



Isotone.net

BOXING

A SPLIT-SECOND EDGE

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Overview of IsoTone

IsoTone is an innovative, light, and portable resistance fitness and strength training device that automatically adjusts its resistance based on the force applied, making it an ideal tool for training athletes and sportsmen in different sports. The level of workout loads varies depending on need: from casual to extreme where the athlete reaches a highly aerobic state within a few minutes of intense exercise. IsoTone's portability allows athletes to engage at any level of aerobic and strength developing exercises in a gym or, importantly, everywhere outside of gym, anytime.

ISOTONE CUSTOM TRAINING

While IsoTone can be effective in whole body strength development, here we focus on enhancing the speed of offensive and defensive moves of a boxer, one of the most important qualities, in addition to strength of course, that will give an edge to the boxes that are trained using the IsoTone's unique training regimen specifically focused on speed. We will discuss specifics in our next podcast.

ARGUMENT IN FAVOR OF ISOTONE TRAINING

Without getting into the specifics of the IsoTone's Agility and Speed Training (AST) regimen, we asked an imaginary boxer, after giving him a demonstration of AST to answer the two following questions:

1. Do you consider AST as potentially giving you an edge over your competitors, and
2. Would you be concerned about your competitor taking AST as you stuck with the traditional training methods?

NOTE: AST regimen for boxing has yet to go through testing when integrated with traditional training. And, of course, tested in-fight, in the ring.

SPLIT-SECOND EDGE: TIME AND SPEED ESTIMATES

Since boxing is an extremely fast-movement sport, even a minute advantage in speed may separate a win from loss. To understand what "minute advantage" may mean in this context, let's make some estimates of the characteristic periods and dimensions or lengths of the human body and understand how they relate to boxing.

CHARACTERISRIC PERIOD AND DIMENSION OF HUMAN BODY

Let's define the characteristic period and dimension, and thus – characteristic speed for a human body movement. The characteristic period for human movement is about 50 milliseconds. Time duration below 50 milliseconds is below the human capabilities for quick movements. We define this characteristic period as the shortest time that a human needs for moving a limb or other part

of the body over human body's characteristic length, nine inches, accepting the human arm as the fastest moving body part. As a result, nine inches as human body's characteristic length will translate to about 10 miles per hour for a maximum speed at which a human body can move (ratio of the characteristic length to characteristic period).

ADVANTAGE IN SPEED AND TIME

For our analysis, let's assume that the maximum speed of two boxers is the same, 8.0 MPH. Let us now assume that using AST, Boxer 1 was able to increase the movement speed of his arms by 10%, from 8.0 to 8.8 mph. That would mean that Boxer 1 will be able to move his glove to the intended point of impact nine inches away by just about 6 milliseconds sooner than Boxer 2 would get his glove to that same point of impact. No matter whether in defense or offense, these 6 milliseconds will give Boxer 1 a decisive advantage to become a winner. Advantage of mere 6 milliseconds!

CAN ISOTONE AST DELIVER A 10% INCREASE IN SPEED?

We believe that such an increase of arm movement speed using specialized training focused on the muscles involved is possible, as confirmed in the literature. To achieve this our training will target muscle strength, neuromuscular coordination, and fast-twitch muscle fibers, which are essential for quick, explosive movements. Here are the specific types of training implemented in AST using IsoTone:

1. **Plyometric Training:** Special IsoTone exercises that involve rapid bi-directional stretching and contracting of muscles will improve explosive power and speed.
2. **Strength Training:** Building strength in muscles that control arm movement (biceps, triceps, deltoids, rotator cuff muscles) will support quicker, more controlled arm movements.

PRESENT STATUS

Presently, we are in search of a boxing coach interested in helping us to fine-tune our training regimen and test our IsoTone AST.

BOXING: GENERAL INFORMATION

Boxing is a combat sport where agility, power, and precision are key, with arm speed playing a crucial role. Quick arm movements are vital for both offense and defense:

1. **Punching Speed and Precision:** Fast punches (jabs, hooks, crosses) enable a boxer to land strikes before the opponent can react, increasing the chances of scoring points or achieving a knockout. Speed allows punches to hit with accuracy and power, maximizing their impact.
2. **Defense and Reaction Time:** Quick arm movements are essential for blocking, parrying, and countering opponents' attacks. Fast reflexes allow a boxer to deflect incoming punches effectively and set up counterattacks.
3. **Combination Sequences:** Boxers use rapid combinations of punches to overwhelm opponents. Speed in executing combinations creates openings in the opponent's defense and builds offensive pressure.
4. **Feints and Misdirection:** Fast, subtle movements of the arms can be used to mislead opponents, creating opportunities to strike by causing them to react to deceptive gestures.