Supplementary Table 1: Demographic and clinical data for the ASC donors in this study. All patients were non-diabetic.

Patient	Age	Sex	BMI	Ethnicity / Race
1	45	Female	41.1	Black
2	42	Female	41.4	White, non-Hispanic
3	30	Female	43.0	Black
4	37	Female	40.8	NA
5	43	Female	41.7	Hispanic
6	33	Female	36.9	Black
7	40	Female	42.5	White, non-Hispanic

BMI, body mass index. NA, not available.

Supplementary Figure 1: Phase-contrast (*left*) and immunofluorescence (*right*) images of cells on coverslips. (a) CD31 (*green*) and nuclei (*blue*) stains of LECs and ASCs. (b) CD45 (*red*) and nuclei (*blue*) stains of monocytes and ASCs.

Supplementary Figure 2: Relative cumulative frequency distributions of initial (day 0) tumorto-cavity distances. (a) For tumors in adipose cell-laden and cell-free collagen gels (Fig. 3). (b) For tumors in adipose cell-free collagen gels, treated with control or adipose cell-conditioned medium (Fig. 4). (c) For tumors that were formed in adipose cell-free collagen gels pretreated in control medium and fed with control medium ("*control* \rightarrow *control*"), in gels pretreated in conditioned medium and fed with control medium ("*CM* \rightarrow *control*"), and in gels pretreated in conditioned medium and fed with conditioned medium ("*CM* \rightarrow *cM*") (Fig. 5). (d) For tumors in adipose cell-free collagen gels treated with conditioned medium from ASCs or adipose cells (Fig. 6).

Supplementary Figure 3: Physical properties of collagen gels. (a) Indentation modulus of adipose cell-free and adipose cell-laden collagen gels. (b) Darcy permeability of adipose cell-free collagen gels. (c) Darcy permeability of adipose cell-free collagen gels that were treated with control or adipose cell-conditioned medium.

Supplementary Figure 1:



Supplementary Figure 2:



Supplementary Figure 3:

