[Ann Plast Surg.](http://www.ncbi.nlm.nih.gov/pubmed/20548228" \o "Annals of plastic surgery.) 2010 Jul; 65(1):96-100. doi: 10.1097/SAP.0b013e3181b0bb67.

**The effect of human placenta extract in a wound healing model.**

[*Hong JW*](http://www.ncbi.nlm.nih.gov/pubmed?term=Hong%20JW%5BAuthor%5D&cauthor=true&cauthor_uid=20548228)*,*[*Lee WJ*](http://www.ncbi.nlm.nih.gov/pubmed?term=Lee%20WJ%5BAuthor%5D&cauthor=true&cauthor_uid=20548228)*,*[*Hahn SB*](http://www.ncbi.nlm.nih.gov/pubmed?term=Hahn%20SB%5BAuthor%5D&cauthor=true&cauthor_uid=20548228)*,*[*Kim BJ*](http://www.ncbi.nlm.nih.gov/pubmed?term=Kim%20BJ%5BAuthor%5D&cauthor=true&cauthor_uid=20548228)*,*[*Lew DH*](http://www.ncbi.nlm.nih.gov/pubmed?term=Lew%20DH%5BAuthor%5D&cauthor=true&cauthor_uid=20548228)*.*

**Source**

*Yonsei University, Department of Plastic and Reconstructive Surgery, Institute for Human Tissue Restoration, Seoul, Korea.*

**Abstract**

Human placenta had been used on wound healing such as burns, chronic ulcers, and skin defects. Recently, human placenta has been widely used in the form of human placental extracts (HPE) by clinical field. However, it is unclear what the effect of HPE is on wound healing. We studied the effect and mechanism of HPE on wound healing.In this study, 10 mice (imprinting control region mice, 5 week old males, 30 g) were divided into an experimental group and a control group. An 8-mm diameter single full-thickness skin defect was made on the back by skin punch biopsy. At least 2.0 x 10 mL/30 g HPE was injected into the boundaries of the wound. Wound size measurements were taken by digital image every 3 days over 2 weeks. Hematoxylin and eosin (H and E), transforming growth factor beta (TGF-beta), vascular endothelial growth factor (VEGF), and CD31+ immunohistochemical stains were performed on the 6th and 14th day.The experimental group showed acceleration in the decrease of wound size compared with the control group from the third day to the ninth day. TGF-beta on the 6th day showed a statistically significant increase in the experimental group. VEGF on the 14th day showed a statistically significant increase in the experimental group. CD31+ was increased in the experimental group as wound healing progressed, but this increase was not statistically significant. The total number of vessels increased in the experimental group, but this was not statistically significant.We conclude that administering HPE directly to a wound margin promoted wound healing. This mechanism appears to be related to an increase in TGF-beta in the early phase of wound healing and VEGF in the late phase.

[J Indian Med Assoc.](http://www.ncbi.nlm.nih.gov/pubmed/18839655) 2008 Jun;106(6):405-8.

**Comparative evaluation of human placental extract for its healing potential in surgical wounds after orthopaedic surgery: an open, randomised, comparative study.**

[*Chandanwale A*](http://www.ncbi.nlm.nih.gov/pubmed?term=Chandanwale%20A%5BAuthor%5D&cauthor=true&cauthor_uid=18839655)*, [Langade D](http://www.ncbi.nlm.nih.gov/pubmed?term=Langade%20D%5BAuthor%5D&cauthor=true&cauthor_uid=18839655), [Mohod V](http://www.ncbi.nlm.nih.gov/pubmed?term=Mohod%20V%5BAuthor%5D&cauthor=true&cauthor_uid=18839655), [Sinha S](http://www.ncbi.nlm.nih.gov/pubmed?term=Sinha%20S%5BAuthor%5D&cauthor=true&cauthor_uid=18839655), [Ramteke A](http://www.ncbi.nlm.nih.gov/pubmed?term=Ramteke%20A%5BAuthor%5D&cauthor=true&cauthor_uid=18839655), [Bakhshi GD](http://www.ncbi.nlm.nih.gov/pubmed?term=Bakhshi%20GD%5BAuthor%5D&cauthor=true&cauthor_uid=18839655), [Motwani M](http://www.ncbi.nlm.nih.gov/pubmed?term=Motwani%20M%5BAuthor%5D&cauthor=true&cauthor_uid=18839655).*

**Source**

*Department of Traumatology and Orthopaedic Surgery, Grant Medical College and Sir JJ Group of Hospitals, Mumbai.*

**Abstract**

The study was conducted to compare the efficacy and safety of topical application of purified extract of human placenta (placentrex gel) versus povidone iodine for its wound healing potential after orthopaedic surgeries. In this open, comparative, randomised study, 79 patients above 18 years of age undergoing elective clean and uncontaminated orthopaedic surgery (open fracture reduction, spine surgery and debridement of wound) were enrolled in the study after obtaining written informed consent. Enrolled patients were randomised as per the PC generated randomisation chart (Rando 1.2, 2004) to receive either topical application of human placenta purified extract (PE) on the surgical wound or topical application of povidone iodine (PI) ointment on the surgical wound. Both preparations were applied topically on the surgical wound after the surgery, on days 3, 7 and on day 10, if required. Assessment of surgical wound was done after recovery from anaesthesia and on days 3, 7 and 10 based upon wound healing, physicians' global assessment of response to therapy (PGART) scale, pain and adverse effects. All 79 patients (40 PE and 39 PI) completed the study on day 10 as per the study protocol. Healing of the wound was observed in all patients. The number of patients reporting pain on days 3, 7 and 10 were similar in both PE and PI treatment (p, 0.527) groups. Wound induration was observed in 6 patients (15.00%) of PE and 15 (38.46%) of PI on day 7 (p, 0.041). None of the patients reported any side/adverse events during the study period. Purified placental extract and povidone iodine have comparative wound healing effects.

[J Cosmet Sci.](http://www.ncbi.nlm.nih.gov/pubmed/18528587) 2008 May-Jun;59(3):195-202.

**The effects of placental extract on fibroblast proliferation.**

[*Cho HR*](http://www.ncbi.nlm.nih.gov/pubmed?term=Cho%20HR%5BAuthor%5D&cauthor=true&cauthor_uid=18528587)*, [Ryou JH](http://www.ncbi.nlm.nih.gov/pubmed?term=Ryou%20JH%5BAuthor%5D&cauthor=true&cauthor_uid=18528587),*[*Lee JW*](http://www.ncbi.nlm.nih.gov/pubmed?term=Lee%20JW%5BAuthor%5D&cauthor=true&cauthor_uid=18528587)*,*[*Lee MH*](http://www.ncbi.nlm.nih.gov/pubmed?term=Lee%20MH%5BAuthor%5D&cauthor=true&cauthor_uid=18528587)*.*

**Source**

*Department of Dermatology, College of Medicine, Kyunghee University, Seoul, Korea.*

**Abstract**

Human placental extract is used in the treatment of skin wrinkles and wounds. To date, no studies have evaluated the effects of placental extract on dermal fibroblast proliferation. To investigate the effects of placental extract versus ascorbic acid on fibroblast proliferation and transforming growth factor (TGF)-beta1 expression, cultured human fibroblasts were treated with placental extract (0, 0.08, 0.16, 0.32, and 0.64%) or L-ascorbic acid-2-phosphate magnesium (0, 0.01, 0.1, 1.0, and 10 mM). Fibroblast proliferation was determined by MTT assay, and TGF-beta1 protein expression was analyzed by ELISA. The proliferation of fibroblasts increased significantly after treatment with placental extract at concentrations of 0.32 and 0.64% and with L-ascorbic acid-2-phosphate magnesium at concentrations of 1.0 and 10 mM. Placental extract demonstrated no significant effects on TGF-beta1 expression; however, TGF-beta1 expression significantly increased after treatment with ascorbic acid at concentrations of 1.0 and 10 mM. Placental extract and ascorbic acid had similar effects on fibroblast proliferation; however, placental extract did not significantly increase TGF-beta1 protein expression.

[Indian J Exp Biol.](http://www.ncbi.nlm.nih.gov/pubmed/17877151) 2007 Aug;45(8):732-8.

**Cell adhesion by aqueous extract of human placenta used as wound healer.**

[*Nath S*](http://www.ncbi.nlm.nih.gov/pubmed?term=Nath%20S%5BAuthor%5D&cauthor=true&cauthor_uid=17877151)*,*[*Bhattacharyya D*](http://www.ncbi.nlm.nih.gov/pubmed?term=Bhattacharyya%20D%5BAuthor%5D&cauthor=true&cauthor_uid=17877151)*.*

**Source**

*Division of Structural Biology and Bioinformatics, Indian Institute of Chemical Biology, 4, Raja S C Mullick Road, Jadavpur, Kolkata 700 032, India.*

**Abstract**

Aqueous extract of human placenta, used as wound healer, has shown significant cell adhesion property on mouse peritoneal macrophages and P388D1 cultured macrophage cell line. This property was offered primarily by fibronectin type III like peptide present in the extract and is comparable to fibronectin on a molar basis. The peptide induce adhesion of cell through cell surface receptors having K(d) = 2.8 +/- 0.9 x 10(-5) M suggesting weak binding. This is in support of integrins receptors that typically exhibit low affinities. Cell adhesion was partially inhibited by Arg-Gly-Asp (RGD) peptide, anti-beta1 integrin suggesting that integrin beta1 receptors have roles to play in the process.