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# 13

# The Limits of Muscular Size

In a recent medical article read by the author, it was stated that the average individual's size, by weight, consists of forty percent muscular tissue; in effect, that an average 150 pound individual would have a total muscular mass of approximately 60 pounds. But even if true, such a ratio of muscular mass to total weight can be demonstrated by the employment of what can only be called rather dubious means. Perhaps – if you include such body parts as the heart, the muscles of the head, feet, hands, skin and internal organs – you might be able to demonstrate such a ratio.

But if consideration is given only to the muscles that are directly employed in performing normal muscular activities, then it will be found that the actual ratio of muscular bulk to total weight is very close to fifteen percent (15%) – little more than a third of that indicated above. An average individual weighing 150 pounds at a height of 5 feet and 11 inches will have approximately 20 pounds of such muscular tissue; thus, if his body weight can be increased to 170 pounds, in the form of additional muscular tissue, this will literally result in a doubling of his muscular bulk.

But if such is true, then why won't his strength be doubled as well? In at least some aspects it probably will be; but as a general rule, strength does not increase in direct ratio to increases in muscular bulk – for a number of reasons. For one thing, bodily leverage is changed as the muscular bulk increases – and almost always to your disadvantage. Secondly, the human circulatory system is not capable of properly supporting muscular bulk beyond a certain degree of development.

Strength of muscle is almost entirely dependent upon its bulk, but it is extremely difficult to accurately estimate the bulk of a muscle; size is frequently confused with muscular bulk – and while great size is obviously required for great muscular bulk, it does not follow that great size presupposes great muscular bulk.

Secondly, most people have no slightest idea of the real relationship that exists between measurements of the circumference of various body parts and the actual muscular bulk contained within those same body parts. The average 150-pound individual previously mentioned might have a 12 inch upper arm measurement – flexed; but increasing that measurement by only two inches, to 14 inches, will literally double the muscular bulk of the upper arm. Thus an increase in the circumference of only about seventeen percent (17%) will produce an increase in muscular bulk of approximately one-hundred percent (100%) – or a doubling of bulk.

While that may sound like a gross overstatement, in fact, it may well be an understatement; if you would stand a man like Bill Pearl, at the weight of 210 pounds, alongside our average 150 pound individual of the same height, the comparison between their arms would be ridiculous. And in total overall muscular bulk, Pearl will obviously display at least four times as much bulk as the smaller man – though only 60 pounds heavier.

Then why isn't he four times as strong as the smaller man?  I repeat, in some ways he will be – and he will be far stronger than the lighter man in all ways, everything else being equal. But what degree of this size is useful? That, of course, depends upon how you define "useful." But for most purposes, all of it – any reduction in size would also cause a reduction in strength – and in any activity requiring all-round great strength, all of this size will be useful.

Speed of movement? That, of course, depends upon several things; upon the overall bodyweight, upon the individual's initial potential insofar as speed of reflexes and bodily proportions are concerned, and upon his individual training history. But in almost all cases, it will be far greater than you would probably expect. Some years ago, during the Olympic Games, careful measurements of the speed of movement of most of the athletes involved clearly proved that a weightlifter was the fastest man competing in any sport, and that almost all of the weightlifters were faster than the other athletes.

As I said in an earlier chapter, it is expecting far too much from any form of physical training to expect it to produce a super athlete that will be a champion in all sports; this is literally impossible, because the basic requirements for sports are far too varied for such a possibility to be realized. And it is equally obvious that no form of training can produce a champion athlete in any sport – from just "any" individual.

Until quite recently, any form of weight training was looked upon almost in horror by most coaches; if you had stated, thirty years ago, that almost all athletes would now be using weight training, you would have been considered totally insane – and a great deal of that earlier prejudice still exists. At the present moment, almost all coaches have at least heard from reliable sources that weight training is good for athletes – but, knowing little or nothing about it from personal experience and having heard all sorts of highly biased stories about it, many of them are "not quite sure" about it; some obviously are afraid of weight training – primarily, I think, because they know so little about it.

This situation is changing, but a lot of this bias will still exist fifty years from now – or a thousand years from now.

So you can reasonably expect some degree of improvement in any athletic activity from weight training – and in many cases, enormous improvement will be produced; but do not expect miracles. Critically decide exactly what results you are most interested in, and then follow a weight training program that is designed to give the most in the way of the type of results that you are after.