

# INSTRUCTION MANUAL

## *Deluxe SmartRead® Plus Automatic Wrist Digital Blood Pressure Monitor with Memory and Alarm*

Model 04-239-001

Please read this instruction manual  
completely before operating this unit.



# Lifetime Limited Warranty

MABIS Healthcare guarantees that its Digital Blood Pressure Monitor will be free from manufacturing defects under normal use for as long as the original purchaser owns the product.

This warranty covers only normal use, and does not apply to use in any clinical or commercial applications. This warranty does not cover batteries or other power sources that may be provided with or used with the Digital Blood Pressure Monitor. This warranty is voided if the Digital Blood Pressure Monitor product is misused or abused in any manner.

If the Digital Blood Pressure Monitor fails to operate during the time the original purchaser owns it, return it postage prepaid along with \$5.00 for return shipping and insurance to: MABIS Healthcare, Attn: Repair Department, 1931 Norman Drive, Waukegan, IL 60085. When returning a product, please also include a letter with your name, address, phone number and brief description of the specific problem. Please carefully package the product to avoid any damage that may occur while in the transit. Packaging insurance with returned receipt is recommended. MABIS will repair or replace the defective unit at the option of MABIS Healthcare. Repair or replacement of the defective unit, at the warrantor's option, is the sole remedy under this warranty.

ANY IMPLIED WARRANTIES WHICH THE PURCHASER MAY HAVE ARE LIMITED IN DURATION TO THE TIME THAT THE ORIGINAL CONSUMER PURCHASER OWNS THE PRODUCT. Some states do not allow limitations or how long an implied warranty lasts, so the above limitation may not apply to you.

This warranty constitutes the warrantor's only responsibility and obligation to repair and/or replace materials or components, or refund the purchase price. **MABIS will not be responsible for any indirect, incidental, special, consequential, or punitive damages or other loss**, including, but not limited to, damage to or loss of other property or equipment and personal injuries, whether to purchaser or others. MABIS shall in no event be liable to the purchaser for any amount in excess of the cost of repair and/or replacement of the unit, or the purchase price of the unit. Some states do not allow the exclusive or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Toll-Free Information Line:

1-800-622-4714

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# Index

Introduction	2
Product Identification and Caution	3
General Blood Pressure Information	4-6
Important Information Before Use	7
Battery Installation/Replacement	8
Setting the Date/Time	9
Setting the Alarm Clock	10-11
Applying Your Blood Pressure Cuff	12-13
Taking Your Blood Pressure Reading	14-15
Recalling Measurements in Memory	16
Clearing Measurements in Memory	17
Description of Display Symbols	18
Troubleshooting	19
Error Codes	20
Care and Maintenance	20
Product Specifications	21
Sample Blood Pressure Log	22
Blood Pressure Log	23

## Introduction

*To achieve the maximum benefit from your blood pressure monitor, we recommend that you first consult with your physician or trained health care professional.*

Thank you for purchasing an Automatic Blood Pressure Monitor. With proper care and use, your monitor will provide you with many years of reliable readings.

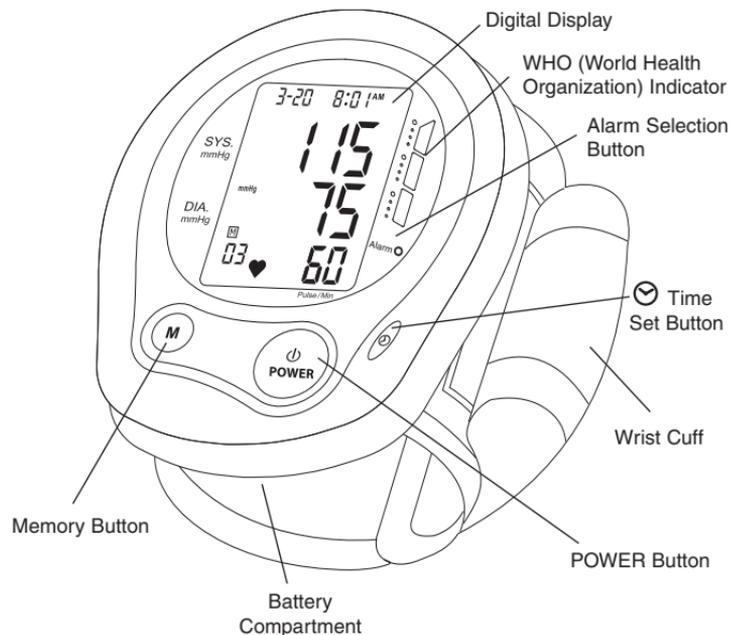
The method of measurement that your Automatic Monitor uses is called the oscillometric method. The monitor detects your blood's movement through the artery in your wrist and converts the movements into a digital reading. The oscillometric method does not require a stethoscope, making the monitor easy-to-use. The preformed cuff requires little effort to apply and is comfortable to wear.

Clinical research has proven a direct relationship between blood pressure in the wrist and blood pressure in the arm. Because the arteries in the wrist and arm are connected, changes in wrist blood pressure reflect changes in arm blood pressure. Frequent wrist blood pressure measurements will provide you and your physician with an accurate indication of change in your true blood pressure.

**People with severe hypertension, severe arteriosclerosis, or severe diabetes, should consult their physician about monitoring blood pressure at the wrist.**

*Blood pressure readings determined with this device are equivalent to measurements obtained by a trained observer using the cuff/stethoscope auscultation method, within the limits prescribed by the American National Standard for Electronic or Automated Sphygmomanometers.*

## Product Identification and Caution



### Caution

While taking a measurement, you can stop the inflation or deflation process of the cuff at any time by pressing the POWER button.

# General Blood Pressure Information

## ***What is Blood Pressure?***

Blood pressure is the pressure that is exerted by blood flowing against the walls of the blood vessels throughout your body.

Your heart, which is the center of the circulatory system, provides the force for the blood to flow or circulate. When your heart contracts or beats, the blood is forced through the blood vessels increasing the pressure. This is the highest pressure in the cycle or what is referred to as **SYSTOLIC BLOOD PRESSURE**. In between beats, your heart relaxes and your blood pressure decreases. This is referred to as **DIASTOLIC BLOOD PRESSURE**.

This complete series of events which occurs in a single heartbeat is known as the **CARDIAC CYCLE**.

Your Digital Blood Pressure Monitor will automatically read your blood pressure and display both systolic and diastolic readings on the screen. Your systolic will be positioned as the upper number and the diastolic reading will be the lower number.

(systolic) **120/80** (diastolic)

Blood pressure is measured in millimeters (mm) of Mercury (Hg) and is generally recorded with the systolic pressure (120) listed first and the diastolic pressure (80) listed second. The numbers are typically separated by a slash mark (/) as shown above.

*Both pressure readings, the SYSTOLIC and the DIASTOLIC, are necessary for a physician to evaluate the status of a patient's blood pressure.*

*Please contact your physician for specific information regarding your own blood pressure.*

## ***What Influences Blood Pressure?***

Many factors such as genetics, age, sex, altitude, physical activity, anxiety, muscular development, certain medications or even the time of day can influence blood pressure. Influences such as sleep or relaxation decreases blood pressure, while anxiety or exercise increases blood pressure.

## ***Why Monitor Your Blood Pressure at Home?***

A visit to a physician's office can be a stressful situation for a patient. And, anxiety is a known factor in raising blood pressure. This temporary occurrence of elevated blood pressure at the physician's office is commonly referred to as "white coat syndrome".

Whether or not you experience "white coat syndrome", home blood pressure monitoring provides you with the opportunity to supplement your physician's office measurements. These home readings, when taken over a period of time, can show an accurate indication of change. Furthermore, your records can assist your physician in evaluating your health and in making important decisions in the diagnosis and treatment of your condition. Because of this, it is important to take consistent, daily measurements of your blood pressure.

*The variations in your individual readings should only be interpreted by your physician or a trained health care professional.*

## ***WHO Blood Pressure Classifications***

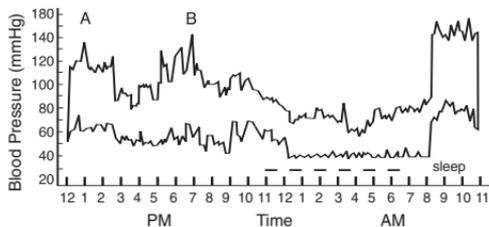
Standards for assessment of high or low blood pressure, regardless of age, have been established by the World Health Organization (WHO) as shown in the chart on the following page.

CATEGORY	SYSTOLIC (mmHg)	DIASTOLIC (mmHg)
Optimal	<120	<80
Normal	<130	<85
High - Normal	130-139	85-89
Mild Hypertension	140-159	90-99
Borderline	140-149	90-94
Moderate Hypertension	160-179	100-109
Severe Hypertension	≥180	≥110
Isolated Systolic Hypertension	≥140	<90
Borderline	140-149	<90

*This chart is only a general guideline. Please contact your physician to determine your **NORMAL BLOOD PRESSURE**.*

### **Variations in Blood Pressure**

Blood pressure can be influenced by many factors. This change can occur from moment to moment. Normally, blood pressure is lowest during the sleeping period and rises during the day. The graph below represents the variations in blood pressure shown over a day with measurements taken every 5 minutes.



The dotted line represents the sleep period. The rise in blood pressure at 1 PM (A in the graph) corresponds to a stressful occurrence and at 7 PM (B in the graph) a period of exercise.

## Important Information Before Use

- Blood pressure measurements should only be interpreted by a physician or a trained health care professional who is familiar with your medical history. Through regular use of this device and recording of your measurements, you can keep your physician informed of the changes in your blood pressure.
- Perform your measurement in a quiet place. You should be seated in a relaxed position.
- Avoid smoking, eating, taking medication, alcohol consumption or physical activity 30 minutes prior to taking a reading. If you are exhibiting signs of stress, avoid taking your measurement until the feeling subsides.
- Rest 15 minutes prior to taking a reading.
- Remove any constrictive clothing or jewelry that may interfere with the cuff placement.
- Apply the cuff to the proper position on the left wrist. The unit should be located on the inside of your left wrist with the display panel in view.
- Keep the monitor stable during measurement to achieve an accurate reading. Remain still; do not talk during the measurement.
- Record your daily blood pressure and pulse readings on a chart.
- Take your readings at the same time, each day (or as recommended by your physician) to get an accurate indication of change in your true blood pressure.
- Wait a minimum of 15 minutes between readings to allow for the blood vessels to return to normal. The wait time may vary depending on your individual physiological characteristics.
- Although such cases are rare, for those with an extremely weak pulse or irregular pulse, errors may result which prevent proper measurement. If abnormal variations are noticed, consult with your physician or trained healthcare professional.
- This device is intended for adult use.

*While taking a measurement, you can stop the inflation or deflation process of the cuff at any time by pressing the **POWER** button.*

## Battery Installation/Replacement

Replace the batteries when the Low Battery symbol appears on the display, *Fig. 1*, or when the display remains blank when the POWER Button is pressed.

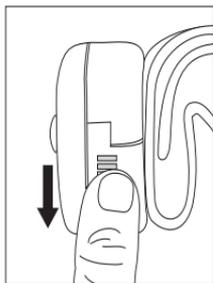
To change the batteries:

1. Open the battery cover, *Fig. 2*.
2. Making sure the battery polarity is correct, install two AAA alkaline batteries, *Fig. 3*.
3. Close the battery cover, *Fig. 4*.

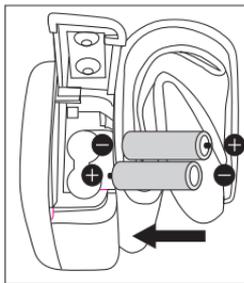
**NOTE:** It is recommended to remove the batteries if the unit will not be used for an extended period of time.



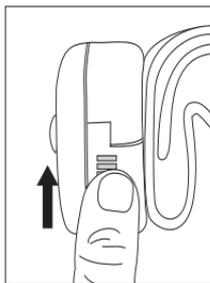
*Fig. 1*



*Fig. 2*



*Fig. 3*



*Fig. 4*

## Setting the Date/Time

1. Press the Time Set Button  to enter into the Time Adjustment mode. The blinking Month will display, *Fig. 1*.
2. Press the 'M' button to change.
3. Press the Time Set Button  to confirm entry.
4. The blinking Date, *Fig. 2*, followed by Year, Hour and Minutes will display. Repeat steps 2 and 3 to adjust the date/time setting.
5. Your unit is now ready to take a reading, or press the POWER button to turn the unit off, *Fig. 3*.



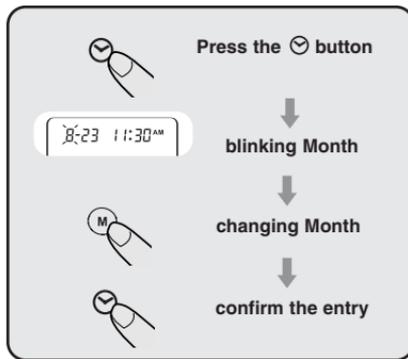
*Fig. 1*



*Fig. 2*



*Fig. 3*



# Setting the Alarm Clock

Your automatic digital blood pressure monitor features an alarm clock. The alarm can be set to ring at three different times in the day. The alarm is especially helpful if you are required to measure your blood pressure at specific times (for example: 7:00 a.m., 12:00 p.m. and 10:00 p.m.).

To set the alarm clock:

1. Using a small pointed object, such as a paper clip, press the Alarm Button to enter into the alarm setting mode.
2. Continue to press the Alarm Button to select the alarm to adjust, *Figs. 1-3*.

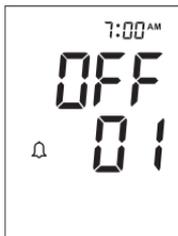
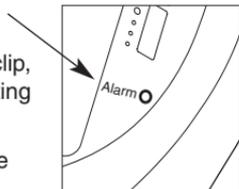


Fig. 1

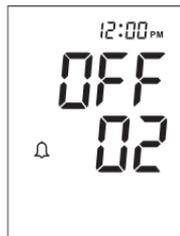


Fig. 2



Fig. 3

3. With the chosen alarm screen displayed, the hour will begin to flash at the top of the screen, *Fig. 4*. Press the 'M' Button to change the hour. Once the correct hour is displayed, press the Time Set  Button to confirm.

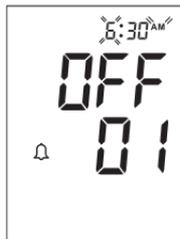


Fig. 4

4. After the hour is confirmed, the minutes will begin to flash, *Fig. 5*. Press the 'M' Button to change the minutes. Once the correct minutes are displayed, press the Time Set  Button to confirm.
5. The alarm feature must be turned on immediately after setting the time for the alarm. Press the 'M' Button to turn the alarm on, *Fig. 6*. Press the 'M' Button a second time to turn the alarm off, *Fig. 7*.
6. Press the POWER Button to turn the unit off.

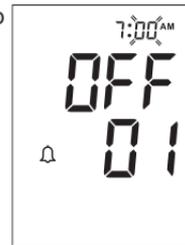


Fig. 5

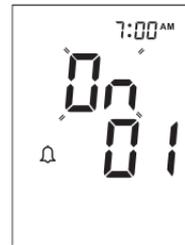


Fig. 6

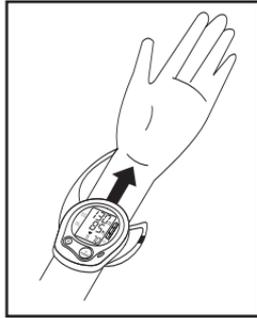


Fig. 7

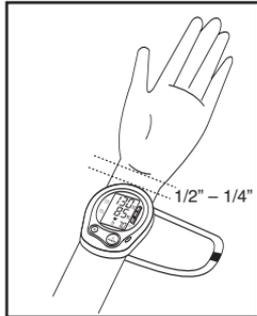
# Applying Your Blood Pressure Cuff

Avoid smoking, eating, taking medication, alcohol consumption or physical activity 30 minutes prior to taking a reading. If you are exhibiting signs of stress, avoid taking your measurement until the feeling subsides. Rest 15 minutes prior to taking a reading.

1. Remove any constrictive clothing or jewelry that may interfere with the cuff placement.
2. You should be seated with your feet flat on the floor.
3. Hold your left arm in front of you with your palm facing upward.
4. Apply the preformed cuff to your left wrist. The digital display panel should be positioned on the inside area of your wrist facing you, *Fig. 1*.
5. Adjust the cuff as shown in *Fig. 2* from the edge of the 'Head of the Ulna Bone.'



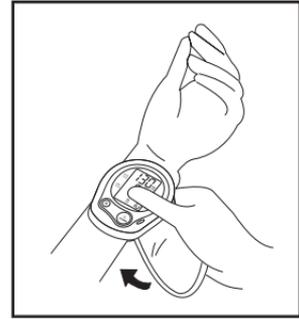
*Fig. 1*



*Fig. 2*

6. Wrap and fasten the cuff securely, yet comfortably around your wrist, *Fig. 3*.

**NOTE:** The left wrist should be used unless you are unable to or should not use your left arm or wrist. In consultation with your physician, you may modify the following instructions and apply the cuff to your right wrist.



*Fig. 3*

# Taking Your Blood Pressure Reading

Proceed only after reading the previous sections of this manual.

1. Rest your elbow as shown on a table with your palm facing upward. **Raise your hand so that the cuff is at the same level as your heart**, Fig. 1. Relax your hand.
2. Press the POWER button. This will turn the power on and start the measurement process.
3. For a brief moment, the unit will run a self-test, Fig. 2.
4. After the self-test, the values for the last reading will appear on the display, Fig. 3.
5. The cuff will automatically begin to inflate, with the display showing the increasing pressure in the cuff. As the pressure increases, an arrow pointing up will appear on the display, Fig. 4.
6. Upon reaching the optimum level, the display will show the decreasing pressure, Fig. 5, by displaying an arrow pointing down.

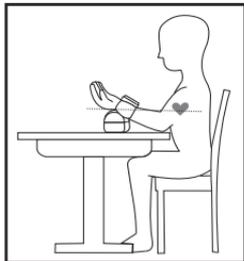


Fig. 1

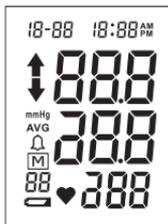


Fig. 2



Fig. 3

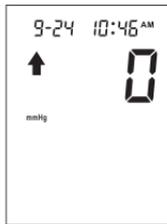


Fig. 4



Fig. 5

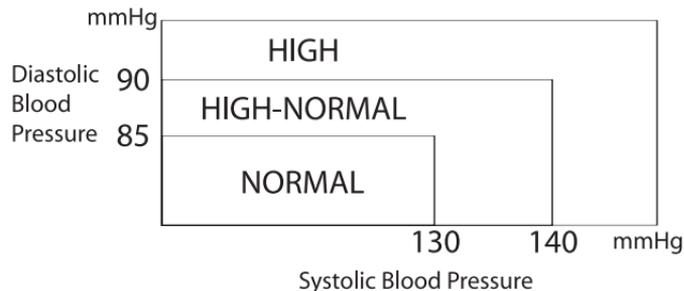
7. Your blood pressure (systolic and diastolic) measurement and pulse rate will be simultaneously displayed, Fig. 6.
8. Your reading will be automatically stored in memory.
9. The WHO Indicator, located to the right of the digital display, Fig. 7, will indicate your reading in a range (normal, high-normal, high) in accordance with standards set by the World Health Organization (WHO), (see chart below).
10. To conserve energy, press the POWER button to turn the unit off. Otherwise, the unit will automatically shut off after approximately 2 minutes.



Fig. 6



Fig. 7



## Recalling Measurements in Memory

You can recall up to 60 measurements plus an average of all currently stored measurements in memory to share with your physician or trained healthcare professional.

1. Press the 'M' button. The first reading displayed is the average of all measurements stored in memory. The letters 'AVG' will appear on the display, *Fig. 1*.
2. Continue to press the 'M' button to view the next previously stored measurement, *Figs. 2-3*.

**NOTE:** The memory bank can store up to 60 readings. When the number of readings exceeds 60, the oldest data will be replaced with the new record.



*Fig. 1*



*Fig. 2*



*Fig. 3*

## Clearing Measurements in Memory

With the unit turned off, press and hold the 'MEM' button until 'CLR' appears on the display, *Fig. 1*. This function will clear the memory of all previously stored measurements.

**NOTE:** The unit must be powered off before the memory can be cleared.



*Fig. 1*

## Description of Display Symbols

SYMBOL	CONDITION	ACTION
	Appears when pulse reading is displayed.	Record pulse reading.
	Appears when recalling a measurement from memory.	Memory recall function in progress.
	Appears when battery voltage is excessively low.	Replace batteries with new ones.
	Appears when alarm is set.	Alarm function active.
	Appears when cuff is inflating.	Measurement in progress.
	Appears when cuff is deflating.	Measurement in progress.

## Troubleshooting

If any abnormality occurs during use, please check and correct the following:

### Condition

### Correction

Display is blank when power is on.

Check and correct the polarity of the installed batteries. Reinstall or replace batteries.

Measurement incomplete or abnormally low or high values displayed.

Review and follow 'Applying Your Blood Pressure Cuff' and 'Taking Your Blood Pressure Reading' sections. Replace the batteries.

Measurements are different from those typically measured by physician or every measurement reading is different.

Remember, blood pressure readings are influenced by physical and mental conditions and/or even the time of day. Daily measurement recordings should be interpreted by your physician.

## Error Codes

<b>Err 0</b>	No pulse is detected
<b>Err 1</b>	Inflation rate is too low
<b>Err 2</b>	Systolic reading unattainable
<b>Err 3</b>	Cuff pressure is too high
<b>Err 4</b>	Diastolic pressure is outside of operation range
<b>Err 5</b>	Cuff deflated too fast
<b>Err 6</b>	Cuff deflated too slow
<b>Err 7</b>	Systolic pressure is outside of operation range
<b>Err 8</b>	Overall pressure is outside of operation range
<b>Err 9</b>	Cuff is unable to inflate to the necessary pressure level

## Care and Maintenance

1. Only use a soft, dry cloth to clean your blood pressure monitor.
2. Avoid using any types of liquids on the monitor or cuff.
3. Store your monitor in the provided storage case when not in use.
4. Do not store the unit where it will be exposed to direct sunlight, dust or humidity. Avoid extreme temperatures.
5. Never disassemble the monitor or cuff.
6. Dropping or subjecting your blood pressure monitor to strong shocks should be avoided.

## Product Specifications

<b>Name and Model Number</b>	MABIS Deluxe SmartRead® <i>Plus</i> Automatic Digital Wrist Blood Pressure Monitor, 04-239-001
<b>Display System</b>	Digital display/LCD
<b>Measuring Method</b>	Oscillometric
<b>Power Source</b>	2 AAA batteries
<b>Measuring Range</b>	Pressure: 30 to 280 mmHg Pulse: 40-200 beats/minute
<b>Accuracy</b>	Pressure: $\pm 3$ mmHg; Pulse: $\pm 4\%$ of reading
<b>Pressurization</b>	Automatic pressurization by pump
<b>Deflation</b>	Automatic pressure release valve; Optimum cuff inflation level determined by Fuzzy Logic
<b>Memory</b>	Built-in memory enabling display of up to 60 measurements plus average of all currently stored measurements
<b>Alarm Clock Tone</b>	Monitor will sound three times per day if activated
<b>WHO Indicator</b>	Indicator light illuminates
<b>Automatic Power Off</b>	Approximately 2 minutes after last button operation
<b>Battery Life</b>	Approximately 300 measurements
<b>Operation</b>	
<b>Temperature</b>	50°F – 104°F (10°C – 40°C)
<b>Humidity</b>	15% to 95% RH (non-condensing)
<b>Storage</b>	
<b>Temperature</b>	-4°F – 122°F (-20°C – 50°C)
<b>Humidity</b>	15% to 95% RH (non-condensing)
<b>Weight</b>	4.1 oz. (without batteries)
<b>Dimensions</b>	2-3/4" x 3-1/4" x 1-1/4"
<b>Wrist Circumference Range</b>	Suitable for 5" – 8-1/4" (12-1/2 – 21 cm)
<b>Accessories</b>	Storage case, Instruction Guidebook, two AAA alkaline batteries, Quick Start Guides

Specifications are subject to change without notice.

# Sample Blood Pressure Log

Name: \_\_\_\_\_ Age: \_\_\_\_\_ Weight: \_\_\_\_\_

Date	1/2	1/2	1/3															
Time	7:00 AM	9:30 PM	7:30 AM															
mmHg																		
240																		
220																		
200																		
180																		
160																		
140																		
120																		
100																		
80																		
60																		
Pulse	68	71	69															
Body Condition	Headache in AM	—	Tired, Restless Night															

# Blood Pressure Log

Name: \_\_\_\_\_ Age: \_\_\_\_\_ Weight: \_\_\_\_\_

Date																		
Time																		
mmHg																		
240																		
220																		
200																		
180																		
160																		
140																		
120																		
100																		
80																		
60																		
Pulse																		
Body Condition																		