

# Nexus TKO<sup>®</sup>-6P Anti-Reflux Technology



You deserve a partner at both ends of your catheter!™

## Choosing the Best Design for Intravenous Needleless Connectors to Prevent Healthcare-Associated Bloodstream Infections<sup>1</sup>

- by William R. Jarvis, MD

✔ **Septum Surface:** Many current NCs have complex external septum surfaces that include gaps and openings.<sup>1</sup>

The Nexus TKO<sup>®</sup> Tri-Seal™ design utilizes an easy-to-clean, smooth external septum surface which is completely flat with NO gaps. The Nexus TKO<sup>®</sup> Tri-Seal™ design has been validated to be easily cleaned and disinfected with an alcohol pad.<sup>2,3</sup>

✔ **Septum Seal:** Although there are no studies to confirm this, any opening between the septum and fluid pathway is, hypothetically, an area where biofilm can develop and a potential opening for pathogens to invade.<sup>1</sup>

The Nexus TKO<sup>®</sup> Tri-Seal™ design has three independent sealing surfaces which were designed and validated to work together to form a safe, swabbable and protective barrier to microbial ingress.<sup>2</sup>

✔ **Fluid Pathway:** Some NCs have a fluid pathway that is complex and indirect. If the pathway is indirect, flushing is less likely to remove blood or other nutrient fluids. When blood or other nutrient materials settle on a NC internal surface, they can serve as the nidus for biofilm development.<sup>1</sup>

Nexus TKO<sup>®</sup> is designed with a clear, direct, rigid internal fluid pathway which enables a low volume Productive Flush<sup>®</sup>.<sup>3,9</sup>

✔ **Dead Spaces:** Is related to the directness of the fluid pathway. NCs with indirect or tortuous fluid pathways often have “dead spaces” that are not always reached by flushing. Contaminating organisms and proteinaceous material (i.e., blood) that enhances biofilm development can “hide” in these dead spaces, increasing HA-BSI risk.<sup>1</sup>

Nexus TKO<sup>®</sup> was created with a laminar flow internal fluid pathway with no dead space which enables a low volume Productive Flush<sup>®</sup>.<sup>3,9</sup>

✔ **Internal Mechanism:** Some NC designs involve complicated internal mechanisms that open the fluid pathway when the NC is activated. As with dead spaces, moving parts in the fluid pathway provide surfaces for infusates to bind to and can serve as a nidus for biofilm development.<sup>1</sup>

Nexus TKO<sup>®</sup> is performance engineered with a clear, direct, rigid internal fluid pathway with no mechanical parts.<sup>3</sup>



✔ **Clamping Sequence:** Both positive and negative pressure luer access mechanical valve NCs require a sequence of clamping steps as part of the disconnection process. The sequence is performed to minimize blood reflux (blood flowing backwards into the distal end of the IV catheter).<sup>1</sup>

Nexus TKO<sup>®</sup> is designed with a proprietary single piece, clear silicone Anti-Reflux diaphragm which automatically opens and closes requiring NO change in clamping sequence or clinical practice.<sup>3,4,5,6,7,8</sup>

✔ **Visibility:** Flushing NCs is critically important because it is the method by which blood or other contaminating infusates (glucose containing solutions, intra-lipid, etc.) is removed from the NC.<sup>1</sup>

Nexus TKO<sup>®</sup> is the only Anti-Reflux NC which is manufactured using 100% visibly clear medical grade materials which provide the clinician with an easy to check fluid pathway and confirm a Productive Flush<sup>®</sup> was achieved.<sup>9</sup>

✔ **Blood Reflux:** Theoretically, blood reflux into either the IV catheter or the NC increases both the risk of occlusion and biofilm formation. Both also increase the risk of HA-BSI.<sup>1</sup>

Nexus TKO<sup>®</sup> Anti-Reflux technology delivers an evidence based solution which safely protects the patients IV catheter 24/7 from occlusions and biofilm formations due to unintentional blood reflux.<sup>3,4,5,6,7,8</sup>

✔ **Flushing Solution:** Some NC types are designed to be flushed with heparin to reduce the risk of occlusion. In some patient populations, there have been reports of increasing rates of heparin-induced thrombocytopenia or HIT.<sup>1</sup> Nexus TKO<sup>®</sup> Anti-Reflux technology is the only NC with published clinical evidence to support a “Saline Only” claim, by safely eliminating all daily heparin flushing procedures with a corresponding and parallel reduction in tPA/Cathflo<sup>®</sup> as well as the associated patient safety risk of HIT.<sup>3,4,5,6,7</sup>

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8. Lab results on file at Nexus Medical, LLC
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