Supplemental Information

Fat Body Cells Are Motile and Actively Migrate

to Wounds to Drive Repair and Prevent Infection

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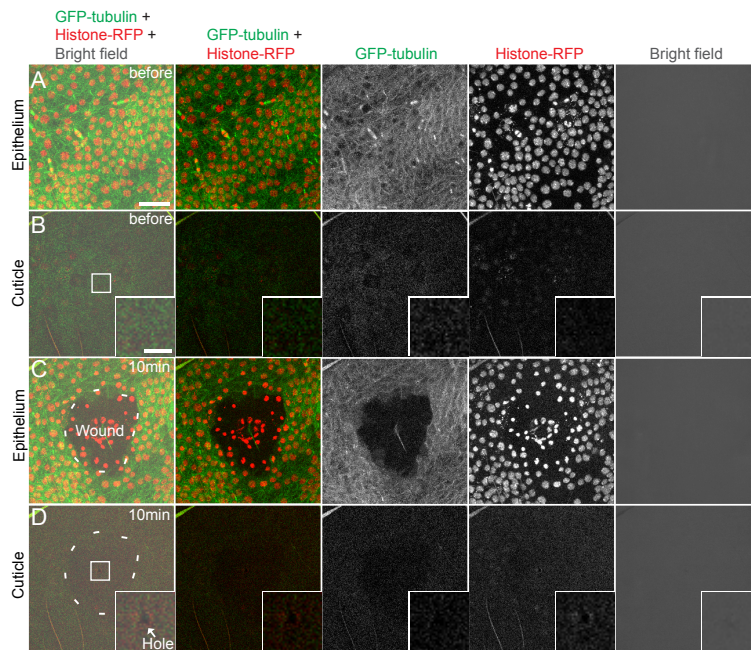
Figure S1
Morphology of a laser-induced epithelial wound labelled with Histone-RFP.
Related to Figure 1

(A-D) Microscopy images of a Z-stack projection restricted to the epithelium (A, C) or the cuticle (B, D) before (A, B) and 10 minutes after (C, D) making a laser-induced wound (outlined by white dotted line) in a c564-Gal4+Ubi>GFP-tubulin+Ubq>Histone-RFP pupa (Tubulin in green; nuclei in red; bright field in grey; magnified in the insets to show the hole in the cuticle).
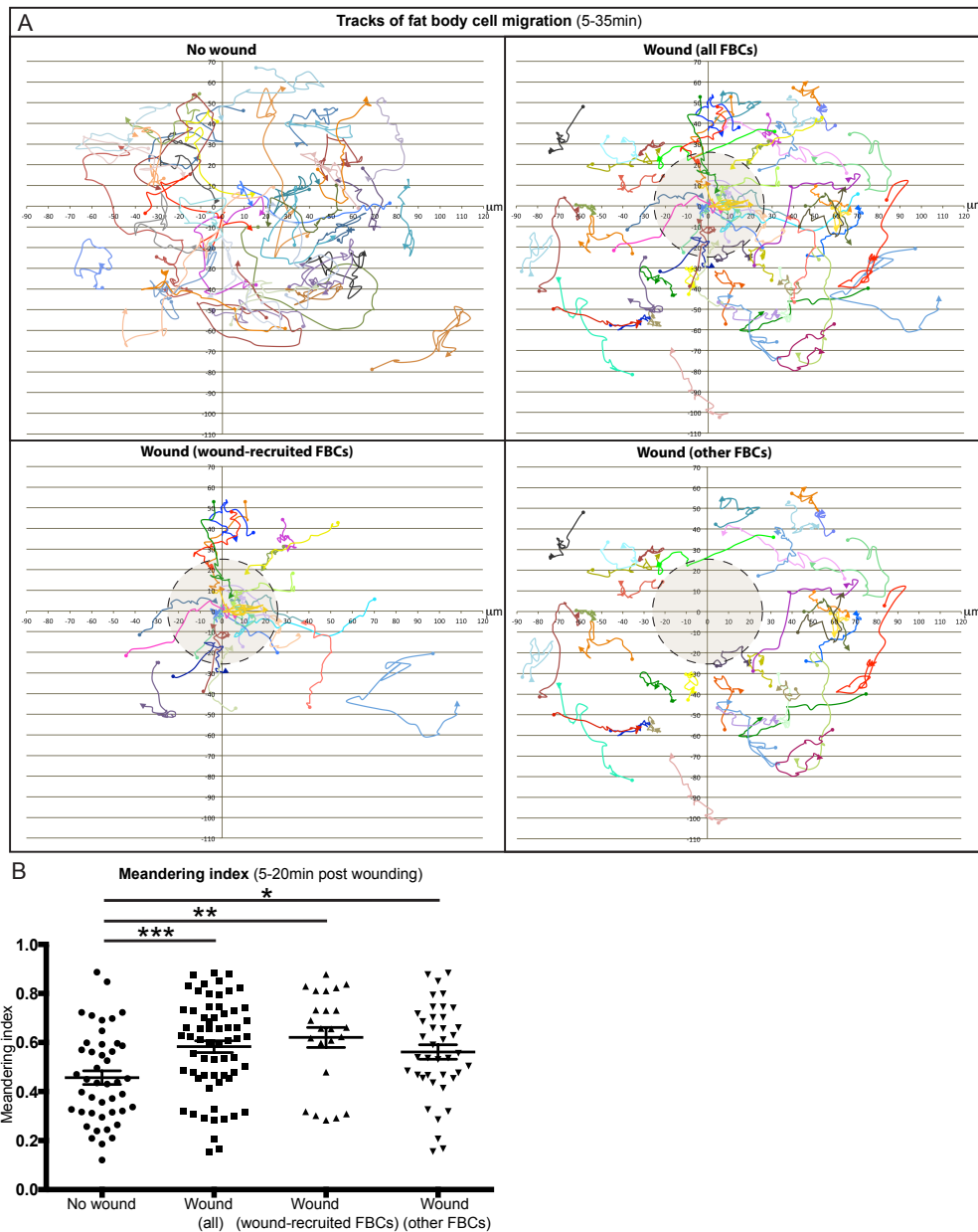Scale bars=20μm and 5μm (insets).

Figure S2
Fat body cells migrate to wounds with a high meandering index.
Related to Figure 2
(A-B) Migration tracks of FBCs (A; 5-35min) and quantification of meandering index (B, 5-20min) of FBC migration in c564-Gal4+UAS-GFP+Ubq>Histone-RFP unwounded (n=44 cells) or wounded pupae (tracks from all FBCs displayed on top right; from wound-recruited FBCs displayed on bottom left; and from FBCs that do not to interact with the wound area, displayed on bottom right; n=63, 23 and 40 cells, respectively; tracking performed in Z-projection mode).
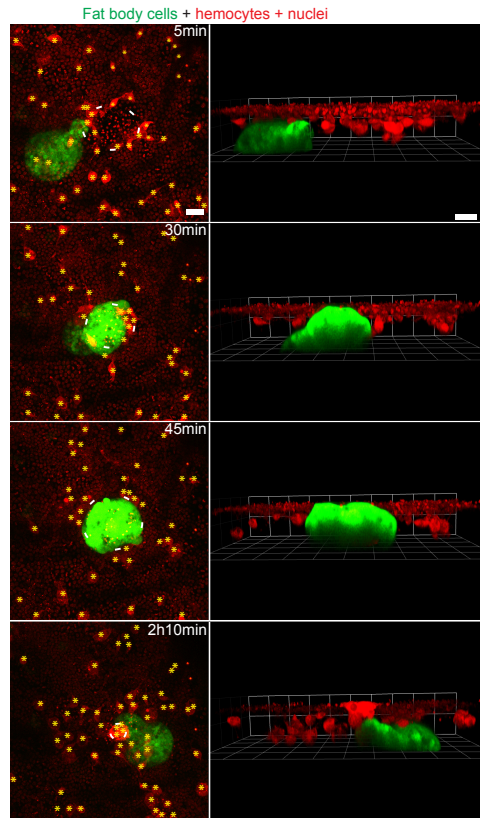Mean±SEM. * P<0.05, ** P<0.01, *** P<0.001 (Student's T-Test)
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Fat body cells + hemocytes + nuclei

Figure S3
Migration of a fat body cell and hemocytes to a wound.
Related to Figure 4
Still images from a timelapse movie showing hemocyte and FBC recruitment to a wound in a c564-Gal4+UAS-GFP+srp>mCherry+Ubq>Histone-RFP pupa (projection (left) and Z-plane (right) views; FBCs in green; hemocytes in red with yellow asterisks; epithelial nuclei in red; wound area containing bright red nuclei + outlined with white dotted line). Elapsed time is in top right corner. Scale bars=20μm. See also Movie S8.
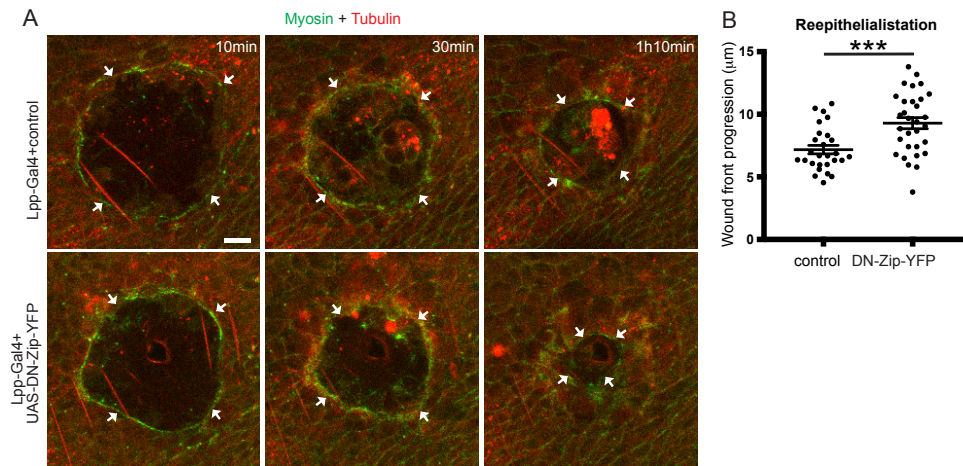
Figure S4
Reepithelialisation is faster in the absence of fat body cells at wounds.
Related to Figure 3
(A-B) Still images from a timelapse of reepithelialisation (A) and quantification of wound front progression (30-70min, B) in sqh>Sqh-GFP+Ubq>RFP-tub+Lpp-Gal4+control or +UAS-DN-Zip-YFP pupae (n=27 and 31, respectively; Myosin in green; Tubulin in red; wounds margins indicated with arrows). Mean±SEM. ***P<0.001 (Student's T-Test). Control=w67. Scale bar = 10µm.

Table S1

Genotypes of pupae used in each experiment.

Related to Figures 1-5 and Supplementary Figures 1-4.

Figure	Genotype
Fig 1A	w67
Fig 1C-I	c564-Gal4+UAS-GFP+Ubq>Histone-RFP
Fig 2A-D	c564-Gal4+UAS-GFP+Ubq>Histone-RFP
Fig 3A and C	Lpp-Gal4+UAS-GMA
Fig 3D and E	Lpp-Gal4+UAS-rd-Tomato+w67 and Lpp-Gal4+UAS-rd-Tomato+UAS-DN-Zip-YFP
Fig 4A	srp-Gal4+c564-Gal4+UAS-GFP+UAS-Red- Stinger
Fig 4B and C	srp-Gal4+UAS-Reaper+tubGal80ts+srp-GMA+Ubq>Histone-RFP
Fig 4D	c564-Gal4+UAS-GFP+Ubq>Histone-RFP
Fig 5A	c564-Gal4+UAS-GFP+Ubq>Histone-RFP
Fig 5B and C	w67
Fig 5D	c564-Gal4+UAS-GFP-Fascin+Ubq>RFP-tubulin
Figure 5 E	c564-Gal4+UAS-GFP+Ubq>Histone-RFP
Figure 5 F	Attacin>GFP+Lpp-Gal4+UAS-myr-td-Tomato
Fig S1A-D	c564-Gal4+Ubi>GFP-tubulin+Ubq>Histone-RFP
Fig S2A and B	c564-Gal4+UAS-GFP+Ubq>Histone-RFP
Fig S3	c564-Gal4+UAS-GFP+srp>mCherry+Ubq>Histone-RFP
Fig S4 A and B	sqh>Sqh-GFP+Ubq>RFP-tub+Lpp-Gal4+w67 and sqh>Sqh-GFP+Ubq>RFP-tub+Lpp-Gal4+UAS-DN-Zip-YFP