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## CHITOSAN AND ITS DERIVATIVES FOR WOUND MANAGEMENT

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### SUMMARY

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One of the ultimate goals of wound healing research is to find effective healing techniques that utilize the regeneration of similar tissues. This involves the modification of various wound dressing biomaterials for proper wound management. Chitin ( $\beta$ -(1-4)-poly-N-acetyl-D-glucosamine) is widely available in nature and is the second most abundant polysaccharide after cellulose. The biopolymer chitosan (b-1,4-D-glucosamine) has natural biocompatibility and biodegradability that render it suitable for wound management. Chitosan and chitosan-based derivatives possess medicinal properties that accelerate wound healing and tissue regeneration. However, the practical use of chitosan is restricted to the unmodified forms, as these are water-insoluble and have high viscosity and the tendency to coagulate with proteins at high pH. Thus, chemical modification of chitosan may ultimately enhance its solubility and potential use for wound dressings. Chitosan has analgesic, antimicrobial and anti-inflammatory effects, which are beneficial for wound treatment. Chitosan and its derivatives can be widely used for the development of various chitosan-based wound dressings and biological scaffolds for tissue engineering. This presentation summarizes studies on the wound-healing effects of chitin, chitosan, and its derivatives with various illustrative clinical applications.