

# Hämoglobin-Oxygenierung der Haut an verschiedenen Spenderregionen für mikrochirurgische Transplantate

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## **Abstract**

*Microsurgical skin flaps raised from various body regions show differences in vascular architecture, cutaneous density and skin perfusion. Therefore it can be expected that oxygenation of the skin is different at the various free flap donor sites. To determine the cutaneous oxygen supply intracapillary haemoglobin oxygenation was measured on the donor sites of the radial forearm flap, scapula, latissimus dorsi, rectus abdominis, anterolateral thigh and osteocutaneous fibula flap on 50 healthy subjects (25 men and 25 women aged 20 -40 years). Measurements were performed noninvasively with the Erlangen Microlightguide Spectrophotometer (EMPHO) on skin areas of 6 x 8 cm in each region under resting conditions. The haemoglobin oxygenation of the skin in all donor regions varied between a maximum of 43.94 - 58.94% in the scapula region and a minimum of 13.89 - 29.45% in the lateral calf. High oxygenation values were also found on the skin over the latissimus dorsi muscle (34.56 - 48.45%), followed by the distal volar forearm (29.78 - 40.30 %), whereas paraumbilical skin and the donor sites of the lower extremities were less oxygenated. Using the WILCOXON test, significant differences were found between all donor regions except of the anterolateral thigh and lateral calf ( $p = 0,05$ ). There were no sexspecific differences. From these results we conclude that on young healthy subjects regional oxygen supply on different free flap donor sites significantly varies. This must be considered in the interpretation of intra- or transcutaneous  $pO_2$ -measurements for flap monitoring.*