Electronic Supporting Information (ESI) for:

Macro-to-micro interfacing to microfluidic channels using 3D-printed templates: Application to time-resolved secretion sampling of endocrine tissue

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Supporting Information (SI) Contents:

3D design files

All design files have been individually uploaded to our laboratory's open-source, 3D design sharing platform on Thingiverse (username: **EasleyLab**) for readers to download, edit, and print. At the time of submission, our current list of 3D models posted on Thingiverse had accumulated 700 user views and nearly 200 user downloads. 3D design files in both STL and SKP file formats have also been attached as ESI files, and these filenames are listed in the captions of the ESI figures below.

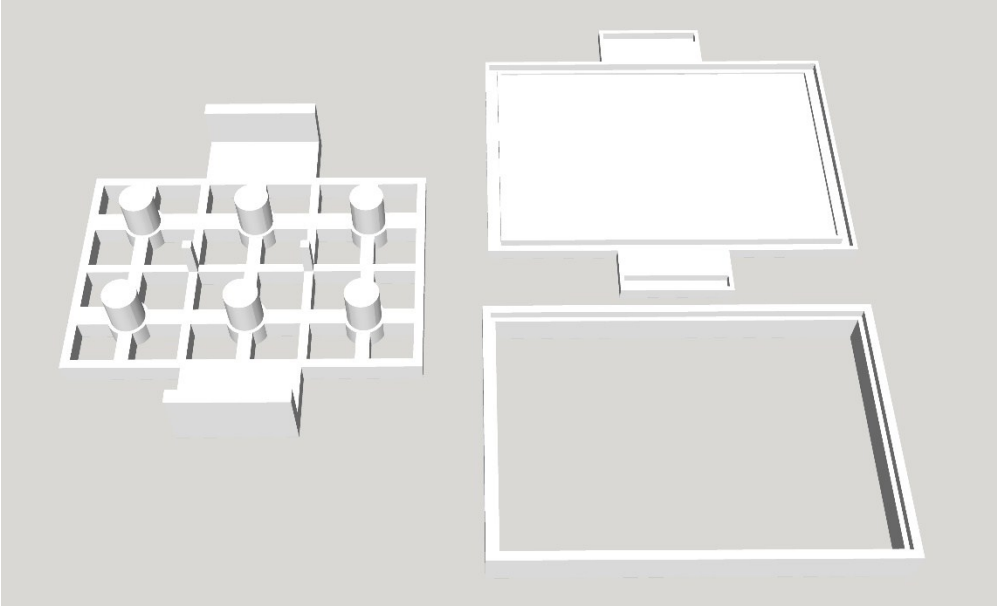

Figure S-1. 3D rendering of reservoir template (left) and wafer alignment container (rightmost two), as shown in Figure 2 of the main text. The latter includes removable walls (lower right) to facilitate removal of cured PDMS devices. (STL and SKP files: "wafer alignment box RSC")

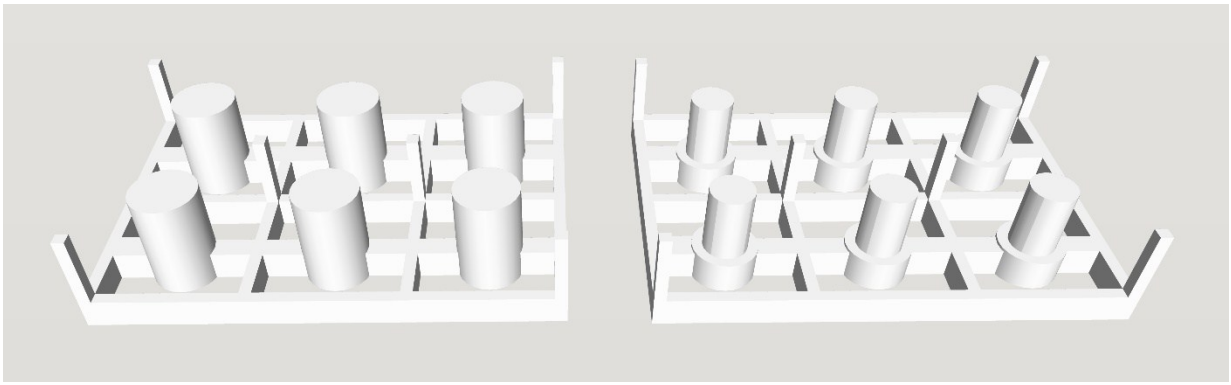

Figure S-2. 3D rendering of 11.0 mm (eWAT explant, left) and 7.5 mm (islet, right) reservoir templates. (STL and SKP files: "7_5mm islet template_RSC" and "11mm explant template_RSC")

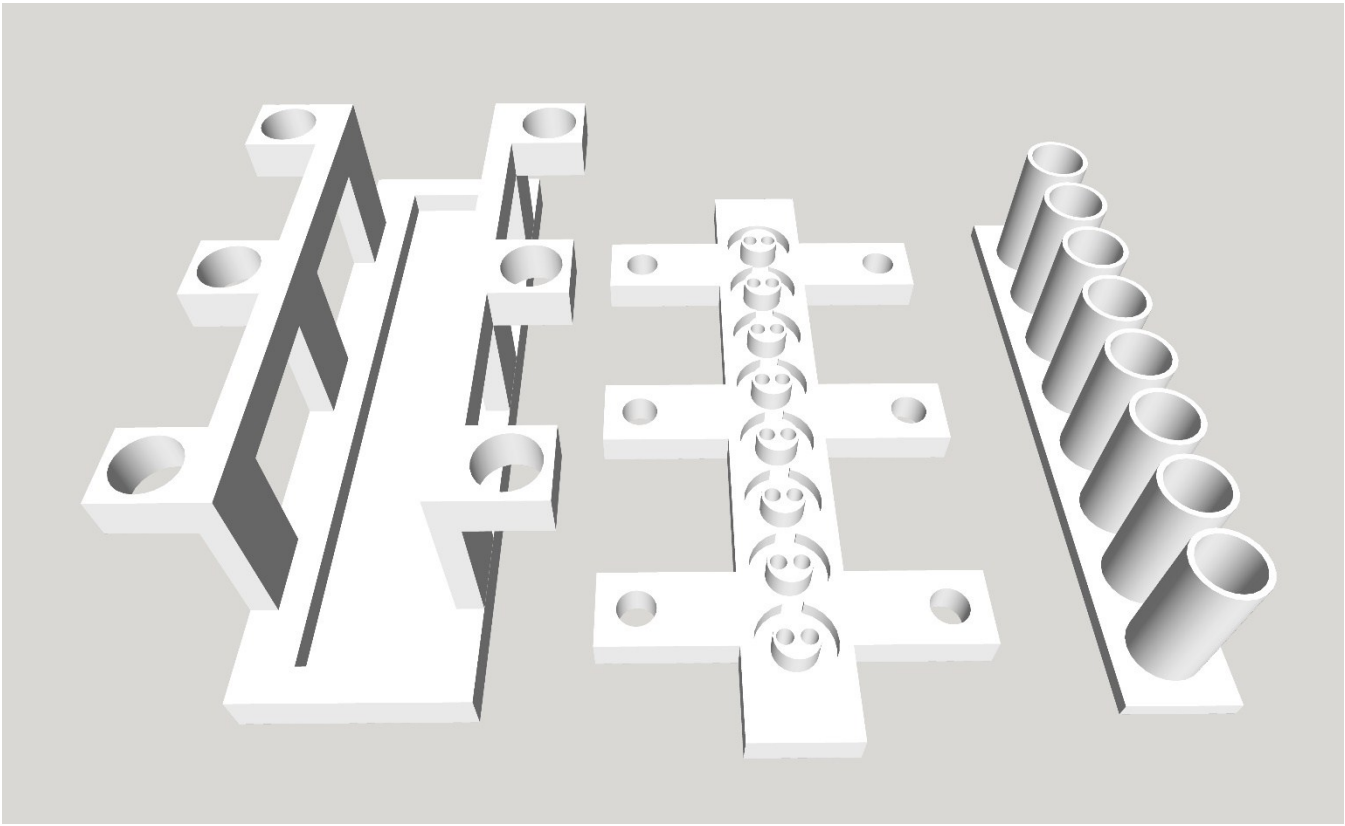

Figure S-3. 3D rendering of disassembled 8-strip sample collection device. The 8-strip PCR tube holder (right) allows tubes to be sealed to an interface (structure in center) with two ports for each tube, permitting both fluidic collection and vacuum application to individual tubes. These tubes were used to collect secretions from eWAT explants, as discussed in the main text. Images of this accessory device are also shown in Figure 1 of the main text. (STL and SKP files: "8 strip tube holder and sample collector RSC")

Figure S-4. 3D renderings of 8-port fluidic manifold, allowing one vacuum line to control 8 independent lines. The top rendering is a view from the vacuum port, and the bottom rendering is a view from the 8-tube port that interfaces with the 8 microfluidic channels of the device shown in Figure 1 of the main text. This manifold was also interfaced with the 8-strip sample collection device shown in Figure 1 of the main text and in Figure S-3 above. (STL and SKP files: "8 channel manifold RSC")

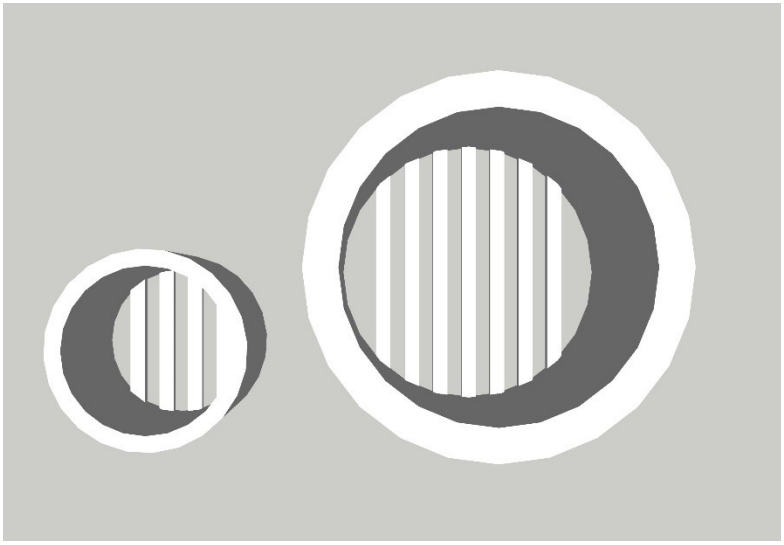

Figure S-5. 3D renderings of adipocyte explant trapping devices for both 96 well plates (left) and microfluidic chips (right), as discussed further in main text and Figure 4.