JCSMS "Lightning Round"

Presented by Kelly Lange, DC CCSP for 2015 JCSMS meeting

ACA Sports Council President

Medical Director Pine to Palm 100 mile endurance race







www.wser.org/research

- Defined as serum or plasma sodium concentration below the normal reference range of 135 mmol/L
- Occurs during or up to 24 hours after prolonged physical activity
- Sx&Sy: nausea, dizziness, headache, confusion, disorientation
- Leading cause of preventable morbidity & mortality in endurance activities
- Severe form includes significant mental status changes resulting from cerebral edema (Exercise Associated Hyponatremic Encephalopathy – EAHE)
- Primary risk factor = overhydration

*Wilderness Medical Society practice guidelines for treatment of exercise-associated hyponatremia:2014 update. Wilderness Environ Med. 2014;25:S30-S42

- Case study:
- 53 yoa male participating in WSER 161-km race presented with seizure after dropping at 145 km
- Body weight increase of 2.2% at 126 km; vomiting and fatigue with drop at 145 km
- Initial tx consisted of 2 IV boluses of 100 mL of 3% hypertonic saline
- Hospital more concerned with rhabdomyolysis and acute kidney injury (AKI) so patient given high volumes of IV isotonic fluids
- Treatment delayed recovery from "unjustified resistance to use of hypertonic saline"
- Patient left hospital AMA
- Concluded EAH from overhydration and excessive sodium supplementation during event

Hoffman MD, Stuempfle KJ, Sullivan K, Weiss RH. Exercise-associated hyponatremia with exertional rhabdomyolysis: Importance of proper treatment. Clin Nephrol. 2014 Jun 16

What can we learn from this?

• Prevention:*

- Avoid overhydration water intake should be *driven by thirst*
- Avoid excessive sodium supplementation (especially events >18 hrs)
- Monitor body weight
- Educate event support and medical personnel

• Field treatment

- Depends on correct diagnosis and access to on-site serum sodium concentration analysis (iSTAT)
- Mild cases can be handled with fluid restriction until urination and administration of oral sodium with limited fluid
- No administration of hypotonic or isotonic fluids without [Na+] analysis

*Wilderness Medical Society practice guidelines for treatment of exercise-associated hyponatremia:2014 update. Wilderness Environ Med. 2014;25:S30-S42

- Medical care in the hospital*
 - Measure blood sodium prior to IV administration
 - Restrict fluids (IV and oral) until onset of urination
 - Severe EAH (signs of cerebral edema or serum sodium <125 mmol/L): administer IV 3% hypertonic saline as a 100 mL bolus repeated twice at 10-minute intervals
- How do I manage this condition for my race?
 - Educate athletes to DRINKTOTHIRST
 - Train my medical staff, monitor athletes through medical staff at AS, use weight measurements when needed
 - Local hospitals informed of event, provided literature and EMS given standing orders for treatment protocol with suspected EAH
 - No IV administration by my medical staff (due to lack of access to iSTAT)

*Bennett BL, Hew-Butler T, Hoffman MD, Rogers IR, Rosner MH. Wilderness Medical Society practice guidelines for treatment of exerciseassociated hyponatremia. Wilderness Environ Med. 2013;24(3):228-40

The impact of maximalist running shoes on Lower extremity kinematics during walking and running

Motion Analysis Research Center, Samuel Merritt University, Oakland, CA Tim Dutra, DPM, MS, MHCA, FACSM, FAAPSM

Dept. of Applied Biomechanics, CSPM@SMU



Altra Olympias: 30mm teel, 30mm tureloot, 10 cz.



Brooks Transcend: 30mm heel, 20mm kirefast, 11.8 or

2015 JCSMS Memphis, TN

The maximalist running shoe is the newest type of shoe in the running shoe industry. This shoe is the antithesis of the minimalist running shoe, which has recently been decreasing in favor. The new maximalist running shoe was first introduced by the Hoka One One company in 2009 and many running shoe companies are now fabricating their own maximalist shoe. Currently there are no studies on the impact of maximalist running shoes on lower extremity biomechanics.

The most commonly touted benefits of the maximalist running shoe are increased cushioning, decreased muscle fatigue, quicker recovery time, inherent stability and a smoother stride. This study will focus on three areas that correlate to the touted benefits: foot pressure (cushioning), lower extremity joint motion (inherent stability/smoother stride) and balance (inherent stability).

The data collected will be used to determine if any differences exist between walking and/or running in maximalist vs. neutral running shoes. Pressure and joint motion results will be cross-referenced with foot typing and baseline balance testing.



Hoka Conquest: 34mm himi, 20mm lowbiot, 11.9 kz.



2015 JCSMS Memphis, TN

The research group is focusing on the quantitative measures that can be gained in the Motion Analysis Research Center at Samuel Merritt University. The group would like to begin establishing a line of research that will benefit the MARC, SMU and our students, and the biomechanical influence of shoe gear on the body is one of the chosen lines of research.

Epi Updates 2015



Major League Baseball (MLB) Surveillance Opportunities and Challenges

- Started 2010 Entire population (30 major league, 200+ minor league teams- 7000 players) vs a sample.
- Centralized system that meets needs of medical AND administrative staffs (Trades / Moves)
- Health Outcomes vast amount of performance variables tied to injury (pre and post)
- Ability to study the difficult concept of overuse.
- BMARC and Research Committees provide oversight and strategy
- MDs, ATCs both feel invested.
- Collaboration (??) between MLBPA and clubs.

Major League Baseball (MLB) Surveillance Results

Major and Minor League Baseball Hamstring Injuries: Epidemiology from Major League Baseball Injury Surveillance System

Hamstring strains are a considerable cause of disability in professional baseball and are affected by:

- prior history of hamstring strain (20 % Major, 8 % Minor)
- seasonal timing (May)
- Base running(2/3), particularly to first base

Mild Traumatic Brain Injury in Major and Minor League Baseball

Mild traumatic brain injury accounted for 1% of all game injuries. Catchers were at significantly higher risk than all others when in the field

Ongoing

Basic epi studies on knee, hip and elbow. More complex studies on shoulder.

Performing Artists

- DANCE > 70% pro ballet and modern dance participants suffer injuries annually (2 to 7 injuries per year)
- **ORCHESTRA** > 75% of orchestra members will develop at least one MSD <u>from playing</u> during their career.
- **DCI** 64% of 2013 World Class Drum Corps had members who developed a stress fracture, most in foot, pelvis.
- **VOICE** 65% of occupational voice patients have moderate to severe depression due to vocal impairment
- NOMC Top chronic diagnosis Hypertension, Depression and Diabetes. 67% of NOMC patients did not have a regular health provider
- ALL- 50% of musicians experience some form of Noise-Induced Hearing Loss (NIHL)

Next Steps

MLB Baseball

<u>Hamstring</u>

- Published in AJSM 2013
- Prevention programs and effectiveness being studied
- Linking MRI with severity of injury
- Effectiveness of platelet-rich plasma (PRP) for recovery

Concussion

- Accepted for publication AJSM 2015
- New rules for contact at home plate instituted 2014 season

Feb 2014 -An experimental rule, 7.13, intended to increase player safety by eliminating "egregious" collisions at home plate was jointly announced by MLB and the MLBPA

• Hat with protective front plate being piloted for pitchers - 2014

Performing artists

- Monitor volume and intensity of weekly practice activities
- Monitor volume and intensity of sound exposure
- Develop a relationship with a medical professional before an injury occurs.



SIT UPS ARE ASSOCIATED WITH:

Higher levels of psoas activation High low back compressive loads exceeds National Institute for **Occupational** Safety and Health (NIOSH) occupational guidelines (1981)



FEELING THE PRESSURE!

 crunches and traditional situps place 3,300 newtons (equivalent of 730 lbs.) of compressive force on the spine when bent in flexion. (Axler and McGill 1997)



The Maximum Permissible Limit assumes:

- 1. Musculoskeletal injury incidence and severity rates increase sharply;
- 2. A 650 kg compression force on the L₅/S₁ disc, created by the MPL, are not acceptable; and
- 3. Only 25% of men and less than 1% of the women would be capable of performing above the MPL.

Am. Ind. Hyg. Assoc. J. 480(1):698-702 (1987)

Comparison of United States (NIOSH Lifting Guidelines) and European (ECSC Force Limits) Recommendations for Manual Work Limits

ANDRIS FREIVALDS Department of Industrial and Management Systems Engineering, Pennsylvania State University, University Park, PA 10802

STU MCGILL'S BIG 3



TES=thoracic extensor spinae LES=lumbar extensor spinae RA=rectus abdominis OE=external abdominal oblique OI=internal abdominal oblique TrA=transverse abdominis

OTHER ALTERNATIVES TO SIT UPS



Why these exercises?

- Reduce low back pain
- Improve targeting core musculature
- Increase power through the extremities
- Functional core stabilization

The Aspen Institute's **PROJECT PLAY**

REIMAGINING YOUTH SPORTS IN AMERICA



Jim Whitehead Joint Commission on Sports Medicine & Science Memphis, TN

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Focus on the Health of Children and Communities

PROJECT PLAY

REIMAGINING YOUTH SPORTS IN AMERICA

How do we give stakeholders – from parents to sport leaders – the tools to build 'Sport for All, Play for Life' communities?

I'd like to congratulate the Aspen Institute for including sports. These sessions will (do more) than anything that can happen in this country to bring about positive changes.

Jim Brown Founder of Amer-I-Can, member of Pro Football Hall of Fame



So Many Breakdowns ...

Barriers for all

- Marginalization of in-town, rec leagues
- Cuts to middle school & freshman teams
- Decline of intramurals
- Most schools no longer offer daily PE
- Casual or pickup play is less prevalent

Upper-income barriers

- Exclusionary sport organization policies
- Excessive demands on family
- Win-at-all-costs mentality
- Lack of age-appropriate play
- Burnout, overuse injuries, concussions



Lower-income barriers

- Lack of viable parks
- Slashed recreation budgets for programs
- Lack of volunteer coaches
- Safety/transportation needs
- Large schools one varsity, one JV team in for 3,000 students

Build a Square Around the Pyramid



Deliver Real Societal Impact

PRIMARY

- More early positive experiences for children
- More children involved in a variety of sports
- Higher sport participation rates overall
- Lower sport attrition rates overall
- More physical activity integrated with everyday life

RESIDUAL

- More active adults
- Lower medical costs over lifetime
- Stronger, healthier communities
- More local resources (coaches) to sustain healthy sport culture

www.AspenProjectPlay.org





Percutaneous Plating of Distal Fibular Fractures

Andrew Yun, DPM Sports Medicine Fellow Amol Saxena, DPM, FACFAS – Director/Senior Author Palo Alto Medical Foundation

Minimally Invasive Plate Osteosynthesis (MIPO)

- Need balance
 - Anatomic reduction & soft tissue devitalization
- MIPO allows:
 - Less periosteal stripping
 - Percutaneous placement of hardware
 - Fracture hematoma undisturbed
 - Minimal disruption of blood supply
 - Increased callus formation
- Overall Advantages:
 - Reduced complication rates
 - Fast healing
 - Quicker return to activity
- Less operative time

Percutaneous Plating of Distal Fibular Fractures



- <u>Objective</u>:
 - Our retrospective study describes a minimally invasive percutaneous technique
 - We also evaluate the efficacy of this technique by measuring:
 - Patient outcomes
 - Hardware removal rates
- <u>Results</u>

•

- 21 patients underwent ORIF
- 17 had percutaneous plating
- Hardware removal \rightarrow 7 patients total
 - 4 in ORIF group
 - 3 in percutaneous group
- All healed clinically and radiographically by <u>8 weeks</u>
 - No delayed/non-unions

Results (cont.) & Discussion

	Satisfaction According to the Roles and Maudsley Score	
<u>Score</u>	Level	Roles and Maudsley Score
1	Excellent	No pain, full movement, full activity
2	Good	Occasional discomfort, full movement, full activity
3	Acceptable	Some discomfort after prolonged activities
4	Poor	Pain limiting activity
	-	

• No difference in pre- and post-operative RM scores of either group

- Post-operative RM scores:
 - 1.0 ±0.2 for ORIF cohort
 - 1.0±0.0 for percutaneous cohort
- <u>Return To Activity</u>
 - 4.8±2.8 months for ORIF patients
 - 4.3±2.0 months for percutaneous group
 <u>Half a month faster</u>
- Discussion
- Did not analyze:
 - Cost
 - Time of procedure
 - Other ankle function scores
- Post-op follow up limitations
- Hardware possibly removed elsewhere
- Larger study may produce different results

Conclusion

- There is **no** difference in **bone healing time** or **hardware removal rate** when a distal fibular fracture has been percutaneously plated.
- Patients also return to activity **faster** and have a **smaller** scar.





ATHLETE APPAREL AND SPORTS PERFORMANCE

Immerging Materials

TED FORCUM, DC, DACBSP ACA SPORTS COUNCIL

1. REACTIVE MATERIALS/FABRICS

Reactive Materials/Fabrics

- Moisture wicking fabrics reacts to sweat. Instead of absorbing sweat like normal fabrics, it moves it to the surface of the fabric and evaporates
- **Thermal technology** reacts to temperature. Essentially, thermal tech keeps the body warm while performing in colder conditions and climates and visa versa.
- <u>"Compression"</u> fabrics have been developed that are specially designed to help reach maximum muscular output.
- Protective materials that are being called "reactive materials." that have the ability to instantly harden on impact.



2. COMPUTATIONAL FLUID DYNAMICS 3. BIOMIMETICS



4. BIOMETRICS


5. CARBON NANOTECHNOLOGY

Carbon Nanotechnology

- Carbon atoms have extremely strong bonds. Using nanotechnology, carbon's atomic form hollow tubes that are super small (approximately 100,000 times thinner than a human hair), super light and stronger than steel.
- Researchers at the University of Texas' Nanotech Institute have developed artificial muscles from carbon nanotubes that contract 30,000 percent per second (human muscles contract around 20 percent per second).
- They can operate at extreme temperatures.
- A "smart skin," on an aircraft would have the ability to change appearance.



FYI: It is washable too

THE ROLE OF GUT MICROBIOTA IN OBESITY AND METABOLIC SYNDROME

- Obesity and metabolic syndrome (MetS) are major public health challenges
- Increased interest in underlying pathophysiology of obesity and metabolic syndrome as it relates to the gut microbiome
- The gut microbiota is thought to consist of approximately 10¹⁴ bacteria estimated to contain 150-fold more genes than our host genome ^(1,2)
- Evidence suggests the gut microbiota affect nutrient acquisition, energy harvest, expenditure and many other metabolic pathways ^(3,4)

POSSIBLE MECHANISMS

Profile of Obese Gut⁽⁵⁾

- Decreased satiety (brain)
- Increased (LPS) Inflammation (adipose)
- Increased SCFA/lipogenesis (liver)
- Decreased PPY and GLP-1 (epithelium)
- Decreased FA oxidation (muscle)
- Deceased butyrate (large intestine)

Possible Mechanisms⁽⁶⁻¹⁵⁾

- Increased fermentation
- 2. Decreased GLP-1 & PYY
- 3. Increased LPL
- Decreased AMPK 4.
- Increased hepatic 5. lipogenesis
- Increased LPS endotoxin 6.
- 7. Increased TLR-5 & Decreased 2 & 4

RESULT: Insulin Resistance

POSSIBLE DIETARY TREATMENT ⁽¹⁵⁻²⁸⁾

Diet influences gut microbiota

- Genetically predisposed obese mice had a 50% ↓ in Bacteroidetes with a proportional ↑ in Firmicutes
- It's not just genetics...A High-fat diet led to ↓ in Bacteroidetes with a proportional ↑ in Firmicutes regardless of phenotype
- Diet is driving force behind microbial change rather than genetic obesity.
 - Gut undergoes a rapid shift in only a single day after switching from a low-fat, plant polysaccharide-rich diet to a high fat, high sugar Western diet. Induces adiposity.
- High-fat diet ↑endotoxin concentrations
 - May contribute to inflammation, insulin resistance, metabolic syndrome

POSSIBLE DIETARY TREATMENT (15-28)

Prebiotics—beneficial effects

- improved glucose tolerance,
- reduced adiposity and low-grade inflammation
- Oligofructose supplementation J ghrelin and PYY, improved glucose regulation in overweight and obese adults

Probiotics—beneficial effects

- probiotic therapy in mice improved the high-fat dietinduced natural killer T-cell depletion and as a result improved steatosis and insulin resistance
- Humans exposed to Lactobacillus (LG2055) beneficial influence on metabolic disorders by lowering effects on abdominal adiposity, body weight, and other measures.

INTERESTING... BUT MORE RESEARCH NEEDED

It seems...

- Diet can influence microflora of gut
- Genetics play a role in microflora of gut
- Microflora of the gut has potential role in obesity and MetS
- However...
 - Mostly mice/rat studies
 - Some human studies mostly on obese
 - Need large RCTs
 - "ideal" composition of the gut microbiota has not been determined

ATHLETES ABUSING ATHLETES

Wm. F. Feldner, DO, FAOASM 2015 JCSMS 5-minute/5-slide

HAZING VS. BULLYING

Hazing is a process, based on a tradition that is used by groups to discipline and to maintain a hierarchy. Regardless of consent, the rituals require individuals to engage in activities that are physically and psychologically stressful. It's about group dynamics and proving one's worthiness to become a member of the group.

Bullying is an intentional act of aggression that is meant to harm a victim either physically or psychologically. Bullies choose to victimize individuals whom they perceive as vulnerable.



RECENT INCIDENTS

- Central Bucks West (PA) HS FB cancelled season after waterboarding and sexual assault
- Sayerville, NJ coach dismissed after 7 players arrested for sexual assault
- Principia HS (MO)-5 students charged (3 as an adult) for sodomy and assault
- Soccer Club in Southern CA used "pole tradition" and other sexual battery

STATISTICS

- >250,000 students hazed to join a college athletic team
- 40% of the time a coach or club advisor is aware
- 22% report a coach was involved
- 50% of female NCAA Div 1 athletes hazed
- 10% of female NCAA athletes physically hazed (branded, tattooed, beaten, thrown in water or head forcibly shaved)
- 6-9% of female NCAA athletes subjected to sexually related hazing
- >50% of incidents had photos posted on public web sites

WHAT TO DO?????

- Awareness
- Starts at the top
- Severe penalties for program
- Early discussions from parents
- Involvement from sports medicine organizations.



Any way you look at it, hazing doesn't add up.



Running at slow speeds, 5-10mins/day can reduce CV risk!! content.onlinejacc.org/mobile/ article...

9/21/14, 4:46 PM

Original Investigation

Published online August 05, 2014

Leisure-Time Running Reduces All-Cause and Cardiovascular Mortality Risk

Listen to the Editors Audio Summary

Download File

Duck-chul Lee, PhD*; Russell R. Pate, PhD*; Carl J. Lavie, MD*; Xuemei Sui, MD, PhD*; Timothy S. Church, MD, PhD*; Steven N. Blair, PED*

[+] Author Affiliations

J Am Coll Cardiol. August 05, 2014,64(5):472-481 doi:10.1016/j.jacc.2014.04.058



FDA Warns consumers: There are NO supplements that can be used to treat concussion / traumatic brain injury fda.gov/ ForConsumers/C...

9/22/14, 9:41 PM





Some major league teams looking at neuroscience to help thier players hit a baseball m.wsj.com/articles/baseb...

wsJ Wall Street Journal



Baseball's Science Experiment

By Brian Costa @BrianCostaWSJ



AMSSM: 5 things a patient should consider when seeing a Sports Medicine Physician #ChoosingWisely choosingwisely.org/doctorpatient...

9/27/14, 6:40 PM



An initiative of the ABIM Foundation





Telemedicine robot roams the sidelines screening for concussions at Dartmouth football games thedartmouth.com/2014/10/01/spo...

10/2/14, 9:51 PM



Courtesy: Dartmouth A telemedicine robot will be on the sidelines at all five Dartmouth home football games this fall.





Is the 30 minutes/moderate-to-vigorous intensity recommendation sufficient, given the diminishing background of physical activity?

1996 2015 30 mins 30 mins

We may not yet have hit the bottom – with further technological ingenuity, we can get a lot worse!

TV viewing time and all-cause mortality

"....participation in leisure-time physical activity does not fully mitigate the health risks associated with prolonged sitting"





moderate – vigorous physical activity (hours/week)

C Matthews et al. Am J Clin Nutr 2012

Sedentary Behaviors and Health Outcomes

Associations reported from prospective studies: 1996-2011



Thorp et al. Am J Prev Med 2011

Sedentary time & breaks in sedentary time NHANES 2003-2006



Adjusted for age, sex, race/ethnicity, moderate-vigorous intensity activity + other potential confounders

Breaks in sedentary time additionally adjusted for total sedentary time

Healy G.N., Matthews, C.E., Dunstan, D.W., Winkler, E.A.H., Owen, N. (2011). Sedentary time and cardio-metabolic biomarkers in US adults: NHANES 2003-06. *European Heart Journal, 32,* 590-597

IDLE Breaks: Glucose



Eigung 2 The effect of the three trial conditions on nectoring dial placing alugoes loyals (A):

30 minutes/moderate-to-vigorous intensity recommendation is not sufficient! Concurrently must reduce sedentary time.

Addressing NCAA Bylaw 16.5.2 (g)

- The 30% Protein Rule
 - (g) Nutritional Supplements. An institution may provide permissible nutritional supplements to a student- athlete for the purpose of providing additional calories and electrolytes. Permissible nutritional supplements do not contain any NCAA banned substances and are identified according to the following classes: carbo- hydrate/electrolyte drinks, energy bars, carbohydrate boosters and vitamins and minerals. (Adopted: 4/27/00 effective 8/1/00, Revised: 11/1/01 effective 8/1/02, 4/14/09)
- NCAA Competitive Safeguards and Medical Aspects of Sport
 - Consists of 20 members dedicated to:
 - Promote and sponsor research to address relevant health and safety issues;
 - Promote education to enhance the health and safety of student-athletes;
 - Operate a national injury surveillance program to monitor injury trends and enhance safety in intercollegiate athletics;
 - Deter the use of NCAA banned substances in order to promote fair competition and safety;
 - Facilitate outreach activities to enhance student-athlete health and safety; and
 - Provide a health and safety perspective on relevant legislation and policy.



Protein Overview

- From
 - Potential risk that higher protein may pose for renal health
 - Basing risk on knowledge that people in renal failure benefit from restricting protein in the diet

- То
 - Utilizing protein with athletes where a higher percentage of protein is necessary for optimal health
 - Recognizing WHO's report on protein intake that shows that there is no evidence linking higher protein diets to renal disease.
 - No adverse effects on kidney metabolism in athletes that consumed up to 2.8g protein/kg/day. This is 3.5 times greater than the RDA in the U.S.



Protein Dietary Supplementation

- Timing is an important factor.
- Longitudinal studies show recovery is greatest when protein is consumed immediately after exercise.
- Having a supplement is the most efficient and reliable way for an athlete to consume protein after exercise.
- Many are willing to consume liquids after a workout, but not ready to eat.
- Supplements provide an immediate/convenient option for athletes that suffer from lactose intolerance.
- Food options to provide protein in a "grab-n-go" fashion are limited due to shelf stability. Most require constant refrigeration.



Product Certification Standards

 Altering the current rules could open the door for many supplement companies that currently do not make a compliant product.

• Implementing policies like MLB, PGA, LPGA, etc. would be the safest way to keep tainted products away from student athletes.



Next Steps

- Collaboration with Competitive Safeguards and Medical Aspects of Sport
 - Developing document that answers specific questions from NCAA
 - Leveraging expertise of CPSDA, NCAA SSI and SCAN
 - Additional conversation at summer meeting



St. Jude Children's Research Hospital





Medical Mgmt = PERFection

Prevention

• Early recognition, early intervention

- Rapid response to injury
- Functional treatment and rehab

Challenges & Opportunities

- Challenge from OSHA (on K-tape, others)
 - partner with NATA, others?
- The Injury Prevention System (TIPS)
 - Analyze movement patterns, then provide corrective exercises with goal to prevent injuries
- Certified Industrial Athlete Employee (C-IAE)
 - Program for temporary-employees to demonstrate a specific level of physical conditioning that indicates they are capable to performing the job



Research & Education

Milestones and Impact





Research & Education

DART Rates





Research & Education

Additional Data

- Return on Investment
 - 4.4 to 1
- Company Records
 - 96 days and counting injury free
 - 80 days was previous record
- Employee contacts ("Touches")
 - 23 per day

PREPARATION OF HIGH SCHOOL SENIORS FOR COLLEGIATE ATHLETICS

MICHAEL WALLER PHD, CSCS, NSCA-CPT UNIVERSITY OF SAINT FRANCIS SCCC WRITTEN EXAMINATION COMMITTEE MEMBER

DIRECTION FOR PREPARATION

%

TABLE 2. Thematic analysis regarding areas of improvement.*

Major themes	
Olympic lifting technique	36.8
Core/lower extremities strength	33.3
Flexibility/mobility	22.8
Mental toughness	22.8
Knowledge of exercise technique/recovery	22.8
Work capacity	19.3
Minor themes	
Running/jumping form	5.3
Knowledge of periodization	3.5

*50th percentile was 18.4%. Any theme greater than the 50th percentile was considered a major theme, whereas any theme less than the 50th percentile was considered a minor theme.

- Needs analysis of sport & athlete
- Physiological and psychological growth and maturation
- Division I S&C Coaches surveyed: muscular imbalances and flexibility
- Need to research what is physically and psychologically lacking in incoming freshmen

Wade, SM, Pope, ZC, and Simonson, SR. (2014) How prepared are college freshmen athletes for the rigors of college strength and conditioning? A survey of college strength and conditioning coaches. *J Strength Cond Res* 28(10), 2746–2753.

DIRECTION FOR PREPARATION

- 1. Can the athlete execute required drills or exercises with minimal flaws?
- 2. What is their Level of Skill/Technique Mastery?
- 3. What are the athlete's overall and specific joints, mobility & stability? (e.g. FMS)
- 4. Based on the athlete's evaluation, where do they rank or can be categorized (criteria or norms)?
- 5. Previous injury and psychological profile
- 6. S&C plan and counseling based on EBP


QUESTIONS?



Contact email: <u>mwaller@sf.edu</u> Cell: 847 – 987 – 8193



American Academy of Podiatric Sports Medicine

Getting Our Patients with Diabetes to Exercise

David W Jenkins, DPM Professor, Arizona School of Podiatric Medicine MIDWESTERN UNIVERSITY President, AAPSM

Getting Our Patients with Diabetes to Exercise

- *The evidence is overwhelming that exercise is beneficial in the management and prevention of diabetes.
- *The prevalence of patients with diabetes who are engaged in regular physical activity is poor.





Getting Our Patients with Diabetes to Exercise

The low participation of persons with diabetes in regular physical exercise is a result of:

- *Poor motivation
- *Lack of knowledge
- *Lack of time
- *Socioeconomic conditions
- *Inability to change old habits



*Inadequate training and/or motivation of the provider.

Getting Our Patients with Diabetes to Exercise

- * The curriculum of Colleges of Podiatric Medicine should include discussion of the exercise-diabetes connection and implementation of an exercise recommendation.
- * Given the large number of patients with diabetes seen in podiatric practices and also the fact that so many podiatric physicians have an expertise in sports medicine, podiatric physicians are uniquely positioned to participate in the exercise prescription for patients with diabetes.





For updated information on **EXERCISE & DIABETES** as well as other topics, visit the AAPSM website at www.aapsm.org



SPORTS DENTISTRY & MOUTHGUARDS ANATOMY = SOFT TISSUE SURGERY PREVENTION/DIET/NUTRITION MICROBIOLOGY = WWW.AGD.ORG Role of mouthguards in reducing mild traumatic brain injury/concussion incidence in high school football athletes.

All mouthguards are not equal in protection when a blow is received.







Results

6 Teams	412 Players
PFPL	OTC
8 concussions	16 concussions



The original models were kept in house after the initial fabrication. At the end of the season the returned P.F.P.L.M.s were placed back on the models for a "Visual Hands-On Evaluation" of the mouthguards.

All mouthguards are not equal in protection when a blow is received.





www.jackwintersdds.com www.sportsdentistry-asd.org **TrueSport** WHAT IS TRUESPORT?

WHAT IS TRUE SPORT? *TrueSport is a movement to redefine a positive youth sport experience by imparting the lessons of clean competition, sportsmanship, and peak performance.*

CLEAN

- Decision-Making
- Energy Drinks
- Dietary Supplements
- Performance-Enhancing Drugs (PEDs)
- Shortcuts

SPORTSMANSHIP

- Respect & Accountability
- A Good Sport
- Teamwork
- Leadership
- Bullying Prevention

PEAK PERFORMANCE

- Goal-Setting
- Nutrition
- Perseverance
- Hydration
- Preparation & Recovery



TrueSport TRUESPORT PARENTS | Resources

5 Things Parents Should Know About Energy Drinks

Blog Posts Parents

It's easy to be lured by the marketing schemes of ener to keep busy athletes fueled and hydrated. However, e Doping Agency's Special Advisor on Drug Reference a shares five things parents should know about energy c



True Sport" Parent Handbook









Healthy Snack Ideas for Youth Sport Athletes

Blog Posts Parents

As a parent, how many times have you found yourself whipping through a fast-food restaurant to grab a burger for your young athlete to devour as you rush him to practice? For many of us, this scenario is all too familiar as we try to manage our children's busy lives as athletes and students. Unfortunately.

September 26, 2014

The Benefits of Playing Multiple Sports: A Conversation with **David Epstein**

Athletes Blog Posts Coaches Educators Parents

In theory, it makes sense for athletes to specialize in a given sport at an earlier age. After all, isn't the saying, 'practice makes perfect?' By specializing early, athletes should be improving their chance of a college scholarship, professional contracts, or the ever-elusive chance at Olympic plory. The reality, however, is that early specialization does...

August 14, 2014



Being a Part of the Team: The Positive Parent Role

Blog Posts Parents

Signing your son or daughter up for a team means that he or she will become a teammate. As a parent, you will likely have many conversations with your young athlete about sharing, supporting, and working through conflict as he navigates this important role. Have you thought about the new role that you'll also take ...

Details >

July 24, 2014

TrueSport TRUESPORT KIDS | TrueSport Deck Pass



TrueSport TRUESPORT KIDS | Camps

"True Sport does such a great job with teaching a budding elite athlete what it takes to be great and live with great integrity and accountability."

– Lauryn Williams —

Olympic Gold Medalist, 5th athlete in history to medal in Winter and Summer Games

















April 23, 2015 Pennsylvania State University



TrueSport U: Nurturing Youth Sport Excellence

An Evening Workshop for Parents, Kids, and Coaches

- Hosted by TrueSport in collaboration with Pennsylvania State University
- Presentation and Q&A with youth sport experts, including Dr. Dan Gould Director of the Institute for the Study of Youth Sport
- Highly interactive youth experience with Pennsylvania State University athletes
- Topics to include: To specialize or not, Instilling the values of team, and others



How big is the APEDs problem?

- Anabolic Steroids:
 - % of high school students admit to use
 - # Equates to nearly 2 million high school kids!
 - About 4 dozen per high school
 - More than 1 per classroom
- Human Growth Hormone
 - # 11% of high school students admit to use
 - 9% of girls
 - 4 12% of boys
- Over 2 million kids!

Epidemic



18-25% of supplements spiked with steroids

 15 of 58 protein powders tested positive for steroids (25%)

Informed-Choice.org, 2014

 45 of 240 OTC supplements tested (18%) contained anabolic steroids

Int'l. Olympic Committee

 Almost 50% of all testosteroneboosting supplements contain illegal steroids.

Military Times, 7/2013





 "25% of all vitamins and supplements on sale are spiked with anabolic steroids"

Intn'l. Assoc. of Athletic Federations, 2014

 "... about 25% of sports-focused dietary supplements contain anabolic hormones."

Jeff Anderson, Sports M.D., 11/10/2010

"60% of the creatine we test is laced with the steroid nandrolone."
 Frank Shorter, Founder of US Anti-Doping Agency Nov. 2010



Education is key

- THF Education Objective: Effectively get students to understand why they shouldn't be using steroids even if they were not against the rules
- Hoot's Chalk Talk Programs
 - High Schools
 - Coast to coast Canada and Latin America
 - State of Rhode Island Grant
 - Colleges and Universities
 - LSU, Georgia, Florida, Hawaii, Vanderbilt, Oregon State, . . .
 - Programs with MLB and NFL

We've reached about 1 million people!











Ken Giles - Phillies

Target - kids

- Promoting a "PED-Free" lifestyle
 - > Pledge / Video
 - > allmeleague.com



Team Gear

A vehicle to help us broaden our conversation with America



Advisory Board

- Jay Bruce
 - Cincinnati
- Matt Carpenter
 - St. Louis
- John Danks
 - Chicago White Sox
- David DeJesus
 - Tampa Bay
- Brian Dozier
 - Minnesota
- Charlie Furbush
 - Seattle
- Brett Gardner
 - New York Yankees

- Dillon Gee
 - New York Mets
- Ken Giles
 - Philadelphia
- Alex Gordon
 Kansas City
- Clayton Kershaw
 Los Angeles Dodgers
- Jason Kipnis
 - Cleveland
- Dustin McGowan
 Toronto
- Mark Melancon
 - Pittsburgh

- Dustin Pedroia
 - Boston
- Josh Reddick
 - Oakland
- Anthony Rendon
 - Washington
- Tyson Ross
 - San Diego
- Max Scherzer
 - Detroit
- C.J. Wilson
 - Los Angeles Angels
- Brad Ziegler
 - Arizona





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Prohibited Association

Prohibits associating in a **PROFESSIONAL OR SPORT-RELATED CAPACITY** with

- Coaches,
- Trainers,
- Physicians, or
- Other Athlete Support Personnel

who are sanctioned and/or criminally convicted of doping.

Examples of assistance:

BUILD

SPORT

TEAM

A CLEAN

 Obtaining training, nutrition, or medical advice, and/or

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USADA

esport

• Serving as an agent or representation.



Purpose of the Rule

It is not intended to be guilt by association on the athlete's behalf.

- The intent is focused on coaching staff and other athlete support personnel
- Serious cheats don't do it alone they have a support system

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A CLEAN

SPORT

TEAM

- Goal is to keep them out of sport for the period of their violation.
- Focus of code changes is on being "tougher on cheats" not clean athletes



Preserving. Inspiring. Protecting.



- Expanded education requirements
- Statute of limitations extended to 10 years
- Storage of samples increased to 10 years
- TUEs must be mutually recognized between all anti-doping organizations

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Resources



719-785-2000 or Toll-Free at 866-601-2632 athleteexpressousada.org









TrueSport' Nutrition Guide







Preserving. Inspiring. Protecting.