# A systematic review on free tissue transfer in diabetics

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**Introduction**

Diabetes mellitus (DM) affects 8.2% of the Singaporean population. Historically, free tissue transfer has been contraindicated in patients with diabetes as vessel wall disease is often an accompanying condition. As the number of diabetic patient and life span of these patients increase, the number of diabetics requiring free tissue transfer also increases. It has been perceived that there is increased rate of free flap failure in diabetic patients due to the associated risk of microvascular and macrosvascular pathology. Recently, several authors have shown that free tissue transfer is not necessarily contraindicated in diabetics. We aim to study the incidence of failure in free tissue transfer surgery in a diabetic.

**Objective**

The aim of this study is to compare the flap failure rates between diabetics and non-diabetics and the feasibility of free flap surgery for limb salvage in diabetics.

**Methods**

Pubmed, Embase, SCOPUS and CINAHL and Cochrane Library (up till 2011) were searched for all articles on free tissue transfer in diabetics. The flap failure rates, salvage rates and limb salvage rates were reviewed by 2 independent reviewers using a predetermined data collection form.

**Results**

496 patients from 18 studies were included in the systematic review. There were 4 case-control studies and 14 case series. Three studies examined free tissue transfer for head and neck surgery, 1 on breast reconstruction and 14 on lower limb reconstruction, of which 5 of these studies were done on patients with revascularisation procedures combined with free tissue transfer. Due to the small number of studies on breast and head and neck surgery, further analysis was only performed on the 14 studies examining lower limb reconstruction.

**Discussion**

The rate of complete flap failure in a diabetic (1.4-10%; avg 3.3%) is not significantly higher than in a non-diabetic (0.8-5.2%). In comparing patients who undergo limb salvage reconstruction, patients requiring revascularisation and free tissue transfer have poorer prognosis than patients who require free tissue transfer only. Patients undergoing revascularisation and free tissue transfer have a complete flap failure rate of (0-15.4%; avg 4.55%), partial flap failure rate of (0-29.2%; avg 11.8%) and limb salvage rate of (73.7-94.7%; avg 87.0%)

**Conclusion**

Free tissue transfer is a viable option in diabetics. Free tissue transfer is a feasible option for limb salvage in diabetics.