INFLATABLE ABDOMINAL EXERCISE APPARATUS

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ABSTRACT

An abdominal exercise apparatus has a seat operably disposed on a base. The base has an inflatable back wedge section and optionally an independently inflatable front wedge section. The seat has raised sides that form a shallow cavity that is adapted to support the body of a user therein. The seat resiliently flexes forward and backward along its length. At least one inflatable cushion, preferably profiled to accept the body contour of the user, provides a floor below the shallow cavity. Preferably, the floor is realized by three independently inflatable cushions including one that supports the upper legs, another that supports the lumbar section, and a third that supports the upper torso, neck and head. Hand grips are affixed to opposite sides of a top portion of the seat and to opposite sides of a bottom portion of the seat. The inflation level of the back wedge section and the front wedge section is adjustable; A wide variety of effective abdominal and other exercises can be performed with the apparatus.
INFLATABLE ABDOMINAL EXERCISE APPARATUS

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to exercise devices and methods for isolating, strengthening, and toning the abdominal and lower back muscles.


[0004] Sit-ups are used by many to strengthen and tone the abdominal muscles. Typically, the sit-up is executed by placing one’s back to floor with the knees bent and feet flat to the floor. The hands are placed behind the head with the elbows extending forward. The head and shoulders are lifted using the abdominal muscles until the elbows touch the knees, and then the head and shoulders are lowered back to the floor.

[0005] When the sit-up is performed on a flat surface, the hip-flexor muscles provide assistance to the abdominal muscles and thus take away some of the benefits to the abdominal muscles. To alleviate this problem, exercise cushions have been developed and sold commercially, such as that sold under the AB-MAXIMIZER name. These cushions are placed under the lower back and provide improved isolation of the abdominal muscles during the sit-up by eliminating assistance from the hip-flexor muscles.

[0006] While these exercise methods and apparatus have achieved moderate success, several drawbacks and deficiencies are known to exist. First, placing the hands behind the head during the sit-up stresses the neck muscle, which can strain and injure the neck muscle. Second, significant stress is applied to lower back during the initial part/final part of the sit-up when the lower back is close to the floor. Such lower back strain is associated with the majority of sit-up related injuries.

[0007] Thus, there remains a need in the art for exercise methods and apparatus that provide isolation of the abdominal muscles while at the same time reducing stress to the neck and lower back.

SUMMARY OF THE INVENTION

[0008] It is therefore an object of the invention to provide an exercise apparatus that provides isolation of the abdominal muscles while at the same time reducing stress to the neck and lower back.

[0009] It is another object of the invention to provide such an exercise apparatus that can be used to perform a variety of abdominal exercises.

[0010] It is a further object of the invention to provide such an exercise apparatus that can be used to exercise other muscle groups (such as leg muscles and oblique muscles).

[0011] It is also an object of the invention to provide such an exercise apparatus that enables control over range of motion and effort such that it is suitable for different users.

[0012] In accord with these objects, which will be discussed in detail below, an improved abdominal exercise apparatus is provided with a seat operably disposed on a base. The base has an inflatable back wedge section and optionally an independently inflatable front wedge section. The seat has raised sides that form a shallow cavity that is adapted to support the body of a user therein. The seat resiliently flexes forward and backward along its length. At least one inflatable cushion, which is preferably profiled to accept the body contour of the user, provides a floor below the shallow cavity. A first set of hand grips are affixed to opposite sides of a top portion of the seat. A second set of hand grips are affixed to opposite sides of a bottom portion of the seat.

[0013] It will be appreciated that a wide variety of effective abdominal exercise and other exercises can be performed with the apparatus while stress to the lower back and neck are reduced.

[0014] According to one embodiment of the invention, the inflation level of the back wedge section is adjustable to vary the range of motion of the user’s body (and thereby control the amount of lower back strain).

[0015] According to another embodiment of the invention, the inflation level of the front wedge section is adjustable to vary the range of motion of the user’s body.

[0016] According to a further embodiment of the invention, the floor below the shallow cavity is realized by three independently inflatable cushions including a first cushion disposed under the upper legs of the user during use, a second cushion disposed under the lumbar section of the user during use, and a third cushion disposed under the upper torso, neck, and head of the user during use. The second (lumbar) air cushion supports the lower back and also reduces lower back strain. The third air cushion supports the head and neck to reduce lower neck strain.

[0017] Additional objects and advantages of the invention will become apparent to those skilled in the art upon reference to the detailed description taken in conjunction with the provided figures.

BRIEF DESCRIPTION OF THE DRAWINGS

[0018] FIG. 1 is an isometric view of an abdominal exercise apparatus according to the present invention;

[0019] FIG. 2 is side view of the abdominal exercise apparatus of FIG. 1, supporting a user’s body in use;

[0020] FIG. 3 is a side view of the abdominal exercise apparatus of FIG. 1, showing the starting inclination angle of the body of the user as controlled by the level of inflation of the back wedge section of the base portion;

[0021] FIG. 4A is a top view of the seat portion of the abdominal exercise apparatus of FIGS. 1 through 3; and

[0022] FIG. 4B is a side view of the seat section and base section of the abdominal exercise apparatus of FIGS. 1 through 3.

[0023] FIG. 5 is a side view of the seat section and base section of an alternate abdominal exercise apparatus in accordance with the present invention.

[0024] FIG. 6A is an isometric view of the seat section and base section of the abdominal exercise apparatus of FIG. 5, showing hook and loop fastener straps that removably attach the base section to the seat section.
FIG. 6B is an isometric view of the seat section and base section of the abdominal exercise apparatus of FIG. 5, showing the base section removable attached to the seat section with hook and loop fastener straps.

FIGS. 7A and 7B are side views of the seat section and base section of the abdominal exercise apparatus of FIG. 5 during conventional sit-up exercise.

FIGS. 8A, 8B, and 8C are side views of the abdominal exercise apparatus of FIG. 5, showing different configurations of the inflatable back wedge section for different levels of effort (from the easiest level of effort to the hardest level of effort).

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Turning now to FIGS. 1 and 2, there is shown an abdominal exercise apparatus 10 in accordance with the present invention. It includes a seat portion 12 that is centrally disposed on and attached (preferably by hook and loop fastener(s)) or affixed to a base portion 14. The base portion 14 includes an inflatable front wedge section 16 and an inflatable back wedge section 18. Preferably, the inflatable chambers (not shown) within the front wedge section 18 and the back wedge section 18 have their own air valve assemblies (not shown) and thus are independently inflatable. The seat portion 12 has an outer support structure 20 that maintains a C-shape profile (or shape similar thereto) when viewed from the side as best shown in FIG. 2 in order to support the user's body. The outer support structure 20 is preferably realized by two sections 21A, 21B that are interconnected by a hinge 22 (such as a live hinge) that enables the top section 21A to flex downward toward the bottom section 21B during use. The hinge 22 may be adapted to provide resistance to such flexing movement if desired. Such resistance increases the energy applied to the abdominal muscles during use. The outer support structure 20 has raised sidewalls 28 that form a shallow central cavity 30 therebetween. Preferably, the shape and form of the outer support structure 20 is resiliently retained by heat sealed vinyl internal ribs or other support structure(s) (not shown). Two inflatable support cushions 32A, 32B provide a floor below the central cavity 30. The user's body (from the upper legs to head) is disposed within this shallow central cavity 30 during use and thus centralized on the apparatus. Preferably, three inflatable chambers 33A, 33B, 33C within the two support cushions 32A, 32B have their own air valve assemblies (not shown) and thus are independently inflatable. As shown in FIG. 2, the support cushion 32A and the inflatable chamber 33A support the upper legs of the user, the support cushion 32B and the inflatable chamber 33B support the lumbar region of the user, and the support cushion 32B and the inflatable chamber 33C support the upper back, neck and head of the user. Preferably, the upper surface of the support cushions 32A, 32B are contoured to fit the body of the user as shown. Moreover, the upper surface of the support cushion 32B optimally forms a spinal cavity 34 that fits around the backbone of the user and a head cavity 35 that fits around the head of the user. The spinal cavity 34 and the head cavity 35 provide improved support of the back and neck, respectively.

A first pair of hand straps 36A, 36B are affixed to opposite sides of the upper portion 24 of the outer support structure 20. The upper hand straps 36A, 36B are preferably positioned to provide a natural hand position that encourages positioning the user's hands adjacent his/her head. The upper hand straps 36A, 36B can be used to exercise the abdominal muscles as described below. A second pair of hand straps 38A, 38B are affixed to opposite sides of the lower portion 26 of the outer support structure 20. The lower hand straps 38A, 38B are preferably positioned to provide a comfortable way for the user to position himself/herself on the apparatus. The lower hand straps 38A, 38B can also be used to exercise the upper abdominal muscles and oblique muscles as described below. Preferably, the upper and lower hand straps are formed from nylon webbing that are stitched or heat sealed to the support structure 20 to provide reliable and low-cost manufacturing.

As described above, the inflatable chambers of the apparatus are provided with air valves. The air valves can be mouth valves, needle valves, pump valves or any other type of air valves known in the art. Preferably, the air valves are adapted to permit the respective air chambers to be rapidly emptied of air. An air pump (not shown), which is preferably packaged along with apparatus 10, mates to the air valves to inflate the respective chambers.

The air pump can be a manually-actuated air pump (e.g., a foot pump or hand-pump) or an electric air pump.

The support cushions 32A, 32B of the seat 12 and the wedge sections 16, 18 of the base 14 are preferably realized from plastic, such as vinyl or heavy gauge PVC, that is welded together (preferably using well-known heat welding or ultrasonic welding techniques) to provide the air-tight chambers therein. The seat 12 and the base 14 are preferably formed from ribs, channel, columns or other inflatable support structures that provide rigidity to retain their desired shape and structure. The outer surface of the seat 12 and base 14 preferably has flocking (or double-flocking) to provide a soft intermediary between the user and the plastic. Such flocking also aids against scooting of the apparatus on the floor (e.g., carpet). Sewn nylon or another suitable bag may also be used for the inflatable structures. Preferably, the outer support structure 20 is realized with inlay cotton. An outer sock (not shown) that slips over the seat 12 may be provided. The outer sock is preferably formed from a durable resilient material. The outer sock may have slits that enable the user to insert and remove the inflatable seat cushions 32A, 32B (preferably in a non-inflated state) into place. The outer sock may also have access flaps (not shown) that provide quick and easy access to the air valves that are used to inflate the air chambers of the apparatus. In addition, the outer sock (or the outer support structure of the seat 12) may have a pocket 73 (or other storage compartment) as shown in FIGS. 6A and 6B that can be used to hold electronic devices (such as MP3 players, CD players, etc.). Such electronic devices produce audio signals (and possibly video signals) for supply to the user during exercise.

A patch kit (not shown), which is preferably packaged along with apparatus 10, may be used to repair damage (e.g., holes) to the inflatable chambers of the apparatus.

Prior to (or during) exercising, the user can adjust the level of inflation of the front wedge section 16 and/or the back wedge section 18 of the base 14. The level of inflation of these sections adjusts the range of motion of the user (and corresponding level of effort when performing sit-ups.
through the range of motion). A lower inflation level provides a larger range of motion than a higher inflation level. For an extreme level of effort, the back wedge section 18 can be deflated entirely (or detached from seat 12 and not used (FIG. 8C)).

[0034] Note that by adjusting the inflation level of the back wedge section 18, the user can control the starting inclination angle & as shown in FIG. 3. Preferably, the inflation levels of the back wedge section provide a range of starting inclination angles between zero and thirty degrees and possibly between zero and forty-five degrees. Note that a starting inclination angle greater than 8 degrees may be desired. In this configuration, lower back strain that occurs in body positions at inclination angles between 0 and 8 degree is avoided. Such lower back strain is associated with the majority of sit-up related injuries as described above. Moreover, neck strain is avoided because the neck and head are well supported by the seat with the hands held in their natural position by the upper hand straps.

[0035] Also note that by adjusting the inflation level of front wedge section 16, the user can control his/her leg position. Because the front wedge section 16 pushes the pelvis back towards the back wedge section 18, adjustment of the inflation level of the front wedge section 16 enables the user to adjust the position of the pelvis and lower back against the back wedge section 18 as desired.

[0036] The apparatus 10 can be used to perform a wide variety of abdominal exercises as well as other exercises. For example, the user can perform “conventional” sit-up exercises that target the lower abdominal muscles by positioning his/her body as shown in FIG. 2, grabbing the upper hand straps with his/her hands with the elbows extending forward, and then moving the head and shoulders forward (and back) using the abdominal muscles. The resilient nature of the apparatus 10 works against the lower abdominal muscles during such movement to strengthen and tone the lower abdominal muscles. The inflation level of the front wedge section 16 and the inflatable chamber 33A of the seat 12 can be varied to adjust the bend angle of the legs for bent-leg sit-ups. Alternatively, the front wedge section 16 and the inflatable chamber 33A of the seat 12 can be deflated entirely (or removed from the apparatus) for straight-leg sit-ups. For a lower level of exercise, the user can grip the lower hand straps 38A, 38B instead of the upper hand straps during the exercise.

[0038] The upper abdominal muscles may be exercised by positioning the base 14 of the apparatus 10 on an elevated surface (such as the seat of a reclining chair). The user positions his/her body as shown in FIG. 2, grabs the lower hand straps with his/her hands with the elbows extending forward, and then moves the head and shoulders backward (and forward) using the upper abdominal muscles. The resilient nature of the apparatus 10 works against the upper abdominal muscles during such movement to strengthen and tone the upper abdominal muscles.

[0039] In addition, the apparatus 10 can be used to perform side leg lifts and oblique strengthening. In these exercises, the front and back wedge sections 16, 18 are deflated and the user lies on his/her side in the seat portion 12. In effect, the seat portion 12 is used as an inflated exercise mat with raised side walls that keep the user centered on the mat during exercise. When performing the side leg lifts and/or oblique muscle exercises, the user can grasp onto one of the lower hand straps for support.

[0040] Advantageously, the back wedge section 18 and/or the inflatable support cushion 33B provide a soft intermediary between the floor and the upper buttocks/lower back of the user. It also provides an impact cushion (air cushion 33B) to smooth out the transition from rocking back to rocking forward, which avoids the jerkiness of the sit-up which caused injuries in the prior art. It also enables adjustable positioning of the lower back and aids to isolate the muscle groups in the stomach during exercise (by eliminating assistance from the hip-flexor muscles). Moreover, the inflation levels of the air chambers provide control over the hardness of the apparatus, which provides variable resiliency. Moreover, the inflation levels of the air chambers provide user control over different levels of exercise (from a low level of exercise to a high level of exercise).

[0041] FIGS. 4A and 4B provide general dimensions of the abdominal exercise apparatus of FIGS. 1 and 2. As shown in FIG. 4A, the seat section is on the order of 24 inches wide and 38 inches long. The raised sidewall is on the order of 2 inches wide. The support cushions 32A, 32B are on the order of 18 inches wide. As shown in FIG. 4B, the back wedge section 18 fully inflated, it has a height on the order of 8 inches. The top portion of the seat extends to a height on the order of 30 inches, while the bottom portion of the seat 12 extends to a height on the order of 11.25 inches.

[0042] FIG. 5 illustrates an alternate abdominal exercise apparatus in accordance with the present invention. In this embodiment, the seat 12' is adapted to include an inflatable wedge section 51 that is coupled via a living hinge interface 52 to a back rest section 53. The back rest section 53 is supported by a back wedge section 16'. Both the wedge section 51 and the back rest section 53 have raised side walls (similar to the embodiment described above) that form a shallow central cavity therebetween. The user’s body (from the upper legs to head) is disposed within this shallow central cavity during use and thus centralized on the apparatus. As shown, the wedge section 51 supports the upper legs of the user during use, while the back rest section 53 supports the lumbar section, upper back, neck and head of the user. The profile of the wedge section 51 and the back rest section 53 may be contoured to fit the body of the user (and for example, form a spinal cavity) as described above.
The apparatus 10 includes three air chambers—a first air chamber 54 that is part of the wedge section 51, a second air chamber 55 that is part of the back rest section 53 and that is disposed under the lumbar section of the user, and a third air chamber 56 that is part of the back wedge section 16. The second air chamber 55 may be extended such that is disposed under the upper back and possibly the neck and head of the user. Preferably, the inflation levels of the three air chambers are independently inflatable.

The apparatus 10 may include upper hands straps 66 (one shown) and/or lower hand straps 68 (one shown) similar to those described above. In addition, the apparatus 10 may utilize hook and loop fastener straps 71A, 71B that removably attach the back wedge section 14 to the wedge section 51 of the seat. As shown in FIGS. 6A and 6B, the fastener straps 71A, 71B preferably wrap under the wedge section 51 and are removably attached to hook and fastener pads 72A, 72B affixed to the front of the wedge section 51. In this configuration, the straps 71A, 72B effectively hold the back wedge section 16 in place adjacent the upper section of the seat as shown.

Advantageously, the apparatus 10 can be used to perform the wide variety of abdominal exercises as well as other exercises. For example, the user can perform “conventional” sit-up exercises that target the lower abdominal muscles by positioning his/her body as shown in FIG. 7A, grabbing the upper hand straps 66 with his/her hands with the elbows extending forward, and then moving the head and shoulders forward (and back) using the abdominal muscles. The resilient nature of the apparatus 10 works against the lower abdominal muscles during such movement to strengthen and tone the lower abdominal muscles. The inflation level of the wedge section 51 can be varied to adjust the bend angle of the legs for bent-leg sit-ups. Alternatively, the inflation level of the wedge section 51 can be deflated for straight-leg sit-ups. For a lower level of exercise, the user can grip the lower hand straps 68 instead of the upper hand straps 66 during the exercise.

Similarly, the user can perform “twisting” sit-up exercises that target the lower abdominal muscles and oblique muscles. In this exercise, the user grabs the upper hand straps 66 with his/her hands and holds the head rest of the seat 12 against the head. The user twists his/her upper body while moving forward to strengthen and tone the lower abdominal muscles and oblique muscles. The resilient nature of the apparatus 10 works against the lower abdominal muscles and oblique muscles during such twisting movement to strengthen and tone these muscles. The inflation level of the wedge section 51 can be varied to adjust the bend angle of the legs for bent-leg twisting sit-ups. Alternatively, the wedge section 51 can be deflated for straight-leg twisting sit-ups. For a lower level of exercise, the user can grip the lower hand straps 68 instead of the upper hand straps 66 during the exercise.

The upper abdominal muscles may be exercised by positioning the seat 12 of the apparatus 10 on an elevated surface (such as the seat of a reclining chair). The user grabs the lower hand straps 68 with his/her hands with the elbows extending forward, and then moves the head and shoulders backward (and forward) using the upper abdominal muscles. The resilient nature of the apparatus 10 works against the upper abdominal muscles during such movement to strengthen and tone the upper abdominal muscles.

In addition, the apparatus 10 can be used to perform side leg lifts and oblique muscle strengthening. In these exercises, the back wedge section 16 is detached from the seat 12 (it is not used) and the wedge section 51 is deflated. The user lies on his/her side in the seat portion 12. In effect, the seat portion 12 is used as an inflated exercise mat with raised sidewalls that keep the user centered on the mat during exercise. When performing the side leg lifts and/or oblique muscle exercises, the user can grasp onto one of the lower hand straps for support.

The inflation level of the air chambers 54, 55, 56 of the apparatus 10 can be varied to control the range of motion (i.e., inclination angle and level of effort) of the user’s body during use as shown in FIGS. 8A-8C. FIG. 8A illustrates the configuration with the back wedge section 16 fully inflated, which provides the easiest (least) level of effort. FIG. 8B illustrates the configuration with the back wedge section 16 partially inflated, which provides an intermediate level of effort. FIG. 8C illustrates the configuration with the back wedge section 16 removed, which provides the hardest (most advanced) level of effort. Such inclination angle control can be used to avoid lower back strain as described above.

In addition, the inflation level of the air chamber 54 of the wedge section 51 can also be used to control position of the user can control his/her leg position, which enables the user to adjust the position of the pelvis and lower back as desired. Finally, the inflatable lumbar support chamber 55 provides a soft intermediary between the floor and the upper buttocks/lower back of the user. It also provides an impact cushion (air cushion) to smooth out the transition from rocking back to rocking forward, which avoids the jankiness of the sit-up which caused injuries in the prior art. It also enables adjustable positioning of the lower back and aids to isolate the muscle groups in the stomach during exercise (by eliminating assistance from the hip-flexor muscles).

There have been described and illustrated herein several embodiments of an abdominal exercise apparatus and method of using such apparatus. While particular embodiments of the invention have been described, it is not intended that the invention be limited thereto, as it is intended that the invention be as broad in scope as the art will allow and that the specification be read likewise. Thus, while particular hand gripping mechanisms have been disclosed, it will be appreciated that other hand gripping mechanisms such as straps or support bars can be used as well. Alternatively, the grips can be molded holes into the support structure 20. In addition, while particular types of air chambers have been disclosed, it will be understood that the inflatable air chamber types can be used. Furthermore, the air chambers could have structural support members therein. Moreover, the abdominal exercise apparatus described herein can be manufactured with different sizes, with different shapes and with different materials. Preferably, the apparatus can be folded and compressed such that it fits into a small box or a suitcase for traveling. It will therefore be appreciated by those skilled in the art that yet other modifications could be made to the provided invention without deviating from its spirit and scope as claimed.

What is claimed is:

1. An abdominal exercise apparatus comprising:

a base having an inflatable back wedge section; and
a flexible seat disposed on said base, said flexible seat having raised sides that form a shallow cavity therebetween, said cavity adapted to support the upper and lower body parts of a user therein; and said inflatable back wedge section for adjusting an angle of said body parts relative to a horizontal direction.

2. An abdominal exercise apparatus according to claim 1, wherein:

said seat includes an upper portion and a lower portion.

3. An abdominal exercise apparatus according to claim 1, wherein:

said base further includes an inflatable front wedge section, wherein said back wedge section and said front wedge section are independently inflatable.

4. An abdominal exercise apparatus according to claim 2, wherein:

said seat comprises an outer support structure having a hinge coupling said upper portion to said lower portion.

5. An abdominal exercise apparatus according to claim 1, wherein:

said seat further comprises at least one inflatable cushion that provides a floor below said shallow cavity.

6. An abdominal exercise apparatus according to claim 5, wherein:

said at least one inflatable cushion is profiled to accept the body contour of the user.

7. An abdominal exercise apparatus according to claim 1, wherein:

said at least one inflatable cushion comprises a first inflatable cushion that supports a lumbar section of the user.

8. An abdominal exercise apparatus according to claim 7, wherein:

said at least one inflatable cushion further comprises a second inflatable cushion that supports the upper legs of the user.

9. An abdominal exercise apparatus according to claim 8, wherein:

said first and second inflatable cushions are independently inflatable.

10. An abdominal exercise apparatus according to claim 8, wherein:

said seat comprises a front wedge section, and said second inflatable cushion is part of said front wedge section of said seat.

11. An abdominal exercise apparatus according to claim 7, wherein:

said seat further comprises a third inflatable cushion that supports the upper back, neck and head of the user.

12. An abdominal exercise apparatus according to claim 11, wherein:

said first, second and third inflatable cushions are independently inflatable.

13. An abdominal exercise apparatus according to claim 2, further comprising:

a first set of hand grips affixed to opposite sides of said upper portion of said seat.

14. An abdominal exercise apparatus according to claim 13, further comprising:

a second set of hand grips affixed to opposite sides of said lower portion of said seat.

15. An abdominal exercise apparatus according to claim 1, further comprising:

a pair of straps that removably attach said back wedge section to a part of said seat.

16. An abdominal exercise apparatus according to claim 15, wherein:

said straps comprise hook and loop fasteners.

17. A method of exercising comprising:

providing the abdominal exercise apparatus of claim 1;

adjusting an inflation level of said back wedge section to vary a range of motion of the user’s body up to at least 30 degrees.

18. A method according to claim 17, wherein:

said inflation level of said back wedge section is adjustable to vary a starting inclination angle of the user’s body up to at least 30 degrees.

19. A method according to claim 17, further comprising:

performing at least one exercise with the abdominal exercise apparatus.

20. A method according to claim 17, further comprising:

performing a variety of exercises with the abdominal exercise apparatus

21. A method according to claim 20, wherein:

said variety of exercises are selected from the group comprising

i) conventional situps;

ii) twisting situps;

iii) elevated sitbacks;

iv) side leg lifts; and

v) oblique muscle exercises.

22. A kit comprising:

the abdominal exercise apparatus of claim 1; and

an air-pump for inflating air chambers of said abdominal exercise apparatus.

23. A kit according to claim 22, further comprising:

a patch kit for patching said air chambers.

24. An abdominal exercise apparatus comprising:

a base; and

a seat having an upper surface with a profile that is substantially C-shaped, said seat having an upper portion and a lower portion with a pair of hand gripping mechanisms affixed to said upper portion;

wherein at least one of said base and said seat has an inflatable air chamber disposed therein.

25. An abdominal exercise apparatus according to claim 24, wherein:

said seat is removably attached to said base and is disposed on said base during use.

26. An abdominal exercise apparatus according to claim 24, wherein:
said seat has raised sides that form a shallow cavity therebetween, said cavity adapted to support the upper and lower body parts of a user therein.

27. An abdominal exercise apparatus according to claim 24, wherein:
said base comprises an inflatable back wedge section for adjusting an angle of body parts relative to a horizontal direction.

28. An abdominal exercise apparatus according to claim 24, wherein:
said seat comprises a hinge coupling said upper portion to said lower portion.

29. An abdominal exercise apparatus according to claim 24, further comprising:
a pair of hand gripping mechanisms affixed to said lower portion of said seat.

30. An abdominal exercise apparatus according to claim 24, wherein:
said seat comprises an inflatable air chamber for supporting the lumbar section of the user.

31. An abdominal exercise apparatus comprising:
a base; and
a seat attached to said base and having an upper surface that supports body parts of a user, said seat having an upper portion that is coupled to a lower portion by a hinge interface;

wherein at least one of said base and said seat has an inflatable air chamber disposed therein.

32. An abdominal exercise apparatus according to claim 31, wherein:
said seat is removably attached to said base and is disposed on said base during use.

33. An abdominal exercise apparatus according to claim 31, wherein:
said seat has raised sides that form a shallow cavity therebetween, said cavity adapted to support the upper and lower body parts of a user therein.

34. An abdominal exercise apparatus according to claim 31, further comprising:
a first pair of hand gripping mechanisms affixed to said upper portion of said seat.

35. An abdominal exercise apparatus according to claim 31, further comprising:
a second pair of hand gripping mechanisms affixed to said lower portion of said seat.

36. An abdominal exercise apparatus according to claim 31, wherein:
said seat comprises an inflatable air chamber for supporting the lumbar section of the user.

37. An abdominal exercise apparatus comprising:
a plurality of inflatable air chambers disposed in a resilient support structure, wherein at least one of said inflatable air chambers is adapted to provide a soft intermediary between the floor and the lower back of the user, and said resilient support structure is adapted to provide resistance to abdominal muscles of the user.

38. The abdominal exercise apparatus according to claim 37, wherein:
said plurality of inflatable air chambers comprise at least three inflatable air chambers.

39. The abdominal exercise apparatus according to claim 38, wherein:
said at least three inflatable air chambers are separately inflatable.

40. The abdominal exercise apparatus according to claim 37, wherein:
an inflation level of at least one of said plurality of inflatable air chambers is adjustable to accommodate users of different sizes and shapes.

41. The abdominal exercise apparatus according to claim 37, wherein:
an inflation level of at least one of said plurality of inflatable air chambers is adjustable to accommodate different levels of effort during use.

42. The abdominal exercise apparatus according to claim 37, wherein:
an inflation level of at least one of said plurality of inflatable air chambers is adjustable to accommodate different body inclination angles during use.