

CLAIMS

We claim:

1. A device for treating lipid-rich cells disposed under a cutaneous layer, comprising:
a vacuum cup defining an interior cavity and including a contour that defines a mouth of a cavity;
a thermal conductor disposed about at least a portion of the cavity, the thermal conductor is configured for heat transfer with respect to the lipid-rich cells when the contour engages the cutaneous layer; and
an adjustor configured to adjust at least one of (a) dimensions of the interior cavity, and (b) position of the thermal conductor with respect to the interior cavity, wherein the adjuster is configured to reshape the contour.
2. The device of claim 1, further comprising a plurality of thermal conductors disposed about at least a portion of the cavity.
3. The device of claim 2 wherein the adjuster is configured to vary at least one of interior cavity dimension and spacing and orientation of a first thermal conductor relative to a second thermal conductor.
4. The device of claim 2, further comprising at least one sensor configured to sense at least one of applicator cavity dimension and spacing and orientation of a first thermal conductor relative to a second thermal conductor.
5. The device of claim 4 wherein data from at least one sensor is used to adjust a subcutaneous lipid-rich cell treatment parameter.
6. The device of claim 1 wherein the adjustor is configured to adjust the dimensions of the interior cavity after a subject's tissue has been drawn into the interior cavity.
7. The device of claim 1 wherein the adjustor is configured to adjust the dimensions of the interior cavity before a subject's tissue has been drawn into the interior cavity.

8. The device of claim 1 wherein the adjustor is configured to provide adjustable gap width control of a gap of the vacuum cup.
9. The device of claim 1 wherein the thermal conductor includes a plurality of cooling panels movable from a splayed-out arrangement to a narrowed arrangement.
10. The device of claim 9 wherein the cooling panels are generally parallel to one another when in the narrowed arrangement.
11. The device of claim 1, further comprising a vacuum port, wherein the adjustor is configured to adjust the at least one of (a) the dimensions of the interior cavity and (b) the position of the thermal conductor with respect to the interior cavity, while a partial vacuum is drawn via the vacuum port.
12. The device of claim 1 wherein the vacuum cup is deformable to adjust a distance between opposite faces of the interior cavity within a range between approximately 0.5 inch and 3 inches.
13. The device of claim 1, further comprising two cooling plates that define a relative angle therebetween, and wherein the adjustor is configured control the relative angle.
14. A device for treating lipid-rich cells of a subject, the device comprising:
 - a vacuum cup defining an interior cavity;
 - a vacuum port;
 - at least one thermal conductor positioned to be in thermal contact with lipid-rich cells of the subject's tissue drawn into the interior cavity by a partial vacuum drawn via the vacuum port; and
 - an adjustor that reconfigures the device to compress the subject's tissue positioned in the interior cavity to affect heat transfer between the at least one thermal conductor and the lipid-rich cells positioned in the interior cavity, wherein the adjustor is positioned relative to a mouth of the vacuum cup such that the adjustor narrows the interior cavity while the subject's tissue is positioned in the interior cavity.
15. The device of claim 14 wherein the adjustor is operable to reconfigure the device by varying at least one dimension of the interior cavity.

16. The device of claim 14 wherein the adjustor is operable to reconfigure the device by adjusting a position of the at least one thermal conductor with respect to the interior cavity.
17. The device of claim 14 wherein the at least one thermal conductor includes a first thermal conductor and a second thermal conductor positioned on opposite sides of the interior cavity, wherein the first and second thermal conductors are movable from a tissue-receiving arrangement to a narrowed cooling arrangement, and wherein the adjustor is configured to keep the first and second thermal conductors in the narrowed cooling arrangement.
18. The device of claim 14 wherein the adjustor is operable to move the at least one thermal conductor between a splayed-out arrangement and a narrowed arrangement.
19. The device of claim 14 wherein the adjustor includes one or more clamp members, clips, or drawstrings.
20. The device of claim 14 wherein the adjustor reconfigures the device such that a distance between opposite faces of the vacuum cup is varied between about 1 inch and about 2 inches.
21. The device of claim 14 wherein a distance between opposite faces of the interior cavity is kept within a range between approximately 0.5 inch and 3 inches when the device is reconfigured to compress tissue within the interior cavity.
22. The device of claim 21 wherein the device has a narrowed arrangement in which a width of the interior cavity is greater than approximately 0.5 inch and an expanded arrangement in which the width of the interior cavity is less than approximately 3 inches.
23. The device of claim 22 wherein the adjustor holds the device in the narrowed arrangement.
24. A device for treating lipid-rich cells disposed under a cutaneous layer, comprising:
a vacuum cup defining an interior cavity and including a contour that defines a mouth of a cavity;
a thermal conductor disposed about at least a portion of the cavity, the thermal conductor is configured for heat transfer with respect to the lipid-rich cells when the contour engages

the cutaneous layer, the thermal conductor includes a plurality of cooling panels movable from a splayed-out arrangement to a narrowed arrangement; and an adjustor configured to adjust at least one of (a) dimensions of the interior cavity, and (b) position of the thermal conductor with respect to the interior cavity.

25. A device for treating lipid-rich cells of a subject, the device comprising:
a vacuum cup defining an interior cavity;
a vacuum port;
at least one thermal conductor positioned to be in thermal contact with lipid-rich cells of the subject's tissue drawn into the interior cavity by a partial vacuum drawn via the vacuum port; and
an adjustor that reconfigures the device to compress the subject's tissue positioned in the interior cavity to affect heat transfer between the at least one thermal conductor and the lipid-rich cells positioned in the interior cavity,
and wherein the adjustor includes one or more clamp members, clips, or drawstrings.
26. A device for treating lipid-rich cells of a subject, the device comprising:
a vacuum cup defining an interior cavity;
a vacuum port;
at least one thermal conductor positioned to be in thermal contact with lipid-rich cells of the subject's tissue drawn into the interior cavity by a partial vacuum drawn via the vacuum port;
an adjustor that reconfigures the device to compress the subject's tissue positioned in the interior cavity to affect heat transfer between the at least one thermal conductor and the lipid-rich cells positioned in the interior cavity; and
wherein a distance between opposite faces of the interior cavity is kept within a range between approximately 0.5 inch and 3 inches when the device is reconfigured to compress tissue within the interior cavity.