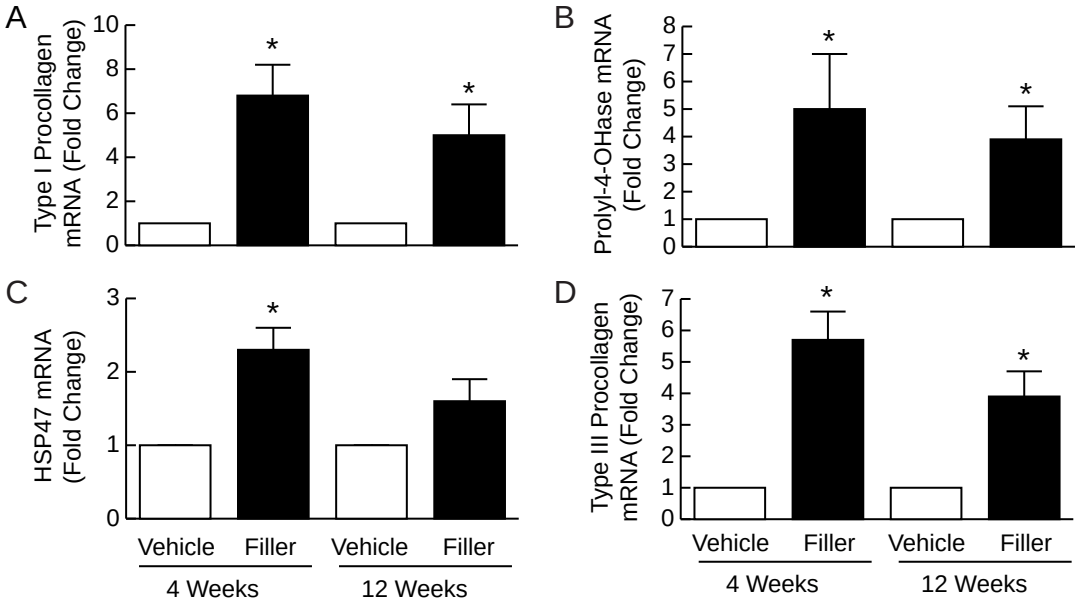
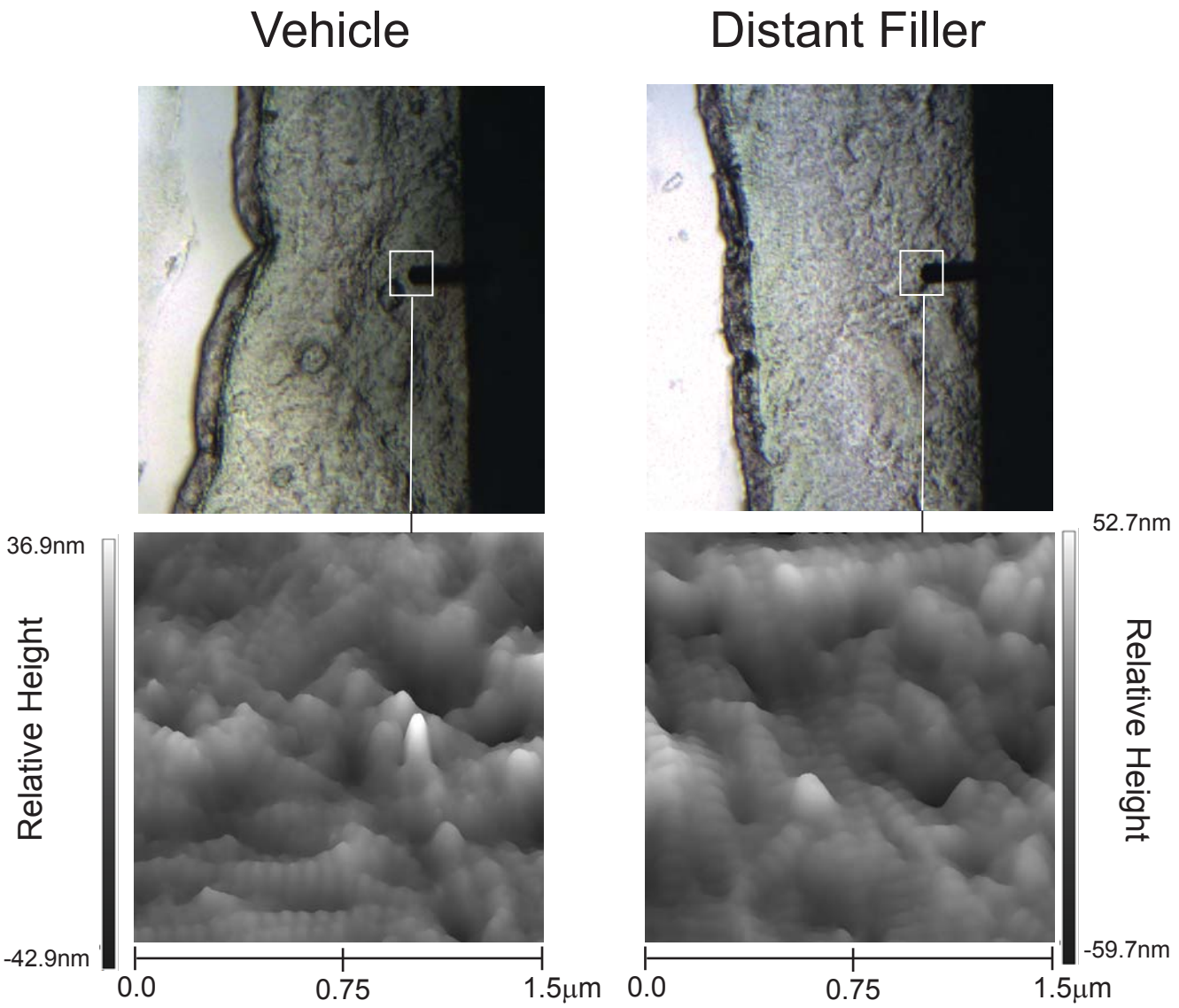
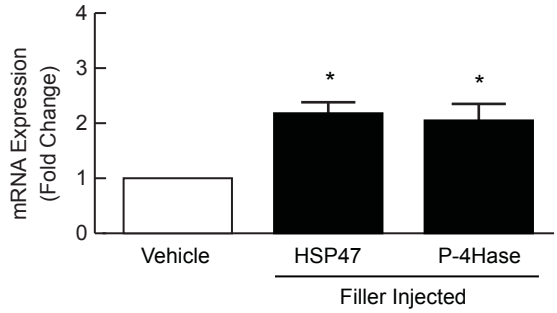


Supplemental Figure 1. Induction of procollagen gene expression in aged human skin due to enhanced mechanical support of the dermal microenvironment. Buttock skin of aged subjects was injected with vehicle or filler. Skin samples were obtained 4 and 12 weeks after injection. Total RNA was isolated and gene expression was determined by real-time RT-PCR. (A) Type I procollagen (n=22), (B) prolyl-4-hydroxylase (n=10), (C) heat shock protein 47 (n=19), and (D) type III procollagen (n=22). Bar graphs display means+SEM. *$p<0.05$.



Supplemental Figure 2. Structure and organization of collagen fibrils at sites distant from injected filler are similar to vehicle-injected human skin. Buttock skin of aged subjects was injected with vehicle or filler. Skin samples were obtained 4 weeks after injection. Nanoscale structure of collagen fibrils was imaged by atomic force microscopy. Upper panels display video image of probe location in the dermis. In filler-injected skin (right panel), at sites at least 500 μm away from dermal pools of injected filler, collagen fibrils are fragmented and disorganized, resulting in a rough appearance. In vehicle-injected skin (left panel), at dermal sites matched to those in filler-injected skin, collagen fibrils appear similar.
Images are representative of 6 subjects.



Supplemental Figure 3. Enhanced structural support of the cellular microenvironment in dermal equivalent cultures up-regulates expression of genes involved in collagen production. Dermal equivalent cultures, consisting of human dermal fibroblasts embedded in a three dimensional lattice of type I collagen, were injected with vehicle or filler. Cultures were analyzed 2 days post-injection. Using real-time RT-PCR, gene expression of heat shock protein 47 (HSP47) and prolyl-4-hydroxylase (P-4Hase) was quantified. Data are means+SEM, n=4, *p≤0.05.