THE PRESENT INVENTION

According to a first aspect of the present invention, there is provided a signal acquisition device for acquiring signals which can be used to derive a measurement of the blood pressure of a user, the signal acquisition device being adapted to be integrated with a personal hand-held computing device (PHHCD) to produce a personal hand-held monitor (PHHM), wherein the signal acquisition device comprises a blood flow occlusion means adapted to be pressed against one side only of a body part or to have one side only of a body part pressed against it, a means for measuring the pressure applied by or to the body part, and a means for detecting the flow of blood through the body part in contact with the blood flow occlusion means, wherein the blood flow occlusion means comprises a button, the surface of which is adapted to be brought into contact with the body part, and the means for measuring the pressure includes a sensor for determining the force applied to the button.

There is also provided a personal hand-held monitor (hereafter "a PHHM") comprising a signal acquisition device for acquiring signals which can be used to derive a measurement of a parameter related to the health of the user, the signal acquisition device being integrated with a personal hand-held computing device (hereafter "a PHHCD").

The PHHM of the present invention must be of such a size and weight that it can readily be manipulated by a normal adult using one hand to hold the PHHM and the other hand to enter or retrieve data. Preferably, the PHHCD includes communications facilities, such as WiFi or wireless telephone connectivity.

By "integrated" is meant that the signal acquisition device and the PHHCD form a single physical unit wherein the signal acquisition device and the PHHCD remain in fixed relationship when either is moved. All electrical connections are provided within the PHHM.

The acquired signals may be analogue or digital and, if analogue, may be converted to digital form for subsequent analysis by the processor of the PHHCD or for analysis by a remote data processing facility with which the PHHCD communicates using the Internet or other data communication means.

The PHHCD with which the signal acquisition device is integrated may be a cellphone, a tablet computer, a PDA or any other computing device which can readily be manipulated by a normal adult using one hand to hold the device and the other hand to enter or retrieve data.

The present invention merges medical technology with PHHCD technology by combining proven technological principles with novel implementation to create a PHHM which allows its user to acquire measurements of personal health data solely by using the PHHM. If desired, the user may communicate those measurements to other parties.

CLAIMS

1. A signal acquisition device for acquiring signals which can be used to derive a measurement of the blood pressure of a user, the signal acquisition device being adapted to be integrated with a personal hand-held computing device (PHHCD) to produce a personal hand-held monitor (PHHM), wherein the signal acquisition device comprises a blood flow occlusion means adapted to be pressed against one side only of a body part or to have one side only of a body part pressed against it, a means for measuring the pressure applied by or to the body part, and a means for detecting the flow of blood through the body part in contact with the blood flow occlusion means, wherein the blood flow occlusion means comprises a button, the surface of which is adapted to be brought into contact with the body part, and the means for measuring the pressure includes a sensor for determining the force applied to the button.

2. The signal acquisition device of claim 1, wherein the means for detecting the flow of blood employs an oscillometric method.

3. The signal acquisition device of claim 1, wherein the means for detecting the flow of blood is an optical sensor.

4. The signal acquisition device of any one of Claims 1 to 3, wherein the button comprises a plurality of elements, each of which is connected to a separate force sensor.