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## Diabetes management in spinal surgery

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Diabetes mellitus can lead to long-standing complications in multiple arenas. An area that is often overlooked is implications for major surgery. Spinal decompression and fusions have unique challenges in the diabetic patient. In this review, we briefly highlight the pathophysiology of diabetes mellitus prior to examining implications for spinal surgery. We focus on the wound healing process, surgical infection risk and delayed fusion. The paper then transitions to a focus on early diagnostics as well as pre-operative glucose control. Finally, we highlight important management strategies post operatively, continued necessity of monitoring and emerging treatment and diagnostic approaches. This paper will serve as a key clinical guide that clinicians can utilize for diagnostic, management and follow-up planning.

### Recent Publications

1. Goldman M, Lucke-Wold B, Martinez-Sosa M, Katz J, Mehkri Y, Valisno J, Quintin S. Steroid utility, immunotherapy and brain tumor management: an update on conflicting therapies. *Explor Target Antitumor Ther.* 2022;3(5):659-675.
2. Shokoufeh Khanzadeh, Hossein Tahernia, Jairo Hernandez, Camila Sarcone, Brandon Lucke-Wold, Amirhossein Salimi, Fatemeh Tabatabaei, "Predictive Role of Neutrophil to Lymphocyte Ratio in Adnexal Torsion: A Systematic Review and Meta-Analysis", *Mediators of Inflammation*, vol. 2022, Article ID 9680591, 8 pages, 2022.

3. Mehkri Y, Woodford S, Pierre K, Dagra A, Hernandez J, Reza Hosseini Siyanaki M, Azab M, Lucke-Wold B. Focused Delivery of Chemotherapy to Augment Surgical Management of Brain Tumors. *Current Oncology.* 2022; 29(11):8846-8861.

### Biography

Brandon Luck-Wold was born and raised in Colorado springs, co. He graduated magna cum laude with a BS in neuroscience and distinction in honors from Baylor University. He completed his MD/Ph.D., master's in clinical and translational research and the global health track at West Virginia University school of medicine. His research focus was on traumatic brain injury, neurosurgical simulation and stroke. At West Virginia University, he also served as a health coach for the diabetes prevention and management program in Morgantown and Charleston, WV, which significantly improved health outcomes for participants. In addition to his research and public health projects, he is a co-founder of the biotechnology company Wright-Wold scientific, the pharmaceutical company CTE cure and was a science advocate on capitol hill through the Washington fellow program.

He has also served as president of the WVU chapters for the American association of pharmaceutical scientists, the neurosurgery interest group and the Erlenmeyer initiative entrepreneur group. He was an active member of the gold humanism honor society and alpha omega alpha honor society. He is currently a member of the young neurosurgeons' committee.

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