A retrospective review of 180 patients who underwent posterior cervical spine surgery at the University of Florida was performed. Nuchal thickness was measured, from the ventral most point of the spinous process of C5 to the skin on mid-sagittal preoperative, imaging. Diabetes status, BMI, smoking status, duration of anesthesia, prior, operations, and subcutaneous layer thickness was also collected. Infections were, identified according to the Centers for Disease Control and Prevention (CDC) definitions for SSI. Univariate and multivariate analyses were performed by a biostatistician.

Twenty patients (11%) had SSI. Smoking status, the nuchal thickness of greater, than 55 mm or less than 29.8 mm, and subcutaneous fat thickness were all associated, with SSI. Age (OR 0.99, p = 0.45), diabetes (OR 0.50, p = 0.37), BMI (OR 1.03, p = 0.35), and use of intraoperative antibiotic powder (OR 0.62, p = 0.35) were not associated with, infection. On multivariate analysis (adjusted for smoking status), nuchal thickness, ($p < 0.0001$), subcutaneous fat thickness ($p < 0.0001$), and the ratio of subcutaneous fat to, nuchal thickness ($p < 0.0001$) all remained associated with SSI.

Nuchal thickness and subcutaneous fat thickness are associated with SSI, in patients undergoing posterior cervical spine surgery. The risk of infection increases with very thin and very thick nuchal measurements [1].

1)
Porche K, Lockney DT, Gooldy T, Kubilis P, Murad G. Nuchal thickness and increased risk of surgical site infection in posterior cervical operations. Clin Neurol Neurosurg. 2021 Apr 25;205:106653. doi: 10.1016/j.clineuro.2021.106653. Epub ahead of print. PMID: 33984797.