CLAIMS

What is claimed is:

1. A distal section of a catheter configured to enter a skin insertion site, comprising:

a tapered junction including one or more dilation structures configured to dilate the skin insertion site; and

a distal portion extending from a distal end of the tapered junction, the distal portion having a diameter smaller than a proximal portion of the catheter.

2. The distal section of the catheter according to claim 1, wherein the one or more dilation structures includes one or more protrusions or a helix extending from a side wall of the tapered junction.

3. The distal section of the catheter according to claim 2, wherein the one or more dilation structures extend radially from the side wall of the tapered junction.

4. The distal section of the catheter according to claim 2 or claim 3, wherein each protrusion includes a proximal edge and a distal edge.

5. The distal section of the catheter according to claim 4, wherein each protrusion extends longitudinally from the proximal edge to the distal edge.

6. The distal section of the catheter according to claim 5, wherein each protrusion extends laterally from the side wall to an apex.

7. The distal section of the catheter according to claim 6, wherein the apex is located between a longitudinal mid-point and one of the proximal edge or the distal edge, including the proximal edge or the distal edge.

8. The distal section of the catheter according to claim 7, wherein each protrusion defines a proximal face extending between the apex and the proximal edge.

9. The distal section of the catheter according to claim 7, wherein each protrusion defines a distal face extending between the apex and the distal edge.

10. The distal section of the catheter according to claim 8, wherein the proximal face defines a cutting edge extending longitudinally through a midline of the proximal face.

11. The distal section of the catheter according to claim 9, wherein the distal face defines a cutting edge extending longitudinally through a midline of the distal face.

12. The distal section of the catheter according to any claim of claims 2-11, wherein the protrusions are longitudinally organized into a first line of two or more protrusions and a second line of two or more protrusions disposed on opposite sides of the tapered junction.

13. The distal section of the catheter according to any claim of claims 2-12 , wherein the proximal face and the distal face of each of the protrusions coordinate to define a rounded outer profile.

14. The distal section of the catheter according to claim 12, wherein each of the protrusions of the first line is longitudinally aligned with each of the protrusions of the second line.

15. The distal section of the catheter according to claim 12, wherein each of the protrusions of the first line is longitudinally offset from each of the protrusions of the second line.

16. The distal section of the catheter according to claim 2, wherein the helix includes a right handed helix or a left handed helix.

17. The distal section of the catheter according to claim 2 or claim 16, wherein the helix includes beveled or chamfered edges.

~~18. A method of inserting a catheter comprising:~~

~~inserting a distal section of a catheter into a skin insertion site, the distal section having a tapered junction including one or more dilation structures configured to dilate the skin insertion site and a distal portion extending from a distal end of the tapered junction, the distal portion having a diameter smaller than a proximal portion of the catheter;~~

~~dilating the skin insertion site; and~~

~~advancing the proximal portion of the catheter into the skin insertion site.~~

19. The method according to claim 18, wherein the one or more dilation structures include one or more protrusions or a helix extending from a side wall of the tapered junction.

20. The method according to claim 19, wherein each protrusion includes a proximal face and a distal face.

21. The method according to claim 20, wherein the proximal face defines a cutting edge extending longitudinally through a midline of the proximal face.

22. The method according to claim 20, wherein the distal face defines a cutting edge extending longitudinally through a midline of the distal face.

23. The method according to claim 21 or claim 22, wherein dilating the skin insertion site includes using the cutting edge to dilate the insertion site.

24. The method according to claim 19, wherein dilating the skin insertion site includes rotating a helical dilation structure about a longitudinal axis to dilate the insertion site.

25. The method according to claim 24, wherein the helix includes a right handed helix or left handed helix.

26. The method according to claim 25, wherein the helix includes beveled or chamfered edges.

27. The method according to claim 26, wherein dilating the skin insertion site includes using the beveled or chamfered edges to dilate the insertion site.

28. The method according to any claim of claims 18-27, wherein dilating the skin insertion site includes twisting the distal section of the catheter around a longitudinal axis, clockwise or counterclockwise.

29. The method according to any claim of claims 18-28, wherein dilating the skin insertion site includes wiggling the distal section of the catheter about a transverse or lateral axis.