MAIN OBJECTIVE OF TAEKWONDO TRAINING

The main objective of Taekwondo training is developing the following skills which will yield an entirely positive result:

- 1. Recognition of any weakness the student has (not only physical, but also psychological and emotional).
- 2. Progressive elimination of these weakness through regular exercise.
- 3. Discovery and development of skills and assets that may be in a dormant or erroneous state.
- 4. Slow and steady improvement of the student's attitude (kindness, respect, discipline, self-discipline, etc).
- 5. Character improvement.
- 6. Personality development.
- 7. Overall development of one's self-image (physical and mental health, wellness, as well as excellent physical condition).

- 8. Gaining strength (emotional, psychological and physical) through Taekwondo, which helps dealing with everyday problems in life and overcoming countless difficulties that constantly arise in unforeseen times.
- 9. Constant effort of the student to evolve, aspiring to be abetter person.

Of utter *importance* is the fact that in Taekwondo as a complete sport, the objective is not to defeat a timer, ruler, obstacle or even the opponent. Nor is the objective to obtain medals, DAN, an office position or any such temporary and insignificant vanity.

A person's hardest opponent is self-weakness and his/her limits. This is why Taekwondo presents with special interest, and the effort one will put in it will be enjoyable, enduring, and constructive for a life time.

Value does not lie in the possession of honours but in the charachter of the possessor

> ARISTOTLE (384-322 B.C.)



THE BRAIN DATA PROCESSING DECISION - MAKING



Make your mind your supreme commander

SOLON (639-559 B.C.)

EFFECTS OF TAEKWONDO ON DEVELOPMENT OF THE BRAIN AND CENTRAL NERVOUS SYSTEM (CNS) IN CHILDREN

The role of the brain

Every exercise, movement, and technique we execute is registered in the brain. After many repetitions, they are stored in the macromemory, where a motor program is created for each movement. In high-level athletes, techniques have already been stored in the brain's macromemory and every time the brain sends a signal to execute one, it is automatically and perfectly executed by their muscular system.

The reality is that when we train, the workout does not only affect our body; it primarily affects our brain. When, however, we are not focused on the workout, the body will still be trained but the brain will not learn anything new nor will it absorb significant details of technique and tactic (how to execute each technique with precision and when to use it in sparring). This is why it is of utmost importance that the athletes' attention is fully focused on training.

Exercise trains the brain. This is why coaching and training programs should not be limited to only a few basic movements or techniques that always stay the same, and are monotonously repeated countless times in never-changing circles. Athletes, and *children in particular*, *should train through many, different, and new physical activities with original and versatile movements which develop their imagination and creativity.*

Learning stages

During the 1st (initial) learning stage (cognitive stage) only the basic principles of a technique are stored in the brain; however, many elements are missing. After repeating a movement several times, the athlete goes into the 2nd (intermediate) learning stage; that is when its details become comprehensible and the correct execution and number of repetitions significantly improve. Nevertheless, mistakes are still made and the athlete is frequently concerned with the details. In the 3rd (final) learning stage, that of movement automation, the athlete does not think at all. The specific technique is then automatically executed with no mistakes and with a high percentage of right repetitions.

Motor programs in the brain's macromemory

A motor program is created and permanently registered in the brain's macromemory. That program involves exclusively one movement which contains every detail on:

- The muscle groups which will be activated in a specific movement, and their sequence; agonist and antagonist muscles; extending muscles and duration of extension.
- The power and speed of a movement's execution.
- Trajectory of a body part (leg or arm).
- The arms' simultaneous movements, and the initial position and shifting of the torso during the kick's execution, all perfectly coordinated.
- The initial position of the centre of gravity (body mass) and the way it changes to the end of a movement.
- A well-aimed movement (the leg or arm has to rest precisely at the right spot).
- Control of a movement after its conclusion and reset to initial fighting stance (or where the athlete chooses).
- Activation of the neurotransmitters which will be responsible for communicating the brain's signals via the nervous system, to every fiber of those muscles that will execute the movement.

Every single process is controlled by the brain. In order for the brain to sort out the immeasurable motor information it receives, it creates a special and detailed motor program for each movement. This is where it stores technique, improves, controls, and commands that it be executed by parts of the body. In high-level athletes, techniques are stored in the brain's macromemory to the last detail. Every time the brain sends the signal for a technique to be executed, it is executed perfectly automated by the muscular system.

Effect of Taekwondo on maturity of the brain and the CNS

The high number of hands and legs techniques, defense and attack movements, feints, attack and retreat steps, etc, in competition Tkd, offer an advantage. The endless combinations and tactics in sparring maximize stimulation and performance, not just physically but mentally as well. Adding specialized drills at the beginning of training enrich the already rich curriculum, entertain the child, and make Tkd more appealing and beneficial for his/her development. If we factor in the wide variety of movements which comprise the traditional Tae-



Haste, rage, and thought-decision

Haste is different than speed. Speed of thought and action means that a process has been properly completed, in order, and as it should, without gaps and omissions, only very fast. Hastiness means that a process is not complete, and there are mistakes, gaps, or omissions. *Rage is linked to negative emotions. It clutters the mind, impairs judgment, clouds reason and covers the brain like a fog.* It leads to mistakes, excesses, loss of control and actions, and causes low performance, defeat, or even self-injury; an enraged athlete attacks thoughtlessly and carelessly, without reason and tactic and can thus receive a knock out from a smart opponent. He/she is dangerous of causing injuries as his/her attack is not about scoring a point but about releasing his/her anger through striking.

This is why our athlete has to be prepared for a scenario when he/she has to fight an angry opponent. Training in class with specific tactics of attack and counterattack techniques, will prepare him/her for such a situation. The athlete also needs mental training when processing similar scenarios.

Good mental health and total control of negative emotions that result from an undesirable development in sparring is a basic and necessary condition for proper function of the brain, at maximum capacity. Maintaining good mental health and eliminating negative emotions is a difficult matter and requires long sparring experience as well as comprehensive mental training.

Tactic in sparring

Phase 2 is about *attack and counterattack tactic in sparring.* During the basic preparation period, the athlete must practice many different reactions (techniques) when training. This way, he/she and the coach can choose the techniques the athlete trusts and executes better. When it comes to the same action/attack, these techniques vary from athlete to athlete and depend on the individual technical skill level, physical condition, flexibility (for high or spinning techniques), as well as sparring experience.

If the athlete focuses on one reaction technique only, he/she will have the advantages of maximum reaction speed, automatically and without thinking, and also that of a perfect technique. At the same time, the athlete has the disadvantage of becoming easily predictable by the opponent or his/her coach and, after repeating that technique a few times, he/she becomes easily manageable, and instead of scoring points with that particular technique, he/she loses them to the opponent (Table 2.1.).

On the contrary, the advantage of having many technique options against the same attack (i.e., 6 to 8) render the defender a completely unpredictable and difficult opponent –as to his reactions and choices. There is, however, another version, when the athlete has difficulty choosing which technique to use, delays making a decision, and ends up not reacting properly or on time.



KINESIOLOGY FIGHTING STANCES



Always excel, do your best over others, and not shame your forefathers

> HOMER (Iliad)

5. Blocking an attack to the face (frontal)

The defender is in Basic defensive stance "2." or "2.1.", and in receipt of a high kick to the face (Dollyo chagi, Huryeo chagi, Bandal Dolyo chagi:

- a. If the opponent kicks from a long distance, blocking is done with the front hand, rising vertically. At the same time, head tilts backwards (Image 8.14).
- b. If the opponent kicks from a short distance (i.e. Dollyo or An chagi), his/her leg has already travelled past the defender's front hand, which is why blocking is done with the defender's back hand, rising vertically. At the same time, head tilts backwards (Images 8.15a. & 8.15b.).



lmage 8.14.





Image 8.15b.

Image 8.15a.

6. Blocking a Naerio chagi attack to the head

The defender is in Basic defensive stance "2." or "2.1.", and in receipt of a high kick to the head (Naerio chagi):

- a. The defender opens-extends his/her arm from the same side of the kick in order to stop it's ascend (Image 8.16.).
- b. If the opponent's leg is already elevated, blocking must be done with the front hand, high up (Olgul maki). At the same time, the head tilts backwards (Image 8.17.).

7. Blocking Dwit chagi

If the defender is standing with the right foot forward and the opponent attacks with a left Dwit chagi to the chest protector, the defender's back left arm drops down to cover the lower area of the chest protector (just like when blocking a Paltung chagi), while his/her front right arm moves towards the head, over and alongside the left hand. Both arms cover the chest protector in a parallel position. The palm of the hand that rises over and beside the head at chin-level, may open in order to protect it more effectively, should the opponent continue his/her attack with a second kick to the head, i.e., Huryeo chagi, (Image 8.18 & Image 12.8, Ch. 12). If the defender is in Basic defensive stance "2." or "2.1.", he/she may also block a Dwit chagi directly with his back hand, that is, with the forearm already covering the lower area of the chest protector.



lmage 8.17.





lmage 8.18.

lmage 8.16.



KICKS PALTUNG CHAGI



Good [and right] does not only mean not to do wrong, but not wish to do wrong

> DEMOCRITUS (470-370 B.C.)

5. Front leg Paltung chagi with a shuffle-slide of the back leg

Athletes tend to use their front leg more often (front leg is now dominant in sparring) with electronic chest protectors, unlike the case with conventional chest protectors. In this specific technique, the explosive force necessary for the body to shuffle and for the support leg to slide forward, is applied exclusively to the **back leg.** The front leg just rises and kicks explosively to the lowest part of the opponent's chest protector, but does not participate in the shuffle at all (Image 10.5., Technique "6.1.", Ch. Feints). The push is totally different compared to that in sprint-Paltung chagi (Next Technique "6"), which is done with the front leg only.

Tactic

This technique surprises the opponent before he/she has a chance to raise his/her front leg and deter the attack. It is a technically difficult kick which requires adequate force from the support leg and very good muscular coordination in order to prevent the defender's reaction and hit his/her chest protector.

6. Sprint Paltung Chagi

6.1. Sprint Paltung chagi

This entire movement is based on the front leg which, in collaboration with the quadriceps femoris and gastrocnemius, shuffles our athlete forward. Contact with the opponent's chest protector occurs at the same time as the landing of the support foot, or moments before, but never after (this would constitute lack of proper coordination and technique, decreasing kicking force and effectiveness). It is a very fast and effective technique, regardless of sparring regulations.

Should the attacker wish to deprive the opponent from an opportunity to kick and does not intend on continuing the attack with a second kick with same leg, he/she can resort none of the following actions:

- "Clinching" on the opponent and stop the impact.
- Kicking leg should immediately land on the ground • and the athlete must apply force on it and shuffle backwards in order to move away from the opponent.
- Move sideways (Sideways Movement, Technique "10" • or "11") and evade the opponent's kick.

6.1.1. Variation: after Paltung chagi – provided the leg has completed the motion in the air without hitting the opponent's chest protector - the leg does not land: instead, it chambers high up, executing counter Yop chagi to the opponent's chest protector, mostly to prevent a counterattack but also to score two points just as the opponent is trying to counter.

6.2. Sprint Paltung chagi from the opponent's side of chest protector, forward and diagonallysideways (**K** - **7**)

This kick aims low to the opponent's chest protector. However, in case the opponent has had the chance and has already started to turn his/her torso to counterattack with Dwit chagi, the kick will be hitting his/her ribs, while the attacker has already landed behind the defender's back (Image 16.19.) Shuffling is done exclusively with the front leg, without any other motion that would disclose the attacker's intention to move diagonallysideways (Image 16.7.).



Image 16.7.





lmage 16.16.

11. Back leg Paltung chagi, shuffling sideways and backwards with a jump

The previous technique (10) can be very well executed without differentiations and with a simultaneous low flying jump to the side and slightly backwards ($\boldsymbol{\ell} - \boldsymbol{\lambda}$), from the opponent's side of chest protector. Because this technique is classified as a direct reaction, the athlete is required to be in a high level of readiness, able to predict the opponent's movement and react instantaneously.

Tactic

From a tactical point of view, this technique is used when:

- The opponent attacks to the head with a high kick (i.e., Naerio chagi or Dollyo chagi).
- The opponent is taller and retreating becomes the wrong option for our athlete.
- The opponent has longer lower extremities and sideways movement is the best tactic for our athlete.
- The opponent executes penetrating attacks (i.e., piercing Yop chagi or Mirro chagi).
- The opponent attacks with 2-3 slides with the front knee bent high.

In all of the above cases, it is not in the defender's best interest to use the previous technical variation of retreating backwards (Technique "10"); he/she should move sideways instead (Technique "11").

Common mistakes (in Techniques 10., 11.)

- 1. Body stays upright or, even worse, leans in front of the longitudinal (vertical) axis.
- 2. The athlete jumps while retreating, that is, the centre of gravity follows an arched instead of a linear trajectory. In both mistakes 1 & 2, the defender's head is exposed to the opponent's kick.
- 3. The athlete performs a right back leg counterattack with a jumping retreat against the opponent's attack with right Naerio chagi. In this reaction, Naerio chagi will hit either the head or the highest part of the chest protector, with a good chance of the defender even falling down, should Naerio chagi hit him/her in the air during the kick (that is when the defender is changing sides, his/her chest protector is turning towards the opponent and he/she does not have any balance, finding him/herself in the air without a support base).