angles During a Jump-Landing Assessment

Mauntel TC, Marshall SW, Hackney AC, Cameron KL, Pietrosimone BG, Padua DA: Walter Reed National Military Medical Center, Bethesda, MD; Uniformed Service University, Bethesda, MD; The University of North Carolina, Chapel Hill, NC; United States Military Academy, West Point, NY Concurrent criterion validity of a novel portable motion analysis system for assessing the landing error scoring system (LESS) test

Gali Dara, for Alon Yehiel and Maya Cale Benzoora, for Gali Dara, for Gali Dara,

<sup>a</sup>Faculty of Social Welfare & Health Studies, Department of Physical Therapy, University of Haifa, Haifa, Israel; <sup>b</sup>Physical Therapy Clinic, The Ribstein Center for Sport Medicine Sciences and Research, Wingate Institute, Netanya, Israel

Physimax & Emory Research at NFL Physicians Society Combine; Mar19





# Privacy, Security Externally Audited – Data Security

by: NBA, UCHealth

HIPAA
Vulnerability &
Penetration
Test Scoring
(July-19)

acunetix





# Integration with EMR & Athletic Management Systems

Two-way data communication integration; standardized OAuth 2.0



# Why our partners choose Physimax



**Scientific** 

Objective Validated Scoring

Evidencebased Tests





**Data Rich** 

Extensive coverage Thousands: Elite, College, Competitive, Youth, Recreational



**Quick & Simple** 

Closing the loop

Portable settings

Few minutes per athlete

Automated measurement and scoring



**Affordable** 

Proportional to your capacity

SaaS annual all-inclusive fee



Referenc es

Elite, Pro & Olympic Centers

Military

DI Colleges

Healthcare Providers



