Introduction: Antibiotic prophylaxis is used to prevent surgical site infections (SSIs) that can cause significant morbidity from pain, delayed wound healing and impaired cosmesis. High-risk patients receiving Mohs Surgery are often given antibiotic prophylaxis. Evidence with respect to oral and intra-incisional antibiotic prophylaxis is inconsistent.

Objective: To systematically appraise the literature and create a clinically significant pooled meta-analysis result regarding the effect of oral and intra-incisional antibiotics improving surgical site infections in Mohs Surgery.

Materials and Methods: A comprehensive literature search was performed to include eligible randomized controlled trials (RCTs) that investigated rates of SSIs vs. placebo following administration of oral or intra-incisional antibiotic prophylaxis in Mohs surgery. Calculated risk ratios were calculated and a pooled meta-analyses of these risk ratios was performed using a random-effects model.

Results: Five randomized controlled trials (RCTs) with 2,919 patients receiving Mohs Micrographic Surgery (MMS) met the inclusion criteria for the current study. Three of the five studies were RCTs (n= 839) investigated oral antibiotic prophylaxis vs. placebo in MMS. The meta-analysis revealed no difference between antibiotic prophylaxis and placebo for SSI reduction (pooled RR: 0.41 (95% CI: 0.08-1.95), I2 =82%). Two of the five included RCTs (n= 2080) reported data for pre-operative intra-incisional antibiotic prophylaxis in MMS at various sites. Both studies showed statistically significant reductions in the SSI following intra-incisional antibiotic prophylaxis (pooled RR: 0.18 (95% CI: 0.05-0.71), I2 =26%).

Conclusions: In conclusion, our meta-analysis showed no statistically significant reduction in SSI following oral antibiotic prophylaxis vs. placebo. Intra-incisional antibiotic prophylaxis, a methodology that is not widely used, may be a viable prophylactic option given the significant reduction compared to placebo in this pooled analysis. The current study furthermore suggests that routine oral antibiotic prophylaxis should be cautioned due to the development of microbial resistance to antibiotics and antibiotic related adverse events.