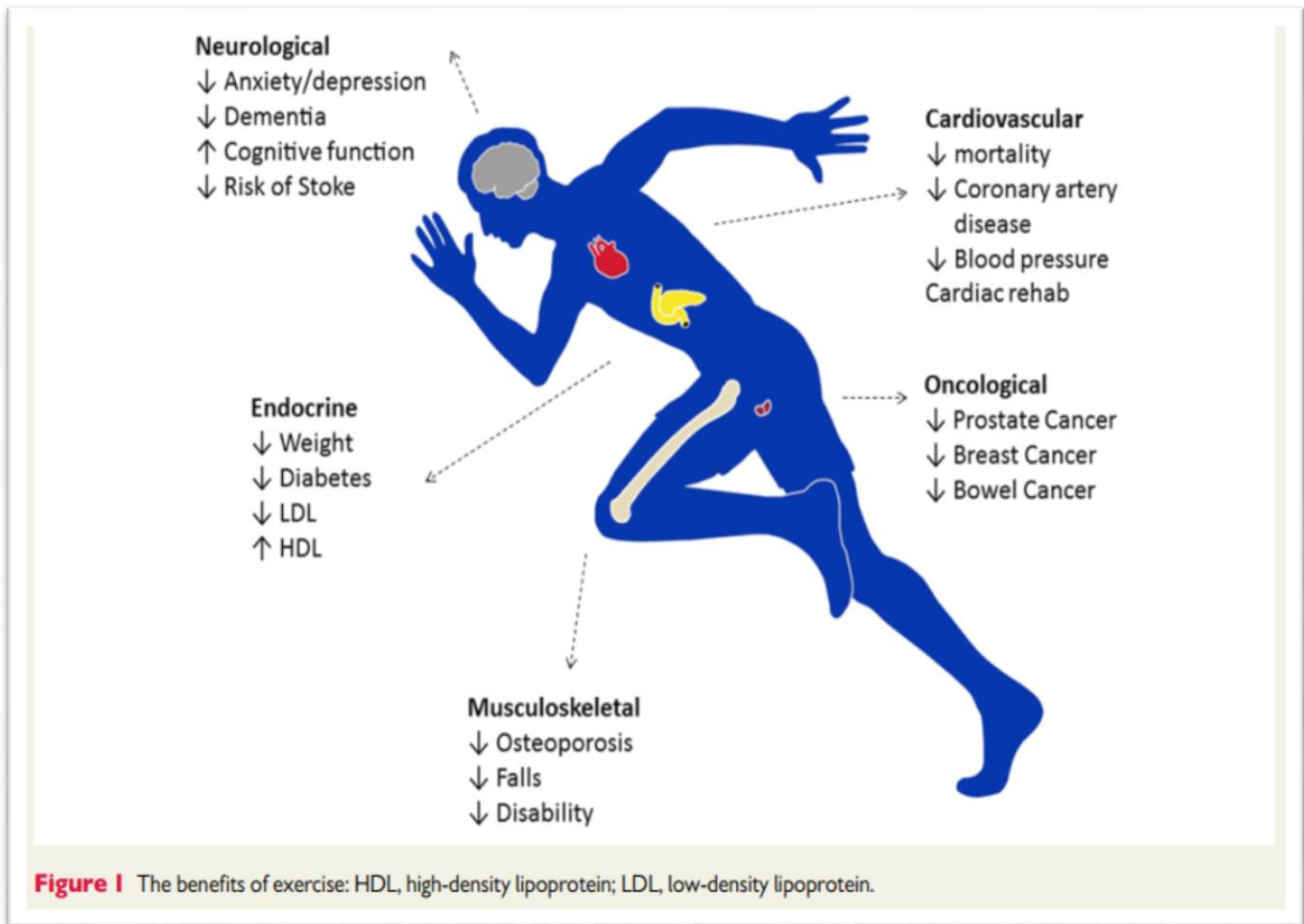


# The benefits of physical activity

## الفوائد الصحية الناتجة عن الممارسة المنتظمة للنشاط البدني

- تحسن اللياقة القلبية التنفسية، وانخفاض ضربات القلب في الراحة وفي الجهد دون الأقصى.
- تحسن اللياقة العضلية الهيكلية.
- ارتفاع مستوى الكوليسترول عالي الكثافة -الجيد في الدم- HDL-C.
- انخفاض مستوى الدهون الثلاثية TG في الدم.
- انخفاض مستوى كل من الكوليستيرول الكلي والكوليستيرول السيئ LDL-C في الدم.
- انخفاض نسبة الشحوم في الجسم.
- انخفاض ضغط الدم الشرياني خاصة إذا كان مرتفعاً.
- زيادة انحلال مادة الفيبرين في الدم، مما يساعد على سيولة الدم.
- الإقلال من التصاق الصفائح الدموية، مما يخفف من فرص حدوث الجلطة.
- زيادة حساسية خلايا الجسم للأنسولين، مما يخفف سكر الدم.
- تحسين أيض الكربوهيدرات.
- ارتفاع القدرة على تحمل الجلوكوز.
- تحسين وظائف الخلايا المبطنة للأوعية الدموية (Endothelium).
- زيادة مصروف الطاقة، مما يساعد على الوقاية من السمنة.
- زيادة كثافة العظام، مما يقلل احتمال الإصابة بهشاشة العظام.
- خفض القلق والتوتر والكآبة.
- خفض تأثير هرمون الكاتوكولامين على القلب، مما يقلل من اضطراب النبض.
- خفض احتمالات الإصابة بسرطان القولون.



## How Exercise reduces the risk of Cancer:

- There are many theories about and mechanisms responsible for the **relationship between exercise and a reduction in certain types of cancers**. Much of the decrease in cancer risk is attributable to **improved lean body mass and metabolic effects associated with regular exercise**. Also, **hormonal changes such as reduced circulating estrogen are thought to be linked to the improved risk of breast cancer in habitual exercisers**. Lastly, the beneficial effects of regular physical activity on **the immune system** are felt to decrease cancer risk.
- Physical activity provides many benefits for cancer patients both during and after treatment. Due to the improvement in cancer treatments, the population of cancer survivors is growing, so it is important to emphasize the benefits of physical activity on reducing the risks of *other* chronic diseases that can occur in cancer survivors. Additionally, there are improvements in *quality of life* for cancer survivors who participate in physical activity.

## Blood Cell Counts and Contraindications to exercise :

Many studies examining the potentially harmful effects of exercise during cancer treatment have found that exercising with low blood cell counts (white or red) is safe with proper caution. patients who exercise during the course of cancer treatment may have one or more of the following contraindications to exercise and should use appropriate caution (Schairer and Keteyian 2003):

- Fever (temperature >100.4 °F or >38 °C)
- Active infection
- Severe nausea
- Severe weight loss (>35% of precancer weight)
- Ataxia

## Hypertension and Cardiovascular Disease ;

Physical activity is considered one of the mainstays in the nonpharmacological treatment of hypertension. Normal blood pressure is defined as a pressure less than 120/80 mmHg (see table 10.1). Elevated blood pressure, which at one time was diagnosed only when in excess of 160/100 mmHg, is a primary cardiac risk factor and also increases the risk for stroke, type 2 diabetes, kidney disease, and vascular disease.

**TABLE 10.1 Classification of Blood Pressure**

Classification	Systolic blood pressure (mmHg)	Diastolic blood pressure (mmHg)
Normal	<120	And <80
Prehypertension	120-139	Or 80-89
Stage 1 hypertension	140-159	Or 90-99
Stage 2 hypertension	≥160	Or ≥100

A single session of aerobic exercise creates a sustained hypotensive response that lasts up to 24 h (Hagberg and others 2000). Postulated mechanisms for the reduction of both systolic and diastolic blood pressure that occurs with regular exercise training include the following:

- Reduced visceral fat
- Improved sodium elimination due to altered renal function
- Reduced plasma renin and catecholamine activity
- Reduced sympathetic and increased parasympathetic tone

## **Diabetes :**

Diabetes is a devastating disease that results in higher-than-normal blood glucose levels either through inadequate insulin secretion (type 1 diabetes) or impaired response to elevated circulating levels of insulin (type 2 diabetes). Complications of diabetes include CAD, peripheral arterial disease, stroke, kidney failure, blindness, and neuropathy and may lead to circulatory problems, amputation, and premature death.

### **Benefits of Physical Activity for Preventing and Managing Diabetes:**

Daily activity is not only to prevent diabetes but also to prevent complications in people who have diabetes. Physical activity and exercise for people with diabetes can improve glucose tolerance and insulin sensitivity as well as manage weight, improve well-being, and reduce other cardiovascular risk factors. Physical activity is a cornerstone in the management of diabetes, along with diet and nutrition. Goals for physical activity in people with type 2 diabetes include weight control, glycemic control, improved insulin sensitivity, reduced CVD, reduced cancer rates, and lower overall mortality.

### **Potential Concerns Regarding Physical Activity:**

Because of the potential nerve damage and metabolic derangements associated with diabetes, there are specific concerns regarding physical activity. Blood sugar levels may be higher or lower than normal, depending on a person's medication, degree of disease control, and activity level, and many people with diabetes require closer monitoring during physical activity to avoid fluctuations in blood glucose. Also, hydration status may both cause and result from changes in blood glucose, and so it requires attention as well. Nerve damage may occur both in peripheral nerves and in the autonomic nervous system, necessitating Caution in individuals with either complication.

people with other organ damage such as eye or kidney damage may require modification of activity.

### **Hypoglycemia and Hyperglycemia :**

During exercise, glucose is a primary source of energy. It is derived from skeletal muscle and the liver and is mediated by glucagon and catecholamines. Hypoglycemia is the most common problem for people with diabetes who also exercise.

Patients may or may not be aware of hypoglycemia; the signs of hypoglycemia are presented shortly. In patients with poorly controlled diabetes, rapid drops in blood glucose may precipitate signs or symptoms of hypoglycemia even if the absolute glucose level is normal or elevated.

Physical activity may cause hypoglycemia in individuals who take insulin or other oral hypoglycemic agents because glucose mobilization is attenuated by high levels of insulin.

