FITEDUCATION

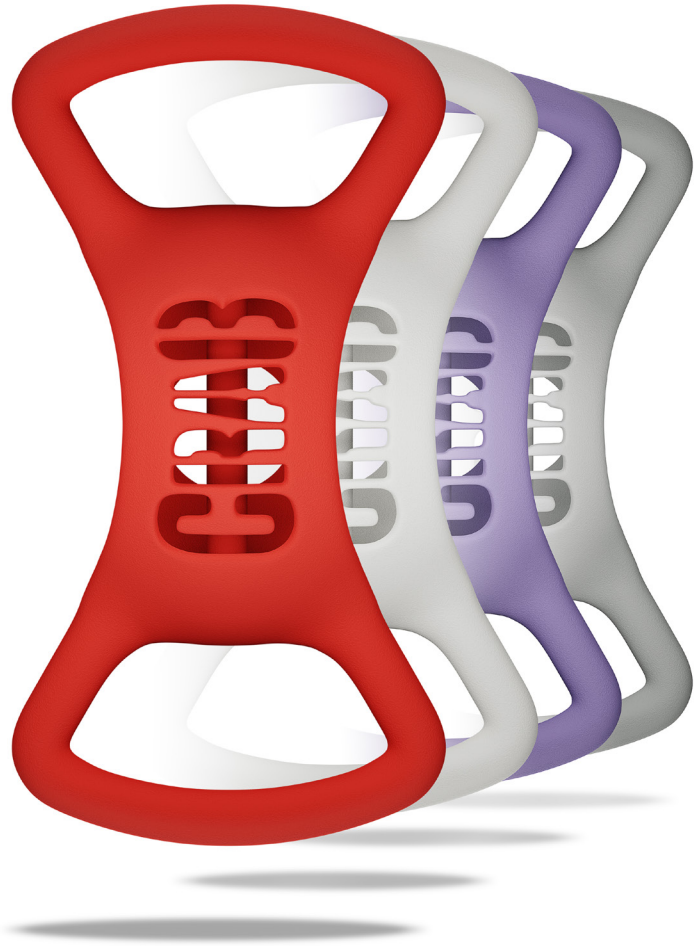
Welcome to Crab Athletic Training


CRAB

CONTENT


CRAB

CRAB IS AN
INNOVATIVE
TOOL THAT
MAKES YOUR
BODY STRONG
AND YOUR
BRAIN THINK



"CRAB is the device that makes you appreciate every inch of its composition, simply because it can be used as a whole.

It is an open material (a complex product because of its versatility but simple in concept), powerful (I tried to give it the ability to improve ones motricity, ability that other products don't have) and a device that can improve the way someone moves with the help of its form (optimal technique and movement mechanics) and control (correct use)."

Flavius Turcanu

indestructible
different weights
specific colors
perfectly balanced

INDICATIONS FOR A CORRECT USE

HOW IT SHOULD BE USED

Crab is destined to be lifted, moved, thrown, dragged, sloped, turned, straddled and so on, as shown in this user manual.
Crab exercises are represented by dynamic and rhythmic actions that include complex moves.
It is better for beginners to start using Crab by doing easy, simple moves.
Crab can be cleaned with a universal cleaner.

HOW IT SHOULDN'T BE USED

Crab is not destined to be twisted, bent, violently thrown or pierced in any way.
Crab was not designed to simulate isolated body building exercises and moves.
Thanks to its versatility, it creates the opportunity to create certain moves, which can be dangerous to perform.
This is why you need to make sure you have enough space around you. You need to maintain a great level of attention and a gradual way of coaching and teaching
Crab exercises.
Do not improvise!

HOW TO USE THE GUIDE

The technical manual give you all the elements you need to create your own Crab Training Session.

INDICATIONS FOR A CORRECT USE

THE INSTRUCTOR NEEDS TO HAVE CERTAIN ABILITIES IN ORDER TO PROVIDE A GOOD TRAINING SESSION: SAFETY, AUTHENTICITY, ENTHUSIASM, COMFORT, PASSION AND THE ABILITY TO BE ADDICTIVE.

COURSE OBJECTIVES

The Crab course provides information and practical experience essential for the way you use Crab in a complex training session with a great level of safety in order to obtain major advantages.

The objective of this course is to study fundamental techniques and complementary exercises that will help you build a functional body.

AT THE END OF THIS COURSE, THE INSTRUCTOR NEEDS TO BE ABLE TO:

1. **Prove that Crab training represents an optimal way to improve sports results and that it can maintain a good fitness level in general.**
2. **Promote Crab training efficiently and effectively, regardless of one's fitness level.**
3. **Adapt a training program to the client's needs;**
4. **Share important information for understanding and practicing exercises and movements as well as the rules for a successful training session: awareness, sacrifice, control and positivity**

The trainer needs to focus on: skill, precision, control, grip, level of attention, the ability to mix and combine moves, neuro-muscle efficiency during moves (functional force).

Although it is a polyvalent device, the cost is significantly low and it can be adapted to home fitness sessions

Both men and women can use this device, no matter the age. Children can use the device as well, but under a careful supervision of a coach.

The methodologies used can reduce the time actually spent working out.

THE ADVANTAGES AND OPPORTUNITIES OF CRAB USE

The effectiveness of Crab is very great because of the following considerations:

Crab was built to be used:
- Indoor;
- Outdoor.

Crab can be used in different workout session types:
- Group exercise (adapts to musical training sessions);
- Small group;
- One to one / personal training;
- Rehabilitation.

BENEFITS

Anyone using Crab can easily understand how this device can help in improving physical conditioning and lowering body fat percentages because of the wide range of expressions of physical qualities that complete a work out.

Here are some examples:

- Moving and removing the device out of the body's central axis' area offers an improvement of one's ability to concentrate and an increase in body stability in different positions in time and space.
- Gripping is improved and also hand strength.
- Strengthening the musculoskeletal apparatus that helps in preventing injuries.
- Growth of shoulder and hip mobility.
- Resistance training with Crab helps improve functional muscles in the entire body therefore increasing the cardiovascular capacity.
- An optimal physical conditioning is obtained thanks to an explosive and resistant expression of force.

There are countless benefits that Crab training offers. When you have the ability to safely handle the device generating movement using the entire body, you improve many physical qualities such as:

- Force: the capacity to oppose an external force thanks to muscle contraction;
- Speed and rapidity: the capacity to execute an athletic gesture in the shortest time possible;
- Potency: the capacity to produce maximal force in the shortest time possible;
- Flexibility: the capacity to execute moves that have a greater joint aperture, both in active and passive form;
- Coordination: the ability manage body parts in space depending on different situations;
- Muscle Resistance: the capacity to physically perform during a long period of time;
- Cardiovascular resistance: the hearts capacity to sustain muscle work involved in athletic gestures.

These components are tied to one another and they are developed inside athletic conditioning in many sports or fitness.

USE, GRIPS AND DIMENSIONS

Movements are mainly classified in 4 ways:

Grind – slow moves, that generally need less reps.

Ballistic – dynamic / explosive moves, large number of reps, optimal for endurance and cardiovascular conditioning.

Hand to hand drills – fast moves; these moves need good handling, gripping and coordination, optimal for cardiovascular effort that needs a great amount of awareness and attention.

Balance: These types of moves require a great amount of balance and concentration, but also physical strength to generate complex movement when we use the unstable side of the Crab.

Crab can be used in many ways with different gripping options:
- One Crab for each arm;
- One Crab held with both hands;
- One Crab passed from one hand to the other;
- One Crab placed on the floor and used as a contact surface, with the user either using his/her hands or feet, creating less or more instability depending on the side that's in use.









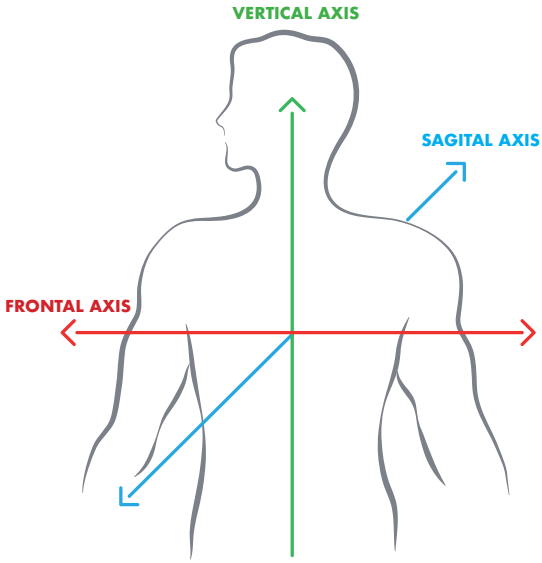

GRAB
GRAB


GRAB

SAFETY MEASURES

- Make sure that you have enough space around you, in order to execute the moves properly and be aware of the people standing next to you.
- Avoid trying dangerous moves such as swing, switch, snatch etc. with people standing in your execution trajectory.
- Always grip the Crab firmly and precisely.
- Always maintain a straight body and be in total control of your moves.
- In case you lose control, it is better to just let the device fall down instead of trying to grip it again.
- Increase your load progressively.
- Learn how to position your hand inside the Crab so that your hand and wrist won't touch the sides of the device.
- Control and balance your moves when you are using the Crab as a sustaining device. If you lose your balance, push one handle down on the ground first, and get off afterwards.
- Don't throw the Crab on the floor in an uncontrolled manner, after finishing your routine.
- Don't try out new and difficult moves if you aren't familiar with Crab yet.
- Don't let yourself be distracted by other trainees around you; stay focused on what you are doing.
- Don't forget what a good technique means: lack of injury, precision, intensity control, listening to your own body.
- Once you get tired you need to adjust your training accordingly.

PLANES OF MOTION



ANATOMICAL AXES

VERTICAL AXIS

The vertical axis of the human body is perpendicular on its base, when the body is standing in an upright position.

FRONTAL AXIS

This axis is perpendicular on the vertical axis (from left to right).

SAGITAL AXIS

The sagital axis passes horizontally from posterior to anterior

SAGITTAL PLANE

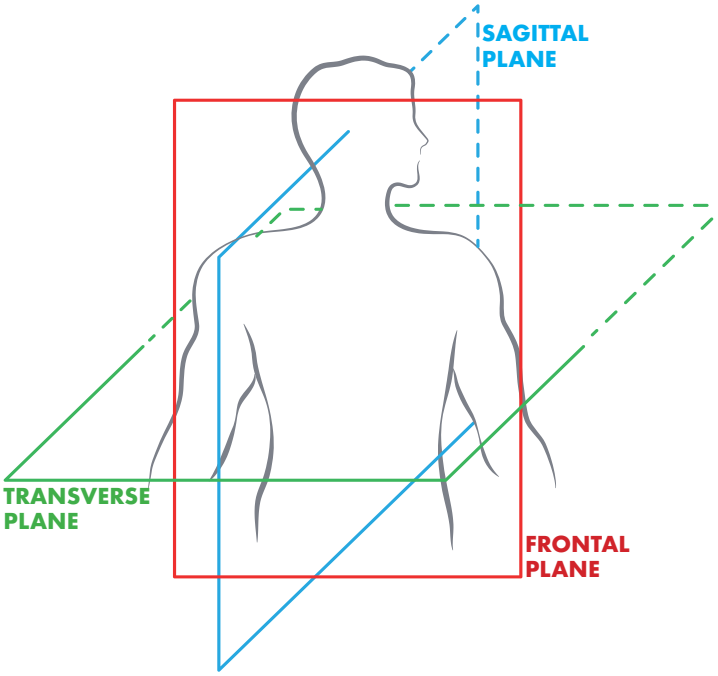
Passes through the body front to back, dividing it symmetrically in half.

FRONTAL PLANE

This plane divides the body into front and back.

TRANSVERSE PLANE

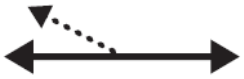
Passes through the body horizontally, dividing it into top and bottom.



MOVEMENTS

FLEXION
Is the movement that tends to form a smaller angle in-between two segments.

EXTENSION
Is the movement that tends to form a straight line between two segments.

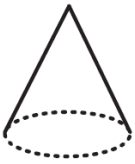


ABDUCTION
Moving the body part away from the body.

ADDUCTION
Moving the body part towards the body.

ROTATION
The movement of a segment around its own axis.

CIRCONDUCTION
A movement that a segment makes in order to create the shape of a cone with the tip in the segments joint.



STRUCTURING A TRAINING SESSION

Usually, people that take part in such training sessions have a couple of things in mind:

- Losing weight;
- Toning;
- Increasing strength.

Crab training can be the answer to any of those wishes, regardless if it is gaining a better figure, strength or increasing ones tonus.

HOW TO CREATE A CRAB TRAINING SESSION

There are certain types of sessions:

- Group sessions;
- Circuit training;
- Interval training.

IMPORTANT:
A training session can't include just a single part of the body.
Exercises should be repeated for at least 30 seconds and no longer than 2 minutes, depending on the intensity of the movement.

DIVIDING THE SESSION

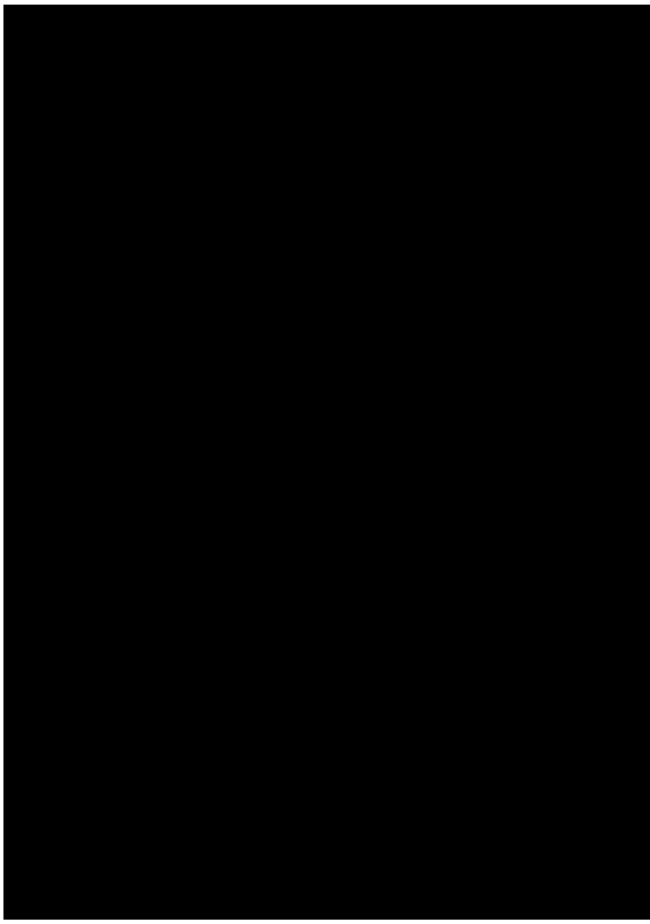
WARM UP

LENGTH: between 5-10 minutes.

Static training session with global and dynamic joint exercises.
General objectives:

Prepping the body for the exercises you chose as your main part
Specific objectives:
a. Muscle and joint specific;
b. Organ general.

Warm up is presented facing the class; try to make eye contact with every single person during this time.
Movements that increase body temperature and respiratory frequency, improve the level of extension during exercises, stimulate the nervous system and decrease the risk of injuries.



SPECIFIC OR MAIN PART

LENGTH: between 30-40 minutes.

This is the main part of your training session and typically the moment to apply your objectives from the weekly planning.

This part can have several sequences:
Cardio exercises with a high level of intensity to increase the heart rate and ease fat loss. You can also include intense moves and athletic gestures that increase aerobic and anaerobic activity.
Specific exercises that use a load (and a muscle resistance) using Crab for toning and complete muscle definition.
Less dynamic exercises using a heavier Crab during a shorter interval, strength exercises that increase explosive force and muscle potency.

COOL DOWN / STRETCHING

LENGTH: between 5-10 minutes.
The main purpose of this part is to readjust the body to its base line, organized cool down, metabolic decrease and muscle decontraction in order to prevent a rapid decrease of arterial blood pressure.

Cool Down

- general relaxation = try to decrease body fatigue and induce mental relaxation
- Stretching = muscle relaxation and stretching.

DIDACTIC TEACHING

CLASS COMMUNICATION

- introducing and presenting the session;
- giving information about the importance of staying focused;
- encouraging the class;
- safety measures;
- feed back

VERBAL INFORMATION (CUEING)

Verbal information refers to everything that the instructor communicates during class through speaking. The main objective when using verbal information is to anticipate moves, in such a way, that the trainees won't have to stop during the workout session. Cueing is done following certain rules:

- using specific names for specific moves;
- communicating the last steps before changing the move;
- any information you want to deliver should be short and concise;
- keep your class aware about how many steps are left;
- don't forget to state which arm or leg leads the way;
- describe and explain the action that composes an exercise;
- use increasing or decreasing numerical cues.

GESTUAL INFORMATION (NON-VERBAL)

This is about using visual and sound cues. When you have a full class, only the first few rows will hear what you speak, the rest of the class needs to be tutored using visual cues. These also have certain rules:

- using numerical signs;
- use your arms to indicate direction;
- use a visual preview of the move.

The quality of your voice, knowing how to use your tone, using a certain intonation to create an atmosphere, non-verbal language and enthusiasm, are the factors that trainers need to use accordingly in order to complete a workout session.

THERE ARE CERTAIN PERSONAL VARIABLES THAT INFLUENCE A PERSON'S TRAINING:

BODY STRUCTURE;
FORCE AND RESISTANCE;
FLEXIBILITY;
TRAINING;
CARDIO RESPIRATORY CAPACITY;

VARIABLES IN CRAB TRAINING

INTENSITY

You can find formulas that claim to calculate this parameter, when in fact, intensity is variable and relative. If we try to calculate the intensity of a Crab workout it is even more difficult.

- External resistance;
- External stimulus – rotational pattern;
- Lever lengths – short to long;
- Mechanical load – the actual weight that needs to be lifted;
- Gravity;
- Intensity of the exercise itself;
- Number of reps;
- Number of sets;
- Strength;
- Time spent being under pressure;
- Speed of a movement (for example: 3:1:3 when doing push-ups=3 seconds going down, 1 second hold, 3 seconds going up);
- Pushing pulling and static moves;
- Recovery;
- Moving the load – moving the weight with the help of multiple muscle groups, throughout the range of motion.

THE DYNAMIC OF INCREASING THE INTENSITY:

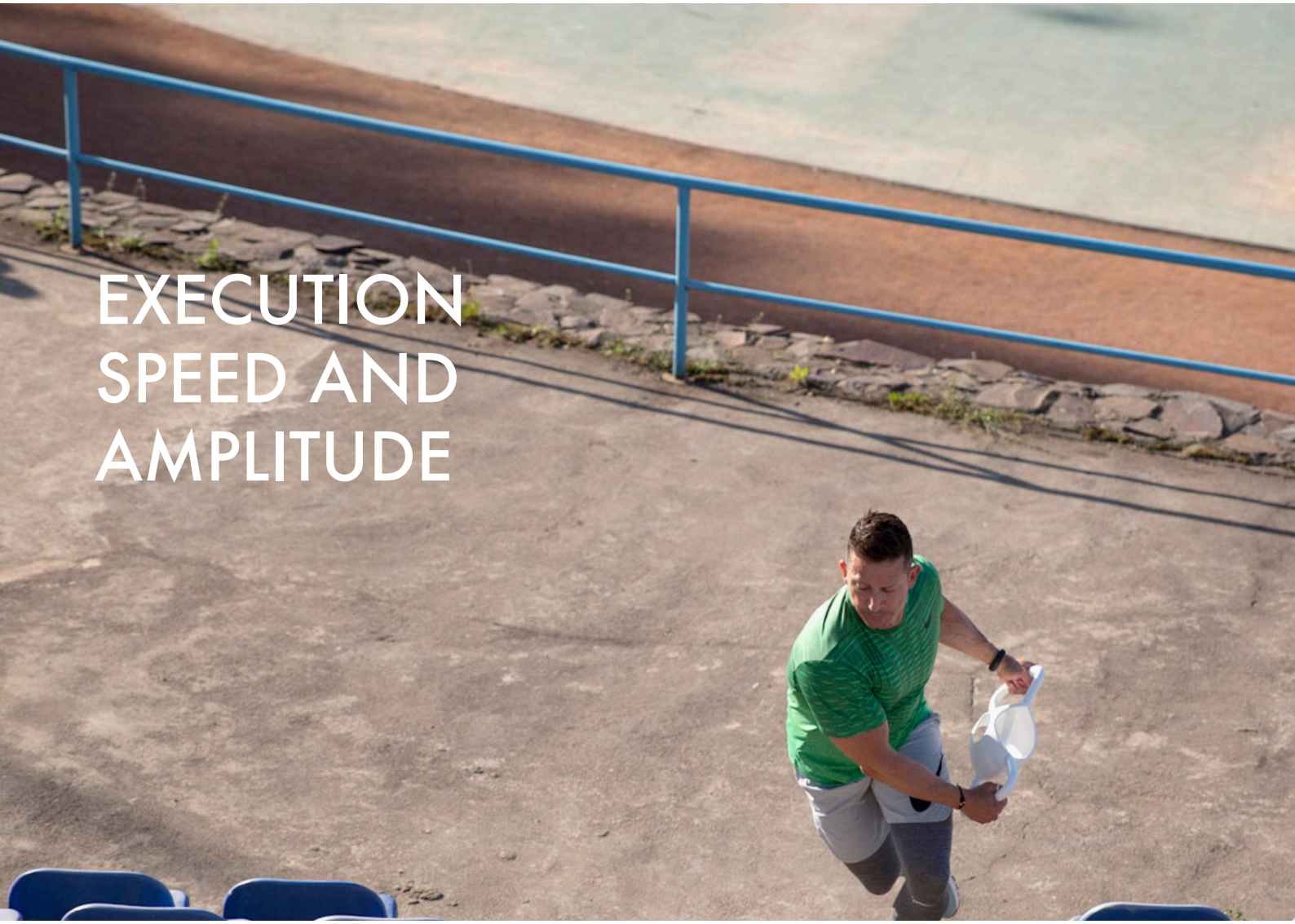
- Increasing speed, when you have to cover a certain distance of increasing the load during a strength training session;
- Increasing the number of reps that a trainee has to finish, maintaining a perfect form;
- Introducing new moves in a complete exercise, in order to help improve the exercise, including resistance exchange, reducing stability or a combination of both.

RESISTANCE

When toning muscle groups, it is necessary to work against a resistance in an equal and controlled manner;

You can increase resistance by:

- Using an external load: Crab;
- Using your natural weight, concentrating muscle contractions and working against gravity.



EXECUTION SPEED AND AMPLITUDE

Exercises need to be completed at a moderate and controlled speed, always finishing the whole range of motion: amplitude.

Many times, performing an exercise at a higher speed implies using inertia and losing control because of that.

DENSITY

Density is a fraction between the time spent doing certain moves and the break.
Density increases if the break is shrunk down to minimum.

BENEFITS:

- Increasing muscle strength when an exercise is done with the complete amplitude that a muscle is capable of reaching during movement;
- Maintaining a good level of joint mobility.

Exercises need to be taught perfectly, so that the trainees' attention during execution will be focused on a certain execution speed and not so much on a perfect form of movement. This aspect has to be explained before the actual execution.

THE CORRECT USE OF JOINT EXERCISES

FUNCTIONAL STRENGHT

Is the result of neuro-muscular efficiency when moving with/the Crab.

TECHNICAL ASPECTS:

- Planes of motion – sagital, frontal, transverse;
- Angle of motion;
- Moves become dynamic from stationary;
- Isolated moves that become compound;
- Range of motion;
- Motor load;
- Multiple moves;
- Distance covered (or movement from the initial position);
- Joint stability;
- Support base (hands or feet); stable or unstable (balance);
- Self awareness;
- Difficulty level;
- Posture;
- Hand and arm position.

COORDINATIVE ABILITIES

Coordinative abilities are determined by the guidance processes and gesture regulation. They are meant to assure that the athlete is executing moves with efficiency and precision, in stereotype or unpredictable conditions, as well as a rapid learning process when introducing new technical procedures. (Frey, 1977)

Having skill is the capacity to:
- Coordinate rapid moves;
- Learn new moves quick and easy;
- Quickly adapts old motric experiences to new situations.

A good level of coordinative abilities allows an effective way of expressing strength, resistance, speed and gives an athletic gesture the possibility to become more economic in regard of the amount of energy used.

Developing coordinative abilities is based on the nervous system, mainly:
- Perceptual apparatus (seeing, hearing, feeling);
- Sensorial – motoric apparatus (balance and the ability to orientate)
- Expression abilities (body language).

A correct manner of teaching these, allows the athlete to make functional motor gestures in a more precise, coordinate, efficient, expressive and faster way.

Agility is a hard to define ability. We can say that it has something to do with general dexterity, but it's not quite the same as having skills or being handy.

Agility is a fusion between all types of motricity, at their highest level. Therefore it depends strictly on the way balance and coordination develop and on the capacity to adapt quickly to new situations with a great amount of speed and elasticity.
Agility can be defined as the capacity to adapt to new and complex motric situations in an efficient way.
Increasing the agility level is pretty easy to achieve as long as you try out different gestures frequently (this is especially valid when training children)

THERE ARE TWO TYPES OF COORDINATIVE ABILITIES: GENERAL AND SPECIFIC.

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GENERALE COORDINATIVE ABILITIES

1.THE ABILITY TO LEARN MOTRIC SKILLS

This refers to assimilating and learning skills that initially were unknown, and that need to be included in the cognitive map later on. An important role is given by the absorption of information with the help of analyzers: organs that have the ability to collect information that have a different amount of importance, depending on sport types.

- The tactile analyzer
Is the outer layer of the body, that informs us about the surfaces we touch and the amount of pressure being generated.

- Visual analyzer
The eyes collect visual information about the space we are moving through.

-Vestibular analyzer
The inner ear captures information about the body's acceleration and position in space.

- Acoustic analyzer
The main function of this analyzer is to perceive noises and sounds.

- Kinesthetic analyzer
This analyzer captures the sense of motion and position and it captures all other sensations on the inside and outside, like touching or self-awareness. Emotions are also felt by this analyzer even though these are actually sensations of something.

2.THE ABILITY TO DIRECT AND MOTRIC CONTROL

This is the capacity to control the way you move keeping you goal in mind. It is the ability that makes you achieve the exact result that you were focusing on during a move or an exercise.

3.THE ABILITY TO ADAPT AND TRANSFORM A MOVE
This refers to the way you can adapt and transform a motric program established earlier, to surprising, new or unpredictable circumstances. In order to succeed you need to stop the move you were executing at that precise moment and readapt to the situation with the help of other moves that are as efficient as the last. This ability is recognizable in several sports, martial arts, and others, where the necessity to change action is frequently needed.


CRAB

SPECIAL COORDINATIVE ABILITIES

1.**THE ABILITY TO COMBINE MOVES**
This ability allows a learning process of correlating all other abilities. It is developed with segmented coordination exercises for both upper and lower limbs. This segmented coordination relies on the way you coordinate and pair you moves and it can be explained by the way an individual is doing several actions at the same time using every segment (arms, legs, trunk), in different planes and directions.
(S. Serbanoiu, 2002)

2.**THE ABILITY TO ORIENT IN TIME AND SPACE**
The way you modify your body position and your body segments in time and space in correlation with the field of action, the movement of other objects or possible partners define this ability. (S. Serbanoiu, 2002)
In order to be organized through space, you need to realize certain parameters of the object or people moving around you, such as: length of the movement, tempo, moment succession, quickness, and so on.

3.**THE ABILITY TO MAKE KINESTEZIC DIFFERENCES**
This ability is directly related to the fine, differentiated dynamic, temporal and spatial parameter control, based on the perception of time, space and force. You can develop this ability with the help of specific exercises, which gradually increase the level of precision in your executions.

4.**THE ABILITY TO BALANCE**
The level of stability that your body has in certain positions as well as regaining balance when executing moves, exercises or motric actions that have a wide range of amplitude define this ability. There are several types of stability: static balance (when doing slow moves and maintaining certain postures) and dynamic balance (in quick, vast and fast slides). Static balance is based on the way you are able to use certain analyzers, such as: kinesthetic, tactile and sometimes also the vestibular and optical analyzers. The dynamic balance uses information mostly obtained by the vestibular analyzer. To increase you general level of balance you need to do exercises using a small or narrow contact surface or to use an unstable basis.

5.**THE ABILITY TO REACT**
The way you react to an outside stimulus can be classified in two categories: there are simple reactions (to known and predictable situations) and complex reactions (when there are unknown and new situations). (A. Dragnea, S. Mate Teodorescu, 2002)

6.**SENSE OF RYTHM**
When you talk about movement, rhythm represents the ability to organize your motric executions in a chronological way through time and space. This capacity is responsible of the perception and execution of dynamic characteristics when changing or reengaging certain moves in a symmetrical or asymmetrical way, as well as having control over your motric reactions.
A sense of rhythm can be learned by trying out different actions and repeating them at certain intervals. (S. Serbanoiu, 2002). You can increase you sense of rhythm by moving at a certain speed, increasing it and trying out new rhythms for that same move.

INTERNAL AND EXTERNAL LOAD

When you train in an analytical way, it is easy to measure and evaluate your training sessions. When you try out Crab training, you have to take multiple aspects into consideration. While you are training you need to be aware of the difference between the two types of load: internal and external.

EXTERNAL LOAD

The external load is the resistance applied as a weight (we can talk about how many kg you lift or the amount of watts applied while rowing or cycling). You can measure this type of load in an objective and quantitative way.
If we interfere on the volume with an increase of 5% and on the intensity with the same amount, the whole external load will increase by 10%.

INTERNAL LOAD

The internal load is the real effort, the real fatigue that the subject perceives. The internal load depends on several external variables for example: the number of reps, number of series, exterior temperature, humidity and so on, as well as internal factors (the mental and physical state of the subject).The internal load is a qualitative and subjective parameter.

Il Movimento è l'unione tra azioni volontarie e involontarie.

Sistema percettivo (sensitivo - afferente) - invisibile

Sistema elaborator (SNC; cervello, midollo) - invisibile

Sistema effettore (unità motorie) – visibile.

HOW TO USE CRAB

In order to do Crab exercises in an efficient and effective way, you need to follow some basic rules.
These rules need to be explained in a simple matter before and during a Crab training session.

WEIGHT DISTRIBUTION

The weight needs to be distributed in a uniform way. This term also refers to the way your own weight is distributed for an optimal resistance.
This fact determines a difference between a beginner and an advanced user. If nay move seems too difficult or unsteady, usually it means that you have an incorrect bodyweight distribution.

RESISTANCE CONTROL AND MANAGEMENT

Monitoring personal resistance is given by the rapport between the weight of the material that you want to support and the amount of force used when executing a move based on a certain angle and positioning. You need to adapt the difficulty level used and be able to adapt it; this way you get to know your limits and you are able to gradually adapt the amount of force you use in an exercise.

CENTER OF WEIGHT

When you keep your body in balance, the contact surface is the central support of the body. When creating a lever with your own body, the ability to perceive the contact surface is essential for maintaining balance. There is a certain type of force, inertia, which is also known as balancing force:
$F - m \times a = 0$

(D'Alembert's principle)
The center of weight also has the ability to condition you general body posture, tonus and breathing.

BALANCE

Balance is a vital element of functional training.
Statics is the one responsible for maintaining body balance and the causes that interfere to this state. Force can be classified by external, internal and gravitational. Although these terms are very complex, statics is the one to use an athlete's muscle force and push it against a resistance: when there two forces are equal, the system is in balance, when one of them is greater, it produces movement.

THE EFFICIENTCY OF MOVEMENTS

The objective is about using levers in an optimal way, in order to use the biomechanics of the move in an efficient way.
While gliding to several positions, the move needs to be as fluid as possible, in order to reduce energy loss.
Dynamics is a part of mechanics that studies forces that generate movement.
Complexity of human motion (mechanical self awareness) and motor control. Kinesthetic sensitivity (sense of body positioning and movement)

Kinesthetic control

The kinesthetic system controls all the sensations that we have, both on the inside and the outside, even if we talk about the sense of touch or the awareness of your own body.

Emotions are part of a kinesthetic system, although there still is one thing that needs to be mentioned: there are sensations about something. Never the less, the body responds to them in a kinesthetic way.

Kinetic chains

A good posture is given by the synergic balance between the kinetic chains. These are muscle systems that interact and influence each other when we talk about shortening or stretching the muscle.
Perceptive system (sensitive) – invisible
Elaborating system (central nervous system, brain, marrow) – invisible
Effective system (motor units) – visible

Nervous impulse (the end result of stimuli received by the analyzers and programmed by the cortex and sub cortical centers) – muscle contraction = movement.
Motoneurone = a nervous cell that forms a neuromuscular juncture between skeletal muscles and muscle fibers that it stimulates.
The motoneurone reaches the proteic components of the muscles through the descending bone marrow (actina si miozina), that activated by the impulse give life to a tension that is transmitted through tendons to the bones, finalizing itself in movement.

Movement is the union between voluntary and involuntary actions.


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Learning movements

Initial coordination
Movement with error (this part is difficult for the subject, at this initial point, he needs motivation)

Fine coordination
The movement that was barely coordinated at the beginning becomes automated in this phase. When repeated frequently the movement can be done correctly even when the subject is tired, loses his balance or tries changing the speed.

Technical coordination
High precision executions, the result of rational programming and demanding training sessions; this is the phase when the nervous system goes from a complete voluntary move to an automated action. Only a voluntary input is necessary for this action to take place.

The instructor needs to be able to maintain the participants in the training session at a rhythm and intensity that is suitable for their physical form and skill level.
Safety is always a priority and the instructor needs to be able to change the exercises at any point needed in unpredictable situations.

EXECUTION

Concentrating on correct moves that maximize the results and reduce the risk of injuries.

EFFECTIVENESS

Concentrating on reducing unusual moves in order to increase speed and precision.

EXPRESIVITY

Concentrating on technical execution using the functional force of a real athlete.
Motor sequences need to be taught from easy to difficult and from a low intensity to an increased one.

GUIDE LINES


CRAB

ADVICE FOR A GOOD CRAB TRAINING SESSION

- Take into consideration the physical force and level of abilities of your class.
- Prepare the devices and the necessary space to reduce to pauses and time outs to a minimum.
- Feel free to choose the training structure and methodology best suited for the situation.
- Always use new exercises and combinations that keep the spirits up and increase the value of versatility of the product.
- Reduce time outs between exercises (high density) to maintain high blood pressure and in doing so, increase the cardio factor.

BASIC RULES TO FOLLOW DURING CRAB TRIANING SESSIONS

When using a musical base during a training session, you must take into consideration following factors:

DIFFICULTY

Difficulty is given by the coordinative skill of you class.
Necessary abilities are:
- Ability to move;
- Ability to remember and reherse combinations of moves;

It is the instructor's job to transmit information in a logical and sequential way in a simple manner, respecting the principles of progression and teaching transition.

Criteria of exercise selection:
- Safe;
- Demanding;
- Progressive;
- Systematical;
- Complete self awareness;
- For specific activities.

FLUIDITY

Motor sequences need to be united in a fluid and linear way, without sudden changes or brakes.

SIMMETRIA

Le sequenze devono rispettare soprattutto inizialmente la simmetria del corpo, per evitare sbilanciamenti biomeccanici e posturali.

PROGRESSION

To increase the level of fitness it is necessary to increase the intensity and length of the training session step by step.
- Slowly at first, quickly afterwards;
- Simple at first, complex afterwards;
- Known at first, unknown afterwards;
- Involve less load at first, more load afterwards;
- Static at first, dynamic afterwards;
- Good technical execution at first, then increase the number of reps, sets and the intensity.

MUSIC

Music is one of the essential components in helping a class coordinate itself. Music is an added value and its main purpose is to stimulate the class. At rhythm that is too high, technique and safety are threatened (not enough time to complete the move).
The main components of music that need to be explained in order to use it at its best are the following:

BEAT (BPM)

For instructors it represents the measuring unit of music.
BPM needs to be constant, regular and repetitive.

MUSICAL FRASE

It consists of 8 beats (one octave).

MUSICAL BLOC

Is equal to 4 musical phrases and 32 beats.

MASTER BEAT

The first musical block.

RHYTHM

Rhythm is the most important aspect when involving temporal perception of the human movements; the heart has a certain frequency of movement, according to the requests that we transmit, mechanical or emotional. In this manner it alternates the respiratory rhythm.
Rhythm represents the connection between the number of moves and the time unit.
At rhythm that is too high, the joints aren't able to loosen up in the right manner and the moves will turn out incomplete.

CRAB FUNCTIONAL TRAINING

The human body was built to move in a coordinate manner. It manages several body segments at the same time, executing complex moves, involving a number of joints, in a number of planes. This requires synergy, balance and the absence of risk. In appearance, "functional" is a very simple word, but it embeds complicated concepts that induce strength, resistance, flexibility, coordination, concentration, awareness and determination in a training session.

The reason why Crab training is considered "functional" is that this instrument allows you to do moves that use several joints, in all planes, with accelerations, decelerations, or balancing the body while using the device. Even if a movement seems to take place in one plane, the other planes are balanced in a dynamic way.

The concept of improvement is that the everyday environment is full of moments and movements that need dynamic postural control at different speeds. Unbalancing the kinetic chains causes a lack of action that can cause injuries if not corrected.

Identifying these, helps us create a good training program. Also, testing the athlete before you begin is advised, so that you can identify postural problems (if there are any). Only then can you begin to increase the athletes:

- Flexibility;
- Strength;
- Coordination;
- Postural control;
- Core control (stabilizing);
- Reactivity (potency);
- Speed integrated training.


GRIP

MODEL MOVEMENTS

In order to create a complete Crab functional training session, you need to respect a progression (from easy to difficult), using 6 model movement:

1.**SUPPORT**

Starting with a basic balance, you can create static exercises standing on your hands, arms, knees, feed or equipment. By doing this, you include isometry in pronation, supination, lateral decubitus, hand stand and single leg balance.

2.**PUSH**

When you do pushing exercises, you create a specific move that pushes a load or your own body's resistance beyond the fulcrum. Pushes usually concentrate on a number of muscle groups: chest, shoulders, triceps, quadriceps and the outer part of the thigh.

3.**PULL**

When you do a pull, your body completes a movement that pulls a load, weight or resistance towards itself. Pulling exercises concentrate on your back muscles, biceps and gluteus.

4.**SQUAT**

Squatting is the basic exercise of the functional school and it is based on moves that include several joints. It is the most useful exercise to increase leg muscle strength.
A full depth squat refers to a position where your knees are flexed until the posterior side of the thigh touches the calf, while your heels remain on the ground. Children younger than 4 years will do this move instinctively when they want to touch something that is on the ground, frequently maintaining a stable position in order to play.
When it comes to the Asian culture, often squatting replaces sitting down on a chair. Westerners' lose the ability to complete a full squat, because this move isn't necessary anymore in the day to day life. You eat while seated, you work while standing or sitting, etc. Another reason is the shoes. Nowadays, shoes usually have a lifted sole even a high heel, shortening the calf muscle and Achilles' tendon, which leads to a loss of ankle mobility. This lead to the execution of western style squats, where the heels aren't touching the ground.

Full depth squatting has 5 benefits:

1. Joint mobility

Limiting the ankle movement in flexion is a common problem as it produces a number of postural deficiencies, overpornation and runners knee. The loss of joint mobility is caused by the shortening of the calf muscle and Achilles'' tendon. A deep squat, keeping the heels down, requires a good flexibility of the ankle. Squatting and maintaining the position improves joint mobility.

2. Reducing back pain

Many people have an excessive curve in their lower back region that is often caused by the tension in the pelvis because of the hip flexors. During a full depth squat, the pelvis rotates backwards, allowing an elongation of the spine. This stretches out the shortened or tensed muscles from the lower back region. Also, the body's position during a deep squat produces a traction effect that decompresses the spine by creating space between the individual segments of the back. This only happens when doing squats using you own body weight and it is recommended that you keep a neutral position of the spine when squatting with a load.

3. Thigh toning

If a person has weak thigh muscles, we can often notice how the legs tend to move inwards (adductive) and create an internal rotation while doing moves similar to jumping or walking down stairs. This position puts the knee in a wrong posture and can cause injury. A full depth squat moves the thighs in the opposite direction creating abduction and an external rotation. Squatting strengthens the muscle groups that are responsible for completing this move and increases the level of control and positioning of the entire leg.

4. Gluteus toning

The gluteus maximus is one of the largest muscles in the human body. The muscle is responsible for performing numerous daily activities such as walking, lifting, running. Also, it plays an important role as a stabilizing muscle keeping the trunk and the legs in an upright position. Tests using EMG machines demonstrate that during squatting the gluts are engaged only when the athlete's gluts go lower than the knee level. This clearly demonstrates that you can't obtain the same benefits while doing normal squats. The up and down motion of a full depth squat is by far the best way to tone the gluts. Also there aren't many people that would complain that they have a toned backside.

5. Posture correction

The cumulated effect of this exercise is an increase of static and dynamic posture. When joint mobility and lower body strength increase, the entire bone and muscle system will be able to naturally obtain a better posture. This has a great impact on the way you look, but also on the way you move and feel about yourself. A full depth squat is a good way to erase the bad habits that our body has developed because of modern style living.

Modern squats

When a person that is not used to deep squatting is trying out this move, there is a big chance that he or she will lift the heels off the floor and lose its balance, falling backwards. These are two signs that the person has lost ankle flexibility. In the image below, you can see the difference between a correct squat and a western style one, with rigid ankles.

You can clearly notice how the ankle remains at a 90 degree angle when doing western style squats. Without adequate ankle mobility, the attempt to go lower while squatting makes the center of weight shift behind the support base, the person will lose balance and fall backwards.

Other disadvantages of this technique are the following:

- A smaller contact surface (only the toes) make this posture unstable;
- The calf muscles are too engaged in order to maintain the position; they can't get any rest;
- The compression levels between the soft tissues from the lower part of the leg and the upper one is too high.

Most adults squat in western style because it is impossible for them to keep their heels on the ground. Executing a correct squat is a sign of a good mobility and it can be a reasonable goal for the athletes that want to increase their fitness level

Preparing the squat

Squatting is a basic functional move, the simple repetition of the exercise is often all that is necessary in order to obtain a complete and correct posture. To anyone who is unfamiliar with the movement, it is recommended to segment the exercise. By doing this, you can increase the strength and motric control necessary to do a full depth squat. The ones that have difficulty in keeping their heels down need to regain ankle mobility with the help of targeted movements.

Is squatting dangerous for the knees?

Some people say that performing a full depth squat is dangerous and unsuited for the knees. Squatting, as well as a lot of other fitness exercises, has a certain risk factor, but the fact that it is dangerous for our knees is a myth.

When properly executed, the risks are considerably less and most of the time there are more benefits to gain from squatting.

Based on current research, a complete squatting move with your own body weight is not only a safe activity, but also has a beneficial influence on your health. You must keep in mind that it's important to be aware of any risks of injury when trying out any move that your body isn't accustomed to.

5.CORE

"Core" refers to the central or middle part of the body and includes a complex series of muscles that extend beyond the abdomen.
This area is also known as the "center of power" because the power of movement and stability comes from here. The core zone is both a power source and a strong stabilizer.
Core muscles keep the body stable and balanced, regardless if it is a static or dynamic movement.
Core is also known as the interior middle, because of the most in depth muscles, a muscle group that, under normal conditions, works together in order to stabilize the trunk and pelvis. These basic muscles are programmed to contract automatically when moving.
Beyond the fact that it stabilizes the trunk, it also helps expel unnecessary substances outside the body.
We usually use this muscle group at about 20-30% of its capacity.
The core region helps stabilize the body creating efficient body moving schemes both in the upper and lower body, increases posture, assures stability ad power in the kinetic chains, prevents back pain, reduces the risk of injury, increases athletic performance.

Exercises can be static, isometric or dynamic; these exercises concentrate on the body's nucleus, using different angles and intensities.

The 6 core movements are:
- Lunges – require stability and balance. These are used especially for increasing the speed and stabilizing the trunk;
- Stands – require balance;
- Pushes – increase posture, stability and strength;
- Pulls – unites stability and the extension of movements;
- Flexing
- Rotations – add dimension, dynamism, and direction to all fundamental movements. While rotating it is required to move your body weight, developing core strength and increasing stability in the whole body.

A. 87.5% have a rotating part in their function;
B. Our body was build to twist;
C. Most gym training sessions avoid twisting the trunk.

Abdominal activity:
- Transfers pushes made by the lower limbs;
- Transfers the impulses from the superior limbs;
- Compacts the system, assuring muscle balance and joint kinetics;
- Allow the expression of functional force;
- Grows dynamic postural control;
- Prevents injuries;
- Increases the perception of muscle synergy
- Improves benefits.

6.FITNESS MOVES

Fitness moves concentrate on building up specific muscle groups. This leads to an increase of cardiac frequency in terms of agility, reaction and speed.

ADVICE

1. TRY TO IMPROVE YOUR TECHNIQUE IN THE USE OF FUNCTIONAL EQUIPMENT.
Training with functional equipment is dynamic and improves numerous motor skills so we must never lose focus and conquer the best position to maximize the target.

2. ARM SPEED & LEG SPEED
The work of the arms - the faster we move the arms the faster the lower part of our body will follow us or will have to stabilize the work performed by the upper part by actively participating.

3. MAINTAIN BALANCE
Check - in the event that you lose your balance, you lose control of the movement and you cannot maximize the effectiveness of execution.

4. RELAX
Being tense slows you down - relaxes your body parts to take advantage of the fluidity of your movements.

5. ALWAYS CHANGE
Changing the training by progressively increasing the difficulty will lead to inevitable improvements.

6. REST WHEN YOU NEED IT
Every athlete must know and listen to her body in order to be able to give it the necessary rest. Remember that we train quality, not just quantity.

7. BE SELFISH: TRAIN FOR YOURSELF
It’s about the time you invest to make your dreams come true, so eliminate all distractions to get the results you want.

8. BELIEVE YOUR WORKOUT MAKES A DIFFERENCE.

Biography:
Alfredo Stecchi - biomechanics of physical exercises
Paul Collins - Functional Fitness
Carl Paoli & Anthony Sherbondy - Freestyler

NOTE

www.crabfitness.com