

2 Morphology of the Liver

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(Figures 2.1–2.20; table 2.1)	

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1 General anatomy of the liver

The liver is the largest solid organ in the body. • The **weight** of a normal liver comprises about 1/18 of the newborn child's body weight (approx. 5%) and about 1/50 of the adult's body weight (2.3–3%), varying in men from 1,500–1,800 g and in women from 1,300–1,500 g. The relatively larger weight in infancy is mainly due to an enlargement of the left lobe. The weight of the liver relative to body weight decreases from 3% to 2% with age. With regard to **size**, the liver is on average 25–30 cm in width, 12–20 cm in length and 6–10 cm in thickness. The **surface** is smooth and shiny. The **colour** of the liver is brownish red. The lobular structure can be seen distinctly upon close inspection. The **position** is intraperitoneal (with the exception of the area nuda and the gall-bladder bed). Due to the suction of the lung, the position of the liver is directly dependent on the position of the diaphragm; the respiratory displacement of the liver amounts to approx. 3 cm. (s. fig. 4.3!)

1.1 Topography

The topography of the liver is characterized by the (smaller) *left lobe* and the (about six times larger) *right lobe*, which are separated by the (translucent) *falciform ligament*. This peritoneal duplicature splits dorsad into a right and left coronary ligament of liver; both terminate in the triangular ligament. (s. figs. 2.1, 2, 5; 16.4) • The *round ligament* (= lig. teres) is a remnant of the umbilical vein of the foetus. It runs in the free edge of the falciform ligament (during the time of foetal development, it actually joins the left branch of the portal vein) and is often coated by drop-shaped mesenteric fat tissue. The *ligamentum venosum* is a slender remnant of the duct of Arantii in the foetus. (s. p. 9!) • On the inferior liver surface – separated by the portal vein – are the *quadrate lobe* (lying anteriorly between the gall bladder and round ligament) and the *caudate lobe* with papillary tubercle and caudate process (lying posteriorly along the inferior vena cava in front of the hepatic porta). This *hilum of the liver* in the centre of the inferior liver surface consists of the proper hepatic artery, portal vein, common hepatic duct, lymph vessels, and hepatic nerve plexus. These are held together by the perivascular fibrous capsule. (s. fig. 2.1)

With its convex **diaphragmatic surface**, the liver, which faces forwards and upwards, abuts the arch of the diaphragm and the anterior abdominal wall. It bears a flat cardiac impression. This diaphragmatic surface is differ-

entiated into the *pars libera* (covered with peritoneum) and the *pars affixa*. • The **visceral surface** inclines both backwards and downwards. The superior and inferior surfaces form together the sharp liver margin (*margo inferior*). The inferior surface may show impressions caused by adjacent organs (gaster, colon, kidney, duodenum, gall bladder) and the posterior surface shows a *fissure* for the ligamentum venosum. (s. fig. 2.1)

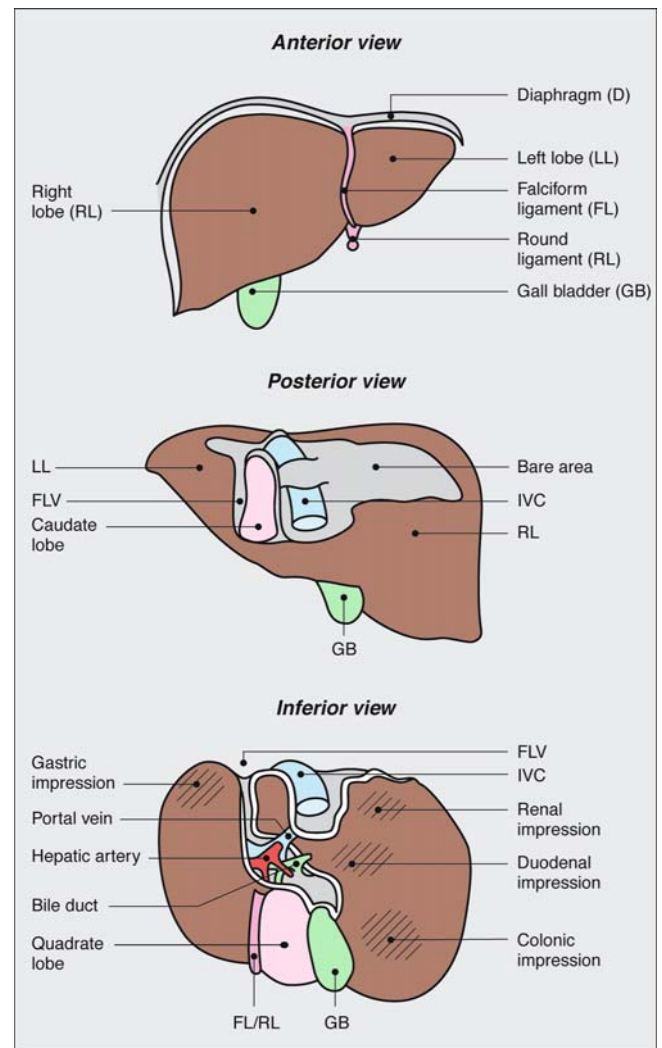


Fig. 2.1: Views of the liver: anterior, posterior, inferior. (LL = left lobe, RL = right lobe, D = diaphragm, GB = gall bladder, FLV = fissure for ligamentum venosum, RL = round ligament (= lig. teres), IVC = inferior vena cava, FL = falciform ligament)

1.2 Form and variants

The **shape** of the liver resembles largely that of a pyramid lying at a slant with its base towards the right side of the body. The exterior form can vary greatly. (s. p. 2)