

# JCSMS Lightning Round

COLUMBUS, OH 2017

# Order of presentations

- ▶ Amanda Carlson-Phillips
- ▶ Paul Roetert
- ▶ Amol Saxena
- ▶ Erin Wasserman
- ▶ Rob Franks
- ▶ Tatiana Jevremovic
- ▶ Cassidy Hallagin
- ▶ Monica Forquer
- ▶ PRIVIT
- ▶ Walk with a Doc
- ▶ Dutra/Forcum
- ▶ Randy Dick (time allowing)



·C·P·S·D·A·  
FUELING VICTORY

# Evolving Nutritional Care for the Athlete:

Beyond Healthy Eating to Personalized Nutrition

Amanda Carlson-Phillips, MS, RD, CSSD

Vice President

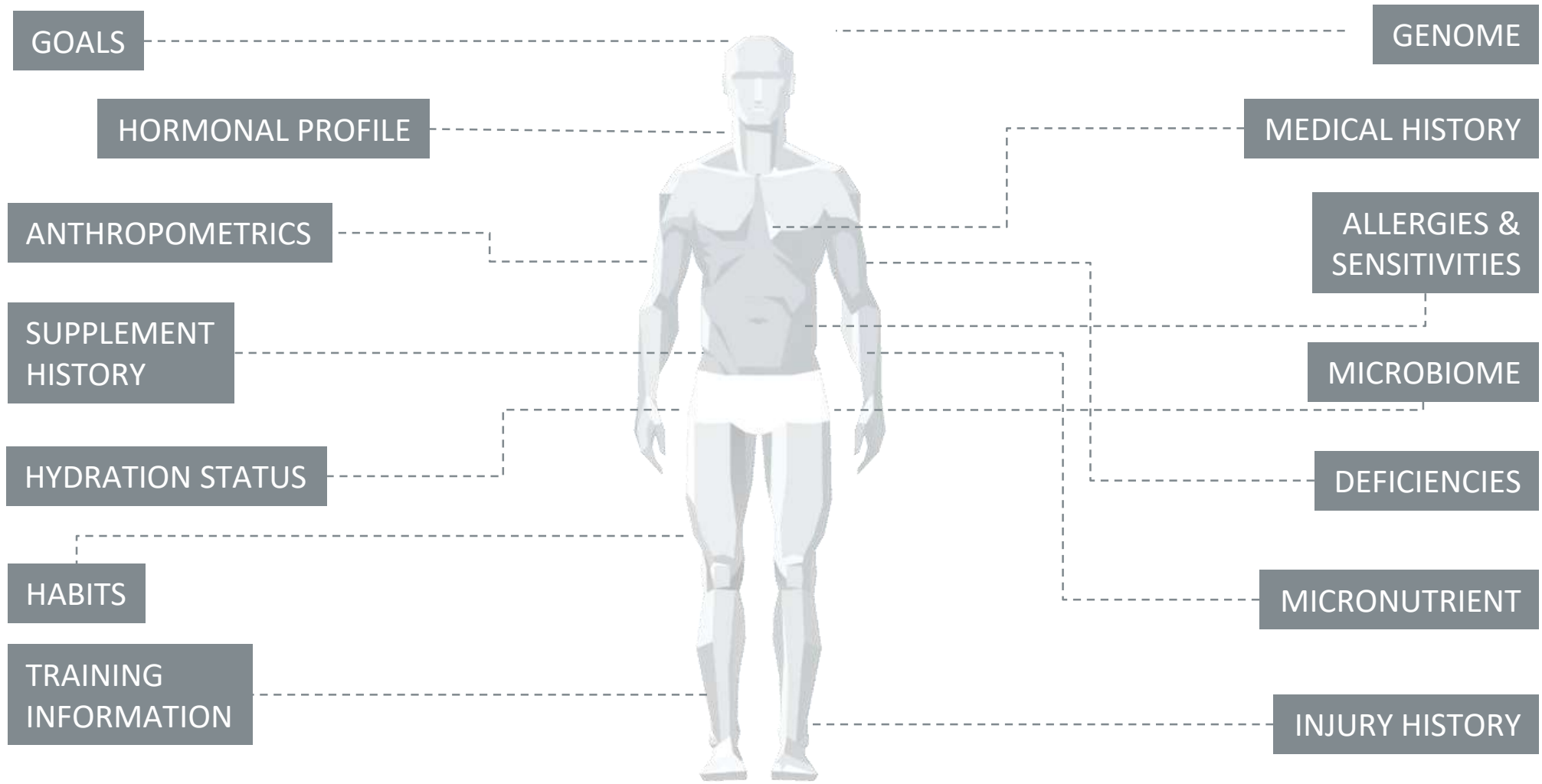
Collegiate and Professional Sports Dietitians  
Association

F U E L I N G V I C T O R Y



·C·P·S·D·A·  
FUELING VICTORY

# Leveraging Diagnostic to Advance Nutritional Programming





·C·P·S·D·A·  
FUELING VICTORY

# Are athletes fed, but undernourished?

Vitamin D | Magnesium | Omega 3 | Homocysteine | AA: EPA

Players with 0 abnormalities

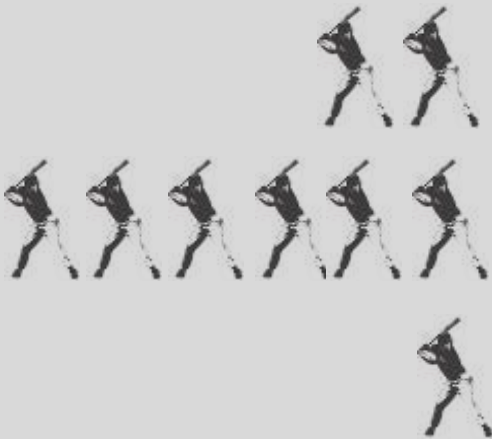
Players with 1 abnormalities

Players with 2 abnormalities

Players with 3 abnormalities

Players with 4 abnormalities

Players with 5 abnormalities



N Essential Input  
Deficits\* (N = 30)

Number of  
Abnormal Values

0	0
0	1
0	2
5	3
10	4
15	5

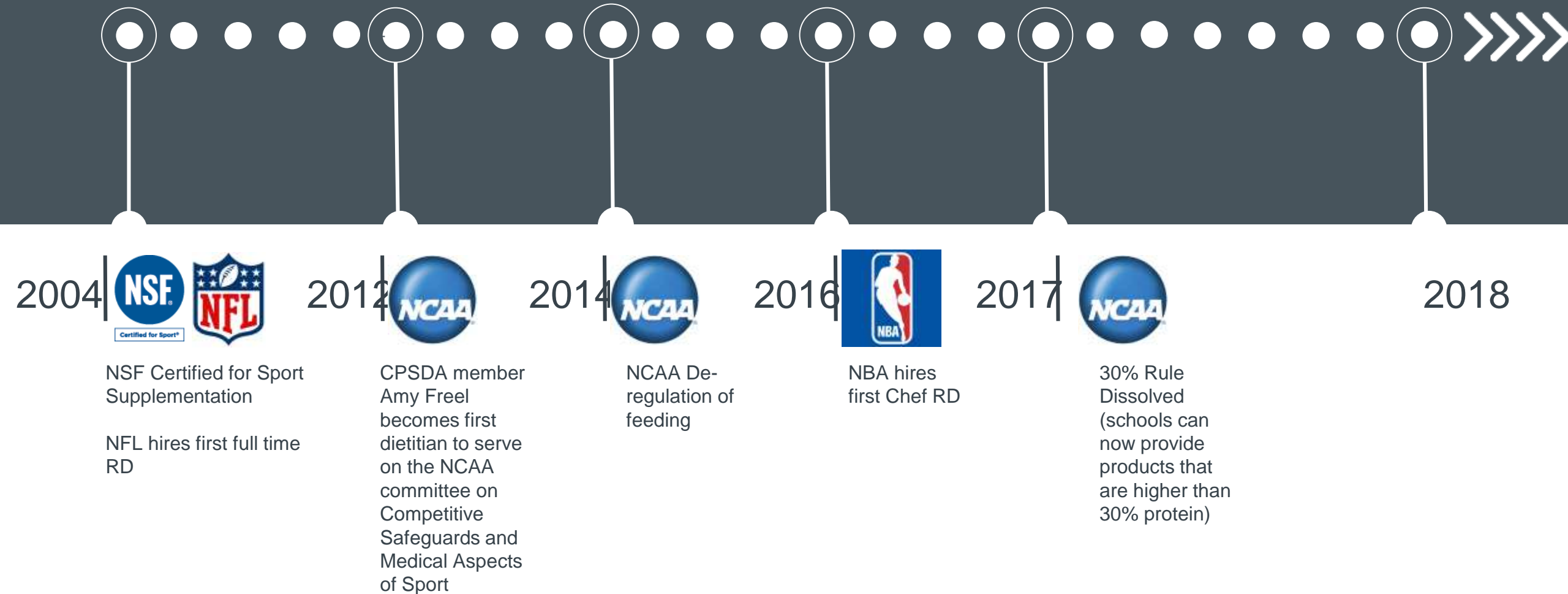


FUELING

VICTORY

# CRITICAL MILESTONES: Past · Present · Future

## Evolving Nutritional Care for the Athlete





01

NCAA

**~90%** The Power 5  
Conference teams have a  
full time RD



02

NFL

**~45%** of teams  
with full time RD support



03

MLB

**10%** of teams with full  
time RD support



04

NBA

**10%** of teams with  
full time RD support

Sports Nutrition is advancing as a part of the integrated performance team, but still has a long way to



# Preparing for a Physically Literate Life

- Aunt Mary
- History
- Early sport specialization





**“The ability to move with competence and confidence in a wide variety of physical activities in multiple environments that benefit the healthy development of the whole person.”**

**Mandigo, Francis, Lodewyk and Lopez (2012)**



# SHAPE America Standards for K-12 Physical Education

- **Standard 1 - The physically literate individual demonstrates competency in a variety of motor skills and movement patterns.**
- **Standard 2 - The physically literate individual applies knowledge of concepts, principles, strategies and tactics related to movement and performance.**
- **Standard 3 - The physically literate individual demonstrates the knowledge and skills to achieve and maintain a health-enhancing level of physical activity and fitness.**
- **Standard 4 - The physically literate individual exhibits responsible personal and social behavior that respects self and others.**
- **Standard 5 - The physically literate individual recognizes the value of physical activity for health, enjoyment, challenge, self-expression and/or social interaction.**



- SHAPE America, 2014



**SHAPE**  
**America**

SOCIETY  
OF HEALTH  
AND PHYSICAL  
EDUCATORS

health. moves. minds.

# Physical Literacy Training Concepts

- Spatial Awareness
- Strength
- Balance



# Summary Comments:

- Attain motor skill competency with a focus on lifetime physical activities
- Develop a proper understanding of motor patterns and teaching age-appropriate skills is imperative for a full understanding of the benefits of physical literacy
- Expose youth to a variety of movement patterns to ensure that a child can competently perform a breadth of movement skills in a range of different activities and environments before specializing in specific movement patterns within a single sport



# High-Energy/Low-Energy

- OLD Terminology!!!
- **Current Terminology** (since 2006): **Focused** aka “ESWT” (true shockwaves) and **radial** (RSW, SWT,rESWT) “sound/pressure” waves
- **WORKS BY:**
- Causing pain, release & depletion of Substance P
- Creating micro-trauma, releases growth factors, neovascularization, re-introduces a healing response
- Can induce stem cell release in bony & fatty areas



# Chronic Plantar fasciitis (6+ mos)

- Gollwitzer et al (2015) Multicenter RCT. Focused ESWT vs. Placebo showed favorable VAS and RM outcome of ESWT<sup>3</sup>. **Level I**
- Saxena et al (2013) Case-controlled study on athletes. Comparing endoscopic plantar fasciotomy (EPF) vs. Focused ESWT. EPF with better outcome but ESWT preferable since they can remain active during treatment<sup>4</sup>. **Level II**
- Gerdesmeyer et al (2008) RCT. Radial ESWT vs. Placebo. Radial ESWT with superior VAS and RM results<sup>5</sup>. **Level I**
- Malay et al (2006) RCT. ESWT vs. Placebo with better VAS outcome of ESWT<sup>6</sup>. **Level I**
- **NOTE: Tx < 3mos vs >6 mos works better (Saxena et al)**

# Achilles Tendinopathy

- **Saxena et al (2011)**. Prospective study. RSW for para, proximal, and insertional Achilles tendinopathy. Significant improvement in RM score for Achilles tendinopathy<sup>7</sup>. 75% effective **Level III**
- **Rompe et al (2009)**. RCT. RSWT vs. Eccentric + ESWT with favorable outcome for the combined group<sup>8</sup>. **Level I**
- **Rompe et al (2008)**. RCT. RSWT vs. eccentric loading. Better outcome for ESWT<sup>9</sup>. **Level I**
- **Rasmussen et al (2008)**. RCT. ESWT vs. Placebo ESWT. Better outcome with the ESWT<sup>10</sup>. **Level I**
- **Furia (2008)**. Case control study. RSWT vs. Control (traditional conservative method). Better outcome with ESWT<sup>11</sup>. **Level III**



# Medial Tibial Stress Syndrome (Shin Splints)

- Rompe et al (2010) Retrospective cohort study. Radial ESWT + home training program vs. Home training program only. ESWT combined group out performed the other group<sup>12</sup>. **Level II**
- Moen et al (2012) Prospective study comparing ESWT w a gradual RTRunning program. RTA sig faster ( $P=.008$ , 60 vs 92days) <sup>15</sup> **Level II**

# Medial Tibial Stress Fracture: 17 Wks later, Olympic Gold



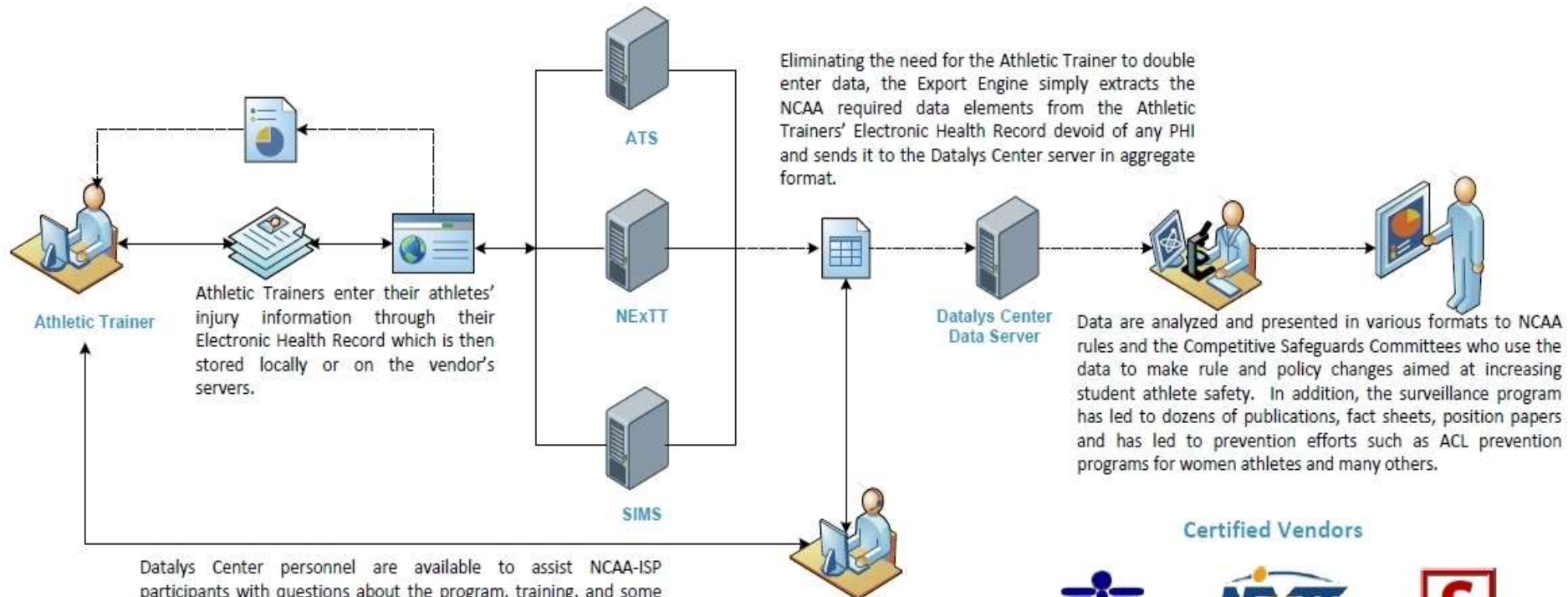


# Comparison of Pitching Injuries between NCAA Softball and Baseball Pitchers, 2009/10 – 2014/15



- Differences in **body site**, **diagnoses**, and **time loss** of pitching injuries between NCAA baseball and softball

# NCAA Injury Surveillance Program

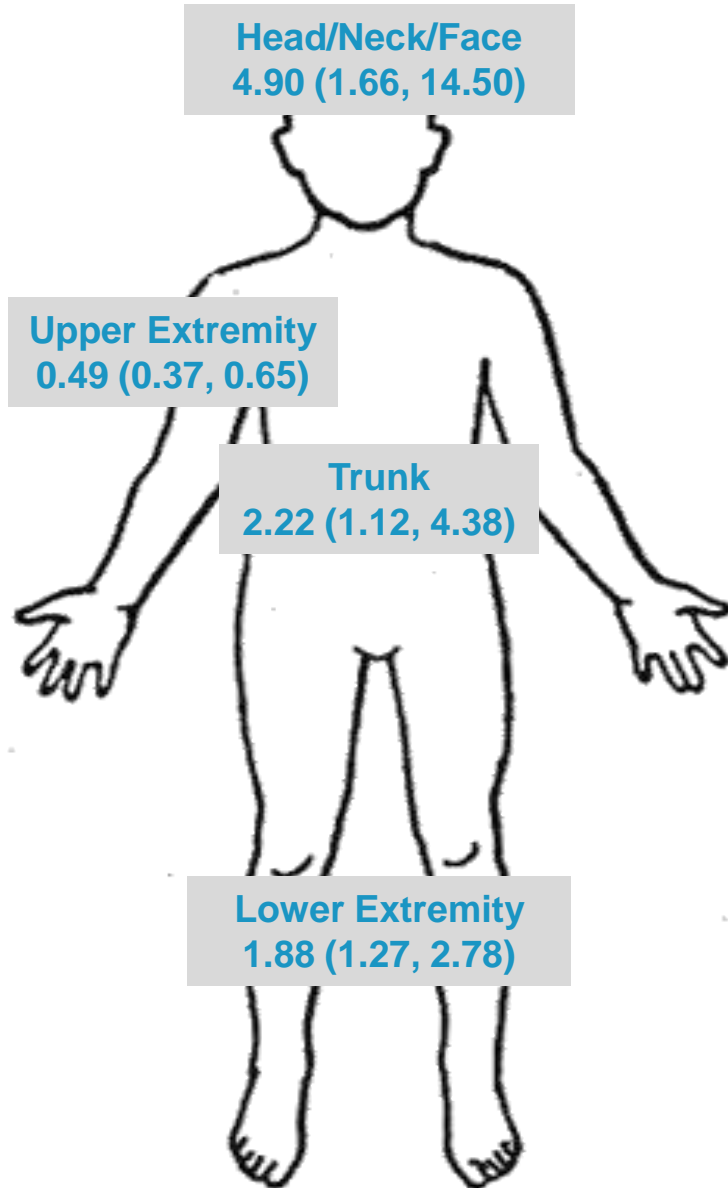


Datalys Center personnel are available to assist NCAA-ISP participants with questions about the program, training, and some vendor specific questions related to the export process. Each vendor also has customer support.

## Certified Vendors



# Softball vs. Baseball IPRs

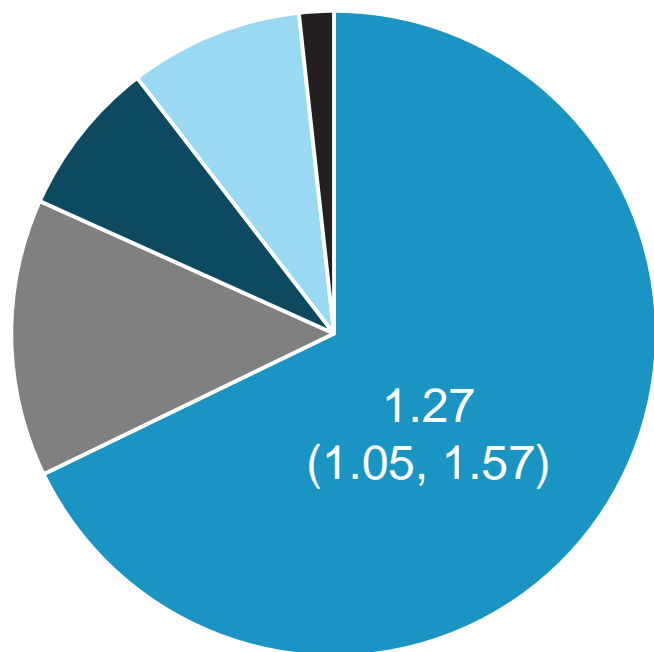


## Most common diagnoses:

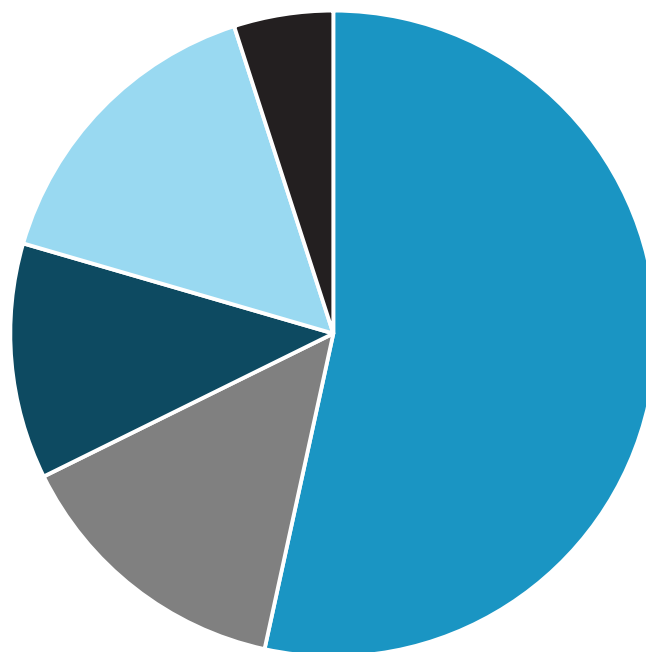
- Softball
  - Shoulder inflammation (8.7%)
  - Trunk strains (7.0%)
  - Lower leg contusions (6.1%)
- Baseball
  - Shoulder strains (10.6%)
  - Elbow inflammation (10.6%)
  - Shoulder entrapment (8.1%)

# Time Loss

Softball



Baseball



■ <24 Hours    ■ 1-6 Days    ■ 7-21 Days  
■ >21 Days    ■ Missing

## Common mechanisms:

- Softball
  - Overuse (41%)
  - Non-contact (28%)
  - Ball contact (22%)
- Baseball
  - Overuse (52%)
  - Non-contact (28%)
  - Ball contact (15%)

# Conclusions

- Baseball pitchers sustain a higher proportion of upper extremity injuries than softball pitchers
- Softball pitchers report a higher proportion of lower extremity injuries than baseball pitchers
- Further examination of biomechanics needed for injury prevention

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# AMERICAN OSTEOPATHIC ACADEMY OF SPORTS MEDICINE

## Epidemiology

- National Federation of High School Sports 2013-14 survey found 7.8 million students participate in sports.
- Overuse injuries account for 46-50% of all athletic injuries.
- No epidemiological data for number of young athletes who play year-round in same sport or on multiple teams at the same time.
- NFHS 2015-16 study showed specialized athletes had twice the frequency of lower extremity injuries than those that did not specialize.
- Same study showed specialization led to twice as many overuse injuries than those who did not specialize controlling for gender, grade, sport and previous injury status.
- Same study showed 50 % of student athletes participated in club team in addition to high school team.

Specialization of the Athlete  
R. Robert Franks, DO, FAOASM  
President, American Osteopathic Academy  
of Sports Medicine



# AMERICAN OSTEOPATHIC ACADEMY OF SPORTS MEDICINE

## Definition

### **Sports Specialization**

- Athlete focuses on only one sport
- Athlete often plays same sport year round
- See increased frequency at earlier age as select/travel teams begin with athletes as young as 7.

### **Differentiation**

- Early Specialization - Begins before puberty
- Late Specialization with Early Diversification – Sampling
- Reasons for above - scholarships, desire to be professional or Olympic athlete, self image as elite as defined by media, sporting industry, coaches, family, or society.
- Only 3.3 to 11.3 % of high school athletes compete at NCAA level with only 1% receiving an athletic scholarship.
- Only 0.03 to 0.05 % of high school athletes achieve play at the professional level.
- Athletes who participate in a variety of sports have less injuries and play sports longer than those who specialize before puberty.
- Parents are greatest influence on choosing a particular sport.
- Coaches influence the decision to train more intensely and specialize.

Specialization of the Athlete  
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# AMERICAN OSTEOPATHIC ACADEMY OF SPORTS MEDICINE

## Effects of Early Specialization

- Consideration of decision for specialization should include development of sports related motor skills, sport specific knowledge, motivation and socialization.
- Affectation on health is seen in areas of cardiac, nutrition, maturation, musculoskeletal, and physiologic effect on athlete.
- Cardiovascular - No adverse effects.
- Nutrition - Emphasis on caloric intake to meet demands of sport in those in high intensity or endurance sports.
- Maturity - Menarche often 1 to 2 years later than in those who are non – athletes.
- Musculoskeletal - Increased risk of stress fractures, lower bone density, female athlete triad, overuse injuries.

Specialization of the Athlete  
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# AMERICAN OSTEOPATHIC ACADEMY OF SPORTS MEDICINE

## **Early Evidence Concerning Sports Specialization**

- There is little evidence that specialization before puberty is necessary to reach elite status and is more likely to be detrimental to the health of the athlete.
- Delaying sports specialization until after puberty decreases risk of injury and leads to higher propensity for success. Delay and participation in multiple sports allows increased diversity of athlete's skills.
- Early specialization before puberty leads to risk of physical, emotional, and social issues. Risk of injury is multifactorial and can include training volume, competition level and pubertal maturation stage. Staleness of skill development and burnout are also significant issues with early specialization.
- Exact amount of training to be successful has yet to be determined.
- No data exists to show sports enhancement programs are successful.
- National ranking of athletes should be discouraged before athlete's later years of high school.

Specialization of the Athlete  
R. Robert Franks, DO, FAOASM  
President, American Osteopathic Academy  
of Sports Medicine



# AMERICAN OSTEOPATHIC ACADEMY OF SPORTS MEDICINE

## Questions for the Future

- Is there a genetic predisposition/s that may predict success or failure with specialization of sport?
- Need for longitudinal data on early sports specialization and injury and burnout rates
- Need for data as to when to begin sports specialization, if at all.



*Don't prescribe opiates as first line treatment  
for tendinopathies.*

CASEM

ACMSE





Don't prescribe opiates as first line treatment for tendinopathies.



CASEM

ACMSE

*Don't order an MRI as an initial investigation for suspected rotator cuff tendinopathy.*



Don't prescribe opiates as first line treatment for tendinopathies.

*Don't order orthotics for asymptomatic children with pes planus (flat feet).*

CASEM

ACMSE

Don't order an MRI as an initial investigation for suspected rotator cuff tendinopathy.

Don't prescribe opiates as first line treatment for tendinopathies.

Don't order orthotics for asymptomatic children with pes planus (flat feet).

*Don't immobilize ankle inversion sprains with no evidence of bony or syndesmotic injury.*

Don't order an MRI as an initial investigation for suspected rotator cuff tendinopathy.



Don't prescribe opiates as first line treatment for tendinopathies.

Don't order orthotics for asymptomatic children with pes planus (flat feet).

*Don't order an MRI for suspected degenerative meniscal tears or osteoarthritis (OA).*

CASEM

ACMSE

Don't order an MRI as an initial investigation for suspected rotator cuff tendinopathy.

Don't immobilize ankle inversion sprains with no evidence of bony or syndesmotomic injury.

The relationship between  
pre-operative and  
twelve-week post-  
operative  
Y balance and quadriceps  
strength in athletes with  
an ACL tear

**Cassidy Joseph Hallagin PT, DPT**

**Co-Authors:**

J. Craig Garrison, PhD, PT, ATC, SCS  
Jim Bothwell, MD  
Shiho Goto, PhD, ATC  
Joseph Hannon, PT, DPT, SCS, CSCS  
Kalyssa Pollard, MS

## Background



- Decreased quadriceps strength pre-operatively → decreased quadriceps strength post-operatively
- YBT ANT asymmetry >4 cm at 12 weeks did not meet criteria to RTS for the single and triple hop test for distance
- PURPOSE: Examine the relationship between Y Balance Test scores and isokinetic quadriceps strength at pre-operative ACL-R and 12 weeks post-operative following ACL-R

# Methods

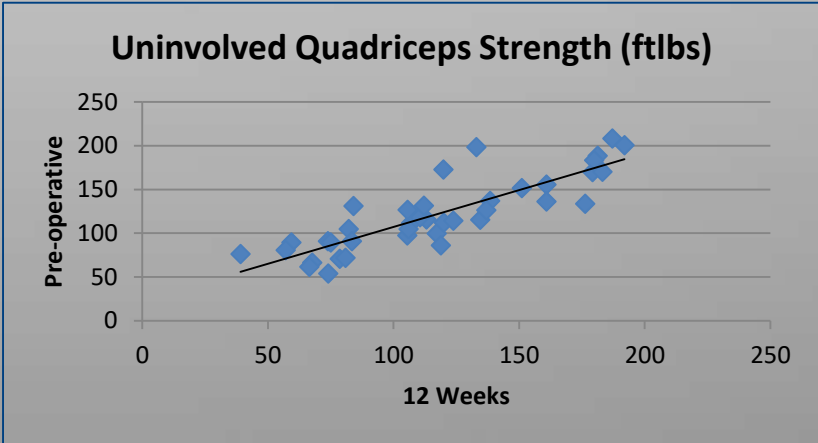
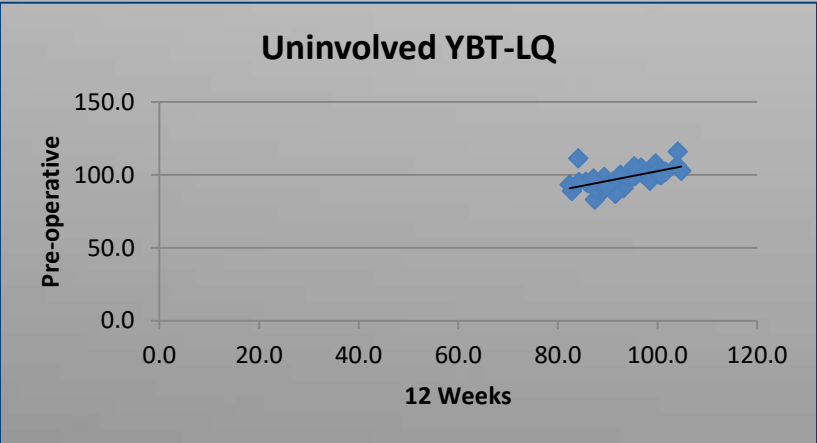
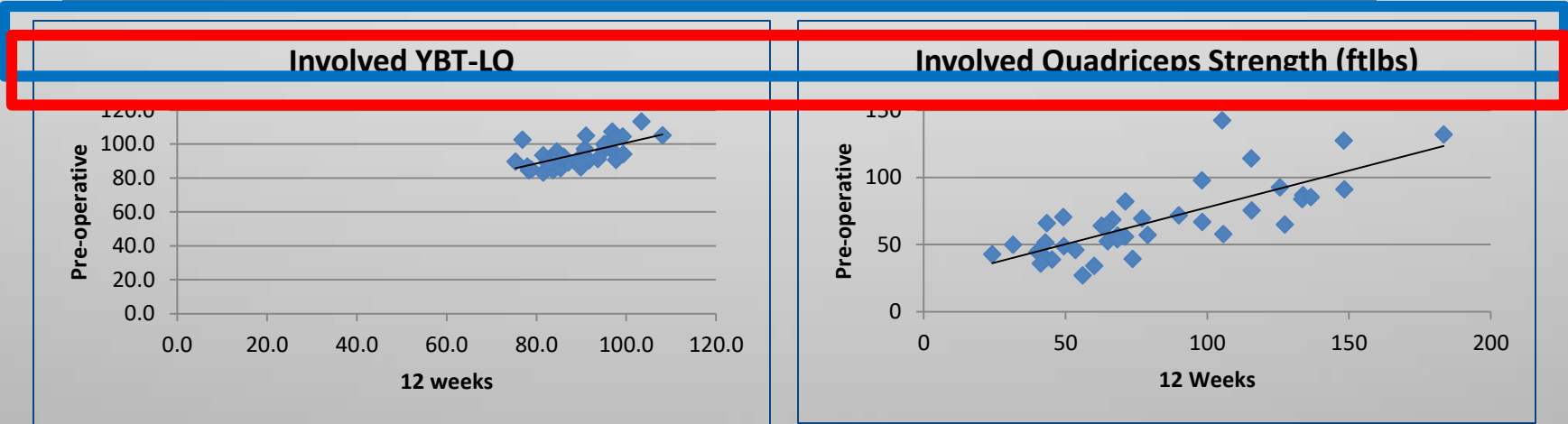
Inclusion	<ul style="list-style-type: none"><li>• Involved in/plan to return to Level 1 sport</li><li>• Physical therapy (2-3x/wk for at least 12wks)</li></ul>
Exclusion	<ul style="list-style-type: none"><li>• Previous ACL tear and/or reconstruction on either side</li><li>• Any other ligamentous injuries to the knee</li><li>• Associated chondral defect requiring surgical intervention</li></ul>

- Biodex Multi-Joint Testing and Rehabilitation System
  - Quadriceps muscle strength @ 60°/sec
  - Average of 5 trials
- YBT-LQ assesses ROM, strength, and neuromuscular control
  - Anterior (ANT), Posteromedial (PM) and Posterolateral (PL)
  - 3 test trials each leg, each direction

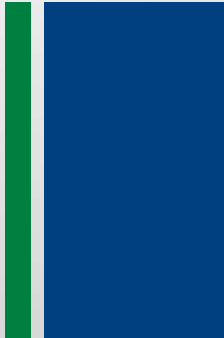


# Results

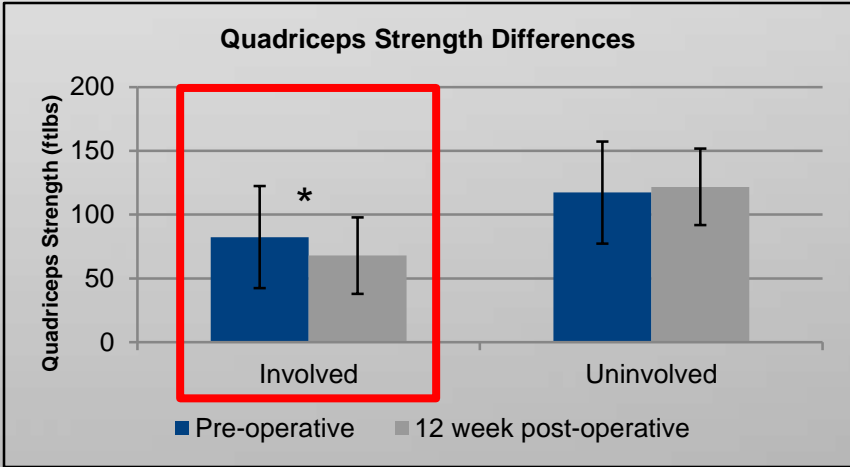
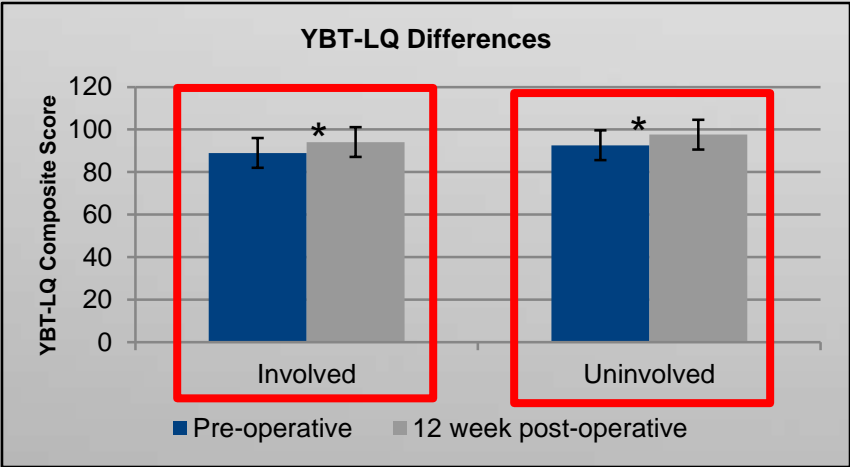
Age (yrs)	Gender		Height (cm)	Weight (kg)	Dominant Side		Injured Side	
	Male	Female			Right	Left	Right	Left
15.6±1.5	21	18	172.1±9.6	72.1±16.8	37	1	20	19



# Results



	YBT-LQ		Quadriceps Strength (ftlbs)	
	Involved*	Uninvolved*	Involved*	Uninvolved
Pre-operative	89.0 ± 7.7	92.6 ± 6.2	82.3 ± 38.6	117.3 ± 42.0
12 Weeks post-op	94.1 ± 7.1	97.6 ± 6.8	67.9 ± 27.4	121.7 ± 41.5



**\*17% DECREASE FROM PRE-OPERATIVE TO 12WKS**

**30% DEFICIT AT PRE-OPERATIVE →  
44% DEFICIT AT 12WKS**



# Discussion



- Previous research has demonstrated that poor pre-operative QS correlates with decreased QS and poorer performance on RTS measures post-operatively
- Increase in involved limb YBT-LQ at 12 weeks but decrease in quadriceps strength at same time point
- HUGE 44% quadriceps strength deficit at 12 weeks (INV vs UNINV)
- QUESTION: Is 12 weeks an appropriate time point to begin plyometric/jogging progressions?

# The Case for Inclusive Fitness

Monica Forquer, Manager of Fitness  
[mforquer@specialolympics.org](mailto:mforquer@specialolympics.org)



Special Olympics  
**Health**

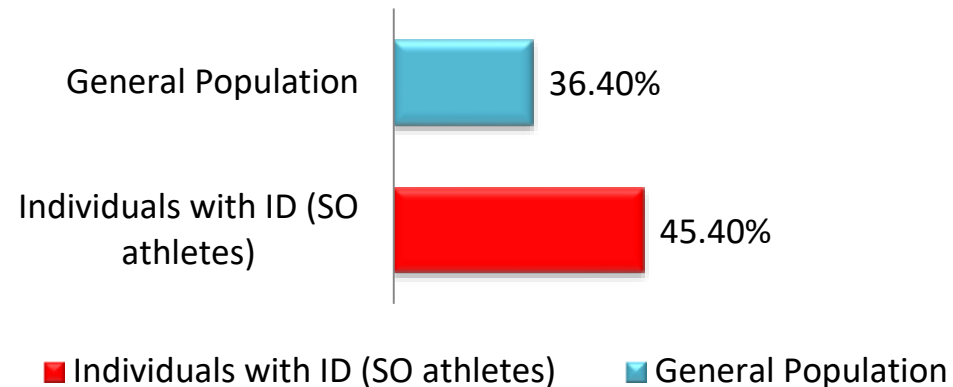
MADE POSSIBLE BY: **Golisano** FOUNDATION



## And yet, the health of our athletes is poor....

- 46.5% Exercise less than 3 days most weeks
- 91% Flexibility Problems Identified
- 83% Strength Problems Identified
- 45% Obese

### Healthy weight disparity (US)



# A Multi-Tiered Approach...





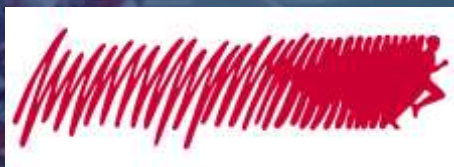
# Here's what Inclusion looks like...







© PRIVIT



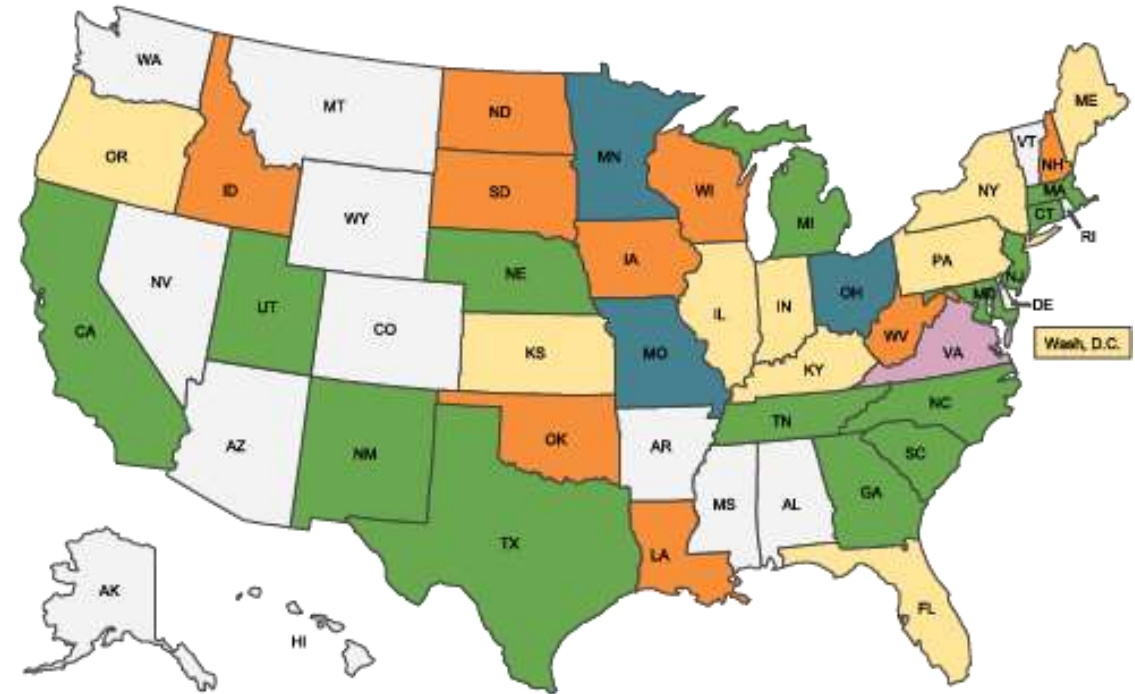
Joint Commission for  
Sport Medicine and  
Science

February 18, 2017



# PRIVIT® Summary

- #1 provider of e-PPE solutions throughout North America
- Serving...
  - State High School Athletic Associations
  - Colleges & Universities
  - Sporting Organizations
  - Middle and High Schools
- 3.5 Million PPE Snapshots



# Problems We Solve

- Shorten a difficult and time-consuming process
- Provide the ability to “manage” the entire process
- Eliminate concerns of privacy to athletes and parents
- Provide compliance to organizations and staff members

A photograph showing a person's hand filling out a blue 'Information Release Form'. The form is titled 'Information Release Form' and contains various sections for personal information, contact details, and insurance coverage. The form is being held over a desk with a laptop, keys, and a notebook visible in the background.

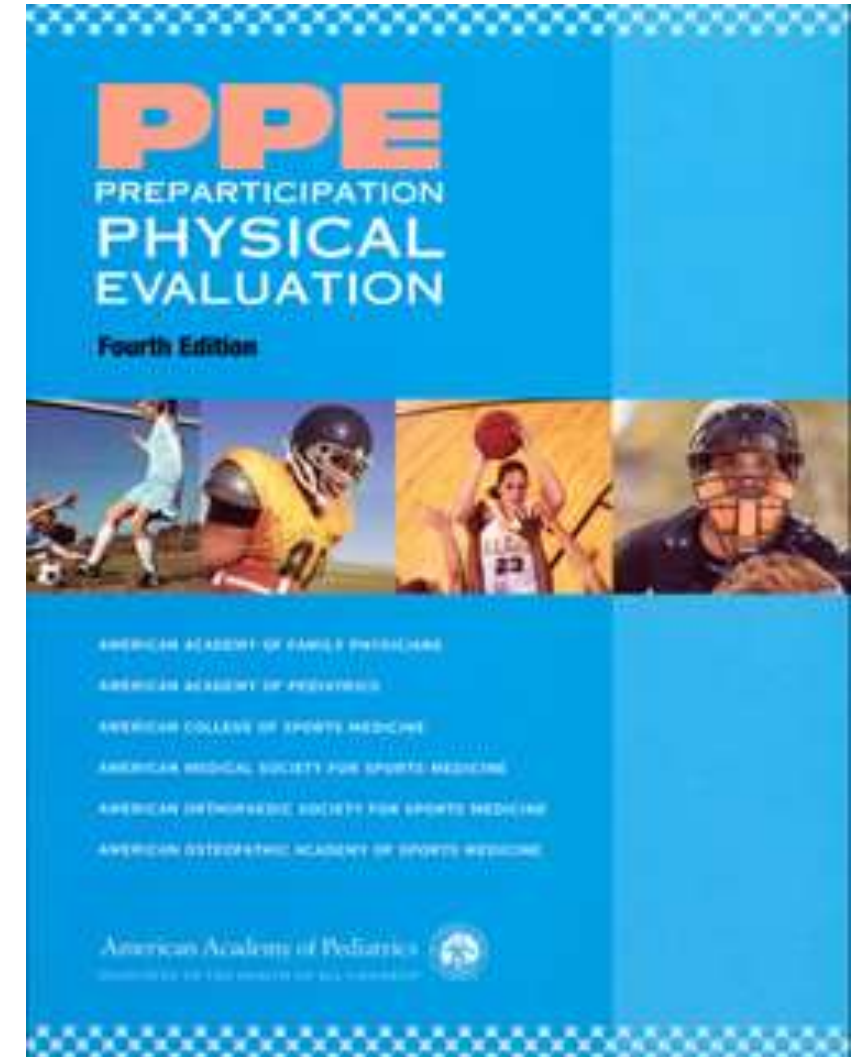
# Compliance

- Clear majority of PPE processes are not completed in a compliant process
- Protecting PHI at all times is a requirement
- PPE Physicians and Organizations are trusting the organizations that carry out the PPE process
- The decision to not adopt to a compliant process is often left to the Athletic Director



# What We've Learned About the Future of PPE

- Organizations want flexibility of content not another monograph
  - Medical professionals want as much detail as possible
  - Parents and students want the shortest history form possible
  - Every top-level organization has their own Medical Advisory Group
  - The mid-level organizations that complete the process don't want change





# What We've Learned About the Future of PPE

- Most organizations don't know or care if they aren't compliant
- Flexibility without sacrificing comprehensiveness can only be done with a platform
- Record retention, Document Management, and PHI security requires automation
- Most contract medical professionals assume that the PHI is protected...It's not





# Questions

**Contact:**

**Greg Miller, President**

**[gmler@privit.com](mailto:gmler@privit.com) | 614.360.1152**

**® PRIVIT**



# Walk with a Doc



# PARDON JCSMS INTERRUPTION

**Guests:** *Ted Forcum & Tim Dutra*

**Host:** *Bill Feldner*



1:00



## RUNDOWN

Does Cost Matter?



Which is better,  
kinesiology tape or  
athletic tape?

3:00

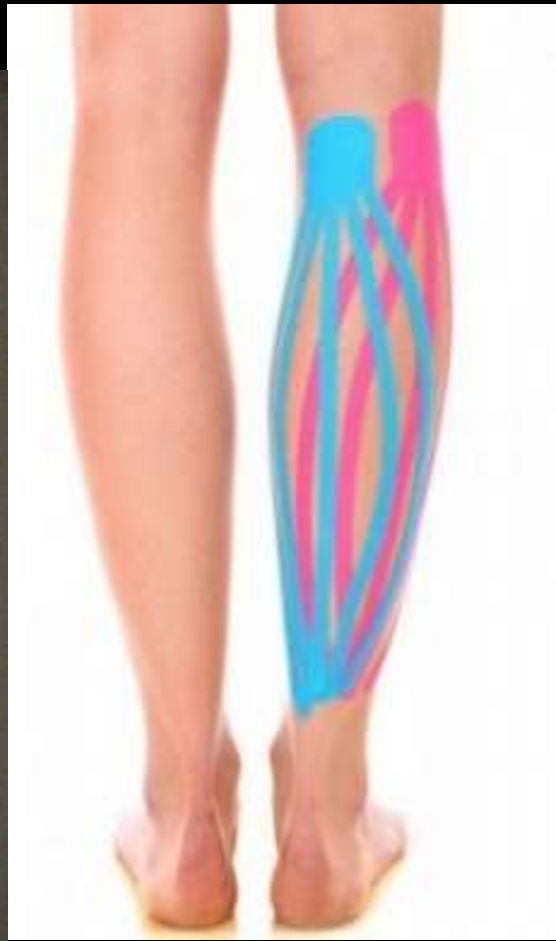
2:00

30sec

Pause

Stop

GO!



1:00



## RUNDOWN

Does Cost Matter?

Ease of use



Which is better,  
kinesiology tape or  
athletic tape?

3:00

2:00

30sec

Pause

Stop

GO!

1:00

**RUNDOWN**

Does Cost Matter?

Ease of use

**Mobility vs Stability**

Kinesiology tape or  
athletic tape?

3:00

2:00

30sec

Pause

Stop

GO!

# 1:00

## RUNDOWN

Does Cost Matter?

Ease of use

Mobility vs Stability

Proprioception



Kinesiotape or  
Athletic tape?

3:00

2:00

30sec

Pause

Stop

GO!



1:00

CRIME SCENE DO NOT CROSS

**RUNDOWN**

Does Cost Matter?

Ease of use

Mobility vs Stability

Proprioception

**Durability**

Does kinesiotape or  
athletic tape hold up  
better?

3:00

2:00

30sec

Pause

Stop

GO!



1:00

**RUNDOWN**

Does Cost Matter?

Ease of use

Mobility vs Stability

Proprioception

Durability

**Run Forrest!**

Is max or min shoe better  
for running (or no shoes)?

3:00

2:00

30sec

Pause

Stop

GO!

1:00

**RUNDOWN**

Does Cost Matter?

Ease of use

Mobility vs Stability

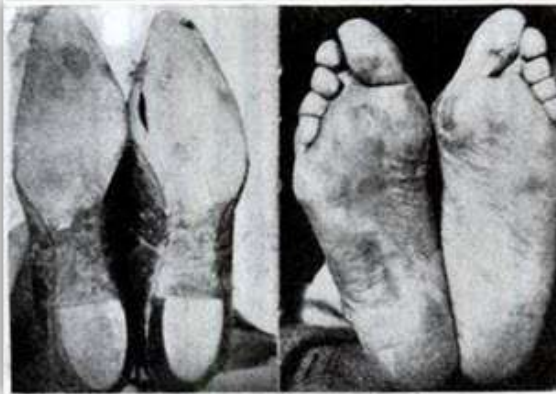
Proprioception

Durability

Run Forrest!

**Nature vs Nurture**

Feet of a Modern Business Man



Feet of a Barefoot Runner



Even horses wear  
shoes, right?

3:00

2:00

30sec

Pause

Stop

GO!

1:00

**RUNDOWN**

Does Cost Matter?

Ease of use

Mobility vs Stability

Proprioception

Durability

Run Forrest!

Nature vs Nurture

**Leveraging control**

Everyone wants to be  
in control these days.



Do your feet need  
cushioning?

1:00

## RUNDOWN

Does Cost Matter?

Ease of use

Mobility vs Stability

Proprioception

Durability

Run Forrest!

Nature vs Nurture

Leveraging control

**Cushion?**



3:00

2:00

30sec

Pause

Stop

GO!



1:00

**RUNDOWN****Performance**

Mechanical  
engineering and  
sports science?

3:00

2:00

30sec

Pause

Stop

GO!





*Thank You!*

# TBDBITL





Mary Ruth Weigel



Homecoming 2011







UM 1932 (static)

... evidence of possibly the first formation of a Script Ohio was provided by George N. Hall, member of the Michigan band, who participated in the October 15, 1932 formation (above photo).



The Incomparable  
Script Ohio

OSU 1936 (dynamic)



- All



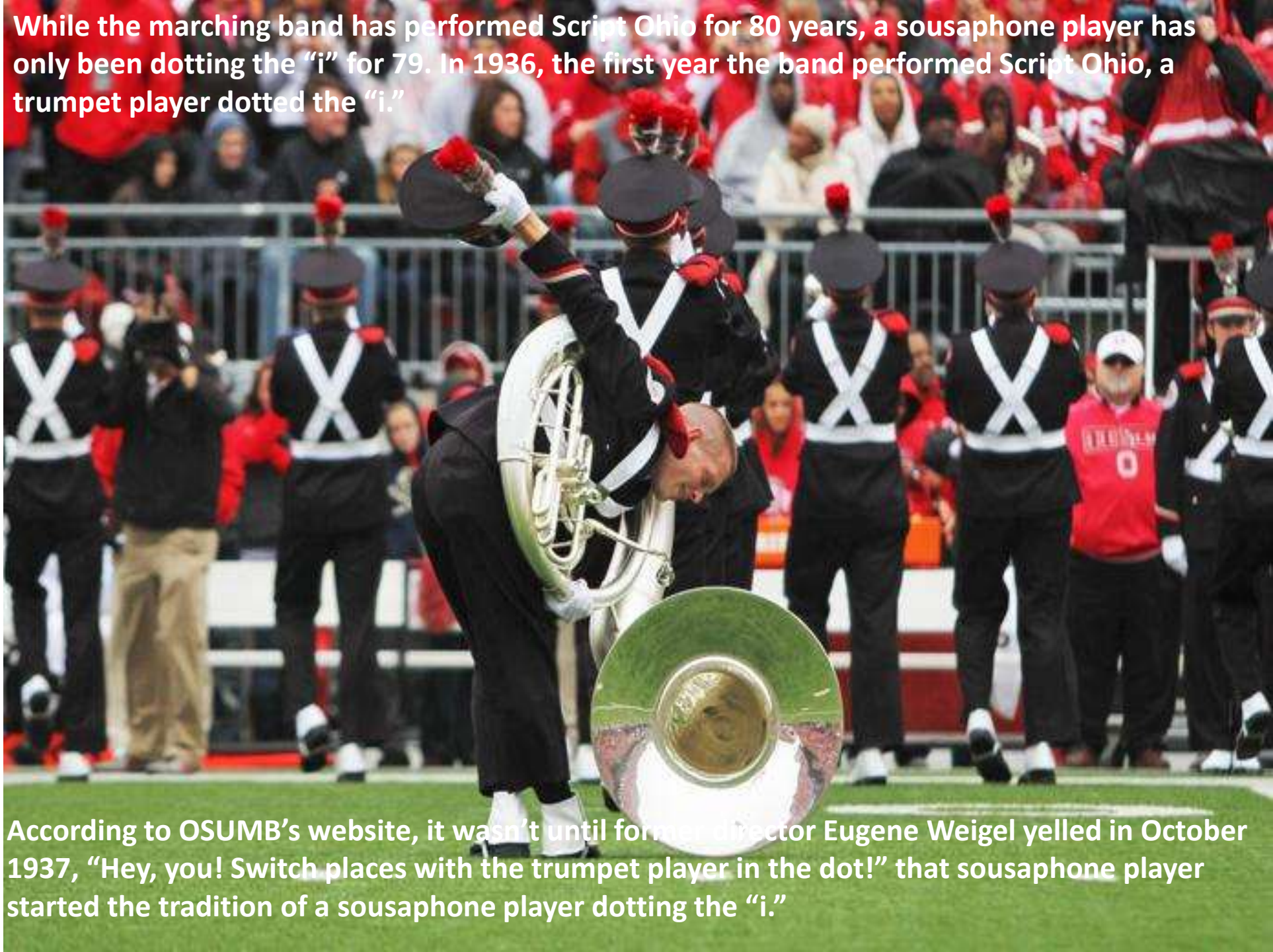
## Le Regiment de Sambre et Meuse – WW I

All Brass





While the marching band has performed Script Ohio for 80 years, a sousaphone player has only been dotting the “i” for 79. In 1936, the first year the band performed Script Ohio, a trumpet player dotted the “i.”



According to OSUMB’s website, it wasn’t until former director Eugene Weigel yelled in October 1937, “Hey, you! Switch places with the trumpet player in the dot!” that sousaphone player started the tradition of a sousaphone player dotting the “i.”

- <https://www.youtube.com/watch?v=4SkeBH0jbYo>