Mike Mentzer’s

New Advanced
High-Intensity Training Program

Text Transcription of Original Cassette Recording
(first edition)

by

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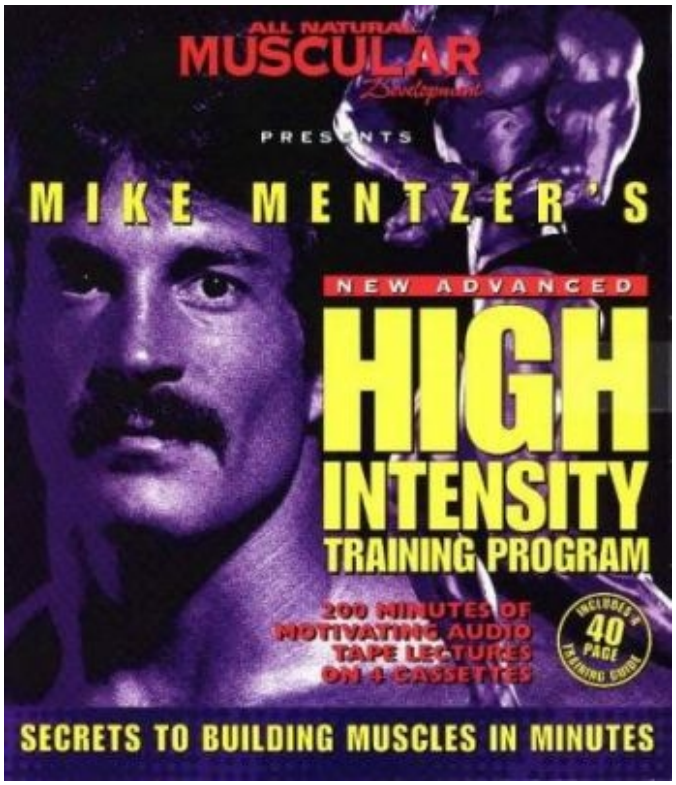

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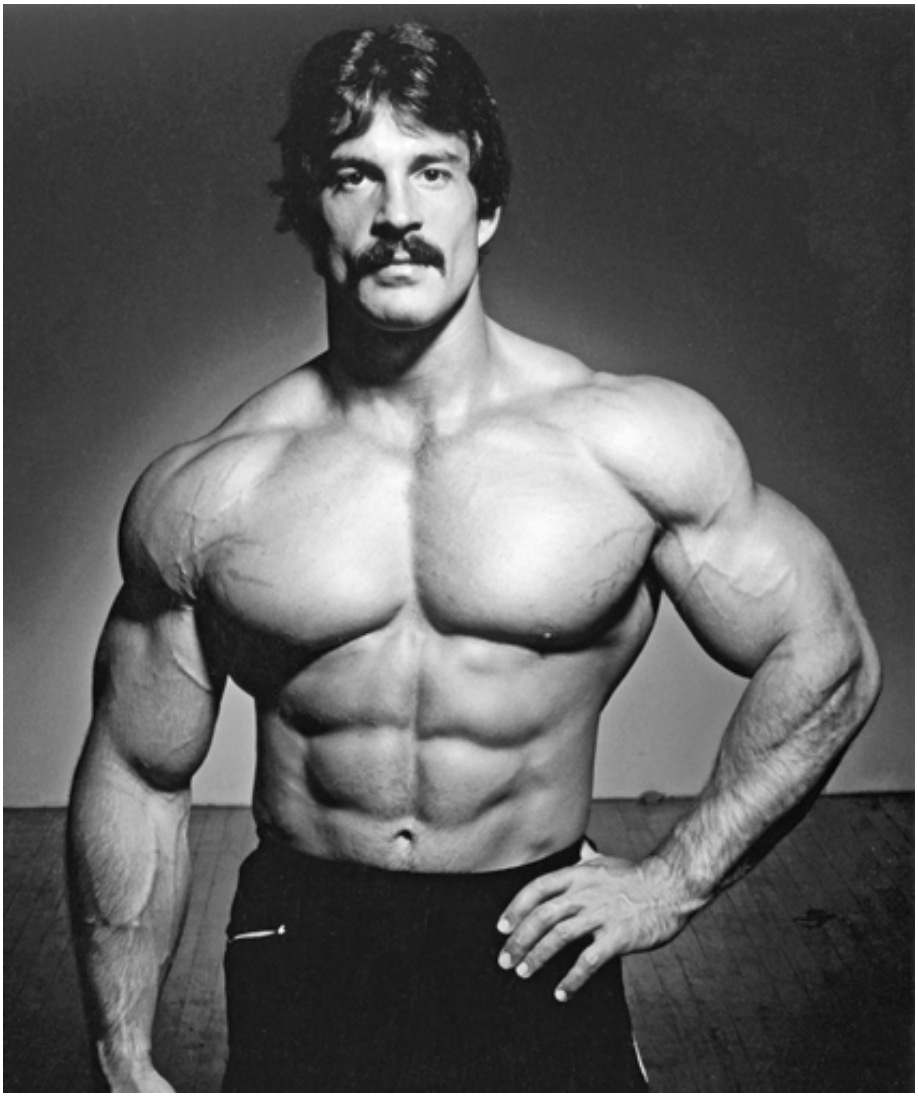
on the 70th anniversary of Mike Mentzer's birth



Michael John "Mr. Heavy Duty" Mentzer
November 15, 1951 – June 10, 2001

"*It is only within the context of having properly developed your mind that you will be able to truly enjoy the achievement of your material values, including that of a more muscular body.*" -Mike Mentzer

I make nothing from the publication of this text. With Mentzer's death, and the owner of Mentzer-Sharkey enterprises being now retired, I have no compunction, nor do I have even an iota of fear, in publishing this text, because it is done in the spirit of preserving Mike's message, which is an open and endearing appeal to objective reason within the realm of bodybuilding – a realm that, unfortunately, suffers from a dearth of objectivity and logic.

What follows is as true a transcript of Mike's spoken word as possible. However, the words of this cassette transcript are not Mike's final statements with regard to exercise, specifically high-intensity training. The interested reader would be wise to find a copy of Mike's final book, titled *High-Intensity Training the Mike Mentzer Way* (PDFs can be found online, or it can be bought outright for around twelve dollars), co-authored by the great John Little. That book, one may note, borrows a great deal of its content from these cassettes. Mike's work was constantly evolving throughout his years as a bodybuilder and personal trainer, with his later works perfecting what had been written in earlier ones. Mike's last book, *High-Intensity Training the Mike Mentzer Way,* published literal days after his death, represents his final testament regarding his greatest contribution to those who would heed him – the logical truth and pragmatic efficacy of the theory of mass muscular gain called high-intensity training.

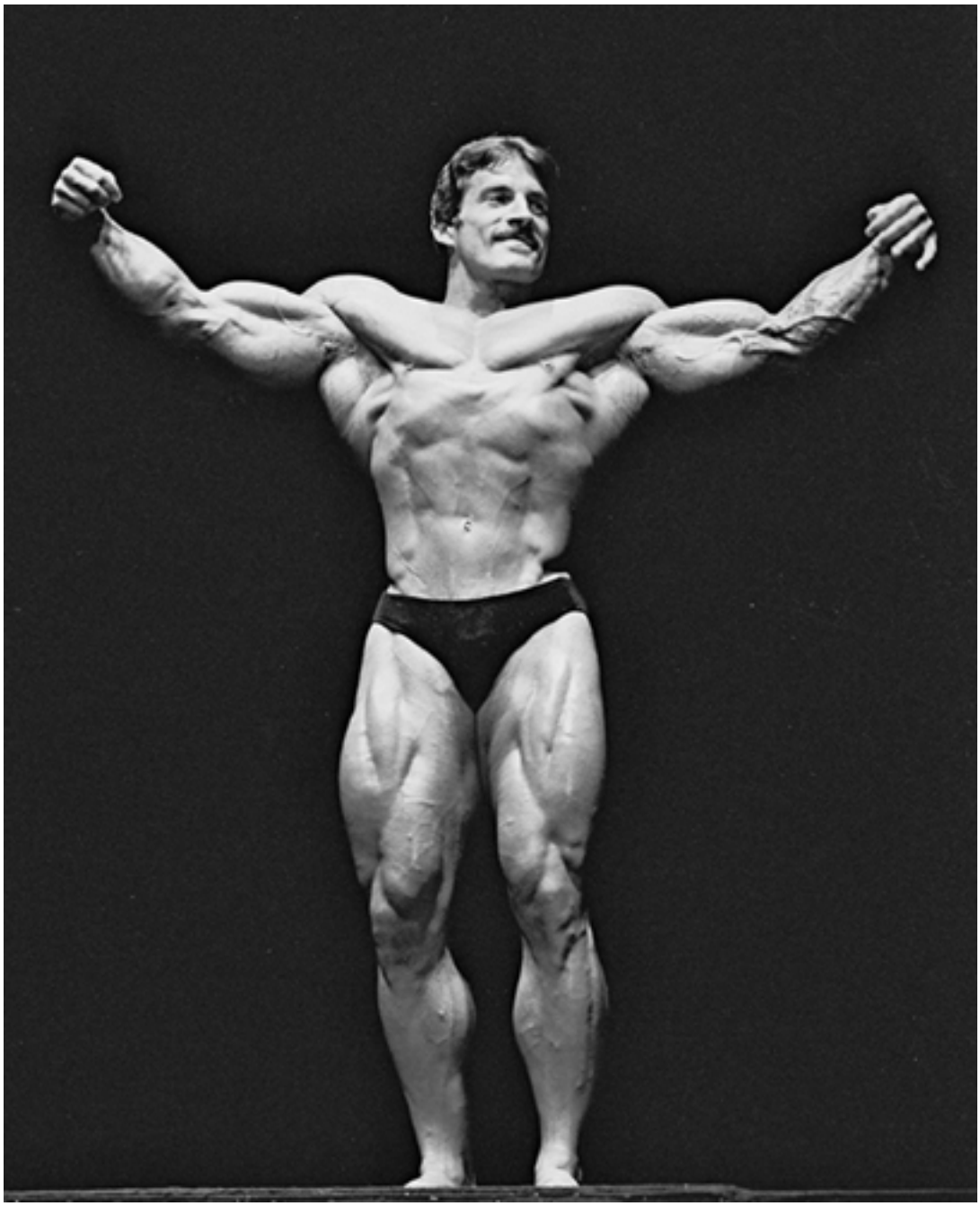
Yet Mike's wisdom, distilled over his years of dedicated and intense study, was not relegated to the practical aspects of bodybuilding alone. In the literal translation of the word, Mike was a *philosopher*: *a lover of wisdom*. Mike was brilliant beyond measure, harboring a mind which can, in truth, be said to have been honed to a point most sharp by the precise and consistent application of man's greatest faculty: his reason. Mike's scrupulous exercise of reason made itself manifest in the sharp definitions and sheer mass of his Herculean physique, the only one to have ever achieved a perfect score in the Mr. Universe contest. As John Little put it in *High-Intensity Training the Mike Mentzer Way*: "Here, finally, was the embodiment of the ancient Greek and Roman ideal of *mens sana in corpore sano*—a healthy mind in a healthy body."

This published transcription of the original cassette recording can be found on Github (https://github.com/Npoubko), or by searching for its title on The Internet Archive.

"The purpose of art… was to set man's soul on fire and never let it go out… Art...is the concretization of metaphysics (an individual's abstract estimate of man and of existence)… art is the indispensable medium for the communication of a moral ideal… This… [explains] the historical connection between art and religious morality. Men couldn't be expected to read exhaustive philosophical treatises explaining all the virtues one was expected to practice; this would represent too lengthy a chain of abstractions; too much for anyone's rational faculty to hold in focus. The function of art was to concretize these abstractions in the personification of a human *moral ideal.*

There are two fundamental ways of viewing man: Man the exalted hero, who stands noble and tall, proud of his ability and willingness to be a creative, productive innovator, or there was man the evil villain, who relied on the use of physical force to get what he wants... I would make the effort to use these abstractions that came from religion and pertained to the supernatural, and redirect their emotional counterparts to their proper place here on earth—to Man the Hero." -Mike Mentzer, *The Integrated Man*

Tape 1: The Logical Path to Successful Bodybuilding



"*The degree of one's emotion varies inversely with one's knowledge of the facts – the less you know, the hotter you get.*" -attributed to Bertrand Russell

Not infrequently, I am told by bodybuilders that they enjoy the personal fashion in which my articles and books communicate to them. My writings are meaningful to many, because in addition to dealing with limited bodybuilding issues, I also address their deepest concerns and interests. For instance, scores of bodybuilders from around the world who read my book, Heavy Duty I, have informed me that it seemed like chapter 1 entitled “Bodybuilders are Confused”, was written specifically with him in mind; that through some special power, I was able to divine what was in his soul and then make explicitly clear, what he had only kind of, sort of known or had merely sensed therefore. Each was effusively grateful for what in effect was my having lifted the veil of mystification that had enshrouded his thinking and kept him confused on the subject of how to best proceed with his training.

I accomplished this by logically identifying the nature and source of their confusion. It is this, understanding the nature and source of one's confusion, which is the first step toward resolving it. And make no mistake, confusion, self-doubt and uncertainty can be monstrously intolerable; most assuredly incompatible with self-esteem, confidence and happiness. Of course, I possess no special non-rational insight which enables me to perceive things that others do not. I have diligently trained myself to use logic, to be able to make valid philosophic, scientific identifications of the facts of reality, something that anyone with a normal intact functioning brain, and the appropriate motivation, can learn to do. Which brings me to the subject of the purpose of these audiotapes. It is not my intention to merely provide the listener with another bodybuilding program and expect you to then blindly follow it. That would not be worth much long range. Instead, my purpose is to teach you to think logically about training and nutrition so that ultimately, you'll be able to think independently about these subjects, and thus become your own trainer, your own couch and never again have to rely on the suspect opinion of others.

And how do you put a price tag on that? That would be of inestimable value, for as wonderful as it may be to have a well-developed physique, without the ability to think logically and effectively about a subject that you have been passionately committed to, you are in effect consigning yourself to living as one half of a human being: a muscular individual, who can't even think about that which is of enormous concern and interest.

An interesting side note here: it was just six years ago that I decided to undertake a study, and gain as thorough an understanding as possible, of the nature of logic. I did so to improve my thinking on all important issues, including the theory of high-intensity training. I realized that if I wanted to be better able to develop my training clients muscles, I had to further develop my mind.

In the process of learning to think logically about bodybuilding, you’ll learn something about the nature of thought itself, which can then be extended to other areas of life; and with continued effort and study, you'll soon make the delightful discovery that you've been developing your intellectual range and thereby maturing as a human being should. The practical result is that you become a more efficacious individual, with considerable dominion, or control, over his being.

Why not consecrate this moment to that goal, of not just actualizing your full muscular potential, but to the constant active expansion of your knowledge, to an ever-widening range of achievements, including the reaching of your full human statue, which can be accomplished only by learning how to think properly, logically, not merely about the best manner in which to proceed with your bodybuilding; but about all of the crucial, fundamental issues of human existence.

It was Aristotle, the discoverer of the laws of logic, the principles of thought, who said that a friend is that other person in whom one sees himself; ones values reflected in the person of another Those who find my philosophy interesting and attractive share a certain mutuality of values with me. If not always on the level of explicit, verbalized, understanding, at least in terms of subconscious, emotional or sense of life affinity. I find this encouraging as I have worked conscientiously over a span

of many years developing my philosophy, especially that aspect of most central significance: my values, which are of a positive nature.

Specifically, I value reason, objectivity, logic, knowledge, science, human progress and happiness. The reason why the world has descended to the lowest rung of Hell in man's history is because, despite the lip service paid them, such life-affirming values no longer predominate. The fact that so many bodybuilders possess a pro-mind, pro-life philosophy, or sense of life, means that there is still hope for man's long-range survival and success.

What relevance do these issues have in a tape series about bodybuilding? They are eminently relevant if you are sincerely interested in developing your body, the most vitally important aspect, of course, being the brain. Bear in mind, that bodybuilding does not exist in a vacuum apart from the rest of life; and that, as a human being, knowledge is your means of achieving your goals. So, of course, the greater your knowledge, the greater your ability to reason, the more likely you'll achieve your goals.

Lacking the rudiments of rationality necessary to critically analyze ideas, the average bodybuilder today finds himself impotently bewildered, awash in an oceanic proliferation of new theories on training and nutrition. Unable to even begin to properly evaluate or judge the flood of conflicting contradictory misinformation, most bodybuilders flounder helplessly, taking years and years to develop a physique they could have, should have, obtained in months; or allowing the flame of their passion for a more muscular physique to be extinguished, they either cease their training efforts entirely or continue going to the gym merely as a social ritual, to temporarily stave off the inevitable consequences of their refusal to think: namely, anxiety and fear.

Just a few days ago, while explaining to one of my local training clients, the reasons for working out only once every four to seven days, a man in his mid-thirties, whom I’ve seen in the gym training every day for years – and with nothing to show for it – had apparently overheard my explanation and intoned, “Mister Mentzer, what you just said about training so infrequently, sounded intelligent and logical. But if I don't train everyday, what else am I going to do with my time?”

I was astonished at such a question, as the individual obviously didn't understand that he was implicitly admitting that his life had been one enormous betrayal.

“Why, sir, I responded, I might suggest a number of things for your consideration: read a novel or a philosophy book by Ayn Rand, learn the laws of logic, translate what you had merely sensed about the nature of existence into an explicitly verbalized philosophy of life. Why, you might even study neuro-anatomy and physiology. Yes, neuro-anatomy and physiology. I'm always amazed at how much human beings take for granted their sacred existence. Or take up a trade, enroll in a class, go to the movies, take walks in the park. You might even learn about the true nature of romantic love. In short, you might seek to actualize your human stature.”

He scratched his head and said half-heartedly, “Yeah, I suppose I could find something to do.”

As a microcosm of the culture at large, the bodybuilding subculture, too, exhibits an appalling lack of respect for truth, knowledge, logic and rationality. In certain cases, so great is the distance of ideas in this field from reality, one might characterize them as reflective of a type of modern madness or schizophrenia.

For instance, the premise that there is no such thing as over-training, only under-eating. This idea represents the apotheosis of irrational thinking in this field, as it contradicts the most basic fundamental principles of bodybuilding nutritional science.

A brief logical critical analysis of this idea will reveal it immediately as a monumental absurdity: the notion that there is no such thing as over-training, only under-eating, implies that if you

will only agree to over-eat, then you can infinitely expand the limit to which you can train to stimulate the body to grow. And this simply is not true, because the supply of biochemical resources used up in the process of training to induce growth stimulation is, of course, strictly limited, and cannot be restored instantaneously, which would have to be the case for this assertion to have any merit, no matter how much or how often one eats. Therefore, the amount of training one may engage in before it becomes over-training is strictly limited. And if it were possible to infinitely extend the degree to which growth could be stimulated through the indefinite extension of training time, and of the amount of food consumed, there would already be a legion of bodybuilders whose muscular development would far exceed that of Dorian Yates, as most bodybuilders today are chronically, grossly over-trained and over-nourished.

Despite being touted as the science of modern bodybuilding, very few have engaged in any rigorous scientific thinking on the subject. In fact, the legitimate scientific medical community has long looked upon weight training rather gingerly, only recently according it a minuscule respect. The actual value of bodybuilding goes largely unnoticed because of the preponderance of low-grade mentalities controlling it. Unlike the hallowed researchers and practitioners of Western theoretical, medical science, who rightfully pride themselves on exacting, intellectual standards and noble ethical principles, too many of those involved in the sport industry of bodybuilding, and to a significant degree, exercise science, have no explicit intellectual standards; and worse, their degree of control has emboldened them such that they actually take pride in violating ethical principles with promiscuous abandon.

Unfortunately, too many of the self-styled experts in this field not only fail to make a nominal effort to stay apprised of the latest state-of-the-art knowledge, they actively evade such knowledge and even work diligently to suppress valid ideas that would help people to achieve greater progress, as well as to protect their health. Sheer innocent ignorance is one thing, but the conscious evasion and willful suppression of life-enhancing knowledge is another. The motive of such people is the irrational desire to project and protect an image of incontestable superiority and omniscient infallibility. Such only serves, of course, to make them look ridiculously pathetic, and to pose a threat to the young and innocent, who are apt to be duped by the crude sophistry of these not so big big-shots.

When someone establishes himself as an authority in bodybuilding or nutrition, or any other arena involving human well-being, that individual has an enormous ethical responsibility to do everything within his power to keep abreast of the latest word in human thought, in that field. So there is absolutely no excuse for the bodybuilding orthodoxy, after 50 years, to continue promulgating the notion that more is better; advocating that bodybuilders train for hours a day, 6 days a week.

This I submit... really obscene, as the dangers of over-training have been described and well-documented for decades. My goodness, the issue is human well-being. What does it take to make some people indignant? While those I just described should be censored heavily, they are instead among the most successful in this industry.

Some may recall from my book, Heavy Duty I, that just as there are those individuals who do not tolerate exposure to high-intensity sunlight stress, as well as others, with albinos, Scandinavians and light skin people at the far left end of the continuum, and dark skin types and Negroes at the other, so there exists a similar situation with regard to individual exercise stress tolerance, with those who don't tolerate exercise stress well at one extreme, and those who do at the other.

To advocate that all bodybuilders, or any for that matter, should train for hours a day is like suggesting that everyone, without regard for genetic considerations, should expose themselves to the intense summer sunlight at the equator for two hours. And when I speak of the dangers of over-training, it is not merely that over-training is counterproductive and that it hampers your training

progress, it may be life-threatening, as the recent research of Dr. Kenneth Cooper indicates. This is not so difficult to understand, when you consider that intense weight training is a form of stress on the human physiology; and who has to be reminded that we are all rather delicate and vulnerable as living organisms.

It only stands to reason that chronic, gross overtraining could inordinately tax the overall physical system and possibly result in a breakdown, where there might be a weak link such as the glandular system. Dr. Cooper, in fact, attributes the lymph cancer of Lemieux, the hockey great, as well as that of Marty Liquori, the distance Runner, to over-training.

While the science of productive bodybuilding exercise is not infinitely complex, there's considerably more to it than the childlike simplistic notion that “more is better”. As children, many gain the notion that more jelly beans are better than less, then carry that unchecked, unchallenged premise through life, and misapply it to many subjects, such as bodybuilding science. In fact, if you reflect for a moment, you'll realize that the “more is better” jelly bean premise is wrong too. Beyond a definite, limited point, jelly beans make you sick, fat and may cause dental problems. The premise “more is better” is actually an ethical economic principle: i.e., more money, more knowledge, more values are better than less.

One cannot take a principal from ethics or economics and apply it blindly to another context, such as bodybuilding, and expect any meaningful results. The premise “more is better” means precisely that: “more is better” means “more is better”. Look at the implicit logic, listener. There is a building guarantee: if twenty sets are good, forty sets are even better, and eighty sets better still. You can't lose: the more exercise you perform, the better your progress. Again, it’s a building guarantee. So why not just take off of work for three months, train eighteen hours a day and you'll reach Mr. Olympia caliber.

You see now how useful logic is: it is man's method of gaining knowledge, which is again, his means of survival, and is therefore that of most fundamental importance in human life. Man is not an instinctual creature. Instincts are a form of knowledge that are hardwired into animals and therefore guide them automatically and unerringly. Man is a conceptual being, who gains and uses knowledge only by a volitional cognitive effort. And it is because one must exercise his power-of-choice, exert a specific effort of will to initiate and sustain a process of thought, that many don't do it. They apparently find the effort involved too much or not to their liking. Having been brought up in an anti-rational culture, many are not taught to value logic, and thus never achieve intellectual self-sufficiency, i.e., the ability to think rationally and to judge independently. They have uncritically accepted faith as a means of knowledge, and faith is the antithesis of reason. It is the blind acceptance of ideas for which there is no rational proof, or sensory evidence; and they were taught to “judge not”, or the secular version, to “keep an open mind”.

The idea that one should not judge or that he should keep an open mind is very dangerous. It is used to keep people confused, by suggesting it is a virtue to grant plausibility to anything. Obviously not everything can be true. Instead, one should cultivate an active mind, one that treats ideas critically, seeking to distinguish truth from falsehood.

The approach of most bodybuilders to training, from the start, amounts to little more than a blind leap into the dark. Throughout life, we all encounter innumerable theories... subject from religion to philosophy, to politics to the healing arts, nutrition and bodybuilding science. And because so few in our culture were taught to think rationally, or to judge critically, most are left disconcertingly confused when confronted with the necessity of making intellectual choices, such as which training theory to employ.

I realize that I was like this when I reached my late teens. Most symptomatic was my notion that if something was printed, it had to be true. I learned later that my notion was illogical, of course; not every idea can be true, since so many of them conflict with, and contradict, other ideas. It was Arthur Jones who divested me of this bit of ragtag illogic when he barked, “Mike, just because something is printed doesn't mean it's true. In fact, 90% of what is printed on all subjects is outright hogwash.” And now some 25 years, considerable thought, study and experience, later, I realized Mr. Jones was being charitable: it's more like, 98% of what is printed on most subjects is garbage. Understanding this is an important first step in developing one's critical ability.

The purpose of my writing and communications with others, in addition to providing rational training guidance, is to help achieve an ideal society by a cultural revolution that will bring men back to reason and logic, the only means of solving the problems threatening our very survival. Wouldn't it be interesting if bodybuilders, so often thought of as mindless, were instrumental in helping save the world? But why not? After all it was the ancient Greeks, who lived not in a dark age as we are today, but a golden age which exalted the power of man's mind, yet simultaneously idealized the beauty of the human body. Many may recall that the orienting principle of their philosophy was “a healthy mind in a healthy body”. If more bodybuilders would simply re-appropriate some of their teeming passion to the mind, philosophy and logic, they could literally be instrumental in helping to save, or at least redirect the world on to a more rational course.

The majority of those listening have heard of the Greek dictum, “a healthy mind in a healthy body”, which fact played a part in the naming of my new book, Heavy Duty II: Mind and Body. As stated previously, man is not an instinctual creature, but a conceptual being. The power or health of an individual man's mind is directly proportional to his conceptual range, i.e., the number of concepts his mind has integrated, how well he understands their exact meaning, and the number of logical connections he has made among them.

As a human being, you have no choice as to whether you need a conceptual grasp of reality, that is, a philosophy. To quote Ayn Rand on this matter: “Your only choice is whether you define your philosophy by a conscious, rational, disciplined process of thought, and scrupulously logical deliberation, or let your subconscious accumulate a junk heap of unwarranted conclusions, false generalizations, undefined contradictions, undigested slogans, unidentified doubts, wishes and fears, thrown together by chance, but integrated by your subconscious into a kind of mongrel philosophy, and fused into a single solid weight. Self-doubt like a ball and chain, where your mind’s wings of confidence should have grown.” Close quote.

The purpose of a proper study of philosophy is to gain a fully defined and consistent view of life, based on a clear, first-hand, understanding of objective principles. A firm intellectual grasp of objective principles is an absolute requirement to learn to think and judge independently, and thereby enable one to achieve rational goals. The most important principle one need grasp to achieve dominion over his being and to achieve his goals, whether he desires to develop a larger muscles, a successful business, or a happy marriage is the law of causality, or cause and effect. It was philosophy’s discovery and explicit statement of the law of causality that provided man with the intellectual base that made for the vast superiority of Western culture and its control over reality, as expressed through the achievements of mathematics, medicine, physics, engineering and all other sciences.

The law of causality states that an entity can act only in accord with its own nature and cannot act otherwise; or, a rock cannot fly, a muscle cannot grow without the imposition of the requisite stimulus and man cannot properly exist as anything other than man, i.e., the rational animal. Those who do not possess an explicit understanding of philosophic fundamentals, such as cause and effect, have a very difficult time achieving their goals. Lacking aware of the role of fundamental principles in guiding

one's life, they are for the most part emotionally-driven instead of conceptually-directed, they seem to operate on the fuzzy notion that if their mere desire to achieve a goal is strong enough, such will suffice; and having never made it a policy to check for inappropriate mental habits, they semi-consciously resort to the unchallenged premise “more is better”. If stated in words, their attitude would be, “I want big muscles so badly, if I persevere, and go to the gym religiously for hours every day, eventually I’ll achieve my goal. After all, everything I’ve read and heard in the culture suggests that if I'm relentless, if I remain a slave to my art through sheer dint of unrelenting effort, I must succeed.”

Well, the joke is on them; how pathetically wrong they are. We live in a reality, that is an objective absolute. It is reality and its laws – the laws of nature – which dictate what causes must be enacted to effect the development of a rational mind, the development of a suntan or the development of muscles beyond normal levels. Neither a wish, a whim, a hope or dream is sufficient to cause a muscle mass increase; neither is the application of a false idea or theory, blindly accepted.

This is the end of side one. Please turn over the tape at this point, to continue with side two.

A person exposed to the sun's ultraviolet rays, at the equator in summer, would have no slightest concern that the intensity of the stress would be high enough to threaten the physiology sufficiently as to cause an adaptive response: a suntan. While the imposition of a high-intensity sunlight stress is the primary causal determinant, or first necessary cause, it would not be sufficient cause to effect the development of an optimal suntan. The suntanner's primary concern, his overriding consideration, would be related to secondary and tertiary causes, the proper regulation of the volume and frequency of the exposure time, so as not to overdose on the stress stimulus and incur a sunburn or in extreme cases, death

A person exposed to high-intensity sunlight stress does not fret as to whether he'll succeed in achieving his goal, an optimal suntan, but only so long as he doesn't overexpose. Bodybuilders, utilizing the blind, not theoretical, volume approach to training, do fret continuously over the prospect of ever developing their muscles because they know absolutely nothing about the nature of the causes required to affect the development of muscles beyond normal levels. They are completely ignorant of the first cause required by nature: training to failure to stimulate the body's growth mechanism into motion, and they remain solely concerned with volume and frequency. Unlike the suntanner, however, who is rationally concerned with the proper regulation of the exposure of the sunlight stress, the bodybuilder has an irrational obsession with over-imposing the training stress.

The theory of suntanning, by the way, is essentially the same as the theory of muscle-building, both of which derive from the theory of stress physiology.

Recently, one of my phone clients expressed considerable astonishment, that he was able to make so much uninterrupted progress with heavy duty, high-intensity training; and I explained to him that such should not be a surprise, that there's no mystery to any of this, that people have been growing larger muscles for thousands of years, that we live in a knowable, rational universe of absolute clear-cut identity, guided by one set of never-changing principles, and that the cause-effect relationship between intense exercise and muscle growth has been understood for quite some time, even though the vast majority of self-styled experts here don't seem to grasp it. I concluded by explaining to this individual that it is reality and its laws, the laws of nature, that dictate what causes must be enacted to effect the buildup of muscle mass beyond normal levels; and that once these causes are understood, the task of building bigger muscles, while requiring high-intensity effort, is actually rather simple. With a proper understanding of the law of causality, bodybuilding progress should be, will be, immediate, continuous and nothing short of spectacular, through to the full actualization of one's muscular potential, in one year or less. That's right: it is possible to actualize your full muscular potential in one year or less.

While anyone should be able to actualize his muscular potential in one year, no one can guarantee exactly what his potential is, as the prime determinant of bodybuilding success is genetics. And although the subject of genetics, or inherited characteristics, is widely recognized as of central importance in bodybuilding and athletics, it is rarely understood. Individuals inherit characteristics peculiar to their parents, and not common to the species, examples of which are height, eye color, blood type and body type. These are referred to as fixed genetic traits, and thus not typically subject to alteration from exogenous influences. There do exist other inherited traits, however, such as intelligence and muscle size, that are not absolutely fixed, and can be progressively altered, although within a genetically prescribed range.

Along with specific psychological motivational factors that the individual must possess, or acquire, in order to achieve his goals... is the primary factor, determining both the rate of response to intense exercise, and the degree of muscular development. So, while anyone can improve upon his level of muscular development, with proper training and nutrition, only a small percentage will possess the requisite genetic traits to become champions. The most visible of the physical characteristics necessary for the development of a top physique is related to the skeletal structure. The formation of the bones dictates not only how much muscle can be supported, they also determine a significant aspect of the aesthetic quality of the physique.

Though the size of the skeleton… in how much muscle can be supported, the actual size potential of a muscle is determined to a significant extent by it's length. Skeletal considerations and muscle belly length, however, are only two inherited characteristics which affect physique potential, and were discussed briefly here, merely to introduce the listener to the subject. There are numerous others, including muscle fiber density and recovery ability, an elaboration of which is beyond the scope of this work. For those interested in more information on the role of genetics, I suggest you refer to my book, Heavy Duty I.

I am often amazed by the Sisyphean efforts of bodybuilders who are willing to train for hours a day, every day for months and years with literally little or nothing to show for their efforts. It is almost as if they're waiting for a zap out of the mystical realm of whims, wishes and hopes to one day deliver them their much-dreamed-of muscles.

If you are such an individual: wake up and stop wasting your time. If your present program hasn't been yielding progress for weeks, let alone months or years, it isn't going to start doing so tomorrow. Presumably your life is sacred and the achievement of your goals is of great value of significance. It is important, having set a goal, that you successfully achieve it, as the implications to your confidence, happiness and self-esteem are crucial.

With a properly conducted heavy duty, high-intensity training program, you will grow stronger and larger literally every workout, until you reach the upper limits of your muscular potential. Yes, as I've already stated, in one year or less. Given your present state of knowledge, such may seem impossible. But remember, it wasn't all that long ago that the Great American unwashed thought we'd never get to the moon. "Impossible," they said. Of course, without any knowledge of the scientific principles of cosmology or astrophysics, reaching the moon might seem like an insurmountable task. And without the knowledge of the scientific principles of high-intensity, anaerobic, exercise stress physiology, yes, the idea that you can actualize your muscular potential in one year or less would seem impossible. Let me remind you that man has not only been to the moon, but he has gone and returned safely many times. Sending a man to the Moon is an enormously complex task, or goal, requiring the application of theoretical knowledge from a constellation of intellectual disciplines, including mathematics, physics, medicine, biology, physiology, electronics, engineering, computer technology, to name a few. If we can send a man to the moon and return him safely, every time, we should be able to

succeed with every one of our missions to the gym here on Earth. In fact, it should be a cakewalk compared to a moonwalk.

Another reason, in addition to my logical identifications of the facts of reality, why I'm able to communicate on a meaningful level with bodybuilders is quite simply because I am a bodybuilder myself. Many of the hopes dreams, doubts, and fears you may have experienced as a bodybuilder, I've experienced too. So, while it is true that we are all unique as individuals, each in possession of an unrepeatable, irreplaceable personality, it is also true that as human beings, we share many things.

This brings to mind another statement from Arthur Jones, the man who taught me not only much of considerable value about the nature of exercise, but also about thinking and human beings. On the subject of shared experiences and issues, Mr. Jones said, "Mike, if you want to understand others, merely look inside of yourself." Mr. Jones' concept has served me very well over the years as a type of orienting principle with regard to my writing. When searching for a subject or issue to serve as a topic for an article, I would merely invoke Jones' dictum, and ask myself, "Okay, look inside of yourself with regards to this matter, identify and isolate what you find most relevant, interesting and exciting as both a bodybuilder and a human being, and others will find it likewise."

Those shared matters are referred to philosophically as fundamental issues. A fundamental issue, dear listener, is one that pertains to all members of the species, an inescapable part of human existence. Examples of fundamental issues are: is the world knowable or is it mysterious and unknowable? Are reason and logic man's sole means of gaining knowledge, or are emotions superior means of cognition? Is man a rational, efficacious being, capable of success and happiness, or is he a congenital incompetent, doomed to perpetual doubt and despair? Is the struggle to gain knowledge and learn how to think for myself worth it, or is obeying and pleasing others more important. Should I possibly accept the dominant culture's values? Or should I look outside the culture to the grand scale context of the history of ideas for something better?

Whether one should work to develop a more muscular body is not fundamental, for the issue does not inevitably arise in the course of normal human life. What is fundamental, is whether it is proper to strive for goals at all. And as a title winner, I'd be the last to suggest that developing a more muscular physique is not a worthy goal. A muscular physique, however, is not a viable substitute for a mature mind, that is, a mind with a conceptual grasp and intellectual understanding of the fundamental issues of human life. While you are free, dear listener, to evade the effort and responsibility required to learn how to think and judge independently, and thus deal successfully with that which is of most fundamental importance of human life, you are not free to evade the consequences. No, big muscles do not… confer a halo onto your crown or provide one with intellectual confidence and self-esteem. I have known a number of top bodybuilders, men of extraordinary muscular development, who suffered from profound lack of self-esteem; who, despite all their trophies, and the public adulation, were riddled with self-doubt, and beset by psychological conflicts they had no slightest clue how to resolve.

None of this was the result of a deficient or malfunctioning brain; no, they were intellectually self-arrested. Each had apparently decided at an early age that he had learned enough. One of them was a bodybuilder of the absolute first rank, who despite being well-known for his massive development, was plagued by chronic doubt as how to proceed with his training, and marred by a number of serious character flaws. While training at Gold's Gym, where I conducted my personal training business, this individual befriended one of my clients, a rank beginner with no muscle to speak of. I was surprised to learn later that the heavily-muscled champ had called my client on a number of occasions, once at 3 in the morning, to ask if there was really any merit to this heavy duty, high-intensity training, and whether or not he should forsake the volume approach, and give it a try.

Many make the unwarranted assumption that the top bodybuilding champs must be experts on the subject of exercise; after all, they have the muscles. It is a mistake, however: one cannot cite the apparent success of a couple of dozen of top bodybuilders as indubitable proof that a certain training approach is effective or superior. If one were to look back through the course of their training careers, and calculate the hours, months, and even years of wasted effort, time during which they made no progress, one would have to question whether their achievement could properly be termed success at all.

You'd conclude by scratching your head and wondering, "Didn't these men have anything better to do with their time?"; and many apparently did not. The champ mentioned above for instance, never gave much time to thinking about his moral character and its development. I can clearly recall a couple of instances in Gold's Gym where this imposing giant of muscle used his greater size to intimidate others of lesser physical stature, once because a person accidentally got in his way while walking to the water fountain for a drink between sets.

And I know from an unimpeachable source that there were those who helped this individual financially, to get his business started (their largess was motivated by sheer benevolence and goodwill) yet were never paid back. It was also widely rumored that he regularly beat up his girlfriends when they didn't wait on him hand and foot precisely as he pleased, which may or may not be true. Obviously, the point is big muscles are not the measure of a man.

As much as these tapes are about the human body and its improvement, they are also about the mind and its improvement. Why would an audio tape series on bodybuilding also be about the mind? Because human intelligence, of course, is what makes it possible to understand anything at all, including exercise, bodybuilding science, and that which is most interesting; and that, of course, is us. We, the members of the species, man; the Divine spark in the great chain of being, the highest of all living species on Earth.

It has been averred all too often that body builders are dumb, or stupid, which simply isn't true, as evidenced by the number of phone calls I receive from intelligent bodybuilders everyday. These include people from all walks of life, such as medical doctors, lawyers, physicists, stockbrokers, students and tradesmen, all who happen to be bodybuilders as well.

I will not talk down on the assumption that the listener so lacks intellectual depth that he is incapable of exercising the mental effort required to integrate knowledge of a higher order; nor will I insult your intelligence by expecting you to accept anything I say simply because I've won a few bodybuilding contests. It is only on the basis of grasping the logical truth of an argument, that one should agree.

I will not bore you with the type of intellectual pabulum, or garbage, you've read so often in some of the muscle magazines. In case you hadn't noticed, the vast majority of articles written on the subject of training consist of little more than a series of arbitrary, out-of-context, Biblical-like commandments: thou shalt perform four sets of this exercise, and thou shalt perform five sets of that one. Why? Blank out, no reason, no logic.

The realm of the intellect is more demanding than the average bodybuilding writer recognizes. And that formulating a valid, non-contradictory theory of training requires knowledge of the nature of human physiology, as well as knowledge of the nature of man's mind, and his method of using it: logic. A mere passionate discharge of the arbitrary contents of one's subconscious onto a piece of paper is just that: intellectual vomitus.

As a man of reason, I act only on the basis of understanding the reasons for doing something, as all mature adults should; and that is what these tapes are about. A reasoned, principled approach to bodybuilding, one that can be learned by anyone willing to exercise the required mental effort.

I presume, after all, that you purchased these tapes because of your enthusiastic desire to be a successful bodybuilder, whether to actualize your muscular potential for personal reasons, or to be Mr. New England, Mr. Midwest or Mr. Olympia; and that you already understand that the basis of a rational approach to bodybuilding, or any other arena of endeavor, is the recognition that only the specific appropriate knowledge can lead one to engage in the purposeful action required to achieve a goal. No, the material on these tapes is not infinitely complex; but it's not intellectual pabulum either.

Why not cast aside all other concerns for now. Get intense mentally, focus on the logic of my ideas and once and for all clear up any and all confusion, then you will be able to proceed with the greatest power possible to a human being: the power of certainty.

It only stands to reason that a serious bodybuilder should want to know that the ideas guiding his training efforts are true ideas. And how will he ever come to distinguish true ideas from false ideas unless he learns something about the nature of ideas, or knowledge? To settle for anything less than certainty about the truth of the ideas guiding you in the pursuit of your life’s goals is to abdicate your most fundamental responsibility as a human being and leave your life literally to chance.

I entered into a personal Renaissance of my own, once I began a serious, formal study of philosophy, and learned something about the nature of knowledge. I learned that knowledge, like everything else that exists, has identity, a nature.

Human knowledge is hierarchical in structure. It has a foundation, or base, consisting of fundamental principles, which must first be grasped before one may move upward in logical progression, to more complex derivative knowledge. This may be most readily observed in mathematics, where the fundamentals are addition, subtraction, multiplication and division. It is only on the basis of having grasped these fundamentals that one may move up the logical hierarchy to derivative aspects such as algebra and calculus. Algebra and calculus, in other words, are logically based on and derived from an understanding of the fundamentals.

There does exist a viable intellectual discipline, exercise science. On tape number 2, I will explain the logically interdependent hierarchy of ideas that make the context of bodybuilding science. Again, so that you may learn to think logically about the subject, and go on to confidently and successfully achieve your bodybuilding goals.

Before concluding, however, I'm going to address one important issue which will serve as a direct prelude to the material on tape two; and it has to do with the near-universal confusion that exists with regard to the fact that there can only be one valid theory of proper productive bodybuilding exercise, or any other subject. This confusion is centrally responsible for most of the failures in bodybuilding, and I can tell you unequivocally, without a doubt, more fail to achieve their bodybuilding goals than succeed.

Most bodybuilders make the mistake of approaching the subject of training with the idea that all training theories have some merit, or are of equal validity, then they waste precious, precious time frantically trying one after the other, in the hope that someday, somehow, some way, they'll find one that works; and as a result few bodybuilders achieve their goals.

It could not possibly be true that all, or many, or even two training theories are valid. Since a theory is a set of abstract principles, which purports to be either a correct description of some aspect of reality and/or a guide for successful human action – and there is only one reality – there is and can be

therefore only one valid theory of any aspect of reality. There's no debate on the subject, just as there is only one valid theory of epistemology, mathematics, electricity, chemistry, physics, evolution, relativity; likewise, there is but one true theory of productive bodybuilding exercise; and it just so happens to be the theory of high-intensity training.

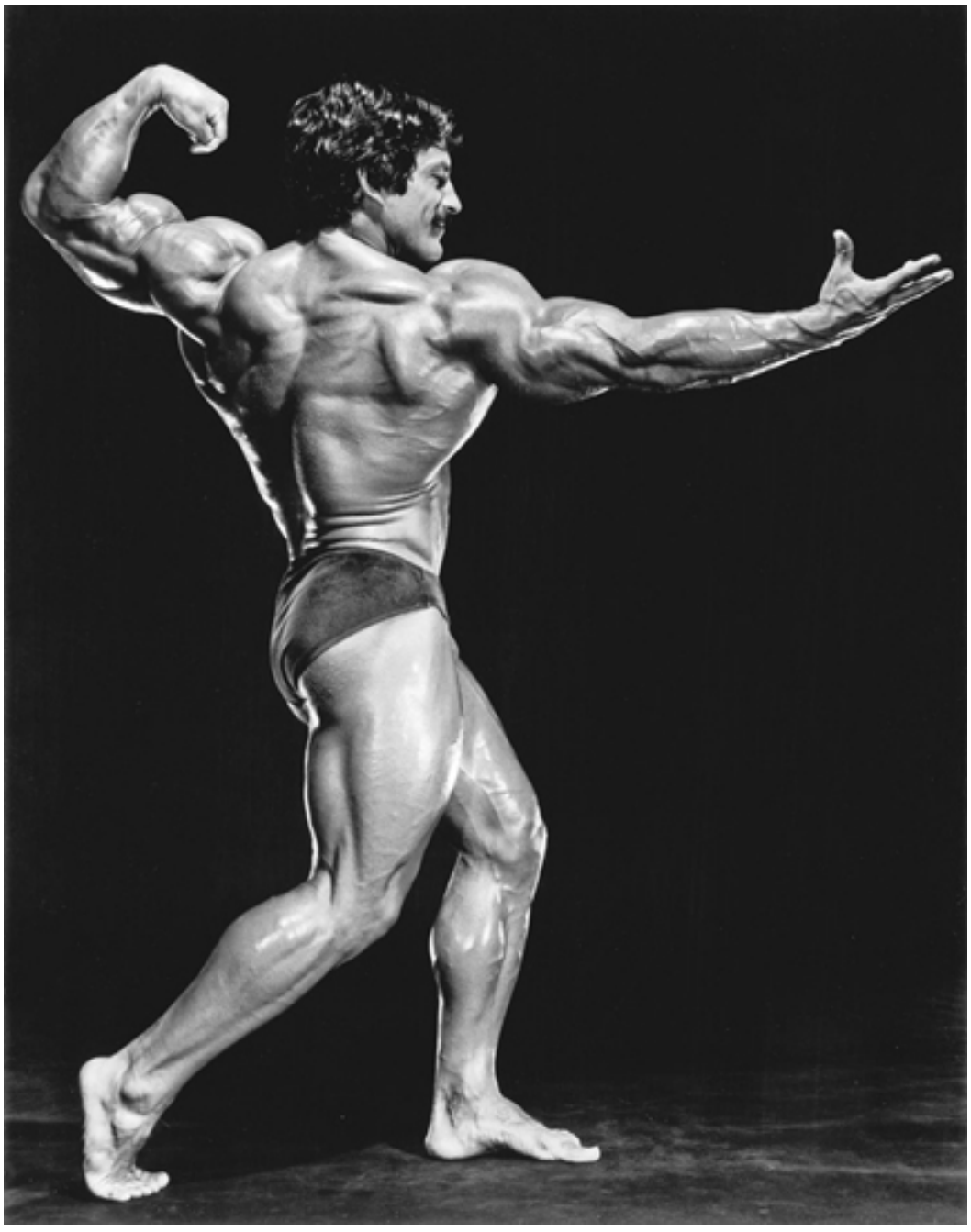
The science of exercise, like the science of medicine, is based on an understanding of the principles of human physiology, which of course are universal, that is, applicable to all human beings. If everyone’s cells, muscles and organs were constituted and functioned differently; if everyone was a unique physiologic entity unto himself, medical science could not exist as a viable discipline, doctors couldn't make diagnoses, perform surgeries or dispense medicine. It is this fact, the fact that the principles of human physiology are universal, that makes it possible for me to state with absolute certainty, there is only one valid theory of training, i.e., one best way to train. It is not my mere opinion that every human being requires intense training to stimulate growth, it is a well-authenticated fact beyond debate. And because the magnitude of the toll on the body's limited recovery ability, made by high-intensity training is enormous, such training must be brief and infrequent to allow for the production of an increase.

The major philosophic theme of these tapes is that without a firm, intellectual grasp of, and guidance by, a valid theory, one cannot be certain he is on the right course. A sane individual setting out on a trip from Los Angeles to New York will consult a map, a map being a theory of how to get from one place to another. Without it, he would get lost, lose whatever certainty and motivation he may have had, and terminate his effort along the way. Knowledge, like any other value, has to be gained through a volitional effort. Anyone smart enough to learn the ABCs, write a sentence or read a book can, with enough effort, integrate and make use of the knowledge contained on these tapes.

It's not likely that you'll get it on the first listening, however, so listen to the tapes repeatedly, until you do have a firm grasp.

This is the end of tape one. Please go on to tape two: The Fundamentals of Muscular Development.

Tape 2: Fundamentals of Muscular Development



"… the majority of men delude themselves with what seems to be rather than with what actually is…" - Niccolo Machiavelli, *Discourses on Livy,* Book 1, Chapter 25

Most bodybuilders make a basic mistake, which from one perspective it might be said that this mistake accounts for all of their other mistakes; and it is that they don't take this goal endeavor seriously enough, at least to remember one crucial point: that bodybuilding really is a part of exercise science.

I am not suggesting that one must be a full-fledged exercise scientist, or a PhD in exercise physiology, to be a successful bodybuilder, of course not. It would argue one of education, however, to deny that a firm grasp of the fundamental principles of bodybuilding science would be to the individuals decided advantage. The first thing one learns when studying exercise science formally in college is something that many already know, or are at least familiar with, and it is that the field of exercise science is divided into two fundamentally distinct branches, mainly aerobic and anaerobic. While there may be those listening that probably already know some of this preliminary material, let it be known that I am not merely going through a perfunctory review here to eat up time. These basic points are being raised so that I'm certain you have them clear and clean in your mind, then I will connect them to new ideas in the attempt to create a logically clear perspective.

Aerobic exercise, of course, is geared exclusively to the development of endurance of a certain type and is properly defined as low-intensity, long-duration activity. This last statement, listener, is very important, you might make a note. I'll repeat it: aerobic exercise is properly defined as low-intensity, long-duration activity.

Bodybuilding is a part of the opposite branch, anaerobic, and that is vitally important also, so, please, write it down; the fact that aerobic and anaerobic are to be regarded as opposites, and I'll elaborate on why that's important shortly. Anaerobic exercise is not geared ordinarily to the development of endurance, although there is something called anaerobic endurance which is not relevant here. Instead, anaerobic exercise is geared to the development of strength, muscular size and speed, and is properly defined as high-intensity, short-duration, activity; high-intensity, short-duration activity. It is this, precisely this, high-intensity, short-duration activity that is responsible for the development of muscles beyond normal size. Not long, drawn-out, bouts of endurance type activity.

One of the major reasons so many people are having difficulty grasping what I have been communicating on this subject, is if they have failed to take the time, give some serious thought and adequately distinguish between the two species of exercise, aerobic and anaerobic, remember they are literally opposites and have to be regarded thusly. Where it may be appropriate to train aerobically, three times a week for up to an hour or more, as the goal is to increase one's endurance, which means the capacity to do more and more work, such is not proper with the opposite, anaerobic, precisely because it is the opposite. They are opposites, with opposite approaches for each, required.

My greatest success as a trainer involves a young phone consultation client from Canada by the name Gareth. An interesting name, Gareth. During one of his follow-up phone calls, I nicknamed him Growth, as he recently, in a nine week period, gained literally fifty pounds, mostly of muscle. This fine young man has been a regular phone client for two straight years, and while Gareth, or Growth, has always made good progress, never until recently of the order just described. Whereas, in the past, he would train once every 72 to 144 hours, or once every three to five days, for thirty to forty minutes, Gareth made his greatest progress by far, training for approximately twenty minutes, once every seven days.

Gareth is so excited by his progress, as well as by his better and more relaxed understanding of the issue of training frequency, that he agreed to do an experiment where he trains only once every 10 days. If you are incredulous, listener, that such progress is possible, then you have already forgotten that aerobic and anaerobic are opposite. We are beginning to see that where again, it may be appropriate to train aerobically, where the physiologic stresses are quite low, for three or four times a week, for an hour or more, that with high-intensity, anaerobic, weight resistance exercise, where the

stresses are literally almost infinitely greater only, three to six workouts a month for fifteen to twenty minutes each proves most productive.

When I stated that the stresses involved with high-intensity, anaerobic exercise are infinitely greater than the stresses associated with aerobic exercise, I meant it literally. While an individual in good physical condition can tolerate aerobic exercise for up to an hour with little distress, project how you might feel, listener, were you to attempt one hour of non-stop maximum, heavy squatting. Yes, you may even be chuckling, the mind balks at the mere suggestion. No one could tolerate that; the high-intensity stress would kill him well before an hour had elapsed.

Occasionally, when I sign up a new training client locally in Venice, California where I conduct my personal training business, the client, by the end of the first workout, will look at his watch and remark, “Well, Mister Mentzer, that was only twenty minutes. I feel like I can do a lot more.” And my stock reply to such has become, “Well, sir, if I'm to take your statement at face value, I would have it that you’d like to have me train you until you can't do anymore, and you have to leave the gym in an ambulance.” The point here is that many bodybuilders have lodged in their subconscious, the mistaken notion that bodybuilding exercise involves an endurance component – which it does not. Bodybuilding, as I stated earlier, has little or nothing to do with endurance.

Many bodybuilders today, still seem to be operating on the notion that their purpose is to go into the gym to see how many sets they can do, or discover how long they can endure. And this is erroneous, because bodybuilding is not aerobic. A bodybuilding workout, in other words, is not an endurance contest. Your purpose is not to go into the gym to see how tough you are, how much work you can perform or how long you can endure. Your actual, literal purpose as a bodybuilder is to go into the gym and intelligently do what nature requires to trigger the growth mechanism into motion, then get the hell out, go home, rest and grow. So what if your workouts only take twenty minutes – so what? Bodybuilding training literally has nothing to do with endurance.

I make a point in my new book, Heavy Duty II: Mind and Body, which I am quite proud of, as I don't believe anyone has ever established this point before, at least not so thoroughly or firmly, and it is that the principle of intensity is not merely important, it is much more than that. It is the cardinal, fundamental of exercise science, the intellectual foundation of the whole field. That's correct, not merely important, but the intellectual foundation of all of exercise science. How do I justify such a bold statement? Well, let's look back to the definitions of the two basic branches, which make up the whole of exercise science: aerobic and anaerobic. They are both defined primarily in terms of intensity: aerobic as low-intensity, anaerobic, high-intensity.

And that's the point: if the two basic branches which make up a field of exercise science are defined primarily in terms of intensity, then intensity is the cardinal element. You may have noticed that more and more writers in the bodybuilding field have been using the term intensity as of late, but very few use it properly. Let it be made clear that the term high-intensity is not one that I concocted to sound pretentious or falsely technical. It is the proper scientific terminology. In fact, the terms high-intensity and anaerobic can be used interchangeably. Exercise scientists who deny the validity of high-intensity training theory either forgot, or never were aware in the first place, that high-intensity and anaerobic are essentially the same thing.

Intensity, you see, is a measure of effort and what is exercise, essentially, about? Efforts of various types. Without a method for measuring the level of effort, one doesn't know what is most centrally important about the nature of the training stress or stimulus, and therefore, he won't know how to regulate the volume or frequency of the effort to ensure optimal results from the exercise. This is fundamentally what exercise bodybuilding science is about. When it is understood that the level of effort, or intensity, is low, then we also know that the demands on the body's limited reserve of

biochemical resources, known as recovery ability, are also low, and obviously more of that exercise can be tolerated in the way of both volume and frequency. When one is clearly aware on the other hand, that the level of effort is very high, then we know that the demands are high and the volume and frequency must be low.

Something I learned a number of years ago while studying philosophy and logic, which has helped to improve the quality of my thinking enormously, relates to the crucial role of unequivocal or precise definition. Concepts, of course, are the tools of thought. If the major concepts involved in one's thinking aren't held in clearly defined form. then his thinking will not be clear or logical either.

What I would like to do now, listener, is give you the precise meaning of the concept, intensity, as an important step towards teaching you to think logically about the subject of exercise; not the concept high-intensity or low-intensity, but the concept intensity. Please write this down.

Intensity refers to the percentage of possible, momentary muscular effort being exerted. I'll say it again: intensity refers to the percentage of possible, momentary muscular effort being exerted.

In philosophy, such a definition would be regarded as highly abstract or technical, which may be difficult to grasp. I'll repeat it one last time: intensity refers to the percentage of possible, momentary muscular effort being exerted.

I clearly recall the first time I read that definition about twenty-five years ago. I hadn't the slightest clue as to what it meant. I had to read it over and over and over before I gained even a glimmering of meaning. I do understand the meaning of the concept very well now. I also understand that the best way to clarify a highly abstract definition is to go to a concrete example, in perceptual reality.

Let's assume that you, for instance, the listener, hypothetically at least, for the sake of this illustration, were capable of curling, a 100 pound barbell for a maximum of ten reps to failure. And by that I mean, you couldn't possibly perform an 11th rep. In fact, the 10th rep requires a maximum, all-out effort, where you're gritting your teeth, shaking all over and you barely complete that rep. Now, bear in mind, please, what we're doing here. We're going to examine a real life concrete example, a set of barbell curls with a hundred pounds for ten reps to failure, so as to gain a better understanding of the meaning of intensity.

But before I do, I'd like to make a few oblique comments. You may have been aware that over the past few years, and moreso recently, a considerable amount of critical commentary has been aimed at the theory of high-intensity, even me personally. In effect, a number of people have been saying, "How could anybody be so damn dumb? How can Mentzer believe that only one set could possibly be enough? He seems like a bright fellow otherwise, but he has a critical blind spot here. One set couldn't possibly be enough!"

And the reason that they are having a difficult time grasping that such might be possible, is that they have allowed themselves to become mindlessly hypnotized by the mere number itself: the number one. They just hate the number one here. And I must say, I'd rather have $100 than $1 too, but then we're not talking about economics or personal finances, either. The context is exercise science. What these individuals have failed to do, listener, is what you and I are about to do, and that is, to forget the number one and instead, look at the nature – the key term is nature – look at the nature of what that one thing is. You see the distinction? Forget the number one, and look at the nature of what that one thing is.

Were you to point out to these same individuals that there are those who may require only one – again the unit or number 1 – one hour of exposure to high-intensity sunlight stress to develop a suntan,

they might be surprised it's still the number one. If you don't like the number one, you could alter the standard of notation: instead of one hour of high-intensity sunlight, you might say a hundred-zillion, photon units of light, a very large number; or instead of one set, you could say 100 units of intensity.

You may know of the top bodybuilder, Flex Wheeler. Flex trains at Gold's Gym in Venice, California, again, where I conduct my personal training business. Flex trains with a partner, a big fella named Rico McClinton. Rico knows that I trained Dorian Yates in the past and he has apparently read some of my work. Over the past two years or so, Rico has made it a habit to periodically tease me at the gym on this subject, but always in a good-natured fashion. Every now and then, Rico would pipe up so all of his gym buddies could hear and get a laugh, “Hey Mentzer,” he would say. “You still believe that crap only one set is all you need to grow?” And at different times, I would use varying analogies to jog his thinking, to provide Rico with a different perspective on the issue. Things like, “Well, Rico, it only takes one bullet to kill a person. So why can't one set be adequate to stimulate growth?”

Or on another occasion, “It only takes one well-placed blow from a hammer to stimulate the explosion of a stick of dynamite, with no number of lesser blows having the same effect.” And he was never impressed by such. Then here, recently, he said it again, “Mike, you really believe that stuff, don't you? It only takes one set to stimulate growth.” Now, I did note this time, at least Rico was using the proper terminology: stimulate growth. In fact, he seemed more sincere about the issue. This time, however, I stopped Rico cold, providing him with what just may be the perfect analogy. “Rico,” I said, “Only one sperm was required from your Daddy to stimulate the growth of your mother's egg into a fully fashioned human baby, namely, you. Only one sperm, literally, to stimulate the growth of all of your skeletal muscles and your skeleton, in fact; also your skin, guts hair, brains and so forth.”

Rico was highly impressed and said, “Mike, you got me with that one. Nothing more to say, I'll never bother you about it again.” What I did was give Rico a new perspective on the issue of number one. And what I'm asking you, the listener, to do, is to discard what you thought you knew, and take a fresh, new, unobstructed look at this subject.

Now, back to that set of curls with a hundred pounds for ten reps to failure, so you might gain a better understanding of intensity. Let's look at the nature of it. Let's start in the beginning with the first rep. Of all the reps of the set, the first rep obviously would be the easiest, requiring the least intensity of effort; or, referring to the definition of intensity that you’ve written down, one would say that the first rep requires the least percentage of his possible momentary muscular effort of all the reps of the set. Allow me to explain this point a little further, then we'll move more briskly straight ahead, I promise. If you were to look outside right now and happened to see a loved one pinned under the front wheel of a car (we've all heard stories like this), you would dart out there as quickly as you possibly could; and in the attempt to remove the automobile, you would exert yourself with 100% of your possible momentary muscular record. Or to make it more simple from here on, let's just plug in the word for the definition. You would exert yourself with 100% intensity of effort. Now, the first rep of that set of curls would not require anywhere near a hundred percent intensity of effort; again, it would be the easiest rep of the set.

That first rep does fatigue you somewhat, however, and that is why the second rep is at least a little bit harder to complete. Whereas, the first rep may require on the order of 8 to 10% intensity of effort, the second rep, you see, may require closer to fifteen to twenty percent intensity of effort. The second rep fatigues you even further still, and that's why the third is even harder to complete than was the second. And without belaboring the issue, you know, that's how it goes with each successive rep of the set; each becomes progressively harder to complete, each requires more intensity of effort than did the preceding, until finally, we get to the last rep, in this case, the 10th rep to failure. That would be the only rep, which is said to require 100% intensity of effort, just like trying to lift the automobile. Now,

the important question: which rep, listener, would be more productive in terms of stimulating a strength or size increase? The first rep, which is the least intense, or the last rep, which is the most intense, the only rep requiring 100% intensity of effort? Yes, of course, the last.

If you could curl one hundred pounds for a maximum of ten reps, and for some weird reason you only ever just did the first and then put the bar right back down at that point, you would never grow. Why? Because the intensity of the stress at that point is not sufficiently threatening to the physiology to warrant an adaptive response, i.e., a strength and muscle mass increase. Just like you can't obtain a suntan sitting in front of a hundred watt light bulb, even if you sit there for an infinity of eternities. The stress is not high enough.

Do you see where it stands to reason that, if the last rep is more productive than the first rep, it is also better than the second, third, fourth, fifth, and so on? Yes, in fact that last rep is quite special, it is different from every other rep of the set. There is something that occurs physiologically, only on that last rep of a set carried to failure, which is literally responsible for flipping on the growth machinery inside the muscle.

How is that last rep different? What occurs physiologically at that point, which makes the last rep so special? Well, no one understands all of the biochemical or physiologic changes entirely. Some of the changes or differences are readily apparent, however. For instance, compare your breathing on the first rep of the set compared to the last. On the first rep, your breathing is not labored at all, your heart is beating normally, and you experience no distress. By the last rep, you are breathing like a racehorse, your heart is pounding like a trip-hammer and you feel quite different, you feel stressed, perhaps even light-headed or nauseous. Obviously, there is something different that is going on physiologically on that last rep, which makes it rather different.

And now, the important conclusion: having achieved your purpose of triggering the growth mechanism into motion by going to failure on that one set, you don't have to do it again; you don't need a second set. It's like when you throw the switch to turn on a light: once the light is on, you are confident that the electrical mechanism will remain in motion. There is no need to flip the switch up and down repeatedly. You'd just wear it out. There is much about the human being which is mechanistic. I am not speaking metaphorically when I refer to the growth mechanism. There is a physiologic growth mechanism and your purpose, once again, is to do what nature requires to trigger that into motion, by carrying one set to a point of momentary muscular failure; and having achieved that by going to failure, on one set, it is neither necessary nor desirable to do another set.

A note here with regard to the detractors of high-intensity training theory. When someone denies the validity of the theory, they are in effect, denying the validity of the principle of intensity, which, recall, is the intellectual foundation of exercise science. In denying the principle of intensity, they are saying that the level of effort is not important, plays no role in stimulating growth, which is tantamount to saying that the first rep of a set of curls, for instance, carried to failure at ten reps, is just as likely to stimulate growth as the last. Anyone with a modicum of training experience, or a little common sense, knows that such as ludicrous, as, of course, the last rep, the most intense, the one requiring 100% intensity of effort, is the most productive rep.

Quite often I'm asked if performing a second set would really make that much difference. And the answer is: not only would it make a difference, but going from one set to two is the biggest mistake of all, for it is the biggest increase possible: a 100% increase. Going from one set to two sets represents a 100% increase in the volume of the exercise, making for twice the inroad into recovery ability, and that's how it should be properly viewed. Often when taking a new client through a workout, he'll note the fact that I have him performing but once set per exercise, whereupon, he'll ask, "But Mike, you only had me doing once set, I feel like I should do another set!"

And I respond to the effect that the feeling he has is fear, specifically, a fear that he hasn't performed enough exercise to stimulate growth, and that if he could provide me with one good reason – not two – just one good reason why I should consider allowing him to do one more set, I would consider it. And after all these years as a trainer, not one single individual has ever given me one good reason. And that is the issue, listener, precisely how many sets one should perform. If you honestly believe that one set is not enough, it is incumbent upon you to tell me precisely how many sets are required.

Which brings me to the second fundamental of bodybuilding science: the issue pertaining to volume. Many years ago, Arthur Jones made a statement that struck me as remarkably intelligent and very important. He said, and I quote, “Mike, the issue of volume, or number of sets, is a negative factor or influence – period. Insofar as one trains at all, whether he does one set or a hundred sets, volume is a negative thing here; and that is because any exercise makes an inroad into the body's limited reserve of biochemical resources known as recovery ability.” Close quote.

To help you understand the concept inroad, you might visualize an in into the road, or a hole being dug into your body's limited reserve of resources. You perform one set and you dig a small hole, a second set, a deeper hole, a third set, an even deeper hole, and so on. This is a negative thing here, for the deeper the hole gets, the greater the inroad into the body's limited reserve of resources, the more of your body's resources then have to be used in the attempt to fill the hole, which is recovery, leaving that much less left over, or available, for building a mountain on top: the muscle. Ideally, one would stimulate growth with zero sets, then none of the body's resources would be wasted on recovery, with all of it being used for growth production, and one would grow so damn fast, it would stagger the imagination. However, at this point in time, I haven't figured out how to stimulate growth with zero sets. Just joking, of course.

Overtraining, by definition, means carrying on any more exercise than the precise amount required to stimulate growth. Most, however, seem to regard overtraining as something only kind of negative. Overtraining is much worse than that; it is precisely that which militates against muscle growth production. Don't make the mistake of thinking that overtraining is merely wasted effort. No, it is counterproductive. Again, it is exactly that which prevents you from growing. When you are finished working out, you don't feel the same as you did before the workout, do you? No, you're exhausted, and by exhausted, I don't mean merely in the personal sense that you feel very tired, or fatigued, but also, in the technical sense that you've exhausted, or used up, a considerable portion of your body's limited reserve of resources, merely to fuel the workout.

This is the end of side one. Please turn over the tape at this point to continue with side two.

You actually feel like you're in a hole, you're tired. The first thing the body must do following a workout is not grow, but recover, overcome the inroad, that is, fill that hole. Or as I like to say more precisely, compensate for the exhaustive effects of the workout, or more simply, replenish, restore, put back what was used up, put back what was there before the workout. The body must first replace what was there before the workout, or compensate, before it can put back more than was there before the workout, or overcompensate, which of course is what growth is. Recovery is putting back what was there before, i.e., compensating, and growth is putting back more than was there before, i.e., overcompensating. Recovery, therefore, precedes growth, and if you train again before the body has completed both the recovery and the growth processes, growth production will be compromised, short-circuited shy of a hundred possible units.

Important here is the fact that the process of recovery alone may take up to several days or longer to be completed before the body even has the opportunity to start producing the growth that the workout merely stimulated. Please note the distinction between growth stimulation and growth

production. And if the trainee works out again before the recovery process is completed, he will short-circuit the growth production process and merely start digging another hole.

When I first started training people, some years ago, I had my clients train three days a week, every 48 hours, Monday, Wednesday and Friday, with weekends off. And while most of them did well, I was absolutely convinced that they weren't achieving the results I knew were possible, and I didn't attribute this to undertraining, but to overtraining. So as remedy, I reduced their training frequency to one workout every 72 hours. Now, they were training on Monday, taking Tuesday and Wednesday off, then training Thursday, taking Friday and Saturday off and training Sunday, and so forth. While their progress was better, it still wasn't as good as I knew to be possible.

Some might be prompted to ask the question at this point, “Well Mentzer, what motivated you to continue thinking in this direction?” It was something I learned from philosophy that when in possession of a truly valid theory, and beyond that and just as important, you're making the proper practical application of the theoretical principles, progress will be little short of spectacular all the time – no matter what the field of endeavor, whether you're sending a man to the moon, performing surgery or developing muscle mass beyond normal levels.

I had to admit that my clients progress wasn't always thus, It wasn't until I reduced their training frequency to once every four to seven days back in February of 1995, that voila, they finally started achieving results of the order I always knew were possible. Where, prior to that, I would only occasionally have a client gain ten to twenty lb in a month, or thirty to forty pounds in three to five months, since February of 1995, such results have been the rule. I was initially reluctant to go to once every four to seven days as I, like everyone else apparently, had blindly and uncritically accepted the notion that decompensation starts after 96 hours of no training.

This was during a period of rigorous, philosophic, retraining on my part, when I had reached the conviction, I would never, ever again blindly accept anything that mystical “they” had to say: “they say”. Who is this “they” we all keep hearing about? I recall that many times, I and numerous other bodybuilders I've experienced would remark, “Have you ever noticed that when you take a week or two layoff, that you always come back stronger?” And every single one, without exception replied, “You know, now that you mention it, yes I have noticed that after a week or two off, I always come back stronger.”

I finally realized that if one comes back stronger after a week or two layoff, then he didn't decompensate, that is grow weaker and smaller, no, he in fact overcompensated, just the opposite. He got stronger and didn't lose anything. Well, if you don't atrophy or decompensate after up to two weeks of no training, how the hell is it going to happen after 4 days? It won't. And remember, it may take up to several days or longer just to compensate, or recover from, the workout. There is no decompensation after 4 to 7 days. No way, it just doesn't happen.

I want to wrap up this section on theory with a broad general statement, on which I’ll then elaborate briefly before describing the actual workout program. It is this, I'd like you to write it down, please, very important. The big picture, the big picture in bodybuilding is comprised essentially of two elements of equal value, 50/50, not 60/40 or 70/30, but 50/50, the first element, 50% of the big picture, of course, is the workout itself; and the other element, just as important as the workout, the other 50% is the rest period between workouts. And this is why that is true: the workout, you understand, does not actually produce muscle growth. Remember, the workout merely serves to stimulate, or trigger, the body's growth mechanism into motion. It is the body itself, of course, which actually produces the growth, but only if left undisturbed during a sufficient rest period. You don't rest enough, you don't grow enough. Now, if you accept my premise that the rest period between workouts is that important, do you see where it follows logically that there has to be a perfect, or optimum, number of days of rest,

and anything, less than that will compromise progress? And I have found that for most, one workout every 4 to 7 days, as I said before, is literally almost miraculous compared to any other frequency protocol.

Okay, that's enough with training theory. I'd like to start this section on the actual training routine with a prefatory point. Only if there was a god, would he have the luxury of being able to read your genetic material, your DNA, and say to you with absolute certainty, "Sir, thou shalt perform four sets per workout once every 101 hours, anymore or any less will compromise your progress."

The point here, of course, is that I don't even have the luxury of being able to work with you in person, let alone read your DNA. Therefore, I can't guarantee anyone I start him out on the same baseline program the Almighty would, but then I ain't so sure it'd be all that different either, as at least we'd both be clear about the fundamental principles. I am going to suggest that everyone start with what I have determined through vast, personal experience as a trainer, works quite well for most. And if after finishing three cycles of the four workout program, your strength hasn't increased significantly, that you switch to the consolidation program as described in the booklet that came along with these tapes.

You might want to take notes on my description of the baseline program, although it too is contained in the booklet. I want to go over this one verbally, however, as there are numerous important points and details, which I believe you'll better understand if I explain them on tape. Some of the points relate to safety, and as a personal trainer, of course, safety is always of paramount concern.

You will start by training once every four days on a four workout protocol. So, if you start on a Monday, that means you wouldn't train again till Friday. After Friday, you wouldn't train again until Tuesday, then Saturday and so forth, once every four days. And if a scheduling problem arises, so that you can't make it into the gym on day four take off one more day, and train on day five. Also, once you've been with the program for three weeks or so, start inserting an additional rest day or two, even at random. If you do, you should never hit a sticking point, and here's why: as you grow stronger week-to-week, as you will with this program, that is, as you lift progressively heavier weights, the stresses on the body grow progressively greater too, until finally, unless you do certain things, like add extra rest days, the stresses will reach a critical point, they'll constitute over training and the first symptom will be a slowdown in progress; and if you continue with exactly the same volume and frequency protocol, there will ultimately be a complete cessation of progress.

Continue inserting the additional rest days with greater and greater regularity until you are only training once every five days, then start inserting an extra rest day at random: a sixth day. Continue inserting the extra rest day, or days, with greater regularity, until you're eventually training once every six to seven days. Once the fundamentals of intensity, volume and frequency are grasped, this issue becomes the most crucial one of bodybuilding science: that, as the weights grow progressively greater, the stresses also grow progressively greater, and they must be compensated for.

If after a number of months, utilizing the baseline program, while training once every six to seven days, ceases to yield meaningful results, switch to the consolidation program.

Some may want to have the workout program with the additional points in their training journal, to take to the gym, rather than the accompanying booklet. If so, write down the words "day one" close to the upper left-hand corner of your paper, and then write the word "chest", next to it the number one. Exercise number 1 for the pecs will be pec deck, for 6 to 10 reps to failure. Now from here on, you won't have to write the words "to failure" as that is a given; and 6 to 10 reps is merely a suggested guideline. There is nothing magic about the number 10: if you reach 10, but you see you might go to 13 reps to failure, don't stop at 10, go to 13. And at the other end, if you see by rep three, you won't reach

even six reps, but only four or five, don't stop and reload, get four or five and next time, you'll likely get 6 to 10. And if you don't have access to a pec deck, then flat bench dumbbell flys or cable crosses, may be substituted.

Directly underneath exercise one, write out the word “superset”, and directly underneath that the number two Exercise number two for the pecs will be the incline press, preferably on a machine such as the Smith, Hammer, Carrion or Nautilus. If you don't have any machine for the incline press, you may perform either regular free weight barbell incline presses, or incline dumbbell presses. Exercise number two should be performed for one to three reps, not 6 to 10, one to three reps. And make a parenthetic note next to the incline press: “use a fairly close hand grip”. Your hands should be slightly closer than shoulder-width. What should be wide are not your hands, but your elbows: flare your elbows way back away from your torso toward your ears, and you'll feel all the stress go into the pecs. Contrary to popular opinion, a wide grip is not the best way to develop pecs. And for beginners, a superset means two sets, one set of each of two different exercises, where the performance of one is followed immediately by the other, as with pec deck supersetted, or followed immediately by, incline press.

All right, now write down the word “back”, still under day one, write down the word “back” and then the number one itself. Exercise number one for the back will be close-grip palms-up pull downs, 6 to 10 repetitions. Close-grip palms-up pulldowns. Directly underneath that write down the number two, which will be regular style, not stiff-legged, but regular deadlifts. There is no superset here, by the way. There will be no superset unless I specify; and where there is no superset, you may rest as long as necessary, but no longer. Don’t over-complicate this issue, use your common sense, let your breathing slow down and as soon as you feel ready to resume training, do so. Do not allow the workout to degenerate into a race against the clock, and don't malinger either.

The regular style deadlift is a very productive exercise, the most productive exercise of all, in fact, because it stimulates so much muscle mass: everything on the back side of the body, from the Achilles tendon, to the nape of the neck. However, there is a bit of a risk factor here, not seen with most other exercises, so listen carefully. If you have one available and you are strong enough, use an Olympic Bar with a 45lb plate on each end of the bar, so you don't have to bend over quite so far. Always start with the bar rolled back flush against your shins, grasp the bar with a slightly wider than shoulder-width grip, and use an interlocking hand grip, where one hand is overhand, the other hand is underhand. Squat down is such a fashion that your hips are at least slightly lower than your shoulders. And most important of all, keep your back perfectly flat and your head up. Keep your back perfectly flat and your head up. You might even pick out a point on the wall, that crevice where the wall meets the ceiling, and keep your attention trained on that unwaveringly throughout. Then stand up in a deadlift fashion, with considerable rotation around the hips until you're standing perfectly straight – no need to arch backwards – then put the bar back down, reset, and do another. Perform five to 8 reps as close to failure as you're willing to go. If you have problems with your lower back, shrugs may be substituted, and do 6 to 10 reps to failure.

That's all on day one, just four total sets.

Then 96 hours, or four days later, is day two. Write down the words “Day Two”. On day two, you will train legs. The first exercise is leg extensions, supersetted with exercise number two, leg press. Now just to the right of the words leg extension and leg press, using a common bracket or a parenthesis, indicate that each is to be performed for 8 to 15 reps. If you don't have a leg press, substitute squats, preferably in a Smith machine. You're not going to be doing leg curls for a while: just because an exercise is done traditionally for a certain muscle doesn't mean of course that you are morally or legally bound to do it all year round.

One of the first lessons I learned as a trainer years ago, is that the leg biceps and the biceps of the upper arm overtrain extremely easily; besides, the hamstrings will receive sufficient stimulation for now from the deadlift and the leg press and the squat. I would like to make a very important point here. This program is designed for the exclusive purpose of marshaling all of your body's energy and resources on to the side of maximum growth in your major muscle groups. Any exercise you might add beyond what is listed here will merely subtract from maximum growth in the major muscle groups. Very often, when I give this program to a phone client, he will say at the end, “Well Mr. Mentzer, I see you don't have me doing leg curls for the hamstrings, in fact. No seated calf raise for the inner calf. No bent-over dumbbell concentration curls for the lower, outer third of the biceps.”

And we’re not doing this for that, and that for this, and on and on ad infinitum, and I respond, “Sir, but that is precisely how you were training before. And that is why you’ve made no progress and were prompted to call me for counseling. You so burned yourself out with all those exercises, you dug so deep of a hole, your body never had the opportunity to recover from the merely exhaustive effects of the exercise, let alone grow. Why not build a 20 inch arm first, then worry about the details?”

Remember, the issue of volume and anaerobic exercise, is negative factor, as I stated earlier; and that your purpose is not to see how many sets you can do, or how long you can endure, your purpose is to do the precise amount of exercise required to stimulate growth then get out of the gym, go home, rest, and grow.

After the leg extension, leg press superset, take a rest. Go drink some water, walk around the gym for a minute or two, then finish up quite simply with a set of standing calf raises, 12 to 20 reps. And that is it for day 2.

96 hours, or 4 days after legs, is day three. On day three, you’ll train delts and arms. Write down the road “delts”.

For delts, you start out with dumbbell laterals (some people call them side raises), 6 to 10 reps. After a brief rest, but no superset here, proceed to exercise number two for delts, either bent-over dumbbell laterals, or if one is available, sit in a pec deck backwards and work your rear delts, 6 to 10 reps here too. After delts you’ll work your arms, you might write down the word “arms”. Exercise number one for arms is barbell curls, 6 to 10. 6 to 10 reps with barbell curls, and that is a straight bar, not an EZ curl bar: EZ curls do not work the biceps, they work the brachialis on the outer part of the arm. Do straight bar barbell curls.

Exercise number two for the arms is tricep pressdowns, with either a straight bar or a V bar, but do not use a rope – do not use a rope, either a straight bar, or a V bar, six to ten reps for the tricep pressdowns. And if a pressdown machine is not available, perform one set of lying French presses for 6 to 10 reps. Immediately after the pressdowns, in superset fashion proceed to dips between parallel bars for three to five reps to failure, three to five. If you can do more than 5 reps with your bodyweight, then add weight; and if you can't do any positive, or full range, dips, then place a chair or bench between the dip bars, stand up into the straight-arm, locked-elbow position, and lower yourself in negative fashion, taking several seconds to reach the bottom, then stand up on the chair into the straight-arm position and do it again. When you can perform up to 10 negative dips, with each rep taking several seconds to complete, you should be able to do regular full range dips.

Okay, 96 hours later is day four: legs. Yes, legs, again. This time, you will start with leg extensions and follow immediately in superset fashion with Smith machine or free weight squats, but don't do hack squats, unless absolutely forced to do so. Hack squats are not very productive and they stress the knees inordinately. You will perform the leg extensions differently, this time using approximately thirty pounds more than the last time. When you perform the leg extension with the leg

press, you will do but one positive rep, lifting the lower legs until they are in the straight-leg, locked-knee position, you will hold that position statically. This is called a static hold rep. The weight will be sufficiently heavy so that you're limited to holding a straight-leg, locked-knee position for approximately 10 to 25 seconds. There will come a point during that period, of course, when you won't be able to hold it any more, and you'll say to yourself, “If I don't start the lower this thing in the next moment or two, it's going to go crashing down.” Do not let that happen. When you recognize it’s necessary, lower the weight slowly in controlled, negative fashion, not hyper slow or imperceptibly slow, but under strict control all the way down to the bottom. And make sure that you keep your buttocks planted firmly in the seat, as there is a tendency to want to come up off a seat, when your thighs are burning and torque it down. Do not torque it down, lower with the strength of the thigh muscles alone, then proceed immediately to the squat, and perform 8 to 15 reps to failure. Take a rest for a couple of minutes, go get some water, and finish once again with a set of standing calf raises, 12 to 20.

And then four days later, you start over with day one and repeat the four workout protocol as already described.

Whenever I have a superset listed, as with pec deck and incline press, or leg extension, leg press, or leg extension, squat, start the warm-up on the second exercise. For instance, when performing the leg extension, squat, superset, if you start with the leg extensions without having first warmed up the glutes, spinal erectors and so forth by doing a couple of sets of squats, first off, as you've finished the leg extension and you're heading to the squat, you'll say to yourself, but my goodness, I forgot the warm-up for the squat. Same thing with the incline press and the leg press. By warming up on the second exercise first, you cover all your bases in terms of a warmup, and you'll also have the weight set on that exercise, so that you may perform a true superset, where one exercise is followed immediately by another, with no rest in between.

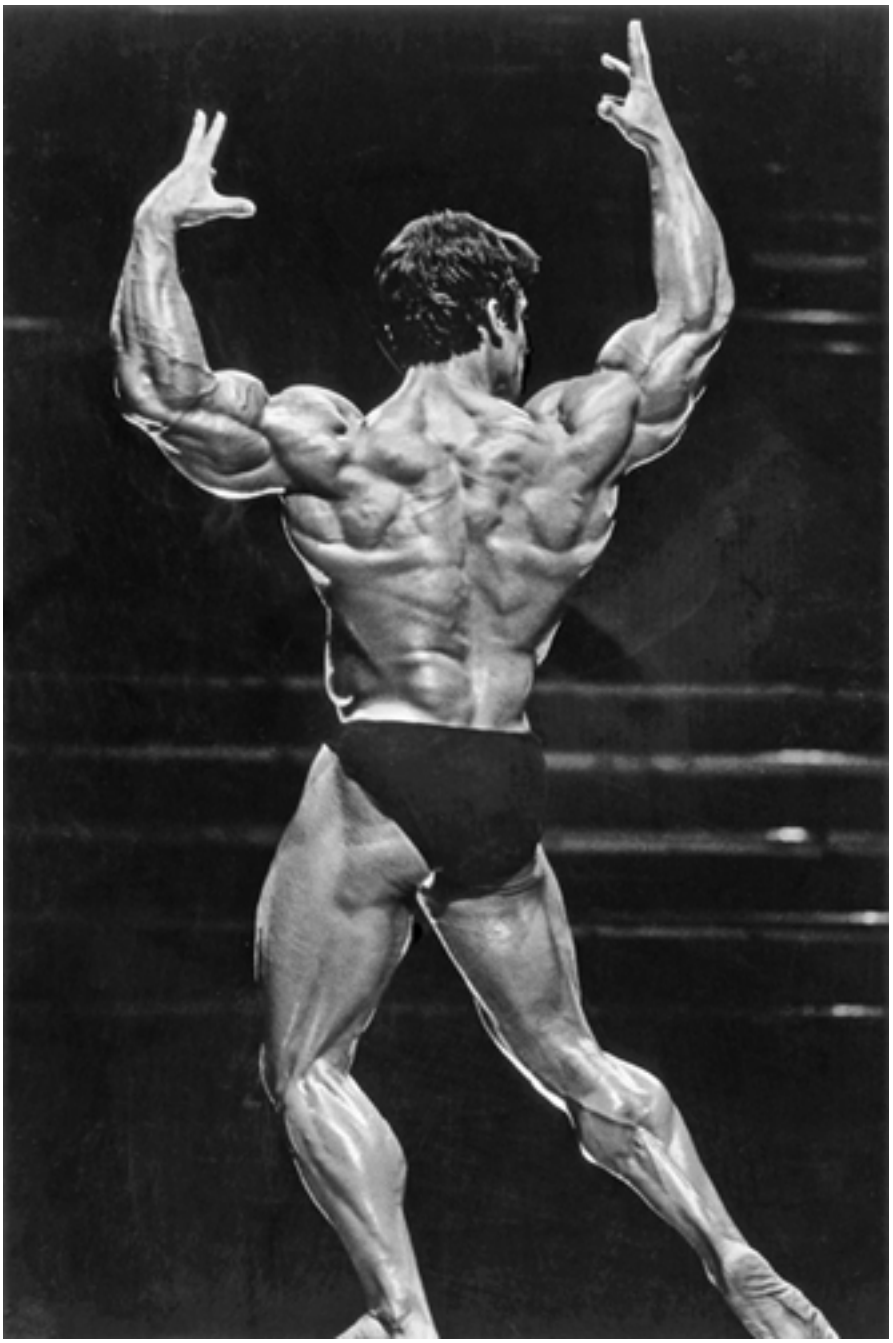
And please, don't change the sequence of exercises I've listed. Everything I've given you here was for a good reason, which is not to say that you can't periodically change exercises, although I would be hesitant, as the exercises listed are all the best ones for the muscles involved.

And don't make the mistake of gauging, or evaluating, the success of any one of these workouts by the standard of feeling: whether or not you get sore or achieve a pump. I see certain people who have been training at Gold's Gym in Venice, California for hours every day for years. If achieving a pump was a sure-fire indication that growth was stimulated, these people would have 28-inch arms by now, as they get pumped every time they workout. The pump, of course, is only temporary and does not indicate that growth was stimulated; and if getting sore was necessary, I never would have won a physique title, as I almost literally never got sore, usually only after a layoff. You can only evaluate the success of any one of these workouts by whether or not you're stronger the next time you perform that workout. So, keep a training journal as described in the value-added booklet.

I would suggest that if you have been training recently without a layoff prior to the time you intend to start this program, take a break entirely from training for two to three weeks. Having been overtrained, you've made a deep, too deep, an inroad into your body's recovery ability. It is important that this inroad be overcome, so that when you start with a properly conducted high-intensity routine, your body will have recovered all the biochemical resources necessary for optimal growth production. Please refer to the accompanying booklet for more information on how to properly implement this training program.

This is David Prokop. I am sure you will agree with me that Mike Mentzer is the thinking man's bodybuilder. His advice is the best you will ever receive on how to build your body while not spending the better part of your life in a gym. Even though there are still two Mentzer tapes to go, All Natural

Tape 3: Bodybuilding Nutrition Demystified



"… if you always put limits on what you can do, physical or anything else, it'll spread over into the rest of your life. It'll spread into your work, into your morality, into your entire being. There are no limits. There are plateaus, but you must not stay there, you must go beyond them. If it kills you, it kills you. A man must constantly exceed his level." -Bruce Lee

As much confusion as does exist on the subject of training, and it's almost omniprevalent, there is just as much, if not more, on the subject of nutrition. I hear it all the time with those who call me for phone consultations. One aspect of such confusion about nutrition, which is particularly widespread, is perhaps best exemplified in the story I'm about to relate. Some time ago, I received a phone call from a young man, probably in his mid-teens, who, as soon as he reached me on the phone, launched into what seemed like an endless series of questions concerning certain nutritional supplements. Without even announcing his name, he immediately set in asking me about the merits of a host of popular supplements including Met-Rx, Vanadyl sulfate, Phosphagain, creatine, Hot Stuff, etc., insisting his lack of bodybuilding progress was due solely to his faulty nutrition.

When I suggested that maybe his training might be the problem, he countered with an emphatic no, that he was training properly. Listening to him prattle on a while longer about nutrition, it finally occurred to me that since he was so very confused about nutrition, it was not likely he was clear and clean on the subject of how to best proceed with his training; and I turned out to be correct. I discovered that he was violating all of the laws of nature here. He knew absolutely nothing about intensity, or the necessity of training to failure. He wasn't stimulating much, if anything, in the way of meaningful growth, and, even if he had been, he was so grossly overtrained, working out 5 to 6 days a week for one and a half to two hours a day, that his body would not have had the resources necessary to produce growth. I finally put a stop to the lengthy catechism and said to him, rather firmly, “Young, man, you remind me of the individual who earnestly desires a suntan, but continues to insist on making the mistake of exposing himself to the light of the moon; then wastes hundreds of dollars trying different suntan lotions, thinking the next one will solve his problem. Not that the issue of the suntan lotion is completely without import,” I continued. “But it only assumes relevance within the context of having satisfied nature's first fundamental requirement, which is the presence of a high-intensity sunlight stress.”

Do you see, listener, that the relationship of nutrition to bodybuilding is similar? While nutrition is clearly of objective importance in the lives of everyone, it has a somewhat different role in bodybuilding. It is only within the context of having first employed the proper training methodology, that [nutrition] then becomes important, and then it is rather simple. In fact, as much confusion as exists on the subject of nutrition, it is really rather simple, at least as it applies to us practically on a daily basis. The one guiding, operative principle, here, is: make a reasonable effort on a daily basis to consume a well-balanced diet.

Ours has been called an age of complexity, with intellectual confusion as its primary characteristic. This is the result of people not learning to think in terms of fundamentals and principles. A system of thought based on fundamental principles serves as an intellectual blueprint that enables one to answer specific, concrete questions. Without such a fundamental base, questions continue to proliferate with no method for answering them, whether the subject is ethics, politics, training or nutrition.

The principle of a well-balanced diet is the fundamental that should guide your nutritional program. A well-balanced diet, by definition, is one that satisfies all your nutritional needs. Once you’ve made a reasonable effort to establish a balanced diet, consider quality supplements as those offered by Twinlab.

The question that logically arises here is: “what do I need calories and nutrients for?” First of all, you need nutrients and calories to maintain your health and existing physical mass; second, to provide for the production of muscle growth. One pound of muscle contains approximately 600 calories and since muscle growth will rarely exceed 1/2 pound a day, you won't have to increase your

nutritional intake, more than 3 to 500 calories a day, beyond your daily maintenance level. And I will address the topic of weight loss later.

No matter what your daily calorie budget might happen to be, approximately 60% of the calories should be in the form of carbohydrates, 25% protein, and 15% fats. This ratio is agreed upon by all of the top, reputable nutritional scientists, along with the US Department of Agriculture and the Senate subcommittee on nutrition. The reason for the predominance of carbohydrates is that sugar is the preferred fuel source of the neuromuscular system, the most efficient fuel for high-intensity muscular contractions. Also, interestingly enough, the brain lives almost entirely off of sugar, deriving 99% of its nutrition from carbohydrates or sugar. In fact, 80% of the brain is made up of something called glial cells, whose primary function is to store sugar.

The suffix “hydrate” in the word carbohydrate means water, and muscle tissue is not mostly protein, but water: 72% to be precise. Glucose is stored in the muscle as a polymer, or chain of glucose molecules called glycogen; and it is primarily the glycogen that keeps the water in the muscle cell, with three grams of water bonded to every gram of glycogen.

If you've ever been on a low carbohydrate diet, and found that your muscles became flaccid or deflated after a few days, it was because as the glycogen was used up, the water that was attached to it left the muscle. While protein has been the most overemphasized nutrient, carbohydrates have been the most maligned. The anti-carbohydrate litany began in Britain in the early 1950s and reached its apex in the United States, where diet books by so-called experts blame carbohydrates for everything from obesity to schizophrenia. Many people still believe that carbohydrates make you fat, which simply isn't true. No nutrient makes you fat in and of itself; calories consumed beyond maintenance and growth needs result in fat deposition, whether the calories are from protein, carbohydrates, or fat. As stated previously, carbohydrates are vitally important in the diet of everyone, especially bodybuilders, as they are the preferred fuel source of high-intensity, anaerobic training, and the brain, which derives most of its nutrition from sugar. So I don't think eating carbohydrates causes schizophrenia.

With regard to the issue of getting fat, I used to believe it was common knowledge that excess calories were responsible for fat buildup. Apparently, I was wrong. In my many daily phone conversations with bodybuilders from all over the world, I see that many don't know much about the caloric dimension of nutrition. Most remarkable was a client of mine, and Dorian Yates, who happens to travel a lot, and he is an agent for some of the top music groups. Last year, while in England on business, I set him up to meet Dorian and they had breakfast together. The conversation centered mostly around bodybuilding and the fact that my client was having a very difficult time losing fat. Dorian’s suggestion to my client was that he was eating too little which was why he was fat, and that he should boost his calories from his maintenance level of around 2,200 all the way up to 4,500. This would somehow boost his metabolism, Dorian insisted, and he'd soon be losing fat rather easily. When my client informed me of this upon his return home, I said that Dorian's advice was ludicrous and that if he followed it, he'd be sorry. He insisted that, no, Dorian is Mr. Olympia, he knows what he is talking about, and that he was going to enthusiastically follow his advice, and increase his food consumption to over 4,000 calories a day.

Two weeks later or so, I saw my client in the gym looking rather despondent. When I asked him what the problem was, he said that rather than lose weight, he put on six pounds of fat since trying the higher calorie intake. I did not say I told you so, but explained it with the simple logic. “Look,” I said. “If one must increase his calories and eat large quantities of food to lose weight, how does one gain weight? By eating small amounts of food, while dramatically decreasing calorie intake?” “I got the point,” was his reply.

Onto the subject of protein. Yes, protein is very important, of course. It is a maintenance, repair and growth substance that must be taken in sufficient quantities to ensure optimal muscle growth. Indulging indiscriminately in massive excesses of protein beyond maintenance and growth needs, however, will not somehow cause you to grow any faster, had you merely satisfied need. Remember listener, muscle is not comprised mostly of protein, but water: again, 72%. This does not mean that you should begin drinking gallons of water a day to hasten the muscle growth process. You'll be very uncomfortable if you try it, and the excess will merely be passed out of the body. Don't be concerned with consuming hundreds of grams of protein a day, or so many grams per kilo of bodyweight, thinking that so doing will somehow speed the muscle growth process. Force-feeding yourself massive quantities of protein could result in fat deposition.

Fats are not nearly the bogeyman some make them out to be. They play a crucial role in proper nutrition, in sheathing the nerves, synthesizing many enzymes and in helping the digestive process. Unless you are directed by a physician, don't take in less than the recommended 15%. Make a reasonable effort each day to obtain a 60:25:15 ratio of carbohydrates to protein to fats. This may be accomplished rather easily by getting your daily complement from each of the four basic food groups, namely: cereals and grains, fruits and vegetables, meat, fish and poultry, milk and dairy products.

Consuming fats does not make you fat, either. Recently a training client said to me that whenever he eats fats, he gets fat, and I told him that such is not true, that if I was to have him eat a small piece of butter or lard, such would not turn to fat unless he were consuming an excess of calories. Years ago, I had a friend who went off to Montana every few winters or so to climb mountains every day for a month. Upon leaving for his trip, my friend was always rather pudgy, and one month hence, after climbing mountains every day, he returned very lean, with almost no visible body fat. While climbing mountains, he live predominantly on fats, such as bacon, butter, beef and animal fat. Obviously this individual was expending more calories through his rigorous mountain climbing activity than he was consuming. And as a result, he lost body weight in the form of fat. The only problem with fats is that they contain 9 calories a gram, as opposed to only 4 calories a gram for both protein and carbohydrates. The point here is that, if you're not careful with regard to your intake of fats, the number of calories from them can shoot up very fast, and before you know it there is fat deposition.

With regards to vitamins and minerals, they are referred to as micronutrients because they are needed in such small quantities. Recommended daily allowances of the micronutrients are measured in micrograms, as opposed to the grams used to measure the macronutrients. Vitamins and minerals combine in the body to form the enzymes that serve as catalyst in countless important physiologic processes.

It is interesting to note here that while most Americans are well-nourished, many bodybuilders are grossly over-nourished, yet they still don't see satisfactory results from their training effort. This serves only to underscore the point that training is the first, primary requirement, while nutrition is secondary. It is only within the context of having satisfied nature's first, fundamental requirement, the imposition of a high-intensity training stress, that nutrition then becomes important for the bodybuilder.

And looking back to my own bodybuilding career, I too wasted considerable time owing to ignorance and confusion. In fact, when I reflect on how many training and dietary mistakes I made through the years, it is a wonder that I made it as far as I did. I unwittingly allowed myself to become diluted by uncritically reading certain muscle magazine, especially their fraudulent seductive advertising, which promise that we could all become bodybuilding champions almost overnight, if only we would invest considerable money in a certain product.

A good example was the one that promised a pound a day muscle gains, if one were to drink Crash Formula Number 7 every day. Yes, it actually promised a pound a day of muscle. A very

enthusiastic, but ignorant bodybuilder. I fell for that one, hook, like and sinker, and gained from 180 pounds to 250 pounds, most of the weight being fat, in seven months. How clever I thought I was. The only reason I didn't go up to 280 lb, which was my goal, was because my parents weren't willing to foot the milk bill anymore, as I was drinking up to two gallons a day. On top of that, I was growing rather concerned about the stretch marks which began populating a good portion of the surface of my body, along with the fact that I outgrew two or three wardrobes. The next six months I spent trying to undo the damage. You see, it was en-vogue back then to bulk up and then cut down, which meant to gain as much weight as possible despite its composition, then lose the fat and be left with just the muscle. Well, by the time I finished getting rid of the fat, more than six months later, I ended up weighing but a hundred and sixty-nine pounds, less than my starting weight of 180, and with less muscle. The near starvation diet, and gross overtraining, that led to such a weight loss caused me to lose muscle. So much for bulking up and cutting down.

Despite that and other mistakes, I never forsook my dream of becoming an accomplished bodybuilder. All through the years, I read the muscle magazines voraciously, never missing a trick. I knew every fad diet that came down the line and tried them all. And everybody was supposed to train differently and follow different diets because we were told everyone is different. The bottom line, so they said, was that because we were each unique, and possess different requirements and regard to training and nutrition, it was up to the individual to discover what was best for him. No wonder I and untold others were confused about training and nutrition. What a massive contradiction: the very people who were selling us the science of bodybuilding, were now telling us that bodybuilding is anything but exact, that there are no universal principles or truths, and they continue with the same irrationality today. Bodybuilding cannot be a science under those conditions. And as much as bodybuilding has been touted as a science, very few have brought critical attention to bear on the subject. As a result, falsehoods abound, severely hampering the thinking of the majority.

There is a notion that has been floating around the bodybuilding subculture for years, which has it that bodybuilding is 80% nutrition, and only 20% training. The implication here is that it doesn't matter how you train, or even that you train at all, if you only agree to consume an excess of nutrients, you'll grow muscle beyond normal levels. And such simply is not true, as the nature of the human physiology absolutely requires that certain, specific training causes be enacted to effect the buildup of muscles beyond normal levels. Or, in other words, consuming excess nutrients will not undo the effects of an improper training program.

More recently, another erroneous idea has garnered considerable attention in the bodybuilding subculture: is that one should consume ten thousand calories a day for best results. And it is the single, most ludicrous, crack-brain theory ever spawned in this sport, or industry. And it flows from the notion that there is no such thing as overtraining, only under-eating. To help ensure that bodybuilders don't undereat, some have suggested that bodybuilders consume ten thousand calories a day, a staggering number of calories, more than any bodybuilder on Earth, I don't care how large he is, requires to build larger muscle.

When one of my phone consultation clients recently asked me if he should try consuming 10,000 calories a day, I, of course, replied emphatically that he should not, then proceeded to logically demonstrate why such would be absurd. After establishing that my client only required 3,000 calories a day to maintain his existing bodyweight of 175 pounds, I asked him if he thought it was realistic to assume he would need 7,000 additional calories to provide for daily muscle growth production needs, assuming he was stimulating growth in the first place. What... that this didn't seem logical, rational or realistic. I explained that if he were training properly and stimulating fifty pounds of muscle growth a year, which is considerable, more than most are likely to gain, that this would average out to but slightly over two ounces of muscle gained a today. Since my client required 3,000 calories a day to

maintain 175 pounds, why would he need another whopping 7,000 calories more to provide for but a mere two ounces of muscle growth? Yes, listener: 3,000 calories to maintain 175 pounds and 7,000 calories, to produce but two ounces of muscle.

Such notions are always presented out of context with neither a theory nor an iota of evidence to support them. In logic, these are referred to as baseless, arbitrary assertions; and as Ayn Rand has stated, there is no room for the arbitrary in the affairs of man, least of all in the realm of cognition.

With a properly conducted high-intensity training program, you will grow stronger each and every workout; and make no mistake, listener, developing stronger muscles is a prerequisite of developing bigger muscles. Whenever someone starts to argue with me on that point, I say, “What is one supposed to do to grow larger, get weaker?”

Yes, if you want to grow larger, you must grow stronger. There is definitely a relationship between strength and muscular size. Most obvious is the fact that heavyweight weight lifters and powerlifters are stronger than lightweight lifters. And everyone listening to this who ever developed larger muscles, observed an attendant increase in strength. No one who ever lifted weights grew larger without growing stronger; it just doesn't happen.

It was discovered by exercise scientists long ago that the strength of a muscle is related to the size of its cross-sectional area. Many are still confused on this subject because they see some who are smaller, who possess less muscle mass, that can lift more weight than other larger, more heavily muscled individuals. The mistake here is in attempting to draw a meaningful comparison between two different individuals. The fact is that the man with smaller muscles will grow larger only as he grows stronger, and likewise, the larger man will grow larger still, only as he grows stronger.

Don't make the mistake of comparing yourself to others. The only person you can accurately compare yourself to is you, and as long as you are increasing in strength, as a result of each workout, you are heading in the right direction, and you will grow, but only so long as you are on a proper nutritional program. You will grow stronger each workout as a result of following the workout suggested on the previous tape.

When a person grows stronger week-to-week, it is proof that there is a positive change taking place inside of his muscles. Since muscles, by definition, lift weights, a muscle growing stronger can't be exactly the same muscle. If it were exactly the same muscle, it would be limited to lifting exactly the same weight. The main point here is that as a muscle grows progressively stronger over a period of time, it is changing somehow. I'm not specifying what that change is now – I will. For now, just remember: if a muscle is growing stronger, it is in a process of positive change.

If, during this period of change, the bodybuilder continues to consume, nutritionally, a maintenance level of calories, by definition here, he will only maintain his existing physical mass. He won't lose, he won't gain: he'll maintain. It goes to the laws of physics or thermodynamics. You can't create something out of nothing. You can't build bigger muscles out of thin air. Certain nutritional and caloric values are absolutely required. What the bodybuilder will be doing by consuming a maintenance level of calories, is, in essence, something less than desirable.

To some extent at least, he'll be frustrating the needs of the growth mechanism. He did train to failure, which is what nature requires one do to trigger the growth mechanism into motion. Also, he is growing stronger, therefore the muscle is changing. When the growth mechanism is activated, you might visualize it as a moving conveyor belt of sorts, for lack of a better image, with a number of little men standing on top, who are reaching up, they're reaching out, to grab the nutritional caloric cement, as I like to call it, that it requires to build the second story: the new mass. But, remember, consuming a

maintenance level frustrates those little men: they are reaching up, but nothing is there; the body is only receiving enough nutritional and caloric values to maintain the first story: the existing physical mass.

In such a case, the muscle change I was referring to, where the bodybuilder is growing stronger, will remain primarily a qualitative strength change. It won't manifest much, if at all, as a quantitative muscle change, i.e., a muscle mass bodyweight increase. In order to avoid this, the frustrating of the growth mechanism, and to do the opposite, to serve the needs of the gross mechanism, one must consume a number of nutrients and calories above his daily maintenance level. He must go into a positive calorie balance. This can be done in a methodical, intelligent fashion, such that growth production needs are precisely met, with little or no excess to cause any appreciable fat deposition.

Before I explain how that may be accomplished, I'd like to make a few side comments. It has been claimed by some that a positive calorie balance is not necessary to build new lean mass while on a bodybuilding program. They say that the body can literally steal calories from fat, and shunt them to the muscles for growth. In fact, this is exactly what Arthur Jones alleged occurred when Casey Viator gained sixty-two pounds of lean muscle mass during the one month Colorado experiment described in my Heavy Duty book number one. He postulated that the number of calories Casey consumed that month weren't sufficient to account for all of the weight gained. Casey was not on a weight loss or maintenance diet. According to observers of the experiment, Jones literally force-fed Casey everything he could shove down his throat, including the kitchen sink. It was calculated that Casey was fed only enough calories to account for 45 pounds of lean muscle mass increase; therefore, that 17 pounds of Casey's fat was sacrificed somehow, to build muscle.

As a parenthetic note here, using a sophisticated radioisotope assay test, the researchers involved with the Colorado experiment, ascertained that despite Casey's registering 45 pounds of weight gained on the scale, he had also lost 17 pounds of fat that month. Therefore, his total lean mass gain was 62 pounds.

While there may be some truth to this claim, I am skeptical. I suspect that either Jones' calculations were skewed, and/or he really believed Casey wasn't on steroids at the time, which he was. Steroids are extremely potent chemical agents, which dramatically alter the bodies biochemistry in many ways, two of them being that protein synthesis and glycogen-water storage inside the muscle are greatly enhanced. So, while stolen calories may account for some of the lean muscle mass, I believe that the steroids helped too.

This is the end of side one. Please turn over the tape at this point to continue with side two.

I conducted a personal experiment years ago, in which I went on a calorie deficit, weight loss diet, while training without steroids, and the first week I lost nine pounds. Then I went on the same diet while taking steroids and I gained two pounds the first week. One point worth making here is that the stealing of calories from adiposity would be a genetically mediated trait, and like all other genetic traits, its expression, how efficiently one's body makes use of calories from fat to form muscle, would vary across a broad range, from those whose body is poor at stealing calories from fat, to those whose is very effective, and everything in between.

Prior to my emphasizing the caloric dimension of nutrition to my clients, most would grow stronger, but many didn't gain the mass and bodyweight they desired. Since reducing the volume and frequency of their training, as described on tape two, as well as emphasizing the need for a positive calorie balance, my clients' mass and bodyweight increases are finally keeping pace with their strength gains, and in the majority of cases, little or none of the weight gain is fat. As mentioned earlier, whereas one, two, or three or four years ago, I would only occasionally have a client gain 10 to 20

pounds in a month, or 30 to 40 pounds in three to five months, now, it is no longer the occasional, or exceptional, case: it is the rule

For those who are acceptably lean, as well as those who may be concerned they have a bit too much fat presently, I suggest you embark on the suggested routine while in a positive calorie balance of 3 to 500 a day. For that second group who may have a little more fat than they'd like, I propose that you place your fat loss concerns on hold for two or three months, put on 10 to 20 pounds of muscle, then go on a fat loss diet. At the end of which, you'll not only be leaner, you'll have the extra muscle too. For those who are extremely overweight, who would like to build muscle, yet must lose fat, don't worry. There is a way of dealing with that efficaciously, and I'll get to it soon.

The goal, remember, listener, is to serve the nutritional caloric needs of the growth mechanism to gain muscle mass and increase body weight, while adding little or no body fat. To do so in a methodical fashion, start by keeping a five-day food diary. Write down everything you eat for five days, and don't become self-conscious during that period and alter what you have typically been eating. What is needed is a representative sampling, so it may be ascertained what your daily average calorie intake is. Write down everything you eat for five days, and the quantity. Be as accurate with the quantity as possible, but don't fret if you think you're off a little. At the conclusion of each of the five days, sit down with a good calorie-counting book (if you don't have one, buy one, as every conscientious bodybuilder should have one, since the caloric dimension of nutrition is vitally important) and tally the total calories for the day. At the end of the fifth day, take the five daily totals add them for a grand total, divide by five and you'll have, of course, your daily, average caloric intake. You must also weigh yourself at the beginning of day one and on the morning of day six. If you didn't gain or lose during that five day period, your daily average is also your daily maintenance level of calories.

Let's assume, hypothetically, that your daily maintenance level of calories turns out to be 2,100. Upon starting the suggested routine, make a conscientious, disciplined, daily effort to keep your calories three to five hundred above the maintenance level. If you don't, you'll maintain; you won't gain. But I'm not suggesting that all of a sudden you should start shoveling down indiscriminately large amounts of food. You'll only get fat.

I have observed with my phone clients that some, not many, do not have a set maintenance calorie level but a maintenance calorie range. If, after two weeks into the training program, with a positive calorie balance as suggested, you haven't gained a couple of pounds, you might be just such an individual, so increase your calories another 300. And the calorie increase should conform roughly with the 60:25:15 ratio, with perhaps a bit greater emphasis on protein.

Those who do as indicated, and conscientiously keep watch of their calories, so that they're in a positive balance of 3 to 500 a day, will be quite delighted. In addition to growing stronger every workout, he'll gain 7, 8, 9, 10, or more pounds the first month. I can't say with any certainty just how much you might gain, due to genetic variations.

As mentioned previously, there are slightly more than 600 calories in a pound of muscle. If you are stimulating three pounds of muscle growth a week, you will require roughly 600 * 3, or 1,800 calories per week above maintenance. This translates to 257 calories a day above maintenance. I am recommending slightly higher, so there's less chance of any slightest frustrating of the nutritional caloric needs of the growth mechanism. Let's assume, in your particular case, that your growth requirements don't necessitate a full 300 calories a day above maintenance. Then, yes, the excess will turn into fat. However, there are 3,500 calories in a pound of fat. If you required only 150 calories a day above maintenance, the other 150, would turn to fat. But you would only gain 1 pound of fat a

month. For those with a higher metabolic rate, or who have a difficult time consuming even a maintenance level of calories, I suggest Twinlab's RX fuel to help boost your calorie intake.

For those interested in losing fat, reduce your calorie intake by five hundred to a thousand a day, below maintenance level, and you'll lose one to two pounds of fat a week. And as long as you're on a proper high-intensity training program, you won't lose muscle and you will likely even gain some. Reducing your calories, 500 to 1,000 per day is sufficient to starve the fat enough to see a meaningful loss, yet still be enough to feed the lean mass and provide for some growth. Once you've lost the desired weight, go into a positive calorie balance as described.

Recently, one of my phone clients reported that while on a calorie deficit diet, he lost 11 pounds of bodyweight over a three-month period, increased his strength considerably and even gained a half an inch on his arms. The loss of body weight would have been predominantly, or exclusively fat, with certainly none of it being from the contractile, protein element in the muscle, as he did grow stronger, and put 1/2 inch on his arms. One cannot lose muscle and grow stronger. This gain of muscle mass while losing fat, does not prove that his body stole calories from fat, and shunted them to the muscles. It demonstrates that when you're in a modest negative calorie balance, the fat can be starved sufficiently to be used as fuel, and yet enough nutrition still provided to maintain lean mass and allow for at least some muscle growth production. I told my client, however, that as well as he did in terms of strength and lean mass increases, he would have done better on a positive calorie balance.

As a bodybuilder continues to gain muscle mass and bodyweight, his maintenance level of calories gradually goes up, until finally, weight gains slow down, then come to a halt. When you see that your weight gains have slowed down, increase your calories another three to five hundred and you'll resume gaming. Likewise, as a person continues to lose weight, his maintenance level goes down and the weight loss diminishes, and eventually comes to a halt. When this starts to happen, reduce calories by another 500 or so a day, and the weight loss will continue.

It has been suggested by many reputable nutritional scientists that when on a weight loss program, the individual should not go below 12 to 1500 calories, as it is impossible to obtain a well-balanced diet below that level. In cases of morbid obesity, it may be necessary to reduce calories even further, but only while under the care of a physician.

One will know when he is too low in calories by the fact that he will start dropping pounds precipitously, rather than one to two pounds a week, he'll start losing 4 to 5 pounds a week, or even more. This rate of weight loss is indicative that one's muscles have begun to catabolize, which [is] undesirable for a number of reasons. the least of which is that the loss of lean mass will slow down the metabolism. Since muscle only has 600 calories per pound, versus the 3500 calories per pound of fat, the body will burn up to six pounds of muscle to get the same caloric yield as from one pound of fat, hence, the much increased rate of weight loss.

For those desiring to lose weight, yes, low carbohydrate diets do work, but like all diets that work, it does so by being a calorie deficit diet, one that is lower in calories than maintenance level. You'd be better to reduce the calories of all the macronutrients instead of just one, or you run the risk of not obtaining a well-balanced diet. And if you are on a well-balanced diet with a calorie deficit, it won't hurt your weight loss efforts to have an occasional treat such as a candy bar, piece of pizza or some ice cream. Just take into account the calories they contain, figured into your daily calorie budget, and subtract some other food item.

A question I get literally almost every day from clients is whether or not it is important to eat six meals a day. And the answer is no; it is not necessary to have six formal meals a day. The body is quite resourceful, in that if you were to skip even one of the three square meals in a day, it would make up

for it by utilizing more of the nutrients than usual from the next meal. Eat your three square meals a day, plus a snack or two, along with your supplements and you'll be fine. To disrupt one's life, to such an extent that he's taking the time to prepare six formal meals a day is to make nutrition a neurotic obsession, when it should be viewed primarily as a basic need, where no more time than is minimally required is spent fulfilling it.

When a bodybuilder is actually gaining muscle mass as well as getting stronger, he should see a reciprocally reinforcing relationship between the two. In other words, his muscle mass increases will facilitate even greater strength increases, which in turn facilitate greater growth stimulation, and the rate of your strength increase will serve as a relative indice of how much growth is being stimulated. If you are only increasing a rep or so here and there, obviously there is less growth stimulation, than if you're increasing in strength by leaps and bounds. If at some point you believe you may need more than a 3 to 500 positive calorie balance: go higher, but be cautious and methodic. Go up a couple of hundred calories at a time and keep tabs on your bodyweight. If, at some point, you start gaining very rapidly, check to make sure it's muscle, and if not, simply cut back. Gaining fat is anathema for the bodybuilder; certainly never to one's advantage. A right-thinking bodybuilder should desire to gain only muscle, as his goal is not to be only muscularly massive, but also defined in appearance. It is not necessary, as I was led to believe 30 years ago, that one must bulk up, that is, gain fat with muscle, to build muscle, which was a very common belief. The more fat one puts on, the longer and harder he'll have to diet to get it off, and I can tell you from personal experience, it's not fun.

Now, with regard to supplements, there is mounting evidence to suggest that even with a well-balanced diet, it is impossible to get enough of certain nutritional substances. One of them is creatine, an important component in the phospho-creatine compound within the muscle itself, necessary for maximum energizing and growth. I first started hearing about the positive effects of creatine a year-and-a-half ago, as a remarkably large number of my phone clients began reporting to me, unsolicited, that whenever they took creatine they trained better and gained faster. I found this rather astonishing, as I don't ever recall, in all of my 33 years of bodybuilding, having heard such a redounding endorsement of any supplement. And while such would be endorsement enough for most, I remained somewhat skeptical. Then I was approached by Steve Blechman, owner of Twinlab, to lend my personal endorsement to his Creatine Fuel Plus. When I expressed my skepticism to Mr. Blechman, he stated emphatically that the reason he wanted me in particular to endorse this product was because of my strict adherence to science in bodybuilding, and that this was the one supplement that had the greatest scientific, medical research backing it.

Mr. Blechman knew that my main thrust with regard to nutrition was that the individual should seek to consume a well-balanced diet on a daily basis. And he agrees. He then explained that the research indicated that even when consuming a well-balanced diet, including up to two pounds of red meat a day, which is high in creatine, such was not sufficient to load the muscles with creatine. I responded by pointing out that I had never pretended to have exhaustive knowledge on the subject of nutrition, or supplements, and that what he had just explained certainly sounded plausible. As telling testimony to his honesty and sound business ethics, Mr. Blechman said he didn't want me to accept the endorsement offer on his verbal recommendation alone, and that he would send me the scientific literature on the subject of creatine's importance in fueling anaerobic, high-intensity training. And he did, volumes of it, in fact. It was from a variety of researchers, and nutritional specialists, and as all agreed that creatine added to a well-balanced diet increased the efficiency of high-intensity exercise, I ceased being so skeptical. Now that all remained was for me to try it personally.

The past six years, I have worked seven days a week to build my business. And when my business kept me working up to ten hours or more a day, I decided to stop training for a while. Well, a while turned into four long years, and I slipped into the worst shape of my life. So, when I finally

decided to start training again on October 24th, 1995, I did so with some trepidation. Because my muscles had atrophied, or shrunk considerably, and I added 25 pounds of fat while having become very de-conditioned, I feared that even mild or moderate intensity workouts would see me nauseous, sore and feeling out of sorts; but none of that happened. While I was planning on holding back on the first several workouts, such has always been difficult, and it was this time. By the end of the first workout, I had realized that I had gone to complete failure in all of my sets, exerting 100% intensity of effort and with a minimum of rest between sets. Not only was I not sick or tired, I literally felt indefatigable, as though I could go on indefinitely, and I gained 30 pounds of muscle or so the first month. That sounds like a lot (and it is) but remember, I was regaining muscle, which is always easier than gaining it for the first time. Having come back from numerous layoffs in the past, never had I felt this good, nor had I ever gained so much muscle in such a short period. And I attribute some of this, at least, to taking Creatine Fuel Plus daily. My phone consultation clients, not to mention Steve Blechman, were right. Finally, a supplement that serves to truly augment a proper training and rest program.

I don't want to mislead anyone: no supplement is magic. Without proper training, adequate rest and nutrition, no one is going to gain optimally. For those not privy to the scientific research and literature, obtain an exercise science or physiology textbook, and usually, in the first chapter, there is a complete section on the energy metabolism of muscles. In the subsection on the metabolism of anaerobic activity, there is considerable space devoted to the importance of creatine, in fueling high-intensity exercise. It only stands to reason that muscles loaded with creatine will perform better and respond better. Simple enough.

Back to the concept: need. The concept, need, plays a crucial epistemological, or intellectual, roll in nutrition. One, in fact, that reverberates throughout the entire realm of biology. If you've ever studied physiology, psychology or sociology, you've no doubt encountered the concept, need. Indeed, the concept need plays an important role in bodybuilding science. A rational bodybuilder does not train beyond need or necessity because this constitutes overtraining, which results in lack of progress and even the loss of muscle; and he does not want to consume food beyond need, since that results in the laying down of fat. Bodybuilding, like I've learned is true of every other subject of human life, can also be ultimately understood in terms of basic principles. They are: number one: train hard, train to failure to stimulate growth; number two: don't overtrain, get adequate rest; and number three: eat a well-balanced diet.

With number two and three being required so that the body can produce the muscle growth that the workout merely stimulated. With regard to point number three, once you have formulated a diet that is reasonably well balanced, then supplements, the most popular supplements with my training clients are Ripped Fuel for increased energy and fat burning, RX Fuel for extra protein and overall nutritional insurance, Creatine Fuel for enhanced strength, power and muscle growth, and finally Sport Fuel, vitamin and mineral formula, which is specially designed for athletes and bodybuilders, as it is rich in antioxidant nutrients that have been shown to prevent muscle damage.

If you had just arrived from the planet Mars on to the Earth and decided you wanted to build your muscles and I told you that all that is required is one workout lasting 15 to 20 minutes every 4 to 7 days or so, such would not strike you as too much or too little. You would have an unobstructed look at the matter. As a fresh arrival from the planet Mars, your thinking would be unhampered by all of the unwarranted assumptions, false generalizations and undefined contradictions about weight training that are floating like so much cognitive detritus, polluting the intellectual atmosphere of the Earth's bodybuilding subculture.

The main point to keep in mind is that bodybuilding is anaerobic, which is antipodal to aerobic. Their defining principles, remember, are opposites. Anaerobic: high-intensity, short duration versus aerobic: low-intensity, long duration.

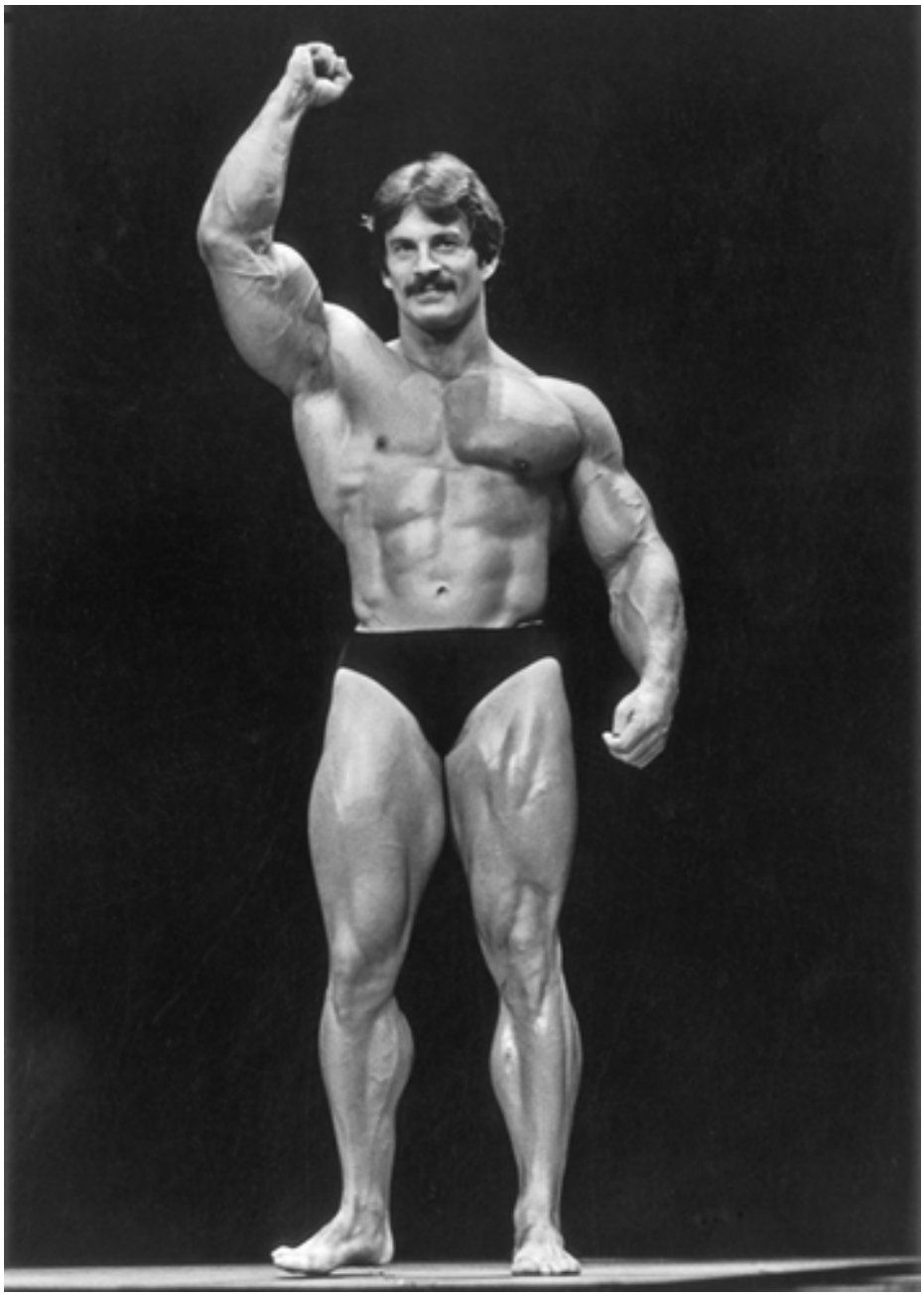
Most of the information presented on these first three tapes is not new. What I did was take some well-known, well-authenticated facts from exercise and nutritional science, and apply them to the unique needs of the bodybuilder; and it is up to each and every listener to work with the further practical application to make the concepts work for his unique needs. Yes, we all have unique needs. This does not contradict my earlier assertion that we are all essentially the same. We are all most unique, in that each of us occupies a different space and time. Regarding nutrition, we all metabolize food at various rates, that is, we possess varying metabolic rates. Because we have different metabolic rates, we get fat, lose weight and grow muscle at varying rates of speed. While this is patently evidence that we possess different metabolic rates, what is less obvious, but very important, is that the physiologic principles governing metabolism are universal.

The chemical processes governing our utilization of food for energy, maintenance, repair and growth, have been clearly mapped and circumscribed by physiologists long ago. Pick up any textbook on exercise physiology or nutritional science and you'll be reading about what goes on inside of yourself, and your neighbor, and your training partner and everyone. So while we each possess the unique stamp of an unrepeatable, irreplaceable personality, we're not all that different inside. We all need protein, we all require sleep, we all burn carbohydrates at the rate of 4 calories per gram, we all need intense exercise to stimulate growth, we each possess a limited recovery ability; and as bodybuilders know, muscle growth beyond normal levels is never fast enough. Although you'll be delightfully surprised when you apply the knowledge gained from these tapes.

Considering what you know now, having listened to these tapes, are you going to let some hulk guide you in the wrong direction merely because he has a 19 inch arm? Are you going to allow your subsequent training activities, and dietary practices, be continually dominated by the bootleg logic “more is better”? He who acts contrary to what his perceptions and rational thoughts tell him is the truth, is akin to Dostoevsky’s Underground Man, who cries, “What do I care for the laws of nature and arithmetic, when for some reason I don't like them, or the fact that two plus two equals four?” Yes, you are free to evade the responsibility of rational thought and logical deliberation, but not free to escape the consequences. It's up to you.

This completes tape three. Please go to tape number four: Mentzer: The Man and the Controversy.

Tape 4: The Man and the Controversy



"But before I launch out into those immense depths of philosophy, which lie before me, I find myself inclined to stop a moment in my present station, and to ponder that voyage, which I have undertaken… I am first affrighted and confounded with that forlorn solitude, in which I am placed in my philosophy, and fancy myself some strange uncouth monster, who not being able to mingle and unite in society, has been expelled all human commerce, and left utterly abandoned and disconsolate… I have exposed myself to the enmity of all the metaphysicians, logicians, mathematicians, and even theologians; and can I wonder at the insults I must suffer? I have declared my disapprobation of their systems; and can I be surprised, if they should express a hatred of mine and of my person?" -David Hume, *Treatise of Human Nature*

Mike, I know you've done this many times over during your career, you know, talk about your background and all that; and I think it would be an appropriate place for us to start here, even though some of those listening have been fans of yours a long time and may know something about your life, there are always new people entering bodybuilding, and I'm sure they would like to know something of your past, anything you consider relevant or important.

You're right, Dave, about people entering this field all the time. As a phone consultant, I receive calls from individuals literally every day who only recently picked up a barbell for the first, and which augurs well for the future of this industry, by the way, these novitiates usually know nothing about mine of the sport's past, and since my life is so intimately bound up in bodybuilding, relating my past may teach them something about the recent and not-so-recent history of the sport. Dave, I was born on November 15th, 1951 in Germantown, a small town outside of Philadelphia. At the age of two, my family moved to another small town in Pennsylvania, Ephrata, which was and is predominantly a farming community. My dad was the major influence during the first twelve years of my life. Although he wasn't intellectually oriented himself, he went to some lengths to inculcate in me the values of education and knowledge. When I did do well in school, for instance, he would reward me. There was one occasion when I received all A's on my report card and he gave me a baseball mitt and another one when he gave me a $20 bill. He started me out correctly as now I am a proud and successful capitalist, except for the very beginning, the first day of kindergarten, when I locked my mother out of the house to prevent her from entering me into school at all. I did rather well.

You locked your mother out of the house?

Yes Dave, I was a very shy child for a number of years. I spent much of my time alone at home, rather introverted, not accustomed to being around other children. So, upon learning I had to go sit in a classroom all day with others my age, I rebelled. I'll never forget as my mother walked out the door holding my hand to take me up the street to the first day of kindergarten. I, all of a sudden, bolted back inside and locked the door. It never occurred to me that she had a key. But my next remembrance of that day was my mother walking into the classroom where all the children were seated, carrying me wailing under her arm.

So your rebellious has a long history.

My rebelliousness, what do you mean by that, Mister Prokop?

I must say, Mike, a good part of your career seems to have revolved around questioning tradition, the establishment and what so many merely blindly accept.

Yes, Dave, that's true. In fact, the first ad I ever ran in 1977 to sell my books, I advertised myself in bold print as bodybuilding's foremost iconoclast. Iconoclast means literally "image breaker". While every other top bodybuilder uncritically, unquestioningly accepted the Weider-Schwarzenegger Dogma, which had and still has, individuals training up to four hours a day, I, upon hearing the truth as told by one Arthur Jones, discarded that junk immediately; and I've never sacrifice my view of the truth. Yes, Dave, I was a rebel, am a rebel and always will be, albeit no longer blindly rebellious, as I was often in my youth. No, not a blind rebel, I now consider myself a radical for the truth, and if my telling the truth makes certain people angry, that's their problem. The truth is everyone's ally, whether each recognizes it or not, and if the truth hurts anyone, that individual is at odds with reality, and is philosophically, psychologically in a bad place. I decided some time ago that I'm not on this Earth to win a damn popularity contest.

Let me note here again that my father was a major influence, Dave. It was from him that I learned something valuable about integrity early on. My father, Harry Mentzer, who is now deceased, was someone who always seemed to find it easy to stand up for what he believed in. He reveled in it at

times, boasting about his integrity, which had a way of irritating those of a week willed ilk. I responded rather hardily to my father's pride and self-esteem, which in part is why I am a staunch individualist today. I can remember people in my youth referring to the Mentzers in a tone that inferred we were arrogant and conceited; but we weren't, we were merely proud of ourselves.

Mike, what about training in those early years?

In addition to emphasizing the importance of education, my father placed a very high premium on being physically able and strong. This resulted in a rigorously athletic first ten years of my life, Dave. I had a reputation around my home town, for wherever I went, I would run, jump to touch signs overhead and leap fences, literally all the time, especially jumping fences. There were times when I would jump fences, seemingly almost all day long, looking for ever higher ones to challenge my ability, and I never missed, believe it or not. I had a remarkable leaping ability. I also swam very well, especially the freestyle, in which event, I beat the best fellow on the community swim team after receiving a special invitation to tryout. I gave up swimming almost immediately, however, as they had us swim so many laps in practice, I simply couldn't believe it. I truly was overwhelmed by the amount of work they expected, and looking back, I see that the coaches were grossly overtraining their athletes, as most trainers and coaches do today, all operating on the overly-simplistic, childlike notion that “more is better”.

I also did well in track and field, football, gymnastics and baseball. But as soon as I discovered weight training, at the age of eleven, I gave up all other sports straight away. My early interest in weights extended beyond bodybuilding to Olympic lifting, and powerlifting. My hometown, including the entire state of Pennsylvania, was influenced highly by the fact that the father of American weightlifting, Bob Hoffman, operated out of York, which is only thirty miles from Ephrata. As a young teenager, a friend of my father's, Johnny Myers, who was a powerlifter, would take me on frequent visits to Muscle Town, as York was called, to watch the nations and world's best Olympic lifters, powerlifters and bodybuilders train. I got the opportunity to spend entire Saturday afternoons at the then famous York Barbell Club watching men like Bill March, Tony Garcy, and the precocious Bob Bednaraski, our best ever heavyweight Olympic lifter, practice technique, as well as challenge their personal bests in the press, snatch and clean and jerk; also, Terry Todd and Ernie Puckett, the first official champs in organized powerlifting, train on the bench press, squat and deadlift. This had an enormous impact on me, as I took up these lifts: the press, snatch, clean and jerk, bench press, squat and deadlift early on. In fact, they were the foundation of my training. And by the time I was fifteen years of age, I pressed around 250 pounds, squatted 500 pounds for two reps on a free bar. By the way, I also got to see and talk to John Grimek on a number of occasions. It was Hoffman and Grimek, you may recall, who launched the muscular development magazine, which was and is my favorite, and now is the only one I write for her exclusively, but it's published by Steve Blechman out of Ronkonkoma, New York, who recently changed the format to all natural, and is now called All Natural Muscular Development.

In the beginning, Dave, I trained as the manual which accompanied the barbell set my parents gave me as a Christmas present directed: three times a week with about ten exercises, or sets, per workout. It wasn't until I became a muscle magazine fanatic that I gave up a reasonably sane approach and started training six days a week for up to three hours per session; and as I wasn't making progress doing that, I assumed I'd have to train four hours a day, but wasn't sure at that point it was worth it. As I was working 12-hour shifts in the Air Force, working a part-time job, trying to spend as much time as possible with my girlfriend, the thought of training four hours a day wasn't very appealing. Just as I was about to forsake my dream of ever becoming a bodybuilding champion, I met Casey Viator, who introduced me to Arthur Jones, who introduced me to high-intensity training theory. During a one-hour

phone call, Mr. Jones disabused me of the notion that I was an expert on the subject, merely because I had memorized all of the top champs' routines out of muscle magazines.

Mike, tell us more about Arthur Jones.

Yes, an interesting subject for me. He possesses an unmitigated passion for the mind, especially mathematical exactitude, the likes of which I haven't seen since, Dave. The first time he and I spoke, it was on the phone, but not a conversation, rather a lecture, and with a capital L. After a very terse, almost abrupt introduction, he launched into an impassioned disquisition on the subject of the fundamentals of anaerobic exercise physiology. I was stunned, not just about what he said, which was brilliant, but moreso how he said, it. Something like Dr. Leonard Peikoff's description of his first meeting with Ayn Rand in her living room, while he was only seventeen years of age. This man, Arthur Jones, was willing to spend considerable time explaining to a complete stranger, in the clearest, most objectively precise manner, the essence of anaerobic exercise science. Dave, it seemed like the fate of the entire world hinged on his summoning every scintilla of cognitive energy, ringing every bit of intellectual clarity possible from himself; and the reason he did it, in addition to enjoying the experience of achieving that level of intellectual precision, was because I was sincere, an intelligent, yet ignorant and sincere, twenty year old, and as doctor Peikoff also said about Ayn Rand, that he never expected to meet another individual again with the likes of her intellectual passion, I suspect I'll never meet anyone quite like Arthur Jones again.

That is one of the most insightful stories I've ever heard, both about Mike Mentzer and about Arthur Jones, certainly unique. Well, Mike, thanks for sharing that. But now, what about Steve Blechman? I know that you were a writer for Joe Weider for twenty years, in fact, we worked together at one point, in the Weider office in Woodland Hills, as you recall. What happened, after twenty years, all of a sudden you're off and working for Steve Blechman?

I originally moved, Dave, to Southern California, twenty years ago, at Weider's invitation to write for his magazine, Muscle Builder, which now, of course, is Muscle and Fitness. The first few years, Joe and I got along extremely well, not only did we work well together during that period, we socialized quite a bit, and as many who were there recall, he seemed to regard me almost as a son, believe it or not. Joe had a certain love for philosophy as I did, so he finally had a top bodybuilder he could promote who he could also talk to on a higher level, and promote me he did, Dave. There were as many as four and five of my articles appearing in each issue of Muscle Builder. I was appearing in his ads and was on the cover regularly; then, in the aftermath of the 1980 Mr. Olympia, I vociferously protested in magazines and at my seminars that the contest was fixed for Arnold to win. This enraged Ben Weider, who talked about it to Joe, and apparently Ben's wrath rubbed off on his brother and he eventually turned against me.

Without belaboring it, Dave, our relationship, that is, Joe's and I's, hasn't been the same since. I'd received a further cooling-off of Joe toward me several years ago, after Dorian Yates won his first Mr. Olympia, in fact. Dorian was very gracious at the time to cite me as his idol, and even credited Heavy Duty, high-intensity training for building his physique. This was the first Mr. Olympia that Mr. Weider couldn't claim he had trained. At about the time that Dorian had burst onto the scene, I was reaching a creative pinnacle, and my articles in Flex magazine were received, with Dorian giving me credit and Heavy Duty receiving ever-greater recognition and acceptance. I believe Joe thought that he had created a monster, a threat to his concept as trainer of champs. But to his credit, Joe still allowed me to write for him.

Mike, haven't you trained a few other top bodybuilders?

Yes, including Erin Baker, David Dearth, Roland Kickinger, and David Paul the Barbarian, of movie fame.

How did they do under your guidance?

Extremely well, in fact, Dave. I got Aaron Baker interested after that first WBF contest where he appeared in the worst condition of his life, having lost 25 pounds of muscle due to chronic, gross overtraining. He was following something called the Bulgarian system, which had him training for up to one hour, three times a day. Very disheartened, he approached me one day and I explained the Heavy Duty system. He signed up immediately, and within six weeks had regained all the muscle he lost, plus some, going to an all-time high muscular bodyweight of 254 pounds, I believe it was. Aaron made progress, Dave, literally, every workout for months and months, which aroused the very intense interest of his good friend, David Darth. David embraced Heavy Duty even more than Aaron, as he loved to train hard, whereas Aaron didn't. David made the best progress of his life, as this was when he put on considerable muscle mass and finally lost the image he had as the scrawny pro. David, Paul was perhaps my favorite client ever, as he trained harder than anyone I've ever seen, including myself. David pushed every set so hard, one had the distinct impression he didn't care, literally if he had pulverized his bones. He approached me a while back, complaining he hadn't gained any strength or muscle in five years, while training for two hours a day, six days a week, sometimes twice a day. I kidded him saying, “David, it took you five years to figure out something was wrong?” Which is a good point to reiterate for the listener, a point I discussed on tape one. If your current program hasn't been yielding results for weeks or months, it's not going to start working magically next week. Cease immediately, take a two or three week layoff and then resume training with high-intensity. David, Paul, by the way, put 185 pounds on his squat in four weeks and gained seven pounds of muscle that month.

That's wonderful progress. And what about Dorian Yates?

Dorian is almost a teratological case, Dave, and ultra-gargantuan physique, who, like Victor Richards, is so imposing that when he walks into Gold's Gym in Venice, the other bodybuilders, even advanced ones, grit their teeth, as they simply can't believe that anyone can obtain that much sheer muscle mass. The first time I trained Dorian was in 1992. I ran into him at Gold's Gym, where he told me he was not satisfied with his progress. He had allowed the number of sets he was performing for each body part to creep up to six. Although he was reluctant to accept my conclusion that he was overtraining, he did allow me to supervise his bicep workout that day. The bicep workout consisted of one set of Nautilus curls carried to a point of momentary muscular failure, whereupon, I helped him into the contracted position and had him hold it there, statically, for roughly fifteen seconds, before lowering under strict control. Dorian didn't say much, other than he liked the way it felt, and with that left the gym.

Thinking the matter was closed, I was surprised to see Dorian the next morning at Gold's, eagerly seeking me out. “Mike,” he said. “I wouldn't be here talking to you right now, but I swear, I woke up this morning and my biceps were bigger from that one set yesterday.” Then with that, Dave, we, Dorian and I, agreed that I train him for the next two weeks, so he can learn the one-set system and use it when he returned home to England to prepare for the 1993 Mr. Olympia. I trained him on a couple of different occasions after that, but lately, he's made it a point to steer clear of me. I suspect he didn't like all the publicity associating him with Mike Mentzer. As a multi Mr. Olympia winner, he is looking to create his own mythology, if you will. And possibly because he found out that it wasn't politically correct to be lauding me in Flex and Muscle and Fitness.

That's too bad.

Well, in a way, perhaps Dave, but remember, Dorian is his own man and must do what he regards as best for his career. He had been so kind as to endorse my Heavy Duty system in my magazine ads, which has helped the cause and I sure do appreciate it.

To pick up the thread Mike, where does Steve Blechman enter the picture?

At the right time. In the early part of 1995, in fact, when I was really starting to grow uncomfortable with the strain between Joe Weider and myself, certain individuals who had contact with Mr. Blechman began reporting to me that he was interested in having me work for him. I had never heard of the man before and would reply to these people, “Look, if Mr. Blechman is interested in having me work for him, why doesn't he call me?” And lo and behold, it wasn't long after that that I received a phone call. And I'm glad he did call, for we hit it off very well from the outset, and I have no regrets about leaving Weider and signing to work exclusively for Steve and the best magazine on the market, namely All Natural Muscular Development.

Mike, I'm glad to hear you and he are getting along so well.

Yes, he is an interesting, intelligent as well as a very decent man, Dave. During the first few of those phone calls last year, we each recognized our strong mutuality of values. In addition to being about the same age, both of us have had a lifelong love of bodybuilding, enormous respect for the intellect of science, and a strong desire to advance the bodybuilding industry's future. In fact, Steve sees himself as the man to possibly direct, or redirect, the future of this sport or industry. He possesses a restless intelligence and exacting standards that demand ever more complex challenges. He also has enormous resources, including time. At the age of 43, Mr. Blechman is imbued with the cardinal element of youth, he knows that great things are possible and has the audacity to achieve them.

And with regard to the Blechman brothers’ Twinlab supplements company, I decided to endorse their Creatine Fuel Plus because it, like the rest of their supplements, is the best on the market. Last year, in 1996, I visited Steve and his brothers at the Twinlab facility in Ronkonkoma, New York. While I was prepared, Dave, not to be unduly impressed. as I had heard reports from a few others, including John Romano, as to how great an operation Twinlab truly is, I was still very, very impressed. As Ross Blechman started me on the cook's tour of the factory and warehouse, I couldn't help but notice the great pride he had in regard to their achievement; and by the time we were halfway through, I saw that his pride was certainly justified. The warehouse is enormous, packed with material and product from the floor to the top of the 35 foot ceiling, much of it on conveyor belts, which keep everything moving all the time so there was never more than two days storage, and thus that the buyer receives fresh quality product, which is their forte. They have so many fail-safe, backup systems at every step along the production line to ensure quality, with Twinlab, you can be certain you're getting what you pay for, as opposed to others in the bodybuilding supplement industry who farm out their products to be produced by others.

I see you've been endorsing Twinlab’s Creatine Fuel Plus – now, Mike, do you really use it?

Not only do I actually use it, Dave, I practically live on it at times. As busy as I am, there are periods when I don't have time for formal, sit-down meals, especially breakfast and lunch. So, I drink Creatine Fuel Plus along with Twinlab’s Egg Fuel mixed in nonfat milk, periodically through the day, but always have a normal dinner. More recently, I added Twinlab Sport Fuel Multi-Vitamin Mineral supplement for the powerful antioxidant properties, which help prevent muscle catabolism during high-intensity training, and I've never felt better.

Mike, there was an interesting comment in one of your recent articles in All Natural Muscular Development: you stated that you've “mastered” bodybuilding science.

To be precise, Dave, I stated that in looking back to when I wrote Heavy Duty I four years ago. I realized that my level of understanding of the fundamental, theoretical principles of bodybuilding science was something on the order of two plus two equals three and a half. As a result, my clients' progress wasn't as good as it could have been. Now, my understanding is the equivalent of two plus two equals four; and that shows up in my clients finally achieving results I always knew were possible. Before, I would only occasionally have someone gain ten to twenty pounds in a month, or 30 to 40 pounds in three to five months, now such gains are the rule. When I mentioned the fact that I have finally mastered the fundamentals of bodybuilding science to someone on the phone recently, he said, "There you go again, posturing Mentzer, always so damned certain, how can you possibly claim such a thing?" And I responded, "Didn't you, sir, master the fundamentals of mathematical science, namely addition, subtraction, multiplication and division. I didn't say," I continued. "That I'm omniscient or infallible, or even that I possess an exhaustive knowledge of exercise science. Give me a break," I continued. "I'm a little slow. It took me over twenty years to master the simple fundamentals of bodybuilding science, and which may be summarized like this: to be productive exercise must be number one, intense, number two brief, and number three, infrequent."

The fundamentals, in other words, relate to the issues of intensity, volume and frequency. Now, in stating that I've mastered the fundamentals of bodybuilding science, listener, I can't say necessarily that I would start you, or a new client, on the same baseline program that the almighty would, as mentioned on the previous tape. What I do is start the individual on a proven, baseline program, one that has worked well for the majority. If after checking his strength increases, once he has completed two or three cycles of the four workouts, I deem his progress is not satisfactory, I make modifications. An important observation, I made several years ago, having been a trainer for two years t that point, is that those with what I refer to as "linear physiques", those with slighter builds, most often individuals five foot ten or taller, and 150 to 185 pounds or so, are the ones who usually do not tolerate high-intensity exercise stress quite as well as others. And with those of that body type whose training history already clearly reveals a lower exercise stress tolerance, I start them out on a modified program, which I refer to as the consolidation program.

Now, I understand, Mike, that your new book, Heavy Duty II: Mind and Body, which is filled with quotes, has a quote, from Thomas Jefferson as the first quote of the book.

Yes, and it is perhaps President Jefferson's most famous. He said, "Fix reason firmly in her seat and call to her tribunal every fact, every opinion. Question with boldness even the existence of a God because if there is one, he must more approve of the homage of reason than that of blindfolded fear." Close quote.

If anyone listening thinks that the material on these tapes is too intellectual, Dave, then perhaps people shouldn't be expected to learn philosophy. Remember, bodybuilding does not exist in a vacuum apart from the rest of life; even within bodybuilding, if one desires to learn to distinguish between true and false ideas, he must learn to reason, and only a rational philosophy can teach that.

This is the end of side one. Please turn over the tape at this point to continue with side two.

Now that you've raised the point, Mike, I think it would be appropriate to ask: what is philosophy, exactly?

Philosophy, Dave, is the intellectual discipline whose purpose is to study the fundamental nature of things, which then enables the special sciences to study isolated aspects of the universe; or, one could say that the purpose of philosophy is to teach man to make valid identifications, i.e., establish the identity of the fundamental nature of things. And one may learn to do this, only once he has come to understand the five branches of philosophy, Dave. Forming the base of philosophy's hierarchical

knowledge are: Metaphysics, which studies the fundamental nature of reality and man, and Epistemology which studies the nature of knowledge and man's means of acquiring it. Logically based on, and derived from, these two fundamental branches is the third branch, Ethics. It is only on the basis of having properly identified the fundamental nature of man, including his means of knowledge, and of the universe in which he acts, that it is possible to formulate a prescription for what man ought to do. Whereas, the first two branches are essentially descriptive, Ethics is prescriptive. The task of a proper non-religious, scientific ethics is to teach man quite simply to make the right choices. The next step up man's hierarchical structure of knowledge is Politics. Its proper function is to identify and implement the principles that serve as a logical transition, from guiding a man's actions to guiding his actions with others; and to tie it all together, and present man his abstract, theoretical philosophy, and concretized form, for his pleasure and contemplation, is Aesthetics, or art.

Everyone, everyone listening to this tape has a metaphysics, a view of reality, an epistemology, a view of knowledge, an ethics, a code for making choices, a politics, and an aesthetics, or art values; in short, he has a philosophy. Man needs a philosophy in order to live. The only alternative, Dave, is whether the individual gains his philosophy by chance or by choice.

That's all I want to say about the five branches, except that if anyone listening does care, if you don't want to leave the creation of your soul to chance, literally, and that is the issue, then start studying philosophy by reading Ayn Rand’s novel, The Fountainhead, and concurrent with reading The Fountainhead, I strongly suggest you read her book of explicit philosophical essays entitled Philosophy: Who Needs It?

That sounds almost frightening, leaving the creation of one's own soul to chance.

Well, it shouldn't frighten anyone, although it should have a sobering affect. Most in our culture have, in fact, left the issue of their own souls to chance influences. One’s soul, Dave, is not some gossamer-like, ghostly aetherium lodged in his nervous system. Your soul is your consciousness, which is comprised of two elements: your ideas and your emotions, which are integrated. Your emotions are literally the products of your ideas, your thinking. And most people blindly and uncritically accept their ideas from magazines, books, movies, family, friends, teachers, by osmosis from the cultural atmosphere, as Ayn Rand put it. As a result, many of their ideas, or beliefs, are contradictory, which is why they are torn by conflict, and thus uncertain about so many things. Without philosophy, one cannot critically evaluate ideas, and he perforce becomes a man of mixed premises, with a soul like a shapeless piece of clay, stamped by footprints going in all directions. With a proper understanding of the power of ideas, that is, philosophy, one can achieve an integrated personality, as I described on tape one, where there are no contradictions between a man's thought, feelings and actions.

Well put Mike. You know, one of my favorite articles of yours in All Natural Muscular Development had, as its theme, the issue of concrete-bound bodybuilders, versus principled bodybuilders. Now, what in hell, does concrete-bound mean?

That's one of my favorite topics as well, Dave. Let me explain how I came to write that piece. I receive phone calls and letters regularly from bodybuilders who are being harassed by others in their gym, merely because they are training in a radically different fashion. Mainly with brief and infrequent high-intensity workouts. They are usually called crazy, and some have even been threatened with physical violence, literally. Dave, there are essentially two types of people in the world, those for whom the mind and knowledge matter enormously, who volitionally choose to work conscientiously and achieve cognitive precision, and wide-scale factual integration. Then there are the others, the mentally passive who decided that the effort required to gain a philosophic, scientific, that is, principled, understanding of reality, including their own, inner life, wasn't worth the effort; and the mentally passive are the ones who have a penchant for calling my clients crazy, or even threatening them with

violence. Philosophically, these are referred to as concrete-bound mentalities. They are limited to dealing with the first level of abstraction, that is, concepts that refer to directly perceivable, or concrete, objects, such as chair, table, gym, weights, biceps, etc. When confronted with higher-level abstractions, those not referring to what is directly perceived, such as the concepts “theory”, or “principle”, they shrink away, bewildered. You see, Dave, gaining a thorough, first-hand understanding of higher concepts requires extensive mental effort of the sort that these individuals have spent most of their lives actively evading; hence, upon encountering that better type of individual, the one who hardily embraced the effort and responsibilities of rational thought and critical judgment, the self-arrested, concrete-bound person feels threatened even to the point where he'll use violence. These are the ones who leave the creation of their souls to chance, as I was discussing previously. Which brings to mind one of my favorite statements from all of literature, and it is from Victor Hugo and his novel, Les Miserables. Listen carefully, Dave, and I quote:

“They were of those dwarfish natures, which if perchance, heated by some sullen fire, easily become monstrous… There are souls, which crab-like, crawl continually towards darkness, going back in life, rather than advancing in it, using what experience they have to increase their deformity, growing worse without ceasing and becoming steeped more and more thoroughly in an intensifying wickedness” Close quote. The point here is that either one continues to gain knowledge and progress morally, or he does not, and goes backward. There is no such thing, Dave, as standing still in human life, or stagnating: either you move forward or backward.

Yes. I'm sure we have all heard something to that effect earlier in our life.

Yes, and it is an important concept for bodybuilders who desire to mature properly to consider. While the degree one can train to stimulate the growth of larger muscles, of course, is strictly limited, there is no limit to how much knowledge one can integrate, as human knowledge is an open-ended hierarchy. A philosophically motivated individual has the capacity to gain knowledge, to develop intellectually, from his first moment of cognizant awareness to his last dying breath.

Mike, just to switch gears here for a moment, I understand that one of your recent articles in Muscular Development angered a number of people. I believe it was your report on the Night of the Champions contest.

Yes, it did, Dave. It did anger some people. So far, three different individuals have contacted me in protest of what I said about them in that article. One of those three threatened me physically, a severely self-arrested, concrete-bound individual. As I was leaving Gold's Gym after my own workout, this particular person confronted me, screaming maniacally, then he started pushing me, saying that I attacked him personally in that article, and that he wanted to go outside and beat me up. I told him that if he touched me one more time, I'd make sure he would spend some time in jail, and that it was a free country, so I could write anything I chose, short of libel. By then the employees from behind the front desk, were there to pull him off me, at which point he was still railing on and on, something to the effect that I was a horrible writer anyway, and that he’d get me back somehow. In fact, I said nothing about his moral worth or person in that article, Dave. I merely reported that he wasn't in his best condition for this contest or his last one. Imagine how such an individual might act in a real crisis situation when he has so little self-control in one where there is no real threat. He is in dire need of the type of mind training that a philosophy of reason provides.

The day after that incident, I was again leaving the gym, when Flex Wheeler piped up, “So, you think I don't know how to train, huh?” Amongst the many glowing things I had written about Flex’s physique in that article, I also wrote that neither he nor Ron Coleman, had the slightest clue as how to properly direct their training effort. I walked over to Flex and said, “No, Flex, you really don't know

how to train. If I could train you for six months, you'd beat Dorian Yates." And that was that day, the more civilized encounter, if you will.

Now, Mike, we don't have much time remaining and I wanted to ask you some questions I have about Heavy Duty. For instance, why do you have your clients in so infrequently on a split routine? Isn't it true that if one trains different body parts each workout, he can train more frequently, since the non-worked body part is afforded rest on the day he is working other body parts?

This is a very common belief but it simply is not true. You are failing to recognize, Dave, that exercise, in addition to having a localized effect on the given muscle being worked, also has a systemic effect, that is, it affects the rest of the physical system. Localized muscle recovery actually is completed fairly quickly, ith systemic recovery, taking up to four days or longer in some cases.

Haven't you had a heavy leg workout, say on a Friday, Dave, then intentionally rested all weekend thinking you'd be fully recovered, but instead you woke up on Monday still generally fatigued? See what I mean?

Yes, indeed. And I've had that experience, and you're right. Now, I see the distinction now, very clearly, between localized recovery and systemic recovery. Now, my next question has to do with your new ad for Heavy Duty II an All Natural Muscular Development, wherein you claim it is possible for an individual to actualize his muscular potential in one year. That doesn't seem possible.

Those who know nothing about the scientific principles of high-intensity, anaerobic exercise stress physiology not only would think that actualizing ones muscular potential in a year would be impossible, they actually wouldn't know where to begin in projecting how long the actualization of their muscular potential might take. Those utilizing the blind, non-theoretical volume approach to training are continuously fretting as to whether they'll ever achieve their goal of bigger muscles or not, because they know nothing, literally nothing, about the nature of the training stress required to stimulate growth; or that the volume and frequency of weight training exercise must be consciously regulated.

I made the point on one of the other tapes, Dave, that when in possession of a truly valid theory, and beyond that, and just as important, one is making the proper practical application of the theoretical principles, progress, no matter what the field of endeavor, should be nothing short of spectacular all the time. Remember, the purpose of theoretical knowledge is to serve as a guide for successful human action.

Mike, I don't ever recall seeing you address the issue of steroid use, as it relates to Heavy Duty training in any of your articles. With the trend away from steroids, I would think that there would be a stampede toward high-intensity training.

Dave, this is one of the most pressing issues in modern bodybuilding: the move away from steroids and the resultant effect on training. But your posing of the question implies that consideration perhaps not generally understood. The reason some bodybuilders have gained muscle with volume training relates to the fact that steroids act primarily as recovery ability enhancers. Were those same bodybuilders to train for two hours a day, six days a week without steroids, they would begin to lose muscle mass, almost immediately. Heavy Duty, high-intensity training is tailor-made for the non-steroid, natural bodybuilder, because of the painstaking precaution to properly regulate the volume and frequency of exercise to prevent overtraining. I'd like to warn the neophyte bodybuilder that those outlandish routines you read about in certain muscle magazines, which advocate that you train like the top champs for hours every day, were developed with the explicit understanding that steroid use increases recovery ability or exercise stress tolerance manifold, yet continue to be promulgated by

unscrupulous publishers, who refuse to inform their readers, the majority of whom are natural, non-steroid bodybuilders, that the top champs who employ them are drug users.

And with steroid use becoming a thing of the past, Steve Blechman, All Natural Muscular Development magazine and Twinlab, had picked up the gauntlet by investing in research and product development, which leads the way in providing nutritional supplements that serve as the proper, healthy way to augment muscular development.

Those insane, marathon workouts do not, cannot, will not yield any results for those with a normal complement of hormones. They don't even work, for chrissakes, for many who do take steroids as innumerable of my phone clients have reported. Only those with superior genetics, who take steroids, make progress while training with a marathon or volume approach, and even they would make much greater progress, of course, if they trained properly. Tthe proof of that is my own success with Heavy Duty, Casey Viator, Aaron Baker's, David Dearth’s, David Paul's, not to mention Dorian Yates, and my hundreds of clients.

What about womenm Mike? Does high-intensity work for them as well as men?

Yes, because the principles of human physiology, Dave, are just that: the principles of human physiology. They are applicable to all, male, female, black, white, tall, short, young and old, with some variations, of course; and the primary difference between male-female physiology is the sexual reproductive system. Within the context of lesser testosterone endowment, therefore, it can be inferred that women don't tolerate exercise stress as well as men, though not always. I have worked with naturally mesomorphic women, who gain better than some men. My advice to women is to follow the advice of these tapes and the accompanying booklet and start with the baseline workout. Whether the goal is to become a bodybuilder, a fitness competitor or model, or even just develop optimum fitness for personal reasons.

And what about older people?

In fact, high-intensity training is very good for older people, as without some form of weight-bearing stress, older women, in particular, become prone to osteoporosis, which is de-mineralizing of the bones. Older people, men and women, also tend to lose lean mass unless they engage in some form of weight training, and aerobic exercise. And as you know, the loss of lean mass results in the slowing of the metabolism, which makes it easier to get fat.

I would imagine many like your Heavy Duty workouts because they are brief and infrequent. I have spoken with numerous people, especially intelligent, career-oriented individuals, who were either about to give up weight training, or were reluctant to start, as they were under the impression that training every day for an hour or two was required, and they just couldn't justify, Dave, that kind of time expenditure. Then they read about my approach, and only trained for twenty minutes every four or five days; and now these same people are quite delighted with their progress. What never ceases to amaze me, Dave, is the number of bodybuilders who scoff at the mere suggestion of even trying Heavy Duty, and continue to slave away for hours a day, with little in the way of meaningful progress.

Throughout human history, men have done all they could to avoid slavery, and here in the latter part of the twentieth century, there's a group of knuckleheads who seem to willfully embrace the role of Beast of Burden.

What about aerobic exercise and cardiorespiratory health?

Dave, aerobics have been inordinately emphasized over the last decade, ever since it was recognized that the public is more likely to engage in low-intensity aerobic activity, that in high-intensity, anaerobic activity. Some may recall that prior to the heavy emphasis on aerobic conditioning,

the primary emphasis was on something called total fitness. Total fitness is comprised of several components including skeletal muscle strength, flexibility endurance, the building and maintenance of lean mass and positive self-image, all of which are best achieved through a properly conducted weight training program. Aerobic activity, does next to nothing to provide for increased skeletal muscle strength, in fact, by overworking certain few muscles to the exclusion of working others at all, aerobics can create imbalances in the skeletal muscular system, which increases the likelihood of injuries; nor does aerobic exercise improve flexibility, anaerobic endurance or lean mass.

And it was never cast in stone that one must limit his activity to repetitive movement of the legs as on a treadmill, or StairMaster, to improve his cardiorespiratory endurance. The cardinal principle for improving cardiorespiratory fitness, is that the individual sustain a certain age-related pulse rate for at least twelve to twenty minutes. This can be easily accomplished with high-intensity training, by limiting rest time between sets, or if a person is hell-bent on doing aerobics, remember, it is possible to overtrain here, too. When training in high-intensity fashion, as described on tape two limit aerobics to no more than twnety to thirty minutes twice a week. And for the bodybuilder who is seeking to develop maximum muscle mass in the shortest time possible, I strongly advise he eliminate aerobics entirely for awhile. This is because the body has a strictly limited adaptive capacity. It's not as if the body has 100 units of adaptive resources for increases in strength and size, and 100 units available for adapting with increased endurance. The body possesses but 100 units of adaptive energy, period. Or in other words: training guided by mixed premises will not yield results of the same magnitude, as with adaptive specific training.

Mike, I see that our time is up. Thank you very much for a most enlightening interview and I will look forward to talking to you again soon.

Dave, it was my pleasure.

The editors of All Natural Muscular Development are pleased to have been able to bring you these highly informative lectures by Mike Mentzer, who writes exclusively for their magazine. Pick up a copy today, or better yet, order your subscription to All Natural Muscular Development at 40% off the newsstand price, by calling 1-800-835-2246, extension 500. That's 1-800-835-2246, extension 500. And remember, keep pumping.