

## Ultimate Fitness Through Martial Arts: A Book Report

Ultimate Fitness Through Martial Arts by Sang H. Kim, Ph.D., attempts to provide a comprehensive guide on the martial arts as a means to attain & improve all aspects of physical fitness. This paper will describe my perspective of the book as a practicing martial artist, including a summary, my critical analysis of the material presented, and my overall impression of the book as a practical instructional manual for the developing martial artist.

Further, as a certified Personal Fitness Trainer with a significant Exercise Physiology background, I hope to provide a further insight from that perspective.

### Organization & Topics

First, let us examine how the book is organized, and the primary concepts that are covered. The first chapter defines fitness in general terms, making a distinction between *Performance Fitness* & *General Fitness*:

“Performance fitness is defined in physical education terms as those qualities that provide the individual with the ability to successfully participate in sporting activities. The fundamental components of skill related fitness are speed, agility, coordination, power and balance.”

Additionally, the author adds a martial arts-related component: “In addition to that definition of general fitness, martial arts must add the qualities of flexibility, accuracy, perception, timing, endurance and mental conditioning.”

Thus, based on these basic definitions, the book is divided into twelve chapters, each covering one the following topics:

Chapter 2: Power Chapter 8: Flexibility

Chapter 3: Speed Chapter 9: Endurance

Chapter 4: Perception Chapter 10: Accuracy

Chapter 5: Coordination Chapter 11: Timing

Chapter 6: Balance Chapter 12: Mental Strength

Chapter 7: Agility

Obviously, it is beyond the scope of this paper to delve into the details of each chapter, but I will instead highlight each topic as described by the author, and list the suggested drills or exercises to improve that component of fitness.

### Summary

The format of each of the chapters first gives a definition of each fitness component. The author then proceeds to expand on the definition, providing a scientific basis for this definition, including examples, and how it might apply to martial arts. As one example, here is excerpt from Chapter 2, which covers the topic of **Power**:

“Power is a combination of strength and explosiveness. It is created by releasing maximum muscular force at maximum speed. . . ”

“Since martial arts applications are, in their purest form, a conflict between opposing forces, increased power gives you a significant advantage. . . . Though many arts stress finesse over power, the ability to recruit and mobilize muscles quickly is ultimately necessary to react to the opponent and apply a wide range of techniques.”

“Some common examples: (1) Move the entire body as one unit, (2) Focus force into one area.”

The chapter then continues by providing a list of exercises or drills that will improve power. Each exercise is accompanied by at least one photo, a description of how to execute the exercise, a list of variations on the exercise, the primary benefit, the martial arts applications, and cautions for performing the exercise.

The strength section consists of 18 exercises, including push-ups, handstand push-ups, chin-ups, v-ups, back extensions, side leg raises, standing jumps, lunges & squats.

Lastly, the chapter concludes with a chart for tracking progress for which the practitioner can list the date on which the workout is performed, the number of repetitions performed, number of sets, and the amount of weight lifted, if applicable.

The text continues with the next chapter, which discusses **Speed**. Speed is defined (in the context of exercise physiology) as “the ability to move the whole or any part of the body from one place to another in the shortest possible time.”

Early in the chapter, the author proposes five sequential steps in developing training: (1) Basic conditioning, (2) Explosive power development, (3) Skill refinement, (4) Skill loading, & (5) Full speed training.

The drills described to improve speed include whistle drills (in which you react to the sound of a whistle), bounding, sprinting, uphill running, obstacle jumps, and bicycle tube drills (in which you use a bicycle tube tied to your ankle to provide elastic resistance as you perform kicks).

**Perception** is defined by the author as “the ongoing cerebral process of organizing and giving meaning to sensory input.” Practically speaking, this refers to the ability to recognize a particular situation such that you can then formulate an appropriate response. For example, during a sparring match, an opponent may launch an attack. Perception is the determination of the type of attack (such as a kick or a punch), whether the strike is aimed towards your head or your body, and whether the strike poses a risk of reaching its target. Based on this information, you can then formulate a defense.

Suggested drills for improving perception include jumping spins, standing spins, dodge ball, forms practice with eyes closed, target response (in which a partner holds a target and randomly presents it for the other partner to strike), and

chalk sparring (in which a pair of partners each holds a piece of chalk with goal of marking his opposing partner's uniform more times that he, himself, is marked).

**Coordination** is the “ability to integrate physical and psychological processes into an efficient pattern of movement. . . . [It] comes from the integration of physical skills like balance, speed and timing, with the sensory input of the visual, tactile and auditory systems.”

Of particular note, the author contends that “coordination, like agility, is something you can improve only through experience. By practicing movements and exercises that require coordination, you develop an awareness of what coordination feels like.”

Suggested exercises to improve coordination include jumping jacks, jumping rope, forward rolls, backward rolls, star jumps (which start from a deep squat and peak in a position in which the legs, arms, and back are flexed, landing back into the original deep squat position), and air bicycling (with the legs held in the air, moving the feet in a pedaling motion as if riding a bicycle).

**Balance** is the “ability to maintain your body position and equilibrium both in movement and at rest.” Further, *Static Balance* is defined as the ability to maintain balance when the body is not moving (such as when you stand upright), and *Dynamic Balance* is defined as the ability to maintain balance while moving (such as when running).

Balance exercises include head stands, hand stands, walking on the hands, slow kicking, single leg balance, single leg squats, single leg hops, & various balance games in which you and a partner assume particular stances and attempt to unbalance your opposing partner. For example, the “pushing kicks” drill consists of each partner raising a leg into a chambered sidekick position with each partner's kicking foot touching his opponent's. From here, the object is to randomly extend and retract the kicking leg with the goal of unbalancing your partner.

**Agility** is defined as “the ability to change direction or body position quickly and proceed smoothly with another movement.” Of particular note, the author suggests that agility is a characteristic of people who are thought of as “natural athletes.” Further, it is “a smoothly integrated combination of perception, coordination, speed, strength and balance.”

To develop agility, the author suggests jumping drills, zigzag runs, backwards runs, footwork drills, shadow sparring, cartwheels, and leg swings (from a standing position, swing one leg to the side, front, or rear, stopping between swings, or continuing onto another direction without putting the foot down).

“The extent to which a joint can be moved through its normal range of motion” is the definition of **Flexibility**, according to the author. Generally speaking, the way to improve flexibility is via stretching, which is recommended as a component of every exercise session.

The author further defines *Dynamic Stretching* as movement in which the muscles are moved through their full range of movement, whereas *Static Stretching* consists of extending a muscle group to the point of feeling slight pain and then holding that position for ten to sixty seconds.

Suggested stretches include neck rotation, arm circles, shoulder stretches, inside & outside forearm stretches, trunk twists, trunk bends, seated trunk twists side bends, back rolls, partner trunk twists, hip rotations, knee rotations, toe touches, butterfly stretches, hurdler stretch, splits, and ankle rotation. This section contains almost forty stretches, as it is fairly comprehensive in suggesting stretches for each of the primary muscle groups.

The author describes **Endurance** as the ability to maintain movement over time. More specifically, he defines *Cardiovascular Endurance* as “the ability of the heart, lungs and vascular system to function efficiently for an extended period of time,” and *Muscular Endurance* as “the ability of muscles or muscle groups to sustain repeated contractions over time.”

The author recommends distance running, swimming, bicycling, interval training (in which an activity is alternatively performed at high and then low intensities continuously for a predetermined length of time), stair running, and sparring to improve endurance.

**Accuracy** is “the ability to carry out movements with precision.” Further, “accuracy in striking arts, means hitting your opponent or target correctly.” In particular, “a technique that is performed accurately uses less energy, moves faster, and has more power than poorly performed techniques.”

Suggested drills to improve accuracy include fast point sparring (short rounds of sparring in which the first person to score is the winner), bar practice (holding onto a dance bar or wall for support while slowly and smoothly executing kicks), prone kicking (kicking while lying on your side), focus pad training, and hanging target drills.

**Timing** is “the ability to recognize an opportunity and capitalize on it at the perfect moment.” This contrasts with speed in that it does not necessarily require that you move quickly.

Some basic practical principles of timing include attacking when your opponent is (a) in midstep, (b) changing stance, (c) advancing, (d) retreating, (e) reacting to a feint, (f) stationary, or (g) distracted.

Suggested drills include visualization, reaction drills, heavy bag workouts, speed bag workouts, double end bag workouts and sparring.

**Mental Strength** consists of “characteristics like intensity, courage, fortitude, will, spirit, conscientiousness, competency and mastery.” As it pertains to martial arts, mental strength is what allows practitioners to adhere to their training schedules and undertake strenuous training.

To improve mental strength, the author recommends visualization, relaxation, meditation, and breathing exercises.

#### Critical Analysis

The most obvious shortcoming of the book from the perspective of someone who has experience with formal exercise physiology education is that the scientific explanations for some concepts aren't based on the most current research. This text was published in 1993, so it contains at least two instances that do not coincide with current scientific research. First, the author suggests that a positive benefit of an effective warm-up will be to decrease lactic acid in the muscles. Although this may be true, decreased lactic acid may not necessarily be beneficial. The most current research has found that lactic acid may, in fact, provide a source of fuel for muscles, and not the source of muscle exhaustion, as commonly believed<sup>1</sup>. Secondly, current research suggests that *proprioceptive neuromuscular facilitation (PNF)* stretches are the most effective in increasing flexibility, yet no such stretches are included in the text<sup>2</sup>.

Additionally, the book lacks scientific credibility in that it contains no citations of medical or scientific research, nor does it include a bibliography.

Another shortcoming of the book is the bulk of the text is comprised of exercises or drills, but many such drills are not adequately described with only text and one or two photographs. As a practicing martial artist, I strongly believe this text could be made stronger in combination with a Video DVD showing each of the exercises.

Lastly, I felt the author could have suggested a progression in performing the exercises detailed in the book. For example, in the strength section of the text, the author suggests regular pushups in addition to handstand pushups to improve strength. He makes no distinction in the difficulty of each exercise, nor does he suggest a progression from one exercise to the other. Thus, an untrained person might try to perform handstand pushups before adequately building up the necessary strength to perform them. As a personal trainer, I believe the logical progression would be to first practice regular pushups before attempting handstand pushups, as regular pushups do not require you to press your full body weight, in contrast to handstand pushups.

#### Conclusion

In my opinion, Ultimate Fitness Through Martial Arts would be a great addition to any martial artist's library, despite a few shortcomings (as described above). It attempts to provide a comprehensive look at martial arts from the perspective of general physical fitness. Although the book could be strengthened with a new edition based on current scientific research, as well as a DVD demonstrating suggested exercises, it does contain a wealth of accurate information nonetheless. Furthermore, the extensive list of exercises it does contain has the capability to vastly increase the repertoire of activities that can not only improve martial arts technique, but to also help people vastly improve their general physical fitness.

## Endnotes

1. Hashimoto T, Hussien R, and Brooks GA. Co-localization of MCT1, CD147 and LDH: evidence of a mitochondrial lactate oxidation (LX) complex. *American Journal of Physiology: Endocrinology & Metabolism* (January 24, 2006).
2. Ian Shrier MD, PhD and Kav Gossal MD. The Myths and Truths of Stretching: Individualized Recommendations for Healthy Muscles, *The Physician and Sports Medicine*, VOL 28, #8 (August 2000).