CLAIMS

1. An apparatus for generating and transmitting air pressure and high frequency pressure pulses to a garment having an air core located adjacent a body of a person whereby the body of the person is subjected to the air pressure and the high frequency pressure pulses, the apparatus comprising:

a generator for producing the air pressure and the high frequency pressure pulses, the generator being configured for operative coupling to the garment to transmit the air pressure and the high frequency pressure pulses to the air core of the garment;

an electric motor drivably connected to the generator for operating the generator to produce the air pressure and the high frequency pressure pulses;

a valve for restricting regulating a flow of air to the generator to regulate the air pressure produced by the generator, the valve including an air flow control member;

a control device operably connected to the air flow control member to operate the air flow control member to alter the flow of air to the generator; and

a controller for regulating operation of the motor and the control device to manage operation of the generator, frequency of the high frequency pressure pulses, and the air pressure produced by the generator, the controller including:

a first programmable control for regulating a time of operation of the motor;

a second programmable control for regulating speed of the motor to control a frequency of the high frequency pressure pulses produced by the generator; and

a third programmable control for regulating the air pressure produced by the generator, the third programmable control including a motor speed and air pressure lookup data table for controlling operation of the control device to change operation of the air flow control member to alter the flow of air to the generator to maintain a selected air pressure produced by the generator when the speed of the motor and the high frequency pressure pulses are changed.

2. The apparatus of claim 1, wherein the first programmable control is operable to change the time of operation up to 30 minutes.

3. The apparatus of claim 1, wherein the second programmable control is operable to change the speed of the motor to change the frequency of the air pulses between 5 to 25 cycles per second.

4. The apparatus of claim 1, wherein the control device is a solenoid operably connected to the air flow control member to change a position of the air flow control member to alter the flow of air to the generator.

5. The apparatus of claim 1, wherein the control device is a stepper motor operably connected to the air flow control member to change a position of the air flow control member to alter the flow of air to the generator.

6. The apparatus of claim 1, wherein the generator includes at least one movable member operable to generate the air pressure and high frequency pressure pulses, the motor being operatively associated with the movable member to move the movable member to generate the air pressure and high frequency pressure pulses.

7. The apparatus of claim 1, wherein the generator includes first and second movable members operable to generate the air pressure and the high frequency pressure pulses, the motor being operatively connected to the first and second movable members to move the first and second movable members to generate the air pressure and the high frequency pressure pulses.

8. An apparatus for generating air pressure and high frequency pressure pulses for use in a garment to subject a body of a person to the air pressure and high frequency pressure pulses, the apparatus comprising:

a generator for producing the air pressure and the high frequency pressure pulse;

a motor operating the generator to produce the air pressure and the high frequency pressure pulses;

a single hose coupling the generator to the garment, through which the air pressure and the high frequency pressure pulses are transmitted from the generator to the air core of the garment;

a valve for restricting a flow of air to the generator to regulate the air pressure produced by the generator;

a control device operably connected to the valve to operate the valve to alter a flow of air to the control device thereby changing the air pressure produced by the generator; and

a controller for regulating operation of the motor and the control device to manage the high frequency air pulse and the air pressure and a frequency of the high frequency pressure pulses produced by the generator, the controller including:

a first control for regulating a speed of the motor to establish the frequency of the high frequency pressure pulse; and

a second control for regulating the air pressure produced by the generator, the second control including a motor speed and air pressure lookup data table for controlling operation of the control device to change operation of the valve to alter the flow of air to the generator to maintain a selected air pressure produced by the generator when the speed of the motor and high frequency pressure pulses are changed.

9. The apparatus of claim 8, wherein the valve includes an air flow control member operably connected to the control device whereby operation of the motor regulates the air flow control member to alter the flow of air to the generator to change the air pressure produced by the device when the speed of the motor and the high frequency pressure pulses are changed.

10. The apparatus of claim 9, wherein the control device is a solenoid operably connected to the air flow control member to change the position of the air flow control member to alter the flow of air to the generator.

11. The apparatus of claim 9, wherein the control device is a stepper motor operably connected to the air flow control member to change the position of the air flow control member to alter the flow of air to the generator.

12. The apparatus of claim 8, wherein the first control is a user programmable device.

13. The apparatus of claim 8, wherein the second control is a user programmable device.

14. The apparatus of claim 8, wherein the controller includes a user programmable control for regulating the duration of operation of the device.

15. The apparatus of claim 8, wherein the generator includes at least one movable member operable to generate the air pressure and the high frequency pressure pulses, wherein the motor is operatively associated with the movable member to move the movable member to generate the air pressure and the high frequency pressure pulses.

16. The apparatus of claim 8, wherein the generator includes first and second movable members operable to generate the air pressure and the high frequency pressure pulses, wherein the motor is operatively connected to the first and second movable members to move the first and second movable members to generate the air pressure and the high frequency pressure pulses.

17. A method of applying air pressure and high frequency pressure pulses to the body of a person, the method comprising:

locating a garment having an air core adjacent a portion of a body of a person to be subjected to the air pressure and the high frequency pressure pulses;

using a generator to generate the air pressure and the high frequency pressure pulses, wherein using the generator comprises:

drivably connecting the generator to a motor used to operate the generator to produce the air pressure and the high frequency pressure pulses,

restricting a flow of air to the generator to regulate the air pressure produced by the generator with a valve having an air flow control member operable to alter the flow of air to the generator,

drivably connecting the air flow control member to a control device to operate the air flow control member to alter the flow of air to the generator and the air pressure produced by the generator,

regulating operation of the motor and the control device to manage a time duration of operation of the generator, the frequency of the high frequency pressure pulses, and the air pressure produced by the generator, and

providing a user programmable control for maintaining a selected air pressure produced by the generator responsive to changes in the frequency of the high frequency pressure pulses produced by the generator; and

transferring the air pressure and the high frequency pressure pulses to the air core of the garment using only one hose, whereby the air pressure and the high frequency pressure pulses are applied to the body of the person.

18. The method of claim 17, further comprising providing a user programmable control for regulating the time of operation of the motor and the time duration of the production of air pressure and high frequency air pressure pulses by the generator.

19. The method of claim 17, further comprising providing a user programmable control for regulating a speed of the motor to regulate the frequency of the high frequency pressure ~~air~~ pulses produced by the generator.

20. The method of claim 17, wherein the user programmable control for maintaining a selected air pressure produced by the generator includes a motor speed and air pressure lookup data table for controlling operation of the control device to maintain a selected air pressure produced by the generator when the speed of the motor and the high frequency pressure pulses are changed.

21. The method of claim 17, further comprising:

providing a user programmable control for regulating a speed of the motor to regulate the frequency of the high frequency pressure;

wherein the user programmable control for maintaining a selected air pressure produced by the generator includes a motor speed and air pressure lookup table for controlling operation of the control device to regulate the air pressure produced by the generator to maintain a selected air pressure produced by the generator when the speed of the motor and the high frequency pressure pulses are changed.

22. An apparatus for applying pressure and high frequency pressure pulses to the thorax of a person, comprising:

an air pulse generator having user programmable controls, the air pulse generator comprising:

an air pumping chamber;

an air pulsing chamber; and

an air displacer assembly, the air displacer assembly comprising:

a first displacer and a second displacer;

wherein the first and second displacers are mounted on opposite sides of the pulsing chamber and are configured to be angularly moved to move air through and pulse air from the air pulse generator;

a check valve operable to allow air to flow from the air pumping chamber into the air pulsing chamber and prevent air from flowing from the pulsing chamber into the pumping chamber;

a seal assembly associated with the air pulse generator;

a garment having an air core, the garment being adapted to be located on the thorax of the person for subjecting the thorax of the person to the pressure and high frequency pressure

pulses from the air pulse generator, wherein the garment includes a single air inlet connector; and

no more than one hose coupling the air pulse generator to the thoracic garment for transmitting the pressure and high frequency pressure pulses from the air pulse generator to the garment, wherein the hose is received by the air inlet connector.