A "reduced-gravity" training ball that allows the user to more easily react to the ball's movement and accelerating skills than a regulation ball. A training system may be provided to coach the user through a series of drills and fitness exercises with the ball. The training ball may come in several weights that train the user by gradually using heavier balls that have more "gravity." In one embodiment, a training ball has a lightweight inner bladder with an inflation port, and an exterior layer that covers the inner bladder. The exterior surface may be provided with lines, indentations, graphics and/or other features that improve the performance of the ball and/or that replicate some or all of the characteristics of the exterior surface of the regulation ball it simulates.
TRAINING BALL FOR INDOOR USE AND A METHOD FOR TRAINING WITH A LIGHTWEIGHT BALL

RELATED APPLICATION

[0001] This application claims the benefit of U.S. Provisional Patent Application 62/241882, which was filed on Oct. 15, 2015 and which is incorporated by reference herein in its entirety.

TECHNICAL FIELD

[0002] The present invention relates to a lightweight ball for indoor and in-home exercise and, in particular, to a lightweight ball for developing ball handling skills indoors without damage to the interior of a household room.

BACKGROUND

[0003] Athletes who play sports that include hitting or kicking a ball tend to spend many hours training. There are many devices to facilitate training, such as balls attached to bungee cords, balls attached to fulcrums, rolling half-spherical balls and rebounding nets. These devices are often used outdoors or in an indoor stadium or other training space. When such devices are used in most indoor settings, damage to walls, ceilings, other structural components—as well as to related objects, such as lamps, pictures, windows, drinking glasses, etc.—can occur.

[0004] As an alternative and in order to limit the possibility of damage, the athlete could use a balloon or beach ball indoors. The exterior of balloons and beach balls do not replicate the exterior of an actual sports ball. Also, the valve, balloon knot and shape can cause the balloon or beach ball to spin lopsidedly and out of balance.

[0005] What is needed is a ball that has a shape and weight that allows for an accurate simulation of real ball handling, while limiting the potential damage the ball can do in an indoor environment such as a house.

BRIEF SUMMARY

[0006] One embodiment relates to a method of training for a sport that utilizes a training ball that simulates a regulation ball but that is lighter in weight. A user trains indoors with a first ball having an inner bladder and an exterior layer extending about the inner bladder, the inner bladder having an inflation port that is adapted to extend through the exterior layer for filling the inner bladder with a gas, the first ball having a first weight that is sufficiently light to be used in a normal household setting. After training with the first ball, the user then trains indoors with a second ball having an inner bladder and an exterior layer extending about the inner bladder, the inner bladder having an inflation port that is adapted to extend through the exterior layer for filling the inner bladder with a gas. The second ball has a second weight that is heavier than the first weight and is sufficiently light to be used in a normal household setting.

[0007] The method may include various optional steps and features incorporated either alone or in combination with other optional features. In one approach, after training with the second ball, the user then trains indoors with a third ball having an inner bladder and an exterior layer extending about the inner bladder, the inner bladder having an inflation port that is adapted to extend through the exterior layer for filling the inner bladder with a gas, the third ball having a third weight that is heavier than the second weight and that is sufficiently light to be used in a normal household setting.

[0008] At least one of the first and second balls may include an exterior surface that is roughened, textured, indented and/or shaped to enhance performance of the ball. The first and second balls may simulate and be about the same outer dimension as a corresponding regulation ball. The first, second and third balls may simulate and be about the same outer dimension as a corresponding regulation ball. The inner bladder of at least one of the balls may secure onto an interior surface of the outer layer of the corresponding ball. At least one of the bladders may be a lightweight inflatable balloon.

[0009] A variety of different materials may be used. As examples only, the balloon may be made of Mylar. The outer layer may be made from spun high-density polyethylene fibers. In one embodiment, the outer layer has protrusions that extend from the outer layer to the surface of the balloon to create a space or spaces between the outer layer and the balloon when the balloon is inflated. Alternatively, the balloon may have structures that create a space or spaces between the balloon and the exterior layer, as desired to create properties as desired for a particular embodiment.

[0010] In another embodiment, a method of training for a sport utilizes a training ball that simulates a regulation ball but that is lighter in weight than the regulation ball. A user trains indoors with a training ball having an inner bladder and an exterior layer that extends about the inner bladder, the inner bladder being a lightweight balloon and having an inflation port that is adapted to extend through the exterior layer for filling the inner bladder with a gas, the ball having a first weight that is sufficiently light to be used in a normal household setting without damaging the contents of the household. The training ball simulates at least one of the dimensions, feel, and movement of a regulation ball.

[0011] The training ball may be inflated by blowing into a straw that is in gaseous communication with the inner bladder, as one example, although other methods of inflating a bladder known in the art may be employed.

[0012] In another embodiment, a method of training for a sport utilizes a training ball that simulates a regulation ball but that is lighter in weight. A user trains with a training ball having an inner bladder and an exterior layer extending about the inner bladder, the inner bladder having an inflation port that is adapted to extend to be accessible from the exterior layer for filling the inner bladder with a gas, the first ball having a weight that is sufficiently light to be used in a normal household setting, wherein the exterior surface of the exterior layer simulates the surface of the regulation ball.

[0013] In this embodiment, as with the others, the training ball may include an exterior surface that is roughened, textured, indented and/or shaped to enhance performance of the training ball. The training ball may replicate the outer dimension of a corresponding regulation ball. The inner bladder of the training ball may be secured onto an interior surface of the outer layer of the corresponding ball. The bladder may be lightweight inflatable balloon.

[0014] Again, the disclosed concept includes variations, and the optional features noted above may be added to embodiments of the invention, either alone or in various combinations as appropriate.

[0015] A further understanding of the nature and advantages will become apparent by reference to the remaining portions of the specification and drawings.
FIG. 1 illustrates a training ball according to one embodiment of the invention in which the ball has multiple panels, an inflation port to fill an inner bladder, and indicia printed thereon;

FIG. 2 is a view of the ball of FIG. 1 in which the inner bladder is exposed for illustrative purposes and an inflation stem is shown extended so that the bladder may be inflated;

FIG. 3 illustrates one embodiment of an uninflated inner bladder;

FIG. 4 illustrates panels that may be sewn together to form an exterior covering of the training ball; and

FIG. 5 illustrates the training ball of FIG. 2 after inflation and with the inflation port tucked into exterior surface of the ball.

The outer layer 18 of the ball 10 may have measurements that match the circumference of an actual sports ball. That is, as just one non-limiting example, the training ball may have a circumference of 68-70 cm to correspond to the circumferences of a regular sports ball. The weight of the ball may be varied. There could be, for example, a set of balls that have weights between less than 1 ounce up to about 8 ounces to simulate different levels of “gravity.” The outer layer 18 is typically made of a lightweight synthetic woven material, or other suitable lightweight material.

In one specific embodiment, the training ball 10 includes a heat-seamed, 4-panel inner bladder 16 that inflates to about 70 cm in circumference. The bladder 16 is made of a material such as Mylar or other material suitable for a bladder. The exterior may be a sewn, 6-panel outer shell that is about 70 cm in circumference when the bladder is inflated. One non-limiting example of a suitable exterior surface is one made of Tyvek 1443R, although other types of Tyvek or synthetic woven materials or other suitable materials may be used.

In another non-limiting embodiment, the inner bladder has an uninflated dimension of about 7 inches or 17.5 centimeters at its widest point, and a length of about 14 inches or 35 centimeters, not including the length of the inflation port. The inner bladder is then inflatable to a circumference of about 70 cm.

The inflatable bladder 16 is lightweight, and includes an inflation valve or port 14 that is a self-closing. The valve typically does not add any significant weight to the ball and does not alter the balance of the spin of the ball. The outer surface 20 of the bladder is situated within the outer layer 18. The bladder may optionally be secured within the outer layer 18 with adhesive, for example, applied at point 22 and/or at other locations on the bladder.

The exterior surface of outer layer 18 may also include designs and/or visuals, such as lines 16. For example, the exterior surface may include lines (printed, molded, intruded or extruded), that give a visual reference to the user and/or give the ball balance properties when the ball is spinning. The exterior surface may also include printed indicia that, for example, assists the user in seeing the ball or a portion thereof.

Fig. 4 illustrates a panel of portions 30a-f which, when sewn or otherwise manipulated and secured forms an exterior layer 18. The precise nature of each of the panels 30a-f may vary for different types of balls and/or the desired properties of the ball. For example, the exterior surface of the outer layer 18 may be roughened and/or have shapes extending from or indented into the surface. The surface may mirror the surface of the type of ball it seeks to replicate, having an external surface that appears to be a soccer ball, a volleyball, or whatever type of ball of the sport for which the user is training.

In one embodiment, using the ball would simulate playing with an actual sports ball (e.g. a soccer ball) in a low-gravity environment. Being lightweight and having a low gravity motion, the ball may “float” when hit or kicked, and give the user(s) time to react and adjust their movements for increased skill training, fitness and/or physical therapy, for example. In that regard, various embodiments of a training ball according to the present invention may have different weights. As the user(s) increases skill level, the user
may use a heavier ball with less “low-gravity” effect. This brings the weight of the ball closer to a real regulation sports ball. So, for example, whereas a regulation soccer ball may be 16 ounces in weight, for example, a training ball according to the present invention may range from about 0.3 ounces to about 8 ounces. The heavier ball may more closely replicate an actual soccer ball, but still be lighter in weight and more suitable than an actual soccer ball for training indoors.

[0033] Considering the invention further, an athlete is provided with a “reduced-gravity” ball that allows the user to more easily react to the ball’s movement and accelerating skills than a regulation ball. A training system may be provided to coach the user through a series of drills and fitness exercises with the ball. The “anti-gravity” ball may come in several weights that train the user by gradually using heavier balls that have more “gravity.” In one embodiment, the training ball is safe indoors, similar to playing with a balloon but having an outer surface that better simulates an actual playing ball. In this respect, balls according to the present invention may be used by athletes, coaches, military instructors, fitness seekers, and/or persons with injuries or disabilities. The training ball may lead to rapid improvement of ball-handling skills, hand-eye coordination, and/or fitness, may be used in physical therapy. Embodiments of the invention may be adapted to be used indoors during inclement weather.

[0034] In view of the many possible embodiments to which the disclosed principles may be applied, it should be recognized that the illustrated embodiments are only preferred examples and should not be taken as limiting the scope of the disclosure. Rather, the scope is defined by the following claims. We therefore claim all that comes within the scope and spirit of these claims.

[0035] In view of the many possible embodiments to which the disclosed principles may be applied, it should be recognized that the illustrated embodiments are only preferred examples and should not be taken as limiting the scope of the disclosure. Rather, the scope is defined by the following claims. We therefore claim all that comes within the scope and spirit of these claims.

What is claimed is:

1. A method of training for a sport that utilizes a training ball that simulates a regulation ball but that is lighter in weight, the method comprising the steps of:
   - training indoors with a first ball having an inner bladder and an exterior layer extending about the inner bladder, the inner bladder having an inflation port that is adapted to extend through the exterior layer for filling the inner bladder with a gas, the first ball having a first weight that is sufficiently light to be used in a normal household setting; and
   - after training with the first ball, training indoors with a second ball having an inner bladder and an exterior layer extending about the inner bladder, the inner bladder having an inflation port that is adapted to extend through the exterior layer for filling the inner bladder with a gas, the second ball having a second weight that is heavier than the first weight and that is sufficiently light to be used in a normal household setting.

2. A method as claimed in claim 1, wherein the method further includes the step of:
   - after training with the second ball, training indoors with a third ball having an inner bladder and an exterior layer extending about the inner bladder, the inner bladder having an inflation port that is adapted to extend through the exterior layer for filling the inner bladder with a gas, the third ball having a third weight that is heavier than the second weight and that is sufficiently light to be used in a normal household setting.

3. A method as claimed in claim 1, wherein at least one of the first and second balls includes an exterior surface that is roughened, textured, indented and/or shaped to enhance performance of the ball.

4. A method as claimed in claim 1, wherein the first and second balls simulate and are about the same outer dimension as a corresponding regulation ball.

5. A method as claimed in claim 2, wherein the first, second and third balls simulate and are about the same outer dimension as a corresponding regulation ball.

6. A method as claimed in claim 1, wherein the inner bladder of at least one of the balls is secured onto an interior surface of the outer layer of the corresponding ball.

7. A method as claimed in claim 1, wherein at least one of the bladders is a lightweight inflatable balloon.

8. A method as claimed in claim 7, wherein the balloon is made of Mylar.

9. A method as claimed in claim 1, wherein the outer layer is made from spun high-density polyethylene fibers.

10. A method as claimed in claim 7, wherein the outer layer is made from spun high-density polyethylene fibers.

11. A method as claimed in claim 8, wherein the outer layer is made from spun high-density polyethylene fibers.

12. A method of training for a sport that utilizes a training ball that simulates a regulation ball but that is lighter in weight than the regulation ball, the method comprising the steps of:
   - training indoors with a training ball having an inner bladder and an exterior layer that extends about the inner bladder, the inner bladder being a lightweight balloon and having an inflation port that is adapted to extend through the exterior layer for filling the inner bladder with a gas, the ball having a first weight that is sufficiently light to be used in a normal household setting without damaging the contents of the household; and
   - simulating at least one of the dimensions, feel, and movement of a regulation ball.

13. A method as claimed in claim 12, wherein the method further comprises inflating the training ball by blowing into a straw that is in gaseous communication with the inner bladder.

14. A method of training for a sport that utilizes a training ball that simulates a regulation ball but that is lighter in weight, the method comprising the step of:
   - training with a training ball having an inner bladder and an exterior layer extending about the inner bladder, the inner bladder having an inflation port that is adapted to extend to be accessible from the exterior layer for filling the inner bladder with a gas, the first ball having a weight that is sufficiently light to be used in a normal household setting, wherein the exterior surface of the exterior layer simulates the surface of the regulation ball.
15. A method as claimed in claim 14, wherein the training ball includes an exterior surface that is roughened, textured, indented and/or shaped to enhance performance of the training ball.

16. A method as claimed in claim 14, wherein the training ball replicates the outer dimension of a corresponding regulation ball.

17. A method as claimed in claim 14, wherein the inner bladder of the training ball is secured onto an interior surface of the outer layer of the corresponding ball.

18. A method as claimed in claim 14, wherein the bladder is a lightweight inflatable balloon.

19. A method as claimed in claim 14, wherein at least a portion of the inner bladder is spaced from an inner surface of the exterior layer when the inner bladder is inflated.