Hong Kong Reference Framework for Hypertension Care for Adults in Primary Care Settings
【Patient Version】

Prepared by the Task Force on Conceptual Model and Preventive Protocols of the Working Group on Primary Care
Revised in February 2012
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Introduction

The ‘Hong Kong Reference Framework for Hypertension Care for Adults in Primary Care Settings’ was prepared by the Task Force on Conceptual Model and Preventive Protocols of the Working Group on Primary Care, which was set up by the Food and Health Bureau. This reference framework aims to provide a common reference for healthcare professionals across different sectors for the provision of continuing, comprehensive and evidence-based care for hypertension in the community. This reference framework also serves as a reference to adults at risk of developing or with hypertension and their carers, to empower patients to take care of themselves and to raise public’s awareness on the importance of preventing and properly managing hypertension. This patient version is simple and easy to understand. It is hoped that patients are able to learn and practise the recommendations as laid down in this reference framework.
What is hypertension?

Blood pressure is the pressure exerted by circulating blood upon the walls of blood vessels. ‘Systolic blood pressure’ is the pressure exerted upon the walls of blood vessels when the heart contracts, while ‘diastolic blood pressure’ is one when the heart relaxes. Blood pressure is usually measured in millimeters of mercury (mmHg).

According to the seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure, hypertension is a condition in which the systolic blood pressure is persistently higher than or equal to 140 mmHg or diastolic blood pressure is persistently higher than or equal to 90 mmHg.

Hypertension can be divided into ‘primary (essential) hypertension’ and ‘secondary hypertension’ based on different causes:

- Primary (essential) hypertension: the cause of high blood pressure is unknown, generally related to the risk factors described below (see item 3 on Page 2)
- Secondary hypertension: mainly caused by identifiable underlying secondary causes, such as kidney diseases or endocrine disorders

It is estimated that around 27% of the population aged 15 or above in Hong Kong suffer from hypertension.
Risk factors for hypertension

There are different risk factors for developing hypertension at various stages of life, such as

- increasing age
- overweight and obesity\(^{\text{Note 1}}\)
- unhealthy eating habits and excessive salt intake
- physically inactive
- excessive alcohol intake
- smoking
- family history of hypertension, particularly in first degree relatives

Impact of hypertension on health

Poorly controlled hypertension may lead to heart failure, coronary heart disease, stroke and kidney failure etc.

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Note 1: World Health Organization recommended Body Mass Index (BMI) cut-off points for overweight as 25 kg/m\(^2\) and obesity as 30 kg/m\(^2\) in 2004. For Asian populations, the BMI cut-off points of 23 kg/m\(^2\) and 27.5 kg/m\(^2\) were added as points for public health action. BMI is a measured as weight in kg/height in m\(^2\). Central obesity means the waist circumference \(\geq 90\text{cm}\) in male and \(\geq 80\text{cm}\) in female for the Chinese population.
Most patients with hypertension have no obvious symptoms. They are only found when blood pressure is measured. Therefore, adults are advised to have regular measurement of blood pressure according to the following blood pressure categories:

<table>
<thead>
<tr>
<th>Blood pressure categories</th>
<th>Blood pressure level (mmHg)</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Systolic blood pressure</td>
<td>Diastolic blood pressure</td>
</tr>
<tr>
<td>Normal</td>
<td>lower than 120</td>
<td>lower than 80</td>
</tr>
<tr>
<td>Pre-hypertension</td>
<td>120 to 139</td>
<td>80 to 89</td>
</tr>
<tr>
<td>Hypertension</td>
<td>higher than or equal to 140</td>
<td>higher than or equal to 90</td>
</tr>
</tbody>
</table>

**How is hypertension diagnosed?**

A simple way is to measure your blood pressure by using a sphygmomanometer. The doctor will also ask questions about your past medical history and conduct a comprehensive health check. If indicated, further tests such as blood tests, urine tests, electrocardiogram, chest x-ray and retinal examination will be arranged to identify the causes of hypertension and detect complications.
How to live with hypertension?

There is no proven cure for hypertension. Therefore, in order to control hypertension and prevent its complications, you should adhere to the treatment plan:

- You should have knowledge about the risk factors of hypertension and check your blood pressure regularly. Report the result to your doctor during follow-up consultation.
- Your family doctor and other healthcare professionals can provide you with person-centred, continuing and comprehensive treatment and healthcare service. Therefore, you should develop a close partnership with them for early diagnosis and treatment.
- You should also enhance your self-care ability for the effective control of hypertension.
How to control hypertension?

Your participation and self-monitoring is crucial to the effective control of hypertension. Enhance your knowledge and skills on the management of hypertension could enable you to better control your own health. Therefore, you should-

- understand the nature of hypertension
- maintain a healthy lifestyle
- keep optimal body weight
- understand that undesirable blood pressure control may lead to complications such as stroke
- take medication(s) according to doctor’s prescription
- consult your doctor about the different treatment options and the possible side effects of medication(s)
- develop a close partnership with your family doctor and other healthcare professionals so as to design a treatment plan that best suits your needs

<table>
<thead>
<tr>
<th>Action</th>
<th>Recommendation</th>
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</table>
| Follow up regularly with your family doctor | - Work with your family doctor to set targets for blood pressure level, blood lipid level and BMI  
- Conduct health assessment annually. Observe your health status to see whether complications such as stroke occur. Recommended items for assessment include:  
  » BMI and waist circumference  
  » blood glucose  
  » blood pressure  
  » blood lipid  
  » kidney function test (including urine protein) |
### How to control hypertension?

<table>
<thead>
<tr>
<th>Action</th>
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</table>
| **Develop healthy eating habit and avoid excessive salt intake** | ● Frequent intake of vegetables and fruits. Eat at least two medium fruits such as orange, apple plus one and half bowl* of vegetables such as boiled choi sum and gai lan a day  
● Choose fresh meat and vegetables; avoid processed or preserved food products and food high in salt such as preserved mustard cabbage, fermented bean curd, ham and sausage  
● Avoid excessive salt intake; no more than 1 teaspoon (around 5g) a day is recommended  
● Cut down on the use of soy sauce, oyster sauce, soy bean paste, fermented bean curd, ketchup and salt  
● Use natural seasoning such as green onion, garlic, onion, cilantro, pepper powder and lemon juice to enhance the colour, smell and taste of food  
● Cut down on food high in fat such as high-fat meat, fried food, whole milk, cake and coconut milk  
● Choose low-fat food such as lean meat and skimmed milk  
● Pay attention to the content of fats, sodium (or salt) and sugar on nutrition labels. Choose food lower in fats, sodium (or salt) and sugar |
| **Perform physical activities regularly** | ● Perform 30 minutes per day of aerobic exercise at moderate (e.g. brisk walking) or high intensity. Aerobic exercise can be performed accumulatively in bouts of at least 10 minutes each time  
● Perform muscle strengthening activities at least twice weekly (on non-consecutive days)  
● For more advice and information on exercise, please consult professionals or visit the Exercise Prescription website of the Department of Health (see appendix for website address) |

* Volume of one bowl = 240ml
## How to control hypertension?

<table>
<thead>
<tr>
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| **Reduce alcohol intake** | • No more than 2 standard drinks daily for male  
• No more than 1 standard drink daily for female  
• A standard drink is approximately equal to:  
  » 3/4 can (~250 ml) of beer of 5% alcohol  
  » one small glass (~100 ml) of red wine of 12% alcohol  
  » one pub measure (30 ml) of spirits of 40% alcohol |
| **Quit smoking** | • Non-smokers should not try smoking and smokers should quit immediately  
• If you need help to quit smoking, please see appendix |
| **Relax your body and mind** | • Learn to relax yourself. Stay positive. Cope with stress actively  
• For more advice on coping with stress, please visit the Health Zone website of the Department of Health. See appendix for website address |
| **Self-monitoring of blood pressure** | • You should know the meaning of blood pressure readings and the skills for measuring blood pressure accurately (see appendix)  
• Measure blood pressure regularly and report the result to your doctor during follow-up appointment so that healthcare professionals can learn about the effect of the anti-hypertensive drugs on you and make reference to it for treatment  
• For patients with uncomplicated hypertension, keep blood pressure below 140/90 mmHg  
• For patients with other chronic diseases such as diabetes, keep blood pressure below 130/80 mmHg |
# How to control hypertension?

<table>
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</table>
| **Control blood lipid**        | - Blood lipids are mainly made up of triglyceride and cholesterol. Dyslipidaemia means abnormal high level of triglyceride or lipoprotein in the blood. It is a major risk factor for developing cardiovascular diseases  
- Optimal blood lipid control can be achieved by maintaining healthy eating habit, performing exercise regularly and starting medications when indicated |
Conclusion

To control hypertension effectively and prevent complications, you are strongly advised to learn more about hypertension and its management. You should also develop a close partnership with your family doctor for active disease management. For further information on the care of hypertension, please refer to the ‘Hong Kong Reference Framework for Hypertension Care for Adults in Primary Care Settings’ (see appendix for website address) or consult your family doctor.
## Appendix

### Reference websites

| --- | --- |
## Smoking Cessation Service

<table>
<thead>
<tr>
<th>Service</th>
<th>Organisation</th>
<th>Telephone number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrated Smoking Cessation Hotline of the Department of Health</td>
<td>Department of Health</td>
<td>1833 183 (press 1)</td>
</tr>
<tr>
<td>Hospital Authority Quitline</td>
<td>Hospital Authority</td>
<td>1833 183 (press 3), 2300 7272</td>
</tr>
<tr>
<td>Women Smoking Cessation Service</td>
<td>The University of Hong Kong</td>
<td>2819 2692</td>
</tr>
<tr>
<td>Tung Wah Group of Hospitals Smoking Cessation Hotline</td>
<td>Tung Wah Group of Hospitals</td>
<td>1833 183 (Press 2), 2332 8977</td>
</tr>
<tr>
<td>Pok Oi Smoking Cessation Service using Traditional Chinese Medicine</td>
<td>Pok Oi Hospital</td>
<td>1833 183 (Press 4), 2607 1222</td>
</tr>
</tbody>
</table>
Steps for measuring blood pressure and points to note

I. Equipment for measuring blood pressure

Sphygmomanometer:

i. Mercury manometer – the most accurate type of instrument for measuring blood pressure. Regular inspection for cracks and leaks is required to ensure accuracy.

ii. Electronic sphygmomanometer – electronic sphygmomanometer that measures the blood pressure in the upper arm is more accurate. Pay attention to the instructions of application when in use and periodic calibration by comparing the reading with mercury manometer is required. Electronic sphygmomanometers that measure the blood pressure in the wrist and fingers are not recommended for use.
II. Preparation before measuring blood pressure
i. Avoid doing exercise, taking coffee or tea half an hour before measuring the blood pressure. Go to the washroom if necessary to avoid the feeling of a need to go to the toilet. The sleeves of the clothes should not be too tight. Take a rest for five minutes before making measurement.

III. Steps of measuring blood pressure
i. - Be seated securely. Place your arm flatly on the table and pull the sleeve up to the upper arm
   - Select a cuff of suitable size and place it around the upper arm 2 to 3cm away from your elbow. The cuff should be wide enough to cover two thirds of the upper arm. It should be long enough to encircle the upper arm. Keep the cuff on the upper arm at the same vertical height as the heart.
   - Relax yourself as far as possible and do not talk when measuring the blood pressure.

ii. Palpate the radial artery with fingertips. Inflate the cuff until the artery is completely occluded. At this time, the mercury tube shows the ‘estimated systolic pressure’. Deflate the cuff and pause for 30 to 60 seconds. Place the stethoscope on the brachial artery at the elbow and inflate the cuff again until the mercury tube reads 30 mmHg over the ‘estimated systolic pressure’. Check the radial artery if it is completely occluded and release the cuff pressure. When the first snapping sound is heard, the mercury tube shows the ‘systolic blood pressure’. Release the cuff pressure slowly. When the snapping sounds diminish or weaken, the mercury tube shows the ‘diastolic blood pressure’.
iii. When using an electronic sphygmomanometer that measures the blood pressure in the upper arm, fix the cuff on the arm and press the button. The equipment will inflate and deflate automatically and show the figures of the ‘systolic blood pressure’, ‘diastolic blood pressure’ and ‘pulse’ etc.

iv. Record the readings accurately and pass them to the healthcare professionals for reference during follow-up appointment.