The Best Science-Based Bicep Workout for Size and Definition (7 Studies)
When it comes to arms training, the biggest mistake people make is neglecting both heads of the bicep. Many people are unaware that they are actually composed of two heads.

And although it's true that both heads will always be active in all bicep exercises, as shown in scientific literature, we can elicit superior activation in one head over the other with certain exercises.

Anatomy of the Biceps
The two heads of the bicep are the long head and the short head. The long head lies more laterally on the arm, and the short head more medially (the "inside" of the arm).

Another muscle that tends to be forgotten is the brachialis. It lies beneath the biceps and assists in flexing at the elbow. When well-developed it can actually push your biceps up more to provide a better peak.

So in order to best train your biceps you want to choose exercises that will allow growth in both heads as well as the brachialis.

Exercise 1: Chin-Ups (Heavy Exercise to Stimulate Type II Fibers)
You may be wondering what chin ups are doing in an arm routine, but, they are one of the best exercises to grow your biceps and scientific literature seems to agree with this.
For example, the 2024 study by the American Council on Exercise compared EMG activation of the biceps with 7 different exercises. The chin-up was tied for second for activation of the biceps. It even managed to out-perform traditional exercises like the barbell curl and EZ curl.

Reasoning For Chin-Ups
But the reason I'm opting to start with chin-ups for biceps as opposed to concentration curls which performed better in terms of activation is:

1) Because it's a compound movement.
2) Because research by Hughes et al. has shown that the biceps are comprised of mostly type II muscle fibers which (may) best respond to training with heavy weight.

In fact, one study by Lagally et al. found that each jump in relative load going from 30-90% of 1 rep max resulted in more bicep activation. Meaning that in order to recruit all the motor units of your biceps, you need to use heavy weight. And since you can easily overload chin-ups with weight and work up to very heavy loads with it, I suggest starting your biceps workout with them and going heavy for fairly low reps.

Exercise 2: Incline Dumbbell Curls (Emphasizes Long Head)
This second exercise will be used to put more emphasis on the long head of your biceps, but keep in mind that both heads will always be activated to an extent during any elbow flexing movement.

But the reason it emphasizes the long head more is because when you perform a curl when on an incline, your shoulder is in a hyper-extended position. This stretches the head of the biceps which runs over the shoulder joint.

Since the long head is placed in a greater stretch position compared to the short head, it's now able to produce more force. And as demonstrated in this study, the long head will be active throughout the whole range of motion rather than just the beginning or just the end which is the case for many bicep exercises like preacher curls. Thus, leading to better overall activation and growth for the long head.

Exercise 3: Concentration Curls (Emphasizes Short Head)
The next exercise will be used to put more emphasis on the short head of the biceps.

The concentration curl elicited much higher bicep activation than the 7 other exercises.
And the reason it puts more emphasis on the short head of the biceps is because, as shown in the study by Staudenmann et al., EMG activation of the short head of the biceps is maximized with combined flexion and supination.

So, you want to turn your wrist out during every rep in order to fully activate the short head of your biceps. Another great thing about this exercise is that it minimizes the involvement of the anterior delts, which often come into play during curling exercises.

In fact, the study I previously showed by the American Council of Exercise not only showed that the concentration curl had the greatest bicep activation, but the activation of the anterior delt was significantly lower during this exercise than all the other workouts. This is likely because during this movement the humerus is pressed against the leg and doesn't allow the upper arm to sway. This helps isolate the biceps to a greater degree.

One researcher also noted that there may be something mental going on as well. The fact that you can visually see your biceps working throughout the movement may in fact help with the mind-muscle connection.

Exercise 4: Reverse EZ Bar Curl (Emphasizes Brachialis + Brachioradialis)
You want to use this last exercise to help target the brachialis and the brachioradialis which are muscles that will help a lot in improving the aesthetics of your arm.

EZ Bar curls with a reverse grip, as demonstrated in the study by Staudenmann et al., the brachialis inserts onto the ulna rather than the radius. Simply meaning that it only has one purpose and that is to flex the arm. Since it has no role in supinating the wrist like the biceps do, flexing the arm with a pronated grip will shift some of the work away from the biceps and onto the brachialis. This has been proven in various EMG studies like the one by Naito et al. to put more emphasis onto the brachialis which otherwise gets taken over by the biceps during regular curling exercises.

So, to wrap this all up, here’s a sample workout you can do using everything I previously discussed.

(Weighted) Chin-Ups: 3 sets of 6-8 reps
Incline Dumbbell Curls: 3 sets of 6-8 reps
Concentration Curls: 3 sets of 6-10 reps
Reverse EZ Bar Curls: 3 sets of 6-12 reps

You can add these arms workout with triceps or with your back workout. However, it's a fairly high-volume workout. You may want to consider cutting it down and spreading it throughout your routine or alternating the workouts.