

CLAIMS

What is claimed is:

1. A wound exudate management system, comprising:
 - a pump for generating negative pressure;
 - a dressing for covering and protecting a wound, the dressing comprising:
 - an adhesive layer for adhering the dressing adjacent the wound;
 - a wound contact layer for contacting the wound;
 - a pressure dispersion layer;
 - a plurality of layers of absorbent material disposed between the wound contact layer and the pressure dispersion layer; and,
 - a backing layer having a first surface and a second surface, the first surface of the backing layer being adjacent, and in contact with, the pressure dispersion layer and the adhesive layer;
 - a pressure tube having an interior lumen, the pressure tube disposed between the pump and the dressing such that the pump and the dressing are in fluid communication via the interior lumen; and,
 - a flexible connector connected to the second surface of the backing layer.
2. The wound exudate management system of claim 1, wherein the dressing includes an envelope structure formed by joined peripheral portions of the pressure dispersion layer and the wound contact layer, the envelope structure defining a cavity.
3. The wound exudate management system of claim 1, further comprising a thermoplastic spun lace layer connected to the pressure dispersion layer, and a nonwoven spun lace layer connected to the wound contact layer, and wherein an envelope structure is formed by joining peripheral portions of the thermoplastic spun lace layer and the nonwoven spun lace layer such that the plurality of layers of absorbent material are disposed substantially within an interior cavity of the envelope structure.
4. The wound exudate management system of any of the preceding claims, wherein the absorbent material is disposed within the cavity of the envelope structure.
5. The wound exudate management system of any of the preceding claims, wherein the absorbent material comprises carboxymethylated cellulose fibers.
6. The wound exudate management system of any of the preceding claims, wherein the wound contact layer comprises carboxymethylated cellulose fibers.
7. The wound exudate management system of any of the preceding claims, wherein the wound contact layer has reinforcing nylon stitching.

8. The wound exudate management system of any of the preceding claims, wherein the pressure dispersion layer comprises a reticulated foam.
9. The wound exudate management system of any of the preceding claims, further comprising fenestrations in the one or more of the plurality of layers of absorbent material.
10. The wound exudate management system of any of the preceding claims, further comprising a pressure conveyance member disposed within the flexible connector.
11. The wound exudate management system of any of the preceding claims, further comprising an upper absorbent indicator member and an upper adhesive member, and wherein the upper adhesive member adheres the flexible connector and the upper absorbent indicator member to the backing layer.
12. A wound exudate management system, comprising:
 - a dressing for covering and protecting a wound, the dressing comprising:
 - a wound contact layer, the wound contact layer having a first surface and a second surface, the wound contact layer further having a peripheral region and a central region, wherein the first surface of the wound contact layer contacts the wound when the dressing is adhered to skin adjacent the wound;
 - a pressure dispersion layer having a peripheral region and a central region;
 - a plurality of layers of absorbent material disposed between the second surface of the wound contact layer and the pressure dispersion layer; and
 - an envelope formed by joining the peripheral region of the pressure dispersion layer with the peripheral region of the second surface of the wound contact layer, the plurality of layers of absorbent material being disposed substantially within an interior cavity of the envelope.
13. The wound exudate management system of claim 12, further comprising a thermoplastic spun lace layer connected to the pressure dispersion layer, and a nonwoven spun lace layer connected to the wound contact layer, and wherein the envelope is formed by joining peripheral portions of the thermoplastic spun lace layer and the nonwoven spun lace layer, wherein the interior cavity of the envelope is formed by the nonwoven spun lace layer and the thermoplastic spun lace layer, and wherein the plurality of layers of absorbent material are disposed substantially within an interior cavity of the envelope.
14. The wound exudate management system of claim 12 or claim 13, wherein the absorbent material includes carboxymethylated cellulose fibers.
15. The wound exudate management system of claim 12 or claim 13, wherein the wound contact layer includes carboxymethylated cellulose fibers.

16. A wound exudate management system, comprising:
- a dressing for covering and protecting a wound, the dressing comprising a wound contact layer, a backing layer and at least one layer of absorbent material layer between the wound contact layer and the backing layer;
 - a flexible connector having an interior lumen, the flexible connector secured to the backing layer of the dressing;
 - an indicator between the backing layer and the flexible connector;
 - a tube having an interior lumen, the tube connected to the flexible connector, wherein the interior lumen of the flexible connector and the interior lumen of the tube are in fluid communication; and,
 - a pressure conveyance member disposed within the interior lumen of the tube.
17. The wound exudate management system of claim 16, wherein the pressure conveyance member comprises a flexible lattice structure.
18. The wound exudate management system of claim 16 or claim 17, wherein the pressure conveyance member is disposed within the flexible connector.
19. The wound exudate management system of claim 16, wherein the flexible connector has a substantially planar exterior surface.
20. A wound exudate management system, comprising:
- a pump for generating negative pressure;
 - a dressing for covering and protecting a wound, the dressing comprising a wound contact layer, a backing layer and at least one layer of absorbent material between the wound contact layer and the backing layer;
 - a tube connecting the pump and the dressing, the tube having an interior lumen for placing the pump and the dressing in fluid communication via the interior lumen; and,
 - a one-way valve in-line between the pump and the dressing to maintain a negative pressure within the dressing when the pump is disconnected from the tube.
21. The wound exudate management system of claim 20, wherein the one-way valve is connected to one of the pump and the tube.
22. A wound exudate management system, comprising:
- a pump for generating negative pressure;
 - a dressing for covering and protecting a wound;
 - a pressure tube including an interior lumen, the pressure tube disposed between the pump and the dressing such that the pump and the dressing are in fluid communication via the interior lumen of the pressure tube; and,

a plurality of layers of absorbent material disposed in the dressing, wherein the absorbent material has fibers that swell upon contact with wound exudate to manage a flow of wound exudate through a portion of the dressing.

23. The wound exudate management system of claim 22, wherein the fibers in the absorbent material comprise carboxymethylated cellulose fibers.

24. The wound exudate management system of claim 22 or claim 23, wherein the fibers in the absorbent material have a first volume prior to wound exudate being introduced to the absorbent material, wherein the fibers in the absorbent material have a second volume after wound exudate is introduced to the absorbent material, and wherein the second volume is greater than the first volume.

25. The wound exudate management system of claim 22 or claim 23, wherein after the fibers swell upon contact with the wound exudate, a volume of passages between the fibers decreases.

26. A negative pressure wound dressing for use in applying negative pressure to a wound comprising:

an absorbent layer capable of absorbing exudate from the wound and allowing the passage of fluid through it;

an outer cover layer covering the side of the absorbent layer furthest from the wound, the cover layer adapted to enable negative pressure to be applied at the wound and having a port;

a conduit having a proximal end attached to the port and a distal end, the dressing provided with a pathway for fluid from the wound, through the absorbent layer, the port and to the distal end of the conduit; and,

an indicator positioned in the pathway at a location between the absorbent layer and the distal end of the conduit, the indicator means capable of absorbing exudate to indicate the presence of exudate at the side of the absorbent layer furthest from the wound.

27. A negative pressure wound dressing as claimed in claim 26 wherein the indicator means gives a visual indication of the presence of exudate at the side of the absorbent layer furthest from the wound.

28. A negative pressure wound dressing as claimed in claim 26 or claim 27 wherein the indicator means is located so that it is visible to the user of the dressing.

29. A negative pressure wound dressing as claimed in any of claims 26 to 28 wherein the indicator means is located in the port in the cover layer.

30. A negative pressure wound dressing as claimed in any of claims 26 to 29 wherein the indicator means is located in the conduit.

31. A negative pressure wound dressing as claimed any of claims 26 to 30 wherein the indicator means is a gelling absorbent which visually indicates that it has absorbed exudate by forming a gel.
32. A negative pressure wound dressing as claimed in any of claims 26 to 31 wherein the indicator means visually indicates that it has absorbed exudate by changing colour.
33. A negative pressure wound dressing as claimed in any of claims 26 to 32 wherein the indicator means is a layer of gel-forming fibres.
34. A negative pressure wound dressing as claimed in any of claims 26 to 33 wherein the outer cover layer is a barrier layer which resists the ingress of liquid and air but allows moisture vapour transmission from the wound.
35. A negative pressure wound dressing as claimed in any of claims 26 to 42 wherein the dressing is adhered to the skin surrounding the wound by an adhesive which provides a fluid tight seal between the dressing and the wound.
36. A negative pressure wound dressing as claimed in any of claims 25 to 35, wherein a distribution layer is positioned between the absorbent layer and the cover layer and serves to aid the spread of exudate across the absorbent layer.
37. A negative pressure wound dressing as claimed in claim 36 wherein the distribution layer is a foam layer.
38. A negative pressure wound dressing as claimed in any of claims 26 to 37 wherein the distal end of the conduit is connected to source of negative pressure.
39. A negative pressure wound dressing as claimed in claim 38 wherein the source of negative pressure is a battery operated pump.
40. A negative pressure system comprising a wound dressing as claimed in claim 26 and a source of negative pressure connected to the distal end of the conduit.
41. A negative pressure system as claimed in claim 40 further comprising a fluid collection chamber connected between the dressing and the source of negative pressure and in fluid communication therewith.
42. A negative pressure wound dressing as claimed in any of claims 26 to 41 wherein the absorbent layer is smaller than the cover layer and is positioned as an island within an outer perimeter of the cover layer so that the absorbent layer is framed by the cover layer.
43. A negative pressure wound dressing as claimed in claim 42 wherein the cover layer is provided with adhesive on its underside which adheres the dressing to the skin surrounding the wound with a fluid tight seal.

44. A negative pressure wound dressing as claimed in any of claims 26 to 43 wherein the absorbent layer is in direct contact with the wound.
45. A negative pressure wound dressing as claimed in any of claims 26 to 44 wherein the dressing further comprises a wound contact layer positioned between the wound and the absorbent layer.
46. A negative pressure wound dressing as claimed in any of claims 26 to 45 wherein the conduit further comprises a one way valve at its distal end.
47. A negative pressure wound dressing as claimed in any of claims 26 to 46 wherein the conduit further comprise a luer lock at its distal end.
48. A negative pressure wound dressing as claimed in claim 26 wherein the indicator means activates a remote alarm, for example an audible alarm on absorption of exudate.