

PHYSICAL FITNESS FOR LONGEVITY



Dr. Digambar Naik



NEW

VRUNDAVAN

MEDICAL AND RESEARCH CENTRE

New Vrundavan Hospital and Research Center

You are exactly

- **What you eat**
- **What you exercise**
- **What you think**
----- **Be wise**



Dr. Digambar Naik

Physical Fitness

Your body is the car for your soul to drive in. The body is perishable, the soul is imperishable. We all know this car can be maintained better by following all the rules and regulations, to enabling a longer life for it. Maintenance should include all muscles, bones, joints, ligaments, arches and pillars as well as the brain and mind. Exercise should begin from early life to the last day of our existence whatever its nature and intensity. It should be a habit, a good habit performed everyday regularly. It is better to exercise in the open air than in a closed room unless there is no alternative. Morning hours before breakfast is the best time for exercise, though it can be performed any time, but avoid immediately after food. During exercise you must be conscious that you are exercising to keep the car of your soul running for a 100 years. As the years build up, one of the biggest risks is stiffening of muscles and ligaments, the weakening of bones and creaky painful joints which itself leads to the slowing of body movements and functions. This hastens further degeneration of the body, leading to chronic degenerative diseases and inflammation. All these can be prevented or slowed down if we start taking care of the body right early in life. However, it is never too late to start exercising. We have seen our own Fauja Singh completing a marathon at the ripe age of 100 years



Exercise As Preventive Medicine

It is virtually impossible to enjoy optimal health without regular exercise even if you eat properly. A key to the health benefit of exercise is that it helps normalize your glucose, insulin and leptin levels by optimizing insulin and leptin receptor sensitivity. Preventing obesity and diabetes, reducing stress and lowering your blood pressure are among the most obvious boons. Maintaining a fitness regimen can also go a long way towards preventing a stroke and a heart attack. Exercise can be viewed therapeutically like any other drug. It is “the best prevention drug” for many common ailments ranging from psychiatric disorders to heart diseases, diabetes and cancers. Vigorous exercise is an excellent preventive medicine against cold and flu. High Intensity exercise is the key to great health but do it properly under expert supervision. Exercise is important for health as is good posture while sitting and walking. A well planned fitness programme will give you a completely healthy body. This should consist of:

- **Avoid sitting continuously for more than 15 minutes**
- **High intensity interval training (HIIT)**
- **Care exercise.**
- **Stretching —like yoga**
- **Strength training as in a gym**



What is your target heart rate : The target heart rate helps you to understand how much strain you can put on your body. Your maximum target heart rate is calculated by the following formula. $220 - \text{your age} = \text{maximum heart rate}$. Eg: At the age of 46 years maximum heart rate is $220 - 46 = 174$ beat/min. It is advisable to exercise upto 60-80 % of your target heart rate normally. It is only under supervision that you should go up to your 100% heart rate for your age.



Exercise For Longevity

Truly we all expect not only a long but a healthy life. Every one thinks about longevity but fails to achieve it either due lack of proper knowledge or a lazy attitude.

This book will definitely guide you in understanding the proper meaning of exercise, the scientific reasons behind all activities and would help you to achieve your goal of longevity, examining the role of regular exercise.

It is not only important to exercise but equally important to do it correctly and at the correct time. Besides knowing your limitations and the tolerance you have, you should always try to perform it in a natural way rather than as a punishment.

Types Of Exercises

Physical exercise falls into four basic categories - endurance, strength, balance and flexibility. Most people tend to focus on a single activity or a type of exercise and think they are doing enough. Each type is different, though. Doing them all will impart more benefits. Mixing it up also helps to reduce boredom and cut your risk of injury.

Though we have described each type separately, some activities fit into more than one category. For example, many endurance activities also build strength. Strength building exercises also help improve balance.

Endurance

Endurance or aerobic activities increase your breathing and heart rate. They keep your heart, lungs and circulatory system healthy and improve your overall fitness. As a result, they delay or prevent many diseases that are common in older adults such as diabetes and heart disease. Building your endurance makes it easier to carry out many of your everyday activities.

The following are the endurance exercises:

- * Brisk walking or jogging
- * Climbing stairs or hills
- * Playing tennis, football, basketball
- * Yard work (mowing, raking, digging)
- * Dancing,
- * Swimming
- * Biking



Strength

Strength exercises make your muscles stronger. Even small increase in strength can make a big difference in your ability to stay independent and carry out everyday activities such as climbing stairs and carrying groceries. These exercises are also called “strength training” or “resistance training.” These exercises will increase the burning of calories and include:

- * Lifting weights
- * Using a resistance band
- * Most gyming exercises.

Balance

Balance exercises help prevent falls, a common problem in older adults. Many lower-body strength exercises also improve your balance. Here are a new good way to create coordination between your mind and body.

- Standing on one foot
- Heel-to-toe walk
- Tai chi.



Begin



Step 1



Step 2



Flexibility

Flexibility exercises stretch your muscles and can help your body stay slimmer. Being flexible gives you more freedom of movement for other exercises as well as for

your everyday activities. These exercises include:

- * Shoulder and upper arm stretches
- * Calf stretches
- * Yoga
- * Back stretches.



Frequency, Intensity And Duration Of Exercise

“Exercise is nature’s best physiological tranquilizer.” In order to gain maximum benefits from exercise it has to be aerobic, for at least 20 minutes duration and carried out on a regular basis (3-5 days a week is best). To achieve this level and regularity it is best to try to incorporate exercise into your daily life, walk to work, use the stairs rather than the lift for example.

People often say they don’t have the energy to exercise. However if you exercise on a regular basis, this actually increases your energy levels. Start slowly and gradually over weeks and months and build up your exercise tolerance. Your final goal should be to aerobically walk for a minimum of 20 minutes per day on at least 5 days of the week.



If fatigue is a problem, then start exercising in small amounts until you slowly build up exercise tolerance, this is especially true for people suffering post viral fatigue syndrome. Low impact aerobic walking built up slowly over a number of weeks isn't a problem but it would be advisable to see your doctor for a health check.

Many people think that they do enough physical exercise by gardening or walking. When asked if they exercise, many say they walk in their jobs all day and that should be enough, but even if a person is on their feet all day, an ordinary, slow walk will not supply benefits. While these types of exercises are useful, they are not aerobic. True cardiovascular exercise is performed nonstop for 20 to 30 minutes, reaching your target heart rate range. If you want to convert your work into exercise, the walks should be brisk and nonstop to raise heart rate to the target rate.

The Centre for Disease Control in USA says most walkers are not walking far enough, or fast enough to gain the benefits. The exercise has to be aerobic to get full health benefits.

Intensity of Exercise

There is data which shows that high intensity exercise can be stress inducing not stress reducing, so do not go above 80% of your maximum heart rate. Moderate intensity exercise is best at approximately 60% of maximum heart rate for your age and circumstances. Research has shown that you'll get the same beneficial results by exercising at 50-60% of your maximum heart rate that you would get exercising at an intensity of 80% of your maximum heart rate. In one study researchers randomly assigned depressed participants to ride stationary exercise bicycles using 40%, 60%, and 80% of their aerobic capacity. They then randomly switched them to other conditions, so all participants biked three times at different aerobic capacities in random order. There was a significant decline in depression under all three conditions. The order or intensity didn't matter.

Duration of Exercise

Generally you should aim to aerobically exercise for an approximate minimum of 20 to 30 minutes per exercise episode. The longer you prolong it, the better it is. The benefit especially for calorie burning, is much more after 20 minutes.

Frequency of Exercise

It is not enough to exercise for a couple of days a week, no matter the intensity and duration of exercise. The benefits of aerobic exercise last only a short term after you stop regular exercise. You should aim to exercise at least 4-5 times a week for your whole life.

Research published at the Center of Disease Control reports that the Michigan Department of Community Health analysed 1996 and 1998 BRFSS data and found that only 1 in 18 people who said walking is their chief exercise were doing enough exercise.

78% walked for 30 minutes or more whenever they walked

34% walked at least 4 times a week

26% walked at a moderate intensity (3-5 mph or faster)

Only 6.7% met all three goals.

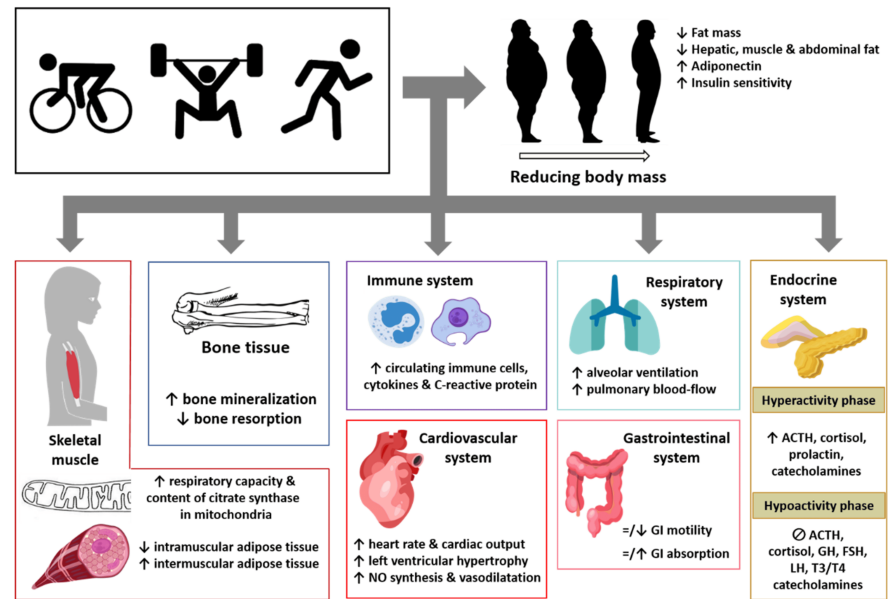
Benefits of Exercise

The World Health Organisation says a sedentary life is one of the ten leading causes of death and disability, and lack of activity leads to more than 2 million deaths annually.

Biochemical and Physiological Changes With Exercise

Research studies have shown that exercise leads to a large number of beneficial physiological changes in our body such as:

- * Lowers the levels of stress hormones in the blood stream.
- * Reduces clotting time of blood.
- * Stimulates gall bladder to drain.
- * Causes muscles to relax.
- * Lowers lactate levels
(linked to being a factor in anxiety).
- * Improves insulin resistance.
- * Improves blood cholesterol profile.
- * Stabilizes blood sugar levels.
- * Lowers blood pressure.
- * Lowers resting heart rate.
- * Boosts immune function.



- * Lowers oestrogen levels.
- * Lowers triglycerides.
- * Improves sleep
- * Improves efficiency of cardiovascular system.
- * Boosts serotonin.
- * Induces relaxation.
- * Increases our energy level.



Physical and psychological benefits of regular aerobic exercise.

The biochemical and physiological changes in our bodies mentioned above have been shown by research to reduce the likelihood of us developing a wide range of health problems such as: -

- High cholesterol levels.
- High blood pressure.
- Problematic labour in pregnancy
- Premenstrual syndrome
- Bowel, prostate)
- Dysmenorrhoea (period pain)
- Colds and infections.
- Post natal depression
 - Reduced mortality rate
 - Certain cancers (breast,
- Kidney stones

- Insomnia
 - Pain
 - Depression
 - Varicose veins
 - Endometriosis
 - Heart attacks
 - Obesity
 - Gall bladder disease
 - Osteoporosis
 - Glaucoma
 - Back pain
 - Migraines
 - Gallstones
 - Acne
 - Exercise improves insulin sensitivity and helps lower blood glucose levels.
- Impotence
 - Anxiety
 - Stress
 - Constipation
 - Strokes
 - Heart disease
 - Headaches
 - Diabetes mellitus
 - Angina pectoris
 - Anger/ Hostility
 - Fatigue
 - Asthma
 - Low self esteem

Diabetes and Exercise

Research has shown that diabetics who exercise regularly have a lower risk of developing diabetic complications and a lower risk of dying when compared to diabetics who do not exercise.

Aerobic exercise can lower insulin resistance in one week. In a study at the University of Pittsburgh in USA, 11 women walked and cycled for 50 minutes a day. In one week, their insulin resistance dropped by 58%. Exercise may improve insulin function by increasing the muscles demand for glucose.

A good exercise regime is absolutely essential for the management of diabetes. In fact exercise alone can help us prevent diabetes. You will be able to reduce and even stop the use of medicines by regular exercise and weight control to the ideal weight.

Heart Disease and Exercise

There are many misconceptions about exercise in people. Many of us think it is not possible or it might damage and worsen the condition. But truly, if we adopt correct exercise with the right discipline, nothing else is as beneficial in recovering your ill health as well as quality of life.

In acute conditions, exercise has no or limited role. In fact you need to avoid exercise in many acute diseases. Regular exercise can help you manage the symptoms and improve your health.

For example:

- **Heart Disease.** Strength training can improve muscle strength and endurance, make it easier to do daily activities, and slow disease-related declined in muscle strength. It builds up collaterals in the coronary circulation.
- **Diabetes.** Regular exercise can help insulin more effectively lower your blood sugar level. Physical activity can also help you control your weight and boost your energy.
- **Asthma.** Often, exercise can help control the frequency and severity of asthma attacks.
- **Back pain.** Regular low-impact aerobic activities can increase strength and endurance in your back and improve muscle function. Abdominal and back muscle exercises (core-strengthening exercises) help reduce symptoms by strengthening the muscle around your spine.
- **Arthritis.** Exercise can reduce pain, help maintain muscle strength in affected joints and reduce joint stiffness.

Precautions

Depending on your condition, your doctor might recommend certain precautions before exercising.

- If you have diabetes, for example, keep in mind that physical activity lowers blood sugar. Check your blood sugar level before any activity. If you take insulin or diabetes medication that lower blood sugar, you might need to eat a snack before exercising to help prevent low blood sugar.**
- If you have arthritis, consider taking a warm shower before you exercise. Heat can relax your joints and muscles and relieve any pain you might have before you begin. Also, be sure to choose shoes that provide shock absorption and stability during exercise.**

The principle that I would like to impose here is, if you do exercise, your body will ask for nutrition. Positive energy running throughout your body will change the hormonal status that would release internal steroids which are helpful for not only fast recovery but also to improve your will power to fight against the disease.

So just do your prescribed exercises regularly, attain a plateau for a while, gain strength and go ahead. Take the help of your doctor, trainer or physiotherapist for any difficulty, but never lose hope. It is a fact that few diseases could not only have been controlled but reverted to normal health just by will power.

Indoor or Outdoor

I am asked this question again and again. People spend a large amount of money to get a treadmill and other gym equipment and then don't use them.

But for longevity, outdoor exercising is a far better option. Indoor exercises should be done only when outdoor exercises are not possible due to bad weather. But one thing must be kept in mind, while performing indoor exercises proper ventilation and heat balance is necessary to avoid easy fatigability.

I would suggest if you're determined to make exercise a part of your body longevity plan, take it outside, in nature and in a good atmosphere.

Increasingly, the effect of nature on our frame of mind and overall health is being appreciated today. For conditions ranging from obesity to schizophrenia and heart disease, promising data suggests, there are significant benefits (including promoting a longer life) to being in the fresh air and wide open surroundings. Get out there, enjoy mother earth, be a part of the wonders of nature. You have lots to benefit, especially long good health. Referred to as green exercise i.e. any exercise done in Mother Nature, it has all round benefits on your body.

Here are some studies that would help us understand the benefits of outdoor exercises over indoor ones. A 2011 review of 38 different research projects, published in the Scandinavian Journal of Public Health, found that people suffering from many different physical and mental problems improved with some form of “nature-assisted therapy”, probably because natural environments tend to promote relaxation. For example, patients with congestive heart failure show significantly improved heart rate and mood scores after gardening programs. Weight loss was greater among obese subjects undergoing an outdoor exercise program, and subjects suffering a variety of diseases- including breast cancer and dementia- reported improved mental focus after their nature programme.

A reduction in anxiety, anger and depression were common findings. Researchers at the University of Exeter in the United Kingdom set out to answer the specific question of whether exercising in an outdoor, natural environment would be better for a person’s health and wellbeing than doing the same activity indoors. Their review, published in Environmental Science and Technology in 2011, analysed 11 different trials comparing the effects of exercising outdoors and indoors. A total of 833 adults were involved.

Outdoors exercise is superior in reducing anxiety, anger, and depression. You definitely feel more revitalized, more energetic after outdoor exercise compared to indoor activity. There is a distinct advantage of being less fatigued and more happy and satisfied after outdoor activities compared to working indoors.

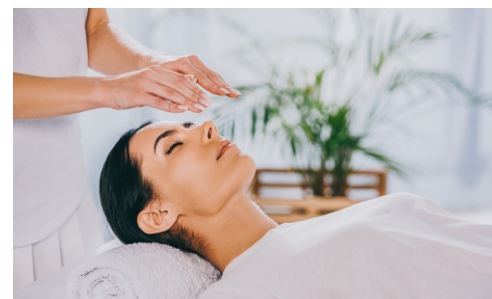
Overall, exercising outdoors was associated with feeling more revitalized, more energetic, and less tense, angry or depressed than with indoor activity. In one of the trials, subjects reported that they felt less fatigued after exercising outside. In addition, most of the participants said they felt more satisfied and had greater enjoyment outdoors. Perhaps most significantly, a majority of subjects also said they were more likely to stick with outdoor activity in the future.

Health issue is a challenge with aging, but exercise and friendship can make it easier to cope. I try to be active and healthy and that's more about making right choices. "I just do not want to be an invalid" says, Carson, who retired from legal practice at the age of 90 and has arthritis, both knee joint replacements, three surgeries on the back, wears glasses and hearing aids and works in a gymnasium daily and lives a very normal independent life alone in her house.

Spas, Massage, Reflexology, Reike and Health

You always feel good when your spouse or anyone in a massage parlour or even at home massages your feet or body when you are tired. In fact a regular visit to a massage parlour is one of the ways people keep themselves happy and healthy. What matters here is the human touch and transfer of energy from the massager. It is important the massager is well trained to understand the flow of human energy and how to direct it perfectly to make your body function with improved biopsychology. A number of experts are known to give you relief from pain or even a disease.

Remember, all these avenues can help. If you have a chance, pick up any of them and add that extra zeal and vigor to your life, that can take you on a journey of self discovery towards an active vigorous life.



Anti-aging Properties of Yoga

Yoga philosophy says! Practicing yoga=fit body=active mind=glowing skin=anti ageing.

Yoga acts positively in maintaining the health and vitality of the human body. Yoga helps you to vitalize your mind and body. People who regularly practice yoga have found several benefits on all the functions of the body and manage to stay younger by even reversing the aging process. Yoga concepts say the aging of the body is determined by the flexibility of the spine and not by the years the man has lived.

Yoga helps in slowing down the process of aging by providing flexibility to the spine, firming of the skin, reducing tension from the body, strengthening abdominal muscles, improving quality of loose muscles, correcting poor posture and so on. Out of the numerous benefits of yoga, the anti-aging benefit is the most important.



Full yogic practice has been described in the following eight stages:

Yama

Pratyahara

Niyama

Dharna

Asanas

Dhyana

Pranayamas

Samadhi

Yoga practice raises the mental competence of individuals. It increases man's power to fight external and internal dangers. Some of the anti aging properties of yoga are increased immunity, and vitality, rejuvenation of glands, improvement in vision, and mental and emotional well being. All these will definitely lead to a better quality of life and greater longevity.

Yoga is beneficial only when you practice it regularly and consistently over a long period of time. Any one can practice yoga safely. It is good if you can learn from the right teacher but a number of people have learned good yoga practices by watching regular Indian television shows. All that matters is to continue doing yoga regularly at any age. A good yoga practices will take you a long way in keeping your life alert, active alive at 100.

- A senior cardio-Metabolic physician already labelled as one of the best in the country
- A senior faculty to cardiology, emergency medicine, Echocardiography, endocrinology and Physician conferences.
- Labelled as one of the 50 pathfinders of the Indian healthcare industry along with stalwarts like Dr Pratap Reddi, Dr Naresh Trehan, Dr Devi Shetty, Dr TMA Pai.
- Creator of Vrundavan group of hospitals, Vrundavan Nursing college, Vrundavan paramedical institute and many health care programs.
- Lead a number of medical organizations like IMA, Goa medical council, GMA etc. At present
Chairman of Goa Association of physicians-Goa, Secretary General of Emergency medicine India.
- A very active Red Cross member having served as active executive member for a number of years.
- A senior Rotarian with a large number of rotary achievements to his credit.
- Major donor of Rotary international.
- Medical educationist created a number of medical videos, articles on national and international magazines, TV channel shows and many more educational programs.
- An avid organizer with the contribution of a large number of national and international conferences to his credit.
- An active researcher with a large number of highly credible contributions.
- His book Alert, Active, ALIVE @ 100 is a great guide for all of us to live a long life without falling sick.
- A great educationist, social reformer with a large number of creditable achievements to his illustrious life.
- A friend, philosopher, guide and supporter to many young and senior.
- Starting his life from rags and climbing slowly with sheer hard work, Dr. Digambar is blessed with wife Mangala and two children Dr Richa and Dr Shalak.
- Dr Digambar is a true Goan with national and international repute.
- Friends I present to you this great doctor.... A great human being.



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“Exercise is the best medicine we have, and every day we need to take that medicine ”

“Regular exercise reduces depression”

“Walk for at least 30 minutes a day at moderate intensity and for least 4 times a week. ”

“You must exercise the whole body, just walking is not enough.” was David’s opinion and his reason for living beyond a hundred years

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THANK YOU

