

## Presence of adipose tissue after autologous fat transplantation in patients with adherent scars, a pilot study



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### Objectives

A substantial number of burn survivors develop an adherent scar because the subcutis had to be excised. The important functions of the subcutis are therefore missing, as well as the functional sliding layer itself. These patients suffer from pain, itching and soft tissue or joint stiffness. Autologous fat transplantation (AFT) is an upcoming technique for the reconstruction of the subcutis in adherent scars. Recent studies have shown a beneficial effect of AFT on the previously mentioned symptoms<sup>1,2</sup>. However, it is still not proven whether the transplanted adipose tissue is present and functional after a period of time, because not all adipose tissue might survive the grafting process due to for example surgical trauma. This study aims to assess the presence of subcutaneous adipose tissue after AFT.

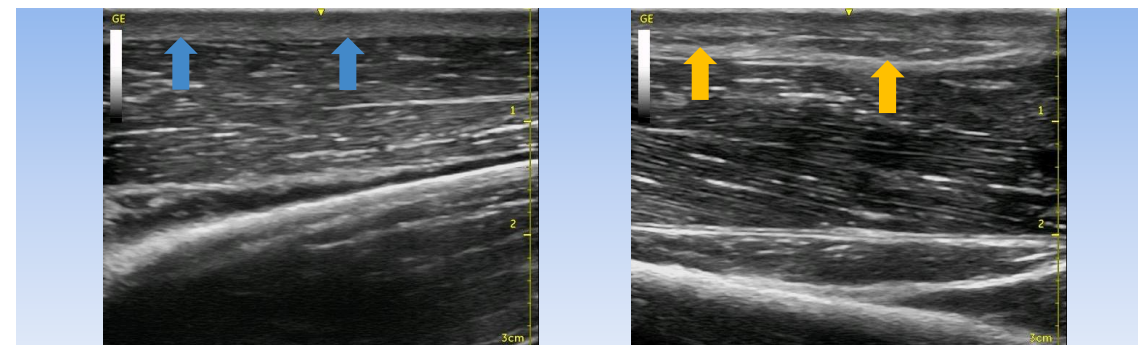
### Methods

A prospective uncontrolled trial was carried out. Five patients with a total of seven adherent scars due to burns, necrotizing fasciitis or degloving injuries, undergoing AFT using the LipiVage method, were included. A subcutaneous ultrasonography was made preoperatively and at 3-months follow-up. These ultrasounds were assessed by a single, experienced anesthesiologist.

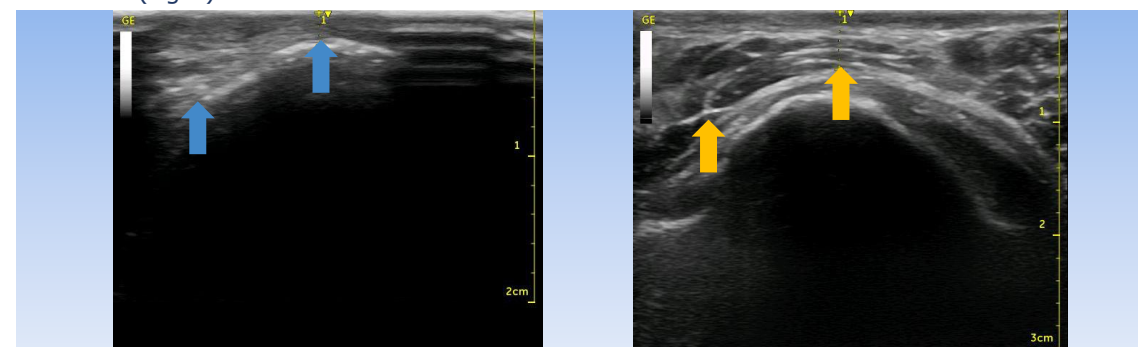


### Results

**In five of the seven scars there was a clear increase in subcutaneous tissue visible. In one scar the result was inconclusive due to differences in ultrasonography angles and in one scar no increase in subcutaneous tissue was seen.**



**Example 1.** Longitudinal posterior view of the proximal forearm, before (left) and 3 months after AFT (right).



**Example 2.** Transverse anterior view of the shoulder, before (left) and 3 months after AFT (right).

### Conclusion

**This study shows that adipose tissue is still present at 3 months follow-up after AFT and its presence supports the hypothesis that adipose tissue is instrumental in the treatment of adherent scars.**

<sup>1</sup> Jaspers ME, et al. Effectiveness of autologous fat grafting in adherent scars: results obtained by a comprehensive scar evaluation protocol. *Plast Reconstr Surg* 2017. <sup>2</sup> Jaspers ME, et al. Sustainable effectiveness of single-treatment autologous fat grafting in adherent scars. *Wound Repair Regen* 2017.