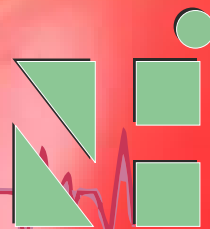




# HEART NEWS

...NHI Dialogue



Vol. No. LVII

Since 1963

Health Magazine of All India Heart Foundation & National Heart Institute

April-June 2022

## BAD HABITS THAT CAUSE JOINT PAIN

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Printed at	: Glory Graphics
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Health Magazine of :

**All India Heart Foundation  
&  
National Heart Institute**

*For Private Circulation Only*

# BAD HABITS THAT CAUSE JOINT PAIN

## Being Overweight or Obese



People who are overweight or obese are more likely to develop arthritis. Research has shown that for every kg increase in your weight, your knees have 4 kg of stress on them. Extra weight also burdens joints in your hips, back, and feet. Additional weight places increased strain and wear and tear on your joints. In addition to the physical stress that increased weight places on joints, fat secretes inflammatory chemicals that may also cause joint pain and increase the risk of arthritis and other chronic conditions. Some types of inflammatory molecules may promote the development of osteoarthritis (OA) and rheumatoid arthritis (RA), two conditions that affect joints. Osteoarthritis is the so-called "wear-and-tear" type of arthritis where cartilage is damaged in the affected joints. Rheumatoid arthritis is an autoimmune condition where the immune system attacks and damages joints.

### Texting with Your Thumb

Texting stresses joints in your hands, especially your thumbs. Texting with your thumbs puts them in awkward and often hyperextended positions that irritate the tendons. Texting with your thumbs places 12 times the pressure on thumb joints that it does on the tips of the thumbs. Experts say your thumbs are responsible for 60 percent of the functioning of your hands. So, you need your thumbs in good working order! Minimize thumb texting or use the voice



function to keep texting hands free. Texting can be bad for your shoulders and neck, too. Hunching over to look at your phone while texting stresses your neck and shoulders. Bending your neck all the way forward so your chin is touching your chest places a tremendous amount of strain on your neck.

### Wearing High Heels:



High heels place your feet in an awkward position that stresses joints, strains muscles, and can throw your back out of alignment. Wearing heels makes your thigh muscles work harder to keep

your knees straight. It also places dangerous twisting forces on your knees. Women who wear heels daily may increase their risk of developing osteoarthritis and foot pain. High heels, sandals, and slippers are considered poor shoes because they provide inadequate support for feet.

Swap high heels and other poor shoe styles for supportive walking shoes or sneakers to keep foot, knee, and back pain at bay.

### Wearing Unsupportive Shoes

Wearing ill-fitting, worn out, or unsupportive footwear is a risk factor for developing osteoarthritis, foot pain, joint pain, and joint problems. Poor footwear includes any type of shoe that does not adequately support your feet or ankles. It also includes shoes that place your feet in awkward or uncomfortable positions. Poor footwear choices





include high heels, slippers, and sandals. If you are playing sports, make sure to choose appropriate footwear for the type of activity you are engaging in. For example, tennis shoes have good side support so you minimize the risk of rolling your ankle. You can have too much of a good thing. Too much cushioning or arch support may cause pain because it places feet in an awkward position and they cannot move naturally. This may lead to arthritis.

### **Cracking Your Knuckles:**



Some people develop a bad habit of cracking their knuckles. The sound results from ligaments that snap against bone or from fluid bubbles that burst around the joints. It is a myth that cracking your knuckles causes arthritis, but it is still a bad habit that you should stop. Results of one study suggest that cracking your knuckles may cause hand swelling and it may even weaken your grip. The best way to break a bad habit may be to replace it with another, healthier habit. Instead of cracking your knuckles, squeeze a stress ball to strengthen muscles in your hands and develop increased grip strength.

### **Carrying Heavy Backpacks or Bags:**

Carrying a heavy load on your back, whether it is a backpack, purse, or messenger bag, can place a lot of stress and strain on your neck, shoulders, and back. When you carry a heavy load, it affects your balance and even the way you walk. This is especially true if



you like to carry your backpack or bag on only one side. The result is that it stresses muscles and joints on that side of the body and overworks them so they experience more wear and tear. You may experience muscle pain, joint pain, and other symptoms. Lighten your load! Avoid lugging around unnecessary objects. Carry just what you need. Use a backpack over both shoulders to distribute the weight you carry more evenly. If you do carry a purse or messenger bag with one strap, switch sides to avoid placing undue stress on just one side of your body.

### **Relying on the Wrong Muscles:**



You have both large and small muscles in your body. When you rely on small muscles to make movements, it places unnecessary stress and strain on joints. Perform physical activities in a way that minimizes stress on joints. Bend at your knees when you lift something heavy off the floor so your thigh muscles, not back muscles, do most of the work. Use your shoulder muscles instead of your finger muscles to open a heavy door. When carrying something, hold it close to your body using the palms of your hands, not your fingers.

### **Being a Stomach Sleeper**

You may snore less when you sleep on your stomach instead of on your back, but the rest of your body may



suffer. People who sleep on their stomachs have to twist their heads and necks to the side. This, in turn, places stress on nerves. It also compresses your spine, leading to

awkward spinal alignment. You want to sleep in a neutral position so that your head and neck are in a straight line with your spine to reduce the risk of strain on your back, neck, and muscles. Avoid sleeping on your stomach. Switch to sleeping on your side or back. Look for special pillows for side sleepers and back sleepers that promote healthy spine alignment.

### Skipping Stretching Is Bad :



Regular stretching improves flexibility and eases joint pain. If you do not warm up or stretch before work outs, now is the time to start. It will strengthen muscles and tendons, lubricate joints,

and boost your ability to have normal range-of-motion. Ultimately, strong muscles support joint stability, so stretching is a good way to maintain your joint health. Warm up before exercise by doing dynamic or active stretching. This involves doing movements that are similar to those used in the activity or sport that you will be doing. Active stretching boosts blood flow, increases muscle temperature, and gets muscles ready for activity.

### Neglecting Strength Training:



After the age of 40, bones begin to become a little thinner. They are also more likely to break. Strength training, or resistance training, increases bone mineral density by

approximately 1 to 3 percent. Working out with weights stresses bone and triggers the growth of new bone. It also slows the rate of bone loss. The combination of strong muscles and dense bones leads to increased joint stability.

This, in turn, makes it less likely that you will suffer injuries. Check with your doctor before starting a strength training program for the first time, especially if you suffer from arthritis pain, knee pain, or back pain. You want to make sure you have medical clearance from your physician before beginning an exercise program.

### Smoking and Tobacco Use:



Tobacco products are not good for any part of you and that includes your joints. Nicotine decreases blood flow to bones, tissues, and

discs in your spine that provide cushioning between vertebrae. Nicotine decreases calcium absorption. Tobacco use also interferes with estrogen in the body. Women need estrogen to maintain healthy bones. Smoking cigarettes inhibits the formation of new bone, so bones are not as dense as they could be if a person did not use tobacco. All of this results in joints that are weaker than they should be and includes an increased possibility of suffering from a broken hip or other joint injury. Another reason to quit smoking; tobacco use depresses the function of the immune system.

### Getting Insufficient or Poor Quality Sleep:



The vast majority of people who suffer from arthritis, approximately 80 percent, have difficulty sleeping. When your joints ache or you are

experiencing joint inflammation or stiffness, it can make it harder to sleep. Researchers have found that the opposite is also true. If you suffer from sleep problems, they can actually make joint pain (arthralgia) and joint symptoms worse. Sleep difficulties trigger inflammation, which may make joint pain and inflammatory conditions such as some kinds of autoimmune disease, chronic fatigue syndrome, fibromyalgia, ankylosing spondylitis, idiopathic arthritis, psoriatic arthritis, gout, osteoarthritis, and rheumatoid arthritis worse.

### Having Poor Posture:





Your mother always told you to stand up straight. She was right! Having poor posture throws your spine out of alignment and increases stress on muscles and joints. It may also decrease your range-of-motion and flexibility and may throw off your balance. Having poor posture may inhibit your ability to do things for yourself. It also increases the risk of falls. The basics of good posture are simple. Stand up tall with your shoulders back and your head held high. Tighten your abdominal muscles and keep your core strong. If you work at a desk, make sure you have a good ergonomic set up (for example, an adjustable chair) that promotes good posture.

### Ignoring Joint Pain:



Joint pain is not a symptom that should be ignored. If you have rheumatoid arthritis, osteoarthritis, or another type of degenerative joint condition, waiting to see the doctor may result in permanent joint damage and disability. How do you know when joint pain is a sign of something potentially more serious?

See your doctor if your joints are red, swollen, stiff, painful, or warm to the touch. Make an appointment with your physician if joint pain or other symptoms make it difficult to carry out daily activities. If you have joint pain or symptoms that last three days or more, see your doctor. If you suffer several bouts of joint symptoms within a 30-day period, see your doctor.

For minor aches and pains, ask your doctor if it is safe for you to take over-the-counter nonsteroidal anti-inflammatory drugs (NSAIDs) like ibuprofen or naproxen to relieve joint pain and stiffness. Your doctor can prescribe stronger COX-2 medications or other drugs if you need stronger pain relief treatment. NSAIDs may not be appropriate for you to use for pain relief if you suffer from gastrointestinal bleeding or ulcers.

### Sitting Too Long at the Computer:

Sitting for too long while working on the computer may lead to pain in your neck, wrists, elbows,



shoulders, and back. Bad posture is one culprit that can produce pain. Working too long while sitting in one position is another problem. Muscles become overworked and sitting for long periods of time also increases stress on discs in your back. Use supportive measures to take the strain off your body. Invest in an ergonomic desk chair. Use cushioned gel pads under your forearms and wrists when you type, write, or use a mouse. Set an alarm and get up and move around for at least a few minutes every hour. Sitting too long is not just bad for your joints, it is a risk factor for increased mortality.

### Having Poor Form:



Playing sports involves performing the same motions over and over again. If you have bad or poor form, you will stress your joints and muscles, increasing the risk for potential injury. Tennis elbow is a common example of an overuse injury. So, if you are starting a sport or a learning how to do a new type of physical activity, get a trainer or take lessons. Learn the correct technique when you first take up a new sport or hobby. That way you will be using proper form and will minimize the risk of developing bad habits that could hurt you later on.

– **Dr. Adarsh Kumar**  
Sr. Consultant Internal Medicine  
NHI, New Delhi.

# PATIENT AMBULATION AND REHABILITATION

Ambulation is defined as moving a patient from one place to another (Potter et al., 2010). Once a patient is assessed as safe to ambulate, determine if assistance from additional health care.

Immobility in hospitalized patients is known to cause functional decline and complications affecting the respiratory, cardiovascular, gastrointestinal, integumentary, musculoskeletal, and renal systems (Kalisch, Lee, & Dabney, 2013). For surgical patients, early ambulation is the most significant factor in preventing complications (Sanguinetti, Wild, & Fain, 2014). Lack of mobility and ambulation can be especially devastating to the older adult when the aging process causes a more rapid decline in function (Graf, 2006). Ambulation provides not only improved physical function, but also improved emotional and social well-being (Kalisch et al., 2013).

Prior to assisting a patient to ambulate, it is important to perform a patient risk assessment to determine how much assistance will be required. An assessment can evaluate a patient's muscle strength, activity tolerance, and ability to move, as well as the need to use assistive devices or find additional help. The amount of assistance will depend on the patient's condition, length of stay and procedure, and any previous mobility restrictions.

## Assisting Patient to the Sitting Position

- Patients who have been immobile for a long period of time may experience vertigo, a sensation of dizziness, and orthostatic hypotension, a form of low blood pressure that occurs when changing position from lying down to sitting, making the patient feel dizzy, faint, or lightheaded (Potter, Perry, Ross-Kerr, & Wood, 2010). For this reason, always begin the ambulation process by sitting the patient on the side of the bed for a few minutes with legs dangling.

## Steps to positioning the patient on the side of a bed prior to ambulation:

- Perform hand hygiene.
- Check room for additional precautions.
- Introduce yourself to patient.
- Confirm patient ID using two patient identifiers (e.g., name and date of birth).

- Listen and attend to patient cues.
- Ensure patient's privacy and dignity.
- Assess ABCCS/suction/oxygen/safety.
- Ensure tubes and attachments are properly placed prior to the procedure to prevent accidental removal.
- Follow the principles of proper body mechanics with all patient-handling procedures.

## Steps:

- Check physician's order to ambulate and supplies for ambulation if required, and perform an assessment of patient's strength and abilities. Check physician orders for any restrictions related to ambulation due to medical treatment or surgical procedure.

- Supplies (proper footwear, gait belt, or assistive devices) must be gathered prior to ambulation. Do not leave patient sitting on the side of the bed unsupervised as this poses a safety risk.

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## 2. Explain what will happen and let the patient know how they can help.

- Explain what will happen and let the patient know how they can help.
- This step provides the patient with an opportunity to ask questions and help with the positioning.
- Lower bed and ensure brakes are applied.
- Stand facing the head of the bed at a 45-degree angle with your feet apart, with one foot in front of the other. Stand next to the waist of the patient.
- Proper positioning helps prevent back injuries and provides support and balance.

- Have patient turn onto side, facing toward the caregiver. Assist patient to move close to the edge of the bed.



- Place one hand behind patient's shoulders, supporting the neck and vertebrae.
- On the count of three, instruct the patient to use their elbows to push up on the bed and then grasp the side rails, as you support the shoulders as the patient sits up. Shift weight from the front foot to the back foot.
- Do not allow the patient to place their arms around your shoulders. This action can lead to serious back injuries.
- At the same time as you're shifting your weight, gently grasp the patient's outer thighs with your other hand and help the patient slide their feet off the bed to dangle or touch the floor.
- Bend your knees and keep back straight and neutral.



- On the count of three, gently raise the patient to sitting position. Ask patient to push against bed with the arm closest to the bed, at the same time as you shift your weight from the front foot to the back foot.



- Assess patient for orthostatic hypotension or vertigo.
- If patient is not dizzy or lightheaded, the patient is safe to ambulate.
- If patient becomes dizzy or faint, lay patient back down on bed.

### **Ambulating a Patient**

- Safety considerations:
- Perform hand hygiene.
- Check room for additional precautions.
- Introduce yourself to patient.
- Confirm patient ID using two patient identifiers (e.g., name and date of birth).
- Listen and attend to patient cues.
- Ensure patient's privacy and dignity.
- Assess ABCCS/suction/oxygen/safety.
- Ensure tubes and attachments are properly placed prior to the procedure to prevent accidental removal.
- Bring in required assistive devices and proper footwear.

### **Steps:**

- Ensure patient does not feel dizzy or lightheaded and is tolerating the upright position. Instruct the patient to sit on the side of the bed first, prior to ambulation.
- Ensure proper footwear is on patient, and let patient know how far you will be ambulating.



Proper footwear is non-slip or slip resistant footwear. Socks are not considered proper footwear.

- Check physician's orders for any activity restrictions related to treatment or surgical procedures.
- Assist patient by standing in front of the patient, grasping each side of the gait belt, keeping back straight and knees bent.
- The patient should be cooperative and predictable, able to bear weight on own legs and to have good trunk control. Apply gait belt if required for additional support.
- While holding the belt, gently rock back and forth three times. On the third time, pull patient into a standing position.
- Rock back and forth to provide momentum and pull into standing position



- Once patient is standing and feels stable, move to the unaffected side and grasp the gait belt in the middle of the back. With the other hand, hold the patient's hand closest to you. If the patient does not require a gait belt, place hand closest to the patient around the upper arm and hold the patient's hand with your other hand.

- Standing to the side of the patient provides assistance without blocking the patient.



- Before stepping away from the bed, ask the patient if they feel dizzy or lightheaded. If they do, sit patient back down on the bed. If patient feels stable, begin walking, matching your steps to the patient's. Instruct patient to look ahead and lift each foot off the ground.
- Always perform a risk assessment prior to ambulation. Walk only as far as the patient can tolerate without feeling dizzy or weak.
- Ask patient how they feel during ambulation.

#### **Back to bed:**

- To help a patient back to bed, have patient stand with back of knees touching the bed. Grasp the gait belt and help patient into a sitting position, keeping your back straight and knees bent.
- Allowing a patient to rest after ambulation helps prevent fatigue.
- When patient is finished ambulating, remove gait belt and settle patient into bed or a chair.
- When patient returns to bed, place the bed in lowest position, raise side rails as required, and ensure call bell is within reach. Perform hand hygiene.
- Placing bed and side rails in a safe position reduces the likelihood of injury to patient. Proper placement of call bell facilitates patient's ability to ask for assistance.
- Bed in the lowest position, call bell in reach, and side rail up
- Document patient's ability to tolerate ambulation and type of assistance required.

– Dr. Zarleen Chongtham (PT)  
(MPT Cardio-Pulmonary)

# MEDITATION FOR HEALTHIER HEART

## Introduction:

What's good for the mind also tends to be good for the heart. The mind-calming practice of meditation may play a role in reducing your risk of heart disease, according to a scientific statement published in the Sept. 28, 2017, Journal of the American Heart Association.



Dozens of studies have been published over the past two decades which has shown that meditation improves host of factors linked with heart disease — making it worth including in an overall program for ongoing heart care. Not only meditation improves your heart functions, but also changes your outlook towards life and motivates you to maintain many heart-healthy behaviours like following a proper diet, getting adequate sleep and keeping up regular exercise.

## How meditation helps in improving your heart health:



Heart health and meditation go hand in hand. As we all are aware that heart attack is one of the leading causes of death world over & it is caused by blockage of the arteries which supply the blood to the heart. The various cardiovascular risk factors which are responsible to cause these blockades are — smoking, high blood pressure, diabetes mellites, high cholesterol, obesity & mental stress. The [meditation](#) reduces these risk factors & helps the heart in maintaining a good health.

A [study published in the](#) American Journal of Cardiology examined data from 61,267 adults who participated in the National Health Interview Survey from 2012 to 2017, including 5,851 people (9.6 percent) who said they practiced meditation. The people who were meditating had lot of heart benefits including lower risk of high blood pressure, better control of blood sugar & cholesterol besides significant reduction in coronary artery disease & stroke in comparison to others who were not meditating. A regular meditation practice supports your heart in many ways — from changing how you cope with stress to lowering heart rate & high blood pressure.

**Heart Rate Variability (HRV):** Researches have shown that meditation can positively affect a measure of heart health known as heart rate variability (HRV). A high HRV is a sign of healthier heart. A 2013 study found that low HRV is associated with a 32% to 45% increased risk of heart attack or stroke among people without cardiovascular disease. With regular meditation, you may be able to raise your HRV.

**Better Control of Blood Pressure:** A number of high-quality studies also show that meditation can modestly lower blood pressure, according to a 2013 American Heart Association scientific statement published in Hypertension. One analysis pooled result from nine studies found that, on average, meditation lowered systolic blood pressure by 4.7 mm Hg and diastolic blood pressure by 3.2 mm Hg.

A [review of 19 clinical trials published in 2017 in the Journal of Hypertension](#) found both [Transcendental Meditation](#) and other common

forms of meditation also caused significant control of blood pressure.

**Better Control of Blood sugar :** A [clinical trial published in June 2018 in the Journal of Diabetes Research](#), randomly assigned 60 people with type 2 diabetes and poorly controlled blood sugar to either practice mindfulness-based stress reduction weekly for eight weeks or join a control group that didn't meditate. After three months, people who meditated had significantly lower blood sugar than people who didn't.

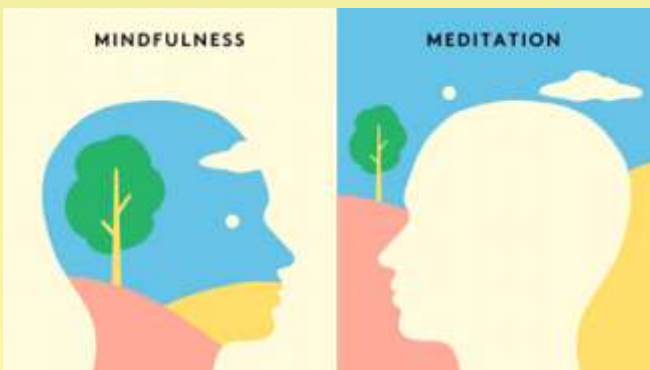
#### **How meditation reduces cardiovascular Stress:**

There is a general consensus that reducing psychological distress, anxiety, depression, and anger or hostility can all be helpful in [preventing heart disease](#) and other chronic illnesses

“Meditation practice may help reduce psychological distress by lowering the overactivation of the sympathetic nervous system, a prominent biomarker of distress”

When stress puts the sympathetic nervous system in overdrive, it triggers the body's fight-or-flight response, leading to a surge in stress hormones and inflammatory chemicals in the body as well as spikes in blood pressure, heart rate, and oxygen consumption causing the cardiovascular stress which may lead to heart disease, heart attack and stroke. Meditation counteracts this “flight-or-flight” responses & helping the body to face the challenges in much calmer way.

#### **Other benefits of meditation:**



Establishing a daily meditation practice can decrease activity in various parts of the brain, consequently calming our minds, thoughts and emotions. You may experience a sounder sleep, less anxiety and a more positive outlook in life. Some other physical health benefits of meditation include: Decreased inflammation, increased immunity,

reduced symptoms of irritable bowel syndrome (IBS) & arthritis.

#### **How to Start Meditating:**

Meditation involves sitting comfortably with closed eyes and focusing on your breathing, a mental image, or repetition of a single positive word or phrase. The goal is to keep your mind focused on the present and away from stressful or distracting thoughts. As your mind becomes calm, so does your body.



You don't need a lot of fancy equipment or money or time to give meditation a try. Even five minutes a day, guided by any number of apps available as free downloads, can help you get going. Try 5 to 10 minutes a day to start with then go up to 20 to 30 minutes, but be consistent.

Meditation is simpler than most people think. Thankfully, there are many different ways to meditate, such as [mindfulness meditation](#), [transcendental meditation](#) and [tai chi](#). The basis of each form is to provide relaxed focus and quiet your mind so you can release inner tensions.



There is no right or wrong way to meditate – the key is finding a practice that works for you. Even just a few minutes a day can make a big impact.

Keep in mind that it may take some time to establish a routine and reap the benefits of meditation, but eventually, you'll be on your way to living a healthier & more tranquil life.

### The American Heart Association Recommends Meditation

**American Heart Association :** American Heart Association endorses that meditation helps in lowering the [risk of heart disease](#) — as long as people do it *in addition* to proven methods for boosting heart health like drugs to [lower cholesterol](#) or blood pressure and lifestyle changes like improved eating and exercise habits.

The AHA guidelines suggest that many common forms of meditation have heart benefits, including:

- **Samatha:** Calming the mind through concentration on your breath, an object, or an image
- **Vipassana (insight meditation):** Emphasizes awareness of breath and tuning in to air as it passes in and out of the nose

- **Transcendental Meditation:** Meditation based on a personalized mantra to help focus your mind inward
- **Raja yoga:** A combination of breathing techniques, mantras, and meditation focused on chakras
- **Relaxation response:** Awareness through tracking breath or repetition of words or phrases, or prayer

These types of meditation don't involve physical activity — making them possible for people of all age & fitness levels. According to the AHA, these methods may be associated with reduced stress and anxiety, fewer [symptoms of depression](#), [better sleep](#), and improved overall well-being.

During these uncertain times, with endemicity of Covid 19 infection world over, meditation may provide the much-needed mental shift to cope up with fear & anxiety prevailing in the mind of people & help them to attain the better health. Regular investments of few minutes of meditation will definitely provide them the benefits of healthy heart, throughout their lives.

– Dr Y K Arora  
Sr. Consultant Cardiology  
National Heart Institute, New Delhi)

## HEALTH IS WEALTH

**A wise man ought to realise that health is his most valuable possession.**

- Hippocrates 460-307 BC in The Oxford Dictionary of Medical Quotations by Peter McDonald 2004 Oxford University Press 2004; page-47

*'Health is wealth',  
So, invest in health,  
Healthy lifestyle,  
Your share & wealth.*

शरीर रूपी चादर को हमेशा स्वच्छ और स्वस्थ रखिये । इसे तम्बाकू, धूम्रपान, मदिरा, जंक -भोजन से मैला मत करिये । शरीर के अंदर अतिरिक्त कोलेस्टरोल या अतिरिक्त शर्करा का कूड़ा -ककट मत बटोरिये । उसे विषाक्त मत बनाइये । नियमित व्यायाम कीजिये जिससे उस चादर में सिलवटें न पड़े ।

शरीर रूपी चादर को हमेशा स्वस्थ रखिये - 'दास कबीर जतन से ओढ़ी ज्यों की त्यों धर दीनी चदरिया' ।

इसे तम्बाकू, धूम्रपान, मदिरा, जंक -भोजन से मैला मत कीजिये ।

डाक्टर श्रीधर द्विवेदी, वरिष्ठ हृदय चिकित्सक  
नेशनल हार्ट इंस्टिट्यूट, नई दिल्ली

# चेयर पर बैठे बैठे योग

## प्रस्तावना

**कसरत करनी है, मतलब करनी है !**

शरीर मुड़े या न मुड़े, अपनी दिनचर्या में हर दिन सरल सामान्य व्यायाम का समावेश अवश्य करें। ज्यादा नहीं तो शुरुआती तौर पर हर कसरत को एक-एक दो-दो बार ही सही, पर करें ज़रूर। ज्यों-ज्यों असर दिखाई देने लगेगा, व्यायाम में आपकी रुचि बढ़ती जाएगी। विश्वास करें आपको खुद से प्रेम होने लगेगा।

प्रारंभ में भले ही १०-१५ मिनट के लिए छोटी-छोटी आसान कसरतें करें, फिर धीरे-धीरे, खुद ब खुद, जैसे-जैसे कसरत के काउंट (गणना) बढ़ेंगे, कसरत का समय अपने आप बढ़ेगा।

प्रातःकाल / सायंकाल २० मिनट के लिए भ्रमण भी ज़रूर करें।

दिनचर्या के अन्य महत्वपूर्ण कार्यों की तरह कसरत को भी स्थान देना अत्यावश्यक है। जिस तरह जीवन में खाना - पीना, सोना - जागना, काम पर जाना जैसे आवश्यक कार्य किए जाते हैं उसी प्रकार कसरत को भी एक आवश्यक अंग बना लें।

बाकी सभी कार्य सुचारु रूप से तभी हो पाएँगे जब शरीर स्वस्थ एवं सुडौल होगा।

## कसरत और आहार

कसरत कर ली और अब खाने की पूरी छूट है ' यह धारणा गलत है, निराधार है। अपने डॉक्टर की सलाह अनुसार, सब कुछ खा सकते हैं, पर एक ही दिन में या एक ही समय में नहीं अधिक मात्रा में न खाएँ। जो भी खाएँ, उसकी मात्रा केवल इतनी ही हो कि आपको बस ये लगे कि चलो थोड़ा स्वाद भी लिया और सेहत के साथ खिलवाड़ भी नहीं हुआ। " खा लेते हैं, थोड़ी कसरत ज्यादा कर लेंगे" यह सोच भी गलत है।

## कसरत के लिए संकल्प

यदि एक बार स्वास्थ्य अच्छा रखने का मन बना लेंगे तो मानसिक दृढ़ता स्वयं आ जाएगी।

ऐसे में आप किसी ऐसे दोस्त या पार्टनर का चयन करें, जो आप ही की तरह सोच रखता हो-आप ही की तरह अपने स्वास्थ्य के प्रति सजग हो, अच्छे स्वास्थ्य के प्रति दृढ़ निश्चयी हो। मन से इस सोच को दूर न होने दें कि कितने दिन मैंने केवल बस खाया ही खाया, शरीर को बढ़ने के लिए खुला छोड़ दिया, व्यायाम के लिए तो समय ही नहीं निकाला। यदि ऐसा है तो इस बात पर पश्चाताप का अनुभव होना चाहिए।

## कसरत और अनुशासन

कसरत करने के भी कुछ नियम होते हैं और उसे करने की पद्धति का भी खास ख्याल रखना आवश्यक है, क्योंकि गलत कसरत तथा गलत पद्धति के कारण अनेक समस्याएँ उत्पन्न हो सकती हैं।

शरीर के अलग-अलग अंगों के लिए भिन्नभिन्न प्रकार की कसरतों का किया जाना आवश्यक है। एक ही कसरत को ज्यादा बार करने से लाभ नहीं होगा।

एक बार किसी विशेषज्ञ के संपर्क में रहकर हर आसन / कसरत नियमानुसार सीख लेना अनिवार्य है। जान लें कि आपके शरीर के अनुसार कौन-कौन सी कसरत की जा सकती हैं कौन सी नहीं। जो भी कसरत करे उसे निपुणता से करना ज़रूर सीख लें। हर व्यायाम को करते समय कुछ बातों का ध्यान रखना आवश्यक होता है। धीरे-धीरे आप उसे उसी प्रकार करने के अभ्यस्त हो जाते हैं। अच्छे स्वास्थ्य के लिए कुछ समय एवं पैसा व्यय करना पड़े तो वह बीमार रहकर शारीरिक कष्ट सहने से तो कहीं बेहतर है। तो क्यों न हम इसके प्रति आज से ही बल्कि अभी से सजग हो जाएँ।

**कसरत नहाकर करें या बिना नहाए ,**

**प्रातः करें या सायंकाल**

**पर करें खाली पेट, करें मन लगा कर,**

**नियमित रूप से, नियमानुसार करें**

**मजबूरी नहीं, इसे आनंद का विषय मानकर करें,**

**अपनी क्षमता के अनुसार करें**

**उम्र कोई भी हो, समय निर्धारित करते हुए आज से ही व्यायाम प्रारंभ कर दें**

**व्यायाम को अपने जीवन का महत्वपूर्ण अंग बनाएँ।**

यह आवश्यक नहीं कि आप सभी आसनों में माहिर हो जाएँ, परन्तु अहम बात यह है कि अपनी जीवनशैली के अनुसार कसरत का सही स्वरूप पहचान कर एक निश्चित रूपरेखा एवं क्रम तैयार कर लें। इन्हें नियमित रूप से करते हुए खुद में गर्व महसूस करें। हाँ, अपने आप को शाबाशी देना कभी न भूलें। दर्पण के समक्ष खड़े होकर आत्मविश्वास के साथ खुद को निहारें और मुस्कुराएँ।

जैसा कि ऊपर बताया गया है, प्रतिदिन २०-३० मिनट (अपनी क्षमता के अनुसार) पैदल भी अवश्य चलें। ध्यान रहे यह प्रक्रिया आहार से २० मिनट पूर्व की जानी चाहिए अथवा आहार के कम-से-कम ३ घंटे बाद करनी चाहिए।

चाल की तीव्रता सुनिश्चित करने का अंदाजा कुछ ऐसे लगाएँ कि जब आप भ्रमण कर रहे हैं और उस दौरान बात करने का प्रयास करते हैं तो आपके द्वारा उच्चारित शब्दों का प्रवाह टूटना नहीं चाहिए (फ्लुएंसी बनी रहे) परन्तु सहजता से गीत गा सकना संभव न हो - चलने की वही गति सही मानी जाएगी (वाक एंड टॉक)।

भ्रमण की बात करते हुए हम यहाँ कुछ सरल चेयर योग ( कुर्सी पर योग ) का भी उल्लेख कर रहे हैं। ये उन वरिष्ठ नागरिकों के

लिए उपयोगी हैं, जो ज़मीन पर नीचे बैठ कर व्यायाम करने में खुद को असमर्थ पाते हैं।

आराम देह वस्त्र पहनकर, एक स्वच्छ एवं शांत वातावरण में निम्नलिखित सामान्य कसरतों का अभ्यास करें तो आप निश्चित रूप से खुद में परिवर्तन महसूस करेंगे। ध्यान रहे इन कसरतों का अधिकतम लाभ प्राप्त करने के लिए, इन्हें वॉक के बाद, नीचे दर्शायी गई पद्धति के अनुसार ही करें।

कसरत शुरू करने के लिए सर्वप्रथम एक बिना हथ्थे (arms) की, टेक और गद्दी वाली (backrest and cushioned) मजबूत कुर्सी लें। कुर्सी को किसी मेट पर रखें ताकि फिसलने का भय न रहे। कमर को कुर्सी की कमर-टेक के साथ सटा कर तटस्थ बैठ जाएँ। अपनी क्षमतानुसार पूरे अभ्यास के दौरान अपनी रीढ़ की हड्डी को बिलकुल सीधा रखें।

पैरों को जमीन पर टिका लें। अगर पैर टिक न रहे हों तो एक पतली चौकी (stool) रखी जा सकती है।

### श्वास निरीक्षण

सबसे पहले गहरी साँस लेने की क्रिया से शुरुआत करेंगे। कुर्सी पर अच्छी तरह टेक लगाकर सीधे शांत मुद्रा में बैठ जाएँ। अपनी रीढ़ की हड्डी को बिलकुल सीधा रखें।

- आँखें हल्के से बंद करें और भीतर ही भीतर आत्मावलोकन करते हुए अपने शरीर की स्थिति पर गौर करें।
- एक गहरी लम्बी साँस लें और फिर धीरे-धीरे साँस छोड़ें
- कोई भी विचार आए तो आने दें
- अपना पूरा ध्यान साँसों पर केंद्रित करने का प्रयास करें।
- जब आप साँस लेते हैं तब आपको अपनी पसलियाँ फूलती हुई महसूस होंगी।
- साँस छोड़ने पर पसलियाँ भी सामान्य स्थिति में आ जाएँगी। (शरीर की आरामदेह स्थिति)

### घुटनों की कसरत

- कुर्सी पर अपने कूल्हे पीछे तक टिकाते हुए कमर से टेक ले कर या सीधे बैठ जाएँ
- कमर सीधी रखते हुए अपने हाथों को दोनों ओर आराम से रखें कंधे आरामदेह सामान्य स्थिति में हों
- अपनी दायाँ पाँव सीधा सामाने की ओर ले जाएँ, ऐसे में घुटने को कुर्सी पर दबान की स्थिति में बनाए रखें (घुटना ऊपर उठना नहीं चाहिए) (चित्र न० १)
- पैर के पंजे को आहिस्ता से अपनी ओर खींचें। इस स्थिति को एक गहरी साँस लेने तक बनाए रखें और फिर पैर प्रारंभिक स्थिति में ले आएँ। ऐसा ८ बार करें या अपनी क्षमता के अनुसार



- ठीक इसी प्रकार बाएँ पैर से कसरत करें
- कसरत के दौरान सामान्य रूप से निरंतर श्वास निश्वास की प्रक्रिया चलती रहनी चाहिए। कसरत के दौरान कमर सीधी रखें।

### प्रारंभिक स्थिति (Starting Position):

अब आप कुर्सी की गद्दी के आगे के आधे भाग का इस्तेमाल करते हुए (कुर्सी की गद्दी के आधे अग्र भाग पर) कूल्हे टिका कर बैठ जाएँ। पैरों को ज़रा आगे की ओर ले जाएँ और उन्हें पूरी तरह नीचे ज़मीन पर टिका कर रखें। दोनों पैरों के बीच का फाँसला आपके कूल्हे की चौड़ाई के जितना होना चाहिए। निश्चित करें कि कुर्सी का संतुलन ठीक है। कमर सीधी रहे, हाथ अपनी दोनों साइडों पर आराम की स्थिति में रखें। पैर ज़मीन पर टिकाए रखें।

अब हम कुर्सी के अग्र भाग पर बैठकर कुछ अभ्यास इस स्थिति में ही करेंगे:

### छाती और कंधे का नियंत्रित स्ट्रेच

- प्रारंभिक स्थिति ले लें
- हाथ से कुर्सी की कमर-टेक के निचले भाग को पकड़ें (अँगूठा सामने परंतु नीचे की ओर रहे)
- कोहनियों को सीधा रखते हुए छाती आगे की ओर तानकर रखें, झुकना नहीं है (चित्र न० २)
- कंधों को ऊपर की ओर न उचकने दें, सामान्य ही रखें। अधिक खिंचाव बनाने के लिए : हाथों को धीरे-धीरे कुर्सी की कमर-टेक के दोनों तरफ से पकड़े-पकड़े, हथेलियों को ऊपर की ओर खिसकाने का प्रयास करें (चित्र न० ३)
- १० सेकंड के लिए (या अपनी क्षमता के अनुसार) इस स्थिति में बने रहें, इस दौरान अपनी साँस सामान्य बनाए रखें



- पूर्व स्थिति में आ जाएँ, ऐसा केवल तीन बार करें।

### शरीर/ धड़ की दाईं ओर का नियंत्रित स्ट्रेच (stretch)

- प्रारंभिक स्थिति ले लें
- अपने बाएँ हाथ को कुर्सी की साइड पर टिका दें।
- श्वास भरते हुए, अपना दायाँ हाथ सीधा रखते हुए आगे की ओर से ऊपर ले जाएँ तथा बाँह को कान से सटाए रखें। अब हाथ नीचे



लाते हुए, बाँह को कोहनी से मोड़कर हथेली सिर के पीछे रख दें।

- अब साँस छोड़ते हुए धड़ को बाईं ओर मोड़ते हुए, दाईं तरफ कमर की साइड पर खिंचाव महसूस करें
- अब साँस भरते हुए धीरे-धीरे, शरीर एवं पेट की दाईं ओर की पेशियों का इस्तेमाल करते हुए, वापस सीधे बैठ जाएँ। एक गहरा साँस लें और छोड़ें।
- इसी प्रकार बाईं ओर की भी कसरत करें।

\*मुड़ते समय गरदन पर बहुत अधिक खिंचाव न बनाएँ। गर्दन को शरीर के साथ समरूप में बनाए रखें। ऐसा करते हुए कंधे को सामान्य स्तर पर रखें, उचकाएँ नहीं।

ऐसा करीब, तीन-तीन बार (अपनी क्षमता के अनुसार) करें। साँस लेने एवं छोड़ने की प्रक्रिया पर विशेष ध्यान दें।



### स्कॉट (Squat)

- प्रारंभिक स्थिति ले लें
- हाथों पर वज़न लेते हुए, आगे की ओर हल्का सा झुकते हुए, कूल्हों को गद्दी से ज़रा सा उठाएँ। एक गहरी साँस भरने तथा छोड़ने तक इस स्थिति में बने रहें (अपनी क्षमतानुसार) (चित्र न० ५)
- धीरे-धीरे इस कसरत को इसी तरह ३ बार की साँस लेने व छोड़ने की प्रक्रिया के जितने समय के लिए करें।



### धड़ का दाईं ओर का घुमावप्रद नियंत्रित स्ट्रेच

- प्रारंभिक स्थिति ले लें
- श्वास भरते हुए, अपना दायँ हाथ सामने से बाईं ओर ले जाएँ, और अपने घुटने के बाहरी सिर पर टिका दें।
- बायाँ हाथ और बाँह का अगला भाग कुर्सी की कमर-टेक के ऊपरी सिर पर टिका दें (चित्र न० ६.१ और ६.२-side view)
- अब कमर से धुमाव बनाते हुए छाती को बाईं ओर ले जाएँ। (ऐसे करते हुए



कंधे सामान्य स्तर पर बनाए रखें, उचकाएँ नहीं)

- ध्यान रहे आपका धड़ और गर्दन एक ही सीध में हों
- इस मुद्रा में २-३ गहरे श्वास लें (अपनी क्षमता के अनुसार)
- श्वास छोड़ते हुए सामान्य मुद्रा में आ जाएँ
- ऐसा केवल तीन बार करें
- इसी प्रकार दूसरी तरफ का व्यायाम भी करें।



### नितंब का नियंत्रित स्ट्रेच

- प्रारंभिक स्थिति ले लें
- अपनी दाईं टाँग को आराम से उठाएँ और बाएँ घुटने के ऊपर रख दें
- इस स्थिति को ३ गहरे श्वासों जितने समय तक बनाए रखें (अपनी क्षमता के अनुसार)
- अधिक खिंचाव बनाने के लिए, इसी दौरान आप आगे की ओर झुकने का प्रयास कर सकते हैं
- धीरे से अपने दाईं टाँग को घुटने से हटाकर सामान्य मुद्रा में ले आएँ
- अब यही कसरत बाईं टाँग से भी दोहराएँ
- ऐसा केवल तीन-तीन बार करें।



### कमर के निचले हिस्से का नियंत्रित स्ट्रेच

- कुर्सी पर अपने कूल्हे पीछे तक टिकाते हुए कमर से टेक ले कर या सीधे बैठ जाएँ
- कमर सीधी रखते हुए अपने हाथों को दोनों ओर आराम से रखें कंधे आरामदेह सामान्य स्थिति में हों
- अपने पैरों की ओर झुक जाएँ। खुद को ढीला छोड़ दें। तीन - चार गहरे साँस लेने-छोड़ने जितने समय के लिए इस मुद्रा में रहें
- बहुत धीरे-धीरे आराम से, श्वास भरते हुए, ऊपर आते हुए वापस अपनी सामान्य स्थिति में आ जाएँ।



श्रीमती अनीता गुप्ता  
डॉ० ऋचा हीरेन्द्र राय



# BENEFITS OF EXERCISE IN DIABETICS (AND THE GENERAL POPULATION)

The World Health Organisation (WHO) estimated the global prevalence of diabetes among adults over 18 years of age as 8.5% in 2014. The prevalence of diabetes in India was found to be 11.8% according to National Diabetes and Diabetic Retinopathy Survey report released by the health and family welfare ministry in 2019. With an estimated 72.96 million cases of diabetes in adult population of India, we could very well be called the world's Diabetes capital! The importance of physical activity and exercise cannot be overemphasized in these times of the pandemic, with reports showing a more severe form of COVID in the obese, sedentary and diabetics. So we now see many cyclists, joggers and Yoga enthusiasts who ironically, have to contend with closed-down gyms! It is important to realise the importance of exercise and physical activity, especially in diabetes with a view to understanding just how one derives these benefits.

## TYPES OF DIABETES

Broadly speaking, diabetes is classed into 2 major types, Type 1 and 2 (leaving aside Gestational diabetes that occurs during pregnancy and Maturity Onset Diabetes of the Young, a rare genetically inherited diabetes).

Type 1 (5%–10% of cases) results from an autoimmune destruction of the pancreatic  $\beta$ -cells, which normally produce insulin, leading to a deficiency of the hormone. Simply put, this condition results from the body's own cells turning against it, thereby targeting the insulin-producing  $\beta$ -cells of the pancreas. Although it can occur at any age,  $\beta$ -cell destruction rates vary, typically occurring more rapidly in youth than in adults.

Type 2 diabetes (90%–95% of cases) results from a progressive loss of insulin secretion, usually also with insulin resistance.

An important condition is Prediabetes. This is diagnosed when blood glucose levels are above the normal range but not high enough to be classified as diabetes; affected individuals have a higher risk of developing type 2 diabetes but may prevent/delay its onset with physical activity and other lifestyle changes.

## TYPES OF EXERCISE

The next thing to understand is the different types of exercise one can engage in. There are various types of activity that result in various benefits to the body:

Aerobic exercise involves repeated and continuous movement of large muscle groups. Activities such as walking, cycling, jogging, and swimming rely primarily on aerobic energy-producing systems (energy production using oxygen).

Resistance (strength) training includes exercises with free weights, weight machines, body weight, or elastic resistance bands.

Flexibility exercises improve range of motion around joints.

Balance exercises benefit gait and prevent falls, especially beneficial for the elderly. Activities like tai chi and yoga combine flexibility, balance, and resistance activities.

## DIRECT BENEFITS OF EXERCISE

### AEROBIC EXERCISE

Aerobic training increases mitochondrial density, insulin sensitivity and oxidative enzymes. Simply put, these changes at the molecular level boost the metabolism of glucose, thus enabling more efficient sugar control. Aerobic exercise also improves the flexibility of blood vessels, delaying onset of age-related blood vessel stiffness. This leads to overall improved cardiovascular health and lesser incidence of high blood pressure.

Exercise improves lung function as it compels one to breathe faster and deeper, thereby opening up the most peripheral parts of our lungs that otherwise remain collapsed during periods of rest, a phenomenon known as "Recruitment." This is one of the mechanisms by which exercise-triggered lung health has been found to be protective against extensive lung damage in COVID pneumonia.

Aerobic exercise also improves immune function by stimulating function of immune cells. It improves cardiac function by enhancing the return of venous blood from the peripheries due to the pumping action of our muscles, leading to improved cardiac output.

These benefits also extend to reduction of blood cholesterol and glycosylated hemoglobin (designated as HbA1c, this blood parameter is indicative of blood sugar control over the last 3 months) levels in both Type 1 and 2 diabetes.

A new trend is HIIT (High Intensity Interval Training), *this* is a broad term for workouts that involve short periods of intense exercise alternated with recovery periods. This form of exercise has been shown to be associated with enhanced aerobic metabolism in skeletal muscles, increased sensitivity to insulin and thence better sugar control by the body.

### RESISTANCE EXERCISE

Diabetes by itself leads to a loss of muscle mass and strength. Benefits of resistance training for all adults include improvements in muscle mass, body composition, strength, physical function, mental health, bone mineral density, insulin sensitivity, blood pressure, lipid profiles, and cardiovascular health. Specific benefits of resistance training in patients with Type 2 diabetes include improvements in glycemic control, insulin resistance, fat mass, blood pressure, strength, and lean body mass.

### BALANCE EXERCISES

Diabetes is said to affect virtually every system of the body, notably the blood vessels, kidneys, eyes and nerves, the latter condition known as diabetic neuropathy. This can manifest in various ways, depending upon the nerve involved. The neuropathy can be very painful, especially when it affects the lower

limb nerves, leading to balance and gait disorders. Balance and flexibility exercises help in maintaining gait and balance in such patients.

For your convenience, given below is a summary of the various types of exercise and how to go about them so as to derive maximum benefit.

Exercise training recommendations: types of exercise, intensity, duration, frequency, and progression (*From: Physical Activity/Exercise and Diabetes: A Position Statement of the American Diabetes Association, 2016*)

	<b>Aerobic</b>	<b>Resistance</b>	<b>Flexibility and Balance</b>
<b>Type of exercise</b>	<ul style="list-style-type: none"> <li>· Prolonged, rhythmic activities using large muscle groups (e.g., walking, cycling, and swimming)</li> <li>· May be done continuously or as HIIT</li> </ul>	Resistance machines, free weights, resistance bands, and/or body weight as resistance exercises	<ul style="list-style-type: none"> <li>· Stretching: static, dynamic, and other stretching; yoga</li> <li>· Balance (for older adults): practice standing on one leg, exercises using balance equipment, lower-body and core resistance exercises, tai chi</li> </ul>
<b>Intensity</b>	<ul style="list-style-type: none"> <li>· Moderate to vigorous (subjectively experienced as “moderate” to “very hard”)</li> </ul>	<ul style="list-style-type: none"> <li>· Moderate (e.g., 15 repetitions of an exercise that can be repeated no more than 15 times) to vigorous (e.g., 6–8 repetitions of an exercise that can be repeated no more than 6–8 times)</li> </ul>	<ul style="list-style-type: none"> <li>· Stretch to the point of tightness or slight discomfort</li> <li>· Balance exercises of light to moderate intensity</li> </ul>
<b>Duration</b>	<ul style="list-style-type: none"> <li>· At least 150 min/week at moderate to vigorous intensity for most adults with diabetes</li> <li>· For adults able to run steadily at 6 miles per h (9.7 km/h) for 25 min, 75 min/week of vigorous activity may provide similar cardioprotective and metabolic benefits</li> </ul>	<ul style="list-style-type: none"> <li>· At least 8–10 exercises with completion of 1–3 sets of 10–15 repetitions to near fatigue per set on every exercise early in training</li> </ul>	<ul style="list-style-type: none"> <li>· Hold static or do dynamic stretch for 10–30 s; 2–4 repetitions of each exercise</li> <li>· Balance training can be any duration</li> </ul>
<b>Frequency</b>	<ul style="list-style-type: none"> <li>· 3–7 days/week, with no more than 2 consecutive days without exercise</li> </ul>	<ul style="list-style-type: none"> <li>· A minimum of 2 nonconsecutive days/week, but preferably 3</li> </ul>	<ul style="list-style-type: none"> <li>· Flexibility: <math>\geq 2-3</math> days/week</li> <li>· Balance: <math>\geq 2-3</math> days/week</li> </ul>
<b>Progression</b>	<ul style="list-style-type: none"> <li>· A greater emphasis should be placed on vigorous intensity aerobic exercise if fitness is a primary goal of exercise and not contraindicated by complications</li> <li>· Both HIIT and continuous exercise training are appropriate activities for most individuals with diabetes</li> </ul>	<ul style="list-style-type: none"> <li>· Beginning training intensity should be moderate, involving 10–15 repetitions per set, with increases in weight or resistance undertaken with a lower number of repetitions (8–10) only after the target number of repetitions per set can consistently be exceeded</li> <li>· Increase in resistance can be followed by a greater number of sets and finally by increased training frequency</li> </ul>	<ul style="list-style-type: none"> <li>· Continue to work on flexibility and balance training, increasing duration and/or frequency to progress over time</li> </ul>

**Some broad recommendations from the American Diabetes Association (ADA) about the frequency of physical activity in adults with diabetes are:**

1. Most adults with diabetes should engage in 150 min or more of moderate-to-vigorous intensity activity weekly, spread over at least 3 days/week, with no more than 2 consecutive days without activity. Shorter durations (minimum 75 min/week) of vigorous intensity or interval training may be sufficient for younger and more physically fit individuals.
2. Structured lifestyle interventions that include at least 150min/week of physical activity and dietary changes resulting in weight loss of 5%–7% are recommended to prevent or delay the onset of type 2 diabetes in populations at high risk and with prediabetes.

To conclude, physical activity and exercise must be made a part of all our lives, more so in our population which is genetically predisposed to diabetes. The amount of sedentary time also needs to be progressively reduced, by interspersing with frequent bouts of intense activity. Such measures, if adopted as part of popular culture, will go a long way in mitigating the socio-economic effects of diabetes in our country.

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