

WHAT IS CLAIMED IS:

1. A controller for controlling inflation and deflation of at least one bladder of a garment to provide compression therapy treatment to a wearer of the garment, the controller comprising one or more processors and a non-transitory, computer-readable storage medium including computer-executable instructions for causing the one or more processors to:

receive, from a pressure sensor, a signal indicative of fluid pressure in the at least one bladder of the garment;

determine whether the received signal includes oscillating amplitude as a function of time; and

based at least in part on the determination of whether the received signal includes oscillating amplitude as a function of time, estimate a blood pressure of the wearer of the garment.

2. The controller of claim 1, wherein the instructions to receive the signal indicative of fluid pressure include instructions to receive the signal indicative of fluid pressure while the at least one bladder is inflated.

3. The controller of claim 2, wherein the instructions to receive the signal indicative of fluid pressure include instructions to receive the signal indicative of fluid pressure while the at least one bladder is inflated at a substantially constant pressure.

4. The controller of claim 3, wherein the substantially constant pressure changes by less than ten percent over the period of the determination.

5. The controller of claim 2, wherein the instructions to receive the signal indicative of fluid pressure include instructions to receive the signal indicative of fluid pressure over a period of greater than about 5 seconds and less than about 60 seconds.

6. The controller of claim 1, wherein the instructions to receive the signal indicative of fluid pressure include instructions to receive the signal indicative of fluid pressure at a predetermined interval.
7. The controller of claim 1, wherein the instructions to receive the signal indicative of fluid pressure include instructions to receive the signal between therapeutic compression cycles of the at least one bladder.
8. The controller of claim 1, wherein the instructions to receive the signal indicative of fluid pressure include instructions to receive the signal based at least in part on a user input.
9. The controller of claim 1, wherein the non-transitory, computer-readable storage medium further includes computer-executable instructions for causing the one or more processors to detect whether the at least one bladder of the compression garment is in communication with the pressure sensor, wherein the instructions to receive the signal indicative of fluid pressure include instructions to receive the signal based at least in part on detection of the communication between the at least one bladder and the pressure sensor.
10. The controller of claim 9, wherein the detected communication between the compression garment and the pressure sensor is fluid communication.
11. The controller of claim 1, wherein the instructions to receive the signal indicative of fluid pressure include instructions to receive the signal indicative of fluid pressure while the at least one bladder is inflated to a non-therapeutic pressure.
12. The controller of claim 11, wherein the non-therapeutic pressure is about 160 mmHg or greater.
13. The controller of claim 1, wherein the instructions to receive the signal indicative of fluid pressure include instructions to receive a first signal indicative of fluid pressure in a first bladder and to receive a second signal indicative of fluid pressure in a second bladder, and the

instructions to determine whether the received signal includes oscillating amplitude includes instructions determine whether the first signal and the second signal each include oscillating amplitude.

14. The controller of claim 1, wherein the instructions to determine whether the received signal includes oscillating amplitude include instructions to band-pass filter the received signal to extract frequencies of about 0.5 Hz to about 25 Hz.

15. The controller of claim 14, wherein the instructions to determine whether the received signal includes oscillating amplitude further include instructions to smooth the band-pass filtered signal.

16. The controller of claim 14, wherein the instructions to determine whether the received signal includes oscillating amplitude further include instructions to low-pass filter the band-pass filtered signal at a frequency of about 5 Hz or under.

17. The controller of claim 1, wherein the instructions to determine whether the received signal includes oscillating amplitude include instructions to detect peaks in the signal.

18. The controller of claim 17, wherein the instructions to detect peaks in the signal include instructions to detect peaks in a frequency range of about 0.5 Hz to about 4 Hz.

19. The controller of claim 18, wherein the instructions to detect peaks in the signal include instructions to detect peaks corresponding to a variation in the fluid pressure of greater than about 0.05 mmHg.

20. The controller of claim 1, wherein the instructions to determine whether the received signal includes oscillating amplitude include instructions to detect a repeating signal within a frequency range of about 0.5 Hz to about 4 Hz.

21. The controller of claim 1, wherein the oscillating amplitude as a function of time of the received signal is representative of a pulse of the wearer of the garment.
22. The controller of claim 1, wherein the non-transitory, computer-readable storage medium further includes computer-executable instructions for correlating the estimated blood pressure with an arterial blood pressure of the wearer.
23. A system comprising:
- a compression garment including at least one inflatable and deflatable bladder, the compression garment securable about one or more limbs of a wearer; and
 - a controller, the controller comprising a memory and one or more processors, the memory including computer-executable instructions for causing the one or more processors to:
 - receive, from a pressure sensor, a signal indicative of fluid pressure in the at least one inflatable and deflatable bladder;
 - determine whether the received signal includes oscillating amplitude as a function of time; and
 - based at least in part on the determination of whether the received signal includes oscillating amplitude as a function of time, estimate a blood pressure of the wearer.
24. The system of claim 23, further comprising a pump and at least one valve, wherein the at least one valve is in fluid communication with the pump and the at least one inflatable and deflatable bladder, the at least one valve is in electrical communication with the controller, and the memory of the controller further includes computer-executable instructions for causing the one or more processors to actuate the at least one valve to control fluid communication between the pump and the at least one inflatable and deflatable bladder.
25. The system of claim 23, further comprising a pump in fluid communication with the at least one inflatable and deflatable bladder, wherein the pump is in electrical communication with the controller, and the memory of the controller further includes computer-executable instructions for causing the one or more processors to adjust a speed of the pump.

26. The system of claim 23, wherein the at least one inflatable bladder extends at least partially around a portion of the limb of the wearer when secured about the limb of the wearer.
27. A controller for controlling inflation and deflation of at least one bladder of a garment to provide compression therapy treatment to a wearer of the garment, the controller comprising a memory, one or more processors, and a non-transitory, computer-readable storage medium including computer-executable instructions for causing the one or more processors to:
- receive, from a pressure sensor, a signal indicative of fluid pressure in the at least one bladder of the garment;
 - determine whether the received signal includes a representation of a pulse of the wearer; and
 - based at least in part on the determination of whether the received signal includes a signal indicative of the pulse of the wearer, determine a blood pressure of the wearer of the garment.
28. The controller of claim 27, wherein the instructions to receive the signal indicative of fluid pressure include instructions to receive the signal indicative of fluid pressure while the at least one bladder is inflated.
29. The controller of claim 28, wherein the instructions to receive the signal indicative of fluid pressure include instructions to receive the signal indicative of fluid pressure while the at least one bladder is inflated at a substantially constant pressure.
30. The controller of claim 27, wherein the instructions to determine whether the received signal includes a representation of a pulse of the wearer include instructions to detect a repeating signal within a frequency range of about 0.5 Hz to about 4 Hz.
31. The controller of claim 27, wherein the computer-executable instructions include instructions for correlating the determined blood pressure with an arterial blood pressure of the wearer.

32. A system comprising:

a compression garment including at least one inflatable and deflatable bladder, the compression garment securable about a limb of a wearer; and
the controller of any of claims 27-30.

33. The system of claim 32, further comprising a pump and at least one valve, wherein the at least one valve is in fluid communication with the pump and the at least one inflatable and deflatable bladder, the at least one valve is in electrical communication with the controller, and the non-transitory, computer-readable storage medium of the controller further includes computer-executable instructions for causing the one or more processors to actuate the at least one valve to control fluid communication between the pump and the at least one inflatable and deflatable bladder.

34. The system of claim 32, further comprising a pump in fluid communication with the at least one inflatable and deflatable bladder, wherein the pump is in electrical communication with the controller, and the non-transitory, computer-readable storage medium of the controller further includes computer-executable instructions for causing the one or more processors to adjust a speed of the pump.