

1. How is the portal circulation different from a systemic capillary bed?

Portal circulation connects one venous system to the other using only venous capillaries. Usually, blood is transferred from arterial to venous system via a systemic capillary bed. So a systemic (the systemic system being the system that carries blood from the heart to the arteries, to the capillaries to the veins and back to the heart again) capillary bed separates arteries and veins, and the portal system carries blood through veins directly into other veins.

2. How is blood shunted from one organ system to another?

Blood is carried into the organs through the arteries, which narrow into arterioles, which narrow and split into capillary beds that supply each organ with the blood needed for nourishment. Blood is shunted between different capillaries in each bed by a precapillary sphincter on each capillary, which shut blood flow on and off at different times, shunting blood between the different organ systems.