Claims

1. A health monitoring device comprising:

a housing including a body, and a base with a first aperture;

a temperature sensor mounted on a printed circuit board housed within the body and arranged to measure temperature of an animal in direct contact with the temperature sensor;

a wireless transmitter for transmitting the measured temperature;

wherein the base is provided with a first layer of adhesive tape for attaching the base to the animal, wherein the first layer of adhesive tape is defined with a second aperture aligned with the first aperture of the base;

wherein the temperature sensor at least partly extends through both the first aperture of the base and the second aperture of the first layer of adhesive tape, such that the temperature sensor contacts the animal; and

wherein the health monitoring device further comprises a second layer of adhesive tape to secure the body to the base via the first layer of adhesive tape, in which the first layer of adhesive tape is defined with an outer portion extending beyond an underside of the base, the body includes a peripheral margin, and the second layer of adhesive tape is provided in a form of a ring which fits over the body of the housing and includes an outer portion which extends beyond the peripheral margin of the body, the outer portion of the second layer of adhesive tape being securable to the outer portion of the first layer of adhesive tape.

2. The health monitoring device according to claim 1, wherein the first layer of adhesive tape and second layer of adhesive tape comprise medical tape or dry surgical tape.

3. The health monitoring device according to claim 1, wherein the wireless transmitter is capable of transmitting any or any combination of WiFi, Bluetooth, and Infra-red.

4. The health monitoring device according to claim 1, wherein the body includes a battery and a pull tab connected to a plastic spacer strip between the battery and an electrical contact, such that removing the plastic spacer strip via the pull tab activates the health monitoring device.

5. The health monitoring device according to claim 1, wherein the housing is shaped and sized to fit in a space between a tail and an anus of the animal.

6. The health monitoring device according to claim 1, wherein the animal is a horse.

7. The health monitoring device according to claim 1, further comprising a receiver including an application on a mobile device which can transmit an alert for selected indicators to a predetermined person.

8. The health monitoring device according to claim 7, further comprising an indicator including any or any combination of the following: normal temperature range, top end of normal temperature range, fever, critically high fever, low temperature, and/or no signal.

9. The health monitoring device according to claim 1, further comprising a heart rate sensor arranged to monitor a heart rate of the animal and/or a motion sensor arranged to detect a physical movement of the animal.

10. The health monitoring device according to claim 1, wherein each of the first layer of dry surgical tape and the second layer of dry surgical tape comprises adhesives on one side of each of the first and the second layer of dry surgical tapes, such that the first layer of dry surgical tape is capable of adhering to a skin surface of the animal, and the second layer of dry surgical tape is capable of adhering to the housing at the peripheral margin of the body and an opposite side of the first layer of dry surgical tape extending from the base so as to secure the body to the base.

11. The health monitoring device according to claim 1, further comprising a biosensor arranged to detect at least one of viruses, bacteria, antibodies, cancerous cells, and biomarkers in blood or interstitial fluid of the animal.

12. The health monitoring device according to claim 11, wherein the biosensor comprises a microchip sensor having a plurality of micro-needles, arranged to be inserted or in contact with the animal, so as to detect the at least one of viruses, bacteria, antibodies, cancerous cells, and biomarkers in the blood or the interstitial fluid of the animal.

13. The health monitoring device according to claim 12, wherein the biomarkers includes at least one of Acute Phase Proteins, Serum Amyloid A (SAA) and Fibrinogen.

14. The health monitoring device according to claim 11, wherein the biosensor is mounted on the printed circuit board housed within the body, and the biosensor at least partly extends through both the first aperture of the base and the second aperture of the first layer of dry surgical tape and to be in contact with the animal.

15. The health monitoring device according to claim 1, wherein the housing includes an insulating layer arranged to insulate the temperature sensor from an external environment.

16. The health monitoring device according to claim 1, wherein the housing includes a protective layer arranged to cushion a plurality of internal components from an external physical force.

17. A health monitoring device comprising:

a housing including a body with a peripheral margin, and a base with a first aperture;

a ring of dry surgical tape secured to the peripheral margin with an outer portion extending laterally beyond the peripheral margin;

a first layer of dry surgical tape provided on an underside of the base with an outer portion extending laterally beyond the base; the first layer of dry surgical tape having a second aperture aligned with the first aperture in the base;

a second layer of dry surgical tape to secure the body to the base via the first layer of dry surgical tape, wherein the second layer of dry surgical tape is provided in form of a ring which fits over the body of the housing and includes an outer portion which extends beyond the peripheral margin of the body;

a temperature sensor at least partly extending from the body through the first aperture in the base and the second aperture in the first layer of dry surgical tape;

a wireless transmitter and an antenna at least partly extending from the housing for transmitting temperature measurements from the temperature sensor to a wireless device running a monitoring application;

wherein each of the first layer of dry surgical tape and the second layer of dry surgical tape comprises adhesives on one side of each of the first and the second dry surgical tapes, such that the first layer of dry surgical tape is capable of adhering to a skin surface of an animal, and the second layer of dry surgical tape is capable of adhering to

the housing at the peripheral margin of the body and an opposite side of the first layer of dry surgical tape extending from the base so as to secure the body to the base;

wherein the outer portion of the ring of the second layer of dry surgical tape is adhered to the outer portion of the layer of the first layer of dry surgical tape to secure the body to the base; and wherein the layer of dry surgical tape can adhere to a horse at a location beneath a tail of the horse such that the temperature sensor contacts skin of the horse;

wherein the health monitoring device further comprises a motion sensor and a heart rate sensor, the heart rate sensor being connected to a data filter arranged to filter any readings from the heart rate sensor; and the heart rate sensor, the motion sensor, and the temperature sensor being disposed electronically on a printed circuit board having a microcontroller arranged to control each of the heart rate sensor, motion sensor and temperature sensor and record readings from each of the heart rate sensor, motion sensor and temperature sensor within a memory storage device;

the memory storage device is arranged to communicate to a centralized telecommunication gateway for processing by a reporting processor arranged to process the readings from each of the heart rate sensor, the motion sensor, and temperature sensor to determine a health condition of the horse;

the printed circuit board being housed within the housing and is surrounded by a layer of resilient shock absorbing foam disposed between the housing and the printed circuit board so as to protect the printed circuit board from shock pressure exerted on the housing;

the printed circuit board being connected to a battery arranged to energize each of a plurality of components on the printed circuit board, wherein the battery is preinstalled within the housing during manufacturing the health monitoring device and is electronically separated from energizing the printed circuit board by a removable insulating tab having a ring pull end arranged to be pulled away by a user when in use such that the battery then forms an electrical connection with the printed circuit board and thus energizes the plurality of components on the printed circuit board; and

wherein the health monitoring device further comprises a blood sensor mounted on the printed circuit board, and the blood sensor includes a plurality of micro-needles arranged to be inserted into the animal so as to gain access to blood or interstitial fluid of the animal for analysis by the blood sensor, the blood sensor being arranged to chemically detect for one or more biomarkers within the blood or interstitial fluid, wherein the one or more biomarkers include Acute Phase Proteins, Serum Amyloid A (SAA), and/or Fibrinogen.