Comparison of Skin Moisturizers and Antibiotic Ointments in the Ability To Inhibit Bacteria

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The objective was to compare antibiotic ointments and skin moisturizers' ability to inhibit bacteria. The hypothesis was antibiotic ointments will inhibit bacterial growth more than skin moisturizers for both types of bacteria because antibiotic ointments contain bacitracin, which prevents gram-positive bacterial growth, and polymyxin B and neomycin, which prevent gram-negative bacterial growth, whereas skin moisturizers do not focus on inhibiting bacterial growth and do not contain antibacterial ingredients. The importance of the research is to see whether moisturizers or antibiotic ointments are better in wound care to minimize the risk of infection. Six trials were conducted for all moisturizers and antibiotic ointments for Staphylococcus epidermidis and Escherichia coli. Twelve plates were inoculated with Staphylococcus epidermidis and Escherichia coli, separately. Twelve disks were soaked in distilled water, each moisturizer and antibiotic ointment, and positioned on the inoculated plates. After incubating the petri dishes at thirty degrees Fahrenheit, the zones of inhibition were measured at 24 and 48 hours. For all the moisturizers and antibiotic ointments tested against Staphylococcus epidermidis, benzoyl peroxide had the largest zone of inhibition, and hyaluronic acid hand cream had the smallest zone of inhibition. For all the moisturizers and antibiotic ointments tested against Escherichia coli, neosporin had the largest zone of inhibition, and distilled water, beeswax, petroleum jelly, hyaluronic acid hand cream, and benzoyl peroxide had no zones of inhibition. The hypothesis was partially supported. When ANOVA statistical tests were conducted, the difference was significant. ($f > 1.00$; $p = 0.05$) Kelly Wyse 11th Grade

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