

## Stallone puts muscle behind HGH; raises alarms

Contributed by Elizabeth Weise  
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To get ready for the new Rambo movie, actor Sylvester Stallone, 61, has stated publicly that he took human growth hormone and testosterone, substances that supposedly promote a lean, muscular body.

But doctors and scientists who study these potent hormones say Stallone may be playing with more firepower than even Rambo can handle.

Steroids such as testosterone have long been used by athletes to bulk up, but the use of synthetic growth hormones for that purpose by such a high-profile figure has raised alarms in the medical community.

"These are not yet ready for prime time," says Marc Blackman, associate chief of staff for research at the Washington, D.C., VA Medical Center, who has conducted many of the definitive studies on growth hormone and aging. "This is still research; it is not to be recommended for clinical practice. And neither the long-term effectiveness nor the long-term safety have been shown."

What has been established by researchers is that growth hormone can cause or worsen diabetes, arthritis, heart disease and possibly cancer.

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It's also illegal to use it in a fitness regime. Under Food and Drug Administration regulations, human growth hormone is a controlled substance that can be administered only by a physician. In addition, physicians must do lab tests to prove that the person being treated is clinically deficient in growth hormone, says Richard Hellman, president of the American Association of Clinical

Endocrinologists.

That's true

elsewhere in the world as well, which Stallone learned last year when he was caught smuggling 48 vials of it into Australia. In May, he was ordered to pay \$10,651 in fines and court costs.

Popular

among athletes, bodybuilders

Growth

hormone stimulates growth and cell reproduction. It is produced in the pituitary gland, the pea-sized "master gland" that sits at the base of the brain. It has been popular in recent years with bodybuilders and athletes because they believe it will increase muscle mass, decrease fat and allow them to more quickly recuperate after punishing workouts. It's also a drug of choice at many anti-aging clinics, where it's given with the promise of restoring energy, strength, vigor and sex drive.

But does it

do any of those things?

Studies

have found that it can slightly, but only slightly, increase muscle mass. And because it cuts down on body fat, it can give bodybuilders the "ripped" look they want, says Alan Rogol, a professor of endocrinology at the University of Virginia and Indiana University School of Medicine.

Not a

sure thing

But there's

not a lot of evidence that the hormone does anything else, says George Merriam, a professor and endocrine researcher at the Veterans Affairs hospital in Seattle.

"If

Mr. Stallone is taking his growth hormone shots to improve the way he looks without his shirt on, the benefits that he's talking about may be real," Merriam says. But he says most studies have consistently shown that "there isn't improvement in physical or physiological performance."

As for the anti-aging effects, it's based on the notion that growth hormone production peaks in adolescence. It begins to decline when normal aging begins in the early 20s, Blackman says. By the time a healthy person is in his or her 60s, growth hormone levels are 30% to 40% of what they were at age 30.

But despite years of research worldwide, no one "has yet been able to show that supplementing growth hormone improves the function of the body," Blackman says.

And it can do harm. Early symptoms are aching joints, fluid retention and swelling. Some plastic surgeons give it just for the effect of fluid retention on wrinkles, says Roberto Salvatori, a professor of endocrinology at Johns Hopkins University in Baltimore.

It can also cause pain, weakness and numbness in the hand and wrist when the narrow tunnel of ligament and bone grows, crushing the medial nerve that passes through the hand. Sometimes it causes the abnormal growth of breast tissue in men, says Shlomo Melmed, president of the International Society of Endocrinology and a doctor at Cedars-Sinai Medical Center in Los Angeles.

There's also evidence that long-term use of growth hormone may cause cancer by fueling the growth of small tumors, Rogol says.

A cheaper alternative

And finally, growth hormone is very expensive and requires daily injections. A so-called anti-aging dosage for a year can cost up to \$20,000, Melmed says.

But there is one easy, cheap and exceedingly healthy way to boost your growth hormone levels: go to bed. "Growth hormone and testosterone production peak during sleep," says Richard Auchus, a professor of endocrinology at the University of Texas Southwestern Medical Center in Dallas.

"You can actually get people to test pathologically low for growth hormone by waking them repeatedly during the night," he says. "I always tell people that if you want to maximize your growth hormone, get a good night's sleep."