Supplemental figure 1: Schematic representation of the type 1 diabetic protocol.

A Vena cava model (diameter = 2.5 mm)

B PET point spread function (FWHM = 1.5 mm)

C Modeled PET image

D Cross-section through image

$$A_{VC} = \frac{VC_{50} - (1 - RC_{50})B}{RC_{50}}$$

VC_{50}

$RC_{50}A_{VC}$

B (liver activity)

$(1 - RC_{50})B$
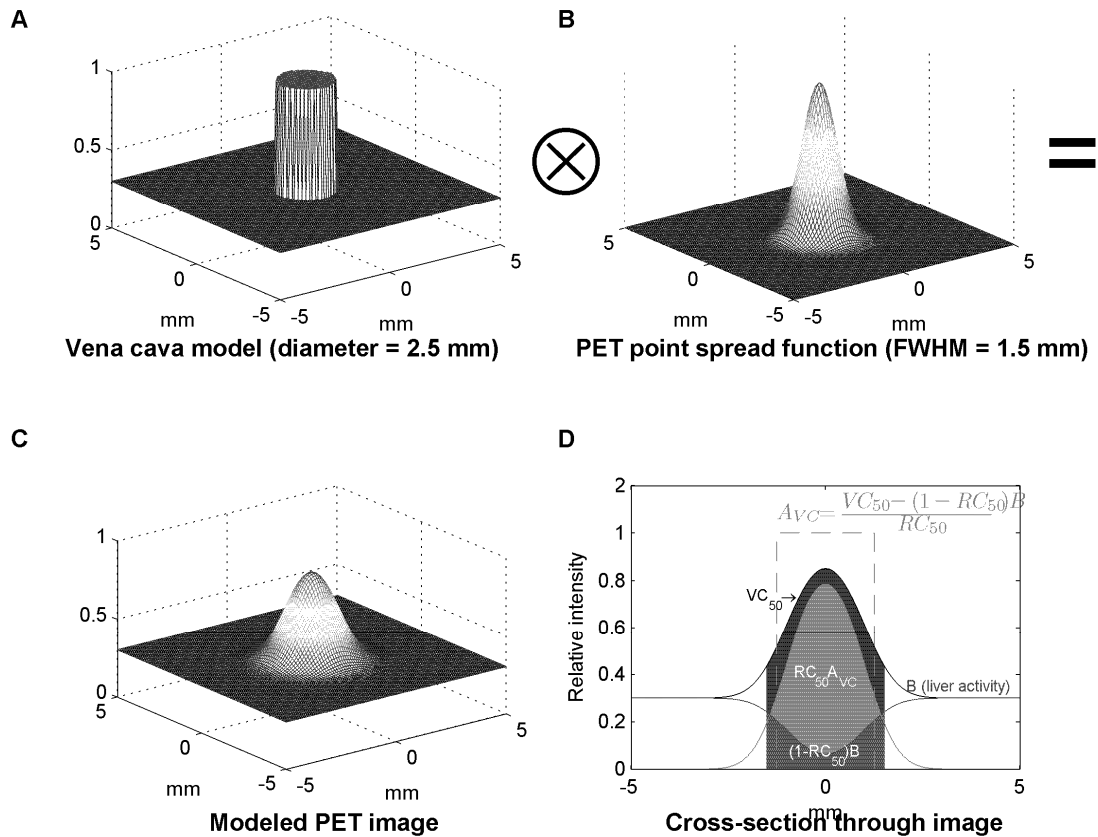
Supplemental figure 2: The vena cava recovery coefficient was estimated by modeling the vena cava as a long cylinder with uniform background activity (A) and convolving it with a previously derived PET point spread function (B) to model the PET image of the vena cava (C). The Recovery coefficient, *RC50*, was estimated as the integral activity above 50% peak activity in the modeled vena cava, relative to the integral modeled vena cava. As demonstrated in the cross section (D), the activity in a 50% peak activity thresholded ROI, *VC50*(black area), can be corrected for background activity spill in (blue area), and then corrected for recovery, *RC50*, to obtain the actual activity concentration in the vena cava, *AVC*, as shown in equation 1. Background activity, *B*, was obtained by sampling the liver activity.