A method for collecting, recording, and broadcasting coded human or animal body waveforms. The method consists of placing a contact, which is designed to receive electrical signals, on a portion of the body. The electrical signal is converted into a readable format and is processed and stored in a computer. The electrical signal can be adjusted and rebroadcast into the body to modulate body organ, muscle, and gland functioning.
Fig. 3

BEGIN CYCLE → RECEIVE WAVEFORM → ADJUST WAVEFORM → BROADCAST WAVEFORM TO BODY ORGAN

Fig. 2

BEGIN CYCLE → RECEIVE DIGITAL WAVEFORM → IDENTIFY WAVEFORM FUNCTION → DIRECT WAVEFORM TO STORAGE AREA
DEVICE AND METHOD FOR CONDUCTING OR BRODACAST ACTUAL NEURO ELECTRICAL CODED SIGNALS FOR MEDICAL TREATMENT

RELATED APPLICATION

[0001] This is a continuation-in-part of application Ser. No. 10/800,005 filed on Nov. 20, 2001, entitled “Method to Record, Store and Broadcast Specific Brainwave Forms to Modulate Body Organ Functioning.” This application also claims the benefit of application Ser. No. 60/503,908, filed on Sep. 18, 2003, entitled “Device and Method For Conducting or Broadcasting Actual Neuro-Coded Signals for Medical Treatment.”

BACKGROUND OF THE INVENTION

[0002] This invention relates to neuro-coded electrical signals and a method for recording and interpreting signals from the brain.

[0003] The brain is one of the last great frontiers in the biomedical sciences. The unraveling of its mysterious complexities as related to medical diagnosis and treatment is a quest as great as inventing technology and gathering resources to travel to the moon. Brain signals direct the harmony of the human body much like a conductor controls and directs his orchestra. The brain senses, computes and decides before it sends electrical instructions to the body it lives in. The brain is a magnificent information processor that not only controls the body it lives in, but communicates with other brains residing in other bodies. Such interrelation to another brain can alter the electrochemical function in both brains.

[0004] Like no other creature, mankind over the centuries has slowly observed his own health status and devised treatments to heal diseases and injuries. Because historically man has preserved this medical knowledge in books it served as the basis of early university scientific training. The last two centuries of education and research in biomedicine have laid down a detailed understanding about the human anatomy and the relative function of its components, all of which serve as a platform for today’s medical treatments.

[0005] Modern scientists have expanded into specialties that never existed before. Today, scientists study the genetic makeup of humans and are heading toward predicting and tinkering with genes to forestall future ailments. Then there are studies on a cellular level that have determined the microscopic workings of many of the ubiquitous chemical and electrical processes that link and regulate life processes.

[0006] Although scientists and physicians can treat every organ in the body with surgery or medications, it is only in the last half century that we have come to grips with electrical treatment of organ systems. Examples of this development are the cardiac defibrillator and pacemaker or electrical brain stimulator for Parkinson’s. Meticulous anatomical studies, animal experiments and recording the consequences of human brain injuries and diseases have served as the base information to understand how the brain works.

[0007] There has also been dynamic cellular and molecular biology work performed in university laboratories over the past 20 years that is still ongoing. This has opened up bio-functional details that were previously unknown. In addition, recent publication of marvelous texts on neuroanatomy and physiology have illuminated the physical relationship to actual function of the nervous system.

[0008] This fountain of knowledge now makes it possible to open up a new technology for electrical modulation of organ function. Such knowledge opens new electrical treatment modalities for life threatening emergencies and cardiac, respiratory and digestive conditions, unaccessible before. This new technology makes it possible to detect the neuro-electrical coded signals being generated by the brain and to ascertain what the signal is for. This invention provides a way to evolve the known and unknown waveforms into electronic devices which can broadcast such signals onto selected nervous system components as medical treatments.

[0009] It is not commonly understood how brain electrical signals modulate functions of the body as a whole, but there is an understanding to a limited degree of how organs are modulated. The brain controls critical functions of all human and animal body organ systems in a coordinated way to keep the body alive and hence to keep alive the brain itself. The brain wants to live and go on into the future, so it fine tunes and modulates the cardiovascular, respiratory and digestive systems among others, to integrate the needs of all. Maintaining optimum performance is more difficult as the body and brain age due to cellular degradation. But if critical organ functions can be reset in a non or minimally invasive way, both quality and life-extension may benefit.

[0010] The brain controls, via the autonomic nervous network, the vegetative functions of the major organs. These organs represent the minimal requirement to support life. These are the organs that must function even if the brain is in coma, and the owner unable to think or do anything, if life is to continue. Major organ function must always be maintained at a certain minimal level for maintaining organism life, otherwise death is certain. Such control is done via a nervous system that consists of two main divisions: a) the central nervous system (brain) in concert with the spinal cord, and b) the peripheral system consisting of cranial and spinal nerves plus ganglia.

[0011] Within the central nervous system is the autonomic nervous system (ANS) which carries all effrent impulses except for the motor innervation of skeletal muscles. The ANS is mainly outside voluntary control and regulates the heart beat and smooth muscle contraction of many organs including digestive and respiratory. Also, the ANS controls exocrine and some endocrine organs along with certain metabolic activity. In addition, there is activity from parasympathetic and sympathetic innervation which oppose each other to attain a balance of tissue and organ function. The nervous system is constructed of nerve cells called neurons which have supporting cells called glia. Neurons are electrically excitable and provide a method whereby instructions are carried from the brain to modulate critical functions.

[0012] The neuron has a protrusion called an axon that can be as short as a few millimeters or longer than a meter. The axon provides and uses nerve fibers to carry electrical signals that end at a synapse. A synapse is at the end of an axon. It faces another synapse from a neighboring axon across a gap. To cross such a gap the electrical signal from the brain must engage in specialized chemical or electrical transduction reactions to allow the crossing of the electrical signal to the next axon or to a nerve plexus or ganglion.
located on an actual organ. Neurons have a body (or soma) and are the morphological and functioning unit that sends signals along their axons until such signals instruct the organ it reaches. Operative neuron units that carry signals from the brain are classified as “afferent” nerves. “Afferent” nerves are those that carry sensor or status information to the brain. The brain computes and generates those electrical signals that are required as a result of the incoming data (afferent signals) it has collected. Such afferent signals received by the brain provide sophisticated organ and overall body operational status. Such information spans the entire body from within and also environmental status detected from areas immediately outside of the body proper and at some distance.

[0013] Outside data reaching the brain may relate to temperature change or a dangerous situation like approaching strangers or even potential mating possibilities. Such outside afferent sensory data is provided by eyes, ears, nose, tongue and skin. In addition, there is proprioception providing sensation in the musculoskeletal system, i.e., deep sensations. Other afferent-type nerve sensors called nociceptors detect noxious stimuli and pain. Nociceptors alert the brain to nasty things that are deemed undesirable and require some immediate action within the brain. This range of information arriving at the brain is processed for action. The afferent nerves provide quick adjustment on performance for the various organ systems or even instruct the skeletal-motor neurons to run, walk, hide, help or physically approach for more sensory information.

[0014] The invention describes specific neuro-electrical coded signals and a method to precisely acquire the key operative neuro-electrical coded signals from selected axons, nerveplexus or ganglion connections of the autonomic nervous system. Such neuro-electrical coded signal data is stored and categorized as to the actual purpose of such signals. This is much like the ongoing effort to identify and categorize human genes. Once the purpose of individual neuro-electrical coded signals have been determined, they will be installed in a specific application microprocessor for electrical broadcast or conduction into the nervous system, in order to treat or correct selected medical conditions.

SUMMARY OF THE INVENTION

[0015] The invention provides a method for modulating body organ functioning. According to the method, neuro-electrical coded signals that are generated and carried in a body are collected from the body. Such collected neuro-electrical coded signals are then electrically stored. Then, one or more of the collected neuro-electrical coded signals can be transmitted to a body organ to stimulate or regulate organ function.

[0016] The collected neuro-electrical coded signals are transformed into a readable format for a processor. The transformation of the collected neuro-electrical coded signals into a readable format includes transforming analog signals into a digital format. The collected neuro-electrical coded signals are stored and cataloged according to the function performed by the neuro-electrical coded signals in the body. A digital to analog converter is used to convert the cataloged neuro-electrical coded signals to an analog form, and the converted neuro-electrical coded signals are then applied to a body organ to regulate for medical treatment purposes.

[0017] The invention further provides an apparatus for modulating body organ functioning. The apparatus includes a source of collected neuro-electrical coded signals that are indicative of body organ functioning, means for transmitting collected neuro-electrical coded signals to a body organ, and means for applying the transmitted neuro-electrical coded signals to the body organ to stimulate or adjust organ function.

[0018] The transmitting means may include a digital to analog converter. The source of collected neuro-electrical coded signals comprises a computer which has the collected neuro-electrical coded signals stored in digital format. The computer includes separate storage areas for collected neuro-electrical coded signals of different categories.

[0019] The apparatus further includes means for collecting neuro-electrical coded signals from a body and cataloging and transmitting such collected neuro-electrical coded signals to the source. The collecting means may be comprised of a sensor placed on the body. A recorder is provided to record the sensed neuro-electrical coded signals in analog form. An analog to digital converter is connected to the recorder for converting the neuro-electrical coded signals before being sent to a scientific computer. Additionally, the apparatus includes a digital to analog converter for converting the collected neuro-electrical coded signals for retransmission to a body for medical treatment purposes.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020] The invention is described in greater detail in the following description of examples embodying the best mode of the invention, taken in conjunction with the drawing figures, in which:

[0021] FIG. 1 is a schematic diagram of one form of apparatus for practicing the method according to the invention;

[0022] FIG. 2 is a flow chart of the software program when the neuro-electrical coded signal enters the computer;

[0023] FIG. 3 is a flow chart of the software program when the operator retrieves and broadcasts the neuro-electrical coded signal from within the computer;

[0024] FIGS. 4A-4H are schematics of representative neuro-electrical coded signals, embodied in the invention, carried by neurons after generation in the medulla oblongata or from sensory neurons going to the medulla oblongata; and

[0025] FIGS. 5A-5H are schematics of alternative neuro-electrical coded signal, as described in the invention, that affect the nervous system.

DESCRIPTION OF EXAMPLES EMBODYING THE BEST MODE OF THE INVENTION

[0026] For the purpose of promoting an understanding of the principles of the invention, references will be made to the embodiments illustrated in the drawings. It will, nevertheless, be understood that no limitation of the scope of the invention is thereby intended, such alterations and further modifications in the illustrated device, and such further applications of the principles of the invention illustrated herein being contemplated as would normally occur to the one skilled in the art to which the invention relates.
[0027] Human and other mammals, and even lower creatures of all types, generate electrical wave-forms from their respective brains that modulate key aspects of vegetative systems. Such neuro-electrical coded signals are of similar general linear analog format in appearance, regardless of species. Parallel lines of signals also can be transmitted simultaneously by the medulla oblongata to help form the signaling neuro-electrical coded signals. Key organ systems such as cardiovascular, respiratory, digestive and others decode these signals and modulate or fine-tune themselves in response to those instructions. The autonomic nervous system (ANS) operates similarly in all species, but not exactly similar. The parallel carriers of autonomic signals may work as the lines on a sheet of music record notes of different characteristic, pause or speed at different levels. The autonomic nervous system operates without willful or conscious control and generally control vegetative state essential body organ systems.

[0028] This invention focuses on the electrical signals transported by the vagus accessory and hypoglossal nerve bundles, including afferent fibers. The vagus nerve is a wandering nerve (Vagus means wandering) that winds throughout the body after it emerges from the medulla oblongata located in the hind brain. The hypoglossal and accessory nerves also emerge from the medulla oblongata and are interfaced with the vagus to harmoniously accomplish basic life support. The signals travel on the surface of the vagus nerve but below its insulating myelin sheath.

[0029] The electrical output of selected afferent and efferent nerves can be made accessible via tungsten, copper, platinum, silver, gold or other metal wires, or voltage clamps or patch electrodes and even seismic sensors, along with other detection methods. The particular apparatus for detecting this output is not part of the present invention. Afferent and efferent nerves travel in the same nerve bundles or can be routed separately. To gain direct measurement of the neuro-electrical coded signals, it may initially require shaving away the insulating fasciulus and myelin sheath. Seismic, ultrasonic, receiving antennas, direct conduction and other methods may be used to capture the coded brain signals as they relate to body organ performance. Such signals are then stored and replicated for electrical return to the appropriate place for medical treatment concerned with modulating organ function.

[0030] Skin usually has a 1000 to 30,000 ohm resistance while the interior of the body is quite conductive. All coded signals operate at less than 1 volt, naturally. Applied voltage may be up to 20 volts according to the invention to allow for voltage loss during the transmission or conduction of the required coded signals. Current should always be less than 2 amps output for the invention. Direct conduction into the nerves via electrodes connected directly to such nerves will likely have outputs of less than 3 volts and current of less than one-tenth of an amp. Up to 10 or more channels may be used simultaneously to exert medical treatment on an organ, gland, muscle or nerve to aid a patient in moving or performing tasks suitable to his or her well-being as medical treatment.

[0031] The invention comprises a method for recording, storing, and broadcasting specific neuro-electrical coded signals to modulate human and animal body organ functioning. One form of the method for recording, storing, and broadcasting neuro-electrical coded signals, as shown in FIG. 1, is comprised of at least one sensor in the form of a treatment member 10, an analog recorder 12, an analog to digital converter 14, a computer 16, and a digital to analog converter 18. The treatment member 10 may be attached to a nerve 20 in the human or animal body, and senses the neuro-electrical coded signals from the nerve 20. In one embodiment, the treatment member 10 may be an electrode comprised of copper wire, platinum wire, gold wire, silver wire, tungsten wire, or any wire suitable for conduction of the perceptible electrical signals transported by the nerve 20. In an alternate embodiment, the treatment member 10 may be rod-shaped, an antenna, or any other shape suitable for broadcasting and sensing the neuro-electrical coded signals. The treatment member 10 may also be coated with Mylar, Teflon, or any other coating suitable to resist corrosion.

[0032] The neuro-electrical coded signal is recorded by an analog recorder 12 because the nerve 20 only transmits electric signals in analog form. Once the neuro-electrical coded signals are recorded they are sent from the analog recorder 12 to the analog to digital converter 14. The converter 14, in a conventional fashion, transforms the neuro-electrical coded signals from the analog format into a digital format, which is more suitable for computer processing. The converter 14 then transmits the converted neuro-electrical coded signals to a computer 16 where the neuro-electrical coded signal is processed, stored, adjusted, and/or broadcast, as desired. The computer 16 is capable of processing signals at speeds of up to 10 million bytes of information per second.

[0033] Selected signals that have been digitized may be transferred to an application specific processor or a linear analog device to be utilized to prepare and broadcast signals recognized by the brain or a selected organ as a modulating treatment. When the operator directs the computer 16 to retrieve and broadcast the neuro-electrical coded signal back into the body, the neuro-electrical coded signal is transmitted from the computer 16 through a digital to analog converter 18. Output speed to send treatment signals can be measured in milliseconds to microseconds. In a conventional fashion, the neuro-electrical coded signal is converted back into analog form because the body only transmits and uses coded electrical signals in analog format. If the coded neuro-electrical coded signals were transmitted into the body in a digital form, the body would not recognize the transmission.

[0034] The computer 16 contains software which is capable of identifying the function associated with particular neuro-electrical coded signals. Many types of software can be developed by those skilled in the art to perform the functions of the invention, and particular software is not part of the present invention. As shown in the flow chart in FIG. 2, after beginning at step 22, at step 24 the computer 16 receives a digital neuro-electrical coded signal from the analog to digital converter 14. After the neuro-electrical coded signal is received, the software reads the neuro-electrical coded signal and at step 26 identifies the function of the particular neuro-electrical coded signal. Once the software identifies the function associated with the particular neuro-electrical coded signal, at step 28 the neuro-electrical coded signal is directed to a particularized storage area. For example, if the neuro-electrical coded signal is used for
digestive functions it may be stored in a separate area from neuro-electrical coded signals used for respiratory functions.

[0035] Later, when it is decided to use the stored digital form of the neuro-electrical coded signal, as shown in the flow chart in FIG. 3, the cycle is begun at 30, and the neuro-electrical coded signal is retrieved from the storage area, as shown at step 32, having been previously stored at step 28 (FIG. 2). If it is determined that the neuro-electrical coded signals needs to be adjusted in order to perform a particular function, the software adjusts the neuro-electrical coded signals as required, in step 34. However, if it is decided that the neuro-electrical coded signal does not need to be adjusted, step 34 is bypassed and step 36 is performed whereby the neuro-electrical coded signal is broadcast to the specified body organ, after conversion to analog form. The brain often makes modifications to the neuro-electrical coded signals in order to fine tune the function the brain requires or needs a particular organ to perform, and such is also performed by the present invention.

[0036] Representative neuro-electrical coded signals that neurons carry after generation in the medulla oblongata are shown in FIG. 4. Such neuro-electrical coded signals have a central linear carrier which is analog. The signal is of a direct current nature and has many coded modulations that provide directions or instructions to the receptor organ or system receiving it. Other representative neuro-electrical coded signals for signals that can affect the nervous system are shown in FIG. 5. The neuro-electrical coded signals can provide instructions as they leave the vagus or other nerve and arrive at organs of the body. Such signals are similar to the modulating instructions broadcast from the medulla oblongata.

[0037] In one embodiment of the invention, the process of broadcasting by the treatment member 10 is accomplished by direct conduction or transmission through unbroken skin in a selected appropriate zone on the neck, head, limb(s), spine, or thorax, or abdomen. Such zone will approximate a position close to the nerve or nerve plexus onto which the signal is to be imposed. The treatment member 10 is brought into contact with the skin in a selected target area that allows for the transport of the signal to the target nerve(s).

[0038] In an alternate embodiment of the invention, the process of broadcasting the neuro-electrical coded signal is accomplished by direct conduction via attachment of an electrode to the receiving nerve or nerve plexus. This requires a surgical intervention as required to physically attach the electrode to the selected target nerve. Direct implantation on the nervous system of the selected endocrine and exocrine glands may be performed in order to transmit signals to control all or some glandular function. Such implantation can be presynaptic or post synaptic and may be attached to ganglion or nerve plexus associated with the desired secretion function.

[0039] In yet another embodiment of the invention, the process of broadcasting may be non-invasive. The non-invasive applications may be accomplished by transposing the neuro-electrical coded signal into a seismic, micro-phonie, or photonic form where it is sent into a region of the head, neck, limb(s), spine, or thorax in a manner that allows the appropriate "nerve" to receive and to obey the coded instructions of such seismic, micro-phonie or photonic signal. The treatment member 10 is pressed against the unbroken skin surface using an electrode conductive gel or paste medium to aid conductivity.

[0040] In yet another embodiment, one or more treatment members 10 may be coils and used to create a magnetic field effect on a nerve, which may be used to transmit selected neuro-electrical coded signals to an organ, gland, muscle or to a specific nerve or nerve plexus. The treatment member 10 may be placed on or near the skin proximal to the selected nerve(s) or as an implantable technique.

[0041] In both the invasive and non-invasive procedures, the treatment member 10, in addition to broadcasting neuro-electrical coded signals, also operates as a sensor providing feedback for manual or automatic adjustment of the neuro-electrical coded signals.

[0042] Various features of the invention have been particularly shown and described in connection with the illustrated embodiments of the invention. However, it must be understood that these particular products, and their method of manufacture, do not limit but merely illustrate, and that the invention is to be given its fullest interpretation within the terms of the appended claims.

We claim:
1. A method for modulating body organ functioning comprising the following steps:
   a. collecting waveforms from a body generated in the body and carried by neurons in the body,
   b. storing the collected waveforms, and
   c. transmitting one or more of the collected waveforms to a body organ to stimulate organ function.
2. The method according to claim 1 in which step “a” further includes transforming said collected waveforms into a readable format for a processor.
3. The method according to claim 2 in which the transforming step comprises transforming analog signals into digital form.
4. The method according to claim 1 in which step “b” further includes storing said collected waveforms according to function performed by the waveforms.
5. The method according to claim 1 in which step “c” further includes transmitting said collected waveforms to a body via a digital to analog converter.
6. An apparatus for modulating body organ functioning, comprising:
   a. a source of collected waveforms that are representative of waveforms naturally occurring within a body and that are indicative of body organ functioning,
   b. means for transmitting one or more of the collected waveforms to a body organ, and
   c. means for applying the transmitted waveforms to the body organ to stimulate or regulate organ function.
7. The apparatus according to claim 6, in which said transmitting means includes a digital to analog converter.
8. The apparatus according to claim 6, in which said source comprises a computer having collected waveforms stored in digital format.
9. The apparatus according to claim 8, in which said computer includes separate storage areas for collected waveforms of different functional categories.
10. The apparatus according to claim 6, further including means for collecting waveforms from a body and transmitting collected waveforms to said source.

11. The apparatus according to claim 10, in which said collecting means comprises a sensor adapted to be placed on the body.

12. The apparatus according to claim 11, including a recorder for recording sensed waveforms in analog form.

13. The apparatus according to claim 12, including an analog to digital converter connected to said recorder for converting the sensed waveforms.

14. The apparatus according to claim 11, including a digital to analog converter for converting collected waveforms.

15. The apparatus according to claim 6, in which said applying means comprises a body electrode.

16. A method for modulating body organ functioning comprising the following steps:
   a. collecting waveforms that are representative of waveforms naturally occurring within a body and that are carried by neurons in the body;
   b. storing the collected waveforms, and
   c. transmitting one or more of the collected waveforms to a body organ to stimulate organ function.

17. The method according to claim 16 in which step “a” further includes transforming said collected waveforms into a readable format for a processor.

18. The method according to claim 17 in which the transforming step comprises transforming analog signals into digital form.

19. The method according to claim 16 in which step “b” further includes storing said collected waveforms according to function performed by the waveforms.

20. The method according to claim 16 in which step “c” further includes transmitting said collected waveforms to a body via a digital to analog converter.

21. A method for modulating body muscle functioning comprising the following steps:
   a. collecting waveforms from a body generated in the body and carried by neurons in the body,
   b. storing the collected waveforms, and
   c. transmitting one or more of the collected waveforms to a body muscle to stimulate muscle function.

22. The method according to claim 21 in which step “a” further includes transforming said collected waveforms into a readable format for a processor.

23. The method according to claim 22 in which the transforming step comprises transforming analog signals into digital form.

24. The method according to claim 21 in which step “b” further includes storing said collected waveforms according to function performed by the waveforms.

25. The method according to claim 21 in which step “c” further includes transmitting said collected waveforms to a body via a digital to analog converter.

26. An apparatus for modulating body muscle functioning, comprising:
   a. a source of collected waveforms that are representative of waveforms naturally occurring within a body and that are indicative of body muscle functioning,
   b. means for transmitting one or more of the collected waveforms to a body muscle, and
   c. means for applying the transmitted waveforms to the body muscle to stimulate or regulate muscle function.

27. The apparatus according to claim 26, in which said transmitting means includes a digital to analog converter.

28. The apparatus according to claim 26, in which said source comprises a computer having collected waveforms stored in digital format.

29. The apparatus according to claim 28, in which said computer includes separate storage areas for collected waveforms of different functional categories.

30. The apparatus according to claim 26, further including means for collecting waveforms from a body and transmitting collected waveforms to said source.

31. The apparatus according to claim 30, in which said collecting means comprises a sensor adapted to be placed on the body.

32. The apparatus according to claim 31, including a recorder for recording sensed waveforms in analog form.

33. The apparatus according to claim 32, including an analog to digital converter connected to said recorder for converting the sensed waveforms.

34. The apparatus according to claim 31, including a digital to analog converter for converting collected waveforms.

35. The apparatus according to claim 26, in which said applying means comprises a body electrode.

36. A method for modulating body muscle functioning comprising the following steps:
   a. collecting waveforms that are representative of waveforms naturally occurring within a body and that are carried by neurons in the body,
   b. storing the collected waveforms, and
   c. transmitting one or more of the collected waveforms to a body muscle to stimulate muscle function.

37. The method according to claim 36 in which step “a” further includes transforming said collected waveforms into a readable format for a processor.

38. The method according to claim 37 in which the transforming step comprises transforming analog signals into digital form.

39. The method according to claim 36 in which step “b” further includes storing said collected waveforms according to function performed by the waveforms.

40. The method according to claim 36 in which step “c” further includes transmitting said collected waveforms to a body via a digital to analog converter.

41. A method for modulating body gland functioning comprising the following steps:
   a. collecting waveforms from a body generated in the body and carried by neurons in the body,
   b. storing the collected waveforms, and
   c. transmitting one or more of the collected waveforms to a body gland to stimulate gland function.

42. The method according to claim 41 in which step “a” further includes transforming said collected waveforms into a readable format for a processor.

43. The method according to claim 42 in which the transforming step comprises transforming analog signals into digital form.
44. The method according to claim 41 in which step “b” further includes storing said collected waveforms according to function performed by the waveforms.

45. The method according to claim 41 in which step “c” further includes transmitting said collected waveforms to a body via a digital to analog converter.

46. An apparatus for modulating body gland functioning, comprising:
   a. a source of collected waveforms that are representative of waveforms naturally occurring within a body and that are indicative of body gland functioning;
   b. means for transmitting one or more of the collected waveforms to a body gland, and
   c. means for applying the transmitted waveforms to the body gland to stimulate or regulate gland function.

47. The apparatus according to claim 46, in which said transmitting means includes a digital to analog converter.

48. The apparatus according to claim 46, in which said source comprises a computer having collected waveforms stored in digital format.

49. The apparatus according to claim 48, in which said computer includes separate storage areas for collected waveforms of different functional categories.

50. The apparatus according to claim 46, further including means for collecting waveforms from a body and transmitting collected waveforms to said source.

51. The apparatus according to claim 50, in which said collecting means comprises a sensor adapted to be placed on the body.

52. The apparatus according to claim 51, including a recorder for recording sensed waveforms in analog form.

53. The apparatus according to claim 52, including an analog to digital converter connected to said recorder for converting the sensed waveforms.

54. The apparatus according to claim 51, including a digital to analog converter for converting collected waveforms.

55. The apparatus according to claim 56, in which said applying means comprises a body electrode.

56. A method for modulating body gland functioning comprising the following steps:
   a. collecting waveforms that are representative of waveforms naturally occurring within a body and that are carried by neurons in the body,
   b. storing the collected waveforms, and
   c. transmitting one or more of the collected waveforms to a body gland to stimulate gland function.

57. The method according to claim 56 in which step “a” further includes transforming said collected waveforms into a readable format for a processor.

58. The method according to claim 57 in which the transforming step comprises transforming analog signals into digital form.

59. The method according to claim 56 in which step “b” further includes storing said collected waveforms according to function performed by the waveforms.

60. The method according to claim 56 in which step “c” further includes transmitting said collected waveforms to a body via a digital to analog converter.

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