

# The Ab-Solute Truth About the Crunch

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**Doing my abdominal routine the other day I overheard an interesting conversation that prompted me to write this article. "I do 300 hundred crunches a day, five days a week", stated a man that appeared as if he could only perform three crunches daily. I then began to watch his "Ab" routine...**

What I saw was the same thing I witness with the other "Ab wannabe's". Starting position was unremarkable; this particular individual was lying on his back, knees bent and feet flat on the floor. He then grabbed the back of his head and as if he was testing a melon for ripeness. Then the race was on - Hurling his body up, elevating his pelvis from floor, and pulling on the back of his neck. This man appeared to be in some abdominal sprint. His breathing pattern was atrocious. I anticipated his head to explode. Ok, so maybe he can do 300 crunches daily. Being an exercise specialist and chiropractor has led me on a crusade of assisting the abdominally misguided. Abdominal training of all types is by far the most misused and misunderstood exercises of them all.

Why are we pulling so hard on our cervical spines? Individuals insist on grabbing the upper c-spine and occiput region of the head and hyperflexing the neck during an abdominal crunch. Two things are happening here. One is the obvious, potential for injury. Hyperflexion of the cervical spine compromises and strains the posterior musculature of the neck. This most likely will create extreme neck discomfort and headaches. Also, in the hyperflexed state the disc material between the vertebrae has the propensity to extrude posteriorly. Thus, making a perfect situation for a bulge or herniation. Cervical hyperflexion can approximate the neuroforamina (openings for nerves to exit); this potentially can irritate the nerve root and cause radiculopathy (pain down the arm). Placing the c-spine in an extreme flexed position will impose greater laxity in the ligaments creating unstableness in the cervical structures. The second reason pulling on the neck is not recommended is simply, it's cheating. The movement should be created by the abdominal musculature only.

Range of motion in an abdominal exercise is often overlooked. While performing a crunch one should not be moving the upper torso greater than 45°. The contraction of the rectus abdominus is greatest in this range. The lower back should always remain on the matt or exercise ball. When excessive ROM is carried out then accessory muscles (hip flexors and lumbar musculature) begin to aid in the movement, taking the contraction away from the abs. Also, the line of drive or vector, which is the direction the torso is going, should be more upward towards the ceiling as opposed to towards one's feet. This will isolate the rectus abdominus, and decrease the use of accessory muscles.

The rate at which abdominal training is performed is crucial. Again, when slowing the rate to a "1,2" count going up as well as down maximizes contractility.

Rapid abdominal motions create potential for lower back injury. This will also create the force of momentum, which eases a crunch exercise immensely. This is why individuals claim they perform hundreds of crunches daily. Just like any resistance exercise, slow and steady prevails.

Something as simple as breathing rate during abdominal exercises can increase productivity greatly. When one exhales on the upward phase of the crunch, and inhales on the downward phase, contraction is more complete. Conversely, breathing rapidly can cause one to hyperventilate. While, not breathing, or holding one's breath for a period of time can induce the feeling of lightheadedness by doing a valsava maneuver (decreasing blood flow to the head from pooling of blood in the lower aorta).

I have a "crunch gauge" I use with my clients. I tell them if you can do more than 25 repetitions per set and are not sore or feel significant contraction, then you are performing the exercise incorrectly. The information outlined can be used as a guideline to determine if your client's or athlete's crunch performance needs to be fine-tuned.

Once again, it's not how much one is lifting or the number of repetitions, it's the way they are performing it. Exercise with greater efficiency and see greater results.

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