

# TRAINING

Dear members,

You are awesome for joining to our gym! What now?

In this article, I will introduce some general and key concepts of training and how a training program should be structured.

A proper training program should have three major parts: work-out, nutrition and rest. Most people don't understand that without proper nutrition and rest it won't matter how much we work-out. It can only lead to a dysfunctional life style and major health problems in the long-run. Below I will try to explain how and why all three are related as well as what to do and what to avoid in relation to our training.

## Work-out

This is the most calming, fun and self-boosting part. This part is your therapy. This part is your play-time. This part is when you grind. When you sweat. When you jump a bit higher, run a bit faster, reach a bit further or lift a bit heavier every following day.

This is also the part where we damage ourselves. I am not talking about injuries. It is of course obvious that if we do things falsely, we will have injuries. I will come to that later. What I mean by damaging is the actual physiological process. When we use our skeletal muscle tissue for tasks that are harder for them to execute, they will re-adjust themselves based on the need. Meaning that they will become stronger, more durable, elastic or stiff, and their mass & volume will increase. The way all these to happen is by damaging your muscles and creating "microtears". These microtears are then filled with new tissue connections eventually growing your muscles. In the meantime, our brain works on muscle-brain coordination, providing better command on the bodily motion known as muscle memory. These processes are called recovery and it has two main elements to it: nutrition and rest.

To gain the best out of our time at the gym we should maximize our controlled muscle damage without injuring ourselves. Here is how:

**Be prepared** - Never come to the gym without knowing what you will do that day. Have a plan of action. A work-out program.,, Make it accessible to you at all times during your work-out. Write down which exercise you are doing, your time and resistance. Also keep track of your body measurements. Such as your weight, body-fat or waist, neck and shoulder size. But be aware that weight is not that good of a measure, because out of two people with the same height if one is heavier than the other yet have a lot less body-fat, the heavier person would be a lot fitter. In my opinion, the right way to track your body measurements is to measure your body-fat, however, unless you are using under-water-weighing or X-ray scans to measure your body-fat mass, most of the body-fat measurement methods would be very unreliable. Manual skin-fold measurements with caliper can be accurate but it needs to be performed by a professional and it should be the same person every time. So the easiest way to track is to measure your waist-shoulder and neck width, for their ratio is also commonly used as a body-fat indicator. For keeping track of your exercises and measures you can use, old-school style, pen and paper like I do. Or you can use many available free or paid apps like StrongLifts

(Resistance Training), Daily Yoga, Endomondo (Multi-sports), Freeletics (body-weight training), Bodybuilding.com (Multi-sports), etc.

Pay attention to use proper workout outfit and gear. For instance if you are to squat try not to use soft padded running shoes, if you have joint issues use suitable supports or straps, carry your water bottle and towel at all times. Pack a snack or meal to consume shortly after workout. Music can boost performance, you might want to use your phone or music player as long as they don't restrict your motion. But most importantly be mentally prepared, don't be a perfectionist, pessimist, shy or lazy about your work-out. So what if you forgot to bring your headphones we have music players in most rooms. So what if you forgot your water-flask - buy a bottle of water on the way. So what if you have been going to gym for the past month but you still can't lose that belly, well in that case you should reconsider your training plan but hey at least it won't get any bigger. So what if you think you are too fat, skinny, etc. we have all been there. So what if you feel down and don't feel like doing anything, you will feel a lot better after a good session of work-out, guaranteed. It is always easy to find excuses, especially regarding time, try to remember that proper training will let you do, whatever you are too busy doing, a lot better, faster, more focused and efficient. Not to mention the health benefits and improved life quality...

**Know what you are doing** - Seek for technical knowledge. Our bodies obey mechanical laws of motion like all other objects. Understanding these laws will improve your gains and protect you from possible injuries, some of which can be permanent. The scary part is that most of us don't even know that we are doing it wrong. I would like to give few examples for your self-assessment. You need to improve your technique if you are rocking back and forth while lifting, if you are moving any part of the body other than where the muscle group you want to work, for instance you are doing biceps curls but your elbows or shoulders move, if you are rocking to the sides or not keeping a constant height while using elliptical/arc trainers, if you are popping or throwing your hips while running... In short if you are doing any exercise with a bad posture and form you must correct yourself. The best way to do so is to perform the exercise in front of a mirror or record yourself and compare it to a professional, videos of which can be found online.

**Manage your time well** - It is a fast world we are living in. We always have so much to do and so little time. So we better have good time management. Here are few tips and tricks to use your time efficiently in the gym. In order to optimize your time as well as your gains from an exercise it is of utmost importance that you have a steady flow of motion with good posture and that you don't over-rest. Especially if you are lifting weights or doing calisthenics your rests should never be more than 2 minutes. Ideally 30-60s between sets. Considering your working set would take a minute or two and that you have a total of 5 exercises and 3 sets per each you would spend ~30 minutes tops. Say you warmed up for 5-10 minutes and stretched for another 5-10. That would still be less than an hour killer workout. That's why you should aim for an hour max. Working-out long hours at the gym will do more harm than any good. If you are continuously working-out for, say, 3 hours you will deplete all your energy sources and your body will start to eat the muscle tissue. In addition to the damage from its breakdown as an energy source, you will also cause a lot of damage from the training itself (remember the microtears) that most of it cannot be recovered no matter how well you eat and sleep. It is also possible to spend a lot of time at the gym by not necessarily continuously working-out but by having long breaks. Besides its ineffectiveness and crowding

factors it can pose a major health risk too. Resting for a long period of time will cool you down and restrict muscle and joint mobility. Therefore working out the next set after a big pause can snap a tendon or muscle, and cause joint damage. So the next time your friend wants to talk to you, ask him or her to talk after you are both done or some other time. You are welcome to blame it on me by referring to this page. Another way of managing your time better at the gym is to do compound movement exercises instead of isolated exercises. For instance instead of doing biceps curls you can do pull-ups. This way you will engage most of your upper-body and hence reduce the time needed to address them individually. Though, some exercises are best done isolated because in compound movements especially small muscle groups can be dominated by the major ones and reduce the resistance on the small groups. (For instance interior deltoid muscles in our shoulders are mostly dominated by the chest, back, biceps and triceps muscles.) In this case you should address them individually and to reduce the time you can superset\* different exercises depending on the body part (upper, lower, back, front) or the nature of the motion (push, pull).

\*merger of two or more sets without any rest in between

## Nutrition

Many studies show that for max muscle recovery and growth as well as immune function we need to consume carbohydrates (carbs) and proteins as soon as possible after the workout<sup>1-6</sup>. And that the even distribution of macronutrient consumption time throughout the day, especially proteins, plays a key role in maximizing the gains<sup>1,5</sup>. Therefore it is a good idea to pack something to eat after the workout. I know that it might not be so convenient. The actual challenge of a good training program is not the work-out but the work you put in your nutrition. There is no way around it. We need to eat high quality food at the right times. Then comes the question how much should we eat? There is no straight answer to this question for everyone's energy requirement is different. There are many guidelines, available online. I often use [Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein and Amino Acids by institute of medicine of national academies](#) and many others. Below are their recommended daily allowances (RDA):

**Carbohydrates:** RDA for men is 220 to 330 g/d, and for women 180 to 230 g/d. There are many different types of carbs but the one you should pay the most attention to is sugars. Try to avoid consuming products with added sugar and sweeteners because they will cause sudden changes in your blood insulin-glucagon levels, make you crave or even worse cause sugar sensitivity and diseases like diabetes. Consuming vegetables as a carb source will help you keep your blood sugar balanced, make you feel full for longer periods in addition to their endless health benefits. People, with fat reduction goals should especially pay attention to amount and type of carb consumption.

**Protein:** RDA for both men and women is 0.8 g of good quality protein/kg body weight/day. Yes only 0.8 g/kg/d and no you don't need more if you are doing resistance training. Although there are some studies promoting higher doses up to 2 g/kg/d may enhance performance in athletes<sup>7</sup> there are others that show that it is highly depended on the athlete<sup>2</sup> or it simply is not the case<sup>6</sup>. Even if higher doses were enhancing, I want to point out that these studies are for "athletes" not for frequent or regular gym goers. This brings up of course the most

important issue of nutrition: supplements. My scientific opinion on this matter based on all the papers and books I've read and following up my own sportive performance and bloodwork during a three months period over which I used ultra-pure whey protein isolate is that: use of supplements is completely unnecessary and can have unwanted health effects. If you search the scientific data-bases even the authors who (commonly funded by nutritional companies) published papers supporting the use of supplements have the decency to state that there is no additional need for these supplements yet consuming athletes(!) may(!) have performance increase. The major problem with these supplements is the lack of their regulation. They can contain practically anything despite what their nutritional datasheet says. Lookup for BBC Protein Powder Documentary.

**Fats:** 20 to 35 percent of daily energy. If you are confused by this recommendation, let me lay out the math. Say your daily energy requirement is 2000 kcal which is a typical average for a semi-mobile man who weighs around 70kg and measures 1.75m in height. If 20 to 35 percent of his daily energy should come from fats, he should intake 400-700 kcal from fats. Since 1g of fat contains 9 kcal, he should consume 44-78 g of fat per day. One of the most common misconceptions about nutrition is the idea of cutting fats and fatty acids. Most people assume that because they want to lose body-fat, they shouldn't consume dietary fats. Well, they are wrong. Fats are essential for our overall health and function. Some vitamins for instance are only fat-soluble, and fatty acids like omega-6 are crucial for brain function, growth and development. Your body will suffer from cutting back or completely removing the fats from your eating plan. Common practice of athletes is to consume healthy fat sources (walnuts, almonds, avocado...) in moderation and to stay away from partially-hydrogenated or trans fats.

**Alcohol:** I know in Denmark alcohol is a huge part of the social life and culture but I just want to remind you that alcohol is one of the four macronutrients -other three being carbs, protein and fats<sup>8</sup>. It is highly calorically dense even though it is not a dietary component - hence the beer belly (though any alcoholic drink would have the same effect). And it is classified as a drug ([just ask google](#)). You are warned!

**Water:** Water is maybe the most overlook dietary unit. It doesn't have any nutritional value however it has an irreplaceable role in our metabolism, from regulating our body temperature to the transport of molecules, water is being used everywhere. Therefore we should be careful not to dehydrate ourselves. Clearly the amount of water we should drink depends on our body mass and level of activity. I will not recommend any amount however I want to remind you that with prolonged high-intensity exercises we lose a lot of water and many salts and minerals with it. It is important that we replenish this loss by drinking mineral waters, sport waters with electrolytes or energy drinks (though you might want to check the sugar and caffeine content first).

Above I shared basic information about the nutritional components of a healthy eating plan. However, it is always a good idea to talk with an up-to-date nutritionist for your specific health goals.

## Rest

This is the easiest part in my opinion. It doesn't require as much effort as nutrition or work-out. Though it still has a few things to consider. Resting is not just sleeping. Sure, you need to

sleep enough, for most people “enough” is 6-8 hours. And I cannot stress how important it is for your recovery, learning, ageing, and physical & mental health. But you also need to consider other types of resting like active resting.

Active resting is when you are putting a physical effort for a given task and you realize that it is becoming overwhelming, you reduce your effort for some time and get back to your high effort once you feel rested. This method is used in almost all endurance sports. And shown to be so impactful that we now do it at the extremes as an exercising method known as interval training. An example can be sprinting for 45 seconds then running 10-15 km/h for 5 minutes then sprinting for another 45 seconds and continuing the cycle as much as you can. Weight-lifters also do active rest by dynamic-stretching or doing mild cardio in between sets.

Then there is care-resting which should be done after prolonged high-intensity work-outs like marathon running or completing a crossfit exercise like: Miagi WOD, or when you slightly hurt yourself, such as ankle sprains. The common practice is to do RICE (Resting, Icing, Compression, Elevation) and do not HARM (Heat, Alcohol, Running, Massage).

I hope above given information gives you an idea for What now?

For more detailed information or any of your training related questions please do not hesitate to contact me.

Aslan, Husnu, Ph.D.

[aslan@inano.au.dk](mailto:aslan@inano.au.dk)

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