

CLAIMS

1. ~~A catheter system, comprising:
a catheter adapter, comprising a distal end, a proximal end, and a lumen extending through the distal end and the proximal end;
a connector coupled to the proximal end of the catheter adapter; and
a connector support device, wherein the connector support device is wedge shaped to support the connector at an insertion angle.~~
2. ~~The catheter system of claim 1, wherein the connector support device is H-shaped having four leg portions and a bridge portion.~~
3. ~~The catheter system of claim 1, wherein the connector support device comprises:
an upper surface contacting the connector;
a bottom surface configured to contact skin of a patient;
a ring or partial ring extending from the upper surface, wherein the connector extends through the ring or the partial ring.~~
4. ~~The catheter system of claim 3, wherein the upper surface comprises a groove aligned with a longitudinal axis of the connector, wherein the connector is disposed within the groove.~~
5. ~~The catheter system of claim 1, wherein the connector comprises a T-connector, wherein the T-connector comprises a body and a side port extending from the body, wherein the body comprises a distal end and a proximal end.~~
6. ~~The catheter system of claim 5, wherein the connector support device comprises:
an upper surface contacting the connector; and
a bottom surface configured to contact skin of a patient,~~

~~wherein the upper surface comprises a groove generally perpendicular to a longitudinal axis of the connector, wherein the side port is configured to rest within the groove.~~

- ~~7. The catheter system of claim 5, wherein the body and the side port rest on an upper surface of the connector support device.~~
- ~~8. The catheter system of claim 7, wherein the connector support device further comprises a ring or partial ring extending from the upper surface, wherein the side port extends through the ring or partial ring.~~
- ~~9. The catheter system of claim 7, wherein in the connector support device comprises a protrusion disposed proximal to the side port and configured to contact the side port.~~
- ~~10. The catheter system of claim 7, wherein in the connector support device comprises a protrusion disposed distal to the side port and configured to contact the side port.~~
- ~~11. The catheter system of claim 7, wherein the connector support device comprises a stepped surface forming an upper step and a lower step, wherein a distal end of the connector comprises a luer adapter disposed within the lower step.~~
- ~~12. The catheter system of claim 11, wherein the connector support device comprises a plurality of protrusions configured to contact the side port, wherein the luer adapter is disposed between the plurality of protrusions.~~
- ~~13. The catheter system of claim 11, wherein the lower step is curved to match a cylindrical shape of the luer adapter.~~
- ~~14. The catheter system of claim 13, wherein the connector support device comprises an extension extending distally from the lower step, wherein the luer adapter rests on the extension.~~

- ~~15. A connector support device to support a connector coupled to a catheter assembly, the connector support device comprising:~~
- ~~an upper surface configured to contact the connector; and~~
- ~~a bottom surface configured to contact skin of a patient, wherein the connector support device is wedge shaped to support the connector at an insertion angle.~~
- ~~16. The connector support device of claim 15, wherein the connector support device is H-shaped having four leg portions and a bridge portion.~~
- ~~17. The connector support device of claim 15, wherein the connector support device further comprises a ring or partial ring extending from the upper surface, wherein the ring is configured to receive the connector.~~
- ~~18. The connector support device of claim 15, wherein the upper surface comprises a groove configured to align with a longitudinal axis of the connector and receive the connector.~~
- ~~19. The connector support device of claim 15, wherein the upper surface comprises another groove disposed generally perpendicular to the groove, wherein the other groove is configured to receive a side port of the connector.~~
- ~~20. The connector support device of claim 15, wherein the upper surface comprises a protrusion configured to contact the side port.~~

CLAIMS

1. A catheter system, comprising:
 - a catheter adapter, comprising a distal end, a proximal end, and a lumen extending through the distal end and the proximal end;
 - a connector having a body with a distal end and a proximal end, the distal end of the body forming a luer adapter and being coupled to the proximal end of the catheter adapter, the connector also having a side port that extends from the body between the distal end and the proximal end; and
 - a connector support device for supporting the connector while the distal end of the connector is coupled to the proximal end of the catheter adapter, the connector support device comprising:
 - a lower surface;
 - an upper surface;
 - a ring that extends upwardly from the upper surface towards a proximal end of the connector support device, the body of the connector extending through the ring such that the ring secures the connector to the connector support device;
 - a lower step that is positioned below the upper surface towards a distal end of the connector support device and spaced from the ring, the luer adapter formed at the distal end of the connector being positioned within the lower step;
 - a groove in the upper surface that extends between the ring and the lower step, wherein a distance between the groove and the lower surface increases from a distal end of the groove to a proximal end of the groove, the body of the connector being supported in the groove to thereby position the connector at an insertion angle; and
 - a first set of protrusions positioned on opposing sides of the ring such that the ring and the first set of protrusions are aligned within a first plane that is transverse to an axis that extends between the distal and proximal ends of the connector support device and a second set of protrusions positioned on opposite sides of the lower step such that the lower step and the second set of protrusions are aligned within a second plane that is transverse to the axis, the second plane being spaced distally from the first plane thereby forming a channel between the first set of protrusions and the second set of protrusions, the side port of the connector extending through the channel.

2. The catheter system of claim 1, wherein the connector support device is H-shaped having four leg portions and a bridge portion.

3. The catheter system of claim 1, wherein the lower step is curved to match a cylindrical shape of the luer adapter.

4. The catheter system of claim 1, wherein the connector support device comprises an extension extending distally from the lower step, wherein the luer adapter rests on the extension.

5. The catheter system of claim 1, wherein the groove extends into the ring.

6. The catheter system of claim 1, wherein the proximal end of the connector forms a second luer adapter.

7. A catheter system, comprising:
a catheter adapter, comprising a distal end, a proximal end, and a lumen extending through the distal end and the proximal end;

a connector having a body with a distal end and a proximal end, the distal end of the body forming a luer adapter and being coupled to the proximal end of the catheter adapter, the connector also having a side port that extends from the body between the distal end and the proximal end; and

a connector support device for supporting the connector while the distal end of the connector is coupled to the proximal end of the catheter adapter, the connector support device comprising:

a lower surface;

an upper surface;

a ring that extends upwardly from the upper surface towards a proximal end of the connector support device, the body of the connector extending through the ring such that the ring secures the connector to the connector support device;

a lower step that is positioned below the upper surface towards a distal end of the connector support device and spaced from the ring, the luer adapter formed at the distal end of the connector being positioned within the lower step;

a groove in the upper surface that extends between the ring and the lower step, wherein a distance between the groove and the lower surface increases from a distal end of the groove to a proximal end of the groove, the body of the connector being supported in the groove to thereby position the connector at an insertion angle; and a first protrusion positioned to a first side of the ring such that the ring and the first protrusion are aligned within a first plane that is transverse to an axis that extends between the distal and proximal ends of the connector support device and a second protrusion positioned to a first side of the lower step such that the lower step and the second protrusion are aligned within a second plane that is transverse to the axis, the second plane being spaced distally from the first plane thereby forming a channel between the first and second protrusions, the side port of the connector extending through the channel.

8. The catheter system of claim 7, wherein the connector support device is H-shaped having four leg portions and a bridge portion.

9. The catheter system of claim 7, wherein the lower step is curved to match a cylindrical shape of the luer adapter.

10. The catheter system of claim 7, wherein the connector support device comprises an extension extending distally from the lower step, wherein the luer adapter rests on the extension.

11. The catheter system of claim 7, wherein the groove extends into the ring.

12. The catheter system of claim 7, wherein the proximal end of the connector forms a second luer adapter.