Single Photon Emission Computerized Tomography (SPECT)
We now have indisputable evidence of systemic damage and cumulative damage.
NORMAL HEALTHY
Severe Brain Injury
NFL NHL BRAIN INJURY STUDIES
MULTIPLE HEAD INJURIES
Stroke
Alzheimer’s Brain Degeneration
COCOAINE
32 yr. old Marijuana Daily User
Alcohol  no alcohol one year later

HEALTHY
ALCOHOL EFFECTS

Glycogen Recovery in Skeletal Muscle Liver and Brain

The glycogen dynamics during and following exhaustive exercise in the brain, skeletal muscle and liver Data from pre-exercise to 24 h after exercise are taken from Figs 1 and 2, and data from 48 h to 72 h after exercise are extrapolated based on our unpublished data. During exhaustive exercise, brain glycogen decreases by approximately 50-60%, while glycogen in skeletal muscle and liver decreases by approximately 80-90%. Following exercise, in the resting phase, skeletal muscle glycogen supercompensation occurs at 24 h after exercise, and returns to pre-exercise level at 72 h after exercise. Brain glycogen supercompensation also occurs and reaches the peak of supercompensation at 6 h after exercise, and returns to pre-exercise level at 48 h after exercise. Liver glycogen is not completely replenished until 48 h after exercise.

Brain glycogen supercompensation following exhaustive exercise
Takashi Matsui1, Taro Ishikawa1, Hitoshi Ito1, Masahiro Okamoto1, Koshiro Inoue1, Min-chul Lee1, Takahiko Fujikawa2, Yukio Ichitani3, Kentaro Kawanaka4 and Hideaki Soya1

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In conclusion, we have provided evidence that brain glycogen supercompensation occurs in the brain, as in skeletal muscle, following exhaustive exercise. Furthermore, the lower the brain glycogen level during exercise, the higher the extent of glycogen supercompensation after exercise. In addition, the brain glycogen supercompensation peak preceded that of skeletal muscles and liver. We also propose that long-lasting glycogen supercompensation is likely to be a prerequisite for training adaptation (increased basal levels), probably to meet the increased energy demand of the brain in exercising.
Liver drives recovery in Muscle and CNS
Any alcohol stops initiation of recovery
40% Decrease in Strength

ALCOHOL INCREASES MUSCLE DAMAGE

Recent research published in the Journal of Science and Medicine in Sport found that alcohol accelerates post exercise muscle loss. In the study eleven healthy males performed 300 maximal eccentric muscle contractions followed by a drink - either vodka and orange juice or OJ alone. Vodka significantly impacted the loss of muscle strength, by as much as 40%.

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Cardiac Output
Stroke Volume
Cardiac Arrhythmias

HEART FUNCTION
< O2
>CO2
< VE

LUNG FUNCTION
TRAINING HORMONES
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
Alcohol stays in the female body longer.

Females have less of the enzymes to breakdown alcohol.

Alcohol affects on females.
Alcohol and Sickness

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

Sickness
Injury rate for drinkers is 54%

Injury rate for non drinkers is 23%

NCAA Injury Study
EXPLOSIVE POWER
POWER ENDURANCE

<8%
0-20 YARDS

<6%

ACCELERATION SPEED
START UP SPEED

< 8%
LATERAL SPEED

0-5 yds.

<8%
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...
Throwing away your hard work?

one night of drinking wipes out 2 weeks of training

American Athletic Institute study, 2010
Marijuana and Athletes

From medical marijuana to legalized recreational use, to acceptance of use by Olympic athletes... the societal acceptance of marijuana has been accomplished in record time. The WADA has joined politicians and governmental agencies, in giving in and giving up in the fight to keep marijuana as an illicit harmful drug. We need to send a message to all athletes, that there are negative effects from using marijuana and despite the green light from misguided leaders and decision makers... use of this drug is addictive, and has negative consequences on athletic performance and human development!

Educate your Athletes

Life of an Athlete
Human Performance Project
Anything you smoke decreases your endurance capacity by 6-10%

Smoke... You are a joke!

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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
THC bound to receptor sites
Cannabinoid Receptors in Brain

memory
cognition
reward
sensory perception
emotions
motor control
movement memory
coordination
THC attaches to receptors in the brain and impacts learning, memory, reaction, movement and coordination.
Arousal and Alertness

Being excited enough to function at a high level in both processing information and deciding on action and physical reaction.

Being unable to sort out situational processing and send signals to motor and motor movement areas of brain.

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Human Performance Project
Two computer images of the human brain (side view), depicting brain to hand nerve control. At left, milliseconds before a patient starts moving their right index finger, nerve cells in the pre movement motor area of the brain (pink) send movement commands to the muscle. At right actual movement area transmitting impulse to muscles.
Initiation of impulses for movement during finger tapping
MARIJUANA	SKILL IMPAIRMENT

Note: Subject not under influence during scan.

POT OR NOT? YOUR CHOICE YOUR GAME
Cannabinoid Receptors ‘hot-spots’

Brain
Liver
Pancreas
Kidney
Skin
Prostate
Cervix
Testes

MRI scan of cellular cannabinoid reception.
(Image © BBC 2009 -
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
It all comes down to time!

Relative amounts of time in a typical week spent in various activities by student-athletes:

- 37% academic work
- 25% athletics and exercise
- 21% personal time (reading for pleasure, TV, video games)
- 9% parties and socializing with friends
- 8% extracurricular clubs, volunteer service, and employment
Change the way you live and you will change the way you can compete...

STOP COMPETING WITH OTHERS.
START COMPETING WITH YOURSELF.