

# Nautilus Bulletin #2

# 19

## Barbells vs. Exercise Machines

Barbells have several advantages over exercise machines – even Nautilus exercise machines; and if the available exercise machines do not provide some sort of advantages that more than compensate for their inherent disadvantages, then you are better off using a barbell. Nautilus machines do provide advantages that far more than compensate for their disadvantages –conventional exercise machines generally do not, and never to any really worthwhile degree.

An "opinion" of the inventor of Nautilus machines? Certainly it is my opinion – but it happens to be supportable fact as well. With only two or three insignificant exceptions (which I will list a bit later in this chapter), almost all conventional exercise machines are actually less productive than barbells – and this is true for obvious reasons; one of the limiting characteristics inherent in all exercise machines (including Nautilus machines) is the factor of "guided resistance" – instead of being free to move in any direction, as it is in almost all barbell exercises, the resistance is confined to a single "track of movement." Another such limitation encountered in most exercise machines (but NOT in Nautilus machines) is "reverse geometry" – the mechanical designs used in most machines actually decrease the efficiency of the exercise movements.

Early attempts in the direction of building conventional exercise machines were usually limited to "redirecting gravity" – changing the "direction of resistance" from "down" to "up," or from "down" to "across." Barbells provide resistance in only one direction – vertically down, as a result of gravity; by the use of pulleys you can "redirect" the resistance, change the direction-of-resistance to any direction desired – but you will still have resistance in only one direction (uni-directional resistance). So at best you still have an exercise almost identical to a barbell exercise – and in most cases, and exercise not quite as good as a barbell exercise – and at the worst, an exercise far less effective than a barbell exercise.

Where and when such simple machines make it possible to work muscles that can not be worked with a barbell, then they are justified; conventional "lat machines" are examples of worthwhile applications of redirected barbell resistance – a leg-press machine is at least a practical example of another such application. But in general, such applications seldom provide any advantages over barbell exercises – and frequently are less effective than barbell exercises.

The state of the art remained at that stage for a number of years, and during that period there were neither any significant improvements nor backward-steps in the nature of available training equipment; but when a major step finally was taken, it was a move in the wrong direction –perhaps primarily because of new and very plush "health studios", the attentions of most equipment manufacturers turned towards improvements in convenience and appearance. But very little, if any, attention was given to function – and in almost all cases, the functions of exercise machines became worse.

Two companies in particular seem to have devoted most of their attentions and efforts towards attempts to design exercise machines that work on leverage principles – because, if cables could be eliminated and replaced by levers, the machines would then not be subject to such frequent breakdowns from cable wear; which would be fine, if the functions of the machines were not harmed in the process – but in fact, most such machines do suffer from greatly reduced function.

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Secondly, the same companies were also greatly interested in trying to cram as many different "stations" into the smallest possible space, and wrap the whole thing into one package – eventually the term "jungle" resulted from this practice; and such machines are certainly just that, jungles, mixed-up multi-exercise monstrosities of little or no actual value by comparison to a barbell. It may be possible to cram fourteen people into a phone booth, too – but if so, then don't plan on any of them using the phone.

In later chapters devoted to exact step-by-step examinations of the supposed purposes and actual functions of many different types of exercise machines and devices, I will point out a large number of the obvious mistakes that were incorporated into the design of most of the current crop of exercise machines; but for the moment, it is enough to state that a barbell is usually better – far better – than an exercise machine which is supposed to duplicate a barbell exercise. If you want barbell exercises, use a barbell – don't try to make an elephant out of a mouse; barbells are very productive tools if they are properly used – and almost all conventional exercise machines are a firm step in the wrong direction.