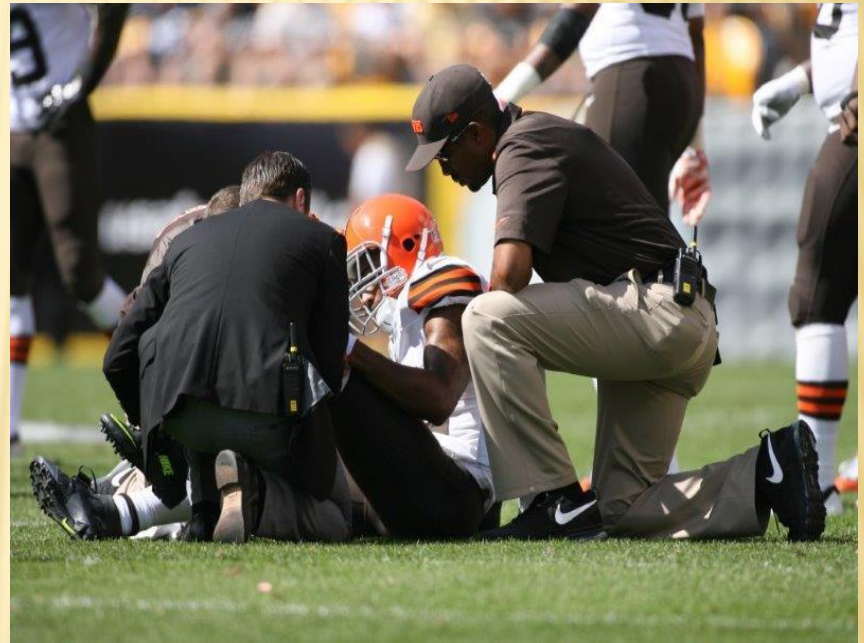


# MENTAL & PHYSICAL ASPECTS OF SPORTS PERFORMANCE

Andre' Tucker ATC/L, PES  
Cleveland Browns  
Assistant Head Athletic Trainer



# CREATING A SPORTS PERFORMANCE SYSTEM

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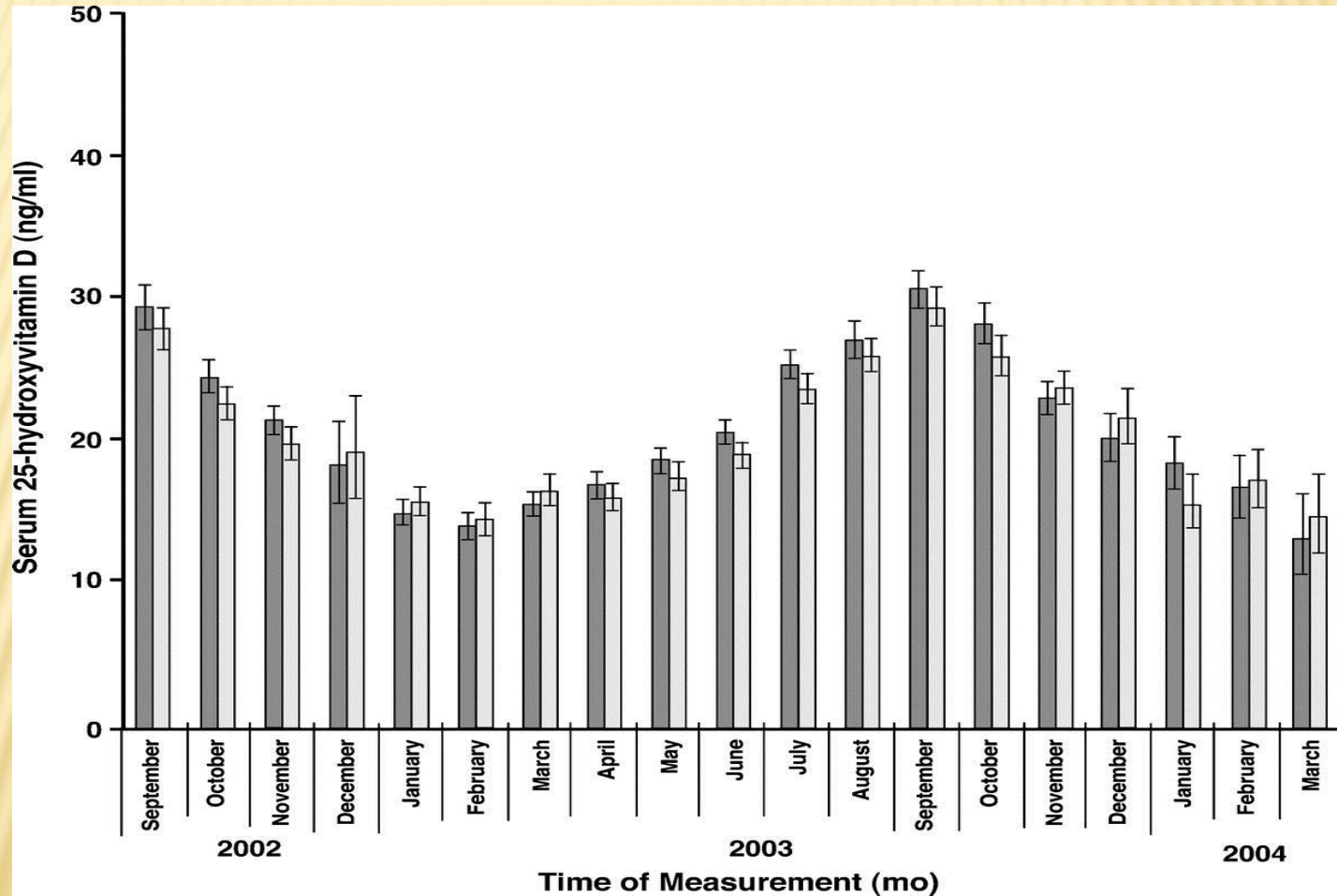
- ❖ Global and systematic approach
- ❖ All members involved (coaches, medical staff, AD, principal, etc..) have to be onboard and believe in the benefits of this system
- ❖ Understanding data collection and how to apply or simplify the process
- ❖ Understanding many various areas that affect performance



# ATHLETIC PERFORMANCE & VITAMIN D

- ❖ Vit D awareness has grown over the last several years
- ❖ Ongoing studies regarding which performance variable most improves (reaction time, strength, balance, coordination, or endurance)
- ❖ Athletes with abnormally low levels tend to have the largest gains (6-8wks)
  - ❖ Improvements (15-30 ng:mL)
  - ❖ Less Improvement (30- 50 ng:mL)
- ❖ Vit. D deficiency in athletes (African American)
  - ❖ Risks
    - ❖ 1. Increasing number of diseases assoc. with Vit D deficiency are growing
    - ❖ 2. Stress fractures
    - ❖ 3. Chronic musculoskeletal pain
    - ❖ 4. Viral respiratory tract infections
- ❖ Factors that affect cutaneous Vit D production – latitude, season, time of day, skin color, and age
- ❖ Late summer season peaks in performance with abrupt reduction in physical performance when levels decline (early autumn)

# ATHLETIC PERFORMANCE & VITAMIN D



# VIT. D TESTING & IMPLEMENTING

## Test

- ❖ Annual Physicals – Labs

## Monitor/Check

- ❖ When appropriate
- ❖ Taking correct dose as directed. (Daily/Weekly)



# SLEEP DEFICIT: HOW IT AFFECTS PERFORMANCE

- ❖ Sleep science is advancing in many different aspects
- ❖ Sleep aids
  - ❖ negative side effects ranging from disassociate states of consciousness to potential addiction.
  - ❖ Less effective over time
- ❖ Stimulants (caffeine)

# SLEEP DEFICIT: HOW IT AFFECTS PERFORMANCE

- ❖ Four major sleep-related factors affect our cognitive performance.
  1. Homeostatic drive – number of consecutive hours we have been awake.
  2. Amount of sleep over several days
  3. Circadian phase – midnight vs dawn
  4. Sleep Inertia – Grogginess. Brain needs time to wake up

# SLEEP: TESTING, TRACKING, IMPLEMENTING

## ❖ Testing

1. Sleep study
2. Neurological Consult/Sleep Medicine Physician

## ❖ Tracking

1. Monitoring devices – watch
2. Journal/Log

## ❖ Implement

1. Sleep plan – create and revise as needed



# MENTAL PERFORMANCE PROGRAM

- ❖ Identifying individual(s) who clearly possess ability to establish player's trust
- ❖ Benefits:
  1. Individuals become in tune with themselves as people
  2. Coping with risks
  3. Performing consistently

# MENTAL PERFORMANCE PROGRAM

## Primary Program Goals

- ❖ Understand who they are as a person
  - ❖ Identify core personal values
  - ❖ Understanding their personality
  - ❖ Vision for success
- ❖ Be effective at coping with risks
  - ❖ Recognizing potential derailers (people, places, and things)
  - ❖ Implementing effective coping skills for dealing with these risks
  - ❖ Creating a trustworthy support system
- ❖ Be a team contributor
  - ❖ Understanding and accepting roles
  - ❖ Communicating with teammates and coaches
  - ❖ Being a leader, when appropriate
- ❖ Be a consistent performer
  - ❖ Implementing an effective pre-game routine
  - ❖ Maintaining a “mind in the moment” presence during competition
  - ❖ Being an accurate self-evaluator of their performance

# MENTAL PERFORMANCE PROGRAM

## Primary Program Activities

- ❖ **Player mental assessment** – routine assessment of mental skills
- ❖ **Player counseling** – learns how to develop and improve both as a person and a performer
- ❖ **Player individual performance meetings** – meets regularly to review on performance
- ❖ **Players group performance**
- ❖ **Coach consultation** – providing guidelines to coach(es) about how to enhance the performance of individual players and team



# IMPLEMENTING A SPORTS PERFORMANCE SYSTEM

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- ❖ Holds all parties accountable. Checks and balances.
- ❖ Recognize core individuals directly involved with player(s) – coaches, medical staff, doctors, parents
- ❖ Meeting weekly and/or daily
- ❖ Tweaking program:
  - ❖ Daily schedules
  - ❖ Length of meetings
  - ❖ Length of practice
  - ❖ Adjusting practice to game like situations (day vs night)
  - ❖ Sleep schedule
- ❖ Player Profiles (individualized)

### Player Profile Performance Plan

<b>Name</b>	ANDRE' TUCKER
<b>Date</b>	6/6/15
<b>Current Status</b>	LIMITED
<b>Summary</b>	75% of normal activity. Continue to increase activities, while monitoring.

Current Medical Issues	
<b>Diagnosis</b>	Left Knee MCL Sprain
<b>Date of Injury</b>	4/16/15
Current Physician Updates	
<b>Date of Last Visit</b>	4/22/15
<b>Physician</b>	Dr. Andre Tucker
<b>Updated Status</b>	Consult, X-Ray, & MRI

Current Body Mass Measurements			
Date	5/25/15	5/1/15	Diff
<b>Weight</b>	229.7	230.8	-1.1
<b>LBM</b>	207.5	202.8	4.7
<b>Fat (lbs)</b>	22.2	28.0	-5.8
<b>PBF</b>	9.7	12.1	-2.4
<b>Report Weight</b>	TBD		

### Preventative Exercises/Flexibility Program

Date	6/6/15	6/7/15	6/8/15	6/9/15	6/10/15	Notes
<b>LPHC</b>	X				X	
<b>Hips</b>			X			
<b>Ankle &amp; Foot</b>		X		X		
<b>Upper</b>	X					
<b>Summary</b>	Continue to focus on movement deficiencies in hips, predominantly left-sided, which are more dominant than those of his foot and ankle.					

### Nutritional Plan

<b>Avg. Calorie Utilization During Workout</b>	768.5 kcal		
<b>Recommended Daily Consumption</b>	3464 kcal	Fats: 502 kcal	Protein: 680 kcal
<b>Nutritional Concerns</b>	Continue to monitor caloric intake to avoid unnecessary weight gain.		
<b>CHO:</b>	2148 kcal		

### Sleep Plan

<b>Date</b>	6/6/15	<b>Follow-Up Date</b>	Week of July 10th
Maintain a regular bedtime and wake time. Wake up no later than 9am on weekends or days off.			
Avoid late naps, none after 4pm. Try not to nap longer than 30 mins. This is to ensure bedtime is not affected.			
Turn TV off at night or use sleep timer.			

### Performance Plan

<b>Date</b>	6/13/15	<b>Follow-Up Date</b>	Week of July 10th
Limit amount of people in his direct support network.			
Ensure coach continues to try and build a relationship directly with player by expressing a true interest in him and helping him become a better person and player.			
Continue to educate him on how to manage risk both on and off the field.			
Continue to educate him about the consistency required in all aspects of preparation to perform at a high level.			

# MAXIMIZING YOUR ATHLETE'S POTENTIAL

## Summery

- ❖ Create a program that is practical and makes sense
- ❖ Willing to be non-traditional and have an open mind
- ❖ Difficult to perform at a high level without the proper mental training and physical tools needed to succeed





# SPECIAL THANKS

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Anthony Trem – PT, Cleveland Browns

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Dr. Sean Cupp – Lead Medical Physician, UH/CB

# REFERENCES

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Cannell, J.J., B. W. Hollis, M. B. Sorenson, T.N. Taft, and J. J. Anderson. Athletic Performance and Vitamin D. *Med. Sci. Sports Exerc.*, Vol. 41, No. 5, pp. 1102-1110, 2009.

Curran, F. Sleep Deficit: The Performance Killer (A Conversation with Dr. Charles A. Czeisler). *Harvard Business Review*. Pp. 53-59, Oct. 2006.