

# HYPERTENSION & DIABETES

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**In Singapore, both diabetes and hypertension are very common medical conditions. At the last National Health Survey in 2010, 11.3 % of adults aged 18 to 69 have diabetes and 23.5% have hypertension. Commonly, patients with diabetes also have hypertension, high cholesterol levels and are overweight.**

## How is hypertension diagnosed?

Hypertension or high blood pressure is diagnosed when your systolic blood pressure (upper reading) is more than 140 mm Hg and when your diastolic blood pressure (lower reading) is more than 90 mm Hg. Blood pressure readings can be done by your doctor in the clinic. Usually your doctor will check your blood pressure over several visits before making a diagnosis of hypertension. You can also use a battery operated blood pressure meter to check your blood pressure at home. If you check your blood pressure at home, take the reading when you are seated and do make sure you are well, relaxed, rested. You should take two to three readings a few minutes apart. You can do this twice a day for a week and the average of all the readings is your blood pressure.

## How common is hypertension in patients with diabetes?

Hypertension is very common in the general population and it is even more common if you have diabetes. It is estimated that hypertension is one and half times to two times more common in patients with diabetes than in patients without diabetes and that up 75% of patients with diabetes have hypertension. Patients with Type 1 diabetes usually do not have hypertension initially but hypertension becomes more common with increased duration of diabetes and when kidney

damage develops. In contrast, in patients with Type 2 diabetes, hypertension is often present before or at the time of diagnosis of diabetes.

## What is the significance of hypertension in patients with diabetes?

Most of the complications of diabetes result from damage to large and small blood vessels in your body. These complications include heart attacks, kidney disease, eye disease as well as disease of the blood vessels of the foot. Hypertension in patients with diabetes causes a significant increase in the risk of damage to these blood vessels. The presence of both hypertension and diabetes substantially increases the risk of heart attacks, kidney damage and damage to the retina of the eye.

## What are the benefits of controlling hypertension in patients with diabetes?

Treatment of hypertension is particularly important in diabetic patients as it can prevent or delay heart disease and also reduce progression of diabetic kidney disease and diabetic eye disease. It is estimated that each 10 mm Hg decrease in systolic blood pressure is associated with a 12% reduction in the risk for any complication related to diabetes, a 15% reduction in deaths related to diabetes, an 11% reduction in heart attacks and a 13% reduction in complications to the kidney and eye.

**If you have diabetes, it is very important to manage your diabetes well as this will reduce your chance of long-term complications. It is equally important to check your blood pressure and cholesterol and also treat these conditions if you have them.**

### How do I control my hypertension?

It is important to remember that hypertension cannot be cured but it can be controlled with treatment. Hypertension can be treated with lifestyle modification or antihypertensive medication. If your blood pressure is borderline or just slightly high, lifestyle modification alone may be sufficient to control your blood pressure. Lifestyle changes that you can make include weight reduction, sodium restriction, increased consumption of fresh fruits and vegetables, exercise and avoidance of smoking and excess alcohol ingestion.

#### KEEPING YOUR WEIGHT DOWN

If you are overweight, weight loss can lead to a significant fall in your blood pressure. You can reduce your blood pressure by 0.5 to 2 mmHg for every 1 kg of weight lost. Sodium is part of salt and is found in many processed foods and drinks. You can check the food label to see how much sodium is present in the food or drink that you consume. Many people also add salt or soy sauce to their food. Reducing your sodium intake can lower your systolic blood pressure by up to 5 mm Hg. You are advised to take less than 2g of sodium a day. You can do this by choosing foods with lower sodium content and by not adding or adding less salt or soy sauce to your food.

#### HEALTHY DIET

Diets that have more vegetable and fruits may also be beneficial. Excessive alcohol intake can increase your blood pressure so limit alcohol intake to not more than two drinks a day for men and one drink a day for women.

#### EXERCISE REGULARLY

Aerobic exercise and possibly weight training has been shown to be beneficial in reducing systolic blood pressure by 4 to 6mm Hg and diastolic blood pressure by 3mm Hg. You should also reduce or stop smoking. Lifestyle modification and weight management are key components to control both your diabetes and blood pressure.

#### MEDICATION

Often, lifestyle measures alone are not able to keep your blood pressure with the target range. Your doctor may decide to start you on antihypertensive medication if you cannot keep your blood pressure less than 140/90 mm Hg after lifestyle modification. While all types of antihypertensive medication can be used in patients with hypertension, there are two types of antihypertensive medication which are specifically recommended for diabetic patients with hypertension. The first type of medication is called angiotensin converting enzyme inhibitors (ACE-inhibitors).

The second type of medication is called angiotensin II receptor blockers (ARB). Both of these medications have been shown to provide additional kidney protection compared to other types of antihypertensive medication. Sometimes you may need more than one type of medication to control your blood pressure. Commonly, a type of medication called a calcium channel blocker is added to either an ACE inhibitor or ARB if your blood pressure target is not achieved with one drug alone. Occasionally three or more antihypertensive medications may be needed to control your blood pressure.

It is important to take your medication regularly as prescribed by your doctor and to see your doctor regularly for check-ups. Remember to continue with lifestyle changes as that will help to keep your blood pressure under control.



**What are the target blood pressure readings for patients with diabetes and hypertension?**

The most recent guidelines suggest that you should aim for a target of

**<140/90 mm Hg**

However, if you have evidence of kidney damage such as protein leakage in the urine, we usually suggest a lower target of

**<130/80 mm Hg**

Your doctor will be able to advise you on the target blood pressure.



# 高血压和糖尿病

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在新加坡，糖尿病和高血压都是非常常见的医疗状况。在上次2010年的国家健康调查中，年龄介于18岁至69岁的成年人，有11.3%患有糖尿病 而23.5%患有高血压。一般情况下，糖尿病人也患有高血压，高胆固醇以及超重。如果你患有糖尿病，控制好糖尿病非常重要，因为这会降低你的长期并发症的几率。你也要常检查你的血压和胆固醇，如有偏高，及时的治疗也同样重要。

## 如何诊断高血压？

当你的收缩压（上读数）超过140毫米汞柱，舒张压（下读数）超过90毫米汞柱时便可诊断高血压。诊所的医生可以帮你测量血压读数。通常，医生会在你每次复诊时测量血压，几次之后才作出高血压的诊断。你还可以使用电池供电的血压仪测量您在家里的血压。如果你在家里测血压，测量时必须静坐，并确保你没生病，放松及休息的状态下测量。你应该每隔几分钟测量2-3次读数，在一个星期内每天测两次，所有读数的平均值就是你的血压。



### 糖尿病患者伴有高血压的情况有多普遍？

高血压在普通人群中是很常见的，然而在糖尿病患者中更是多见。据估计，糖尿病患者患高血压的比例是非糖尿病患者患高血压比例的1.5-2倍，甚至高达75%。1型糖尿病起初时通常不伴有高血压，但随着患病时间的延长和肾脏开始出现损害时，高血压逐渐显现。与此相反，在2型糖尿病中，高血压通常在糖尿病被诊断之前或被诊断之时便已经伴有。

### 糖尿病加上高血压意味着什么？

大多数糖尿病的并发症是被全身大大小小的血管损害所导致的。这些并发症包括心脏病发作，肾脏疾病，眼科疾病以及足部血管病变。糖尿病加上高血压的患者导致损坏这些血管的风险显著增加。同时患有高血压和糖尿病患者实质上增加了心脏病发作，肾脏损伤以及眼睛视网膜损害的风险。

### 糖尿病患者控制高血压的好处有哪些？

高血压的治疗对于糖尿病患者尤为重要，因为它可以防止或延缓心脏疾病，并减少糖尿病肾病和糖尿病性眼疾的进展。据估计，收缩压每降低10毫米汞柱，糖尿病相关的任何并发症的风险降低了12%，与糖尿病相关的死亡率降低了15%，心脏病发作降低11%以及肾脏和眼睛的并发症减少13%。

### 糖尿病及高血压患者的血压读数指标是多少？

据最新的指导建议，你的血压指标应当低于140/90毫米汞柱。但是，如果你已有肾脏损害的迹象，如尿中出现渗漏的蛋白，那么建议你的血压指标应低于130/80毫米汞柱。你的医生将会指导你个人的血压指标。

### 如何控制我的高血压？

重要的是要记住，高血压不能治愈，但可以通过治疗加以控制。高血压可以通过改变成健康的生活方式和降压药物来治疗。如果你的血压在临界点或稍高，单靠改变成健康的生活方式可能足以控制血压。生活方式的改变包括减轻体重，限制钠盐的摄入，多吃新鲜水果和蔬菜，锻炼，避免吸烟和摄入过量酒精。

如果你体重超重，减肥可以显著降低你的血压。每减轻1公斤的体重，你的血压便可降低0.5至2毫米汞柱。钠是盐的组成部分，普遍存在于许多加工食品和饮料当中。你可以查看食品标签，看看有多少钠存在于你吃的食物或饮料里。许多人还另加食盐或酱油在他们的食物中。减少钠的摄入量可以降低收缩压高达5毫米汞柱。建议你一天钠的摄入量少于2克。你可以通过选择含低钠食品，不加或少加盐或酱油到你的食物当中来做到这一点。有氧运动和重量训练已证明有利于降低4-6毫米汞柱的收缩压和3毫米汞柱的舒张压。更多蔬菜和水果的饮食也可能让你受益。过量饮酒会增高你的血压，所以控制饮酒男性每天不超过2个标准量(drinks)而女性不超过1个标准量\*(drinks)。你也应该减少吸烟或者戒烟。健康的生活方式和控制体重是控制糖尿病和高血压的关键要素。

通常情况下，单单只靠健康的生活方式不足以让您的血压保持在指标范围内。如果改变成健康的生活方式后还是不能让你的血压控制在140/90毫米汞柱以下，你的医生可能会决定开始启动降压药物。尽管所有类型的降压药物可以在高血压患者中使用，特别建议其中两种类型的降压药物用于糖尿病伴有高血压的患者。

第一类型被称为血管紧张素转化酶抑制剂(ACE抑制剂)。第二类型被称为血管紧张素II受体阻断剂(ARB)。这两种药物已被证明相比于其他类型的降压药物，提供额外的肾脏保护作用。有时你可能需要不止一种药物来控制血压。通常情况下，如果单靠ACE抑制剂或ARB一种药物不能有效地控制血压时，另一种药物称钙通道阻断剂(Calcium Channel Blocker)便会被加入其中之一。偶尔可能需要3种或更多种类的降压药物来控制你的血压。很重要的是，根据医生的处方服药以及定期给你的医生检查。记住要继续保持健康的生活方式，这才有助于控制好你的血压。

\*1个标准量:220毫升的啤酒，100毫升的葡萄酒，30毫升的烈酒。