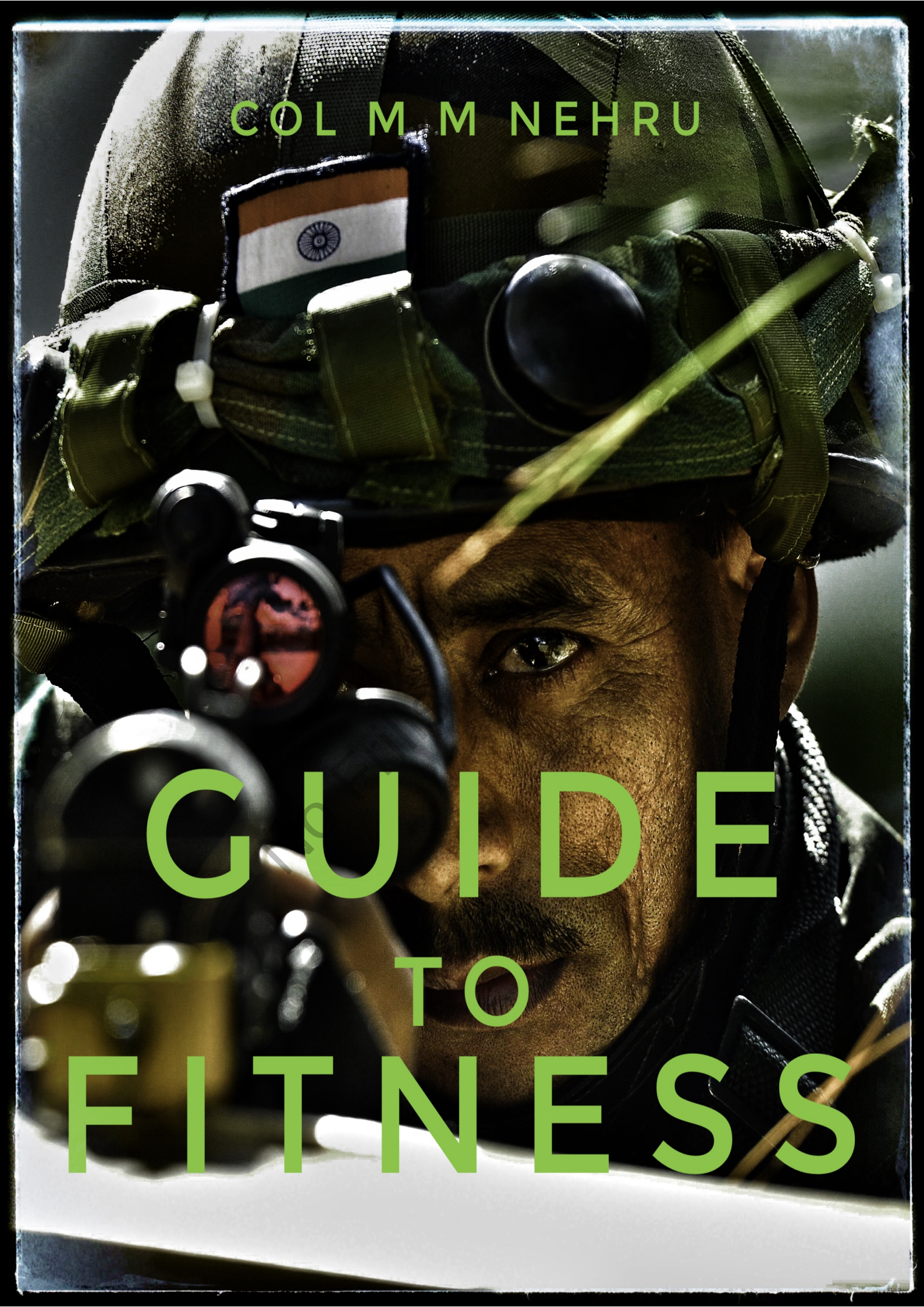

COL M M NEHRU
GUIDE
TO
FITNESS

DISCLAIMER

Contents

Introduction ——————————————————— 4

Why Regular Exercise? ——————————————————— 5

Novice's Guide to Running——————————————————— 8

Injury Avoidance for Beginners——————————————————— 11

Lifting Weights———————————————————13

Basal Metabolism Rate (BMR)———————————————————23

High Intensity Interval Training (HIIT)———————————————————25

Does Sweating Cause Weight Loss?——————————————————— 27

Effective Weight Loss Strategy———————————————————28

Managing Academics With Sports——————————————————— 29

Sleep for Success——————————————————— 31

Pay Attention to What You Eat!——————————————————— 33

Introduction

Often when we think of joining the armed forces, images of us wearing the respective uniforms and leading men and women into battle come to our minds. Let's hold that thought for a moment. A full battle load including an assault rifle comes up to at least 20 kg. Couple this up with long range movements in challenging terrains like the heights of Kargil and deserts of Rajasthan, and you come up with numerous situations that take a considerable physical and mental toll on you. Now, imagine doing all of this and still be required to make important decisions about the men and machines under your command and coming up with ingenious solutions to the trickiest of problems just in the nick of time. That's the life you should think about. That's the life you should be prepared for. Therefore, to be in your peak physical condition is not an option, but a requirement not just for your successful entry into the defence services, but also for a successful career as a soldier thenceforth.

This book is a collection of all my blogs on the topic of physical fitness that I have written over the years. The blogs have now been edited and arranged in a manner to give you a wholistic understanding of what to do and how to do to keep yourself fit. Read and re-read, and work hard and work harder. Always bear in mind that you will carry the responsibility of preserving the pride and honour of not just your battalion and the defence forces, but also the safety of 1.3 billion lives who sleep with their trusts reposed in you. Jai hind!

Chapter 1

Why Regular Exercise?

For those planning on joining the armed forces, it's a no-brainier that regular exercise is a must. But what if you don't? What if your career interest lies in elsewhere? Should you even bother? Yes. And here is why.

- **Improves Cognitive ability**.
- **Improve Discipline**. Often exercise is the first major activity of the day. Regularity in it brings a great sense of discipline and organisation to life.
- **Stress Buster**. Exercise is a great stress buster and uplifts our mood. It has great all round benefits.
- **Improves Confidence**. A sense of well being and regularity in life increases our sense of self control and boosts confidence.
- **Improves Will power**. When a person strives to test the limits of strength or endurance, he has to undergo pain and improves tolerance. Exercising can thus be used to improve our will power and determination.
- **Reduce chances of falling ill**. Regular exercise improves our immune system. We expel toxins from our body and become healthier.
- **Better Sleep and Memory**. Regular exercise improves our sleep and memory.
- **Improves Stress Tolerance**. Regular exercising results in lowered BP and pulse rate, (top long distance runners generally have pulse rates in 40s per minute). When experiencing stress our pulse rate and BP shoots up. Unfit people can get a stroke under stress. A person with well trained heart and lungs is unlikely to do so. He will remain calmer under stress, because of the intimate relationship between the psychological and physiological functions of the body.
- **Increases Energy.** Regular exercising enhances our energy level to perform all our chores. We can thus perform more in lesser time. We can thus read more, work more and get more time to rest as well. We thus become more efficient.

Chapter 2

Aerobic, anaerobic and yoga exercises for fitness

Holistically speaking there are 3 dimensions of physical exercises- “Aerobic”, “Anaerobic” & “yoga type or flexibility” exercises. All are important and should be included in a balanced exercise program.

“Cardio” or “Aerobic” exercises, like jogging, cycling, etc provide following major benefits:

- Improve the muscles involved in respiration, to facilitate the flow of air in and out of the lungs.
- Strengthen and enlarge the heart muscle, to improve its pumping efficiency and reduce the resting heart rate, known as aerobic conditioning.
- Improve blood circulation efficiency and reduce blood pressure.
- Increase the total number of red blood cells in the body & facilitate transportation of oxygen to cells.
- Improve mental health, to include stress reduction and lowering the incidence of depression, as well as increased cognitive capacity.

“Anaerobic” or strength building exercises like pushups, squats & weight training provide following major benefits:

- Build & maintain lean muscle mass.
- Prevent health problems — like low back ache and arthritis.
- Increase and maintain bone strength and density.
- Boost metabolism.
- Improve posture and appearance.

“Flexibility” or “Yoga” type exercises provide the following major benefits:

- Improve blood circulation- thus increase the blood flow and supply of nutrients to muscles and cartilage.
- Improve flexibility.
- Increase range of motion.
- Reduce physical & mental stress.
- Alleviate lower backache.

Two major principles of exercising are: **regularity** and **variety**. These must be obeyed.

Understanding and proper utilisation of the 3 dimensions of exercising, namely —aerobic, anaerobic and yoga is vital for balanced and long term fitness.

Chapter 3

Novice's Guide to Running

When I trained Army personnel in fitness, I was dealing with people who had run 1 mile under 5 minutes and 45 seconds. Some of my students cannot run for even 5 minutes continuously; forget the distance. I have learnt to work with them with fair amount of success. This chapter is meant to help someone who meets all/some of the following criteria:

- No experience of running.
- Not been a sportsperson.
- Probably overweight.

Getting Started

Just start running. If you find that you cannot last even 1 min then do the following:

- Run at a very comfortable pace. Comfortable pace is one at which you can hold a conversation while running.
- Run intermittently- 30 sec to 1 min & then walk for 1-2 min.
- In this manner gain the ability to continuously run for about 30 min in 30-60 days.

Recovery Time

Please run only on alternate days. Take a day to recover from the exertion. This is important to prevent injuries, maintain the motivation and also progress.

Injury Prevention

Injury prevention is the most important aspect for an untrained runner. Common *injuries* for untrained runners can be the following:

- Pain in Knee.
- Pain in ankle.
- Pain in shin.

The best solution for all these *injuries* is rest and gradual buildup of strength of the weak areas and weight reduction. Let us understand the method of *injury* prevention/recovery. Injuries below the knee occur because the ankle and calf muscles are weak and also the bones are not dense enough. Bone density will build up over a time with training. Muscle strength can be improved faster. The good news is that calf muscles are the strongest muscles in the body and can be trained easily every alternate day. Practice single/double leg calf rises over several sets (8-12) to strengthen the muscles of the lower legs.

Cardio endurance has to be built by *running* only twice/ maybe only once in a week. For at least 3 days in a week you should cycle, or train on the cross trainer machine or the rowing machine. These exercises are good because they will build up the cardio endurance (lungs and heart) without putting much stress on your joints.

Knee injury can be prevented by training the quadriceps on the leg extension machine, or just tightening your upper leg muscles for 15-20 sec and then relaxing them. Do this exercise over several sets (8-12) twice a week.

30 Min Continuous Running Ability

By observing the above tips you should be able to reach a level of being able to run continuously for 30 min in about two months without being injured. Even if it takes longer, please do not worry. It is important to have patience and not get injured. Once you have reached this level it is time to think about the distance being covered and speed

Guide for Beginner and Intermediate level Runners

Large number of my students is not used to regular running. To benefit them & others in a similar state I am writing some tips:

BEGINNER: LEVEL-1

- Train on alternate days. This allows body time to recover from the exertion. Everyday training will yield poorer results because of over training.
- For the first 30-60 days do not train for speed. Run at a convenient pace. Try to build up the duration of run to about 30 min nonstop, irrespective of the distance covered.
- Once the body is trained to cover 4.5 to 5 km comfortably, nonstop, you have reached the stage for the next level of training. Till then have patience & perseverance. It is vital not to get injured.

BEGINNER: LEVEL-2

• After reaching this stage incorporate once a week interval training to build speed. Interval training would mean running at 80% of peak pace for distances varying from
(Distance in meters x number of repetitions, with 2-3 min recovery time to regain breath) 150 x 8, 200 x 8, 400 x 6, 600 x 6, 800 x 4.

- Once you can run 400 m below 70 sec & 1600 m below 6 min incorporate once a week jumping & bounding exercises, called plyometrics in your training to further improve speed.
- Do not try to run more than 8 km at a stretch, unless you desire to train for 10km, half marathon & full marathon.
- Continue to train on alternate days only.

INTERMEDIATE: LEVEL-3

- Once you can run 400 m below 65 sec & 1600 m below 5:30 min, you can be considered an intermediate level runner.
- For further progress plan a training regimen under expert guidance.
- Continue to train on alternate days, unless advised otherwise by coach.

Diet Tips

- One hour before run eat a light snack, like a banana.

- Whenever training session is longer than one hour carry water & electoral to replenish loss of water & salt.
- At levels 2 & 3 watch your protein intake. It should be between 1 to 1.5 gm per kg of body weight.
- At levels 2 & 3 have a light protein & carbohydrate combined snack within 30 min post training (E.g. Slice with peanut butter).
- Keep well hydrated.

Chapter 4

Injury avoidance for Exercise Beginners

Common traits of beginners

- Lack of experience.
- Weak muscles.
- Over enthusiasm.
- Weak core muscles (abdominal, obliques & lower back).

Common running injuries

- Achilles pain.
- Knee pain.
- Shin pain.
- Side stitches while running.

Common strength training injuries

- Lower back.
- Over strained muscles.

Preventing common running injuries

- Warm up for at least 10 min by running slowly till the muscles get ready for greater intensity.
- Do stretching exercises after run.
- Incorporate strength building exercises to strengthen leg, abdominal, obliques & lower back muscles.
- Prefer running on softer surfaces.
- Be well hydrated.
- Consume only light food before, preferably one hour, or a little more prior to the run.
- Do not train at over 80% of maximum speed possible.
- Allow adequate rest & recovery time (do not train for more than 4 days in a week).

Preventing common strength training injuries

- Warm up the muscle groups being trained with light exercises of at least 10 min.

- Develop strong core muscles as the highest priority muscles (abdominal, obliques & lower back) before training other muscle groups with greater intensity.
- Do stretching exercises after work out.
- Avoid lifting weights higher than 8 repetitions capacity for upper body exercises, 12 repetitions capacity for leg exercises & 15 repetitions for core muscles' exercises.
- Be well hydrated.
- Consume only light food before, preferably one hour, or a little earlier prior to exercise.
- Stop when there is serious pain in the muscles group being exercised. Do not believe the saying, "No pain and no gain".
- Muscles grow at rest & not when being trained. Allow adequate rest & recovery time- for most muscle groups it is 48 hours.

Chapter 5

Lifting Weights — Basic Principles

I have been training with weights since 1977 and do so even now. At one time, a friend and I were keen to squat 100 kg and failed to do so with 6 months of consistent effort of squatting daily. A friend then told me that our method was wrong. It is then that I read a lot of literature on the subject and realised as to how wrong our method was. We then began to squat just twice a week and within 2 months we could easily squat 120 kg. Yes, our strength had improved by training lesser. *Weight training* is becoming increasingly popular. It is helping the youth get healthy. However, I note that most people exercising regularly in the gym do not understand the principles of weight training. I have explained some major principles to help you to plan your *weight training* schedule.

Muscle Growth takes place at Rest

- When we exercise our muscles experience tiny tears in the fibres. It is during rest phase that these fibres repair and get stronger. Thus nutrition (primarily protein) and rest are vital for muscle growth.
- After training the major muscle groups require 48 hours to recover. The major muscle groups are thighs- (both quadriceps and hamstrings), chest, shoulders and upper back.
- The minor muscles groups require 24 hours to recover. These are: biceps and triceps. Obviously these muscles can be trained more frequently.
- Some muscle groups can be trained every day, like: calves and core muscle group (abdominal and lower back). These muscles have evolved thus because of their usage since ages.

Strength and Endurance are Very Different

- Whenever you can perform below 12 repetitions of an exercise for upper body & 15 repetitions for lower body you are focussing on strength building. Strength building means increasing the white muscle fibre content, which make our muscles bigger in size. Thus heavier weight and lower repetitions imply strength building.
- More repetitions with lighter weight imply more endurance building. The muscles have greater red fibre content. Muscles built for endurance are thinner and wiry. Schwarzenegger may not be able to do even 100 push ups at one go, but a wiry, unimpressive looking boxer may be able to do 200 push ups at one go.
- Depending upon as to what is your objective of *weight training* you should lift lighter or heavier weights, performing fewer or more repetitions.
- Unless you are a well trained athlete you should not lift such heavy weights that the repetitions are below six to avoid injury.

Understand Core Muscles

The muscles above the legs, both in the front and the rear of the body are considered as the core muscles. They can be called as abdominal (front) and lower back muscles (back). These muscles are different in nature and need to be trained differently.

Endurance Type Nature

It is ideal to train the core muscles with lower load and more number of repetitions. Top athletes do over a thousand of sit ups in a session.

Core Stabiliser Muscles

The deeper, invisible core muscles provide stability to our body. They are to be trained differently. The front plank, side plank and back plank are the exercises used to strengthen these muscles.

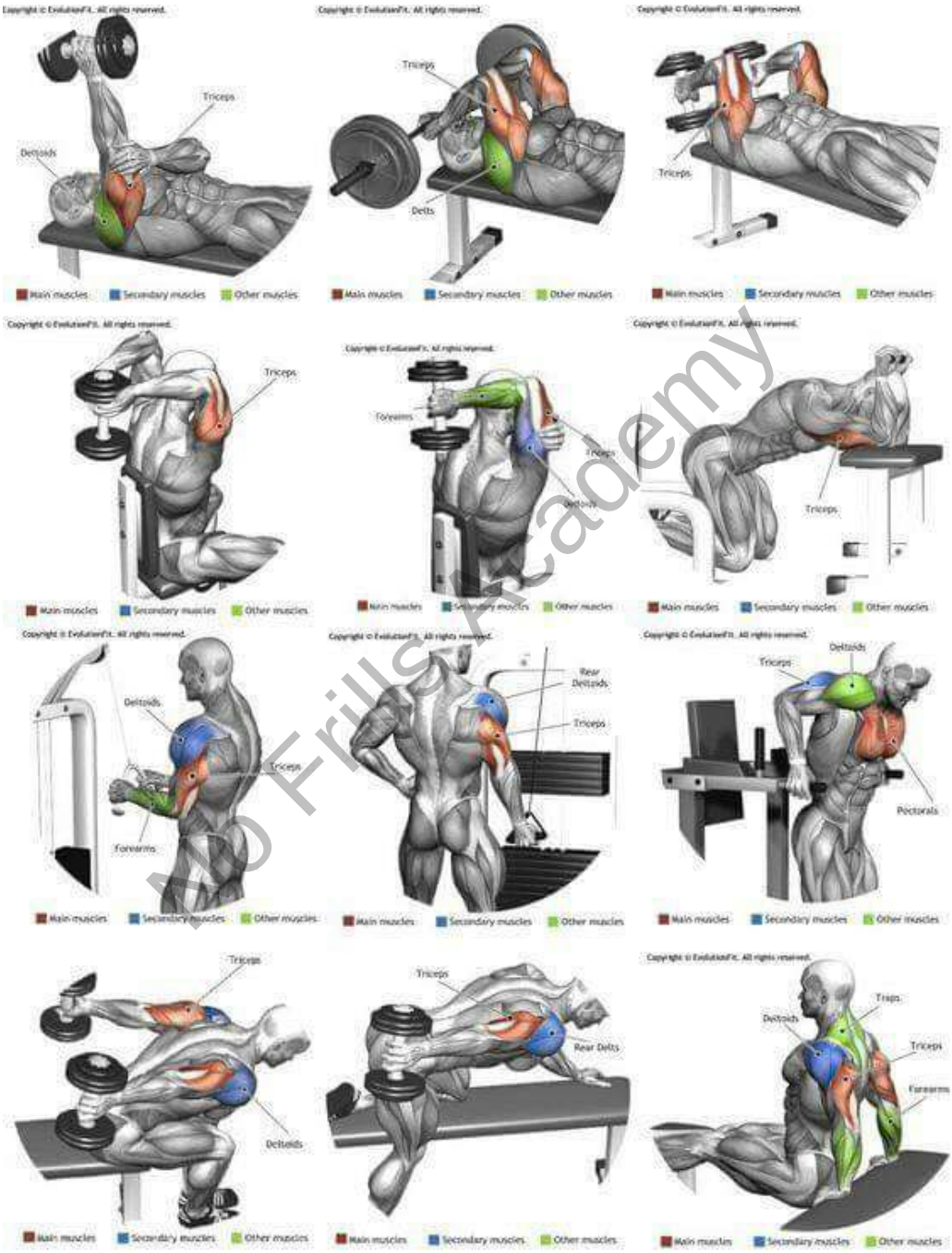
Six Pack?

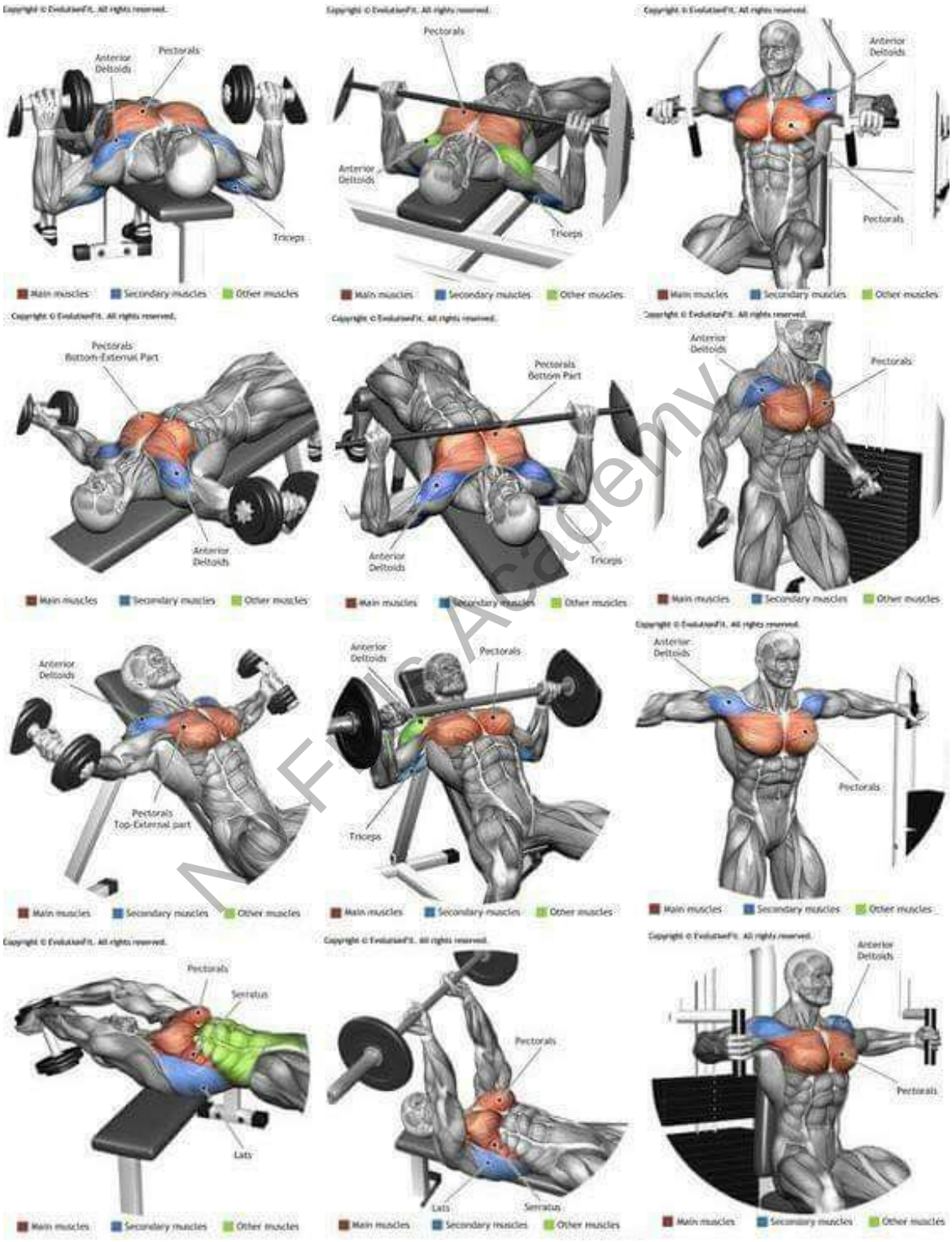
The visible six pack has very little to do with the ability of the abdominal muscles. Visible six pack means that the fat percentage in the body is low and that is all.

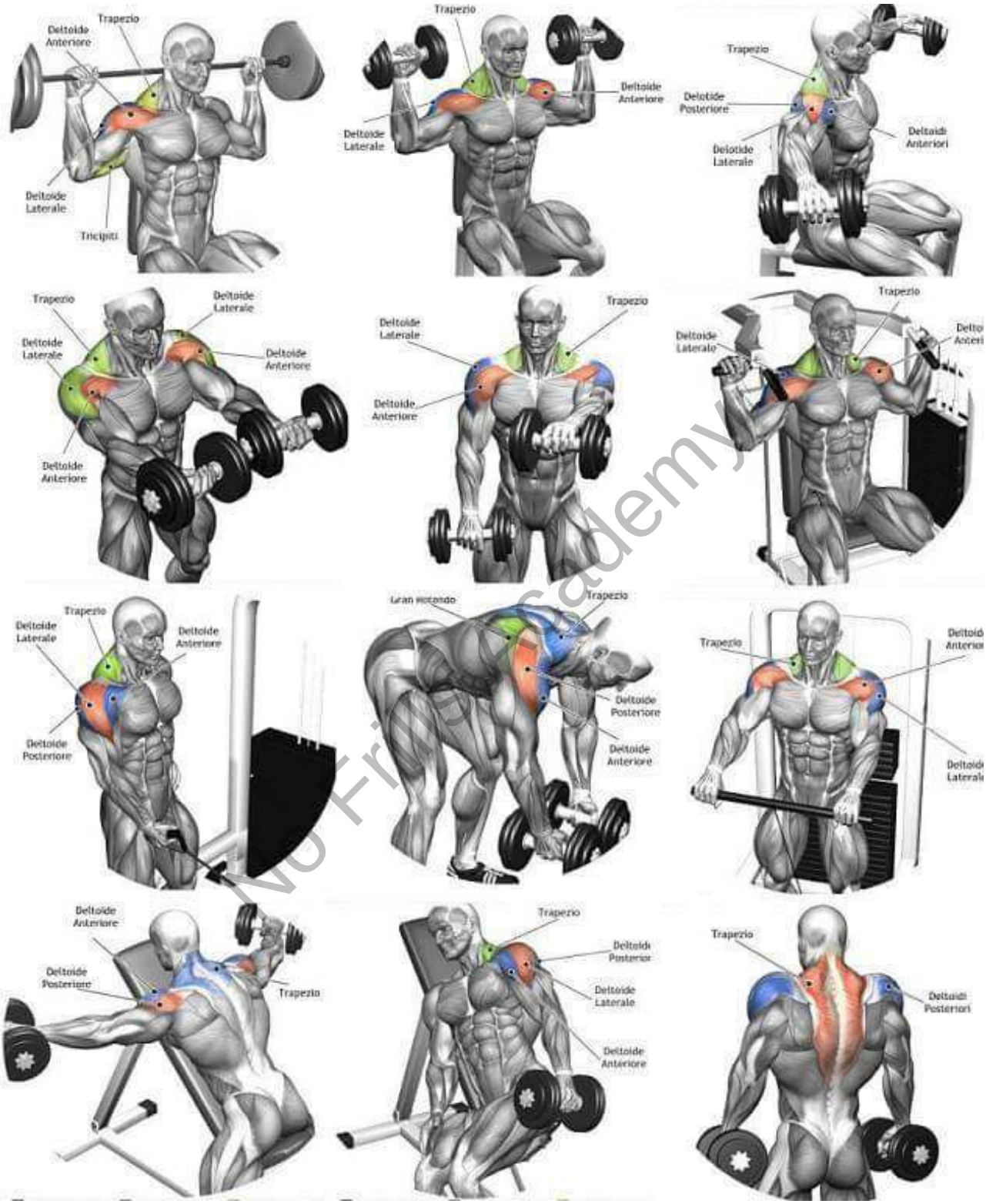
Importance of Muscles Groups in Body

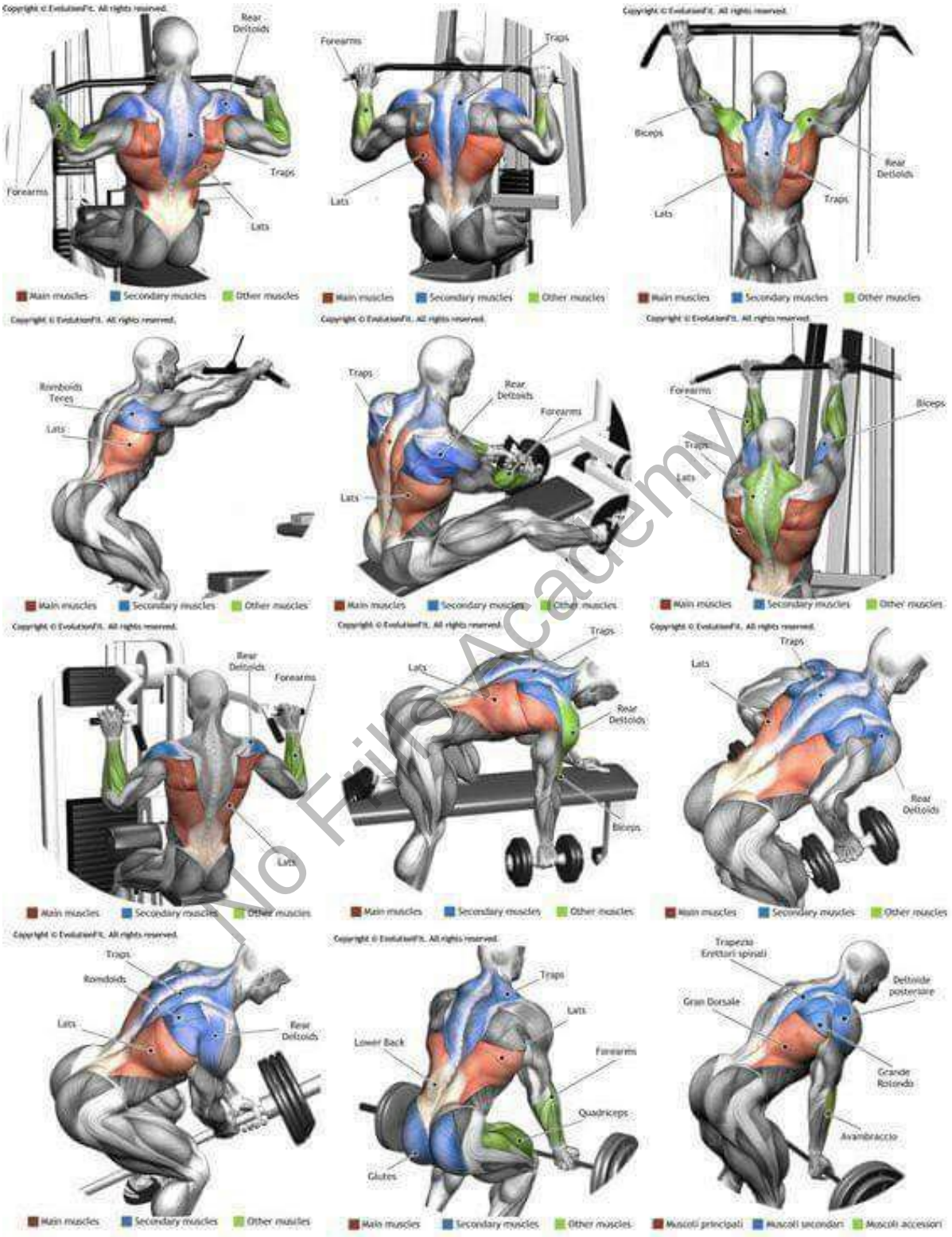
- The most important muscle group is the **core muscles** group because these muscles are involved in practically whatever we do like stretching to catch a ball and fast bowling in cricket, and serving in tennis.
- **Legs** are the next most important muscles group as legs provide us stability and movement. The power of a football kick and boxing punch depends more on the leg and core strength than the upper body.
- **Upper body muscles** are the least important muscles group from the utility perspective. Unfortunately most gyms and gym instructors are obsessed with chest and bicep muscles for their appearance

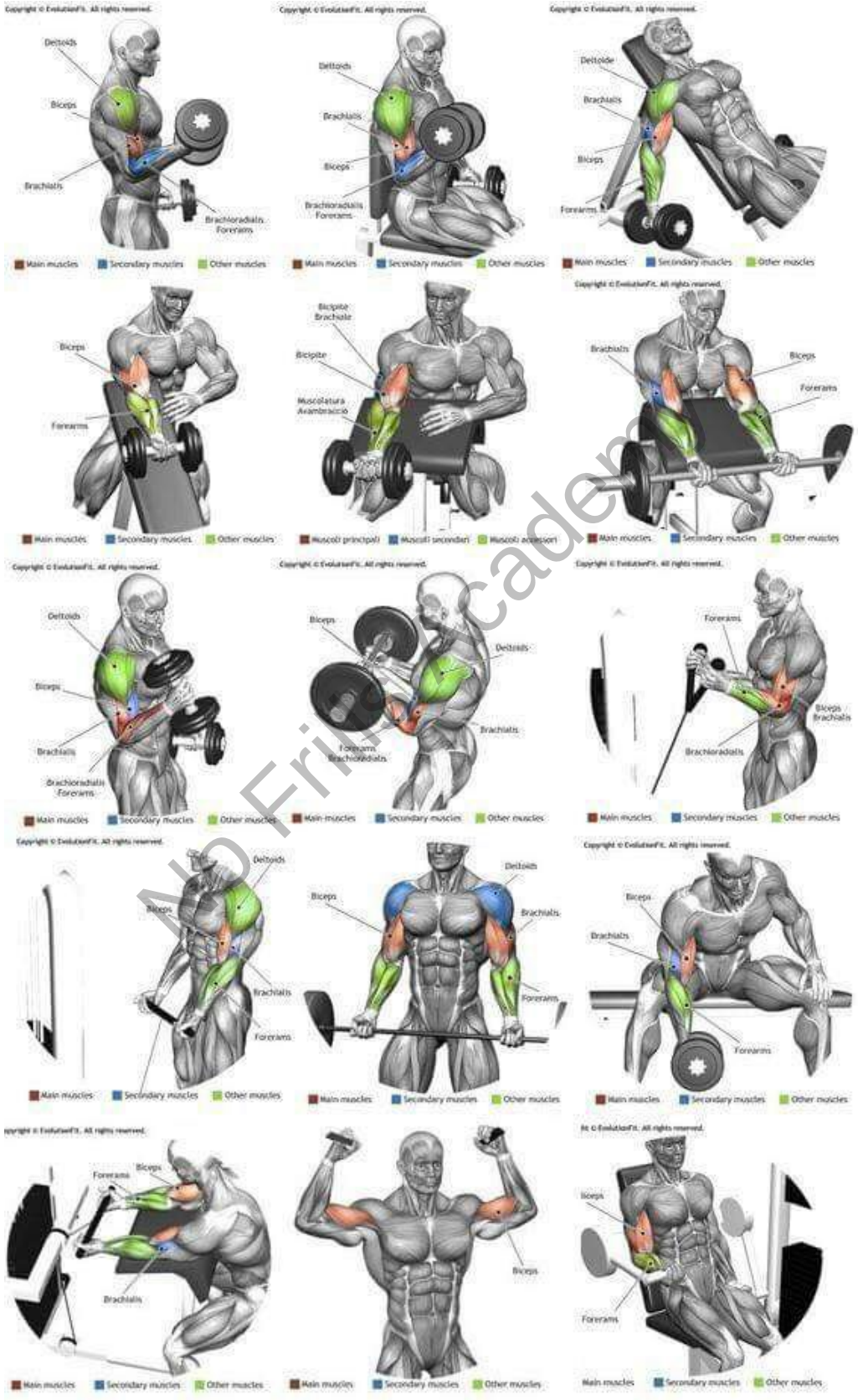
Common workouts at the gym and their target muscles

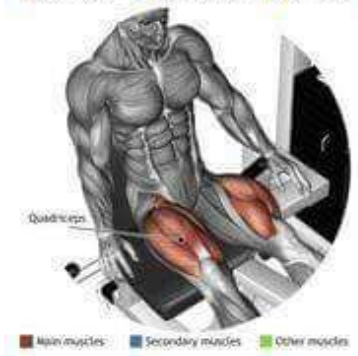


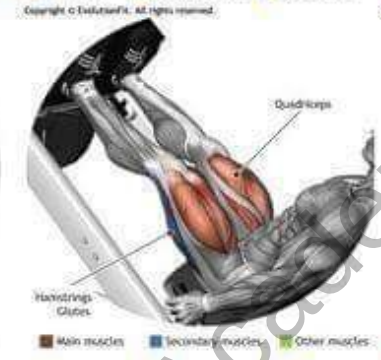


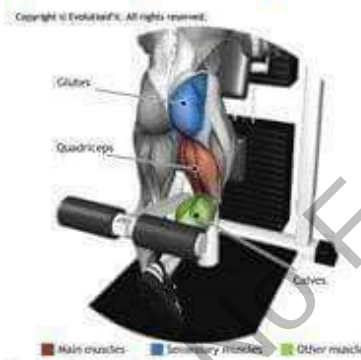


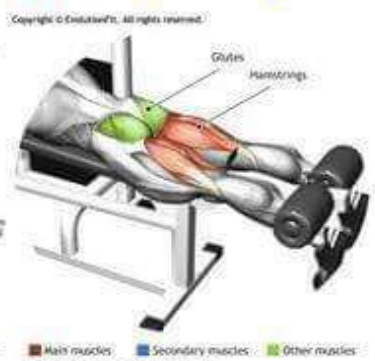


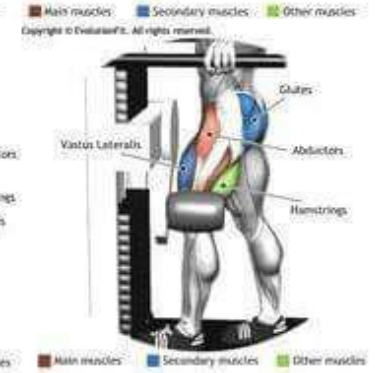

Deltoids
Biceps
Brachialis
Brachioradialis
Forearms
Main muscles
Secondary muscles
Other muscles
Deltoids
Brachialis
Biceps
Brachioradialis
Forearms
Main muscles
Secondary muscles
Other muscles
Deltoide
Brachialis
Biceps
Forearms
Main muscles
Secondary muscles
Other muscles
Biceps
Forearms
Main muscles
Secondary muscles
Other muscles
Bicipite Brachiale
Bicipite
Muscolatura Avambraccio
Muscoli principali
Muscoli secondari
Muscoli accessori
Brachialis
Biceps
Forearms
Main muscles
Secondary muscles
Other muscles
Deltoids
Biceps
Brachialis
Brachioradialis
Forearms
Main muscles
Secondary muscles
Other muscles
Biceps
Deltoids
Brachialis
Forearms
Brachioradialis
Main muscles
Secondary muscles
Other muscles
Forearms
Biceps
Brachialis
Brachioradialis
Main muscles
Secondary muscles
Other muscles
Deltoids
Biceps
Brachialis
Forearms
Main muscles
Secondary muscles
Other muscles
Deltoids
Biceps
Brachialis
Forearms
Main muscles
Secondary muscles
Other muscles
Biceps
Brachialis
Forearms
Main muscles
Secondary muscles
Other muscles
Forearms
Biceps
Brachialis
Main muscles
Secondary muscles
Other muscles
Biceps
Main muscles
Secondary muscles
Other muscles
Biceps
Forearms
Main muscles
Secondary muscles
Other muscles

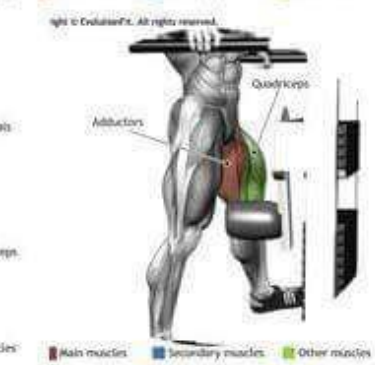












I hope that I have clarified the major aspects about weight training. It is up to you to plan your training schedule. You can train every day, attacking a different set of muscles group. There are body builders who train twice a day. Most athletes train twice or thrice a week in gym only, because they cannot afford to devote greater time to lifting weights and some of the core exercises can be done without going to the gym.

Bonus Section — The Importance of Pull-ups

Being able to pull yourself up is required in various situations in combat life like climbing walls, hills and ropes, slithering from helicopters and so on. All these are important actions. Unfortunately a large number of people cannot perform these tasks satisfactorily primarily because of weak upper- back, biceps, fore-arms and core muscles.
Building the required muscles is quite easy but requires systematic and regular exercising, which most people do not do. In training few cadets get relegated and even withdrawn because of this weakness and incorrect training.

Building Required Muscle Strength

Please remember the following principles to develop strength in these muscles.

Muscles Grow at Rest

Upper back muscles require 48 hours of rest to grow. Please provide this much of gap after exercise. Remember rest is as important as exercise for muscle growth.

Train Hard

When you train for strength building the ideal number of repetitions is 8-12 in one set. The number of sets should be 8 to 15. In the initial one month you may do only 4-5 sets. Since the weak people cannot do these numbers of repetitions they never train properly. They should adopt the following methods to train these muscles:

- Adopt the method as shown in the picture.
- Any machine which provides scope for rowing action while being seated.

- Rowing with weights can also be done while lying face-down on a bench or while standing with bent back.
- Negative Pull-ups. With the support of someone reach the pull-up position & then slowly come down.
- Lateral Pull-down Machine. Use the lateral pull-down machine in the gym & keep increasing the weight till you reach up to your body weight and then start doing normal pull-ups on a rod.
- There are a large number of exercises for these muscles. Please check on the internet & devise your plan.

Patience for Results

With the above suggested training methodology you can expect definite and measurable improvement in 45-60 days. Please do not overdo the exercise to get fast results by reducing the recovery period.

Chapter 6

Get Mentally and Physically Fit by Raising your Basal Metabolic Rate (BMR)

I was travelling with a friend. We have the same height and weight. I am much leaner and have much more muscle mass. We started discussing our food habits. He was surprised to learn that his food intake was almost 1/3rd of mine. Normal logic would suggest that I should have been fatter, but the truth is otherwise. In this chapter, I have tried to explain the importance of BMR in our lives and how it can be kept high to reap health benefits.

What is BMR?

B M R is the amount of energy expressed in calories that a person needs to keep the body functioning at rest. These processes include breathing, blood circulation, controlling body temperature, cell growth, brain and nerve functions, and contraction of muscles. *BMR* affects the rate at which you burn *calories* and ultimately whether you maintain, gain, or lose weight. Your BMR accounts for about 60 to 75% of the *calories* you burn every day. It is influenced by several factors.

Advantages of High BMR

• High BMR implies a more energetic person both mentally and physically. The person will have advantages in mental and physical functions.
• Better immunity as a result of faster detoxification, better blood circulation, faster healing of wounds and recovery from injuries and ailments and better sleep.
• A person will appear younger.
• Better tolerance for stress and more cheerful mood.
• Reduced tendency to put on weight.
Advantages of high BMR are just so many that we would all like to have a high BMR. Interestingly it is not difficult to raise your BMR. Let us see how it can be done.

How to Raise BMR?

Eat More Meals and Start Breakfast Early

Eating breakfast jump-starts *metabolism* and keeps energy high all day. Example: My friend used to come for morning Tennis on an empty stomach, whereas I eat a banana and drink a glass of milk early morning and after about one hour of playing consume a protein shake. Since his body is starved of energy (we have limited carbohydrate reserves- the prime fuel for doing work) it conserves the limited reserves by lowering the BMR. Eating more meals keeps your BMR high. As a principle do not allow more than 3 hours to elapse between meals. Do not eat heavy meals.

Drink Cool Water

Drinking plenty of cool water helps you to burn more calories because it is required to raise the body temperature lowered by the cold water.

Build Muscles

You should exercise to increase muscle mass. A body having a high muscle to fat ratio will burn more *calories* because muscles burn more *calories* than fat even at rest.

Sprint Train

A sprint will raise the *metabolism* much more than a jog. The raised *metabolism* stays for sometime even after the sprint has been stopped. Hence a mixture of sprints and walks will raise the BMR more than a steady run. The same logic favours brisk, vigorous exercise over long and low intensity exercise. Short walks during work hours, rather than continuous sitting on the chair and being fidgety can be quite effective.

Foods that Boost BMR

There are several foods which help boost BMR. It will be wise to include them in your diet.

- Fibrous foods like fruits and vegetables.
- Foods containing Calcium like milk and curd.
- Protein rich foods like pulses, eggs and milk.
- Foods having caffeine like coffee and tea.
- Foods containing Iron like apples and spinach.
- Foods having Vitamin D like fish, cheese and egg yolk.

Utilise the above tips to raise your BMR and reap the many benefits of doing so.

Chapter 7

High Intensity Interval Training (HIIT)

High intensity interval training (HIIT) is becoming very popular. HIIT made Sebastian Coe break world records in the 70s & 80s, Mo Farah and Bolt break records today and helps numerous regular office- going people remain fit and strong by spending minimal time in exercise. I have spoken about HIIT in some of my blogs. Seeing the interest the topic has aroused, I decided to devote an entire chapter to it.

What is HIIT?

HIIT is a form of cardiovascular exercise strategy which has alternating short periods of intense anaerobic exercise with less-intense recovery periods. Examples:

- Sprinting for 30 sec, followed by walking for 60 sec for recovery (one cycle). In this way do 8 cycles.
- Sprint cycling for 60 sec, followed by 120 sec for recovery (one cycle). In this way do 8 cycles.
- Punch bag at high intensity for 60 sec followed by rest for 120 sec. In this way do 6 cycles.

Method for HIIT

The recommended method for practicing HIIT is to warm up for about 5 min, followed by HIIT cycles and finally 3-5 min of low intensity cooling down. Warming up is important to prevent injuries by preparing the body for the intense work out and cooling down is important to reduce muscle soreness, prevent dizziness and gradually lowering the heart rate.

Benefits of HIIT

- It helps raise the BMR and is hence more effective in fat reduction. The results obtained in fat reduction and improvement in cardio ability would be superior to low/medium intensity workout and in a shorter time frame. 3-4 weeks of HIIT may equate with 6-8 weeks of low/ medium intensity workout.
- It improves cardio capacity faster than low/medium intensity workout.
- It builds stronger and bigger muscles than low/medium intensity workout. To note the comparison observe the leg muscles of a Footballer (HIIT trained) and a long distance runner (low intensity trained).
- Time required for HIIT is lesser than for low/medium intensity workout. It is less boring and more challenging.
- It enhances insulin sensitivity better than low/medium intensity workout.

Precautions for HIIT

- Warm up and cool down as advised earlier.

- If you have led a sedentary lifestyle, or are quite overweight, or have vulnerable joints and tendons please do not start HIIT straight away. Improve your ability first with low/medium intensity workout. Start HIIT gradually, implying shorter intense intervals and longer rest periods- example- 20-30 sec interval at 75-80% of maximum intensity, followed by 90 sec of rest. As the ability improves the rest periods can be brought down to 30 sec and intense period increased to 60 sec at 90% intensity.

- Avoid doing HIIT for more than twice a week to avoid injuries.

Use HIIT for the proven immense health benefits. Please observe the precautions explained for best results.

Chapter 8

Does Sweating cause Weight Loss?

Since my days in NDA I have been seeing people trying to lose weight by sweating. In NDA, boxers used to wear overall, and several layers of jerseys during exercise to reduce weight. These boxers checked their weight immediately after the exercise and found that they had lost weight. There was thus reason to continue utilising the method in future as well. Today I see young boys and girls using the same method. They wear track suit and run on tread mill and produce copious sweat. Once they check their weight it is found to have reduced. This **unhealthy and stupid practice** is so universally common that I thought to write about it.

Why We Sweat?

Sweat is the body's reflex response to warm climate, exercise, humidity and spicy food. By sweating the body is trying to cool itself. When we sweat we lose primarily water, salt and other stuff, just the same as we excrete through urine.

Does Sweating cause Weight Loss?

Weight loss occurs by sweating in the form of lost water, or dehydration. Hence if we check our weight after considerable sweating, without drinking any water, we would have lost weight equivalent to that of the sweat produced. We have to make up this loss of water at the earliest by drinking plenty of water. **The genuine weight loss would occur because of the calories burnt through exercise and not due to sweat.**

Fat Reduction from Chosen Parts of Body

Several contraptions(tummy trimmer) are sold in the market which induce sweating from desired body parts by covering them up and then heating them, or rubbing them vigorously to produce sweat. These are a total fraud! There is no way in which one can lose fat only from a specific area. Body stores fat as per its tendency. Exercising will cause fat reduction. It will, however, be from everywhere, the desired parts as well as the undesired parts.

Why Excessive Sweating is Unhealthy?

Excessive sweating causes dehydration and can cause BP to dip and body to cramp. This can be dangerous.

Using excessive sweating to lose weight is an unhealthy and stupid practice. It should not be done. All products advertising their ability to induce fat reduction from specific body parts are a fraud and people using them are wasting money and time! These are popular because of the short cuts desiring society. Fat reduction requires regular planned exercise along with planned diet and will take time. There are no short cuts!

Chapter 9

Effective Weight Loss Strategy

By running 4 km daily I lost only 1.5 Kg in 45 days! This is a common complaint. I had a friend who used to run 16 km for 6 days a week and up to 30 km on Sundays. The maximum distance I ran at a stretch was 8 km. My friend had more body fat than me. Some may be tempted to think that nature had conspired against him. This is a very common problem with a large number of people. In this chapter, I have explained sensible long term and healthy tips to effect weight reduction.

Raise your BMR

Please refer Chapter 6

Don't Allow Body to Get in Comfort Zone

Human nature is to take it easy and get in a comfort zone. The body also likes to cheat and get in a comfort zone. When we run, or exercise **we tend to follow exactly the same pattern and pace. This is a big mistake. This is the prime reason why by running the same distance in the same way is a very poor strategy to lose weight and improve endurance. Keep shocking the body by changing your routine regularly and never get into a set pattern.**

Sweating to Lose Weight is Stupid!

A very popular misconception prevalent among people, promoted by ill educated gym instructors, is to sweat more to lose weight. This is an unhealthy and risky practice. It only leads to dehydration and not loss of fat. Please never do this. I agree it gives a great sense of satisfaction and one feels that fat is melting away with sweat and that is why this idea is popular. It is just a popular stupid myth! Build muscle mass instead.

A combination of right eating, muscle building and cardio exercises is the only effective long term strategy to lose weight and retain a healthy body weight. It is quite easy.

Chapter 10

MANAGING ACADEMICS WITH SPORTS

This is a guest entry by Champ

Balancing both my academic and sports goals has always been important and challenging, and as such, I have had a lot of practice juggling it all over the course of my Badminton career. This has helped me excel both as a player and as a student. Good time management habits that my parent ingrained in me at a young age have helped me succeed. I share my experience with you.

Managing Time

Managing time is vital for success in life. I have learned to make the most out of every minute. With the demanding course load and heavy practice schedule bearing down on me I have very little time to waste. I make a daily schedule and find little ways to fit in more of study and more of sleep. For example, while traveling I catch up on the daily news. I plan my week deliberately and schedule each thing that I have to do and then stick to my plan. I make realistic plan which includes time to relax as well. The dictum: Prepare a practical plan after deliberation and then don't make changes.

Stay Motivated

Sometimes I wonder why I decided to take up both sports and academics when everything starts to pile up and I find myself getting overwhelmed. I like Badminton as well as academics. I also desire to be good at my sport and also be competent at academics. My goals keep me energised and hence I am able to study with good concentration. Since I enjoy what I do I remain motivated. I believe that my efforts will bear fruits and this attitude keeps me going. I have to make each practice session count and also every minute of study! With over 7 hours spent on sport per day I don't have time to waste!

Sacrifice?

When I committed myself to academics and Badminton, I realised that I did not leave myself time for much else. While my friends are enjoying their college life and my family members are attending a party, I am often at home doing the assignments I didn't have time to do, or in the stadium practicing. This is perfectly fine with me as this is the life I chose! Concepts of enjoyment and sacrifice can have different interpretations. I feel that the knowledge I gain and excellence I attain in sport are rewards enough for my efforts. I believe that systematic hard work will get me the results I aspire and there are no short-cuts to attain them!

Rewarding Myself With Breaks

Sometimes I get so caught up in the demands of it all that I forget to rest. At these times my parents remind me that I must remain human and reward myself with breaks- an outing, an ice cream are as important as training and studies. If I don't do that there is risk of burnout. I have to keep enjoying what I do, because if I stop enjoying the game and it becomes only 'work' then I can't become a Tendulkar or a Federer!

The Busier You are, the Better You Manage Time

According to me the busier you are the better you manage your time. My current schedule is occupied by fitness in the early morning, in the forenoon I have my court practice session, in the afternoon I study for an hour and then I am back for my practice session which goes on until the late evening, I come back home, rest for 30 minutes, and then start studying again for nearly two

hours then have dinner, do some light reading and sleep. Being busy either with studies or practice helps me to use every minute of the day productively and reach one step closer to my goals. My goals keep me energised; I enjoy my daily routine and get up each morning look forward to accomplishing my targets for the day!

Chapter 11

Sleep for Success — Fools Study 16-18 Hours a Day!

In my eternal fight against education related misconceptions I will discuss a very popular misconception- “Toppers study 16-18 hours a day!” I am convinced that only fools study 16-18 hours a day. In this chapter I have discussed the importance of getting adequate sleep for people in general and students in particular.

6-8 Hours of Daily Sleep is Essential

6-8 hours of sleep is essential for good mental and physical health of adults. Teen agers require 9 hours of sleep. Anything less than 6-7 hours of sleep per day will result in both mental as well as physical problems. Unfortunately we are not able to notice them clearly and hence people are tempted to push the waking hours in the misconception of enhancing their productivity. Let us note the benefits of getting the required sleep.

Mental Benefits of Adequate Sleep

Memory and Concentration

Too little sleep leaves us drowsy and unable to concentrate. It also leads to impaired memory and reduced ability to carry out calculations. No wonder all the sleep deprived tuition addicts are weak in Math!

Sleeping and Learning

Besides boosting alertness, sleep is a way for the brain to store new information into long-term memory. This event occurs between the 6th and 8th hour of sleep during REM sleep, when people are most likely to dream. During REM sleep, the brain busily replenishes neurotransmitters that organise neural networks essential for remembering, learning, performance and problem solving. Conversely depriving the brain of sleep makes you clumsy and stupid.Research indicates that dreams are more than just abstract thoughts. They represent the brain’s attempts to make sense of daily events.

Physical Benefits of Sleep

- Sleep deprived people have greater chances of having accidents, much more than those under the influence of alcohol.
- Adequate sleep is essential to control obesity and heart diseases.
- Adequate sleep prevents the body from developing diabetes.
- Lack of sleep lowers immunity. I note a large number of physically inactive and sleep deprived youth being highly susceptible to ailments.
- Adequate sleep improves mood and fights depression.

How Many Hours per Day to Study?

By reading the above information you would have realised that it is foolish to study 16-18 hours per day. My take is:

- Smart people need to study- 6 hours per day.
- Average students need to study-8 hours per day.
- During pressure conditions one can study up to 12 hours per day. This work load should not be continued for long as it will start giving diminishing returns after a week.

Chapter 12

Pay Attention to What You Eat!

The middle class youth in India is taking to exercising. This is good. I have been watching gyms over a number of years. It appears that food and drinks business associated with gyms is a more lucrative business. People are misinformed by unqualified trainers and peers. To help exercise enthusiasts, I have dedicated a chapter to shed some light on some common misconceptions and also highlight the dangers of a few others.

Are Glucose Water, Sports Energy Drinks and Energy Bars Good for You?

A simple answer to the question-"***Are Glucose Water, Sports Energy Drinks and Energy Bars Good for You***? for those uninterested in details is, "No". Please do not even touch them!

Why Glucose Water is Not Okay?

All carbohydrates are finally converted into **glucose** by the body for consumption as energy. By consuming *glucose water* the body gets a sudden high of glucose in the blood stream, which will also deplete fast. For a weak, dehydrated, patient it is needed for revival. For a healthy, exercising person it is not required. Moreover, these empty calories have no fibre or nutrients and are bad for long term health. Foods which have slow release of sugar in the bloodstream over a period of time like fruits are ideal before and after exercise. Nadal is sensible when he eats bananas while playing.

Why Sports Energy Drinks are Not okay?

Sports energy drinks vary in composition. However, they primarily contain sugar and Caffeine. Caffeine is a stimulant which has harmful effects in the long run. The impact of the sugar is similar to glucose. Hence these are also not good.

Why Energy Bars are Not okay?

Energy bars also vary in composition. However, they generally contain sugar and other carbohydrates. They lack fibre. They are a sensible source of energy for mountaineers, triathletes, marathoners and endurance athletes who compete in events having durations above 90 min and there is no time to eat a regular meal (Body has carbohydrate reserves of about 45 to 60 min only). For normal sportspersons there is no need to eat *energy bars*.

In the above article I have tried to resolve some misconceptions about the popular foods- **glucose water, sports energy drinks** and **energy bars**. Please do not fall for the marketing myths being created by the manufacturers. Regular meals, fruits and water are the best for all, including sports persons.

Chapter 12.1

How To Prevent Tea & Coffee Addiction?

I see this as a major problem with students & office goers, just to name 2 categories. Long hours of study/work, particularly at night, get students/workers habituated to drinking an unhealthy amount of tea & coffee. Reasonable quantity is okay, but beyond 4-5 cups per day is on higher side.

Genesis of the Problem

To think well the brain requires a decent level of sugar in the blood. When this level dips craving for sugar is caused. A very quick, convenient & socially popular source of increasing this blood sugar is tea/coffee. This is how it usually starts. Since caffeine is a stimulant, it does make one alert early in the morning, particularly after a late night.

Why it is Harmful?

Consumption of sugar means consuming unhealthy calories, no fibre & very few nutrients. The release of sugar in the blood is fast, but depletes very quickly as well. It causes acidity, weight increase & a whole lot of other problems.

How to Overcome the Problem

An Apple or a Banana is much better to keep the blood sugar steady & can keep you working well for longer durations than tea/coffee. Hydration is very important. For this there is nothing better than simple water. All other drinks including the fast gaining popularity energy drinks & fruit juices are far inferior. Fruits & water also prevent acidity.

Solution For Prevention of Tea & Coffee Addiction

In order to study/work for long hours, snack on fruits & drink plenty of water. Up to 2 cups of tea/coffee a day are okay. If you change your habits in this way, the quality of your study/work will also improve. Thus long hours of study/work may also reduce! You will be studying smart, rather than hard.

Chapter 12.2

Avoid Soft Drinks to maintain Good Health

Coke and Pepsi have become two of the biggest brands in the world by selling extremely unhealthy products. Let us see why we should **avoid soft drinks to maintain good health**.

- A single can of soda contains large quantity of sugar. This amount of sugar, especially in liquid form, skyrockets the blood sugar and causes an insulin reaction in the body. Over time, this can lead to diabetes or insulin resistance.
- Soda contains phosphoric acid, which interferes with the body's ability to absorb calcium and can lead to osteoporosis.
- In diet sodas, aspartame is used as a substitute for sugar, and can actually be more harmful. It has been linked to almost a hundred different health problems including seizures, multiple sclerosis, brain tumors, diabetes, and emotional disorders.
- Most sodas contain caffeine, which has been linked to certain cancers, breast lumps, irregular heartbeat, high blood pressure, and other problems.
- Soft drinks cause obesity.
- There is absolutely no nutritional value in soda. It is an unnatural substance that harms the body.
- Because of the high sugar, sodium and caffeine content in soda, it dehydrates the body and over a long period of time can cause chronic dehydration.
- Drinking soda regularly causes plaque to build up on the teeth and can lead to cavities.

What should we do?

Please do not be misled by Salman Khan, Hrithik Roshan and Kareena Kapoor when they promote soft drinks. They are promoting junk! Do not fall prey to the massive marketing and *avoid soft drinks to maintain good health.* Soft drinks only do harm and no good. We should drink water whenever we feel thirsty. Water is the most important constituent of the body. Water is the best drink in the world!

Chapter 12.3

Fruit Juices are Unhealthy

The soft drink makers are increasing their focus on producing and marketing fruit juices as public perception has changed towards soft drinks. The majority thinks that fruit juices are great for health. This is absolutely untrue. ***Fruit juices are unhealthy***. Let us see the reasons.

Why Packed *Fruit Juices are Unhealthy*?

- Packed fruit juices contain large quantity of sugar. This causes obesity. The impact on body is as bad as a soft drink.
- Most of the nutrients of the fruit are lost in the packaged juice.
- The juice contains no fibre.
- The fruit juice has large quantity of sugar. This amount of sugar, especially in liquid form, skyrockets the blood sugar and causes an insulin reaction in the body. Over time, this can lead to diabetes or insulin resistance.

Why Fresh Fruit Juices are Unhealthy?

- The effect of increasing blood sugar quickly is the same as soft drinks and packaged juices.
- A lot many nutrients and fibre are lost in fresh juices as compared with whole fruits. The losses may be less than packaged juices.

What is the Solution?

- Eat fresh fruits.
- Do not drink packaged or fresh fruit juices.
- When thirsty, drink water!

Chapter 12.4
Harmful Effects of Sugar

Sugar is harmful and *addictive*. Traditional belief across societies is that fat consumption is the prime culprit in making humans **obese**. Latest research suggests that the real culprit is **sugar** added to foods, beverages and of course sweets which are an essential ingredient of any celebration. Acceptable sugar consumption per day for a normal person is 6 spoons. Practically most people consume up to 20 spoons of *sugar*. *Sugar* contains a lot of calories, with no essential nutrients. We call them 'empty calories'. In this chapter an attempt is made explain the *harmful effects of sugar* and suggest some practical measures to counter them.

Tooth Decay

Undigested **sugar** present in the mouth provides food to the harmful bacteria present. This is the prime cause of tooth decay.

Liver Overload

For people who are inactive and consume a lot of *sugar*, large amounts of fructose from added *sugars* get turned into **fat** in the liver. Frequent consumption of soft drinks, fruit juices and tea cause the liver to be overloaded. Excess fructose gets turned into *fat*, which can lodge in the liver and cause non-alcoholic fatty liver disease.

Diabetes

When people eat a lot of **sugar**, it can cause resistance to the hormone insulin, which causes many diseases- particularly diabetes. The harmful effects of *sugar* on the function of insulin, make *sugar* the prime cause of type II diabetes.

Cancer

There is considerable evidence that **sugar**, due to its *harmful effects* on metabolism, can contribute to cancer.

Sugar-Biggest Cause of Obesity

Fructose does not cause satiety in the brain or lower the hunger hormone nearly as much as glucose. Hence there is a tendency to overeat/drink such foods/beverages. Sugar causes release of dopamine in the brain; it can cause **addiction** in a lot of people. The ***harmful effects of sugar*** on hormones and the brain increase the risk of becoming **obese**.

Heart Ailments

Studies show that large amounts of fructose can raise triglycerides, small, dense LDL and oxidized LDL (very, very bad), raise blood glucose and insulin levels and cause *obesity*. These are all major risk factors for heart diseases.

Remedies to counter harmful effects of Sugar

• Eat more fruits, whole grains and vegetables. Fruits release sugar slowly in the blood stream. This reduces the craving for sugar, liver overload and checks **obesity**.
• Eat more frequent meals. Hunger increases sugar craving. Frequent small meals maintain a steady blood sugar level.
• Cravings can be reduced by things like chewing gum, drinking water.

Chapter 12.5

Fat Reduction Diet Plan

I know many people who exercise regularly with the prime purpose of losing fat (particularly girls) & exert quite hard & yet do not seem to lose fat. It is quite demoralising & quite a few give up because desired results are not visible. This post is primarily written for such viewers. There has to be something which is not being done correctly. I will analyse the aspects which could be going wrong & hope that the affected persons can discern the problem area & rectify training & diet plan to benefit. In this part we shall analyse the diet.

Calories Intake/ Expenditure

For weight reduction to take place, calories consumed must be less than calories burnt. Since there is no fat reduction, it implies that consumption of food & calories burnt are probably in equilibrium. This state has to be broken. This is the first thing which an individual should check & try to rectify, if possible.

Unhealthy Foods

Let us understand what are unhealthy foods? Large number of food items comes in this category. The lesser such food items are consumed the better, & healthier. Here is a list:

a. Beverages: Alcohol, beer, soft drinks, juices (packed & fresh). Over consumption of tea/coffee.

b. Processed foods.

c. Fast foods (particularly fried).

d. Sweets, cookies & biscuits.

e. Non homemade meals.

Number of Meals

Often people who are trying to reduce eat less number of meals. This is a big mistake because it causes reduction in metabolic rate, lowered blood sugar & cravings for sweet foods (often tea, coffee & biscuits). It is good to have 6 meals in a day. This ensures good energy & blood sugar levels & a high metabolic rate & facilitates fat reduction.

Alkaline Foods, Proteins & Hydration

We should consume greater quantities of alkaline foods, proteins & water for good health & reduce fat.

Still got questions?

No problem

Send me your queries to

mmnehrusir@gmail.com