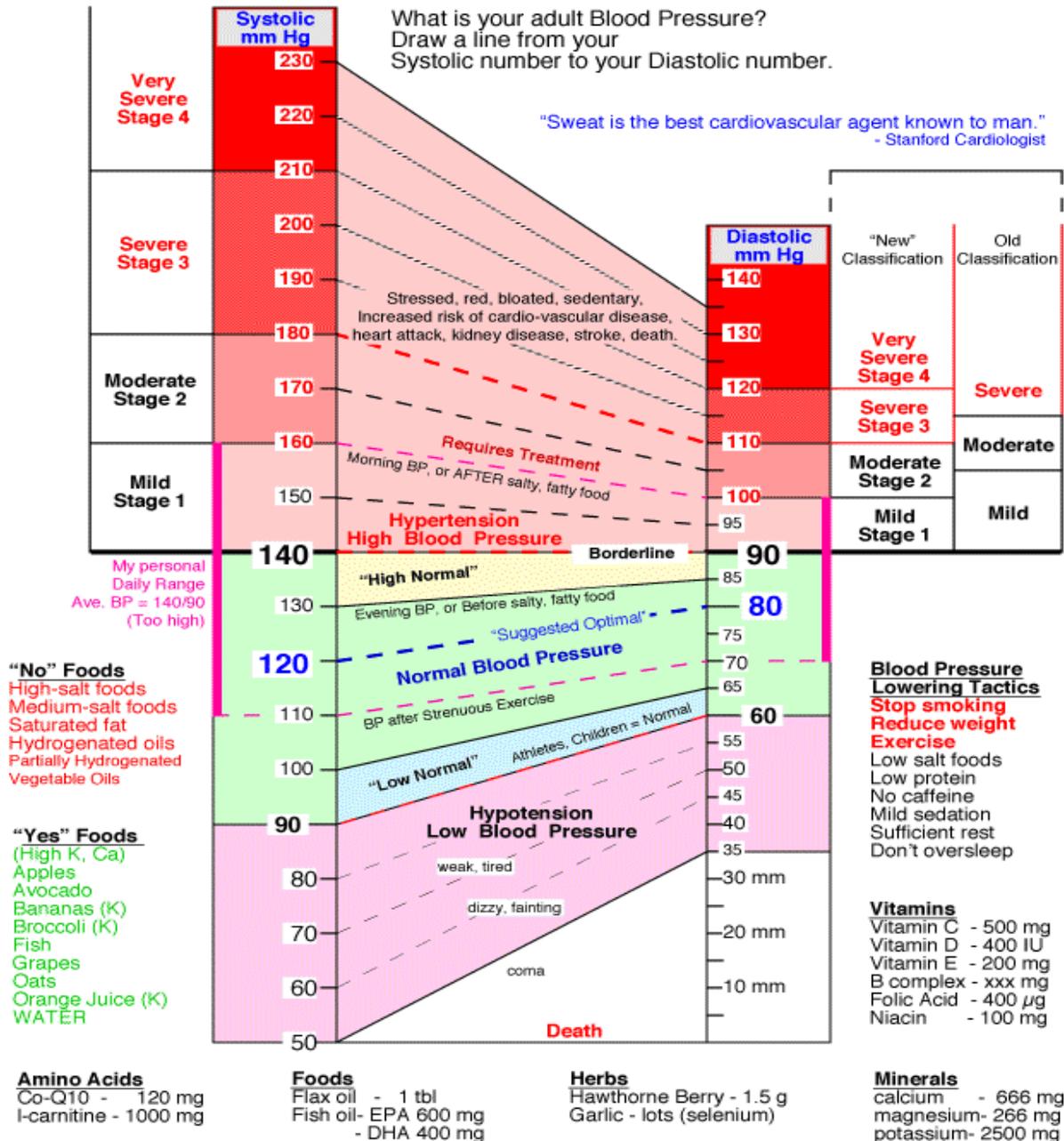


BLOOD PRESSURE CHARTS-RANGE-LEVELS

Vaughns-1-Pagers.com

Medical Summaries

Blood Pressure Chart



Human Blood Pressure Range Diagram

The 1st Number: Systolic pressure is the blood pressure when the heart muscle contracts.

The 2nd Number: Diastolic pressure is the blood pressure when the heart is relaxed.

What is Normal Blood Pressure?

Buy and use an automatic blood pressure monitor.

Compare your BP reading with the numbers on the chart above.

Draw a line from your systolic pressure to your diastolic pressure.

Is the slope of the line about the same as shown on the chart?

Where do YOU fit in? What are your risk factors?

Are your blood pressure readings within the normal blood pressure range?

Should you take anti-hypertension medication to lower your blood pressure?

Normal human daily Blood Pressure Range can vary widely, so any single blood pressure monitor reading is not reliable. BP monitor readings must be taken at different times of day, to determine AVERAGE blood pressure levels over time.

What is important is your AVERAGE BP, or MAP (Mean Arterial Pressure) over time. Or, where are those numbers sitting MOST of the time?

Normal MAP is about 93 mm of mercury.

Lowering Blood Pressure Tactics

How to Lower Your Blood Pressure

If you are very serious about lowering your BP, use a wrist blood pressure monitor daily. Graph your results, as I have below. KNOW your risk factors.

Reduce your salt intake, avoid saturated fats and hydrogenated oils, stop smoking, and exercise daily. You CAN lower your blood pressure naturally.



The 1st Number: Systolic pressure is the pressure generated when the heart contracts.

The 2nd Number: Diastolic pressure is the blood pressure when the heart is relaxed.

140/90 is considered borderline hypertension. Is your blood pressure higher than this?

NORMAL BLOOD PRESSURE BP READINGS RANGE

HIGH Blood Pressure Symptoms - Stressed, Sedentary, Bloating, Weak, Failing

Systolic - Diastolic

210 - 120 - Stage 4 High Blood Pressure

180 - 110 - Stage 3 High Blood Pressure

160 - 100 - Stage 2 High Blood Pressure

140 - 90 - Stage 1 High Blood Pressure

140 - 90 - BORDERLINE HIGH

130 - 85 - High Normal

120 - 80 - NORMAL Blood Pressure

110 - 75 - Low Normal

90 - 60 - BORDERLINE LOW

60 - 40 - TOO LOW Blood Pressure

50 - 33 - DANGER Blood Pressure

LOW Blood Pressure Symptoms - Weak, Tired, Dizzy, Fainting, Coma

Blood Pressure Levels Table

Here is essentially the same information presented above, in tabular format, with notes at the bottom.

Comment	Systolic	Diastolic	Pulse Pressure (S - D)	MAP
Far, Far, Far TOO HIGH Medication Is ABSOLUTELY NECESSARY To Prevent Heart Attack and Stroke	230	135	95	167
	225	130	95	162
	220	130	90	160
	215	125	90	155
	210	125	85	153
	205	120	85	148
	200	120	80	147
	195	115	80	142
	190	115	75	140
	185	110	75	135
Way Too High - Medication Is STRONGLY ADVISED	180	110	70	133
	175	105	70	128
	170	105	65	127
	165	100	65	122
Too High - Most Doctors Will Prescribe Meds	160	100	60	120
	155	95	60	115
	150	95	55	113
Borderline - Some Doctors Will Prescribe Meds	145	90	55	108
	140	90	50	107
	135	85	50	102
Good	130	85	45	100
	125	80	45	95
Very Good	120	80	40	93
	115	75	40	88
	110	70	40	83
Excellent	105	70	35	82

Children and Athletes	100	65	35	77
	95	65	30	75
	90	60	30	70
Too Low - Meds May Be Required To Prevent Fainting (Syncope)	85	55	30	65
	80	55	25	63
	75	50	25	58
	70	50	20	57
Far, Far, Far Too Low - MEDICATION REQUIRED	65	45	20	52
	60	45	15	50
	55	40	15	45
	50	35	15	43

BP Levels Table Notes (for chart above)

1. Why did I do this? I searched high and low on the Internet, and I could find nothing like this in one place - a Summary of human BP range, the Averages, and the Comments relating to each BP level.

2. How did I get the numbers? I started with the commonly seen "Systolic/ Diastolic pairs" seen in the literature - 200/120, 160/100, 140/90, 120/80 and 90/60. From there, I interpolated and extrapolated all the other numbers. Note that these are AVERAGE relationships. For instance, instead of 140/90, your BP may be 140/100, or 140/80. Each individual will have a unique systolic-diastolic relationship. If your S/D difference varies significantly from the averages shown above, this can be helpful in assessing your particular cardiovascular condition.

3. Fairly recently, the difference between Systolic and Diastolic pressure, named "Pulse Pressure", has been gaining interest in the research community. This Pulse Pressure has been found to correlate linearly with heart attack risk - the higher the number, the higher the risk. According to this theory, a BP of 140/ 90 (PP=50) is more desirable than a BP of 140/ 80 (PP=60).

This PP relationship at each pressure appears to be almost linear.

4. As for the comments, I have "averaged" the references made in the literature, since not all doctors agree upon the pressures at which to treat, and how aggressively to treat (multiple medications, type of meds, etc.). You can rest assured that the pharmaceutical companies prefer that you take medication at 135/80, since they sell the meds. Most doctors are not so aggressive. Remember that ALL medications have side effects. Heart medications have more serious side effects than any other class of prescription drugs.

5. Be aware of the "Circadian Rhythm" cycle. Your Blood Pressure is highly influenced by the time of day. For normal people, the highest BP occurs about midday, and the lowest at about 3-4 AM in the morning. For some people, described as "non-dippers", this early morning BP dip does not occur. For these people, highest blood pressure usually occurs around 6 AM to 9 AM in the morning. Some doctors are not aware of this, and make erroneous assumptions. A non-dipper may see 150/95 in the morning, and 130/85 in the evening. Non-dipping is usually associated with abnormal sleep conditions, such as sleep apnea, heavy snoring, drug and alcohol abuse, etc.

6. One blood pressure reading means very little. The advice to "Have your blood pressure checked once a year" is useless. What time of day? Had you eaten less salty foods recently? Were you relaxed that day, when you are usually much more stressed? Had you recently exercised vigorously? You must check your BP far more often than once a year, especially if you show "borderline" readings. I can produce a very low, or very high blood pressure AT WILL, based upon what I do during the 24 hours prior to the measurement.

7. Beware of "white coat syndrome", which results in a much higher BP reading than normal, due to the authoritative doctor, the foreboding, sterile exam room, and the smells such as alcohol and disinfectant. All this is not relaxing. Some unaware doctors may prescribe medication, when in fact, you don't need it at all. As soon as you leave the office, your BP returns to normal. This is another great reason to use your own automatic BP wrist monitor, so that you come to know your own body, and the effects of stress, food, mood, sleep, and time of day.

8. MAP = Mean Arterial Pressure. Three formulas are used to compute MAP. All three produce very similar results.

Above, I used Method #1 -

$$\text{MAP} = \text{DP} + (1/3 (\text{SP} - \text{DP}))$$

Ideal Mean Arterial Pressure is defined as 93 mm of mercury, which corresponds to 120/80.

Alternative Method #2 -

$$\text{Also, MAP} = (2/3 \text{ DP}) + (1/3 \text{ SP})$$

Alternative Method #3

$$\text{MAP} = ((2 * \text{DP}) + \text{SP}) / 3$$

Where SP= Systolic Pressure,

And DP= Diastolic Pressure

Use A Digital Blood Pressure Monitor

Buy a digital blood pressure monitor, and use it daily. Become aware of your blood pressure range, and how it varies throughout the day. Graph your BP readings. Find out the influence

of foods, and moods. My old Omron Model HEM-608 digital wrist blood pressure monitor was great, but it finally failed. I now use an Omron HEM-650, and an Omron BP-652.

Wrist blood pressure monitors are inexpensive and accurate, if used according to directions. The wrist monitor must be carefully positioned at "heart height", to achieve accurate results. Relax a few moments after you sit down, before you take your reading. Don't move or talk while measuring.

How much do you care?

Record your blood pressure monitor data over time, in MS Excel format.

Here is a sample from my personal Blood Pressure Data, and Heart Rate Variation (HRV) data

		1		2		3		4																	
		As a general overall PULSE index, I sum the 4 pulse readings ->																Pulse delta		Overall					
		As an general overall pressure index, I sum the 4 Systolic and 4 Diastolic readings -> Pressure																Pulse		Heart					
		Four consecutive readings - to test consistency and repeatability																Check		Check		Notes		Health	
Date	Notes	Time	Sys.	Dias.	P	Sys.	Dias.	P	Sys.	Dias.	P	Sys.	Dias.	P	-sum	-sum	beats	%			Index				
M	2-03	9AM	148	87	61	137	84	61	124	77	60	130	79	62	866	244	2				11				
		3PM	127	77	75	126	72	74	122	73	73	122	67	73	786	295	2				11				
T	2-04	6PM	125	75	64	125	75	62	117	77	63	118	74	64	786	253	2				10				
W	2-05	10AM	146	86	62	134	78	63	134	77	61	125	76	61	856	247	2		new batteries		11				
		10PM	131	74	74	123	71	73	120	66	71	110	68	71	763	289	3				11				
T	2-06	5PM	127	75	66	133	74	64	124	74	63	119	73	63	799	256	3				11				
F	2-07	noon	141	80	68	134	76	65	121	80	66	132	72	65	836	264	3				11				
S	2-08	11AM	151	85	66	134	86	66	138	83	65	131	84	66	892	283	1				12				
		noon	143	83	74	137	81	73	128	77	73	116	76	75	841	295	2				11				
S	2-09	11AM	129	79	78	138	78	77	125	78	77	130	75	75	832	307	3				11				
W6 Average =			137	80		132	78		125	76		123	74		826	271	2				11.0				
												Target =			840	300									

The V.A. Method of Heart Health Self-Monitoring and Analysis

(Primary assumptions - Low Systolic is good, low Diastolic is good, and low Pulse rate is good.)

1. At least two measurement sessions are performed EVERY DAY.
2. At each measurement session, I take 4 readings (consistency and repeatability check - both monitor and patient).
3. The 8 BP readings are summed in the Pressure Checksum column.
4. The 4 pulse readings are summed in the Pulse Checksum column.
5. The "Pulse delta Beats" column gives HRV - the delta between the lowest and the highest of the 4 readings. Excel does not do this, I do this by eye and by hand.
6. The "Overall Heart Health Index" column gives an "OVERALL HEART HEALTH INDEX" consisting of both BP and HRV data combined, using the formula: BP Checksum plus Pulse Checksum divided by 100.

My OHHI has varied from 15 (very bad) to 9 (very good) - a value of 12 is borderline.

This index is weighted toward BP, since it is usually considered more important than pulse rate (2 BP readings vs. 1 pulse reading). A simplified 2-reading system could be employed, but

that would be inadequate for HRV sampling purposes. There is far more variation between 4 readings than 2 readings, if there is any inconsistency in the measuring device, measuring technique, or high HRV (i.e., atrial fibrillation, as in my case) is present.

(You would never be expected to study your blood pressure in such detail as I have done above. I just wanted to show you my system of monitoring my own BP, HRV, and any trends. I go overboard with the HRV study, because I am in Permanent Atrial Fibrillation. - my heart has had no "sinus rhythm", or "built-in pacemaker", since March 2003.)

Lowering High Blood Pressure Tactics

1. AWARENESS - Use a wrist monitor frequently - the higher your pressure, the more often you should check it, to get it down.

2. DESIRE - Do you want to live? Live better?

3. ACTIONS

Stop Smoking

Exercise Daily

Reduce Weight

DIET:

Reduce Salt Intake

Reduce Saturated Fat

NO "hydrogenated anything"

NO TFAs (trans fatty acids)! ("Partially hydrogenated anything")

4. Clothing

Do not wear tight-fitting clothing, especially socks. When you remove your socks, is there a fairly deep impression where the elastic has just been? This constriction can raise blood pressure substantially. Make your own blood pressure measurements, with and without the tourniquet socks. I have cut the elastic bands on all of my socks, in two places.

No Caffeine

Mild Sedation

Sufficient Rest

Don't Oversleep

Use a wrist blood pressure monitor, frequently

(COURTESY: VAUGHN AUBUCHON)