

Nautilus Bulletin #1

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Strength and Endurance

The subject of this chapter will probably arouse as much heated controversy as any of my other major points of emphasis – even though it is certainly not a new idea; and while it is not my intention to create such opposition to any of the points I am attempting to explain, I feel that an effort to avoid controversy – by writing only on subjects most likely to be widely accepted – is outright dishonesty. Secondly, such a style of writing – or such a selection of subjects – would necessarily avoid many points of importance; all of which are essential to an understanding of the factors involved in a training program capable of producing good results.

Point #1 – There is no slightest evidence that indicates a difference between strength and endurance; accurately measuring one of these factors clearly indicates the existing level of the other. That is to say; if you know how much endurance a man has, then you should also know how strong he is – or vice versa. But such a relationship between strength and endurance is meaningful only in individual cases; it does not hold true for the purpose of comparing the performance of one individual to that of another – thus you cannot fairly compare one man's endurance to another man's strength. Secondly, I am using the term "endurance" only in the sense of "muscular endurance", the ability of a muscle to perform repeatedly under a particular load – I am NOT momentarily concerned with cardiovascular endurance, which is an entirely different matter.

Point #2 – By training for endurance, increases in strength are produced in direct proportion to increases in endurance – and vice versa.

Point #3 – Accurate measurements of muscular mass clearly indicate existing strength levels within a very narrow range of variation – if all factors are taken into consideration. But again, such measurements are only meaningful in individual cases – not for comparison purposes.

Point #4 – Increases in muscular size make strength gains possible – but do not produce such strength gains in direct proportion; and increases in strength force increases in muscular mass, when strength reaches a certain point in relationship to existing muscular mass then no additional strength increase is possible until after an increase in muscular size, and such a size increase will invariable occur if all of the requirements for such growth are provided.

Great misunderstanding in regard to the above points exists primarily because attempts to measure strength and endurance levels have almost invariably been based on different scales; but when the same scale is applied to both measurements, the above mentioned relationships will be obvious. The following example should make this clear.

If you have been training for a period of time and have reached a point where you are capable of a bench press of 300 pounds, and are also capable of performing ten repetitions in the bench press with 250 pounds, you would probably look upon the best single-attempt as an indication of your strength level and the best performance for ten repetitions as an indication of your endurance level; and if so, you would be basically correct in your opinions.

But if you then stopped training for a period of several weeks, and upon resuming training wanted to measure both your strength and endurance after such a layoff, you would probably make an understandable error in the latter measurements – by applying different scales; an error which would lead you to believe that your endurance had decreased more than your strength.

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Whereas, in fact, if such measurements were accurately made, it would be obvious that both strength and endurance had decreased in exact proportion.

After such a layoff, you might find that your best single-attempt was one with 270 pounds and that your best performance with 250 pounds was only repetitions. And such results could easily lead to the mistaken conclusion that your endurance had decreased by sixty percent while your strength had decreased by only ten percent.

But you didn't use the same scale for both measurements; while you decreased the single-attempt weight by ten percent, you left the endurance-attempt weight unchanged. If, instead, you had decreased the weight used for the endurance-attempt by the same percentage – in this case to a weight of 225 pounds – then you would still have been able to perform ten repetitions.

Or, taking the reverse approach to the same situation, you might be led into an apparent result that would be so ridiculous that it would be obviously incorrect to anybody; if both test weights remained unchanged, and if you performed four repetitions with 250 pounds – but failed with 300 pounds – would that then indicate a decrease in endurance of sixty percent, and a decrease in strength of one-hundred percent?

Similar examples could be given to establish the validity of the other points listed above, but restrictions of space make this impractical in this bulletin.