(57) Abrégé/Abstract:
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(57) Abridged/Abstract (continued):
makes application and removal easier, and during intercourse increases sensation for the wearer. The closure (20) provides a seal at the base of the penis (12) to protect from disease and pregnancy resulting from fluid leakage, and if suitably tight, can prolong erections.
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LOOSE PROPHYLACTIC SACK DEVICE
HAVING IMPROVED CLOSURE

The invention is an improved male condom having easier application and removal, increased sensation for the wearer, improved protection against disease and pregnancy from leakage around the base, and the ability to prolong erection.

BACKGROUND OF THE INVENTION

1. Field of the Invention

Sexually-transmitted diseases today affect millions of people. Because of the threat of AIDS, and other sexually transmitted diseases, condoms are enjoying unprecedented popularity. Although the condom is marketed as one of the few over-the-counter, non-prescription contraceptives, it has its deficiencies. Condoms are uncomfortable. Condoms interfere with lovemaking. Condoms feel unnatural. They interrupt spontaneity. They decrease sexual arousal.

Today, the FDA continues to promote condoms (of synthetic material) as the only protection during intercourse against certain sexually transmitted diseases. In spite of the seriousness of the FDA warnings and the risks involved, a significant fraction of sexually
active males, and females, decline to use condoms, or use them only occasionally because of their deficiencies.

The present invention relates to a male condom which prevents insemination and the transmission of disease. More specifically, it provides improved ease of application and removal, increased sensation for the wearer, superior protection against disease and pregnancy previously caused by leakage around the base, and the ability to prolong an erection.

2. Description of the Prior Art

The nature of a condom is to form a barrier around the penis, the male organ of sexual intercourse, to prevent direct contact of body parts and fluids which might transmit disease or cause pregnancy. Unfortunately, the contact barrier and snugness of the fit limit tactile sensorial abilities. The decrease in feeling reduces the users' pleasurable sensations, and, therefore, the desire to use a condom.

The average length of an erect male penis is 6 inches. Standard condoms measure 7.5 inches long (excluding reservoir tip). This length is long enough to cover the erect penises of 90% of the male population. In fact, 95% of all men have erect penises less than 8.5 inches long. The circumference of an erect penis also varies within the population. The vast majority of males have penises with
circumferences between 87.5 mm (3 1/2 inches) and 150 mm (6 inches).

The majority of condoms sold in the United States closely conform to the same basic shape; the condoms, whether straight-sided or anatomically-shaped (straight-sided with a rounded end), are designed for a snug fit around the penis from the tip, or just below the tip, down to the base. There are two common sizes of condoms sold in the United States. The standard size is approximately 7.5 inches long (including reservoir tip) by 100 mm (4 inches) in circumference. The second, which is more common in Japan, is 6.5 inches by 87.5 mm (3 1/2 inches) in circumference.

The snug fit by the condom, down the length of the penis, is necessary to create the seal which prevents fluid leakage and fluid contact. In addition to the snug fit, prior art devices have added seal enhancers, such as ribbon, at the base. As an added precaution, many of these prior art devices have a reservoir tip which helps guard against leakage out of the base by creating a repository for ejaculate.

Conventional condoms, because they are form fitting, are hard to put on and awkward to remove. Most condoms are applied by a rolling on method. The condom is applied to the erect penis before any sexual contact. The condom is placed on the head of the penis and completely unrolled to the base of the penis. This process can cause the condom to catch and pull skin and hair during application.
(and removal). Because of their necessary tight fit, condoms often develop a vacuum during the removal process, adding to the difficulty of the removal.

The utility period of a condom usually begins after the penis is erect, and ends just after ejaculation. The utility time period does not extend beyond ejaculation; following ejaculation, the penis is withdrawn while still erect. Manufacturers warn that although it may be romantic to bask in the afterglow still enjoined, this time is the easiest for the condom to slip off or for seminal fluid to leak out. Thus, prompt removal of the condom after use is uniformly recommended by manufacturers of prior art devices in order to avoid seepage and fluid contact.

In the prior art, sensorial limitations are addressed by using thinner materials of construction. However, although a thinner material improves heat conduction and improves sensation, these thinner materials tend to be less strong, and increase the likelihood of condom failure by breakage.

Variants on the male condom have previously been developed to attempt to address the deficiencies of the prior art devices. In U.S. Patent No. 4,798,600 Meadow, there is taught a male condom consisting of two segments; one segment is attached firmly to the penis and the other segment slides back and forth over the tip end of the penis as it is repeatedly repositioned during intercourse.
Integral to Meadows is a solid ring ("centering means"), positioned at the juncture of these two segments, to anchor the sliding portion. A drawback of Meadow is the use of the solid ring which can be uncomfortable and can move about and inhibit and impede use.

In U.S. Patent No. 4,564,006 Pomeranz there is shown a seal or zipper like element running substantially the length of the condom. Pomeranz, as with prior art devices, shows a full length snug fit in order to create the necessary seal. The snug fit is provided by use of a zipper which facilitates the application and removal of the condom. However, the prominent ridge created by the zipper produces an intrusive, unpleasant tactile sensation.

Materials of construction in the prior art are both natural and manmade. Because natural materials, such as animal intestine, are fairly inelastic, the natural material condom, while still designed to be snug fitting, may have added thread elastic around the base such as that found on a male condom sold as Kling-Tite® Naturalamb® Condoms, distributed by Carter Products, New York, N.Y. The Kling-Tite® condom, as with other prior art condoms, is designed to be form fitting, with the thread elastic ineffective for creating a seal; the seal is created by being generally form fitting along the length of the condom.

Still more recently, the use of adhesives to enhance the seal has been adopted. For example, a male condom sold as Trojan® Mentor®
Safety-Seal™ Condoms, distributed by Carter Products, New York, N.Y, is provided with a ring of adhesive at just above its mid-point. Adhesive is difficult to position and often sticks to unintended locations during application. Because of the difficulty in donning and properly positioning the adhesive ring, an applicator is necessary and is provided with the packaging. Other adhesive condoms typically have the adhesive added at the base, but application of a male condom with any adhesive is difficult and inconvenient.

In the light of the foregoing, it is an object of the present invention to provide a male condom which prevents insemination and the transmission of disease.

It is a further object to enhance the acceptance and use of the male condom by providing a means for easy and convenient application and removal.

It is yet another object of this invention to increase the level of sensation provided to the users.

Still another object of the invention is to provide for enhancing and prolonging erection and continuing the time of use.

Additional objects and advantages will be disclosed by the present invention.
Accordingly, there has existed a definite need for an improved prophylactic device. The present invention satisfies this need and provides further related advantages.

SUMMARY OF THE INVENTION

The present invention provides a male condom for protection against pregnancy and sexually transmitted disease, while substantially increasing sensation for the users. The male condom of the present invention is easier and more convenient to apply and remove, and can optionally be employed to enhance and prolong erection and, thereafter, the period of use.

For the present invention there is provided a loose, flexible sheathing in the form of a loose sack which is of greater circumference than the penis. The sheathing flexibility provides that it has no form and takes the form of the erect penis. The loose sack of the male condom of the present invention is between 91 mm (3 9/16 inches) and 255 (11 inches) long, with a circumference of between 96 mm (3 3/4 inches) and 186 mm (7 5/16 inches). It is preferably provided in a standard size to fit an erect male penis with the condom having dimensions of 165 mm (6.5 inches) in length and 139 mm (5 1/2 inches) in circumference. With these average dimensions it is expected that there will be, on average, 9 mm (3/8 inch) clearance at any given time along the body of the penis.
between the penis and the sheathing, that is, the circumference of the loose sack will be 9 mm (3/8 inches) greater than the circumference of the erect penis with the range for the circumference of the loose sack being 6 mm to 20 mm greater than the erect penis, and at least 1/2 inch clearance in the length at the end of the penis. Thus, it is anticipated that the clearance at any given time (differences in circumferences) between the erect penis and the loose sack will be approximately 2% to 16% of the circumference of the erect penis. That is, the circumference of the loose sack will be 2% to 16% greater than the circumference of the erect penis. For example, if the average erect penis circumference is 130 mm (5 1/8 inches) and the clearance between the erect penis and the loose sack at any given time is 9 mm (3/8 inches), 9 mm is approximately 7% of the circumference of 130 mm. Then, the circumference of the loose sack will be 139 mm (5 1/2 inches). Further, the increase in circumference of the loose sack (greater than the circumference of the erect penis) will typically be closer to 2% if lubrication is added. It will also be closer to 2% if the material used is more elastic because the greater the elasticity, the less clearance is desired, while the increase in circumference will be greater, that is, closer to 16%, if a less elastic material is used.

The male condom of the present invention can also be provided in a larger size of up to 289 mm (11 5/16 inches) long and 176 mm (6 15/16 inches) in circumference to accommodate larger men (5-10% of the population), or for smaller men, up to 100 mm (3 15/16
(2 1/4 inches) long and 96 mm (3 3/4 inches) in circumference, considering that the larger size, or smaller size, will provide the same loose fit and clearance dimensions on larger (or smaller) men as the standard size. Extra length may also be added. It is only at the base that the condom is form fitting providing a snug closure for the necessary seal. At the base (open end) of the sack can be a quick closure, which, when the penis is inserted into the sack, provides for ease of closure and binds the base of the sack closely around the penis to form a tight seal at the base. Alternatively, to the sack at the base may be added a narrowing elastomeric closure as a seal.

Application of the device of the present invention is made easy, quick and not uncomfortable by the looseness of the sack. The sack eliminates the catching and pulling of the prior art device. It can be put on easily and quickly at any time with a minimum of interruption. Removal of the device is similarly easy, as the closure is simply released and the loose fitting sack freed and readily pulled off.

Unlike the prior art devices which are constricting, there is a high level of tactile sensation during intercourse from the device of the present invention which is provided by the looseness of the sack. The looseness leaves the penis unconstrained and permits it to slide about within the sack bounds. If desired, lubricant may be added to facilitate movement. The friction from the relative motion of the users, and the device of the present invention, generates increased
tactile sensation for both users. The looseness of the fit also is comfortable and promotes a natural feel.

The seal necessary to protect against insemination and transmission of disease is provided by the closure, which can cinch down tightly to minimize the likelihood of leaks at the base. Enhanced and prolonged erections of the penis are enabled by the closure, which can be applied tightly enough to restrict the venous blood from flowing out of the penis, both before and after ejaculation, thereby enhancing erection and extending the time of use.

These summary features and other enhancements make the present invention a significant improvement over prior male condoms, and as such will encourage men and women to more frequently utilize this most effective means of protection.

DESCRIPTION OF THE DRAWINGS

Figure 1 is an elevational view of one embodiment of present invention having the closure shown in an unbound state.

Figure 2 is elevational view of an embodiment of the present invention being applied to an erect penis with the closure shown in an unbound state, and the sack partially unfurled, as it may appear during application.
Figure 3 is another elevational view of the present invention applied to an erect penis with the closure means shown in the bound state and the sack fully deployed as it may appear during intercourse.

Figure 4 is an elevational view of the preferred embodiment of the closure of the present invention shown in an unbound state.

Figure 5 is a detail of a cross-section through the unfurled sack, illustrating a pleated formation useful in packaging and for ease of application.

Figure 6 is a side view of another embodiment of the present invention showing a closure of a continuous elastomeric material integrally attached as a elastomeric neck which narrows near the opening of the sack.

Figure 7 is a side view of the present invention having further added to the sack textural augmentation in the form of an array of nubs, and a reservoir at its closed end.

Figure 8 is a side view cut away of the present invention in an unworn and unfurled state having further added to the sack textural augmentation in the form of a series of ridges both the interior and exterior surface.
DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The male condom 10 of the present invention is described in detail in conjunction with the illustrations. It maximizes sensation and prolongs use for the users, while providing for ease of application and removal, and effectiveness for its intended purpose as a contraceptive and disease barrier.

In Figure 1 there is shown the male condom 10 of the present invention just before completion of application around erect penis 12. The male condom 10 has two principle components -- a sack 14 and a closure 20.

The bottom 22 of male condom 10 is the open end. Closure 20 is located at bottom 22 of male condom 10. Closure 20 is positioned and optionally attached to the sack 14 at the bottom 22 with its length circumscribing bottom 22. As shown in Figure 2, both bottom 22 and sack 14 fit loosely about erect penis 12 during application. Preferably, loose fit about erect penis 12 is provided by an excess clearance 18 at any one time of about 3/8 inches plus or minus 1/8 inch. That is, the circumference of the sack 14 is 3/8 inches plus or minus 1/8 inch greater than the circumference of erect penis 12.

Referring back to Figure 2, when bottom 22 is in ungathered and closure 20 is in an unbound state 24, bottom 22 has its full
clearance 18 for facilitation of application. After male condom 10 is pulled down over erect penis 12, and excess air removed, bottom 22 is gathered by closure 20 at the base 16 of erect penis 12 thereby reducing the opening at bottom 22 as shown in Figures 1 and 4.

In Figure 3 there is shown male condom 10 having bottom 22 now in gathered and bound state 26 and ready for use. Sack 14 still has clearance 18 about erect penis 12, however, the excess air has been released from the inside of sack 14. Seal at the base 16 is effected by closure 20 so that gathered and bound state 26 has no clearance provided around base 16.

For sack 14, the material of construction must be able to withstand push and pull forces of intercourse. A high quality latex, such as, Sheerlon®, which combines strength and maximum protection against breaking or tearing, and thinness for comfort and superior sensation may be used. Polyurethane or a polymer elastomer are also materials of construction.

As shown in Figures 2 and 5, to further facilitate application, sack 14 may be provided with a pleated formation 15. A detailed view of pleat formation 15 which may be added to the surface of the sack 14 is shown in Figure 5. The function of pleat formation 15 is to aid in the gathering of quantities of the sheathing of the sack 14 into a convenient and more manageable form.
Referring again to Figure 4, closure 20 preferably consists of a material strip 28, possibly elastic in nature, having two ends -- interior strip end 30 and exterior strip end 32. Closure 20 may be a hook and loop type fastening material, such as elastic or inelastic Velcro™, formed into a strip approximately 1/4 inch to 3/4 inch wide. Material strip 28 is preferably thin to minimize its noticeability to the users. Velcro™ does not catch or pull pubic hair for either party, and therefore does not interfere with enjoyable sensations. Interior strip end 30 is covered on its outside with hook material 34. Exterior strip end 32 is covered on its inside surface with loop material 36. The respective relationship between the interior and exterior strip ends 30 and 32 and the hook and loop materials 34 and 36 can be reversed. However, as loop material 36 is more flexible and is therefore easier to grip with the finger tips, loop material 36 is better suited to the exterior strip end 32, as it will be the piece of the closure 20 manipulated during application and removal. The terminus of the external strip end 32 may be slightly wider than the rest of the closure 22, being about 3/4” wide to be easily grasped by the thumb and forefinger.

For closure 20, other materials can be used in place of hook material 34 and loop fastening material 36. In particular, adhesive strips can be employed (not shown). If reusable adhesive material is used, the exterior strip end can be simply pulled off of the interior strip end, the male condom 10 donned, and the exterior strip returned to its bound position. If the adhesive material is not
reusable, a protective guard strip must cover the adhesive end(s) until the erect penis 12 is in the male condom 10 and ready to be in its gathered and bound state 26.

Figure 6 illustrates another preferred embodiment of closure 20. At bottom 22 there may be located narrowing 38 preferably extending approximately 1” from the end of male condom 10. At bottom 22, there is closure 40 which together with the narrowing 38 seals male condom 10 to erect penis 12. Preferably the closure 40 is of the nature of a continuous elastic band, attached to the loose sack, the elastic band having tension sufficient to grip the base of erect penis 12 firmly enough to form the necessary seal. The circumference of the continuous elastic band is between 68 mm (2 5/8 inches) to 165 mm (6 1/2 inches). The height of the continuous elastic band is between 1/32 inches and 3 inches. The continuous elastic band is preferably 100 mm (4 inches) in circumference (smaller for men with smaller erect penises, and larger for men with larger erect penises) and 2 inches in height, of which 1 inch may be rolled up thus forming an "O" ring in shape.

The application procedure for the male condom 10 is easy and fast, causing little interruption. To don the male condom 10, the wearer slips the bottom 22 over the erect penis 12, and holding the wide, external strip end 32 of closure 20, pulls it tightly around the base of the erect penis 12 to overlap internal strip end 30. This
comfortably, but securely seals closure 20 and bottom 22 about the base of the penis 12 in gathered and bound state 26.

When thus sealed, if sufficient tension was applied when the strip ends 30 and 32 were overlapped, the venous flow of blood from the erect penis 12 will be restricted which can cause maintenance of erection, possibly beyond ejaculation.

To doff male condom 10, the wearer pulls on the exterior strip end 32 which releases the gathered and bound state 26 breaking the seal at bottom 22 about base 16. At this point, male condom 10 condom can be easily slid off.

While in use, the closure 20 is in its gathered and bound state 26 creating a tightly sealed bottom 22 erect penis 12, as shown in Figure 3. It is this seal which prevents transmission and commingling of fluids between the users.

When male condom 10 is in use, sack 14 will generally be completely unfurled and the pleat formation 15 shown in Figures 2 and 5 will not remain. Increased length, in addition to excess interior space 18, may optionally be added. Increased length may be approximately 2 to 2 1/2" in length. This combines with the excess clearance 18 to provide a looseness which further allows erect penis 12 to move freely within the sack 14 during the motions of intercourse. This movement of erect penis 12 relative to the sack 14
produces pleasurable sensations superior to those provided by conventional condoms.

Male condom 10 may be further enhanced by having a variety of widths and lengths to accommodate individual variations in penis size and personal preference. Also may be added different types of lubricants.

A number of additional enhancements may be used with present invention. In Figure 7 there is shown nubs 42 which add an additional stimulating texture to the wearer and his partner. Independent of nubs 42, Figure 7 also shows a narrow tip 44 which can be added. However, the narrow tip 44 grips approximately the top 2” of erect penis 12, reducing the relative motion of erect penis 12 and sack 14, and therefore the stimulation. However, the looseness of the sack 14 continues to provide enhanced stimulation for the remaining lower portion of the erect penis 12. Of use only with the narrow tip 44, is a reservoir 46 for capturing ejaculate.

Figure 8 shows another variation of stimulating texture. Interior ridges 48, which would provide stimulation primarily for the wearer, and exterior ridges 50 which would provide stimulation primarily for the wearer's partner can be included together or singly.

The present invention has been described above in terms of a presently preferred embodiment so that an understanding of the
invention can be conveyed. There are, however, many configurations for apparatus of male condom 10 not specifically described herein, but with which the present invention is applicable. The present invention should therefore not be seen as limited to the particular embodiment described herein. Accordingly, modifications and variations to which the invention is susceptible may be practiced by those skilled in the art in view of the description herein, without departing from the scope and intent of the following claims.
WHAT IS CLAIMED IS:

1. A male condom for wearing on a penis comprising:
   a body formed by a large loose-fitting sack, said sack being
   unrestrained and loose throughout to permit movement within and
   without said sack during push and pull intercourse; and
   a condom base able to withstand push and pull forces of
   intercourse while remaining fixedly attached to the base of the penis
   having a closure for creating a seal at said condom base around the
   base of the penis, said closure having two states, bound and unbound,
   for selectively attaching and releasing the body about the base of the
   penis,
   wherein said closure comprises a strip of material of length greater
   than the circumference of the base of the penis having two ends which
   bind to each other for creating the bound state around the base of the
   penis.

2. The condom of claim 1, wherein said closure is detachable from said
   condom base.

3. The condom of any one of claims 1 and 2 further having a non-smooth
   texture on the exterior surface of the sack.

4. The condom of any one of claims 1 to 3 further having a non-smooth
   texture on the interior surface of the sack.

5. The condom of any one of claims 1 to 4, wherein the sack is pleated.

6. The condom of any one of claims 1 to 5, wherein a vicinity of the
   closed end of the sack is slightly narrower than the penis to grip the
   head of the penis when worn.

7. The condom of any one of claims 1 to 6 comprising an adhesive for
   helping to create the seal around the base of the penis.
8. The condom of claim 1, wherein said strip of material comprises a hook-and-loop fastening material.

9. The condom of claim 8, wherein the hook-and-loop fastening material is elastic.

10. The condom of claim 8, wherein the hook-and-loop fastening material is inelastic.

11. The condom of any one of claims 1 to 10 wherein the loose-fitting sack has a circumference in the range of 96mm to 186mm.

12. The condom of any one of claims 1 to 10 wherein the loose-fitting sack has a circumference of approximately 165 mm.

13. A male condom comprising a large loose-fitting sack and a detachable closure, said loose-fitting sack being unrestrained and loose throughout to permit movement within and without said sack during push and pull of intercourse and said closure creating a seal around the base of the penis, said closure having two states, bound and unbound, for selectively attaching and releasing the sack about the base of the penis, said closure comprising a length of material greater than a circumference of the penis and a pair of ends which bind to each other to create the bound state and which unbind from one another to create the unbound state.

14. The condom of claim 13 further having a non-smooth texture on the exterior surface of the sack.

15. The condom of any one of claims 13 to 14 further having a non-smooth texture on the interior surface of the sack.

16. The condom of any one of claims 13 to 15 wherein the sack is pleated.
17. The condom of any one of claims 13 to 15 comprising an adhesive for helping to create the seal around the base of the penis.

18. The condom of any one of claims 13 to 17 wherein the loose-fitting sack has a circumference in the range of 96mm to 186mm.

19. The condom of any one of claims 13 to 17 wherein the loose-fitting sack has a circumference of approximately 165 mm.

20. A condom to be worn on a penis comprising:

   a loose-fitting sack with a larger diameter than said penis, said loose-fitting sack being easy to apply and unrestrained and loose throughout to permit movement within and without said loose-fitting sack during push and pull of intercourse, said loose-fitting sack having a closed end and an open end for placing upon an erect penis; and

   a closure for attaching the loose-fitting sack to the base of the penis, wherein said closure comprises a strip of material having two ends which bind to each other for creating the bound state around the base of the penis.

21. The condom of claim 20, wherein said closure is detachable from said condom base.

22. The condom of any one of claims 20 to 21 further having a non-smooth texture on the exterior of the sack.

23. The condom of any one of claims 20 to 22 further having a non-smooth texture on the interior of the sack.

24. The condom of any one of claims 20 to 23 wherein the sack is pleated.

25. The condom of any one of claims 20 to 24 wherein the vicinity of the closed end of the sack is slightly narrower than the penis to grip the head of the penis when worn.
26. The condom of any one of claims 20 to 25 comprising an adhesive for helping to create the seal around the base of the penis.

27. The condom of claim 20, wherein said strip of material comprises a hook-and-loop fastening material.

28. The condom of claim 27, wherein the hook-and-loop fastening material is elastic.

29. The condom of claim 27, wherein the hook-and-loop fastening material is inelastic.

30. The condom of any one of claims 20 to 29 wherein the loose-fitting sack has a circumference in the range of 96mm to 186mm.

31. The condom of any one of claims 20 to 29 wherein the loose-fitting sack has a circumference of approximately 165 mm.

32. A condom to be worn on a penis comprising:

   a loose-fitting sack with a larger diameter than said penis, said loose-fitting sack being easy to apply and unrestrained and loose throughout to permit movement within and without said loose-fitting sack during push and pull of intercourse, said loose-fitting sack having a closed end and an open end for placing upon an erect penis; and

   a closure for attaching the loose-fitting sack to the base of the penis,

   wherein said sack has a circumference, and said closure comprises a tubular portion having a first end joined to said open end of said sack and a second end remote from said first end and a ring of elastomeric material around said second end of said tubular portion, said tubular portion and said ring being resiliently stretchable to form a seal with the base of the penis and having a circumference which is less than the circumference of said sack.