

Human corpus luteum physiology and the luteal-phase dysfunction associated with ovarian stimulation

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The human corpus luteum is a temporary endocrine gland that develops after ovulation from the ruptured follicle during the luteal phase. It is an important contributor of steroid hormones, particularly progesterone, and is critical for the maintenance of early pregnancy. Luteal-phase dysfunction can result in premature regression of the gland, with a subsequent shift to an infertile cycle. Understanding the mechanism of steroidogenesis during corpus luteum growth and regression is crucial for evaluating the normal physiology and pathophysiology of reproductive cycles. The rate-limiting step in corpus luteum steroidogenesis is the transport of cholesterol to the site of steroid production. Steroidogenic acute regulatory protein is a key player in this process and is positively correlated with progesterone concentrations throughout the early and mid-luteal phase. Changes in the endocrine environment brought on by the gonadotrophins used for ovarian stimulation are thought to underlie the