APPLE & Gordie Center faculty & staff are here to help!

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@APPLEathletics
#APPLEathletics2019

APPLE_athletics
Conference Presentation Slides

www.APPLEathletics.org
APPLE Goal:
prevent misuse of alcohol, tobacco, and other drugs (ATOD) through:

Education
Empowering teams
Networking
Post-training coaching

APPLE founders Dr. Susan Grossman & Dr. Joe Gieck
Student-Athlete Substance Use
NCAA National Study on Substance Use Habits of College Student-Athletes

June 2018
Compared to all college students in 2017, student-athletes are **LESS** likely to use...

% of Student-athletes who NEVER used...

<table>
<thead>
<tr>
<th>Substance</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amphetamines</td>
<td>98</td>
</tr>
<tr>
<td>LSD</td>
<td>97.1</td>
</tr>
<tr>
<td>Cigarettes</td>
<td>83.7</td>
</tr>
<tr>
<td>Marijuana</td>
<td>65.7</td>
</tr>
</tbody>
</table>

Sources: 2017 NCAA National Study of Substance Use Habits of College Student-Athletes & 2017 National College Health Assessment
Compared to all college students in 2017, student-athletes are **EQUALLY** likely to use...

% of Student-athletes who NEVER used...

- Heroin: 99.6%
- Meth: 99.5%
- Anabolic Steroids: 99.1%
- Cocaine: 96.1%
- Ecstasy/Molly: 94.5%
- Vaping: 86%
- Alcohol: 19.8%

Sources: 2017 NCAA National Study of Substance Use Habits of College Student-Athletes & 2017 National College Health Assessment
Compared to all college students in 2017, student-athletes are **MORE** likely to use...

% of Student-athletes who NEVER used...

<table>
<thead>
<tr>
<th>Substance</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spit tobacco</td>
<td>81.8</td>
</tr>
<tr>
<td>Hookah</td>
<td>77.2</td>
</tr>
<tr>
<td>Cigars</td>
<td>74.8</td>
</tr>
</tbody>
</table>

Sources: 2017 NCAA National Study of Substance Use Habits of College Student-Athletes & 2017 National College Health Assessment
Low-risk drinking has INCREASED significantly among student-athletes.

(<4 drinks for women/ <5 drinks for men in a sitting)

Percent of student-athletes

- **Men**
  - 2009: 42
  - 2013: 46.5
  - 2017: 55.8

- **Women**
  - 2009: 48.6
  - 2013: 52.7
  - 2017: 61.4

Student-Athlete Alcohol Use: Past Year by NCAA Division

NCAA National Study of Substance Use Habits of College Student-Athletes, 2009, 2013, 2017
Student-Athlete Marijuana Use: Past Year by Sex

Student-Athlete Marijuana Use: Past Year by NCAA Division

NCAA National Study of Substance Use Habits of College Student-Athletes, 2005, 2009, 2013, 2017. *For 2017, marijuana use was reported by specific methods, whereas in previous years it was reported as a general substance category. Therefore, the percentage of marijuana use for 2017 includes those who reported “inhaling” or “Ingesting” marijuana.
Which **WOMEN’s sports** have the **lowest rates of alcohol use** in the past 12 months?

- Golf (26% didn’t use)
- Basketball (29% didn’t use)
- Track (35% didn’t use)
Which **MEN’s sports** have the **lowest rates** of alcohol use in the past 12 months?

Football (28% didn’t use)  Basketball (32% didn’t use)  Track (33% didn’t use)

2017 NCAA National Study of Substance Use Habits of College Student-Athletes
Top Reasons Student-Athletes Don’t Drink:

#1: No desire to experience effects
Don’t want to hurt athletic performance
Concerned about how it may affect health
Don’t want to hurt my academic performance
Against beliefs/values
Most student-athletes’ alcohol use does NOT interfere with their sport.

97% didn’t show up late or miss a practice or competition.

93% didn’t perform poorly in a practice or competition.
Student-Athletes who NEVER Use During Competition Season

- **Alcohol**
  - No use in past year: 25.8%
  - Did not use in season: 27.9%

- **Marijuana**
  - No use in past year: 75.7%
  - Did not use in season: 14.6%

2017 NCAA National Study of Substance Use Habits of College Student-Athletes
Compared to other student drinkers, student-athletes who drink...

• Consume more alcohol
• Drink more frequently
• Have more negative consequences including
  ▪ Driving under the influence
  ▪ Unsafe sexual behaviors
  ▪ Criminal offenses

## Student-Athletes, Hazing & Alcohol

<table>
<thead>
<tr>
<th>Student-Athlete Experiences</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least one form of hazing while in college.</td>
<td>74%</td>
</tr>
<tr>
<td>Hazed by participating in drinking games</td>
<td>47%</td>
</tr>
<tr>
<td>Hazed by having to drink large amounts of alcohol to the point of getting sick or passing out</td>
<td>23%</td>
</tr>
<tr>
<td>Believed coaches and/or advisors were aware of the activities.</td>
<td>25%</td>
</tr>
</tbody>
</table>

In your team, discuss how much you personally agree or disagree with this statement.

“Alcohol and other drug use can be the difference between a winning and a losing season.”
Alcohol & Athletic Performance
NCAA Resources
Alcohol Negatively Impacts Body Composition

- Increases body fat +
- Often mixed with high-calorie drinks and high-calorie foods =

Overall weight gain
Alcohol Decreases Aerobic Performance

- blood flow to muscles and organs
- energy available for muscles to perform

![Cartoon of two characters running, one asking how far they have gone and the other saying they are almost to the end of the driveway.](theAwkwardYeti.com)
Alcohol Dehydrates

Up to 3% body weight loss within 4 hours of drinking

- Fluid loss
- Chance of heat cramps, exhaustion and stroke
- Temperature tolerance reverses heat acclimation training

Berning, J. (1996)
Shirreffs & Maughan (2006)
How many \textit{cups} of water may an athlete need to rehydrate after 5 standard alcoholic drinks?

Athletes + Rehydration

12+ cups of fluid per day

1 alcoholic drink = at least 1 additional cup of fluid

5 alcoholic drinks = 17+ cups of fluid
Alcohol Inhibits Absorption of Key Nutrients

...needed for:
- Converting food into fuel
- Healthy red blood and nerve cells
- Making new oxygen-carrying cells
- Energy metabolism and endurance

Firth & Manzo, For the Athlete: Alcohol & Athletic Performance (2004)
Why does alcohol matter?
The body spends energy metabolizing alcohol, not making more glucose.

So What?
Can lead to severe hypoglycemia 6 to 36 hours after heavy drinking.

27% of student-athletes report to practice with low blood glucose levels (not all due to alcohol use)

American Athletic Institute: www.americanathleticinstitute.org
Alcohol Impairs Motor Skills

- Decreases strength, power and sprint performance for up to three days (72 hours)
- Decreases HGH secretion by up to 70%
- Reaction time can be affected up to 12 hours after drinking

Kuhn, Swartzwelder & Wilson (2000) *Pumped: Straight facts for athletes about drugs, supplements and training*

American Athletic Institute: [www.americanathleticinstitute.org](http://www.americanathleticinstitute.org)
Up to 70% Needed for muscle growth

Decreased muscle growth & repair

Decreased motor skills

Up to 70%

Decreased muscle growth & repair
Alcohol Disrupts Sleep & Learning

Reduces time spent in deep, restful sleep.

Impedes memory formation

Disrupts muscle repair

How well can game plans be learned?

American Athletic Institute: www.americanathleticinstitute.org
Alcohol Slows Recovery

Alcohol delays muscle repair

Drinking after competition hinders recovery

Risk of injury is doubled:
Injury rate for non-drinkers 23.5%
Injury rate for drinkers 54.8%


American Athletic Institute: www.amERICANathleticinstitute.org
#1 Day of the Week for Injuries:

American Athletic Institute:  
www.americanathleticinstitute.org
Alcohol Increases Risk of Illness

Drinking depresses immune function.

Athletes who drink get sick more often.

American Athletic Institute: www.americanathleticinstitute.org
What’s the harm in a hangover?

41% of student-athletes had at least one hangover in the past year (half of all who reported drinking).

**EFFECTS of a hangover:**

- Increased heart rate
- Decreased left ventricular performance
- Increased blood pressure
- Decreased endurance performance
- Dehydration

2017 NCAA National Study of Substance Use Habits of College Student-Athletes
Getting drunk 1 time can negate up to how many days of training effects?

Due to lost physiological conditioning including:

- Heart rate
- Ventilation
- Muscle enzymes

ALCOHOL AND ATHLETE: A Comparative Case Study of Enzymatic Activity, Training Effect and Alcohol Ingestion on an Elite Level Athlete, John Greig Underwood American Athletic Institute
MARIJUANA’S IMPACT ON PERFORMANCE

Break out session tomorrow @ 2:30 pm
Lingering Impact

Can last several days beyond initial use

- Respiratory system
- Cardiovascular system
- Cognition
- Psychomotor performance
- Perception
- Motivation
- Mental health
- Immune System
Respiratory Systems

Muscles deprived of optimal energy level

More quickly fatigued

Decreased performance
Cardiovascular System

- heart rate
- blood pressure
- efficiency in oxygen distribution
- stamina
- endurance

Can affect ability to regulate body temperature
Cognitive and Psychomotor Performance

Skill impairment may last up to 36 hours

- Slowed reflexes
- Disrupted balance and posture
- Increased risk of injury

- Increased time needed to learn (up to 5 hours after use)
- Reduced ability to problem-solve
Brain is not fully developed until about age 25:

Impacts:
Reasoning
Impulse control
Planning
Decision-making
Marijuana's Effects on Brain Structure and Function: What Do We Know and What Should We Do? A Brief Review and Commentary
deShazo, Richard D. et al.
The American Journal of Medicine

• Caused changes in normal brain structure development
• Greater impact on thinking skills
• Effects remained after drug use stopped

4 year study of 3,800 adolescents, starting at age 13

Teenagers using cannabis are causing long-lasting damage to their developing brains, a Canadian study suggests.
Lingering Impacts of Chronic Use in Adolescence

Even after a month of abstinence, users had decreased:

Visual perception
Psychomotor speed
Control over inhibition
Attention
Abstract reasoning
Memory
Executive functioning

Jill Schlabig Williams, NIDA Notes, Vol. 18, #5
Alcohol and Team Success
Abstaining from alcohol use while in season can increase the likelihood of having a successful season.
Alcohol and Performance Potential

The lingering effects of alcohol hangovers reduces athletic performance by up to 11.4% in elite athletes (e.g., national teams)

Impacts are higher for college student-athletes.

Source: American Athletic Institute: www.americanathleticsinstitute.org
“The Hangover Effect Or Disturbed Recovery Process”
What Is Acceptable Performance?

Full Capacity: 100%

Acceptable Performance: 90%

Is 80% Capacity Acceptable?

What would a 15% performance INCREASE look like for your team?

For your individual performance?
All-American

Football 4-2

5-1

PTS 160
Opp. 133
Rush 1158
Opp. 854
Pass 1443
Opp. 1001

15% increase

Source: American Athletic Institute: www.amERICANATHLETICINSTITUTE.ORG
Softball 24-31
28-27

NCAAs
Six 1-Run Losses

Avg. .254
Opp. .285
OBP .336
ERA 4.35

Source: American Athletic Institute: www.americanathleticinstitute.org
Test Your Knowledge! Prizes!

On your phone or other device, go to kahoot.it

Enter GAME PIN
333307
Create a nickname
Enter the answer on your device by matching color/shape.  
Accuracy AND speed count!  
Kahoot.it
Prizes for top student-athlete and top administrator score!

Save your screen image!

GAME PIN

333307