

## Novel Use of Platelet-Rich Plasma to Augment Curative Diabetic Foot Surgery

Christy L. Scimeca, D.P.M., Manish Bharara, Ph.D., Timothy K. Fisher, D.P.M., Heather Kimbriel, B.S., and David G. Armstrong, D.P.M., M.D., Ph.D.

### Abstract

Autologous platelet-rich plasma (PRP) may enhance wound healing through the formation of a platelet plug that provides both hemostasis and the secretion of biologically active proteins, including growth factors such as platelet-derived growth factor, transforming growth factor (TGF)- $\beta$ , TGF- $\beta$ 2, and epidermal growth factor. The release of these growth factors into the wound may create an environment more conducive to tissue repair and could accelerate postoperative wound healing. To our knowledge, there are no reports of combining the use of PRP with curative diabetic foot surgery. This article provides a summary of the literature regarding PRP and wound healing and presents a case of a 49-year-old man with diabetes and a three-month history of a deep, nonhealing plantar hallux wound in which PRP was combined with a first metatarsophalangeal joint arthroplasty. Through the use of the PRP and bioengineered tissue to supplement curative diabetic foot surgery, the patient healed uneventfully at seven weeks.

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**Author Affiliation:** Southern Arizona Limb Salvage Alliance (SALSA), College of Medicine, University of Arizona, Tucson, Arizona

**Abbreviations:** (EGF) epidermal growth factor, (IGF) insulin-like growth factor, (MTPJ) metatarsophalangeal joint, (PDGF) platelet-derived growth factor, (PIPJ) proximal interphalangeal joint, (PRP) platelet-rich plasma, (TGF) transforming growth factor, (VEGF) vascular endothelial growth factor

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**Corresponding Author:** David G. Armstrong, D.P.M., M.D., Ph.D., Southern Arizona Limb Salvage Alliance (SALSA), College of Medicine, University of Arizona, 1501 N. Campbell Ave., Room 4318, Tucson, AZ 85724; email address [Armstrong@usa.net](mailto:Armstrong@usa.net)