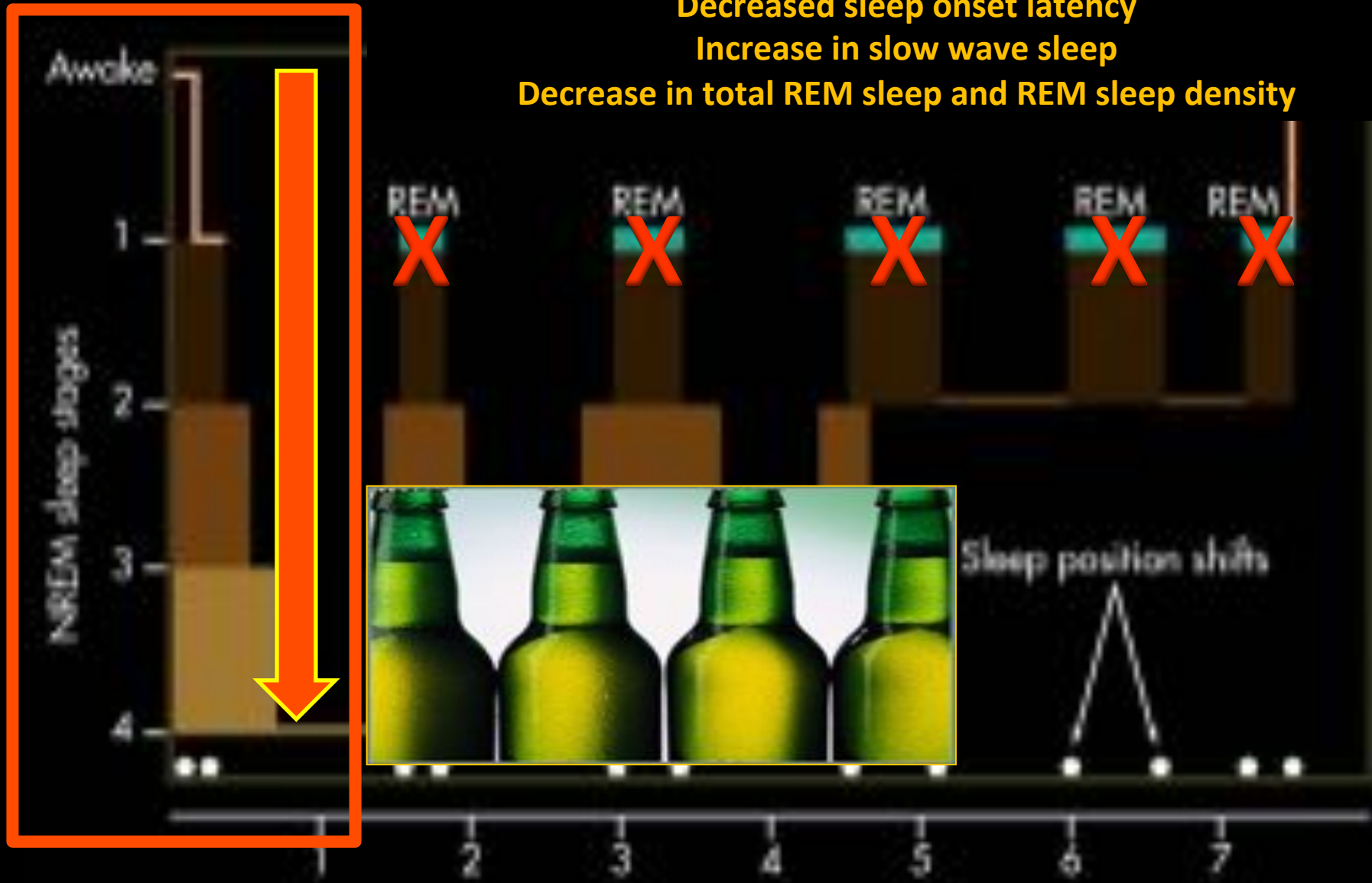


Decreased sleep onset latency

Increase in slow wave sleep

Decrease in total REM sleep and REM sleep density



Transition to deep sleep

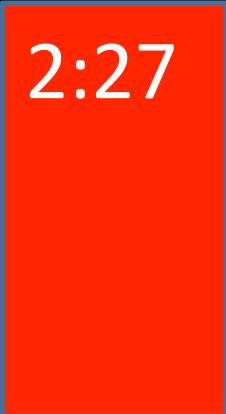
Lost REM

REM and Alcohol Use

You are asleep but your CNS is not recovering!

You wake up the next day with an exhausted brain and central nervous system. Your alertness levels are decreased. Your level of focus is decreased. Your attention span is decreased. Your ability to process information is decreased. Your reaction time is 25% slower. Time to exhaustion is decreased. Perception of fatigue is higher!

Life of an Athlete mood performance project



None



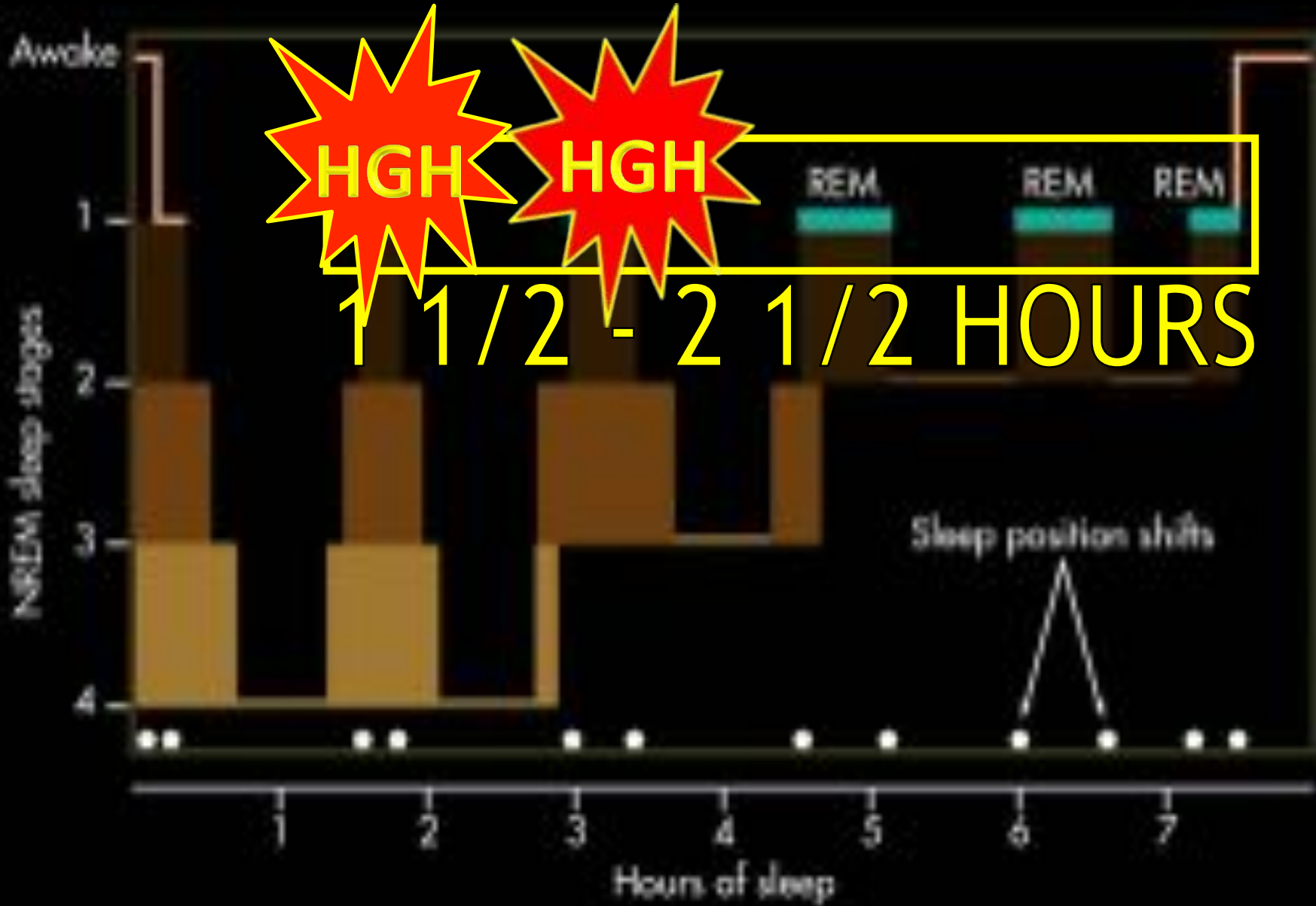
1-2



3-4

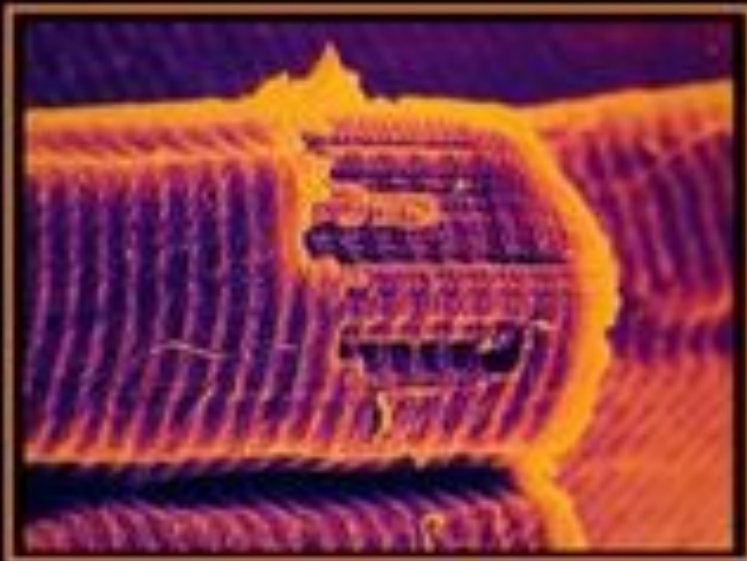


5>



8 HOURS OF SLEEP

Sleep and GROW



Sleep is a critical component in the muscle building process and should not be overlooked. Your muscle tissue repairs itself and grows during rest periods but sleep is more important than waking rest periods.

Here's why:



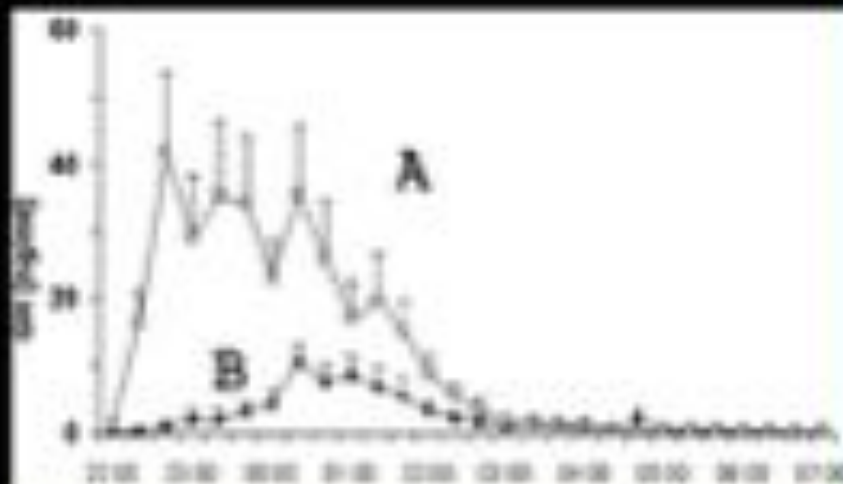
Life of an Athlete
Human Performance Project

The release of growth hormone reaches its peak during deep sleep

Your metabolic rate slows which is perfect for muscle tissue repair and growth

Increased blood flow to the muscles

HGH Release at night

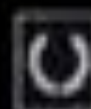


early... Lots of HGH

used during the earlier hours of the later hours. Thus, sleep schedules are:
 A (8 hours of sleep from 10 pm to 6 am) or GH release than B (8 hours of sleep from 12 am to 8 am). The above diagram shows pulses corresponding to the four sleep periods during an average good night's sleep.

A. sleep from 10pm. - 6am.

B. Sleep from 12am. - 8am.



Life of an Athlete
 Human Performance Project

I-net Generation





ATHLETE TIME
MANAGEMENT
VERSUS
TECHNOLOGY

Life of
Athlete

STRESS
TIME LOSS
CNS FATIGUE
RECOVERY DELAYS
METABOLISM CHANGES
LOSS OF FOCUS

Technology has increased significantly the sedentary hours per week for all populations including athletes.





Visual Cortex Energy Drain 

During an athletic
competition,

YOUR EYES PROCESS
MORE THAN

120
MILLION
BITS OF
INFORMATION
EVERY SECOND.



READ

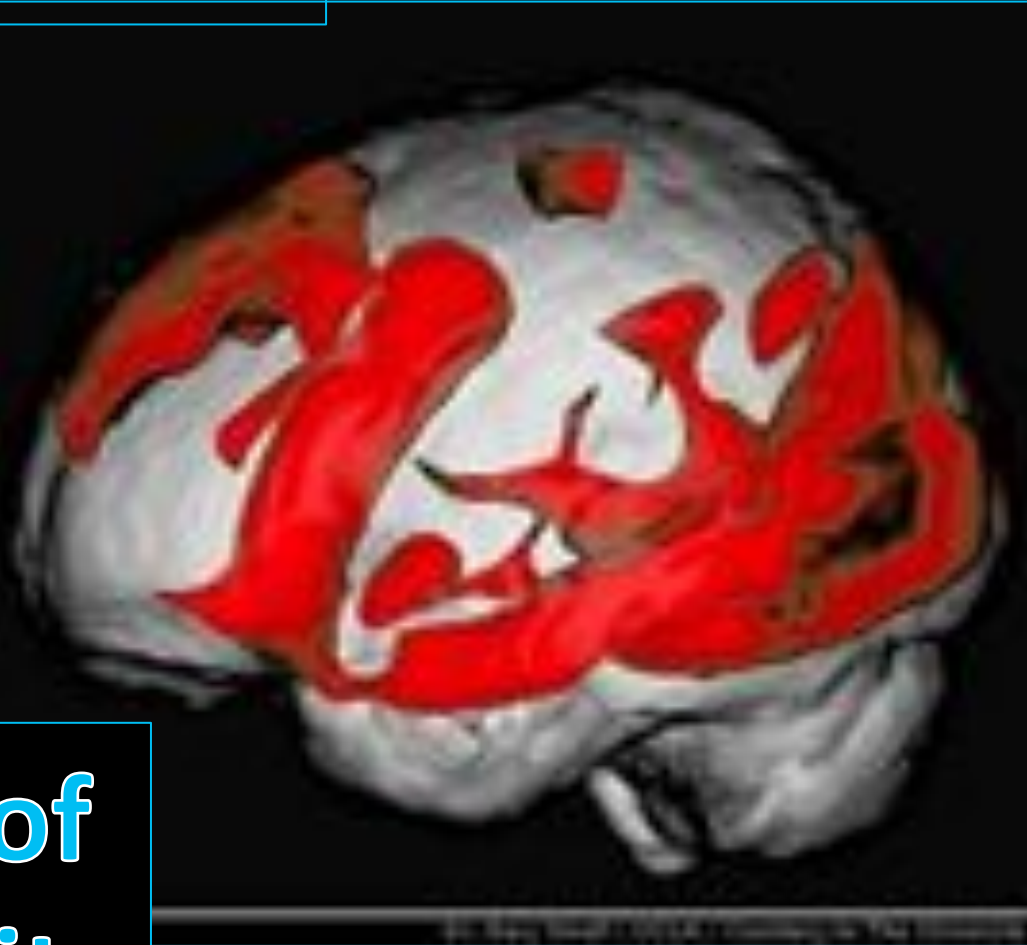


INTERNET

Rest means Rest...

The CNS can rest and reboot critical energy when the brain function is minimal...

Nearly 2/3 of brains activity



Biggest Drain



Tracking/following
moving objects

Depth between
objects

Speed/Velocity
objects travel

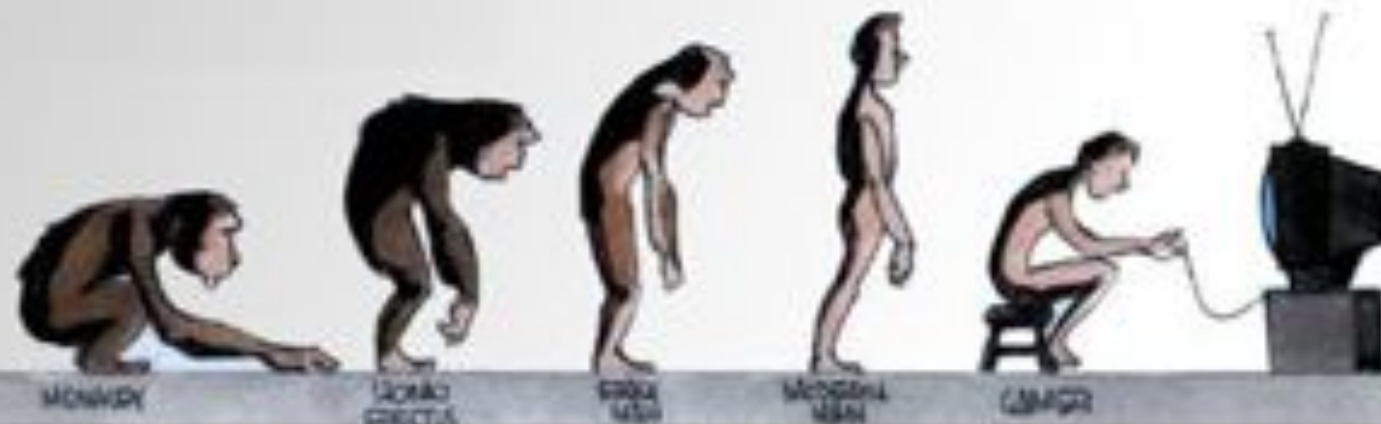
The visual cortex drains much of the CNS
energy during the waking hours.



VIDEO



GAMES





Studies conducted at London's Hammersmith Hospital found that dopamine levels in players' brains doubled while competing in video games.

"I really only play Xbox," "I have been playing a lot of Call of Duty recently. I find myself playing like 30 hours per week. People don't know it's [me]. It is fun, I am very competitive in everything I do."

Michael Phelps



The background features a warm, orange-to-yellow gradient. On the right side, there is a wireframe silhouette of a human head in profile, facing left. The background is filled with faint, semi-transparent binary code (0s and 1s) and some alphanumeric characters, suggesting a digital or data environment.

TECHNOLOGY BASED LIFESTYLE

Is not conducive to optimal training,
recovery, adaptation or performance.

Tech creates problems



Blue Light Disturbances

Blue light from a 15-20 hr day, blue light from your computer screen at midnight - it makes no difference to our circadian rhythm. It's all the same to our bodies, because the millions of years blue light meant daylight, not late night texting or channel flipping on TV and it's the blue light specifically that appears to interfere our sleep patterns the most. Computer screens, iPhones, TV or iPad use late into the night disturb your entire physiological processes, keep that you need for sport!

The adverse effects of night-time light on sleep and circadian rhythm can be reduced by replacing blue-enriched light with red- or orange-enriched warm light after sunset.

Using these devices in total darkness when the problem was worse!

Get a hint as your body can get into a Bio-Rhythm...

It is advised to establish a regular bedtime and wake time. The interval between these two times must allow a person to reach enough sleep. Athletes need more sleep. A typical high school or college athlete would need more than nine hours of sleep.



Life of an Athlete
Human Performance Project



Brain Stimulation



BLUE LIGHT IS EVIL FOR ATHLETES

Blue light is bad for our health – at the correct amount. When we're exposed to levels of anything we stress for the better of what we would have experienced for the bulk of our evolutionary history, problem arise. Blue light impedes the secretion of melatonin, the sleep hormone. Exposed to blue light, we limit the production of melatonin, and we stay alert and awake in the absence of blue light, melatonin production ramps up, and we get sleepy. This system worked quite well for a long time. Reddish light from fire was the primary source of nighttime illumination and had little to no effect on melatonin production, so sleep wasn't disrupted when we relied on fire. These days, though, we're subject to a steady barrage of blue light. During the day, blue light (natural or artificial) isn't a mark of a problem because we're supposed to be awake. But at night, when we're "supposed" to be getting ready to sleep, we tend to put on blazes of blue light: remaining alertness, and our sleep suffers for it. We maintain my release of melatonin and stay alert and stimulated rather than becoming sleepy. Use of blue light often shows in a bad way for athletes who want to sleep and recover and release HRM and get HRM to return the HRM and train for your recovery or competition tomorrow.



Life of an Athlete
Team Performance Project

Delays brains transition from
wake state to sleep



A dimly lit room, likely a bedroom, with a television on a stand in the background. The TV screen displays the text "Blue Light" in a blue, outlined font. The room is dark, with a bed and a table visible in the foreground, all illuminated by a soft blue light. The overall atmosphere is dark and moody, emphasizing the theme of blue light.

Blue Light

Prevents Brain Shutdown





Blue Light Tips for Athletes

Exposure to blue light is problematic, and there are some simple steps you can take to mitigate its late-night effect on your sleep.

Keep electronics usage to a minimum or completely eliminate blue light exposure, TVs, laptops after dark.

Go to sleep earlier.

Use f.lux/light.

Keep your room as dark as possible and your sleeping quarters pitch black.

Install F.lux (partially free) on your computer to cut down on blue light emissions.

If you want to try a somewhat serious experiment you could even wear orange safety glasses at night.

Do not use blue light devices in total darkness (see pic)

Blue light keeps you awake and throws off your circadian rhythm!



Life of an Athlete
Human Performance Project

Limit blue light at night





**Avoid Blue Light
and total darkness**





f.lux options



Life of an Athlete
Human Performance Project

Change to PINK





Blue Light Reducing Computer Glasses

Blue light acts differently on the retina than the rest of the light color spectrum. Ever look at a blue LED and noticed a halo around the light? Staring at it gives you a headache, doesn't it? Dubois, why? Your eyes are straining to try and bring that blurry spot into focus, and it just isn't!

Exposed to blue light, we limit the production of the melatonin sleep hormone, and remain awake and alert. In the absence of blue light, however, melatonin production increases and we get tired.

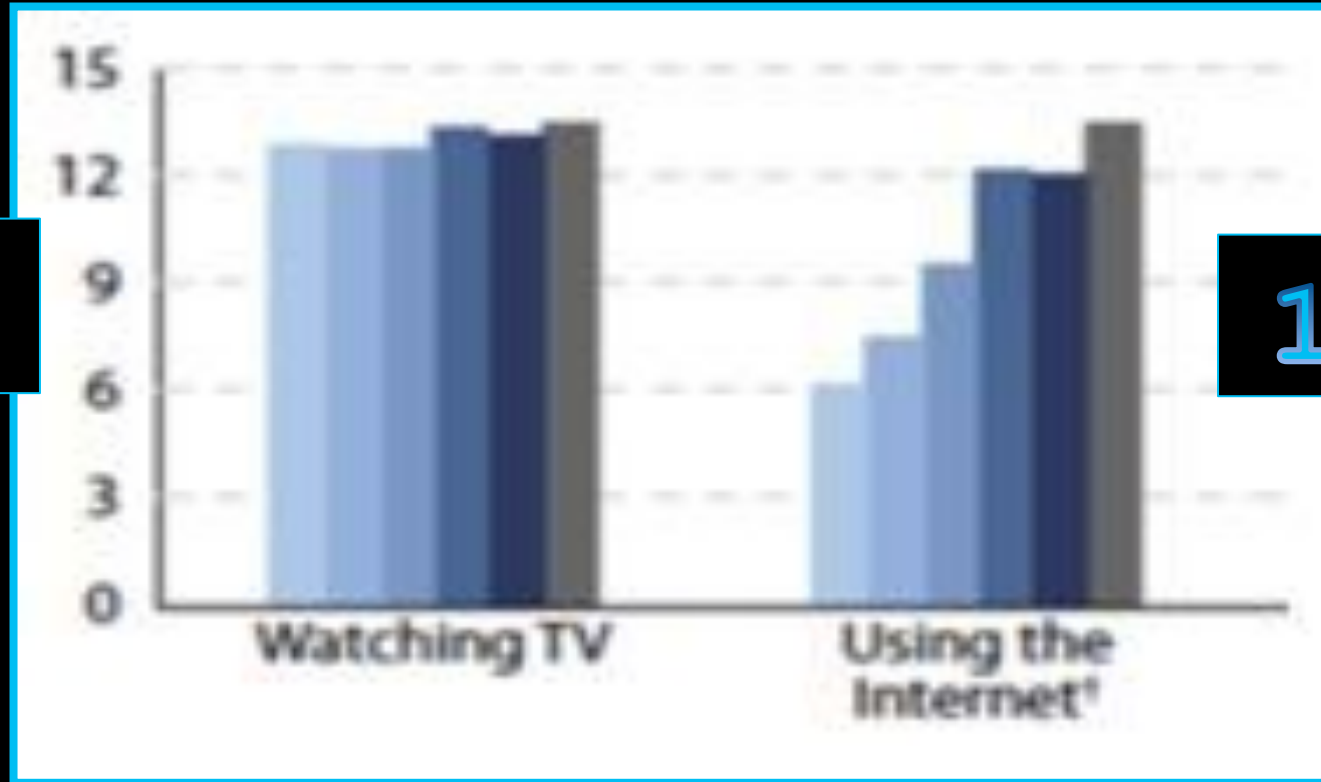
Getting enough sleep is a task that challenges many athletes, but doing what you can to help your body rest naturally can greatly improve the quality of the sleep that you are able to get. By avoiding blue light in the evening and right before bed, you can help your body produce the optimal amount of melatonin and you can fall asleep in a natural way. Additionally, you will reap all of the benefits that a healthy sleep cycle provides, which is pivotal to recovery in all body systems. Optimal training requires sufficient sleep.

Filters



13 HRS

13 HRS



5%

121%

INCREASE IN TV AND INTERNET TIME IN LAST FIVE YEARS

26 HOURS PER WEEK





+10-15-20 Hours





High level populations can use blue light to advantages!

Just like blue light wavelengths can be detrimental to falling asleep, it can also help the brain stay stimulated under CNS fatigue conditions or help speed up the waking reflex in those who need to get highly functional after sleep. PPT in upstate NY is developing these blue light glasses to help with sleep disorders but they also have application for stimulation. Blue light could be utilized shortly after awakening to shorten the grogginess and collect more experience prior to a morning workout. When we consider that morning is now the optimal time for high level training, there is huge applications, see John Underwood, Director of the Human Performance Project.



Life of an Athlete
Human Performance Project



facebook

wasting athletes time since 2004

Stimulants

There is no way
to make up for
the deficits of
lost sleep with
stimulants



ENERGY DRINKS





Use of Stimulants for CNS Fatigue

Clearly any athlete that is suffering from serious CNS fatigue or Neural Fatigue NF knows that it will be a long painful training session. Many use energy drinks or stimulants or the original coffee or espresso. This is a huge mistake! The athlete will quickly experience an energy spike or surge within ten to twenty minutes and then rapidly sink into even greater deficits of NF. The only way to overcome NF is rest and in particular REM sleep. Power naps less than 30 minutes have been shown to elicit a 30% increase in alertness (NASA says 26 minutes), but it will not overcome NF. So suffer through the session and head to bed early. It is no different than waiting for your body to recover from the poisoning of alcohol. You are at the mercy of the timeline for return to normalcy!



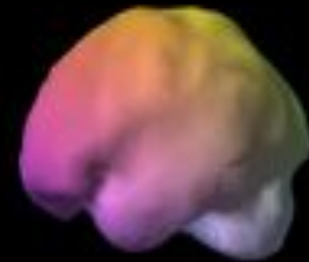
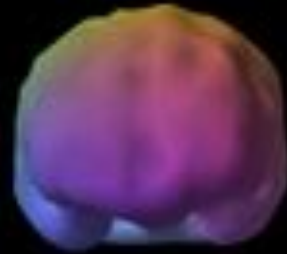
Life of an Athlete
Human Performance Project



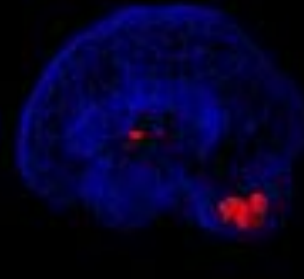
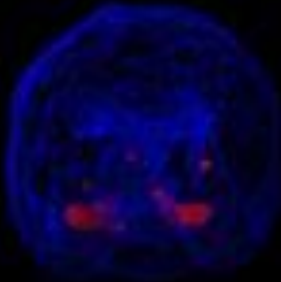
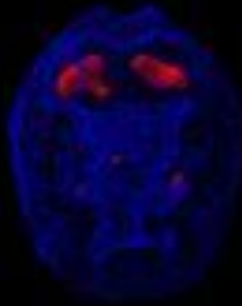


What's this?

DAMAGE



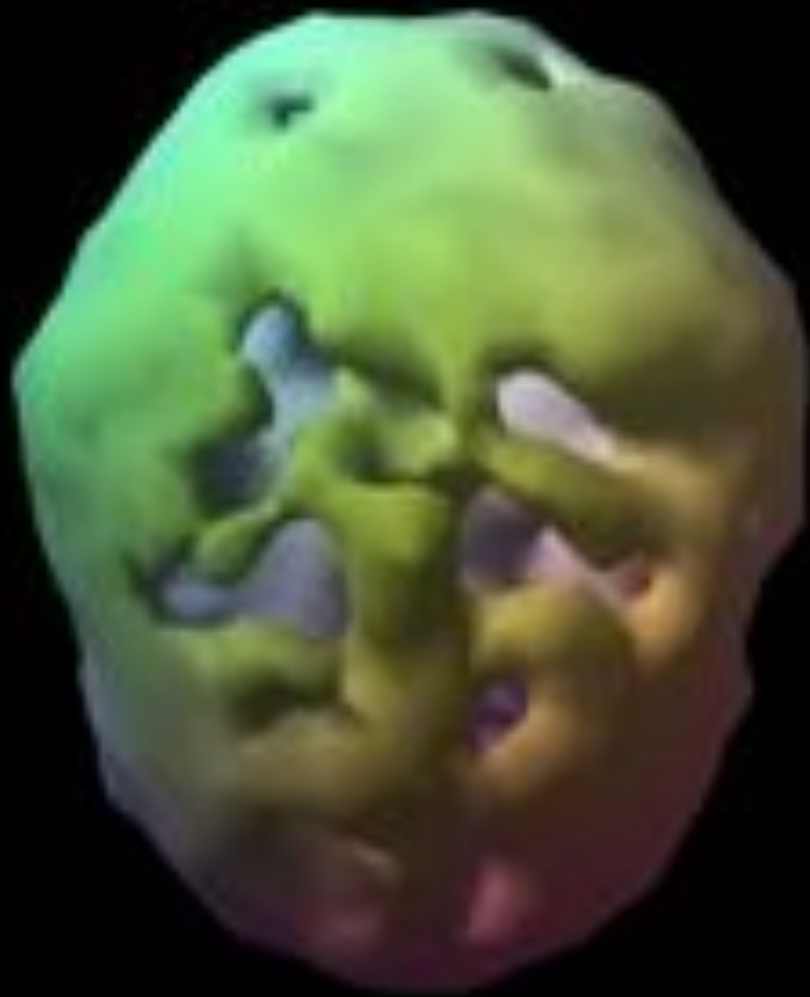
Single Photon Emission Computerized Tomography



ACTIVITY

SPECT





We now have
indisputable
evidence of
systemic
damage and
cumulative
damage.

BRAIN SCIENCE ADVANCES

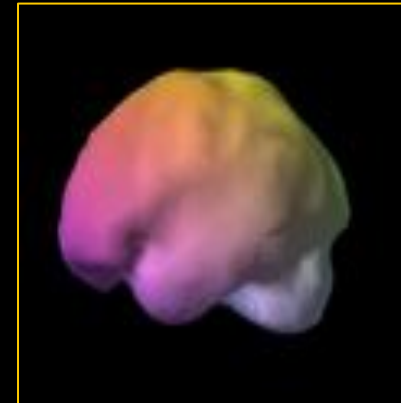
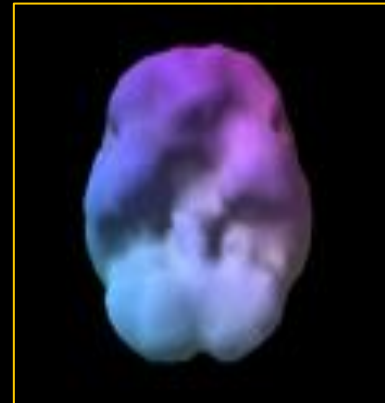
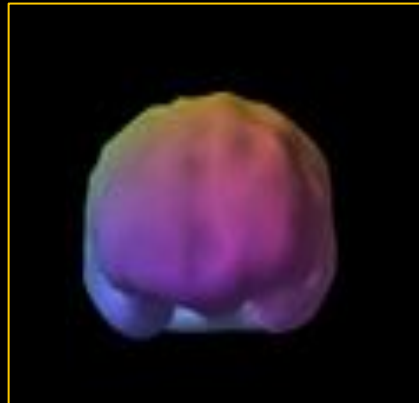
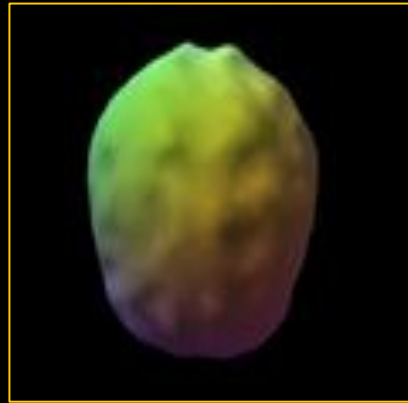


TOP

FRONTAL

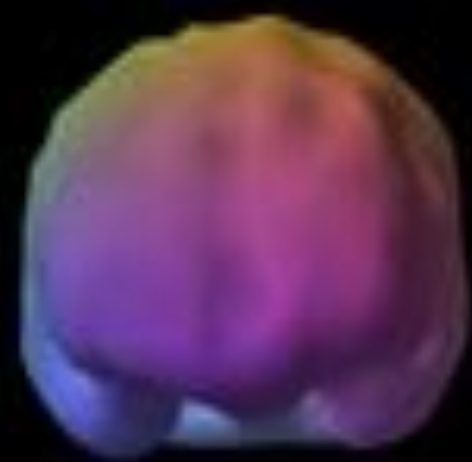
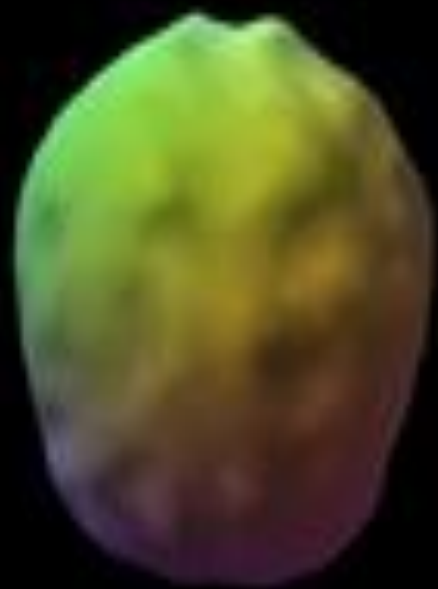
BOTTOM

SIDE

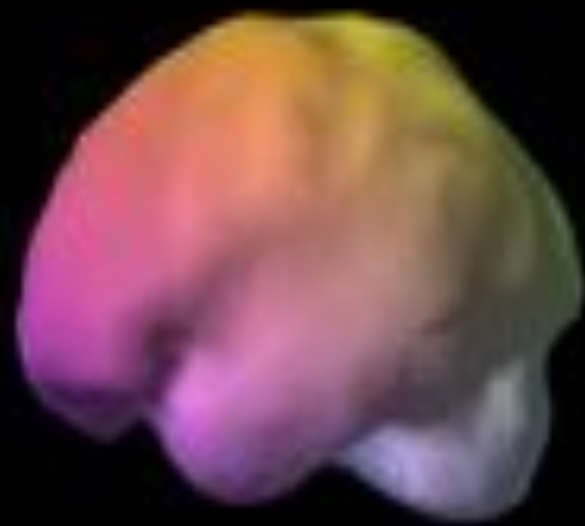


**NORMAL
HEALTHY**

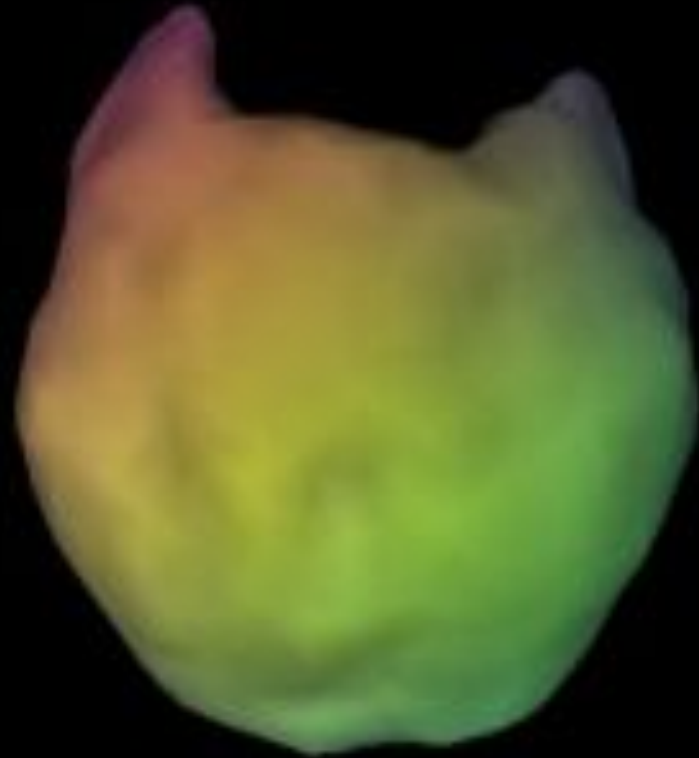
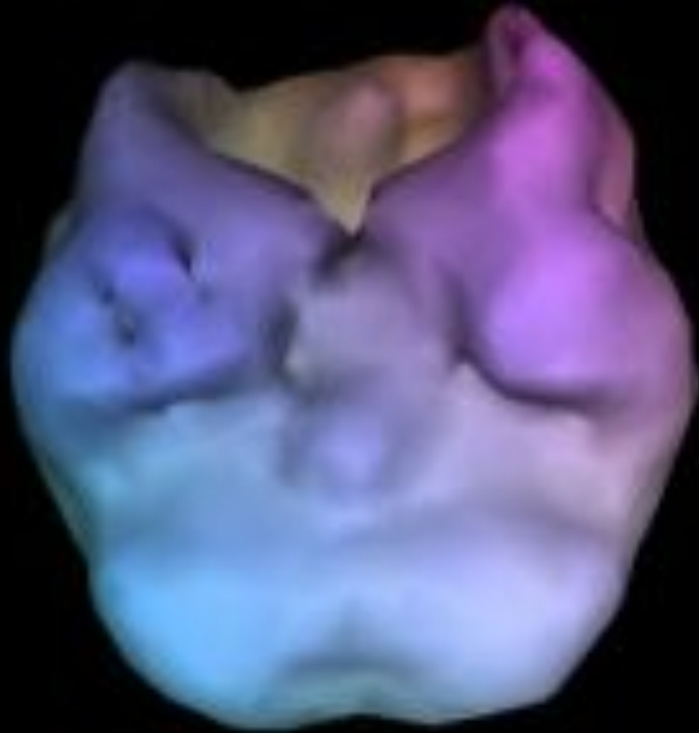




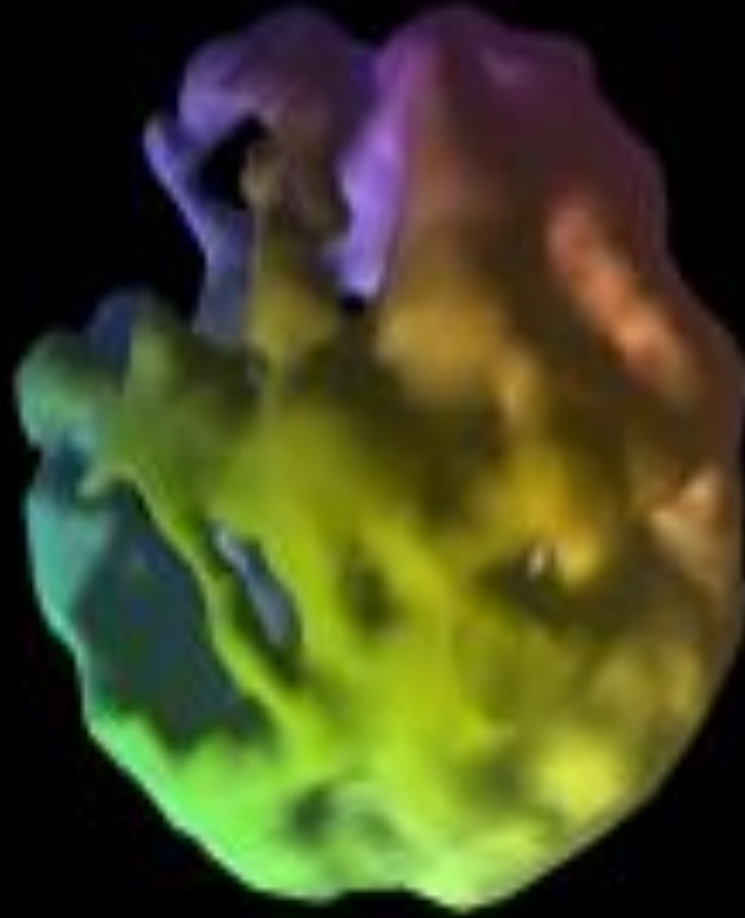
NORMAL HEALTHY



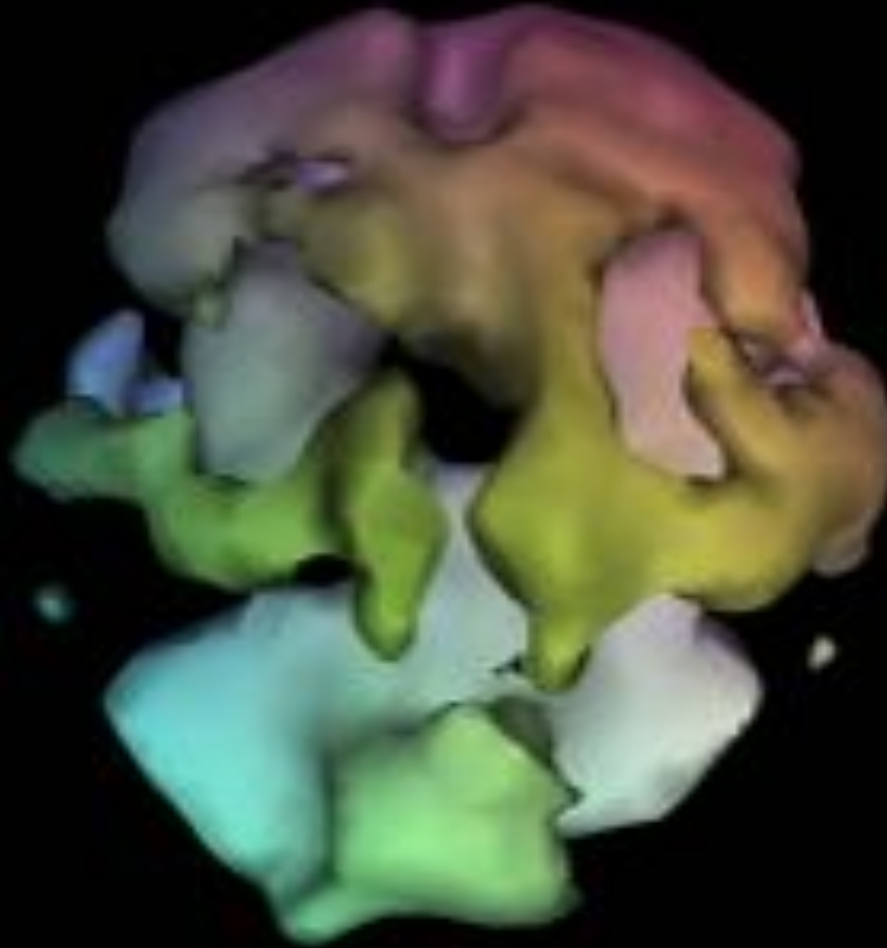
Severe Brain Injury



Stroke

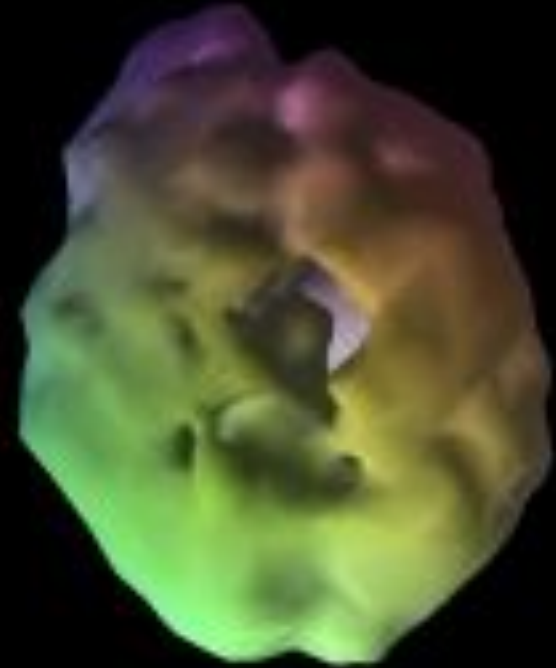


Alzheimer's

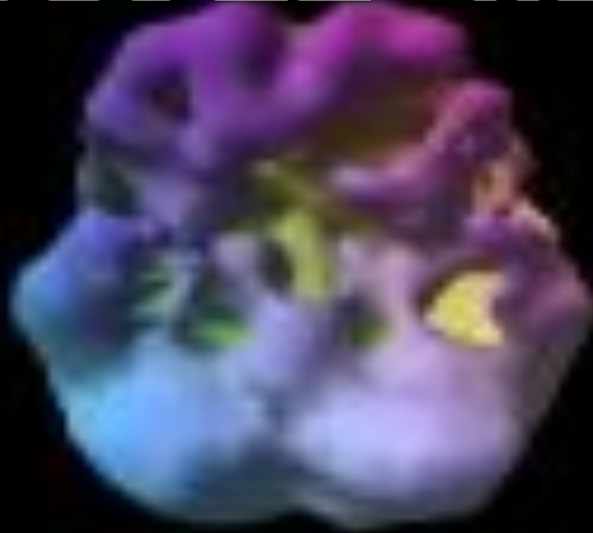


Brain Degeneration

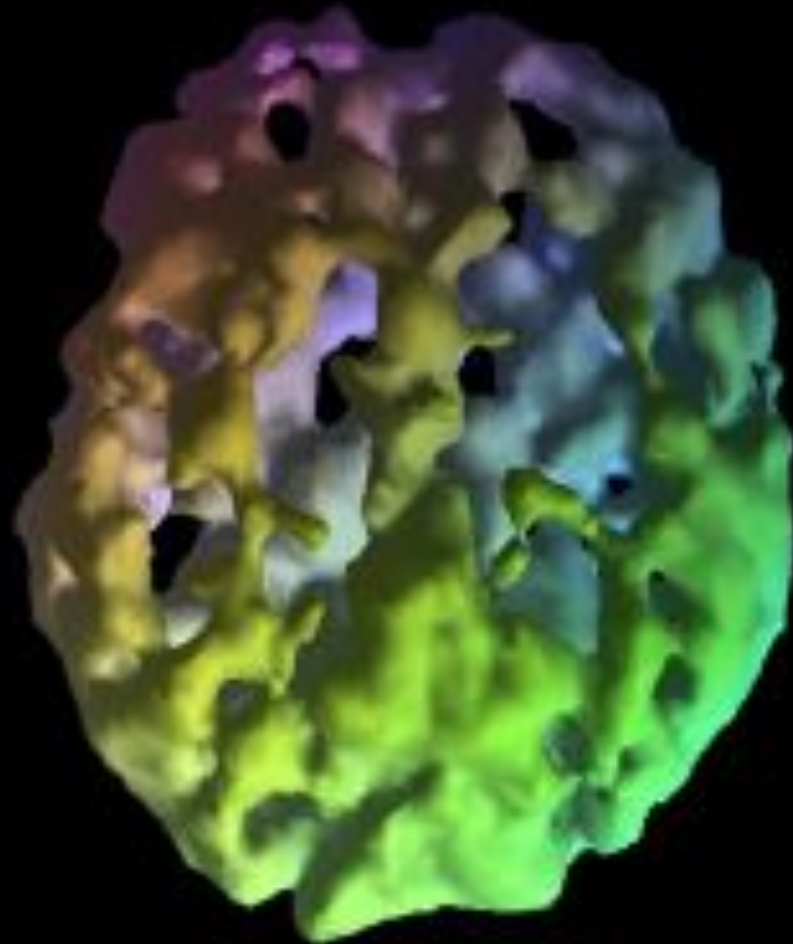
NFL NHL BRAIN INJURY STUDIES



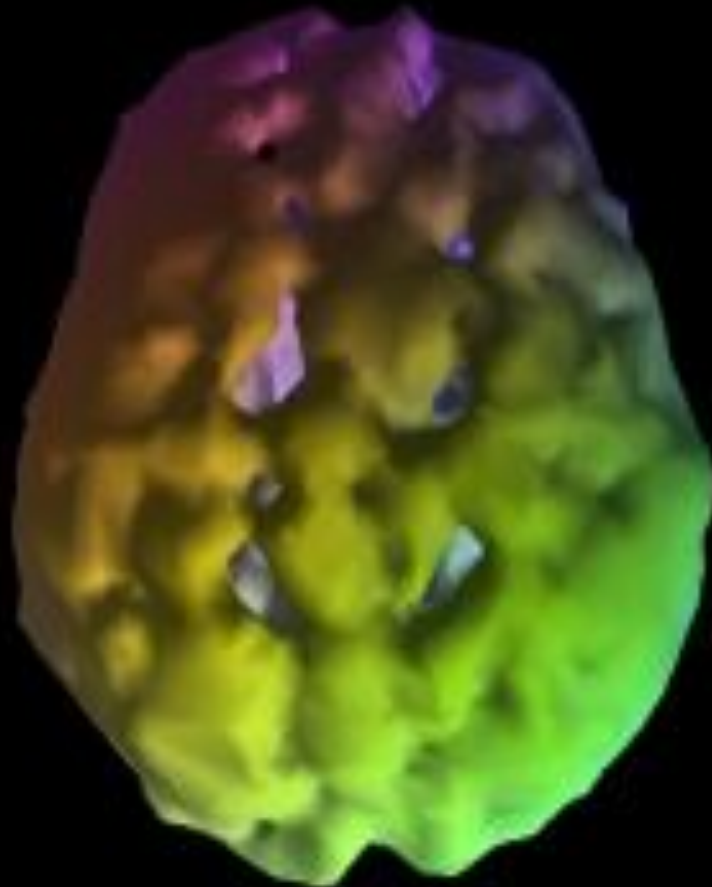
MULTIPLE HEAD INJURIES



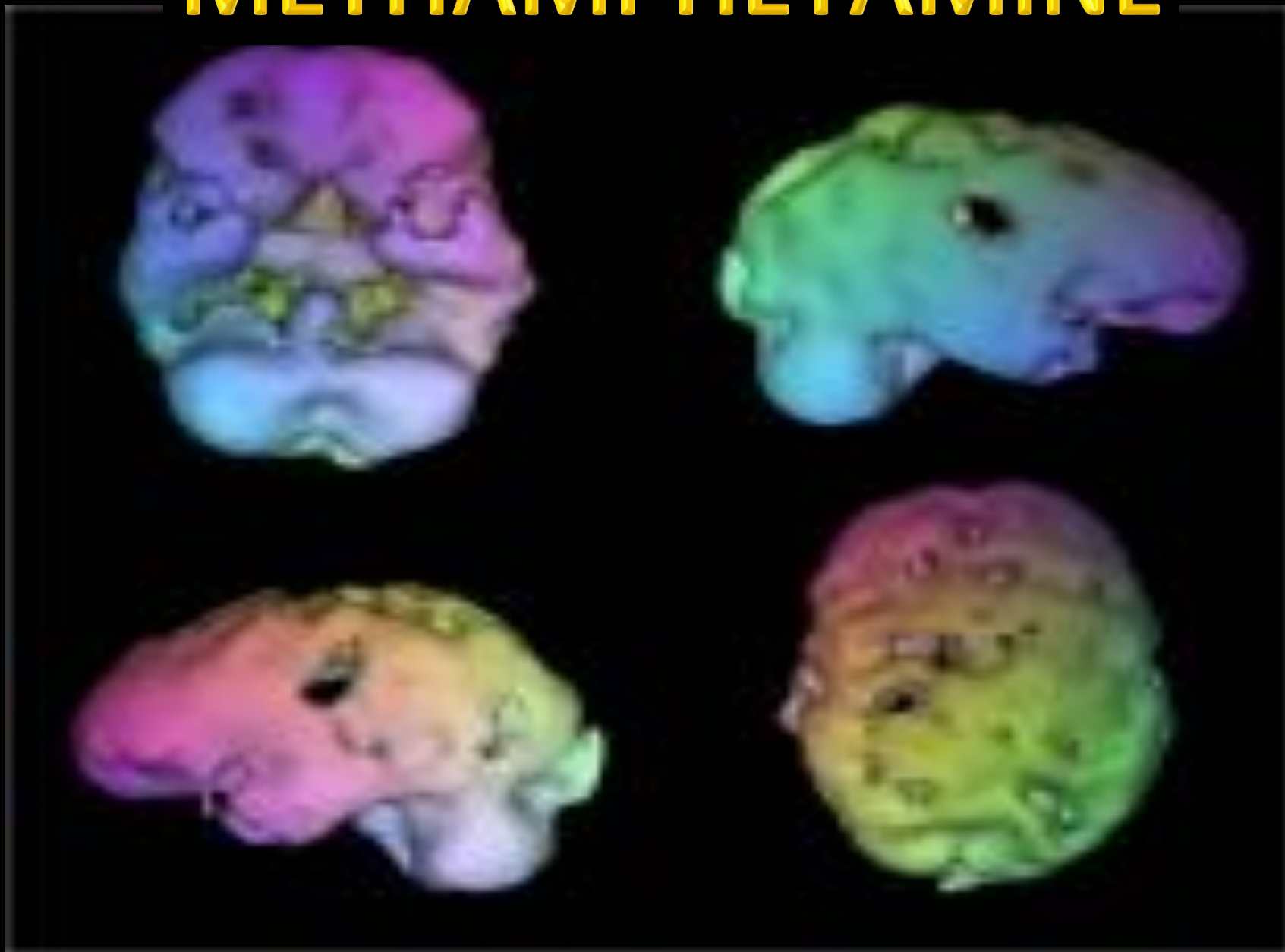
HEROIN



COCAINE



METHAMPHETAMINE





SOCIAL DRUGS





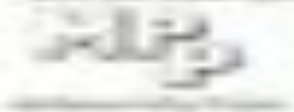
"Marijuana helps me relax, without affecting my athletics."

Michael Phelps

14 Times Olympic Gold Medalist

Marijuana: Inspiring successful Americans since 1776.

See the full story on marijuana, the most effective stress relief method.



MORTEL



WORLD PICTURE EXCLUSIVE

PHELPS GOES BONG

Olympic gold medal winner caught with cannabis pipe



14 OLYMPIC GOLD MEDALS
37 WORLD RECORDS.
2 AWESOME LUNGS.

Unlike heavy tobacco smokers, heavy marijuana smokers exhibit no obstruction of the lung's main airway. This indicates that people who use the substance have smoking marijuana.
For more information visit www.marijuana.com

Don't let the government fool you

© 2008 MARIJUANA.COM

SMOKING MARIJUANA WASTES POTENTIAL

Smoking marijuana can cause a decrease in lung capacity and a decrease in the amount of oxygen that can be carried in the blood. This can lead to a decrease in athletic performance. For more information visit www.marijuana.com

WASTING WHAT A WASTE.





Social Drugs



National Study of
Substance Use Trends
Among NCAA College
Student-Athletes

Alcohol 83%

MJ 22%



Pure Performance Project

John Underwood

Director,

American Athletic Institute



Substance Use Categories

Alcohol

Marijuana

Amphetamines

Anabolic Steroids

Cigarettes

Snuff Tobacco

Cocaine

Ephedrine



RX drugs and Athletes



Although athletes are young and generally healthy, they use a variety of non-doping classified medicines to treat injuries, cure illnesses and obtain a competitive edge. Athletes and sports medicine physicians try to optimize the treatment of symptoms related to extreme training during an elite athlete's active career. According to several studies, the use of Rx medication is more frequent among elite athletes than in the general population.

Substance Use

1985

1997

2001

2005

2009

2012

National Study of
Substance Use Trends
Among NCAA College
Student-Athletes



The NCAA salutes

440,000

student-athletes

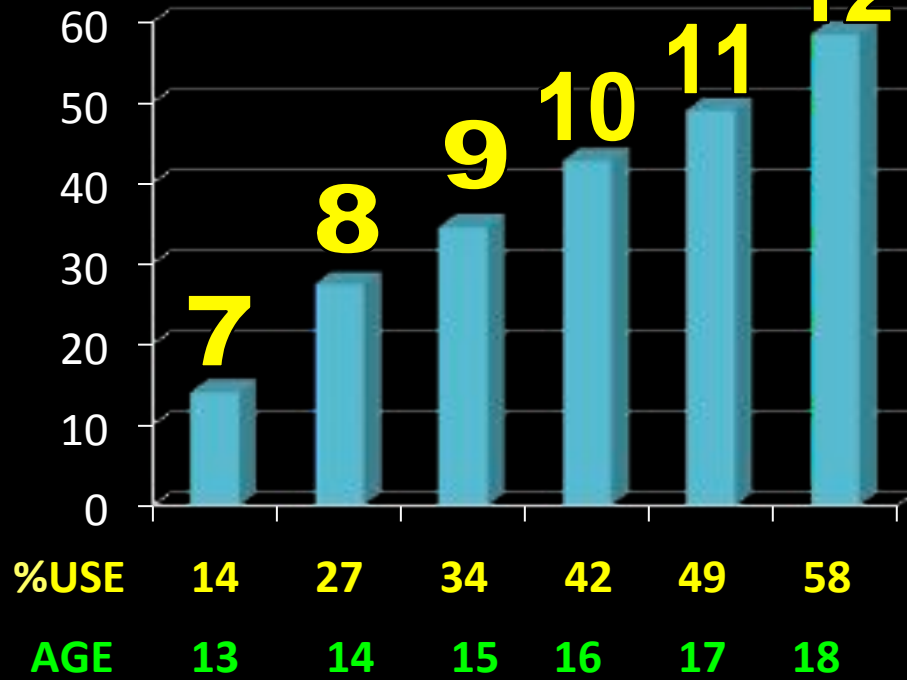
participating in

23 sports at

1,200 member institutions

JR. ATHLETES REPORTING ALCOHOL USE DURING SPORT SEASON

12 GRADE



**ALCOHOL USE
ATHLETES**



Middle School – High School

Junior Level

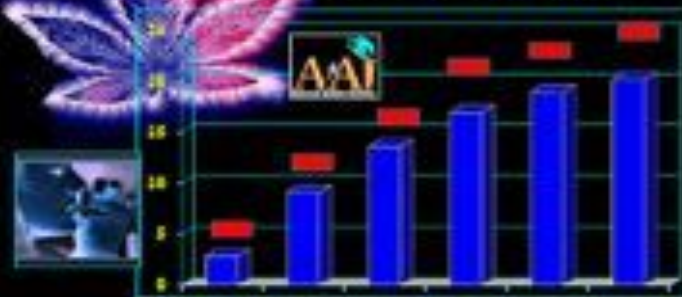
Athlete Use of Marijuana

Age Grade & Using

13	7	3%
14	8	9%
15	9	13%
16	10	17%
17	11	19%
18	12	20%



MARIJUANA USE ATHLETES



Brain Activity Alcohol

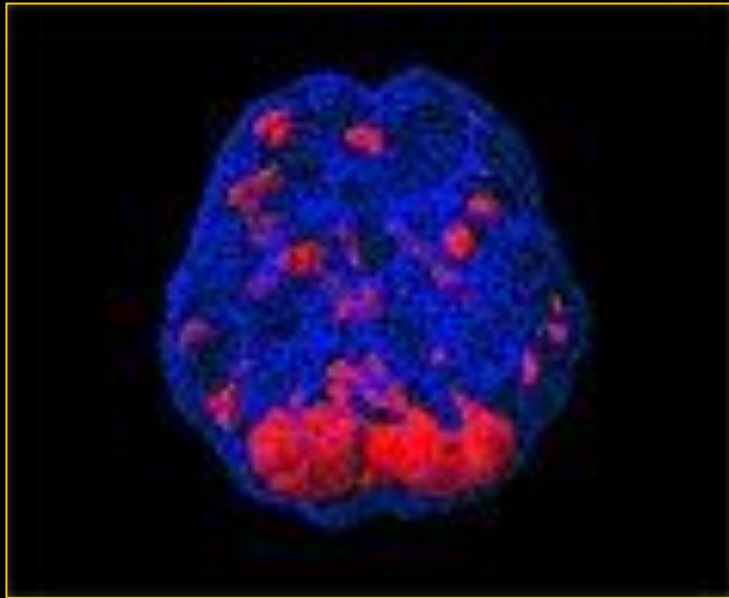


**Not under
influence**

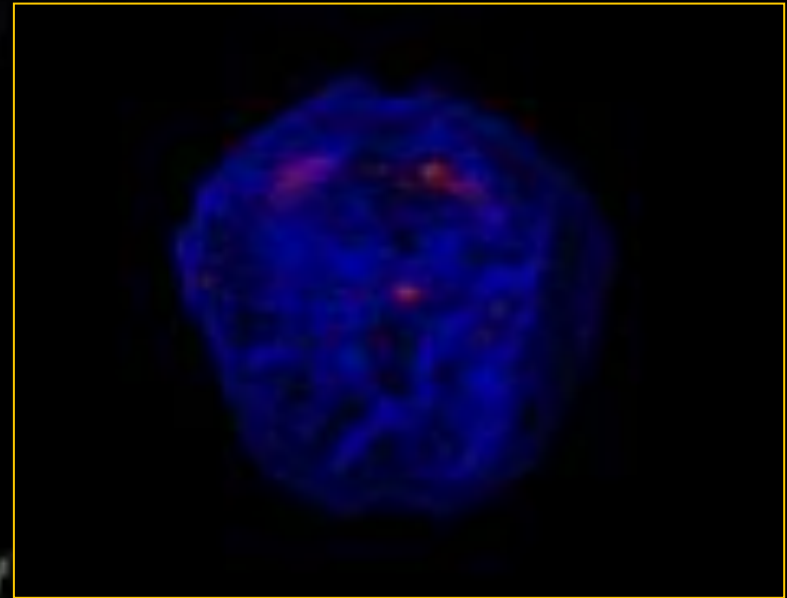
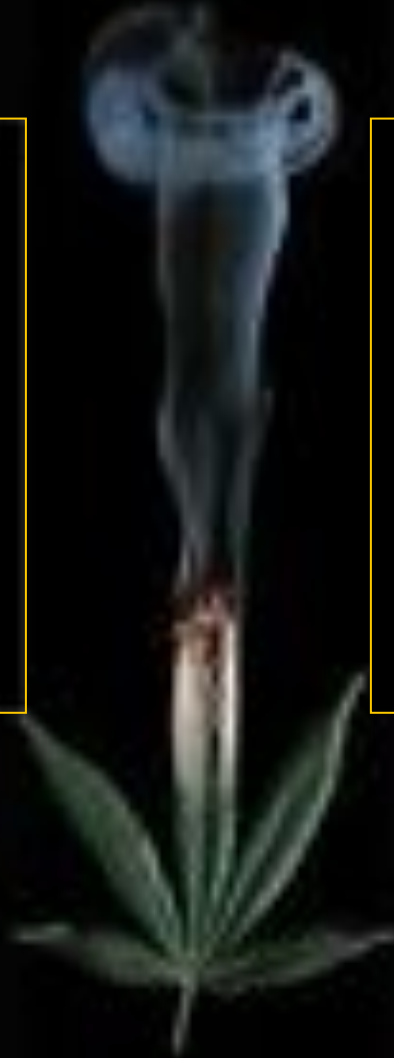
Intoxicated



Brain Activity Marijuana



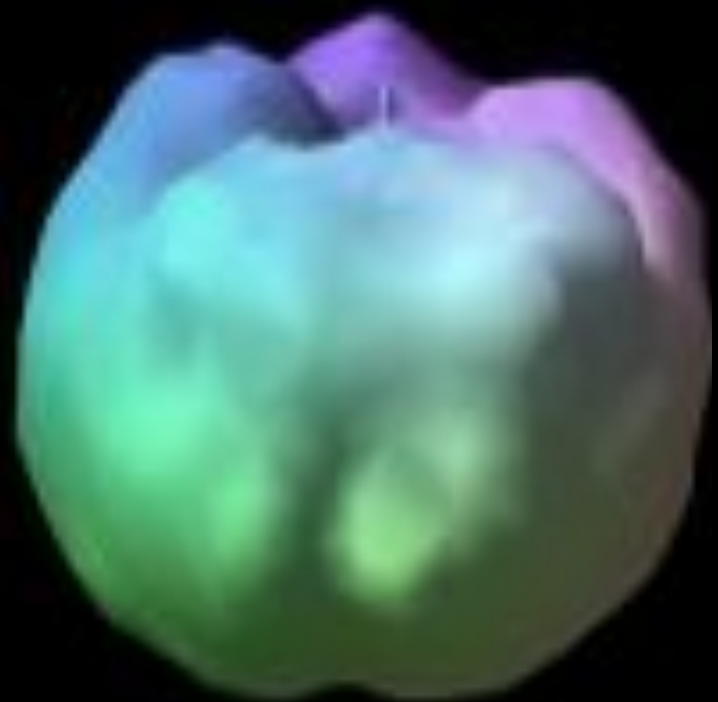
**Not under
influence**



Stoned

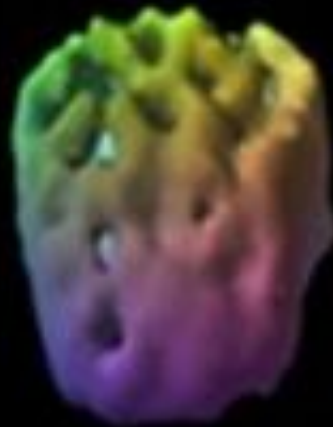
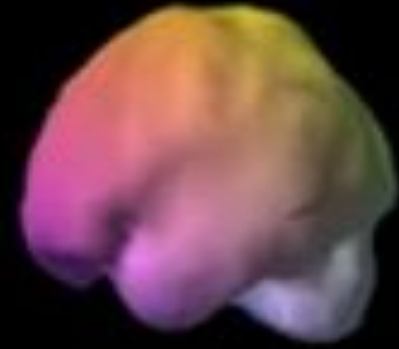
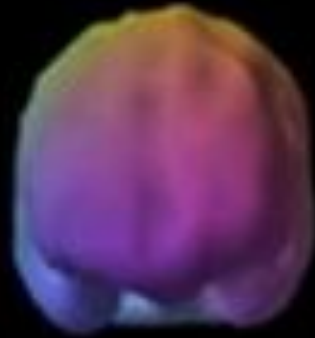


Healthy



Marijuana

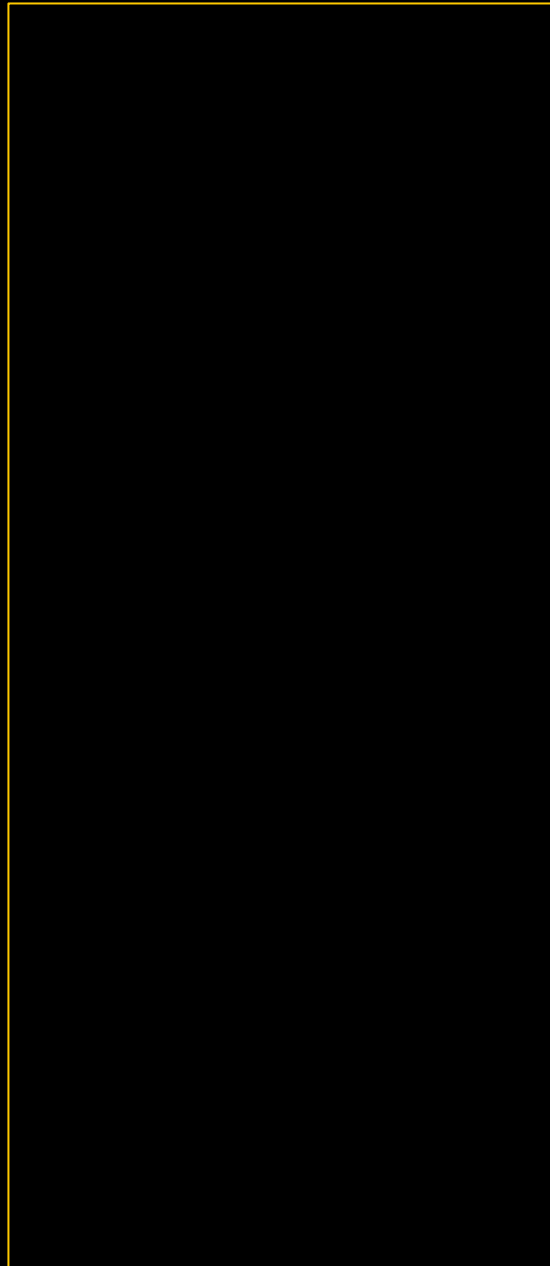


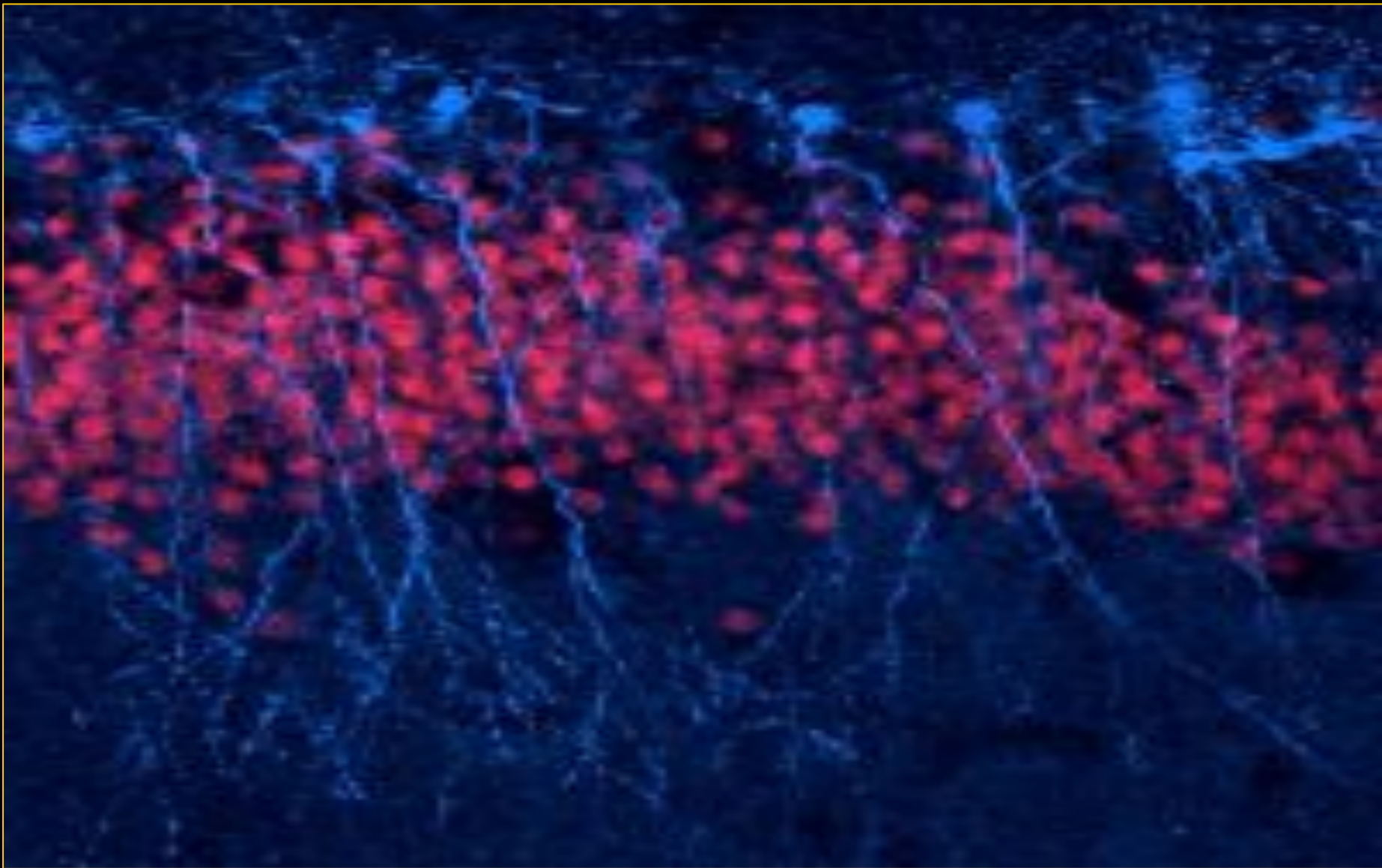


Take your chances



Alcohol no alcohol one year later





Neuroplasticity new brain cells replace damaged areas



Positives and Negatives

EVERY CHECK IN THIS COLUMN
WILL HELP YOU MAXIMIZE
YOUR PERFORMANCE:

- ✓ Elevate Blood Glucose
- ✓ Rested (8+ hours of sleep)
- ✓ **Post Training** Nutritional Recovery
- ✓ Non-weight Bearing
- ✓ Rest
- ✓ Refuel
- ✓ Rehydrate
- ✓ Sleep

Maximum Results for your effort!

A SINGLE CHECK IN THIS
COLUMN AND IT IS ALL
UNDONE

Marijuana

✓ Alcohol





ALCOHOL EFFECTS PHYSICAL/MENTAL





For 24 hours
after heavy
drinking, it is
impossible to
have any
training effect
take place

24 HOURS

DEFICITS





There are
effects from
any amount of
alcohol.
Even one
drink!

PHYSICAL
COGNITIVE



The hangover is just the beginning...



M T W R F S S





ALCOHOL UNKNOWNS

Alcohol is converted to acetaldehyde by the enzyme alcohol dehydrogenase, and then from acetaldehyde to acetic acid by the enzyme acetaldehyde dehydrogenase. Acetaldehyde (poisonous) is between 10 and 30 times more toxic than alcohol itself.



Life
Athlete



10x 20x 30x

ALCOHOL > ACETALDEHYDE



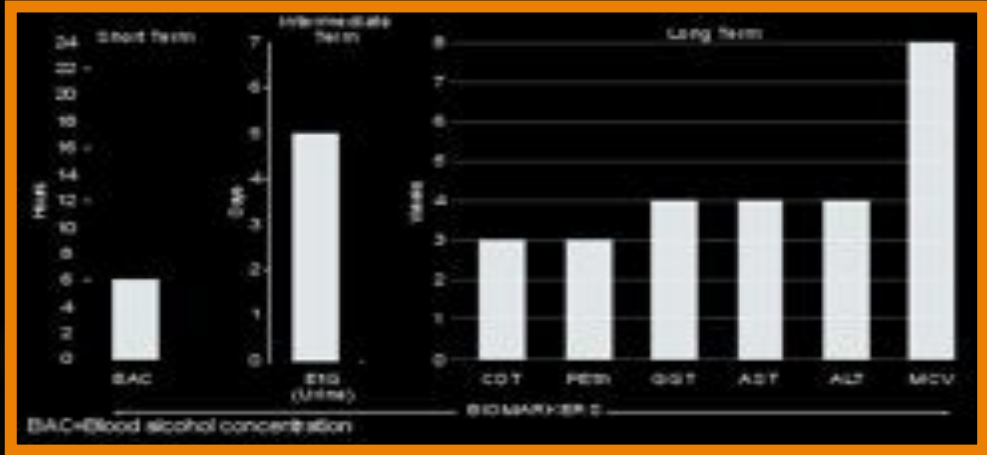


The smallest of
measures

IN URINE



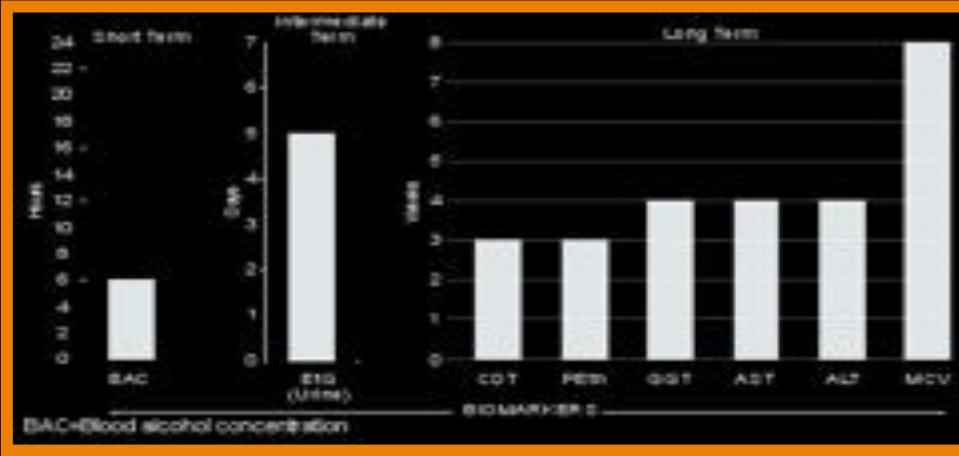
(0.02%) non-oxidative pathway produces ethyl glucuronide (EtG), which is excreted in the urine.



Windows of Assessment for Various Alcohol Biomarkers

**4-5 DAYS
80 HRS.**





IN BLOOD

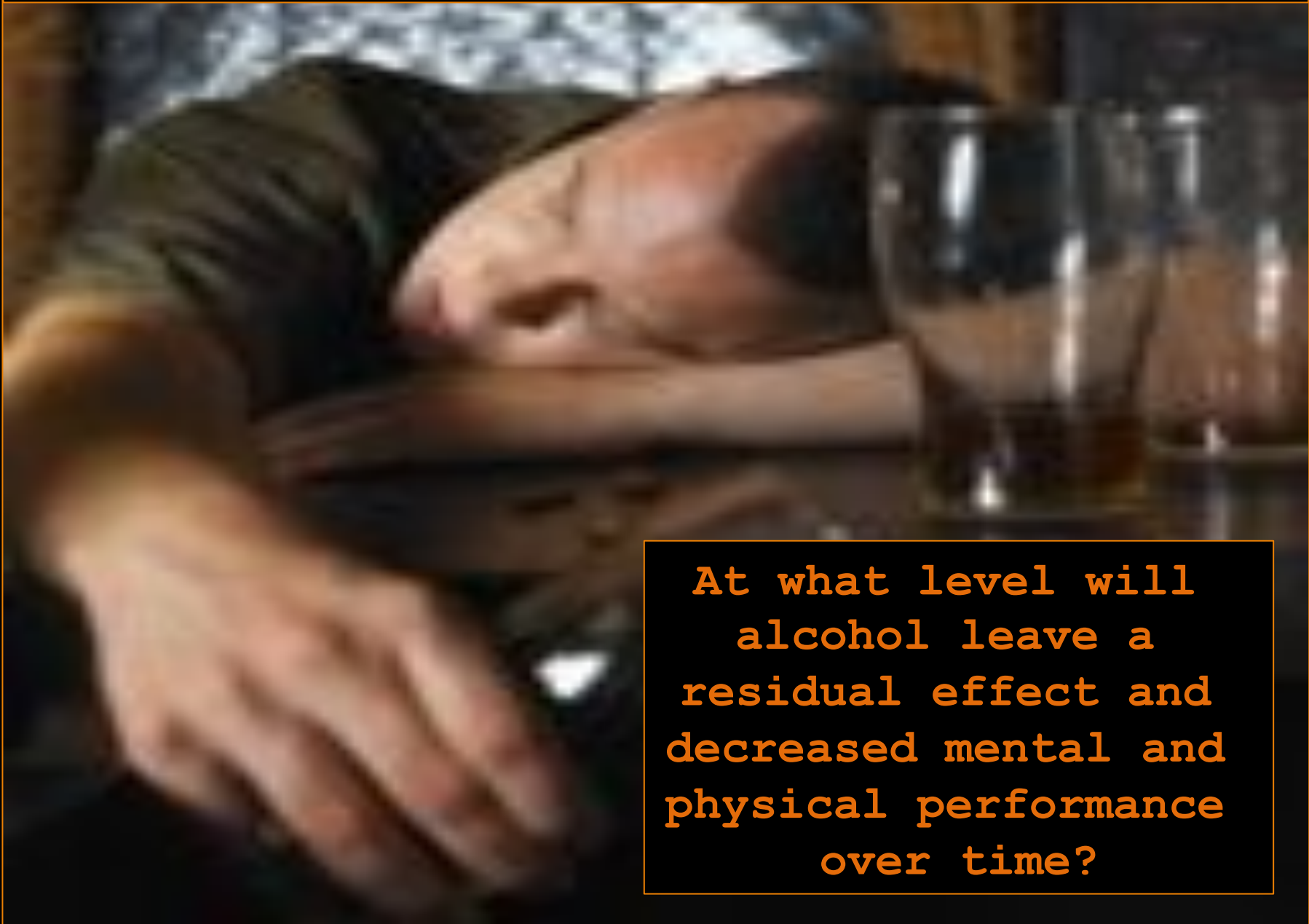
3-8 WEEKS



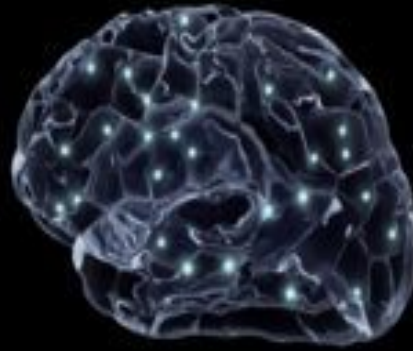
The more you drink the more you impair brain, body and CNS function.



DECREASED MENTAL PHYSICAL PERFORMANCE



At what level will alcohol leave a residual effect and decreased mental and physical performance over time?



Effects of alcohol begin at 1-2 drinks
Effects increase dramatically at 3-4 drinks
Effects at 5-6 drinks have serious residual effect

RESIDUAL EFFECTS

RED GREEN BLUE 12 35 50



1

2

3

4

Minimal Residual





The residual effect of alcohol or a hangover has been shown to reduce performance by an average of 11.4% in elite athlete populations.

<11.4%

PERFORMANCE POTENTIAL



Muscle Function



Ethanol is a very small molecule. Because of its size and polarity (charge), it can readily enter (diffuse without the concomitant expenditure of energy in the form of ATP) through the cell membrane of skeletal muscle.

In the process, ethanol can disrupt the molecular configuration of the fatty acyl groups of the phospholipids of the skeletal muscle. Ultimately, this could interfere with several processes including the entry of calcium ions into the nerve terminal or an increased binding of calcium to the sarcoplasmic reticulum of the muscle.

Calcium is the cation (a positively charged ion) which is involved in the control of the rate of release of neurotransmitter into the synapse (the area between the nerve and the muscle) and plays the most important role in muscle contraction and relaxation.

Thus in summary, alcohol is not a fuel for muscle contraction and alters fuel metabolism to increase lactate production and decrease lactate degradation. Furthermore, disrupts the molecular configuration of skeletal muscle and compromises its ability to perform muscle contraction. (Balon/Underwood 2004)





Alcohol Nerve Muscle



Alcohol injected right on the nerve directly strips off the fat from that location and slows conduction there. Multiple speeding impulses pile up and come through as one single impulse. So a stream of impulses such as:

gogogogogogogogog—gogogogogog—

comes through the black area as:

go—go—go—go—

Engineers call this a low pass filter.

When a muscle gets hit with a single "go" it responds. When it gets hit with a barrage of gogogogogogogogog, it gets thrown into tetany, a rigid hard to undo contractile state. Worse, it screams for help over feed back circuits which (in specificity) are mistakenly linked into the motor circuits by reflex spinal pathways.

Slowing certain nerves in the loop can drop the recruitment of the reflex mechanisms which get drawn into the fray from further and further away in the spinal pathways as the recruitment gets worse.

Life of an Athlete

Misfiring of muscle impulses





Cardiac Output
Stroke Volume
Cardiac Arrhythmias

HEART FUNCTION



< O₂

> CO₂

< VE



LUNG FUNCTION



Blood Glucose Levels

The body has trouble making more glucose because it is expending its energy metabolizing the alcohol. Both of these effects of alcohol can cause severe hypoglycemia low blood glucose levels for 6 to 36 hours after a binge drinking episode.





.08

.07

.06

.05

.04

.03

.02

.01



Abstract: Alcohol consumption causes effects on visual perception, including a loss of 30 behavioral units. In general, the effects of alcohol were characterized of a loss of 30 units per 100 ppm. Many different behavioral functions were included in the category, including visual acuity, visual resolution, eye movements and visual search. These effects were not to be affected by alcohol levels of 0.02% and 0.04%, a finding which is consistent with earlier studies. On the other hand, visual resolution was found to decrease significantly at alcohol concentrations of 0.06% and 0.08%. In addition, visual search resolution was significantly affected at 0.04% and 0.06%.

ALCOHOL AND VISION



Alcohol and Vision

NEWMAN and FLETCHER, who measured seven aspects of visual function in 50 subjects before and after alcohol administration. Blood alcohol levels ranged from 58 to 218 mg. The tests and results follow:

Decreased levels were seen in:

Sensitivity to Light	
Tacitile Tracking	Glare Recovery
Visual Acuity	Eye Coordination
Distance Judgment	Depth Perception
Lateral Visual Field	Glare Resistance

Ability to:
Track and follow moving objects...
Determine depth between objects...
Determine the speed or velocity of a traveling object...

Open your eyes!





TRAINING HORMONES



Life
Athlete

TESTOSTERONE

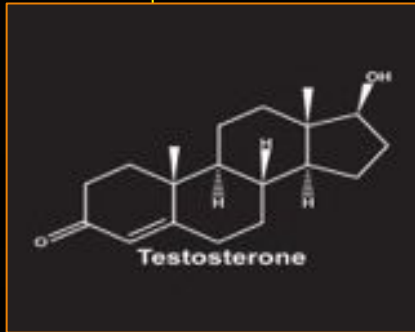
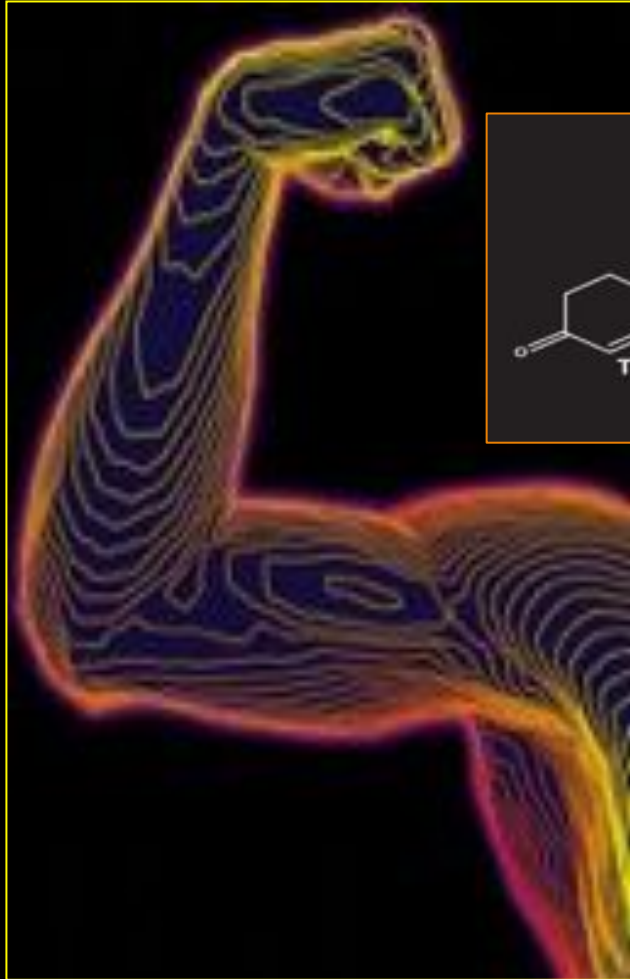
Studies of athletic athletes have shown that alcohol directly suppresses testosterone levels.

The more you drink, the more it gets.

And it's not just at the time you are drinking.

The biggest hit comes later, and spills into the following days...





Heavy maximal level training followed by excessive alcohol consumption can result in hormonal disruptions for up to 96 hours (4 days)

TRAINING EFFECT
RECOVERY
PERFORMANCE

THE 96 HOUR HOLE



(12-20 hours after the start of drinking) the testosterone level was only about half what it was...

It happens fast



TESTOSTERONE



Some males who drink heavily & regularly have testosterone levels similar to female levels.

Alcohol And Testosterone



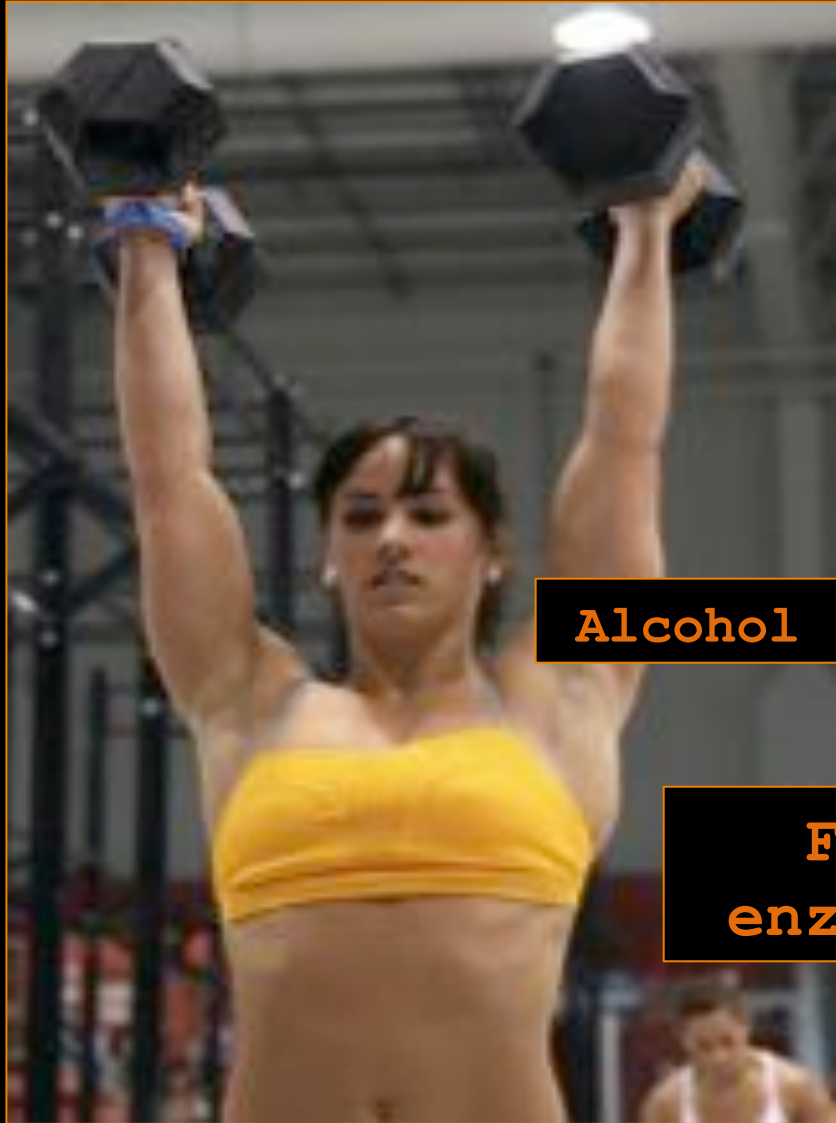
Females have 1/10th
of the training
hormones of men.

Training effect is
much more fragile



Female Training Effect





Alcohol stays in the female body longer

Females have less of the enzymes to breakdown alcohol

Alcohol > affects on females



Alcohol and Sickness

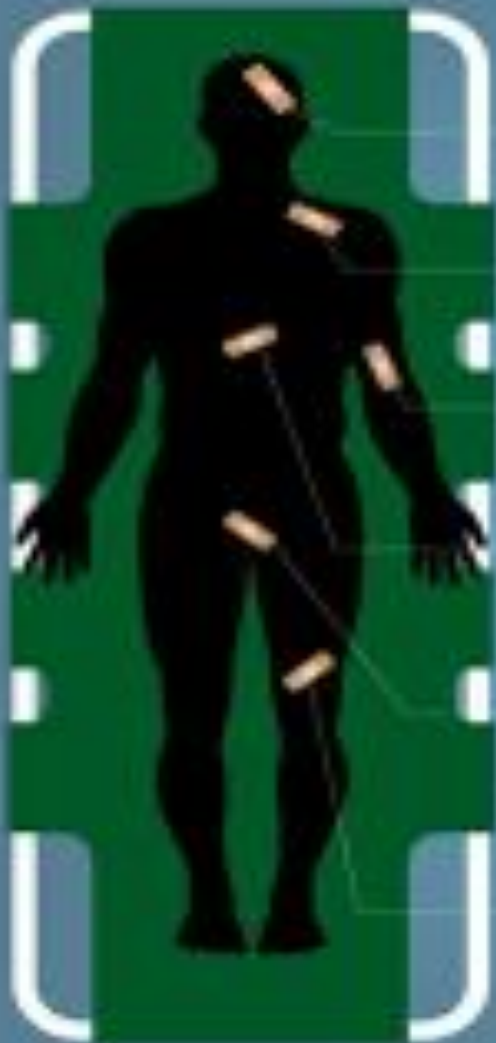
Life of Athletes



The impairment of cellular immune response can be attributed to acute alcohol use...

Sickness





INJURIES

**Injury rate for
drinkers is 54%**

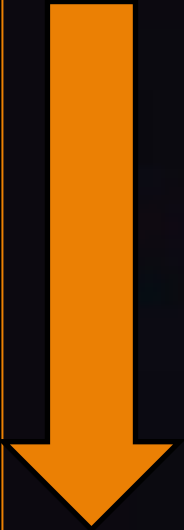
**Injury rate for
non drinkers is
23%**

NCAA Injury Study

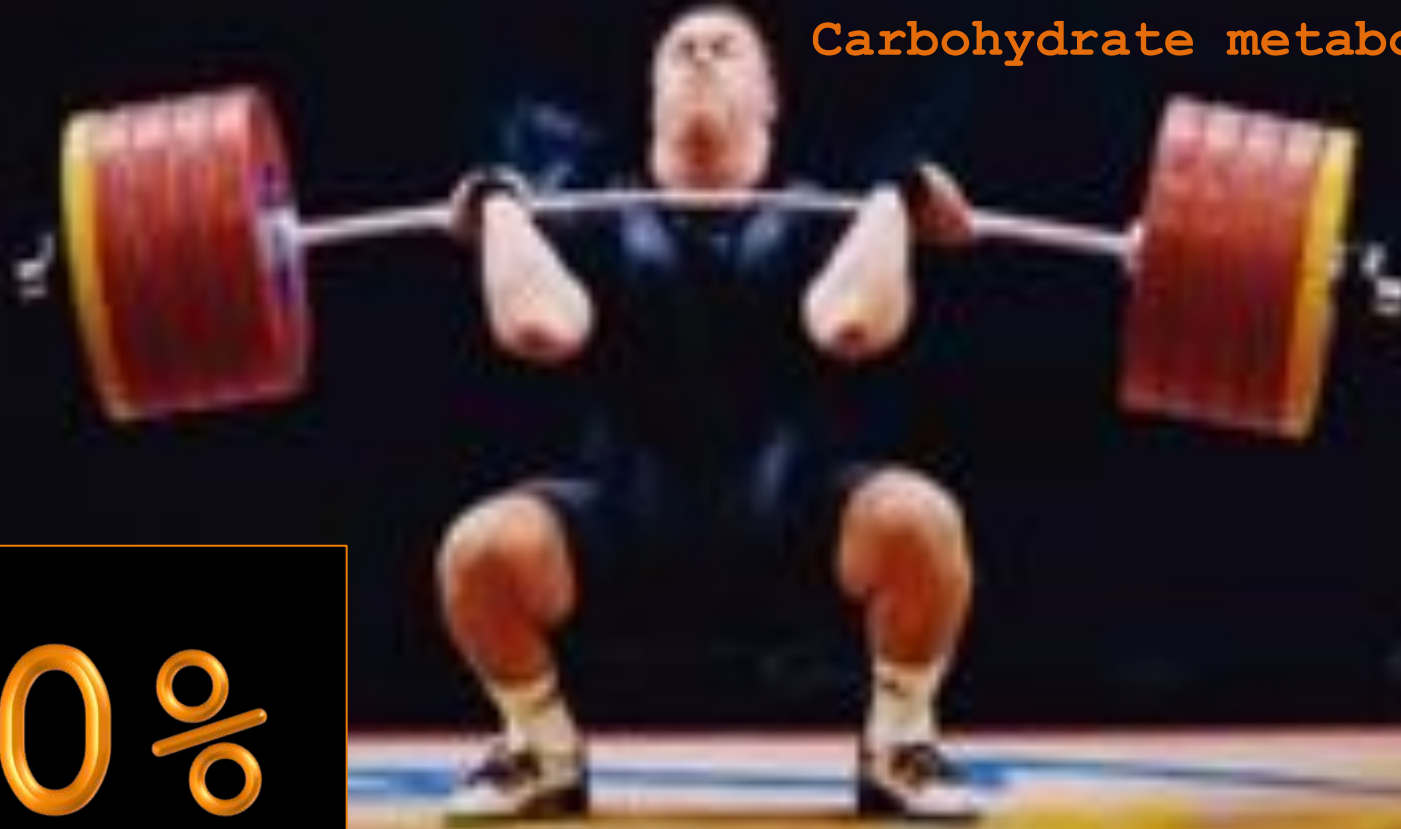


HGH

Maintains muscle mass
Repairs muscle fiber
Fat metabolism
Carbohydrate metabolism

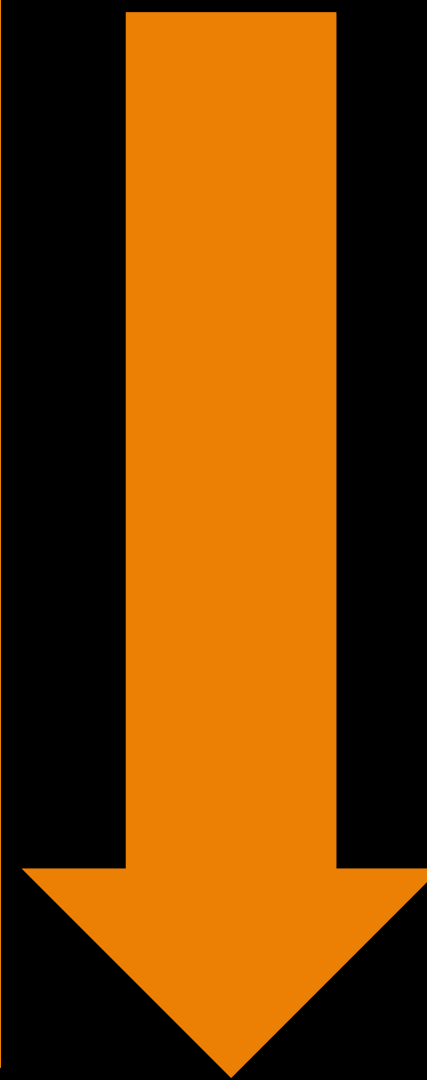


70%



Human Growth Hormone





STRENGTH / POWER





<11%

EXPLOSIVE POWER





< 8%

POWER ENDURANCE



Drunks Can't JUMP



Static CM Jumps

Subject	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
2	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
3	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
4	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
5	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
6	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
7	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
8	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
9	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
11	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
12	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
13	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
14	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
15	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
16	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
17	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
18	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
19	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
20	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10



Static Jump

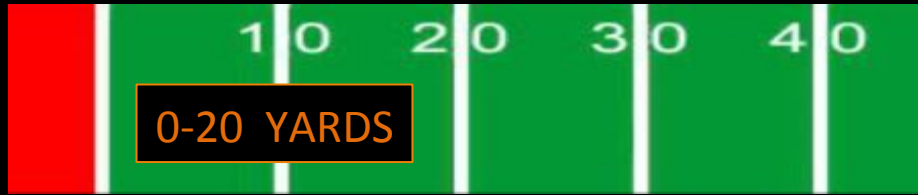


Dynamic Movement Jump

7 of 13 subjects >

This is data on 11 static vertical jumping static jumps and 10 dynamic jumps on the 10 subjects days, with and without alcohol. The two subjects were increased performance, after alcoholization. Alcohol caused more 10% of dynamic jump height than the first test. The alcohol caused no significant to the static. Significant jumps occurred in static jumps was reduced in 7 of 13 subjects.





< 6%



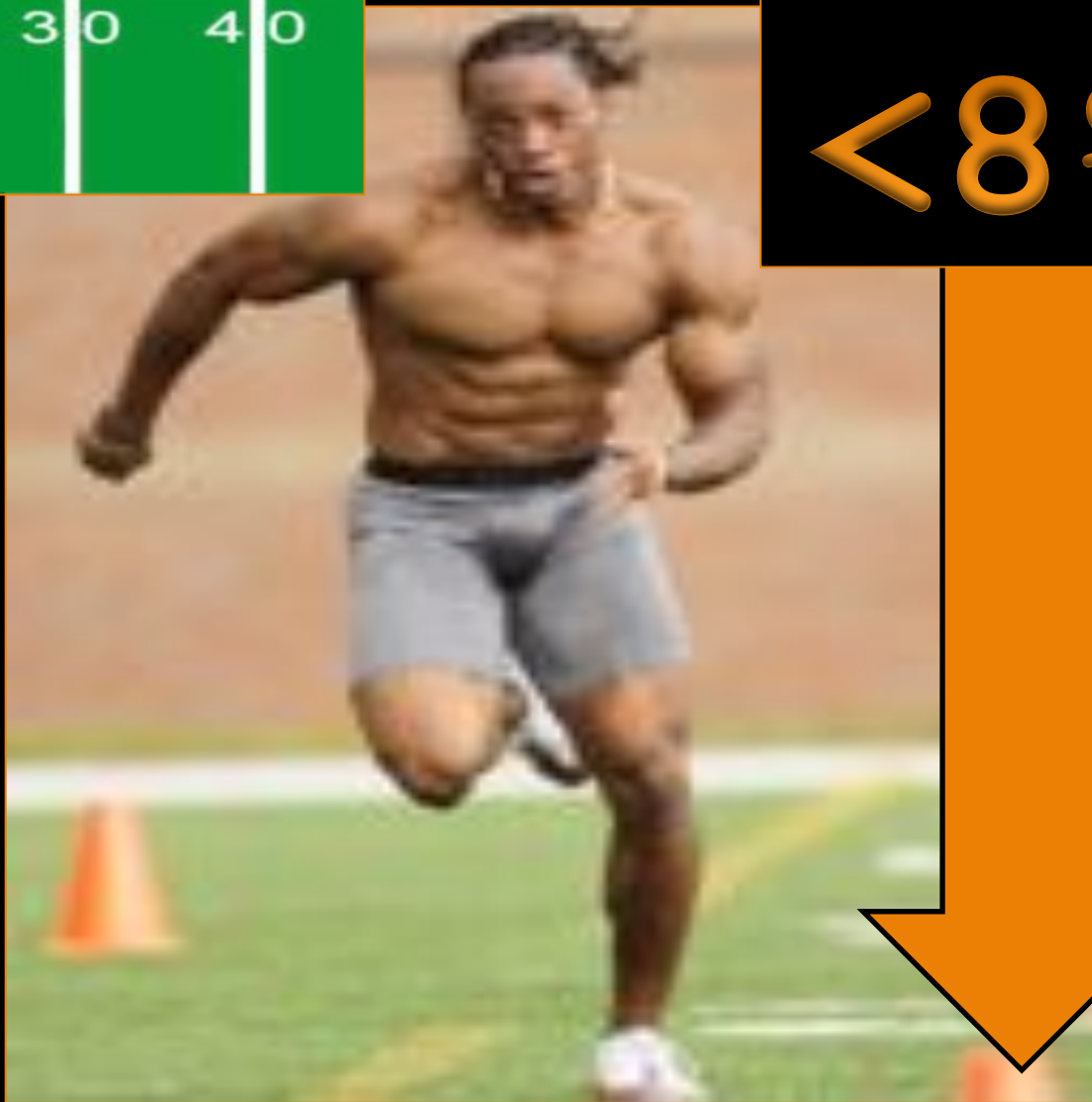
ACCELERATION SPEED



0-10 YARDS

10 20 30 40

< 8%



START UP SPEED



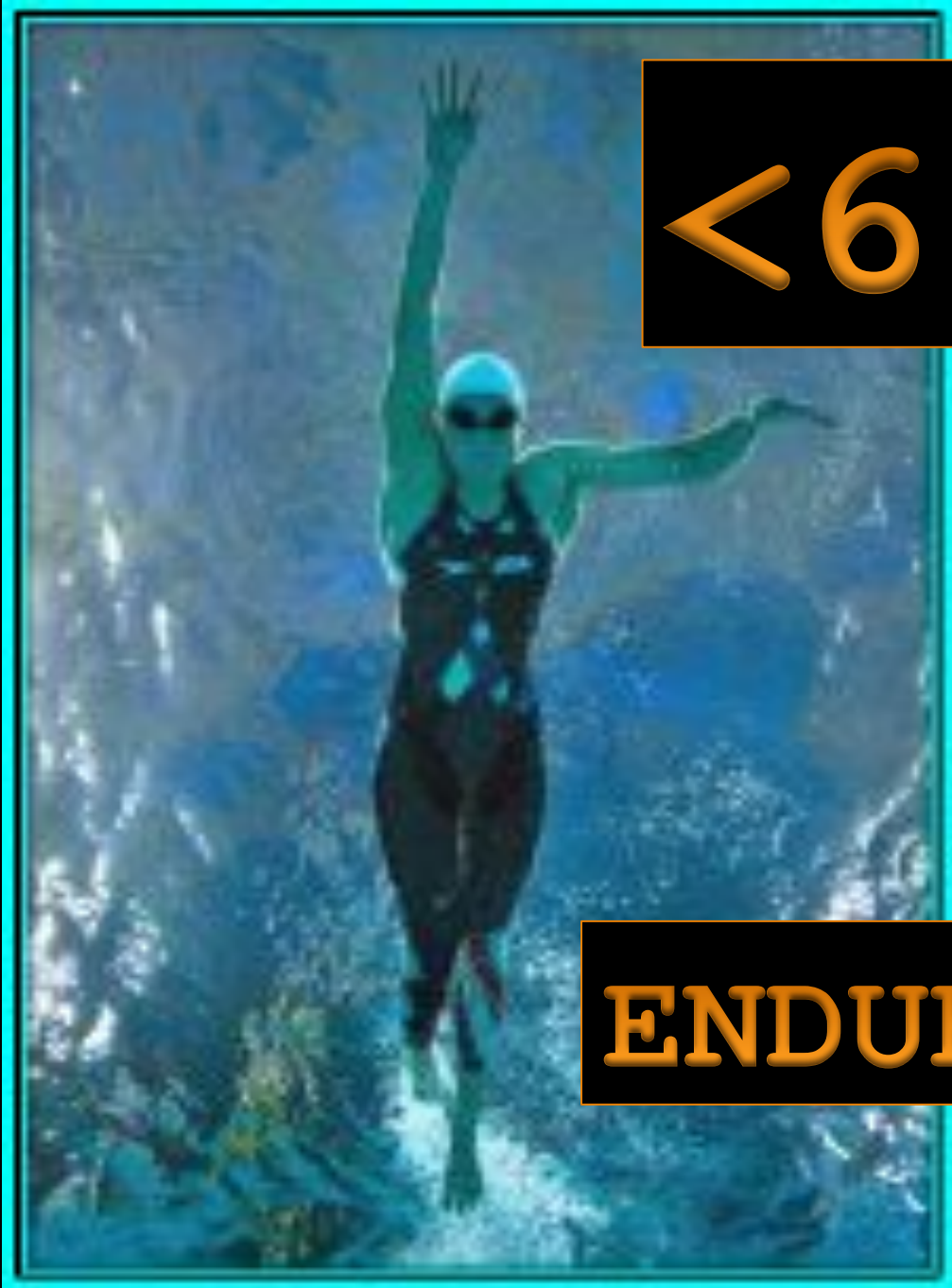
0-5 yds.



< 8%

LATERAL SPEED





< 6.96%

ENDURANCE



A close-up photograph of a person's hand pinching their belly fat. The background is a solid dark blue color.

**FAT
BURNING
DECREASED**

**Alcohol
greatly
affects the
amount of fat
your body can
and will burn
for energy!**

Just a mere 24g of alcohol consumption showed whole-body fat oxidation (the rate at which your body burns fat) decreased by 73%!





1X DRUNK = 14 DAYS
LOST TRAINING EFFECT

American Athletic Institute has studied the impact of alcohol on condition in elite athletes. Impact has shown significant projections in lost physiological condition that correlates to as much as 14 days of lost training effect...for each time drunk...

WASTING YOUR TIME



Throwing away your hard work?

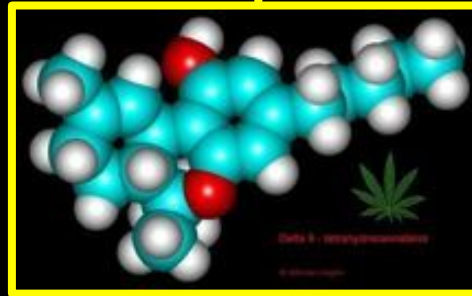


one night of drinking
wipes out 2 weeks of training

American Addiction Centers, 2019



AMERICAN ADDICTION CENTERS
10000 W. 160th Street, Suite 100
Overland Park, KS 66207
www.aacenter.com



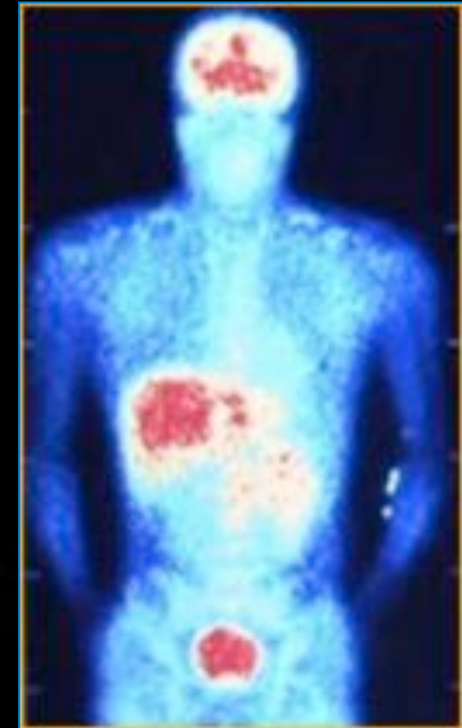
The Effects of Marijuana on High Level Mental and Physical Performance

John G. Underwood
Director American Athletic Institute

Life of Athletes



Global Athlete
MARIJUANA
Project



THC Deposit Sites

Education



NCAA study released in January, 22.6 percent of athletes smoke weed...

College football players (26.7 percent) ranked the highest among major sports.

About half the team smokes, he estimates. "It's a team thing."

Athletes and social drug use...

Life
Athletes

THE
PARTY
IS OVER

Write articles Create Awareness

ATHLETE LIFESTYLE ISSUES

Social drug use among athletes is prevalent and the problem is complex. Athletes may be more likely to abuse alcohol than their non-athlete counterparts and are more likely to suffer behavioral and psychosocial consequences as a result of their drug use. They are also more prone to heavy episodic drinking (HEED) (five or more drinks).

No matter the route, the results have equally severe outcomes including high level athletes and their use of alcohol and marijuana. Although some athletes have demonstrated themselves and establishments to be successful, the extent of their use among athletes may be greater as well as more behavioral. The research showed that performance enhancing effects of alcohol have been limited to

athletes who used anabolic steroids in more or less, only after the fact made to appear within some circumstances drug use.

Unfortunately, the consequences of alcohol use beginning with younger athletes, particularly in athletes who are already prone to injury, could be more difficult to manage. The use of alcohol in athletes is not just a social activity. Many power athletes have had an unfortunate amount of injuries, including alcohol-related injuries and alcohol-related injuries. Athletes involved in alcohol with negative social outcomes, including alcohol-related injuries, are more likely to be injured.

Alcohol use continues as a player follows a career of injury made in the past and regardless of whether they are in or out of the game.

As the leading number of injury and the athletes who are injured, athletes who have injuries during their careers, athletes who are in the game, athletes who are in the game, athletes who are in the game.

and the research shows are more likely to be injured.

Alcohol-related injuries are more likely to be injured, and the consequences of alcohol use are more likely to be injured. Athletes who are in the game, athletes who are in the game, athletes who are in the game.

Alcohol-related injuries are more likely to be injured, and the consequences of alcohol use are more likely to be injured.

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Alcohol-related injuries are more likely to be injured, and the consequences of alcohol use are more likely to be injured.



A recent study found that athletes claimed smoking marijuana prior to a competition helps them focus...

FOCUS

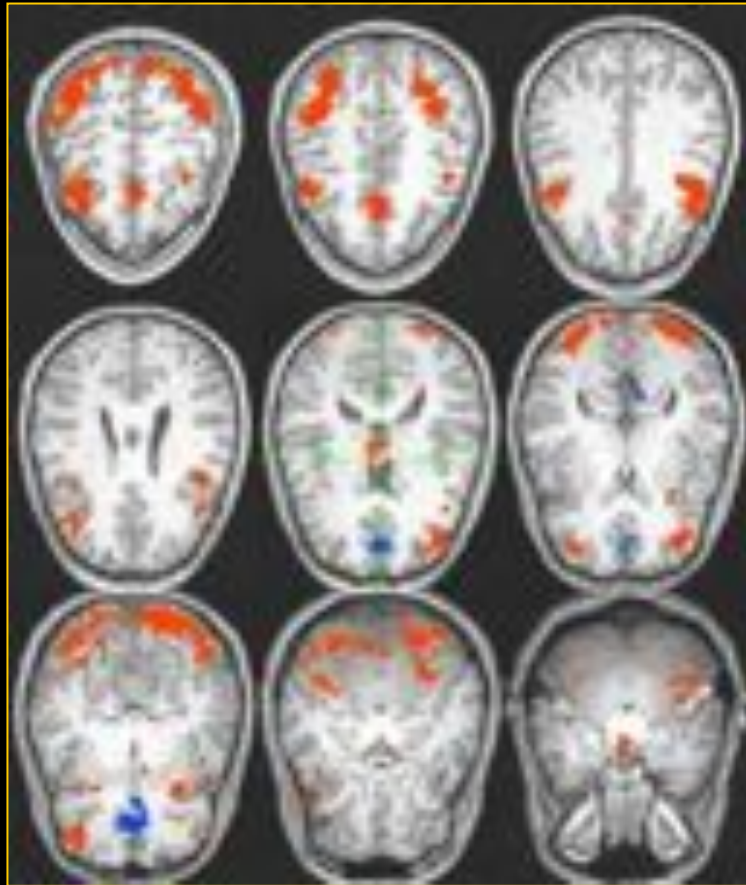




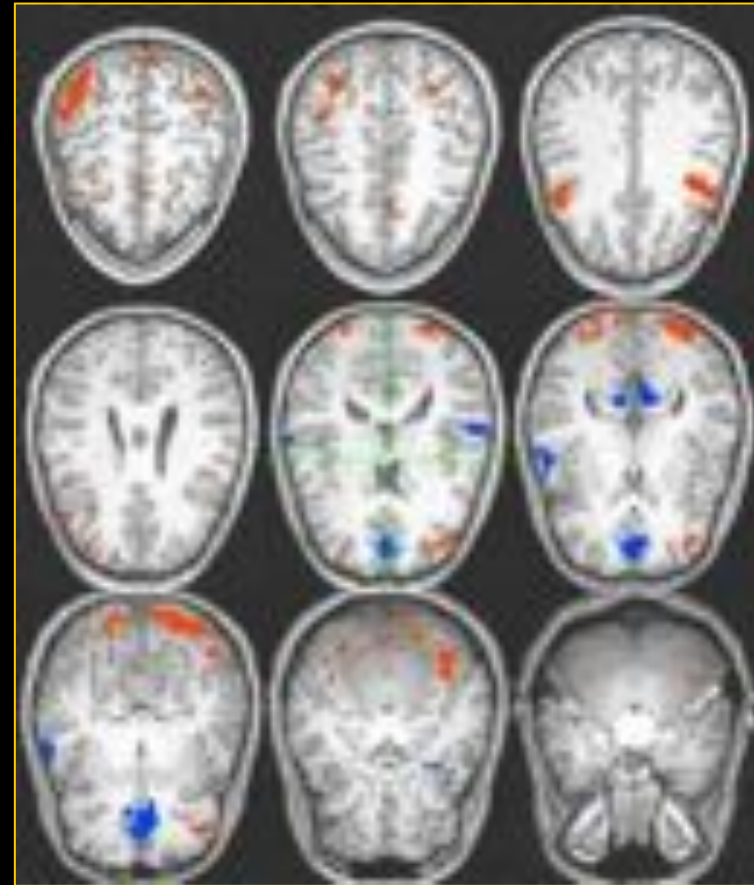
What research has been done worldwide that we can give our athletes to dispel this perception?

Effects of THC (1 mg) on activation on concept reaction to task

Reaction to task formation



Before



After



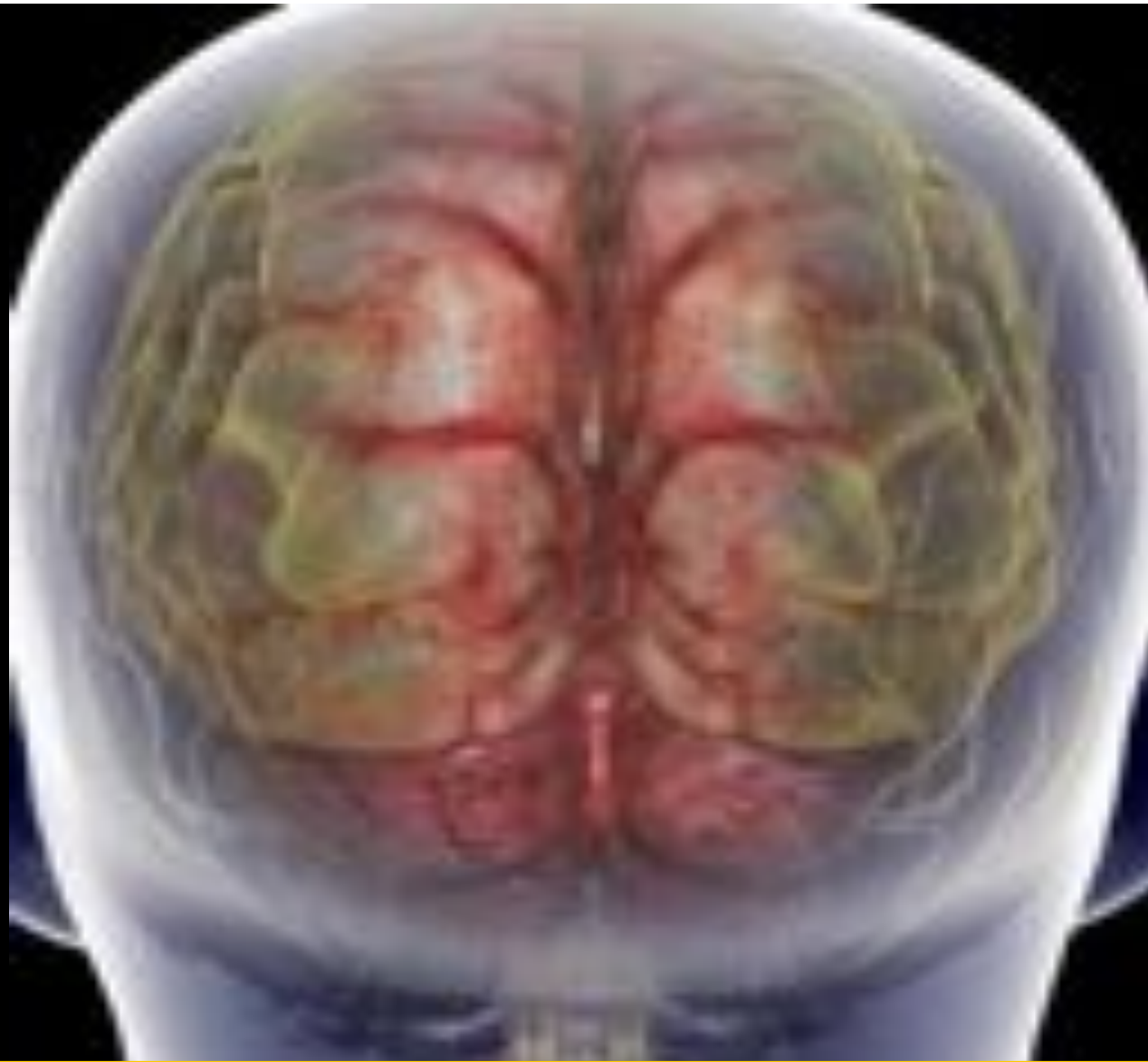
Oranges represent positive and blues negative activation



B

R

A



THC attaches to receptors in the brain and impacts learning, memory, reaction, movement and coordination.

N



Receptors

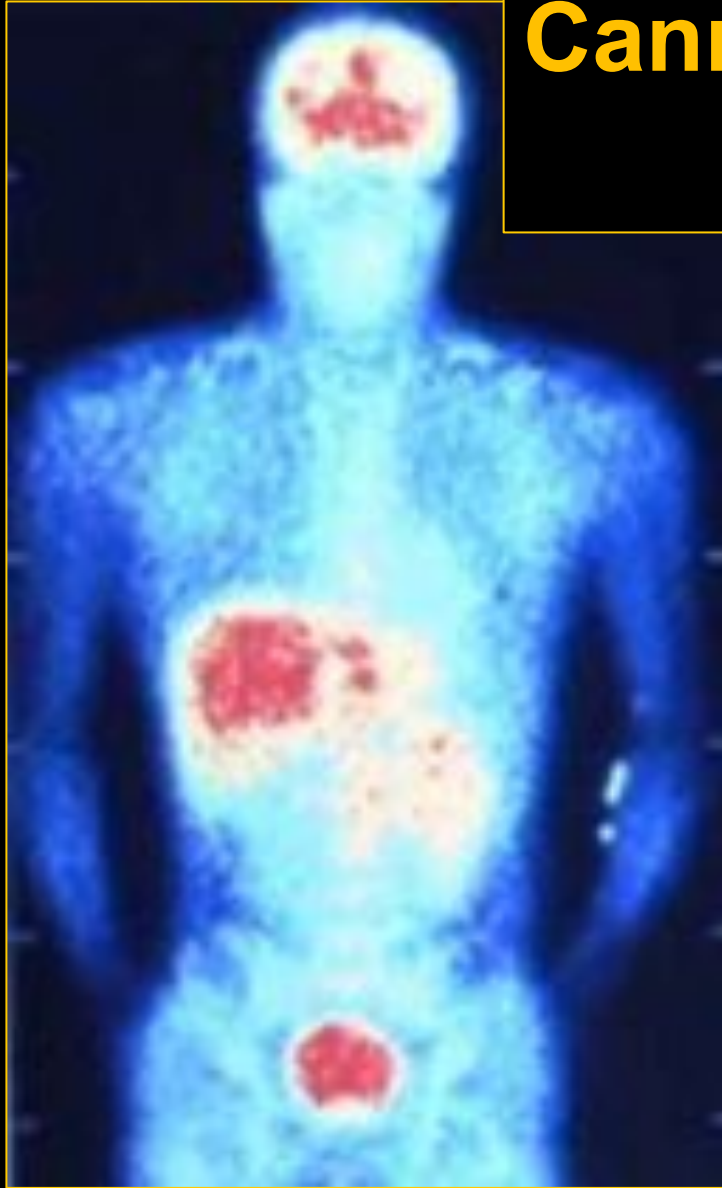
There are membranes of particular nerve cells in the brain that have special protein receptors called, cannabinoid receptors, that bind with the THC. When the THC binds to these nerve receptors, a series of chemical reactions occur that alter the function of those nerve cells.

Deposit Sites



NIDA

Cannabinoid Receptors 'hot-spots'



MRI scan of cellular cannabinoid reception.
(Image © BBC 2009 -

Brain

Liver

Pancreas

Kidney

Skin

Prostate

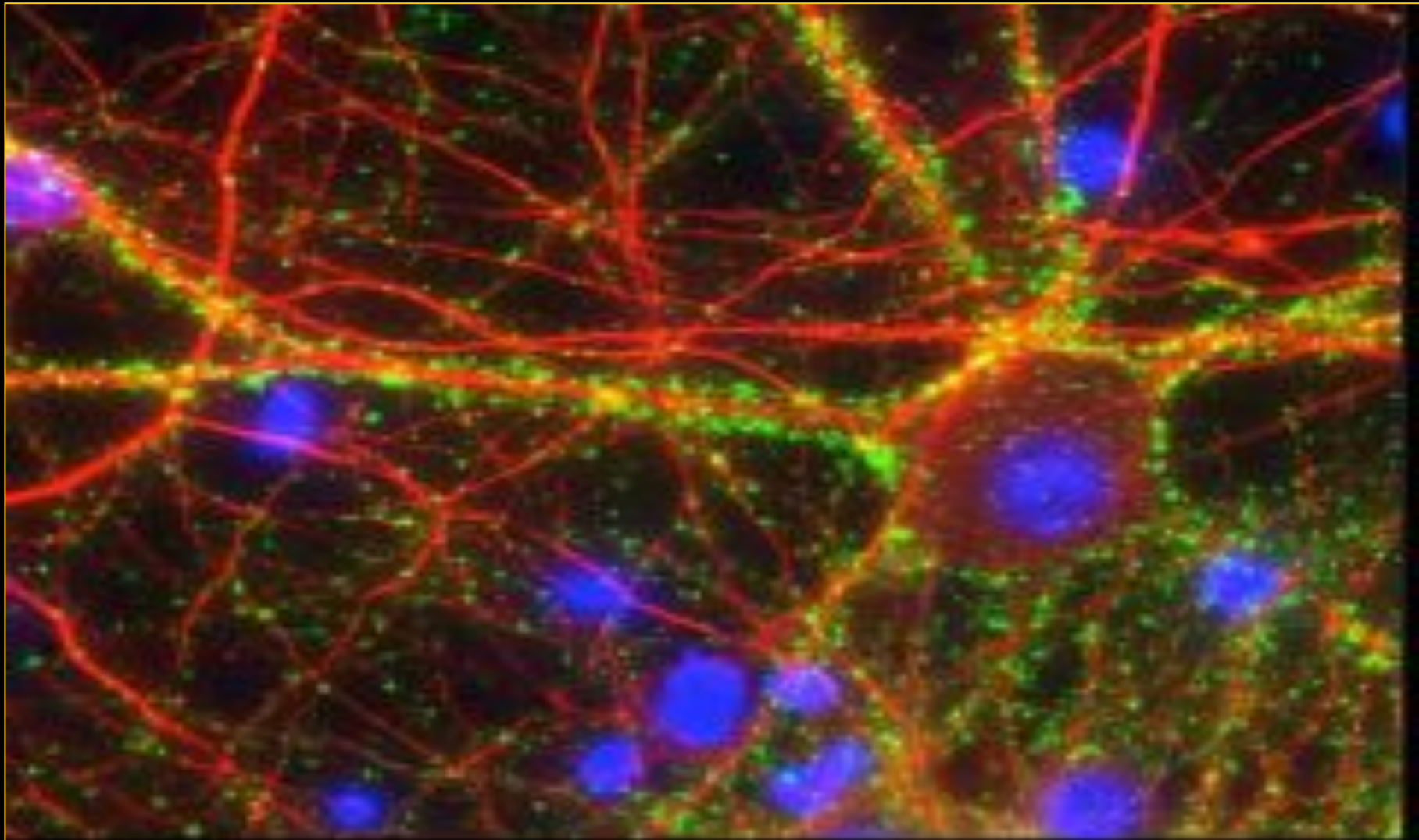
Cervix

Testes

B

O

D



THC bound to receptor sites

Cannabinoid Receptors in Brain



memory

cognition

reward

sensory perception

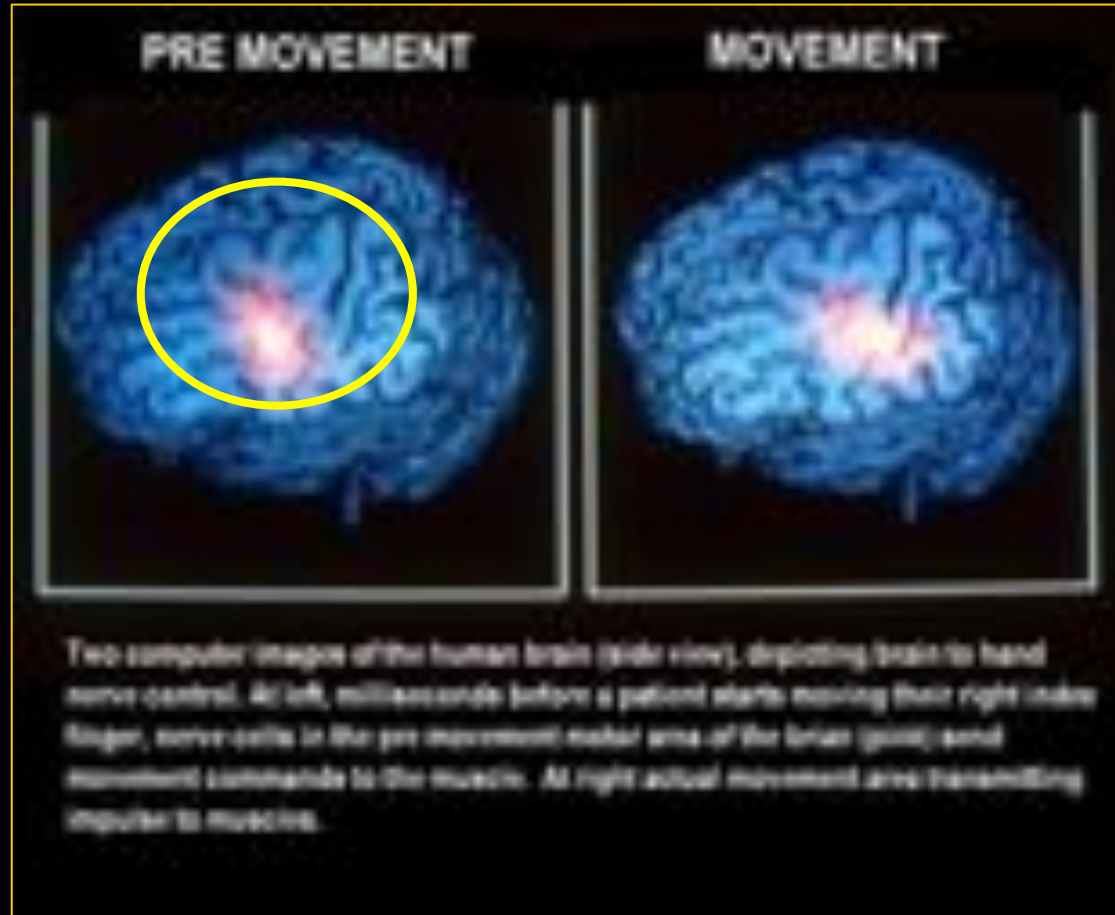
emotions

motor control

movement memory

coordination

Pre Movement-Movement



LOCATOR

Human Movement



Initiation of impulses for
movement during finger
tapping





MARIJUANA SKILL IMPAIRMENT



NON USER
SIMPLE HAND SKILL

Skill
Recall
Area



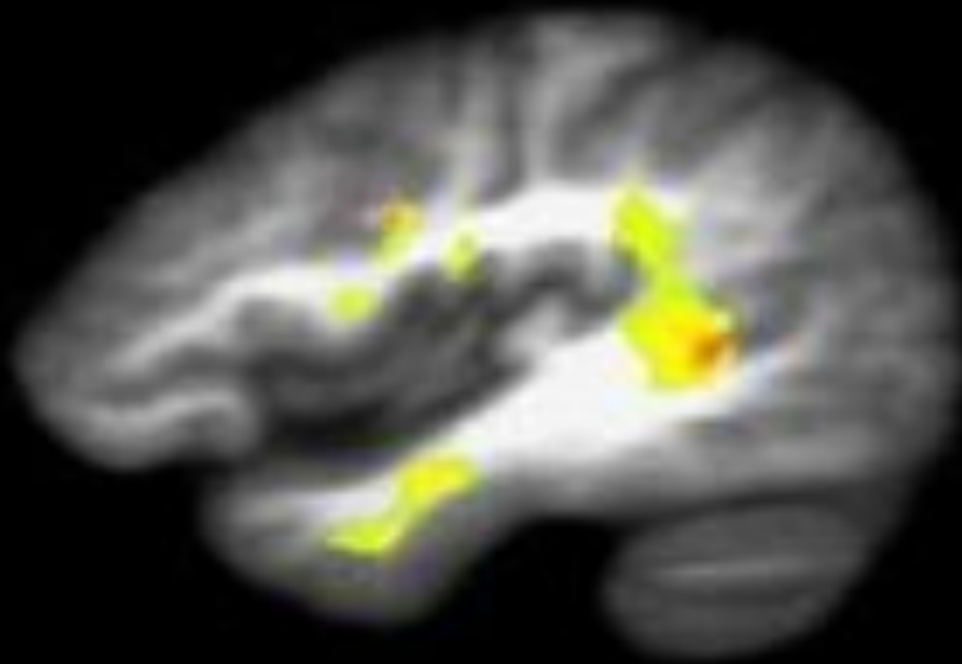
MARIJUANA USER
SIMPLE HAND SKILL

Note: Subject not under influence during scan.

POT OR NOT? YOUR CHOICE YOUR GAME

White matter matters

THINK



COMMUNICATE

CANNABINOIDS
INCREASE THE SECRETION
OF SOMATOSTATIN

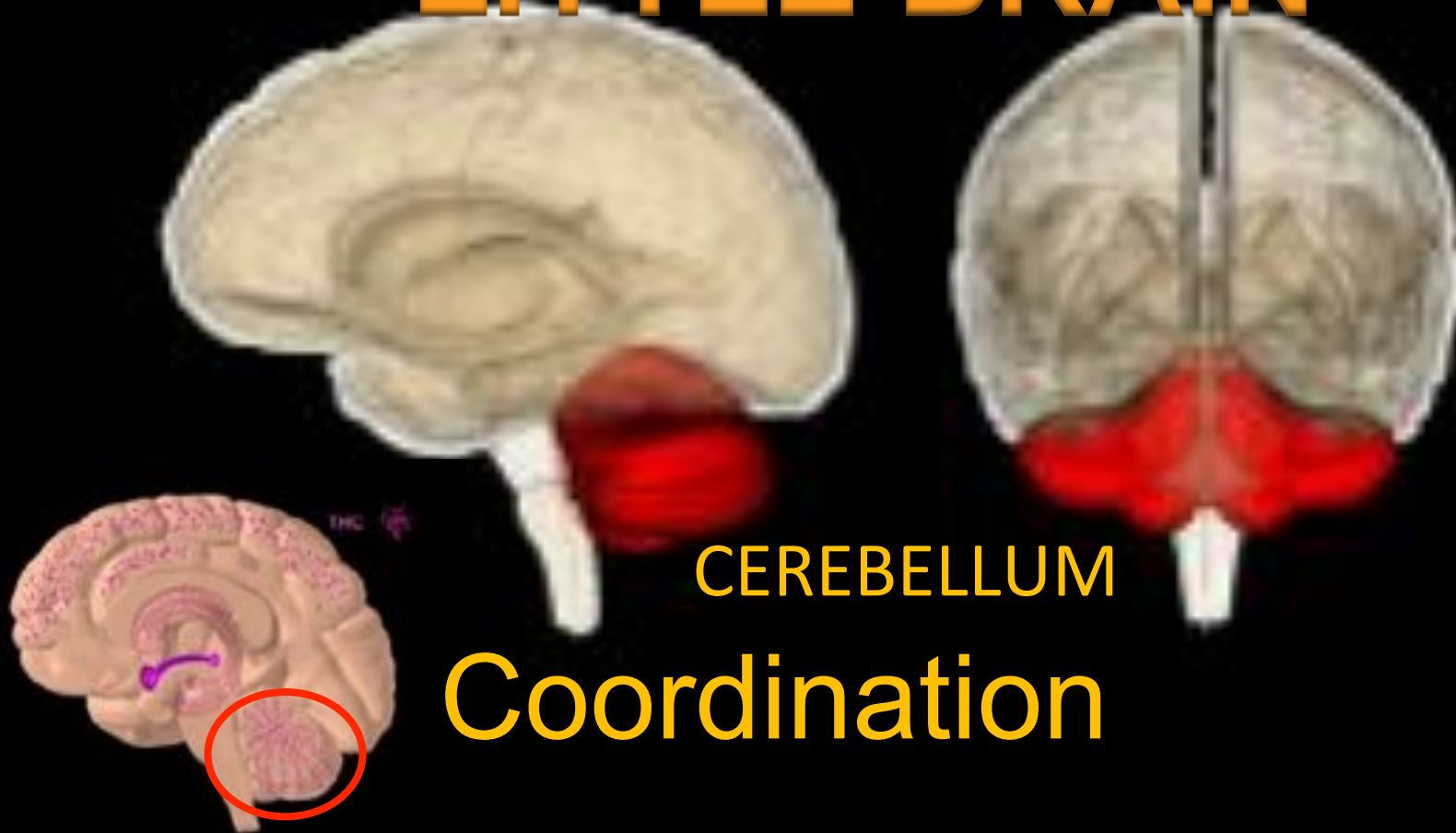
The hypothalamus also secretes a chemical called Somatostatin (SS). When it releases Somatostatin it travels to the pituitary which inhibits or stops the release of growth hormone into the blood.



SOMATOSTATIN BLOCKS HGH

Dr. David Aschewitz, M.D. Project

LITTLE BRAIN

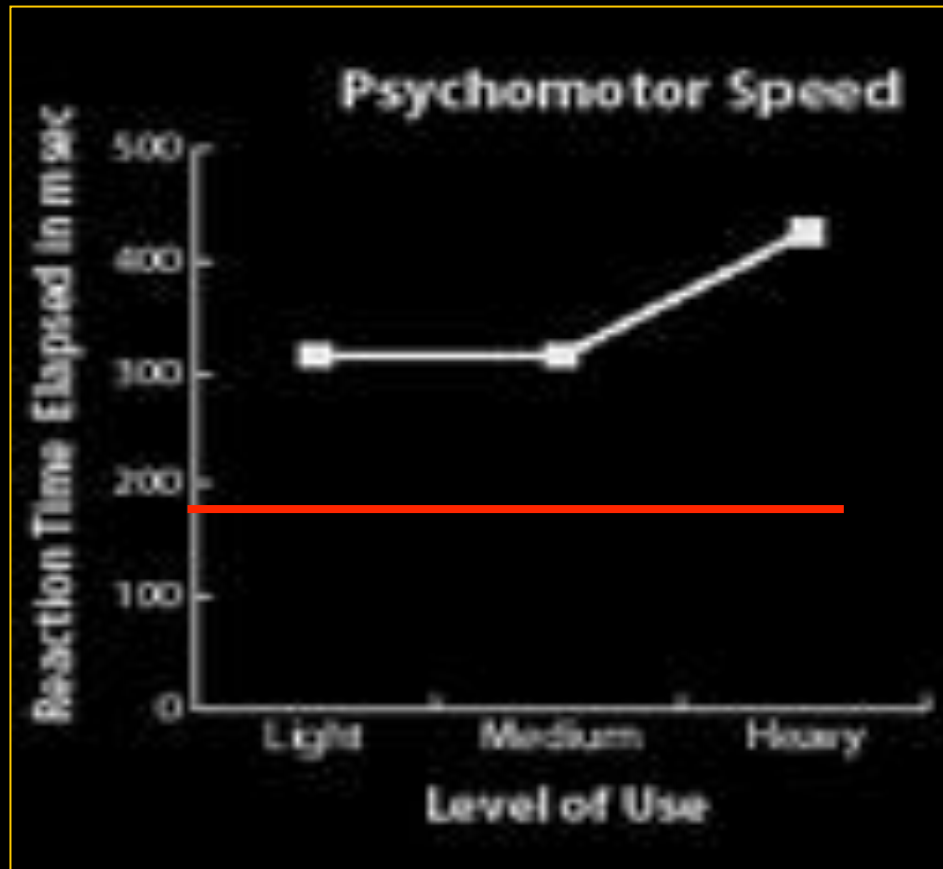


CEREBELLUM

Coordination

- Equilibrium
- Balance
- Muscle tone
- Ability to perform rapid alternating movements

WEED and REACTION



Average in the
.300-.450msec range.



*Highly functional trained athletes
have faster reaction times



Life
Athlete

Change the way you live
and you will change the
way you can compete..

STOP COMPETING
WITH OTHERS.
START COMPETING
WITH YOURSELF.

