

Dangerous & Deadly Stacks

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Wednesday, 11 February 2009

At least once a year, a news flash will interrupt television and radio programming to alert the public of the untimely death of a sports celebrity. On February 18, 2001, millions of fans watched Dale Earnhardt's fatal collision on the final lap of the Daytona 500; he was 49. Earnhardt's car, emblazoned with the famous number "14", was tapped by Sterling Martin's car, causing him to lose control; an earlier collision in the same race triggered a multivehicle wreck involving 21 cars. In the prior season, three drivers died on the NASCAR circuit, leading NASCAR to initiate some safety innovations, but they weren't prioritized until his death. At least one reporter was brazen enough to write that Earnhardt's death was "not a bad way to go."

This article is dedicated to the families, friends and survivors of those we've lost prematurely.

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A Dangerous, Deadly Sport

Several lesser known major league baseball, national football league and NCAA athletes have died from heat stroke, including the Minnesota Vikings' pro bowl tackle, Korey Stringer at age 27, yet only moderate changes have been enacted by these organizations. Compare the relative silence about heat-related deaths to the furor raised in Congress and by the media over performance-drug testing or ephedra. To their credit, many of the sports, particularly the NFL, have enacted rules and regulations reducing sports injuries—older generations will remember terms such as "chop block" and "clothesline." The Heisman trophy, designed in 1934, still portrays a figure wearing minimal padding and an open-faced leather helmet; vastly different from the modern pads, braces and guards that have some players resembling "RoboCop."

On November 13, 1982, fighters Ray "Boom Boom" Mancini and Duk Koo Kim met in a boxing match outside Caesar's Palace in Las Vegas. In the 14th round of the fight, Mancini scored a knockout on Kim, who, moments later, collapsed into a five-day coma, subsequently dying at the age of 23. Mancini reportedly suffered from severe depression following Kim's death; the referee of the fight committed suicide within a year, as did Kim's mother. Pronounced reforms spread through the many boxing associations to promote fighter safety. Fights were limited to 12 rounds as opposed to 15, pre-fight physicals became more extensive and the "standing eight-count" was instituted. Still, Kim was not the last boxer to die. In fact, several boxing-related deaths occur every

year.5

Of course, some will voice the argument that professional athletes are aware of the risks and the possibility of death or injury is part of the appeal of any sport, for the competitors and fans alike. In fact, it may be argued that the risk of injury or death exists with any activity. Bicycling is one of the most dangerous physical activities on record, and the greatest number of injuries among students related to sports doesn't involve the athletes themselves, rather it involves the cheerleaders.^{6,7}

Given these examples, one might be led to believe that bodybuilding should be a much safer activity, as there's no contact, the contestants are relatively stationary (making falls or collisions very unlikely) and the events take place inside, away from traffic or hazardous weather.

Unfortunately, bodybuilding has become a dangerous and deadly sport.

A Risk-free Pursuit?

Bodybuilders, recreational or competitive, don't face 100 mph fastballs, concussive uppercuts or Brian Urlacher. The greatest threats to their health or well-being appear to be getting sprayed in the eyes with PAM while oiling up backstage or suffering a bruised ego if the audience is verbally abusive. Yet, several deaths have occurred globally among bodybuilders and many others have suffered injury or impairment.

Has there been an epidemic of dropped dumbbells or a batch of peanutbutter-flavored, salmonella-laden whey protein crippling, and killing bodybuilders? Or perhaps a conspiracy theory involving health club owners who want to do away with bodybuilders, so they can save money by removing all the mirrors and 45-pound plates from their facilities? What accounts for these tragedies that are largely going unreported in the press?

Sadly, the primary culprit behind most of these events is the victim him/herself. Aside from the occasional tendon injury or muscle tear, bodybuilding should be a risk-free pursuit. Yet, by scouring the literature, it becomes clear that people are dying prematurely or suffering some health consequence that requires medical treatment. The underlying cause in many of these cases is unregulated, unsupervised drug use.

Bodybuilders aren't usually famous, as relatively few fans follow the sport. ESPN doesn't air bodybuilding shows, USA Today doesn't print the results of the amateur or professional events, and local media doesn't

bother showing up unless the promoter knows or pays a producer. Thus, the death of a bodybuilder—especially outside of competition—is often not reported unless he/she has achieved fame or infamy in some other way. Certainly, the death of bodybuilders who have achieved success in television or the movies might be reported, but (hypothetically) what about an unknown Mr. Vermont, the lightweight winner of the USA or a Canadian who didn't place in the money at the Arnold years ago? There's a famous philosophical question that goes something like this: "If a tree falls in a forest and no one is around to hear it, does it make a sound?" This question is designed to challenge students with the concepts of existence and perception. Is there sound if no one hears it? Does something matter or even exist if no one is aware of it?

This concept can be applied to the underspoken dangers being embraced unknowingly by bodybuilders, strength and performance athletes. Is there any risk with pronounced, high-dose polypharmacy (using multiple drugs) if no one has heard of any problems or consequences? Some might like to think that's the case.

Before turning to the next article because you're certain this is just another thinly veiled attempt to discredit performance drugs, consider that this magazine and most—if not all—of its writers believe licensed health care professionals should be able to direct and monitor the use of safe, performance-enhancing drugs distributed through legitimate channels. This is information you need to hear and listen to; it may save your life.

Succumbing to Chemical Assault

The first death relating to the sport of bodybuilding that achieved any level of public awareness was the 1992 death of 28-year-old Mohammed Benaziza, winner of numerous European Grand Prix events and the 1990 Night of Champions.⁸ Benaziza's death was attributed to diuretic abuse, according to news reports. Abuse of diuretics can lead to serious electrolyte imbalances. Electrolytes, such as sodium and potassium, are the ingredients added to rehydration drinks like Gatorade to prevent muscle cramping. Even a moderate electrolyte imbalance can cause bodybuilders to seize up like a statue. Paul Dillett's experience during the 1994 Arnold Classic is an oft-referenced example.⁸ However, when the imbalance becomes severe, or if the bodybuilder has undiagnosed conduction anomalies affecting his heart rhythm, a fatal heart attack may occur.⁹

Not all diuretics-related deaths occur immediately. 1996 was the year that the most widely publicized bodybuilding death occurred—Andreas Munzer at age 30. Munzer was renowned for his shredded condition, appearing in contests with paper-thin skin. He competed in the 1996 Arnold Classic on March 2, placing sixth. Munzer, who had been complaining of pain in his abdomen, was rushed to the hospital less than two weeks later with excruciating stomach pains. He was suffering internal bleeding and was noted to be in multiple organ failure. He passed away that same day.⁸

Normally, electrolytes are tightly controlled, but when diuretics are used, the levels may

fluctuate wildly. This can affect the brain, liver and kidneys, among other tissues. Add to this injury the strain of metabolizing numerous drugs (Munzer's list of drugs used was extensive; some have labeled it the "death stack") and the suppression of the stress hormone cortisol (Munzer was using high doses of Cytadren, an early

aromatase inhibitor that suppressed cortisol production); it's easy to see how his body could succumb to the constant chemical assault.¹⁰

Diuretic use isn't the only path to self-destruction taken up by bodybuilders. Anabolic androgenic steroids (AAS)—a class of drugs that's reasonably safe—still holds risks. In addition to increasing muscle strength and mass, AAS affect other systems and tissues of the body. The heart is a muscle, different but similar to skeletal muscle. The heart is highly dependent on its circulation (blood vessels) to constantly supply oxygen and nutrients necessary for its function. AAS use may affect blood vessel growth in the heart, reducing oxygen and nutrient supply.¹¹ The heart muscle itself may scar in certain AAS-using people and clots may form in the arteries carrying the oxygen-rich blood, leading to a heart attack.^{12,13}

Several bodybuilders have suffered heart attacks and died, including female bodybuilders whose clot risk can be increased if they're using birth control pills.¹⁴⁻¹⁶ Another proposed risk associated with long-term AAS use is an increase in atherosclerosis, or a buildup of plaque in the blood vessels. Atherosclerotic cardiovascular disease is one of the leading causes of death in the United States, yet when it occurs in a relatively young man, one has to question whether AAS played a role in accelerating the disease. Mike Matarazzo, a fan favorite who won his pro card in 1991, underwent a triple bypass in 2004 at the age of 38. In an interview with Flex reporter Julian Schmidt, Matarazzo attributed the damage to the escalating drug use he practiced during his 15-year bodybuilding career.¹⁷

Additional Risk Factors

Surprisingly few bodybuilders suffer or die from tumors. Reports appear in the literature of liver tumors associated with AAS use, though most involve patients being treated for kidney disease or other conditions. Bodybuilders shouldn't feel a false sense of security though, as liver tumors have been reported in this group.¹⁸ Further, liver damage is a common side effect of most oral AAS.¹⁹ Liver damage almost certainly contributed to Munzer's death, as he died from uncontrolled bleeding. The liver produces many of the clotting proteins necessary to stop blood loss.

The excessive use of growth hormone (GH), insulin-like growth factor-1 (IGF-1) and other exotic growth factors is almost certain to lead to the development of a malignant cancer eventually.^{20,21} The anemia drug erythropoietin (Procrit, etc.) has been linked to an increased rate of cancer in patients suffering from anemia. Erythropoietin is used extensively by competitive cyclists, runners and other endurance athletes.²⁰ In addition to promoting tumor growth, GH also interferes with blood sugar control. Some bodybuilders use extremely high doses of GH, which interferes with insulin's function by elevating fatty acid levels in the blood, risking the onset of severe insulin resistance or even frank diabetes.²²

Low doses of GH, sufficient to induce moderate fat release from stored body fat, are believed to be relatively safe, but in the polypharmaceutical environment of bodybuilding, even 4 IU to 8 IU per day, has been associated with the onset of a diabetic state (see reported stack in side note).²³ It should be noted that not everyone responds to GH in the same way.

Some people have a vigorous IGF-1 response, while others don't see much increase in IGF-1 levels. Those who don't have a corresponding increase in IGF-1 appear to be at greater risk of certain GH-related side effects.²⁴

Insulin is the hormone diabetics inject to control their blood sugar. Insulin stimulates the uptake of numerous nutrients into metabolically active tissue and fat cells, including amino acids. When injected immediately after an intense training session, insulin can greatly increase the anabolic response to a workout, making it very popular among athletes and bodybuilders.²⁵ Unfortunately, when insulin is dosed incorrectly, it causes hypoglycemia (low blood sugar) and can even plunge a person into a coma quite rapidly. If the blood sugar level isn't quickly corrected, brain death can occur within a matter of minutes to hours.²⁶ Insulin has even been used as a murder weapon.²⁷

The list of potential risks associated with the number and doses of drugs used to build muscle or reduce body fat go on (Cytomel, clenbuterol, etc.) Sadly, many bodybuilders also suffer from recreational drug use not related to muscle building/fat loss.

Pushing the Limits of Human Experience

Bodybuilding is primarily a sport of young adults who are competitive and driven. In some cases, this drive is based on irrational goals or leads to stress that exceeds the coping skills of the individual.²⁸ In other cases, bodybuilding is just another high-risk pursuit followed by manic individuals seeking to constantly push the limits of human experience.²⁹ In yet other cases, bodybuilding may be an ineffective coping mechanism used to deal with an earlier trauma, possibly explaining the high incidence of weight training among female rape victims noted in one study.³⁰ Then there are the people who just enjoy improving on their physique and health/performance (didn't you start to wonder if there were any normal people left?).

Combine these groups with the forced exposure to black market, street drug dealers and the fall into addictive drug use is nearly inevitable—assuming recreational drug use didn't predate AAS use, which happens in many cases.³¹ Many bodybuilders became addicted to the painkiller Nubain during its heyday; OxyContin use and heroin addiction aren't uncommon.³² In fact, former bodybuilding sensation Paul "Quadzilla" DeMayo died at the age of 37 of a heroin overdose, among others.³³

Painkillers, stimulants such as "meth" (methamphetamine), hallucinogenics and other drugs are harmful enough on their own. In an AAS user, these drugs may be even more dangerous as AAS affect certain receptors and pathways in the brain, making it difficult to predict how an individual may respond to psychoactive drugs.³⁴⁻³

Even over-the-counter drugs like ibuprofen (Advil, etc.) are associated with kidney damage. Ibuprofen doesn't provide a high; it mitigates the chronic tendon and joint inflammation brought on by near-daily weight training. Several bodybuilders are dialysis-dependent or have impaired kidney function, quite probably caused to some degree by the overuse of nonsteroidal painkillers.³⁷

Given the record of early deaths, damaged health, shattered lives and ended careers that have resulted from drug use by bodybuilders, how can anyone possibly justify performance drug use? This is a very complex question and goes into much greater depth than a single article can address. Many of the tragedies that occur within the culture of bodybuilding aren't related to performance enhancement. Recreational drug use is just as harmful and deadly among the strong and buff as it is among the homeless and destitute. It's possible that some people pursue AAS (and other performance drug use) as a consequence of the same psychoses, genetic predisposition or personality disorder that leads them to choose other high-risk behaviors.³⁸ Individual performance drugs all have therapeutic windows and dose ranges in which their use is effective, but also safe. Unfortunately, the "more is better" mantra is still practiced by many bodybuilders, and the degree of excess among young, inexperienced users is much higher today than it was 20 years ago.

While it's relatively easy to predict the effects—positive and negative—of single drugs, bodybuilders have expanded the concept of stacking beyond the boundaries of reason. It's not just the professionals who are using a dozen or more drugs, but amateurs and even noncompetitive "gym rats." With the advent of selective drugs that counter many of the side effects seen with more traditional performance drugs, bodybuilders are now able to push the envelope even further.

Hearing the Tree Fall

Clearly, not even a Nobel Prize winner could tell a person on stacks like Munzer's, or in the case of GH-associated diabetes, what's happening in his or her body or the likelihood of suffering a negative side effect, now or in the future. When people use drugs with limited or no knowledge of the risks and benefits—they're doing so without making an informed consent. An informed consent is making a choice knowing the possible outcomes.

One entity that certainly deserves some measure of blame in this catastrophe is the government. Against the initial advice of nearly all health care professional societies and law enforcement agencies, AAS and other performance drugs have been classified as controlled substances and physicians are prohibited from prescribing these drugs for cosmetic or performance purposes. This has driven the bodybuilder out of the clinic and into the street to acquire his drugs, exposing him/her to drugs of questionable quality purchased from career criminals with no formal training or education. Not only has this placed the bodybuilder/athlete at risk, it has broadened the market for the drugs to include adolescents and sociopaths, encouraged criminal distribution, created a loss of revenue for the drug companies, pharmacies and physicians as well as erased any tax revenue that might have been generated. In addition, adverse events are not tracked, as they are with other prescribed drugs. The outcome of this culture of performance drug prohibition is the same as experienced with alcohol (the 18th Amendment to the U.S. Constitution)—failure. The 18th Amendment was repealed by Congress with the ratification of the 21st Amendment less than five years later. Perhaps there's a lesson to be learned from history.

Any listing of bodybuilders or strength athletes who have died or become ill as a result of the current extremes in drug

use would be incomplete. Who would know if a fledgling Mr. Olympia hopeful died of a blood clot? Would anyone have ever heard of Eric Perrin's death from DNP poisoning had it not been reported in Business Week? Has anyone heard the tree fall yet?

We are losing friends, champions and acquaintances. In 1994, I had the pleasure of meeting Jeep Swenson, WCW wrestler and actor (he portrayed Bane in the movie "Batman & Robin"). Three years later, the "400-pound gentleman died at the age of 40 of heart failure. Would newspaper columnists write of Swenson's death, saying "It's not a bad way to go"? Compare these early deaths to the longevity achieved by some of bodybuilding's pioneers, such as former Mr. America (1943) Jules Bacon, who passed on this year at the age of 89.

"Live fast, die young and leave a good-looking corpse." The statement gets a laugh in the gym, but it isn't quite as funny in the emergency room. It's time to end the insanity of 4,000+mg/week cycles stacked with GH, IGF-1, insulin, stimulants and thyroid hormone (don't forget the aromatase inhibitors, 5- α reductase inhibitors and volume expanders) topped off by a diuretic or two. In bodybuilding, size matters, and success requires some risks in any endeavor, but stupidity inevitably leads to mistakes, setbacks and could be a quick path to the grave. Anyone choosing to hurtle themselves toward the LD50 (lethal dose 50% — a term used to describe a dose that kills half of the subjects in a test) after reading this article needs to accept that any damage done is a matter of choice, not an inherent risk of the drugs used. It's the irresponsible users who bring about the tighter restrictions and intolerant laws that affect any responsible adult wishing to optimize his health or performance.

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