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**MONOGRAPH
MYTHS ABOUT EXERCISE AND DIET**

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GRATITUDE

I want to thank my family, especially to my mom who has supported me in every decision I have make in my life, my friends, for all those moments we have passed together, in the good moments and the bad ones. Thanks to Mario Rendon for let me go to the gym even after I broke a mirror, for his advices.

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SUMMARY

This work is to help people how they can be the best version of themselves, that having a healthy life is the best way to live and it doesn't have to be hard or expensive or something like that. This work is based on videos, books I have read, investigation from different pages and from my own experience.

This work represents me almost all my adolescence, why? I have always been a skinny guy but with some fat. When I started to workout I didn't know anybody to ask for some advice, so I decided to register at the gym, listening to my coaches and I spend almost 1 year of my life listening to them and not having any results. My motivation was destroyed at all but i decided to give one last try, with a few changes. I decided to investigate “the world of the gym” by myself: reading books, doing different researches in different forums, asking to people that I knew they would help me and with my bad experience from the past and make the best out of it.

Unfortunately, with a lot of information I didn't know who or what to believe and my motivation was going away until I discovered that I wanted to help people like me, people who doesn't have any idea. So I decided to focus even more on knowing how to exercise without any danger, how to make a good diet, how to cook easily and in a fun way, how to find the best version of yourself. This is my work, this is me.

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INTRODUCTION

The following monograph is based with my experience doing exercise and diet, what you need to know about it, what you have to do and what you don't, how to prevent injuries at the gym and wasting your money on supplements you don't need. The purpose of this investigation is knowing some myths that surely are ruining your goals and at the same time your results and motivation. This work is also to encourage the people to exercise for their health and it doesn't have to be 2 hours or something like that, with just 30 minutes of daily exercise or just moving your body can change your life and benefit you in different ways.

The specific study of this theme has an importance to show the persons about the importance of having a healthy life style, their benefits as physical as psychological and why you should exercise knowing how to train each part of your body, what the best exercises are for you, which one is the best rutin to you and how a person can reach a limit, you have to listen your body to know what you have to do.

Several authors have treated and reached this theme like David Marchante on his book "Get shaped without losing your time" Brad Shenfield writing "science and development of muscle hypertrophy".

The monography consist of three chapters, the first one is based on disproving some myths about exercise and diet, which one are the best type of exercise, the compounds lifts or isolation exercises and how be careful with some type of foods, the second one on the

supplementation, if is really necessary to gain muscle, which ones are dangerous for our healthy, and when it is really necessary, and the last one is the muscle development, how does it grows, how is the recovery and the importance of doing exercise and the muscle on our lives.

Even if you are not feeling convinced on exercise and having a good diet, the obesity has reach global and epidemic levels and every year (at least) 2.8 million of people die of obesity and this is for having a lazy life style.

CHAPTER I

MYTHS ABOUT EXERCISE AND DIET

1.1 DISPROVE MYTHS ABOUT EXERCISE AND DIET

Many of the people who want to improve their bodies to look better join to the gym, but mostly of the time they don't know what they have to do, which program they have to follow, how does it have to be their diet, important facts that determinate if you have results or not. With that said, let's start with some important facts about exercise and diet:

The importance of hydration in physical activity

Many of the people when are going to workout (this is generally in sports, gym,), don't think about one of the most important things to have a good training, to be hydrated. After, during and before, hydration is a limiting factor in athletic performance, and therefore, proper hydration, has benefits for health and performance of athletes.

The objective of this is to establish the electrolyte in sports needs and proposing a practical protocol of hydration for physical exercise.

"Athletes should be well hydrated and when you exercise in hot environments, hyper hydrated. The urine clear can be a good indicator of this. Post exercise rehydration should be about 150-200% of the weight lost during training and / or competition."

Aritz Urdampilleta Otegui, José Miguel Martínez Sanz, S. Julia Sánchez, Jesús Álvarez Herms. (2013).Hydration protocol before, during after physical activity.*Dialnet*, p.57-56.

Eating at night makes you gain weight

The answer is no, eating carbs at night does not make you gain weight, what it is, is eating more calories than your body burns as known as caloric surplus. What happens when a person eats carbs at night would depend on how full are their reserves of muscle and liver glycogen, the carbs are absorbed by these reserves, just when we surpass this limit is when it stores in form of fat

It doesn't matter the time you eat the food in the day, the important is what you eat, if your body is receiving the nutrients it needs; for example the amount of protein, carbs, fats and micronutrients (vitamin A, vitamin D, zinc, iron, etc.), this will depend on the body of each person and their goal (gain muscle, loss fat, get stronger, etc.)

Exercises behind neck

The potential problems of these exercises could be external and internal impingement, risk of injury to the intervertebral disks. If you have a marked anterior rotation your scapulae will be in a non-natural position and your humerus will be internally rotated, even if you manage to twist yourself under the bar, when you start pushing, you will be at an even higher risk of sub acromial impingement due to the inability of the scapulae to rotate later during a press on the head.

How can I add more fibers muscle

This is impossible, you can't add, a person is born with a specific number, what you can do is make them more stronger, thicker and bigger, what is known as muscle hypertrophy (Is the growth on the size of the muscle cells)

1.2 COMPOUNDS LIFTS OR ISOLATION EXERCISES

We have to clarify what these type of exercises are. Compounds lifts are exercises that involve different group of muscles, for example one of the most famous compounds lifts exercises are the deadlifts, this exercise involves the torso (abdominals, oblique), legs, forearms ,etc. While the isolation exercises targets one muscle group, for example the bicep curl only target the biceps. Once we have understand this we can know the advantages of each type.

One of the biggest advantages of the compounds lifts is they target different group of muscles at the same time, this is important as the volume (one of the most important factors for muscles growth). Are more efficient per repetition from a global hypertrophy perspective and it release more growth hormone than isolation exercises

The advantages of isolation exercises are: Better to target one group of muscles, if we want a certain focus in a muscle group, for example, have more concentrated work on the

quadriceps you better do isolation exercises to have the maximum focus on the specific part of your body you want to work.

Although these types of exercises have many benefits it is potentially dangerous taking compounds like deadlifts to failure or to train in higher reps as fatigue influences form example spinal erectors may fatigue before hamstrings or glutes, putting you at risk of low back injury. In conclusion, both type of exercises should be included on your routine.

1.3 BE CAREFUL WITH SOME TYPES OF FOOD

Most of the problems in a diet are the “light foods”, when you see the word “light”, what comes to your mind is healthy, low in calories, etc. but the fact is that is not what

“According to an investigation in 1990 the experts of the interministerial commission for food management (CIAO) to be able to dominate a product “light” it has to have the next requirements: In the market has to exist a reference product, example, to exist chips light it has to exist “normal chips” (no lights chips), In relation to the reference food there must be a minimum reduction of 30% of the energy value. The labeling should include the percentage of reduced calories, the energy value (per 100 grams or per 100 milliliters) and the existence of the reference food”.

Monika Morales. (). False food light. *besos de mariposa*.

Here is an example

LAY'S		LAY'S LIGHT	
Amount per 100g		Amount per 100g	
Energy	522 Kcal	Energy	512 Kcal
Proteins	6,7g	Proteins	7,3g
Carbs	50,1g	Carbs	59,0g
Fats	31,8g	Fats	30,5g
Saturated fats	4,3g	Saturated Fats	2,2g

As we have seen the comparison between the normal products and “their light version” does not have a lot of difference. The best thing you can do is to eat real food, cook your own aliments so you can now what exactly you are eating, if you don’t have other choice, read the ingredients to know what you are eating, their nutrional values and if they are not empty calories. (Empty calories are calories that our body doesn't need and doesn't take advantage of their nutritional value).

CHAPTER II

THE SUPPLEMENTATION IN THE EXERCISE AND DIET

2.1 DOES PROTEIN POWDER IS NECESSARY TO INCREASE MASS?

After discussing whether supplementation is necessary for this or not we have to understand how someone can increase mass. First you need to be in a caloric surplus.

This means you need to be in a 'state' where you need to consume more calories than your body burns to gain weight, so you have to combine a solid and effective routine of exercises to create a damage to the fiber muscles, the body understands this as a 'little injury' and will repair them in the recovery process. Once the damage is repaired the muscle fiber becomes bigger, thicker and stronger.

Once we have understood this, the answer is no. You don't need of a supplement like mass gainer or protein powder to gain muscle, what people need is to consume more calories than your body burns but you have to control this, is normal to gain fat (you can control this amount but you have to understand that gaining weight is a normal thing), what you don't have to do is being in an over high caloric surplus and eat everything you see, for example, being in a 1000 caloric surplus, you surely will gain weight, some muscle but mostly of that weight gain, be for sure will be fat, so you don't have to exaggerate this, you have to see the amount of extra calories your body needs, if you are not gaining muscle and for example you are between 600-700 caloric surplus it means you need to increase it, this

depends of each body, metabolism, the amount of calories we burn when we workout, how many hours you train, etc. but the range in a normal caloric surplus is between 300-500.

If you are not able to eat a lot of food, then you should have more liquid calories, solid foods keep you full for longer periods of time and the amount of calories you can have in a shake is very easy. Remember this, 1 gr of protein and carbohydrate are 4 calories but 1gr of fats are 9 calories.

2.2 BE CAREFUL WITH SOME SUPPLEMENTS

There are many supplements on the market that are really useful, like multivitamin, vitamin C, biotin, etc. but regrettably the famous supplements are protein powder or mass gainer.

BCAA'S

This supplement is a branch chain amino acids, the building blocks of protein. You want to find a product that has at least a 2:1:1 ratio of leucine, isoleucine and valine (in that order). So for every 1000 mg of leucine, there are 500 mg of isoleucine and 500mg valine.

Leucine: has been found to significantly increase strength during workouts and to prevent muscle degradation and preserve lean mass when taken before workout.

Isoleucine: Promotes muscle growth and elicits anti catabolism effects (prevent muscle breakdown and preserve lean mass)

Valine: Promotes greater energy and endurance during workouts.

BCAA'S are most useful to be taken when you are training fasted, in other words when you haven't eaten anything before your workout.

It can be utilized by your muscles as fuel in place of readily available glycogen, in theory preserving more muscle mass while training and holding onto your hard earned gains. In simple terms, it gives to your body another fuel source to use during exercise when you don't have much in your stomach since you haven't eaten yet, but if you are not training fasted, then you don't need it. As long as you are getting the amount of protein your body needs, you don't need supplement with them. In conclusion this supplement is "required" only if you train without having eaten any food, otherwise than that you will waste your money.

Protein powder

"In a sport center of San Cristobal De La Laguna, Tenerife. 70 users were valued (48 men and 22 women). The results indicate that 72.8% of users consume supplements nutritional, highlighting protein supplements (96.1%), calling the attention that generally produces without the prescription of a professional, this consumption in high quantities and without control by part of a qualified professional may be associated with negative effects on health."

Adrian Diaz Garcia. (Juny of 2015).Consumption of protein supplements in users of a Center sports. *Universidad de laguna*.p, 3

Mass Gainer

This supplement is more “focused” on persons who makes really hard to gain weight, for having a lots of calories. The thing is this supplement is not necessary at all, they can actually save money by doing their own shake, you can track the macros, prioritizing what is best for you (if you needs more protein, more carbs, more fats, more vitamins or minerals, etc.) and besides that you won't have any problems, is more natural.

“Taking large amounts of products to gain weight for prolonged periods can adversely affect your body and cause kidney damage. Weight gainers that contain creatine can cause liver dysfunction and kidney damage. According to UMMC”.

Pedro Betico. (9 December of 2011).What are the negative effects of Weight Gainer?
Infoculturismo.com

As you can see, even if you want to take this supplement you won't be able to take it for a long time, obviously you can risk yourself and see if your body is affected or not you can do your own shake:

- 1,5 cups almond milk
- 2 scoops of protein (as we have talk before with measure and recommend of a professional)
- 1 cup oats
- ½ cup strawberries

- 1 banana
- 2tbs peanut butter
- ice (this is optional, is more for the texture)

For this drink you have 1005 calories (if you want more you can add more fats to have more calories), 130 gr of carbs, 25 gr of fat and 65 gr of protein. Obviously you can add more ingredients for your convenience.

Even though I have said that if a thin person wants to gain weight needs more calories, is not the same 100 calories of carbs of oatmeal than 100 calories of a bread. A calorie is a calorie, that is true but the difference of this is that the oatmeal will apport you fiber, complex carbs, is rich in antioxidants, etc. and the bread will apport you simples carbs, which are quickly decomposed for the body to be used as energy, the fact is this type of carbs (bread, cookies, flours, etc.) have a lack of nutritional values.

2.3 WHEN IS THE SUPPLEMENTATION NECESSARY?

"Supplementation" is an input of nutritional values to your diet for keeping you healthy, prevent illness, etc. As we have seen, a person just can't take a supplement because "he thinks" he needs it.

The supplementation is only necessary when you have a lack of a nutritional value, it can be protein, fats, vitamins, but just because it can replace these nutritional values, doesn't mean supplements are better than food. A supplement is just a complement to complete your diet, we always need to have a balanced nutritional plan.

Multivitamins are supplements that I personally think are the best and the most appropriated, the protein powder is a very popular supplement and is more consumed than multivitamins, but the protein is a lot easier to get than multivitamins (vitamin A, C, D are some examples). You can get protein in meat, rice, beans, etc. but the essential vitamins that your body needs are only on fruits and/or vegetables.

“Vitamins are organic compounds that the body needs for the metabolism, affecting the health and to achieve adequate growth. The vitamins also participate in the formation of hormones, blood cells, chemical substances of the nervous system and genetic material. The lack of intake leads to dysfunctions metabolic, among other problems”.

/Pardo Arquero. (16 December of 2004). *Cdeporte*. The importance of the vultimianis on the sport practice p, 3.

When the athlete can't reach the nutritional values even doing a balanced diet, this is probably because the energetic requirements are very plaintiffs, like intensive workouts, long competition test, marathons, etc. and the volume of food to cover the energy is very high this could lead to digestive problems or gaining weight deteriorating the physical state. When the athlete anticipates that he won't be able to eat after and intense training session or competition it can be justified to need a type of supplement to help him in the recovery or the most suitable would be when there is any pathology that prevents the athlete from

carrying out a normal diet or it can be a pathology of nutritional deficiency, diagnosed by a doctor or a nutritionally assessed by a qualified nutritionist.

CHAPTER III

MUSCLE DEVELOPMENT

3.1 HOW DOES THE MUSCLE GROW?

Each muscle of our body consists of fibers, when those fibers are worked with a practice that is not the regular, we generate a stimulus or a new one and to defend the fibers and will increase of size (as known as hypertrophy) to perform the exercise, the muscles fibers will become stronger and thicker. The protein stored on the fibers muscle is liable for this growth, during the workout the body is in a “stage of looking the way on how to make it easy the next time”, the body repair the tiny injuries caused for the works out and at the same time adds more muscle tissue. If you add more intensity to your workout and weight lifting, your body would have to adapt to the new stimulation. The key for a muscle to grow are the protein synthesis and muscles degradation. The muscle tissue is made up of the fibers and these fibers are made of smaller fibers that are called myofibrils that contain proteins. When a person does a heavy workout or an activity that stress the muscle, the muscle fibers will receive a damage and it will be some small micro-tears and tears that will try to recompose. Not all the muscles grow the same way, it depends on your genetic or in your workout, the things you need to understand when there is an imbalance is to the moment of doing exercise or an physical activity it supposes an extra effort so doing those movements of the right way will be the best way to reach a physical equilibrium that results

essential to perform an extra effort in a proper way.

3.2 THE RECOVERY

There are some keys when having or trying to evidence results at the gym, we have talked about those keys which are: having a good and balanced diet, having a good workout program, but we lack of the third one, which is the recovery. The recovery is one of the most important parts when you exercise, it doesn't have any sense to kill yourself doing a good diet and working out if you are not going to replenish your body, this is due to the physiological mechanisms that are produced by the fatigue and this is the main reason why we need to recover and deplete the energy reserves, the disorders of the metabolism of water and electrolytes.

Every effort involves a work of the muscles and joints. The skeletal muscle effort lowers the energy deposits of the organism and at the same time causes structural damage in the tissues. To contrast this type of fatigue we must need the regeneration of the tissue and after that we must carry out a strengthening process to avoid or delay the future fatigue.

The recovery of the body is not only when you are sleeping, the diet has a very important role in this, that's why is essential to have a diet in proteins and carbs, which helps you to the rebuild and the muscular regeneration. If you are fatigued you can sleep longer periods of time, this will depend on your age, teenagers (14-17) between 10 -9 hours, young adults (18-25) between 7-9 hours but never less than 6 and never more than

11, adults (26-64) between 7-9., you can do flexibility exercises or stretching, doing sports of lower impact to help the recovery (walking, swimming, riding a bike)

3.3 THE IMPORTANCE OF THE MUSCLE AND EXERCISE IN OUR LIVES

Have you ever asked yourself why there is a popular “saying” that is “You should exercise yourself at least thirty minutes a day”? This is why we have to exercise over the 500 muscle a human body has. We are not designed to be seated or something else, doing exercise is the best way to put the organism on movement and burning the calories that accumulates. Beside of having a healthy life, the exercise also benefits you on a emotional and mental levels, increasing your self esteem

“Broadly speaking, in a direct way, physical exercise maintains and improves the musculoskeletal, osteo-articular, cardio-circulatory, respiratory, endocrine-metabolic, immunological and psycho-neurological functions. Indirectly, the practice of physical exercise has beneficial effects in most, if not all, of the major's organic functions, contributing to improve its functionality, which is synonymous of better health, better adaptive response and greater resistance to disease”

Aparicio García-Molina, Carbonell-Baeza, A. Delgado-Fernández, M. (23 march of 2010). *Cdeporte*.

The benefits of performing daily workout are relative, not only to improve the appearance of a person, but to exercise the muscles and joints keeping and getting better, this is known as physical aptitude. This will improve the function of the cardiovascular system such as the prevention of illnesses, you will feel better and happier with yourself.

But having a good diet and exercise is not everything, it is also important to consider the musculature, because we all know that while we age the body starts to deteriorate, you won't be able to run like when you were child, you might fatigue very easily and you won't have the energy you used to have.

“Aging in the human being brings with it numerous changes, among which is the body composition, emphasizing the increase of the fat mass, the decrease of the muscular mass and the reduction of the bone mass among the elderly. These changes can lead to the development of various diseases such as obesity, sarcopenia and osteoporosis, associated with a decrease in the quality of life, a greater degree of dependence and an increased risk of mortality in this population group”.

A. Gómez-Cabello, G. Vicente Rodríguez, S. Vila-Maldonado, J. A. Casajus e I. Ara.
(February 2012).Aging and body composition.*Scielo*.

CONCLUSIONS

At the end of this monographic work it is concluded that:

The exercise should be fundamental for our lives, doing it in a correct way to avoid injuries and have the best benefits and results out of it. Your body needs more attention, the food that you eat is your medicine, so start exercising yourself and eat real food instead of sugar or junk food. The food is even better than all the supplements, food will always be the best option.

Having a healthy life is not as hard as many people think, you just have to do some swaps on your feeding habits, for example instead of eating normal pancakes, make your own protein pancakes or instead of drinking juices eat the real fruit. Instead of being all the day sleeping or laid on your bed move your body at least 30 minutes and you will see the benefits.

RECOMMENDATIONS

At the end of this work it is recommended that:

- The supplements is just a complement to your diet, a person cannot supplement by himself, is necessary to appeal a professional not only for your health but to have the best results.
- To get recovered is not for sleep, is for your diet to, if the person is over training or if is not having the enough nutrients on his diet.
- Doing exercises behind neck does not have any benefit as much people thinks, you are putting in risk of an injury to your shoulders and with that your results. You can do “the normal” version and keep training without any risk.
- The “light versions” of some foods are a lie, you be better read the ingredients and the calories. Is a lot better to cook your own food so you know what is exactly on your food.

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