



Carter Cuff

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INTRODUCTION: The Carter Cuff exercise device is an armband designed for use by a person who uses a hand prosthesis or a person with an impaired hand function. The armband both stabilizes the attachment of the prosthesis thereby allowing numerous pulling exercises that would otherwise be impossible and provides connection to exercise machines and free weights that would otherwise require a user to grasp a handle or operational portion of the exercise machine with his or her hand. US and international patents are currently pending.

MATERIALS AND METHODS: The Carter Cuff is constructed from a sheet of flexible material that is sized to be wrapped around a wearer's arm, enclosing substantially all of the arm and the wrist or base portion of any hand prosthesis. The wrapped armband is tightened by attached cinching straps, and D-rings are attached to the surface of the armband for attachment of portions of exercise machines or free weights. An optional shoulder harness can be attached to the armband for additional stability.

The first Carter Cuff was manufactured in September 2009 and developed over the space of a year using around 10 prototypes. During this year the inventor, under the guidance of elite professional fitness coaches, became able to perform over 20 upper body exercises that were previously not possible or painful to perform with any significant amount of weight. Intensive weight training has continued with the same team of coaches, with a current emphasis on attaining significant lean mass after attaining upper-body symmetry.

RESULTS AND DISCUSSION: Prior to using the Carter Cuff, the device's inventor had a drastic muscular imbalance between the front and back of the shoulders along with biceps and triceps, which led to further imbalances in the muscular development of the chest, back and lateral trunk. All of these imbalances were corrected by using the Carter Cuff to perform exercises targeting the deltoids (rear in particular), rhomboids, latissimus dorsi, trapezius, biceps and triceps in both isolated and synergistic fashion. The ability to perform these exercises has resulted in a more muscularly and neurologically balanced and symmetrical body, especially upper body.

From a strength training perspective, the Carter Cuff allows for the ability to train the upper body (more specifically, the shoulder joint and elbow joint) in a more balanced and functional manner. The biggest benefit of the Carter Cuff is its ability to allow (and sometimes better allow) for loaded scapular retraction and depression, shoulder adduction, flexion and extension, and elbow flexion and extension. In gym lingo, this means the user can row, press, pull down, press down, curl, chop and perform suspension, barbell, dumbbell and kettle bell work, all while loading the body evenly.

In addition, there is an important aesthetic aspect to the Carter Cuff. Many orthotic and prosthetic devices, while utilitarian, are aesthetically lacking. The Carter Cuff also serves important and often overlooking stylistic and aesthetic purposes: in other words, it looks great and is something that stands out in a positive way. This remains an especially important consideration for recent amputees dealing with the sudden change in the body and the resulting body image issues.

The Carter Cuff is currently in use exclusively at Walter Reed National Military Medical Center in Bethesda, MD. Full clinical tests are currently being planned in conjunction with the Miller School Of Medicine at the University Of Miami.