ABSTRACT

Disclosed herein are garments providing adjustable breast support. They can be adapted to fit the shape of the body and can provide varying support to accommodate a wide variety of activities. These garments are particularly suitable for high-impact activities or nursing.
ADJUSTABLE SUPPORT BRA

RELATED APPLICATION INFORMATION

[0001] This application claims priority to U.S. Provisional Application Ser. Nos. 61/050,553, filed on May 5, 2008; and 61/153,066, filed on Feb. 17, 2009; both of which are incorporated herein by reference in their entireties for all purposes.

BACKGROUND

[0002] 1. Field
[0003] The present invention relates to athletic wear and undergarments for women. More specifically, this invention relates to a bra that provides adjustable support and that may be adapted for high impact activities, such as sports.

[0004] 2. Description of the Related Art
[0005] The undergarment known as the bra has been commonly worn by women worldwide since the early twentieth century. Bras are known to provide breast support and comfort on an everyday basis. They are also used for their shaping effects, and more recently, as fashion items.

[0006] Many varieties of the bra can be found in modern culture. For example, bras of the everyday variety may come in styles such as strapless, underwire, wireless, racerback, front-close, back-close, seamless, padded, push-up, demi, or balconet. Different types of bras have also evolved to accommodate particular uses, such as sports bras or maternity bras.

[0007] Sports bras are generally intended for athletic wear and are characterized by their increased level of breast support. This increased support prevents excessive breast movement that often accompanies high impact activities like sports, thus preventing breast discomfort and stretching of connective tissue. A common design of a sports bra is a pull-over style with an elastic band and racerback straps. Often, sports bras provide increased breast support and decreased breast movement by compressing the breasts and pulling them closer to the chest. Varieties of modern sports bras provide a range of support capability, often targeted at a particular activity. For example, less supportive sports bras may be targeted at low impact activities such as yoga, while more supportive sports bras may be targeted at high impact activities such as running.

[0008] While many sports bras minimize breast movement, they do not provide individualized support for each breast or to accommodate a particular wearer. The result is that a given sports bra may be ill-fitting for a particular wearer; for some it may be too constricting, while for others it may provide inadequate support. In addition, many sports bras do not provide individualized support to accommodate different activities. For example, a sports bra that is designed to be worn during low impact activities may not be appropriate to be worn during high impact activities.

SUMMARY

[0009] A need exists for a garment that allows the wearer to vary the amount of breast support based on the wearer’s body shape and activities and to enhance breast shape at the same time. Embodiments described herein are directed to an adjustable breast support garment that can include a band configured to go around a human chest; a strap configured to hold up the band when worn; a frame including an upper portion and a lower portion, the upper portion attached or configured to attach to the strap and the lower portion attached to the band; a cup including a first material and having an upper portion, the upper portion configured to adjustably attach to the strap; and a lining proximal to the cup, where the lining can include a second material that is stiffer than the first material.

[0010] Embodiments described herein are directed to a method of supporting a human breast, which can include placing a band around a chest of the human; adjusting the band to place the breast adjacent to a lining proximal to a cup attached to the band, wherein the cup can include a first material and the lining can include a second material that is stiffer than the first material; adjusting a strap that is attached to a frame that is attached to the band on the human’s body such that it assists in holding up the band; and securing an upper portion of the cup to the strap.

[0011] These and other embodiments are described in further detail below.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] FIG. 1 is an interior view of an embodiment of the garment described herein.

[0013] FIG. 2 is an exterior view of an embodiment of the garment described herein.

[0014] The drawings are intended to illustrate embodiments described herein and are not intended to limit the invention.

DETAILED DESCRIPTION

[0015] Disclosed herein are women’s garments that provide adjustable breast support and that may be adapted for use in high-impact activities, as well as methods of using thereof. The adjustable breast support garments described herein may include a band 10 configured to go around a human chest, a strap 10 configured to hold up the band, a frame 2, a cup 3, and a lining 1, as shown in FIGS. 1-2. Examples of embodiments of the women’s garments disclosed herein are depicted in FIGS. 1-2. Embodiments may be generally characterized as bras with adjustable support features, although those of ordinary skill in the art will appreciate that additional embodiments may include other athletic-appropriate attire such as a tank top or camisole.

[0016] As shown in FIGS. 1-2, the garments disclosed herein may include a band 7. The band 7 may be configured to go around a human chest. In some embodiments the band 7 secures the garment around the human’s chest. The band 7 may be constructed of any material that can be used for clothing, including but not limited to, cotton, polyester, spandex, nylon, modal, mesh or combinations thereof. In an embodiment, the band 7 may be constructed entirely of mesh. In some embodiments, the band 7 further includes an edging 23, as shown in FIGS. 1-2. The edging 23 may extend along the superior and/or inferior edges of the band 7. The edging 23 may be constructed from a variety of materials, such as elastic.

[0017] The band 7 may include a linear piece of material having first and second ends which are secured by a plurality of fasteners 8, as shown in FIGS. 1-2. The fasteners 8 may be, for example, hook and eye closures. The fasteners 8 may be constructed from a variety of materials, including but not limited to plastic and/or metal. In an embodiment, the fasteners 8 may be adapted to rest against a wearer’s back. In another embodiment, the fasteners 8 may be adapted to rest against a wearer’s chest, for example, in a front-close style. In some embodiments, the number of fasteners 8 provided varies depending on the size of the garment and/or the purpose.
for which the garment is used. In some embodiments, the proximal surface of the band adjacent to the fasteners 8 may be lined with a backing material 9, as shown in FIG. 1. In other embodiments, the band 7 may include an approximately continuously connected piece of material without fasteners.

[0018] The band 7 may include a center portion 6 between the cups 3, as shown in FIGS. 1-2. The center front portion 6 may be constructed of any material that can be used for clothing, including but not limited to, cotton, polyester, spandex, rayon, modal, plastic, or combinations thereof. In some embodiments the center front portion 6 may include two separate pieces that can be releasably attached via fasteners 8, as in a front-close style described above.

[0019] In some embodiments, the band 7 may include one or more ribs 22, as shown in FIG. 1. Advantageously, in some embodiments the rib 22 may provide additional breast support and reinforce the strength of the garment. The rib 22 may be made of a stiff material such as plastic and/or metal. In some embodiments, the rib 22 may be lined with a softer material, such as felt. As shown in FIG. 1, the rib 22 may include a linear piece of material that runs vertically from the superior edge to the inferior edge of the band 7. The rib 22 may be positioned at various locations along the band 7. For example, the rib 22 may be positioned between the outer edge of a cup 3 and the point at which a strap 10 meets the rear portion of the band 7, as shown in FIG. 1. In some embodiments, the band 7 includes two ribs 22. Each rib 22 may be positioned symmetrically along a portion of the band 7. Those of ordinary skill in the art may appreciate that other embodiments may not include a rib 22, or may include additional ribs.

[0020] The band may also include a lower support means 4. The lower support means 4 may include a means for providing breast support, such as an underwire or elastic. In some embodiments, the lower support means 4 includes an underwire, as shown in FIGS. 1-2. In some embodiments, the lower support means 4 can be padded with additional material.

[0021] The garment may include a strap 10 that is configured to hold up the band 7 when worn. The strap 10 may have an adjustable length, a variable width, and/or a variable thickness. In some embodiments, the garment may include two straps 10. Each strap 10 may extend from the top portion 11 of each frame 2 to the rear portion of the band 7, such that each strap traverses a wearer's shoulder when worn. The strap 10 may have an anterior portion 19 and a posterior portion 18, as shown in FIG. 1. The anterior portion 19 of each strap 10 may be connected to the top portion 11 of a frame 2 and traverses the anterior side of the wearer's torso and continues across the wearer's shoulder. In these embodiments the posterior portion 18 of each strap 10 is connected to the band 7 and traverses the wearer's back. In some embodiments the strap 10 extends from the top portion 11 of a frame 2 directly over the wearer's shoulder to contact the band 7. In other embodiments, the strap 10 extends from the top portion 11 of a frame 2 over the wearer's shoulder and across the wearer's back to contact the band 7 on the opposite side of the wearer's body, such as in a cross-over or racerback manner.

[0022] In still other embodiments, the garment may include a single strap 10. In some embodiments, the strap 10 may extend from the top portion 11 of a first frame 2 to the top portion of a second frame 2. In these embodiments, the strap 10 may be adapted to pass behind a wearer's neck, for example as in a halter-style garment. Those of ordinary skill in the art will appreciate that a variety of other strap configurations may be used as desired.

[0023] Each strap 10 may be constructed of any material that can be used for clothing, including but not limited to, cotton, polyester, spandex, rayon, modal, plastic, or combinations thereof. In some embodiments at least a portion of each strap 10 is constructed from a material that includes elastic. In some embodiments, a first portion of strap 10 may include a first material and a second portion of strap 10 may include a second material, where the first and second materials are different. In some embodiments the posterior portion 18 of each strap 10 is constructed of a first material that includes elastic and the anterior portion 19 of each strap 10 is constructed of a second material.

[0024] The strap 10 may have a variable width. In some embodiments, the strap 10 is widest at the portion that is intended to contact the top of a wearer's shoulder. As shown in FIG. 1, the strap 10 may have an anterior portion 19 and a posterior portion 18. In some embodiments, the anterior portion 19 is wider than the posterior portion 18.

[0025] At least a portion of each strap 10 may be padded. For example, the anterior portion 19 of the strap 10 may be padded, as shown in FIG. 1. In other embodiments, the portion of the strap 10 that is intended to contact the top of the wearer's shoulder is padded. Those of ordinary skill in the art may appreciate that a padded portion of a strap 10 may be thicker than a non-padded portion, and may result in a strap 10 having a variable thickness. In some embodiments, the anterior portion 19 may be padded and may be thicker than the posterior portion 18.

[0026] Each strap 10 may be adjustably attached to the top portion 11 of each frame 2 and the band 7 by a variety of methods. In some embodiments, the strap 10 may be sewn to the frame 2 and/or band 7. In other embodiments, the strap 10 may be configured to be attached to the frame 2 and/or band 7, for example, a clip 17. In some embodiments, each strap 10 may be readily detached and reattached by the wearer. The length of each strap 10 may be adjustable in some embodiments. This may be accomplished using any means commonly known in the art, such as configuring the strap 10 in a double loop configuration 20 that loops around a buckle 21.

[0027] Each strap 10 may include a plurality of compatible securing elements 13 that are adapted to couple with a securing element 12 on the upper portion 15 of each cup 3. In some embodiments, the compatible securing elements 13 may be adjacent the anterior portion 19 of the strap 10. The compatible securing elements 13 are described further below and may include, for example, a plurality of fabric loops, as shown in FIG. 2.

[0028] The interior view of an embodiment of the present invention is depicted in FIG. 1. As shown in FIG. 1, the garment may include a frame 2, having an upper portion 11 and a lower portion 5. In some embodiments, the frame 2 may include a cut-out 16, as shown in FIG. 1. The cut-out 16 may have an outline that is at least partially curved. In some embodiments, each frame 2 may be configured approximately in an inverted "V" shape. Those of ordinary skill in the art, however, may appreciate that each frame 2 may be configured in a variety of other shapes, such as an upside-down horseshoe or "U" shape. As shown in FIG. 1, the frame 2 may also have an intermediate portion 24. In some embodiments, the intermediate portion 24 may have a width that is less than the width of the lower portion 5. In other embodiments, the
frame 2 may not have a cut-out, and may have, for example, an approximately triangular shape.

[0029] The upper portion 11 of the frame 2 may be attached of configured to attach to a strap 10. The lower portion 5 of each frame 2 may be attached in at least one section to a band 7. In some embodiments, the lower portion 5 can be attached at least in part to the lower support means 4. In embodiments where frame 2 includes a cut-out 16, the lower portion 5 can be attached to the band 7 at two separate points. In some embodiments, the cut-out 16 may be bounded at least in part by the band 7. The garment may include two frames 2, as shown in FIG. 1. The frames 2 may be separated by a center front portion 6.

[0030] The exterior view of an embodiment of the present invention is depicted in FIG. 2. The garment may include a cup 3, which may be distal to the frame 2. In some embodiments, the garment may include two cups 3, as shown in FIG. 2. Each cup 3 may have a lower portion 14 and an upper portion 15. The lower portion 14 may be attached to the band 7. In some embodiments, the lower portion 14 may be attached to the lower support means 4, as shown in FIG. 2. The upper portion 15 may be configured to adjustably attach to a strap 10. The upper portion 15 can include a securing element 12.

[0031] Each cup 3 may be constructed of any material that can be used for clothing, including but not limited to, cotton, polyester, spandex, rayon, modal, or combinations thereof. In an embodiment, the height of the cup 3 may be adjustable. In other embodiments, the longitudinal tension of the cup 3 may be adjustable. For example, in an embodiment the cup 3 may be stretchable.

[0032] The upper portion 15 of the cup 3 may include a securing element 12. The securing element 12 may adjustably attach the cup 3 to the strap 10. As described previously, the strap 10 may include a compatible securing element 13 that may be configured to couple with securing element 12. In some embodiments, the compatible securing elements 13 are located on the anterior portion 19 of the strap 10. Examples of suitable securing elements 12 include, but are not limited to, a clip, as shown in FIG. 2, a snap, or a button. Examples of compatible securing elements 13 may include, but are not limited to, a loop of fabric or other material, as shown in FIG. 2, a mating snap, or a button hole, respectively. In other embodiments, the securing element 12 and/or compatible securing element 13 may include one or more of a hook and eye closure, buckle, clasp, link, or ring. Those of ordinary skill in the art may appreciate that other securing elements 12 and compatible securing elements 13 that are adapted to provide adjustable breast support may be used with the garments described herein.

[0033] Although the garments described herein are generally described as having a cup 3 with a securing element 12 and a strap 10 with a plurality of compatible securing elements 13, those of ordinary skill in the art may appreciate that some embodiments may include a plurality of securing elements 12 and/or a single compatible securing element 13. For example, a garment may include a cup 3 with a plurality of securing elements 12 and a strap 10 with a single compatible securing element 13. In addition, some embodiments may not have a securing element 12. In some of these embodiments, the upper portion 15 of the cup 3 may be configured to directly couple with a compatible securing element 13, such as a buckle.

[0034] The adjustable breast support garment described herein may include a lining 1 proximal to the cup 3, as shown in FIG. 1. In some embodiments, the lining 1 may also be proximal to the frame 2. The lining 1 may be constructed of any material that can be used for clothing, including but not limited to, cotton, polyester, spandex, rayon, modal, or combinations thereof. In some embodiments, the lining 1 is constructed of material that is stiffer than the material of the cup 3. In an embodiment, the lining 1 can be constructed of moldable material and may be reasonably capable of holding its shape once molded. In some embodiments, the lining 1 includes a material such as canvas, felt, neoprene, modal, or non-woven interfacing material such as those available from Pellon Consumer Products Group, or any other material suitable for interfacing. In some embodiments, the band 7 may include a lower support means 4, as shown in FIG. 1. In these embodiments, the lining 1 may be attached, at least in part, to the lower support means 4. For example, when the lower support means 4 is an underwire, the lining 1 may be attached along the entire length of the underwire, or the lining 1 may be attached to the underwire in particular segments. In some embodiments, the lining 1 may be attached, at least in part, to the frame 2. In other embodiments, the lining 1 may not be attached to the frame 2. In some embodiments, the surface area of the lining 1 is approximately the same as the surface area of the cup 3. In other embodiments, the surface area of the lining 1 is smaller than the surface area of the cup 3. In still other embodiments, the surface area of the lining 1 is larger than the surface area of the cup 3. As shown in FIG. 1, the lining may be approximately semicircular in shape. The height of the lining 1 may be different than the height of the cup 3. In some embodiments, the height of lining 1 may be less than the height of cup 3. For example, the height of the lining 1 may be approximately 75% the height of the cup 3. In some embodiments, the lining 1 may lie approximately flat against the frame 2 and cup 3. In other embodiments, the lining 1 may not lie flat; for example, it may be pleated. In another example, the lining 1 may curve convexly away from the body, as in a hammock or sling.

[0035] Disclosed herein is a bra that provides adjustable breast support. The lining 1 can be adapted to the shape of an individual wearer’s breast, thus providing a secure fit. In some embodiments, the lining 1 is made of a material that is stiffer than the material of the cup 3. In those embodiments, the lining 1 may serve to prevent excess movement of the breast. The cup 3 also may be capable of providing adjustable breast support. The securing element 12 on the upper portion 15 of each cup 3 may be coupled with any of the compatible securing elements 13. The amount of breast support provided by the cup 3 may thus vary depending on which combination of securing element 12 with compatible securing elements 13 is used. In some embodiments, a first lining 1 and/or cup 3 may be adapted to the shape of one breast of the wearer, while a second lining 1 and/or cup 3 may be adapted to the shape of the wearer’s other breast. Advantageously, each lining 1 and/or cup 3 may be capable of providing individualized support per breast, in addition to providing individualized support per wearer.

[0036] Advantageously, the garment disclosed herein may also be capable of enhancing the shape and/or silhouette of the wearer’s breasts. In some embodiments, the garment may provide support beneath the breast, thus pushing the breast upwards and outwards.
The garment that is disclosed herein may be worn in a wide variety of situations. It is suitable for everyday use. It is particularly suitable for high-impact activities, such as sports, equitation, aerobics, or other athletic activities where increased breast support is desired. In some embodiments, the anterior portion 19 of each strap 10 is wider and thicker than the posterior portion 18. Those embodiments are particularly suitable for high-impact activities, as they provide increased comfort and support. Additionally, the adjustable support nature of the garment allows for a comfortable fit over a wide variety of situations. For example, the garment can be configured to provide more breast support for high-impact activities, as well as less breast support for low-impact activities.

In some embodiments, each frame 2 includes a cut-out 16. In these embodiments, the lower portion 5 of each frame 2 is attached to the lower support means 4 in two different sections. In some embodiments, the periphery of the cut-out 16 is bounded in part by the band 7 or the lower support means 4. In embodiments such as these, the garment that is disclosed herein may be suitable for use as a nursing bra. The adjustable support nature of the garment allows the wearer to adjust cup size, thus providing a better fit as well as additional comfort and support.

Also disclosed herein are methods for supporting a human breast. These methods may include placing a band 7 around a chest of a human, adjusting the band 7 to place the breast adjacent to a lining 1 proximal to a cup 3 attached to the band 7, adjusting a strap 10 that is attached to a frame 2 so that it is attached to the band 7 on the human’s body such that it assists in holding up the band 7, and securing an upper portion 15 of the cup 3 to the strap 10. The lining 1 may include a material that is stiffer than the material of the cup 3. In some embodiments, the lining 1 may be adjusted to adapt to the shape of the human’s breast. The step of placing the band 7 around a human chest may further include coupling a plurality of hook and eye closures on the band 7. As shown in FIG. 2, the upper portion 15 of the cup 3 may include a securing element 12, and the strap 10 may include a plurality of compatible securing elements 13. In these embodiments, the step of securing an upper portion 15 of the cup 3 to the strap 10 may include mating securing element 12 with one of the compatible securing elements 13. In some embodiments, the securing element 12 may be selected from a clip, snap, and button. In other embodiments, the compatible securing element 13 may include a fabric loop.

The various garments and methods described above provide a number of ways to carry out some preferred embodiments of the invention. Of course, it is to be understood that not necessarily all objectives or advantages described may be achieved in accordance with any particular embodiment described herein. Thus, for example, those skilled in the art will recognize that the compositions may be made and the methods may be performed in a manner that achieves or optimizes one advantage or group of advantages as taught herein without necessarily achieving other objectives or advantages as may be taught or suggested herein.

Furthermore, the skilled artisan will recognize the interchangeability of various features from different embodiments. Similarly, the various components, features and steps discussed above, as well as other known equivalents for each such component, feature or step, can be mixed and matched by one of ordinary skill in this art to make compounds and perform methods in accordance with principles described herein.

Although the invention has been disclosed in the context of some embodiments and examples, it will be understood by those skilled in the art that the invention extends beyond these specifically disclosed embodiments to other alternative embodiments and/or uses and obvious modifications and equivalents thereof. Accordingly, the invention is not intended to be limited by the specific disclosures of preferred embodiments herein.

What is claimed is:

1. An adjustable breast support garment comprising:
a band configured to go around a human chest;
a strap configured to hold up the band when worn;
a frame comprising an upper portion and a lower portion;
said upper portion attached or configured to attach to said strap and said lower portion attached to said band;
a cup comprising a first material and having an upper portion, said upper portion configured to adjustably attach to said strap;
a lining proximal to said cup, said lining comprising a second material that is stiffer than said first material.

2. The adjustable breast support garment of claim 1, wherein the lining and the cup each have a height, the height of said lining being less than the height of said cup.

3. The adjustable breast support garment of claim 1, wherein the shape of the lining is approximately semicircular.

4. The adjustable breast support garment of claim 1, wherein the frame comprises a cut-out.

5. The adjustable breast support garment of claim 4, wherein the cut-out comprises an outline that is at least partially curved.

6. The adjustable breast support garment of claim 4, wherein the frame comprises an approximate inverted “V” shape.

7. The adjustable breast support garment of claim 4, wherein the lower portion of the frame is attached to the band at two separate points.

8. The adjustable breast support garment of claim 7, wherein the frame further comprises an intermediate portion having a width, wherein said width is less than a width of the lower portion of the frame.

9. The adjustable breast support garment of claim 1, wherein said frame is proximal to said cup, and said lining is proximal to said frame.

10. The adjustable breast support garment of claim 1, wherein said garment comprises a bra.

11. The adjustable breast support garment of claim 1, wherein said upper portion of said cup comprises a securing element.

12. The adjustable breast support garment of claim 11, wherein said securing element comprises one or more selected from the group consisting of a clip, snap, and button.

13. The adjustable breast support garment of claim 1, wherein said upper portion of said cup is configured to adjustably attach to said strap via a plurality of loops on said strap.

14. The adjustable breast support garment of claim 1, wherein said strap has a variable width.

15. The adjustable breast support garment of claim 1, wherein said strap has an adjustable length.

16. The adjustable breast support garment of claim 1, wherein at least a portion of said strap is padded.

17. The adjustable breast support garment of claim 1, wherein said band further comprises an underwire.
18. The adjustable breast support garment of claim 1, wherein said band comprises a superior edge and an inferior edge, said band further comprising at least one rib extending from said superior edge to said inferior edge.

19. The adjustable breast support garment of claim 18, wherein at least one of said superior edge and inferior edge comprises elastic edging.

20. The adjustable breast support garment of claim 1, wherein said band comprises a plurality of fasteners.

21. A method of supporting a human breast, comprising:
   placing a band around a chest of the human;
   adjusting the band to place the breast adjacent to a lining proximal to a cup attached to the band, wherein the cup comprises a first material and the lining comprises a second material stiffer than the first material;
   adjusting a strap that is attached to a frame that is attached to the band on the human's body such that it assists in holding up the band; and
   securing an upper portion of the cup to the strap.

22. The method of claim 21, further comprising adjusting said lining to adapt to the shape of the wearer's breast.

23. The method of claim 21, wherein the placing step comprises coupling a plurality of hook and eye closures on said band.

24. The method of claim 21, wherein said upper portion of said cup is secured to said strap via one or more selected from the group consisting of a clip, snap, and button on said upper portion.

25. The method of claim 21, wherein said upper portion of said cup is secured to said strap via a plurality of loops on said strap.

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