



PASESA
心血管檢測儀

PASESA CARDIOVASCULAR MEASURING INSTRUMENT

使用 PASESA 前

PASESA儀器適合18歲以上男女使用

但以下人士並不適合使用Pasesa：

- 孕婦
- 手上有傷口、浮腫或瘀傷人士
- 身體有植入式醫療電子裝置, 例如: 心臟起搏器
- 身體有電子生命維持系統, 例如：人工心臟 / 肺
- 身體有可攜式醫療電子器材, 例如：心電圖儀人士

使用量度前

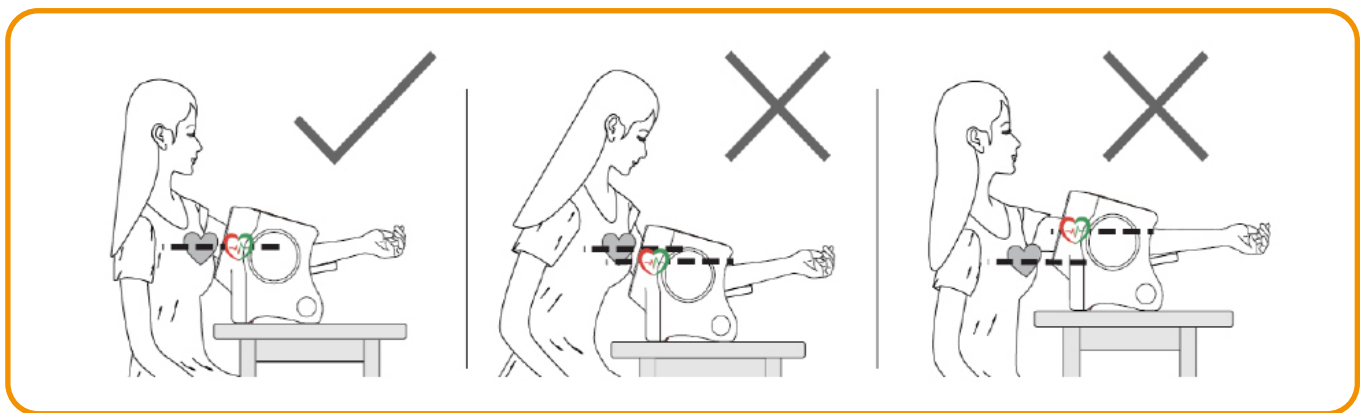
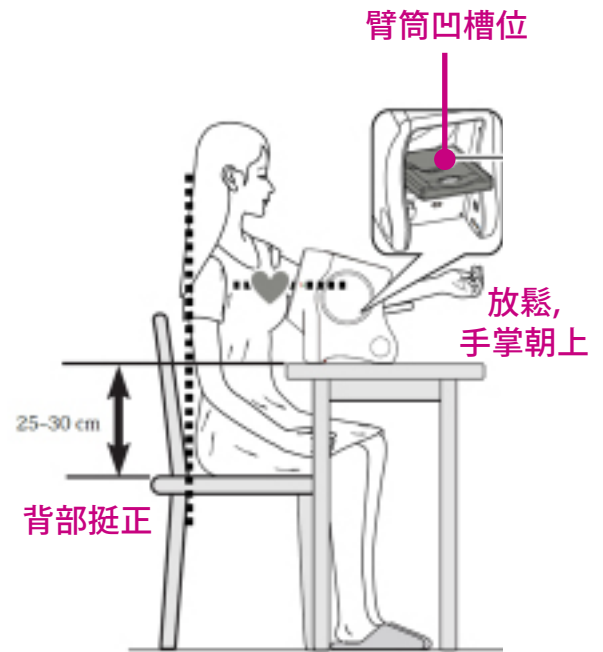
* 首先, 請檢查儀器是否連接妥當 (包括連接電源及良好) *

若測量無法開始/中途暫停/完成測量後無法顯示結果

1. 請重新檢查儀器是否連接良好 (包括連接電源及儀器)
2. 建議重新嘗試開始測量
3. 如問題再次出現, 建議重新開機再次嘗試
4. 如問題持續, 請聯絡工作人員

PASESA 儀器設置

1. 將肘部放置板打開，臂筒朝向自己。
2. 將本機放在身體前偏左側位置，並靠近身體。
3. 桌子和椅子的建議高度差為25~30 cm。
不合適的高度差，會導致身體不同程度傾斜。
(以本機臂筒上心臟圖標與人體心臟同一高度為準)
4. 本機和桌子邊緣的距離、身體和桌子邊緣的距離建議各保持約 2 cm
(以本機臂筒上心臟圖標與人體心臟同一高度為準)
5. 測量時的姿勢不正確，會導致測量的數據不準確
(姿勢不正確如彎腰、盤腿坐在沙發或低矮的桌子上、彎下身體等)



PASESA 測量程序

1. 先靜坐休息數分鐘, 保持心情放鬆。請脫去厚重的衣服及放下負重背包。
2. 姿勢坐正, 將左手伸過儀器臂筒, 手心向上, 將手肘置於臂筒凹槽處。
(儀器臂筒上的心臟圖標, 與測試者心臟保持同一高度)
3. 進行測量期間請勿說話、大笑、移動或晃動身體等。
4. 進行測量時, 請保持身體和心情都處於平靜狀態。
5. 測量時間維持約 2 分鐘, 本機自動發出提示聲音。
6. 請待袖套完全釋放壓力及工作人員指示測量完成後, 將手臂退出臂筒及活動身體。
7. 測量結束。

若在測量時感到不適...

- 在測量過程中, 手臂有發麻現象, 此為正常現象。
- 若測試者感覺手臂壓迫嚴重不適時, 請通知工作人員或按按鈕停止測量。
- 若出現手臂受壓迫使手指尖部血液流通不暢的情況, 請把手舉過頭頂。然後將手掌握緊和伸展, 反復進行約 15 次就能緩解症狀。

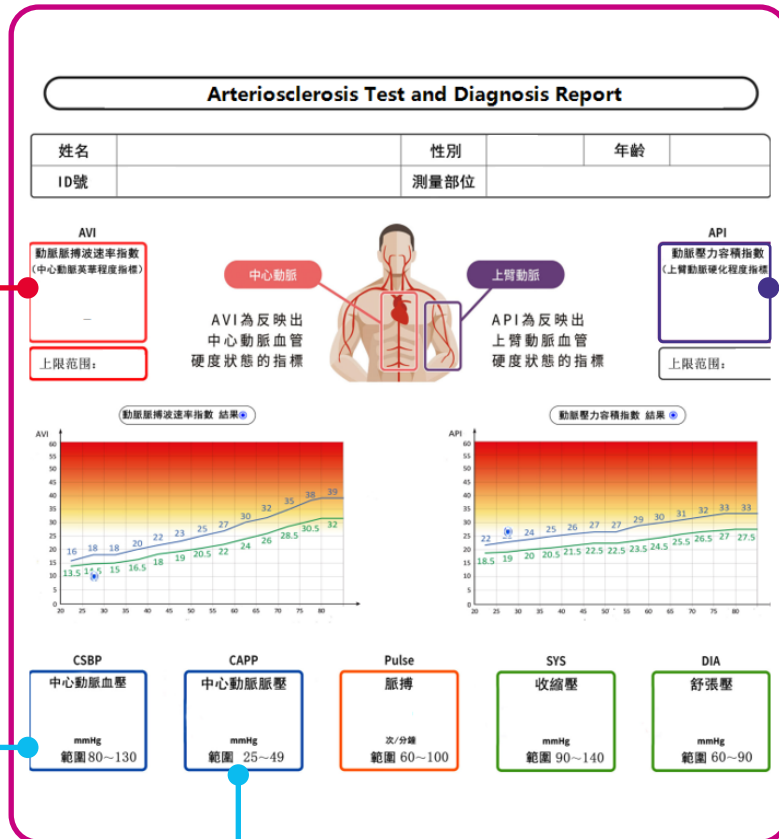
PASESA報告詳細解讀

中心動脈硬化指數 (AVI):
是利用波形解析推算中心動脈硬化程度

中心動脈血壓值 (CSBP):
血液在中心動脈流動時作用於血管壁的壓力值安全範圍 80 – 130
降低中心動脈壓將有助於預防心血管疾病風險

中心動脈脈壓(CAPP):
中心動脈收縮壓與舒張壓之差反映血壓波幅安全範圍 25 – 49
脈壓升高是動脈粥樣硬化及心腦血管疾病高危險的標誌

上臂動脈硬化指數 (API):
是利用波形解析推算上臂動脈硬化程度



	上 壓	下 壓
正常	120以下	80以下
前期高血壓	120-139	80-89
高血壓	140以上	89以上

- ➔ 脈搏指心跳每一分鐘跳動次數正常成人為60-100不等
- ➔ 上壓又稱為收縮壓, 是指心臟收縮泵出血液時血管內的壓力
- ➔ 下壓又稱為舒張壓, 是指心跳之間心臟放鬆時血管內的壓力

中心動脈 (心臟附近) 硬化程度指標 (AVI)

中心動脈硬化指數是利用波形解析推算中心動脈硬化程度

AVI 數值愈高代表中心動脈硬化程度風險愈高

AVI 數值容易受藥物、中藥、保健品、飲食習慣影響

年齡	下限	上限	輕度偏高 (高出20% 以下)	中度偏高 (高出20%-50%)	重度偏高 (高出50%以上)
20-24	10	16	17	20	24
25-29	11	18	19	22	27
30-34	12	18	19	22	27
35-39	13	20	21	24	30
40-44	14	22	23	27	33
45-49	15	23	25	28	35
50-54	16	25	27	30	38
55-59	17	27	29	33	41
60-64	18	30	32	36	45
65-69	20	32	34	39	48
70-74	22	35	37	42	53
75-79	23	38	40	46	57
80	25	39	41	47	59

上臂動脈硬化程度指標 (API)

上臂動脈硬化指數是利用波形解析推算上臂動脈硬化程度

上臂外周動脈(包括連接頸部、腦部)-中小血管動脈)

AVI 數值愈高上臂動脈硬化程度風險愈高

AVI 數值容易受藥物、中藥、保健品、飲食習慣影響

年齡	下限	上限	輕度偏高 (高出20% 以下)	中度偏高 (高出20%-50%)	重度偏高 (高出50%以上)
20-24	15	22	24	27	33
25-29	16	23	25	28	35
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65-69	20	31	33	38	47
70-74	21	32	34	39	53
75-79	21	33	35	40	59
80	22	33	35	40	59

當AVI 和 API 值偏高時, 建議採取以下措施

偏高程度	採取措施	方案
輕度偏高 (高出20%以下)	進行心血管方面檢查, 進一步了解您的健康狀況, 同時建議多做戶外運動, 戒煙酒、少食低油、低鹽、低糖食物、多食高纖維、有營食物	3個月後復查
中度偏高 (高出20%-50%)	進行心血管系統全面檢查, 並在醫生的指導下製定適宜的治療方案	3個月後復查 並調整治療方案
重度偏高 (高出50%以上)	一般提示有血管系統可查見的器官或組織病變, 需要及時就醫	及時就醫

AVI 與 API 數值異常進一步闡釋

	正常	上限	下限	高出上限值 (高出20%以下)	高出上限值 (高出20%-50%)	高出上限值 (高出50%以上)
AVI數值		高		動脈血管的硬化程度輕微偏高, 平時要注意養成健康的生活習慣, 如多做戶外運動, 以低脂、低糖、低鹽、高纖食物為主以及控制體重等, 避免動脈硬化進一步加重	除養成健康的生活習慣外, 亦建議定期到醫院進行全面的心血管檢查, 並根據結果接受預防性治療, 以降低突發嚴重心血管疾病的風險	提示未來幾年內患上心血管疾病(如冠心病、腦中風等)的風險較高, 需及時到醫院進行詳細的心血管檢查, 並根據醫生建議接受針對性治療
API數值		高				

AVI數值			低	有部分人士經常進行運動鍛鍊而且有良好的生活習慣, 由於血管彈性較一般人好, 測量值可能較低。但另一部分人士是屬於中醫臨床觀察表現的氣血兩虛, 會出現體弱多病、面色蒼白、脈搏微弱、有輕微心悸、氣短等, 有可能出現測量偏低的情況。另外, 部分血壓偏低的人士, 由於動脈負荷較低, 測量值可能低於下限
API數值			低	

AVI數值	正常			API數值會一定程度受血壓變動、交感神經活動等生理因素影響, 如API數值一般會隨著血壓升高而增大。針對部分年輕人API測量值偏高的現象, 可能是由於測量時心理緊張而造成交感神經活躍引起, 建議充分休息後再次測量; 另外, 亦有研究表明, 上臂抗阻力訓練會造成上臂動脈僵硬度升高, 故經常進行抗阻力訓練的人士其API值亦可能偏高
API數值		高		

AVI數值		高		AVI 和API 分別反映中心動脈和上臂動脈的僵硬度。由於中心動脈僵硬度與心血管疾病風險的關聯性更強, AVI 數值高於上限表明心血管疾病的風險偏高, 建議到醫院進行心血管檢查
API數值	正常			

AVI數值	正常			可能與血壓偏低有關, 另外, 身體差、四肢無力、腦部供血不足等情況下, 也可能出API值偏低
API數值			低	

AVI數值			低	可能與血壓長期偏低的人士本身中心動脈較普通人柔軟有關, 亦可能是由心率不齊造成測量結果不準確引起, 建議充分休息後再次測量
API數值	正常			

PASESA 測量結果異常

- 手臂周長超出或低於 19 - 32 cm
- 測量時的姿勢不正確
(如彎腰、坐在低矮的桌子上、彎下身體等)
- 正在服藥或身體不適的人士
- 環境因素, 如測量時段、衣服、旁觀者、情緒變化
- 血壓測量前 30 分鐘內, 請勿進食、飲酒、抽煙、運動或洗澡
- 請排空膀胱後進行測量
- 請脫去外套、毛衣等較厚的衣服, 穿貼身薄衣或裸露左上臂
(挽起袖子時請勿壓迫手臂進行測量)
- 安靜休息10分鐘以上, 並在安靜適宜的環境中進行測量

測量後, 若儀器螢幕出現橫線

01

1. 如客人有心率不正的情況, 儀器或無法進行測量, 而出現橫線。

02

1. 請重新檢查儀器是否連接良好
(包括連接電源及儀器)
2. 建議重新嘗試開始測量
3. 如問題再次出現, 建議重新開機再次嘗試
4. 如問題持續, 請聯絡工作人員

Before Using PASESA

**PASESA is only suitable for
the people who are over 18 years old**

Few groups of people are not allowed to use PASESA :

- Pregnant women
- People with wound, swelling or bruises on their arm
- People with implanted medical electronic devices, such as pacemakers, electronic life support systems, such as artificial hearts/lungs, portable medical electronic products, such as electrocardiographs are not allowed to use

Before Measurement

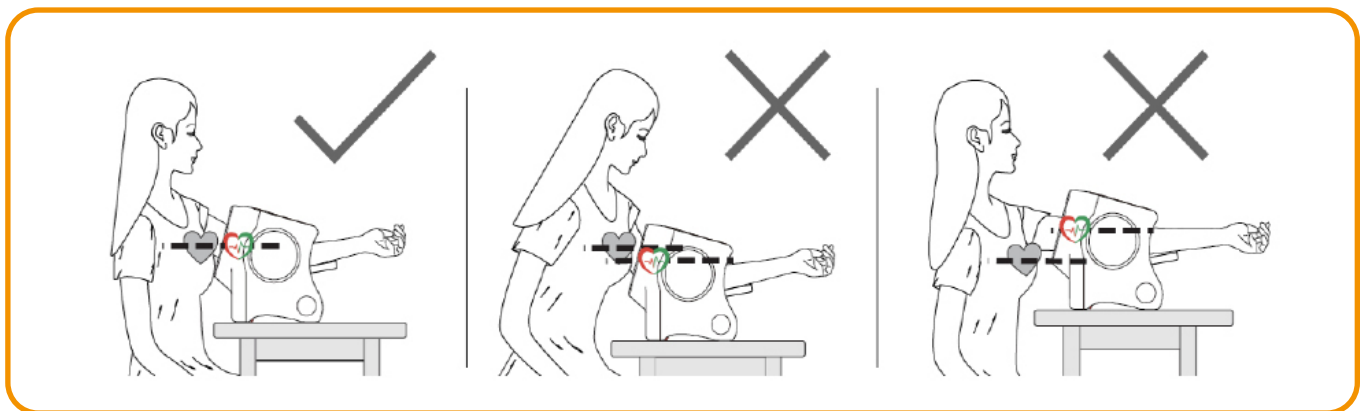
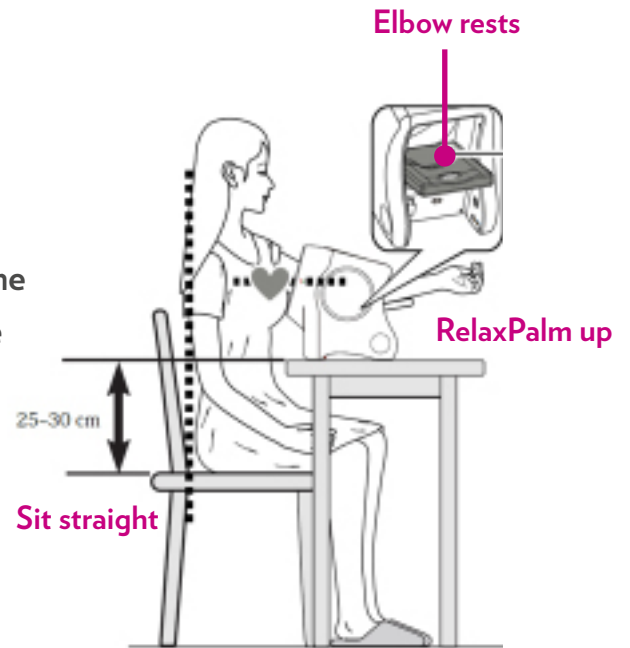
First, please check if the devices are properly connected (including the power supply)

If the measurement cannot be started/paused when measurement / the result cannot be displayed after the measurement

1. Please double check if the devices are properly connected (including the power supply)
2. Start measurement again
3. If still can't measure properly, please restart the device and try measurement again
4. If still can't measure properly, please contact our staff

PASESA setting

1. Open the elbow rests and the arm barrel facing you.
2. Put PASESA near the left side of your body.
3. The height difference between tables and chairs is **25-30 cm**. Inappropriate height difference will cause the body oblique.
(The heart should be at the same level as the sign)
4. It is recommended to keep the distance between the machine and the table about 2 cm and the distance between the body and the table about 2 cm.
(Please keep your back straight and have appropriate distance)
5. Inappropriate posture during measurement will cause inaccurate result
(Bend over, sitting cross-legged or low table, etc.)



PASESA Measurement Procedure

1. Rest for a few minutes to keep your mind relaxed. Please take off your heavy clothes and put down your backpack.
2. Sit straight, put your left hand through the arm barrel and palm up. Place your elbow at the groove of the elbow rest.
(The heart should be at the same level as the sign)
3. Please do not talk, laugh, move your body during the measurement.
4. Please keep your body and mind calm during the measurements.
5. The measurement lasts long about 2 minutes. PASESA will have prompt sound when the measurement is finished.
6. Please wait until the cuff is completely released and the staff indicates that the measurement is completed, then withdraw the arm and move the body.
7. Measurement finished.

Feeling unwell during the measurement

- The arm has numbness during the measurement is normal situation.
- If the participant feels discomfort during the measurement, please notify the staff to press the stop button.
- During the measurement, if you feel lack of blood circulation in the fingers. Please raise up your hands above your head and squeeze and stretch your palms about 15 times to relieve this symptoms.

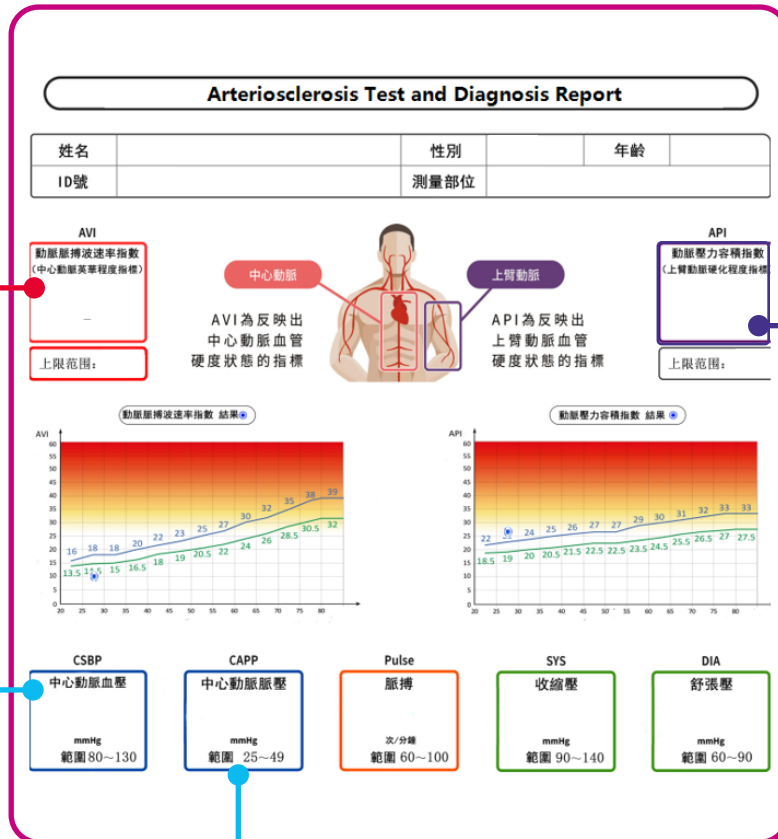
PASESA Report Interpretation

Arterial velocity-pulse index (AVI)
An index of arterial reflected waves. It determines the arteriosclerosis level in the central artery

Central Systolic Blood Pressure (CSBP) refers to the pressure in the aorta near the heart. Lower CSBP helps to prevent cardiovascular disease risk.
Normal Range : 80-130

Central Aortic Pulse Pressure (CAPP) is increasingly considered a better cardiovascular prognostic marker than conventional cuff brachial blood pressure.
Normal Range : 25-49

Arterial pressure-volume index (API)
An index of volume of a conductive blood vessel. It determines the arteriosclerosis level in the peripheral artery



	Systolic Pressure	Diastolic Pressure
Normal	Under 120	Under 80
Elevated	120-139	80-89
High Blood Pressure	Above 140	Above 89

Pulse, a rhythmical throbbing of the arteries as blood is propelled through them.

- ➔ Adult normal pulse range : 60-100/min
- ➔ Systolic blood pressure indicates how much pressure your blood is exerting against your artery walls when the heart beats
- ➔ Diastolic blood pressure indicates how much pressure your blood is exerting against your artery walls while the heart is resting between beats.

Arterial velocity-pulse index (AVI)

An index of arterial reflected waves.

It determines the arteriosclerosis level in the central artery

High risk of central atherosclerosis when AVI value get higher

AVI value easily affected by medicine, Chinese medicine and lifestyle

Age	Lower Limit	Upper Limit	Slightly high ($\leq 20\%$ above the limit)	Moderately high (Between 20%-50%)	Severely high (more than 50%)
20-24	10	16	17	20	24
25-29	11	18	19	22	27
30-34	12	18	19	22	27
35-39	13	20	21	24	30
40-44	14	22	23	27	33
45-49	15	23	25	28	35
50-54	16	25	27	30	38
55-59	17	27	29	33	41
60-64	18	30	32	36	45
65-69	20	32	34	39	48
70-74	22	35	37	42	53
75-79	23	38	40	46	57
80	25	39	41	47	59

Arterial pressure-volume index (API)

An index of volume of a conductive blood vessel.

It determines the arteriosclerosis level in the peripheral artery.

High risk of peripheral atherosclerosis when AVI value get higher

AVI value easily affected by medicine, Chinese medicine and lifestyle

Age	Lower Limit	Upper Limit	Slightly high ($\leq 20\%$ above the limit)	Moderately high (Between 20%-50%)	Severely high (more than 50%)
20-24	15	22	24	27	33
25-29	16	23	25	28	35
30-34	16	24	26	29	36
35-39	16	25	27	30	38
40-44	17	26	28	32	39
45-49	18	27	29	33	38
50-54	18	27	29	33	38
55-59	18	29	31	35	41
60-64	19	30	32	36	45
65-69	20	31	33	38	47
70-74	21	32	34	39	53
75-79	21	33	35	40	59
80	22	33	35	40	59

When AVI and API values are high, the following actions are recommended

Value	Detail explanation	Action
Slightly high ($\leq 20\%$ above the limit)	We recommend that you should have a cardiovascular examination. Also, develop healthy lifestyle, such as regular exercise, low-fat, low-sugar, low-sodium, and high-fiber diet, and control your weight to avoid further aggravation of arteriosclerosis	Having Pasesa review after 3 months
Moderately high (Between 20%-50%)	We recommend that you should have a comprehensive cardiovascular examination, and have treatment according to the doctor's advice	Having Pasesa review and adjust the treatment plan after 3 months
Severely high (more than 50%)	It generally indicates that there have cardiovascular disease. You should have medical treatment as soon as possible	Need to consult doctor as soon as possible

Abnormal AVI & API value explanation

	Normal	Upper Limit	Lower Limit	≤20% above the limit	Above the limit between 20%-50%	Above the limit more than 50%
AVI		High		The value is slightly higher. We recommend that you should develop healthy lifestyle, such as regular exercise, low-fat, low-sugar, low-sodium, and high-fiber diet, and control your weight to avoid further aggravation of arteriosclerosis	We recommend that you should develop a healthy lifestyle. Also, go to the hospital for comprehensive cardiovascular examinations regularly and receive preventive treatment based on the results to reduce the risk of serious cardiovascular diseases	It indicates that the risk of suffering from cardiovascular diseases (such as coronary heart disease, cerebral apoplexy) in the next few years is high, and need to have detailed cardiovascular examinations and appropriate treatment according to the doctor's advice
API		High				

AVI			Low	People who exercise regularly and have a healthy lifestyle. The value may be lower, since the blood vessel elasticity is better than normal people. However, in the perspective of Chinese medicine, it is a symptom that people are a deficiency of "Qi" and blood. They will appear weak and sick, pale and weak pulse, etc. In addition, for some people with low blood pressure, the measured value may be lower than the lower limit.
API			Low	

AVI	Normal			The API value will be affected by the changes in blood pressure or sympathetic nerve activity. Psychological tension will cause high API value It is recommended to take another measurement after rest. In addition, some studies have shown that upper arm resistance training will cause upper arm arterial stiffness. Therefore, people who regularly have arm resistance training may also have higher API value
API		High		

AVI		High		AVI and API reflect the stiffness of central and brachial arteries. The central artery stiffness is more closely related to the risk of cardiovascular disease. If the AVI values higher than the upper limit, it indicates a high risk of cardiovascular disease, and we recommend that you should go to the hospital for cardiovascular examination.
API	Normal			

AVI	Normal			AVI and API reflect the stiffness of central and brachial arteries. The central artery stiffness is more closely related to the risk of cardiovascular disease. If the AVI values higher than the upper limit, it indicates a high risk of cardiovascular disease, and we recommend that you should go to the hospital for cardiovascular examination.
API			Low	

AVI			Low	People who have low blood pressure, the central artery may be softer than normal people. It may cause low AVI value. Also, people who have arrhythmia will cause inaccurate measurement, we recommend that you should take another measurement after rest.
API	Normal			

PASESA Abnormal Result

- Arm circumference over or less than 19 - 32 cm
- Inappropriate posture during measurement
(Bend over, Sitting on a lower chairs, etc.)
- People who are taking medicine or feeling unwell
- Other factors such as measurement time, clothing, mood changes, etc.
- Please do not eat, drink alcohol, smoke, exercise or bath before measurement 30 minutes
- Please empty your bladder before measurement.
- Please take off thicker clothes such as coats and sweaters.
(Please do not measure when you rolling up your sleeves)
- Please rest more than 10 minutes and measure in a quiet and suitable environment

The result cannot appear properly after measurement

01

1. If the customer has arrhythmia, the result will not appear properly.

02

1. First, please doublecheck if the devices are properly connected (including the power supply)
2. Start measurement again
3. If still can't measure properly, please restart the device and try measurement again
4. If still can't measure properly, please contact our staff

PASESA 心血管檢測儀

THANK YOU