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Sculpting shapely arms

By Patty Leon
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Training your arms helps to develop strong biceps, toned and sculpted triceps and forearms and enhances your overall appearance.

Your biceps, triceps and forearms are what allow you to lift or pick up items, push items away or pull things toward you. They also let you swing and rotate items, like a tennis racket during play.

Toned and sculpted arms look good when going sleeveless during the summer and. For those who are getting older, having sculpted arms — especially triceps — reduces the dreaded upper-arm "jiggle."

Ashley McAfee, a personal trainer at 24 Seven Family Fitness in Hinesville, said she receives a lot of compliments about her toned arms. She said that while she is genetically gifted, she has worked those muscles hard to attain her current look.

McAfee, certified by the American Muscle and Fitness Personal Trainer Association for the past 1½ years, said men and women should include arm exercises in their routines and that most arm workouts are great muscle builders for both genders.

"I guess the biggest difference (between how men and women train) is the amount of weight they can lift," she said. "But as far as exercises, … I pretty much do the same exercises a man would do."

Exercise organizations such as the American Council on Exercise, National Strength and Conditioning Association and International Fitness Association agree on the best and most popular methods for building biceps and triceps.

Among the top-listed biceps exercises are curls with a straight or "E-Z curl" barbell or dumbbells. Variations include concentrating curls or alternating bicep curls or hammer curls with chin-ups.

Widely recognized triceps-training movements include dips, pushdown with rope attachment of bar attachment from a high pulley, close-grip bench press and the lying triceps press, commonly referred to as skull-crushers.

"I usually do bicep curls with a dumbbell," McAfee said. "I started doing concentration curls, but I am able to get the same workout with other exercises. I like to work my triceps a lot, too, with pulldowns and skull crushers. I train mine pretty hard and I do it twice a week, while some might train them once a week. I get a lot of compliments on my arms, and I like to keep up with them."

McAfee said women shy away from heavy weights when training their arms. Women often fear they will become too bulky or masculine looking, but nothing could be further from the truth, she said.

"It's mostly toning," she said. "I mean you will build muscle, but you will not look like a man. I'm a perfect example. Unfortunately most women think that is what they will look like if they train like that."

She said the level of training, genetics and hormones, and diet are the ultimate factors determining how far your body will develop. But if you always train lightly, not pushing the limits of your muscles, you might miss out on developing to your true potential.

With regard to genetics, there are three basic human body types: ectomorphs, mesomorphs and endomorphs.

Ectomorphs tend to have a hard time building muscles, are thin and have long limbs. Mesomorphs are the body types that tend to build muscles relatively quickly and more easily than other body types. Endomorphs have shorter limbs and tend to hold weight.

Most people are a blend of body types such as endo-mesomorphs or ecto-mesomorphs. Some folks might have an upper body that is ectomorph and a lower body that is endomorphic, commonly known as pear-shape body type.

McAfee said because she has great genetics, she hasn't needed a strict or restrictive diet to gain muscle mass and tone. But she said she helps her clients meet nutrition goals to ensure they successfully reshape their body and arms.

"Most people do need to (have a strict diet)," she said. "A lot of people think they can just eat whatever they want and look like this, … but that's not how it works. … That is very rare. I eat healthy, but I just don't diet."

McAfee will compete in her first physique competition in July in Atlanta. The event is sanctioned by the National Physique Committee, the largest amateur bodybuilding organization in the United States.

She said the road to her first competition was tough. The lessons she learned epitomize the advice she offers when training her clients.

"My advice is to try and stay consistent," she said. "It is really hard at first. You want to give up, and you are tired and sore. You really have to push through those first three weeks. Make it a routine and habit, and once you push through that, you start to feel bad if you don't go to the gym. Don't give up."

McAfee is at 24 Seven Family Fitness from 10 a.m. until 6 p.m. Monday through Friday and from 10 a.m. to 2 p.m. Saturdays. If you join the gym, you get a free training session with a trainer. There is a fee for subsequent sessions.

Exercise examples from bodybuilding.com

Barbell curls

1. Stand up with your torso upright while holding a barbell at a shoulder-width grip. The palm of your hands should be facing forward and the elbows should be close to the torso. This will be your starting position.
2. While holding the upper arms stationary, curl the weights forward while contracting the biceps as you breathe out. Tip: Only the forearms should move.
3. Continue the movement until your biceps are fully contracted and the bar is at shoulder level. Hold the contracted position for a second and squeeze the biceps hard.
4. Slowly begin to bring the bar back to starting position as your breathe in.
5. Repeat for the recommended amount of repetitions.

Variations:

You can also perform this movement using a straight bar attachment hooked to a low pulley. This variation seems to really provide a good contraction at the top of the movement. You may also use the closer grip for variety purposes.

You can also perform this exercise with a E-Z curl bar and vary you grip from close-grip to wide grip angles.

Dumbbell alternate bicep curls

1. Stand (torso upright) with a dumbbell in each hand held at arms length. The elbows should be close to the torso and the palms of your hand should be facing your thighs.
2. While holding the upper arm stationary, curl the right weight as you rotate the palm of the hands until they are facing forward. At this point continue contracting the biceps as you breathe out until your biceps is fully contracted and the dumbbells are at shoulder level. Hold the contracted position for a second as you squeeze the biceps. Tip: Only the forearms should move.
3. Slowly begin to bring the dumbbell back to the starting position as your breathe in. Tip: Remember to twist the palms back to the starting position (facing your thighs) as you come down.
4. Repeat the movement with the left hand. This equals one repetition.
5. Continue alternating in this manner for the recommended amount of repetitions.

Variations:

1. There are many possible variations for this movement. For instance, you can perform the exercise sitting down on a bench with or without back support and you can also perform it using both arms at the same time. Additionally, you may perform it with a starting position in which both palms are facing forward. In this case, you may alternate the arms as well, or perform at the same time.
2. You can also do the exercise starting with both palms of the hands facing the torso and then rotating forward as the movement is performed. At the top of the movement the palms should face forward and the small finger should be higher than the thumb for a peak contraction.

Cable rope overhead triceps extension

1. Attach a rope to the bottom pulley of the pulley machine.
2. Grasping the rope with both hands, extend your arms with your hands directly above your head using a neutral grip (palms facing each other). Your elbows should be in close to your head and the arms should be perpendicular to the floor with the knuckles aimed at the ceiling. This will be your starting position.
3. Slowly lower the rope behind your head as you hold the upper arms stationary. Inhale as you perform this movement and pause when your triceps are fully stretched.
4. Return to the starting position by flexing your triceps as you breathe out.
5. Repeat for the recommended amount of repetitions.

Variations: You can also do this seated with a bench that has back support, or you can use a dumbbell instead of the rope.

Skull-Crushers

1. Secure your legs at the end of the decline bench and slowly lay down on the bench.
2. Using a close grip (a grip that is slightly less than shoulder width), lift the bar from the rack and hold it straight over you with your arms locked and elbows in. The arms should be perpendicular to the floor. This will be your starting position. Tip: In order to protect your rotator cuff, it is best if you have a spotter help you lift the barbell off the rack.
3. Now lower the bar down to your lower chest as you breathe in. Keep the elbows in as you perform this movement.
4. Using the triceps to push the bar back up, press it back to the starting position as you exhale.
5. As you breathe in and you keep the upper arms stationary, bring the bar down slowly by moving your forearms in a semicircular motion towards you until you feel the bar slightly touch your forehead. Breathe in as you perform this portion of the movement.
6. Lift the bar back to the starting position by contracting the triceps and exhaling.
7. Repeat steps 3-6 until the recommended amount of repetitions is performed.

Variations: You can use an e-z bar or dumbbells to perform this movement. You can also perform it on a flat bench as well.

Photos by Patty Leon

Ashley McAfee, a personal trainer at 24 Seven Family Fitness in Hinesville, often receives compliments for her toned arms. Above, McAfee demonstrates dumbbell biceps curls. Below, she performs triceps extensions.

New method shows promise in treating antidepressant-resistant depression

By Doug Bennett
University of Florida Health

A new study by University of Florida researchers could help reveal methods to treat depression when traditional medications aren't working.

Depression affects about 121 million people worldwide, with about 10 percent of all cases involving people who don't respond to antidepressants, according to an estimate by the U.S. Food and Drug Administration.

To uncover solutions to this problem, UF researchers studied two types of rat models, including one that is particularly sensitive to stress and highly resistant to antidepressant treatments. Researchers suspected that the stress-prone rats' brains might have greater amounts of a protein that may play a role in depression, said Darragh P. Devine, Ph.D., the study's lead author and a professor of behavioral and cognitive neuroscience in the UF College of Liberal Arts and Sciences department of psychology and the College of Medicine department of neuroscience. The study was published in the April edition of the journal Pharmacology, Biochemistry and Behavior.

The stress-sensitive rats that were exposed to chronic and acute stress had significantly higher levels of the protein organic cation transporter-3 or OCT3, in the hippocampus, a part of the brain that plays a role in depression. Researchers believe OCT3 plays a role in chemical processes within the brain that can lead to depression or make it linger.

Next, the researchers looked for a way to create an antidepressant effect in the rat models. To do that, they tested a drug known as decynium-22, or D22. The drug had shown some antidepressant properties in an earlier study by other researchers involving a specially bred mouse model. Devine said those results were interesting, and he wanted to know if D22 could work in a model of heightened stress responsiveness and resistance to antidepressant medication.

"It led us to the basic hypothesis that the stress-vulnerable rats might have a heightened response to D22. And that's what we found," Devine said.

As expected, the D22 created an antidepressant effect in the rat model by blocking the protein suspected of playing a role in depression. Devine's research is believed to be the first time that D22 was found to have an antidepressant effect in the Wistar-Kyoto rat model.

It's encouraging that the treatment worked selectively in a rat model that doesn't respond to conventional depression treatments, Devine said. Although it's too early to know whether a treatment that works on an animal model would help human patients, Devine said it shows promise as a first study.

Regulating brain chemistry is just one part of treating a condition as complex as depression, Devine said. Sometimes, a person's immediate environment can play a big role in how soon — or whether — he or she bounces back from depression, he added. Other experts and studies have cited stress, medical problems, genetic vulnerability and faulty mood regulation as possible causes of depression.

"So if you talk about treating depression, you can't talk about curing things just with drugs," he said.

The potential therapy discovered in his lab is one step toward a possible treatment for depression for those who don't respond to conventional antidepressants alone, Devine said. Whether it could ultimately work as a primary treatment for depression or be used in combination with antidepressant medications hasn't been determined, he said.

Altered bacteria may reduce inflammation and alleviate inflammatory bowel diseases

By Morgan Sherburne
University of Florida Health

An imbalance of bacteria in the gut can cause inflammation, a driver of conditions such as colitis, Crohn's disease and colon cancer. Now, University of Florida Health scientists, in collaboration with researchers from North Carolina State University, have discovered a protein that can minimize that reaction, unlocking a way to restore balance to gut bacteria and potentially reverse these conditions.

Researchers are beginning preparations for a phase 1 clinical trial to test whether giving the protein in pill form to patients could reduce inflammation in their digestive tracts.

The group works with a genetically altered form of the probiotic bacterium Lactobacillus acidophilus. In prior studies, the scientists deleted a gene responsible for a surface component on the cell that potentially increases intestinal inflammation.

They demonstrated that Lactobacillus acidophilus lacking that gene can lessen gut inflammation, easing colitis in mouse models. Now, the group has discovered the specific protein responsible for significantly reducing the inflammation, according to findings published online in February in The EMBO Journal.

"We believe if you can bring inflammation under control, you can basically control the disease progression of the colon," said Mansour Mohamadzadeh, Ph.D., a professor in the UF College of Medicine's department of medicine and the UF College of Veterinary Medicine's department of infectious diseases and pathology. "If you can tune down the local inflammatory responses of the colon, you can control the systemic effects in the peripheral organs."

While some inflammation helps to combat bad bacteria consumed in food, the tissue-damaging effects of too much inflammation can be resolved by transferring gut bacteria from a healthy person into sick individuals to restore the system's balance, said Yaíma Lightfoot, Ph.D., a postdoctoral fellow in the UF College of Veterinary Medicine's department of infectious disease and pathology. But the UF researchers, in collaboration with Todd Klaenhammer, Ph.D., a professor in the departments of food science, microbiology and genetics at North Carolina State, seek a simpler solution.

"It has been shown that people who are suffering from inflammatory bowel disease have an abnormal composition of bacteria in the gut. The composition is pro-inflammatory," Lightfoot said. "Instead of trying to switch a bad composition of gut bacteria with a good composition, our goal is to add a single microorganism that can help restore balance in the gut."

Lightfoot, the paper's lead author, said giving bacteria to a person who needs it could cause unwanted inflammation depending on the recipient's reaction to that particular bacteria.

"Instead, we're adding a single protein we know does not cause inflammation, and which we know causes protective immunity," she said.

Lactobacillus acidophilus has three surface layer proteins in addition to the inflammation-increasing molecule. These cell-surface molecules interact with immune cells to trigger specific responses. The researchers genetically altered the bacterium so that it only created the outer surface layer, called surface-layer protein A.

University of Florida Health

UF researchers have discovered a protein that could block gut inflammation, which could help alleviate inflammatory bowel diseases.

Working in mouse models, the researchers found that the surface-layer protein A binds to a receptor on immune-system cells that controls inflammation, Lightfoot said. When they removed this receptor from mice, the bacterium no longer reduced inflammation in the gut.

Next, the researchers plan to determine how long the protein's protective effects last, which will help them prepare for the clinical trial.

"The bad guy is the pathogenic inflammation that can lead to colitis or colon cancer," Mohamadzadeh said. "Our goal is to dampen that bad guy."