overview of various aspects of the disclosure and introduces some of the concepts that are further detailed in the Detailed Description section below. This summary is not intended to identify key or essential features of the claimed subject matter, nor is it intended to be used in isolation to determine the scope of the claimed subject matter. The subject matter should be understood by reference to the appropriate portions of the entire specification, any or all drawings, and each claim.

[0004a] In an aspect, the present disclosure refers to a therapeutic device comprising: a pouch comprising: opposed first and second ends; first and second composite layers extending between the opposed first and second ends, wherein the first composite layer includes: a first cell permeable layer extending between the opposed first and second ends; and a first cell retentive layer extending between the opposed first and second ends; and wherein the second composite layer includes: a second cell permeable layer extending between the opposed first and second ends; a second cell retentive layer extending between the opposed first and second ends; and a lumen extending through the therapeutic device from the first end to the second end; a reservoir positioned between the first and second composite layers, the reservoir contacting the first cell retentive layer; at least one port in fluid communication with the reservoir; and a removal element attached to or is integral with the first end of the pouch extending from the first end into the lumen to be accessible by a device removal tool such that during use, a device removal tool inserted into the lumen from the second end of the pouch grasps the removal element to exert a force on the removal element through the lumen to cause the device to be removed by eversion.

[0004b] ~~Embodiment~~Examples of the present disclosure relate to therapeutic devices that include a pouch having opposed first and second ends. The pouch includes first and second composite layers extending between the opposed first and second ends. The first composite layer includes a first cell permeable layer extending between the opposed first and second ends and a first cell retentive layer extending between the opposed first and second ends. The pouch also includes a reservoir positioned

between the first and second composite layers, the reservoir contacting the first cell retentive layer. The pouch also includes at least one port in fluid communication with the reservoir. The pouch also includes a removal element configured to operably engage the first end of the pouch, so as to cause the first end to be moveable towards the second end of the pouch by eversion.

[0005] In some ~~embodiment~~examples, each of the first and second composite layers comprises a plurality of wrinkles.

[0006] In some ~~embodiment~~examples, first cell permeable layer has a pore size sufficient to permit growth of vascular tissue therethrough.

[0007] In some ~~embodiment~~examples, the pore size is greater than 5.0 microns as measured by porometry.

[0008] In some ~~embodiment~~examples, the first cell retentive layer has a pore size sufficient to prevent ingrowth of vascular tissue.

[0009] In some ~~embodiment~~examples, the pore size is less than 1 micron, as measured by porometry.

[0010] In some ~~embodiment~~examples, at least one of the first cell permeable layer and the first cell retentive layer comprises an expanded fluoropolymer.

[0011] In some ~~embodiment~~examples, the second composite layer comprises a second cell permeable layer extending between the opposed first and second ends and a second cell retentive layer extending between the opposed first and second ends.

[0012] ~~Embodiment~~Examples of the present disclosure also relate to a method including engaging a removal element configured to operably engage a first end of a therapeutic device implanted in a tissue pocket, wherein the implanted therapeutic device and the tissue pocket define a plane. The method also includes exerting a tensile force on the removal element in a first direction parallel to the plane. The method also includes moving the removal element along the first direction to move a first end of the implanted therapeutic device towards a second end of the implanted therapeutic device opposite the first end such that the implanted therapeutic device is peeled away from the tissue pocket, wherein the moving step everts the implanted therapeutic device to remove the implanted therapeutic device from the tissue pocket atraumatically.

[0013] In some ~~embodiment~~examples, the therapeutic device includes a pouch including opposed first and second ends. The pouch includes first and second composite layers extending between the opposed first and second ends. The first composite layer includes a first cell permeable layer extending between the opposed first and second ends. The first composite layer also includes a first cell retentive layer extending between the opposed first and second ends. The pouch also includes a reservoir formed between the first and second composite layers. The reservoir contacts the first cell retentive layer. The pouch also includes at least one port in fluid communication with each reservoir. The therapeutic device also includes a removal element configured to operably engage the first end of the pouch, so as to cause the first end to be moveable towards the second end by eversion.

[0014] In some ~~embodiment~~examples, each of the first composite layer and the second composite layer comprises a plurality of wrinkles.

[0015] In some ~~embodiment~~examples, the method further includes moving the therapeutic device from a first relaxed state in which the plurality of wrinkles formed the at least one of the first composite layer and the second composite layer engages tissue in a tissue pocket, to a second extended state, in which at least some of the plurality of wrinkles are stretched apart, so as to disengage a portion of the tissue from the at least some wrinkles. The moving step includes a plurality of discrete individual movements, whereby the tissue is incrementally disengaged from the plurality of wrinkles of the pouch so that the pouch is removed from the tissue pocket atraumatically.

[0016] In some ~~embodiment~~examples, the second composite layer comprises a second cell permeable layer extending between the opposed first and second ends and a second cell retentive layer extending between the opposed first and second ends.

[0017] ~~Embodiment~~Examples of the present disclosure also relate to a therapeutic device including opposed first and second ends, wherein the opposed first and second ends define a longitudinal axis therebetween. The therapeutic device also includes a first composite layer extending between the first and second ends. The first composite layer includes a first plurality of wrinkles. The therapeutic device also includes a second composite layer extending between the first and second ends. The second composite layer includes a second plurality of wrinkles. The therapeutic device also includes a reservoir formed between the first and second composite layers, the reservoir having a length, a width and a depth. The therapeutic device also includes at least one port in fluid communication with the reservoir. The therapeutic device is moveable between a first relaxed state, in which the first plurality of wrinkles and the second plurality of wrinkles extend in a direction generally perpendicular to the longitudinal axis, and a second extended state, in which the first plurality of wrinkles and the second plurality of wrinkles are configured to be stretched between the first and second ends, so as to be generally parallel with the longitudinal axis.

[0018] In some ~~embodiment~~examples, at least one of the first composite layer and the second composite layer comprises a cell permeable layer extending between the opposed first and second ends and a cell retentive layer extending between the opposed first and second ends.

[0019] ~~Embodiment~~Examples of the present disclosure also relate to method including engaging a first end of a therapeutic device implanted in a tissue pocket, wherein the implanted therapeutic device and the tissue pocket define a plane. The method also includes exerting a tensile force on the first end in a first direction parallel to the plane to move the therapeutic device from a first relaxed state in which a plurality of wrinkles formed on the therapeutic device engages tissue in the tissue pocket, to a second extended state, in which at least some of the plurality of wrinkles are stretched apart, so as to disengage a portion of the tissue from the at least some wrinkles. The moving step includes a plurality of discrete individual movements, whereby the tissue is

incrementally disengaged from the plurality of wrinkles of the pouch so that the pouch is removed from the tissue pocket atraumatically.

[0020] In some ~~embodiment~~examples, the therapeutic device includes opposed first and second ends. The opposed first and second ends define a longitudinal axis therebetween. The therapeutic device also includes a first composite layer extending between the first and second ends. The first composite layer includes a first plurality of wrinkles. The therapeutic device also includes a second composite layer extending between the first and second ends. The second composite layer includes a second plurality of wrinkles. The therapeutic device also includes a reservoir formed between the first and second composite layers, the reservoir having a length, a width and a depth. The therapeutic device also includes at least one port in fluid communication with the reservoir. The therapeutic device is moveable between the first relaxed state, in which the first plurality of wrinkles and the second plurality of wrinkles extend in a direction generally perpendicular to the longitudinal axis, and the second extended state, in which the first plurality of wrinkles and the second plurality of wrinkles are configured to be stretched between the first and second ends, so as to be generally parallel with the longitudinal axis.

[0021] In some ~~embodiment~~examples, at least one of the first composite layer and the second composite layer comprises a cell permeable layer extending between the opposed first and second ends and a cell retentive layer extending between the opposed first and second ends.

[0022] In some ~~embodiment~~examples, at least one of the first composite layer and the second composite layer is a cell permeable layer.

[0023] In some ~~embodiment~~examples, at least one of the first composite layer and the second composite layer is a cell retentive layer.

BRIEF DESCRIPTION OF THE DRAWINGS

[0024] The accompanying drawings are included to provide a further understanding of the disclosure and are incorporated in and constitute a part of this specification, illustrate embodiments, and together with the description serve to explain the principles of the present disclosure.

WHAT IS CLAIMED IS:

1. A therapeutic device comprising:

a pouch comprising:

opposed first and second ends;

first and second composite layers extending between the opposed first and second ends, wherein the first composite layer includes:

a first cell permeable layer extending between the opposed first and second ends; and

a first cell retentive layer extending between the opposed first and second ends; and

wherein the second composite layer includes:

a second cell permeable layer extending between the opposed first and second ends;

a second cell retentive layer extending between the opposed first and second ends; and

a lumen extending through the therapeutic device from the first end to the second end;

a reservoir positioned between the first and second composite layers, the reservoir contacting the first cell retentive layer;

at least one port in fluid communication with the reservoir; and

a removal element attached to or is integral with the first end of the pouch extending from the first end into the lumen to be accessible by a device removal tool such that during use, a device removal tool inserted into the lumen from the second end of the pouch grasps the removal element to exert a force on the removal element through the lumen to cause the device to be removed by eversion ~~configured to operably engage the first end of the pouch, so as to cause the first end to be moveable towards the second end of the pouch by eversion~~.

2. The device of claim 1, wherein each of the first and second composite layers comprises a plurality of wrinkles.

3. The device of any of the preceding claims, wherein the first cell permeable layer has a pore size sufficient to permit growth of vascular tissue therethrough.

4. The device of claim 3, wherein the pore size is greater than 5.0 microns as measured by porometry.

5. The device of any of the preceding claims, wherein the first cell retentive layer has a pore size sufficient to prevent ingrowth of vascular tissue.

6. The device of claim 5, wherein the pore size is less than 1 micron, as measured by porometry.

7. The device of any of the preceding claims, wherein at least one of the first cell permeable layer and the first cell retentive layer comprises an expanded fluoropolymer.

~~8. The device of claim 1, wherein the second composite layer comprises:~~

~~a second cell permeable layer extending between the opposed first and second ends; and~~

~~a second cell retentive layer extending between the opposed first and second ends.~~

~~9. A method comprising:~~

~~engaging a removal element configured to operably engage a first end of a therapeutic device implanted in a tissue pocket, wherein the implanted therapeutic device and the tissue pocket define a plane;~~

~~exerting a tensile force on the removal element in a first direction parallel to the plane;~~

moving the removal element along the first direction to move a first end of the implanted therapeutic device towards a second end of the implanted therapeutic device opposite the first end such that the implanted therapeutic device is peeled away from the tissue pocket;

wherein the moving step everts the implanted therapeutic device to remove the implanted therapeutic device from the tissue pocket atraumatically.

10. The method of claim 9, wherein the therapeutic device comprises:

a pouch comprising:

opposed first and second ends;

first and second composite layers extending between the opposed first and second ends, the first composite layer including:

a first cell permeable layer extending between the opposed first and second ends; and

a first cell retentive layer extending between the opposed first and second ends;

a reservoir formed between the first and second composite layers, the reservoir contacting the first cell retentive layer; and

at least one port in fluid communication with each reservoir; and

a removal element configured to operably engage the first end of the pouch, so as to cause the first end to be moveable towards the second end by eversion.

11. The method of claim 9, wherein each of the first composite layer and the second composite layer comprises a plurality of wrinkles.

12. The method of any one of claims 9 to 11, further comprising:

moving the therapeutic device from a first relaxed state in which the plurality of wrinkles formed the at least one of the first composite layer and the second composite layer engages tissue in a tissue pocket, to a second extended state, in which at least some of the plurality of wrinkles are stretched apart, so as to disengage a portion of the tissue from the at least some wrinkles;

wherein the moving step includes a plurality of discrete individual movements, whereby the tissue is incrementally disengaged from the plurality of wrinkles of the pouch so that the pouch is removed from the tissue pocket atraumatically.

13. The method of any one of claims 9 to 12, wherein the second composite layer comprises:

a second cell permeable layer extending between the opposed first and second ends; and

a second cell retentive layer extending between the opposed first and second ends.

14. A therapeutic device comprising:

opposed first and second ends, wherein the opposed first and second ends define a longitudinal axis therebetween;

a first composite layer extending between the first and second ends, wherein the first composite layer includes a first plurality of wrinkles;

a second composite layer extending between the first and second ends, wherein the second composite layer includes a second plurality of wrinkles;

a reservoir formed between the first and second composite layers, the reservoir having a length, a width and a depth; and

at least one port in fluid communication with the reservoir,

wherein the therapeutic device is moveable between a first relaxed state, in which the first plurality of wrinkles and the second plurality of wrinkles extend in a direction generally perpendicular to the longitudinal axis, and a second extended state, in which the first plurality of wrinkles and the second plurality of wrinkles are configured to be stretched between the first and second ends, so as to be generally parallel with the longitudinal axis.

15. The device of claim 14, wherein at least one of the first composite layer and the second composite layer comprises:

a cell permeable layer extending between the opposed first and second ends; and

a cell retentive layer extending between the opposed first and second ends.

16. A method, comprising:

engaging a first end of a therapeutic device implanted in a tissue pocket, wherein the implanted therapeutic device and the tissue pocket define a plane;

exerting a tensile force on the first end in a first direction parallel to the plane to move the therapeutic device from a first relaxed state in which a plurality of wrinkles formed on the therapeutic device engages tissue in the tissue pocket, to a second extended state, in which at least some of the plurality of wrinkles are stretched apart, so as to disengage a portion of the tissue from the at least some wrinkles;

wherein the moving step includes a plurality of discrete individual movements, whereby the tissue is incrementally disengaged from the plurality of wrinkles of the pouch so that the pouch is removed from the tissue pocket atraumatically.

17. The method of claim 16, wherein the therapeutic device comprises:

opposed first and second ends, wherein the opposed first and second ends define a longitudinal axis therebetween;

a first composite layer extending between the first and second ends, wherein the first composite layer includes a first plurality of wrinkles;

a second composite layer extending between the first and second ends, wherein the second composite layer includes a second plurality of wrinkles;

a reservoir formed between the first and second composite layers, the reservoir having a length, a width and a depth; and

at least one port in fluid communication with the reservoir,

wherein the therapeutic device is moveable between the first relaxed state, in which the first plurality of wrinkles and the second plurality of wrinkles extend in a direction generally perpendicular to the longitudinal axis, and the second extended state, in which the first plurality of wrinkles and the second plurality of wrinkles are

~~configured to be stretched between the first and second ends, so as to be generally parallel with the longitudinal axis.~~

~~18. The method of either claim 16 or 17, wherein at least one of the first composite layer and the second composite layer comprises:~~

~~a cell permeable layer extending between the opposed first and second ends; and~~

~~a cell retentive layer extending between the opposed first and second ends.~~

~~19. The method of claim 17, wherein at least one of the first composite layer and the second composite layer is a cell permeable layer.~~

~~20. The method of claim 17, wherein at least one of the first composite layer and the second composite layer is a cell retentive layer.~~