The common iliac vein is formed in front of the sacro-iliac joint, by the union of the external and internal iliac veins. The vein ascends supero-medially on the right side of the fifth lumbar vertebra and terminates by uniting with its fellow from the other side to form the inferior vena cava.

The right common iliac vein is shorter than the left. It lies anterior to the obturator nerve and iliolumbar artery and posterior and then lateral to the right common iliac artery. The left common iliac vein is longer and more oblique than that on the right. It lies medial to the left common iliac artery, passing behind the right common iliac artery to join its fellow from the other side. It is crossed by the root of the sigmoid mesocolon and by the superior rectal vessels.

The common iliac veins are valve-less. They drain the iliolumbar and possibly the lateral sacral veins. The left common iliac vein drains the median sacral vein.