

Dehydroepiandrosterone and its Sulphate (DHEA and DHEA-S)	
Description	<p>Dehydroepiandrosterone (DHEA) is produced by the adrenal gland. Sulphation occurs in either the adrenal gland or the liver, with desulphation in peripheral tissues. The circulating concentration of dehydroepiandrosterone sulphate (DHEA-S) is many times higher than that of DHEA.</p> <p>DHEA has weak androgenic actions and may be considered a pro-hormone, with conversion to testosterone and/or oestrogens occurring in peripheral and genital tissue. Adrenal production of DHEA is an important contributor to androgen production in women but not in men. Studies suggest associations between DHEA and DHEA-S concentrations and various measures of health status, including diabetes, cardiovascular disease, obesity, cognitive impairment, physical limitations, and depressive symptoms; however, little is known about their specific functions or the mechanisms by which they affect health.</p>
Indication	The measurement of DHEA and DHEA-S is important in the assessment of adrenal androgen production. DHEA-S is measured in the investigation of hyperandrogenisation in women (e.g. hirsutism, virilisation and alopecia). It is also useful in the assessment of delayed puberty, congenital adrenal hyperplasia (CAH) and adrenal disorders.
Additional Info	DHEA-S is the form routinely measured in the laboratory
Concurrent Tests	DHEA-S is frequently measured in conjunction with other androgens (e.g. testosterone, androstenedione) and the binding protein SHBG in the investigation of female hyperandrogenism. High levels are seen in polycystic ovarian syndrome, and extremely high levels in women may be suggestive of virilising adrenal tumours.
Dietary Requirements	Patients should not be given any steroid or gonadotrophin medications for at least 48 hours prior to sample collection.
Interpretation	<p>DHEA-S concentrations are high in cord blood and drop rapidly at birth, with typical levels of 3-6.9 $\mu\text{mol/L}$ at days 1 to 5. Levels in premature infants are generally much higher than those in full-term infants. Levels are generally less than 4 $\mu\text{mol/L}$ from 1 month to 5 years of age, increase steadily from about 7 years of age, and decline after 30 years of age.</p> <p>DHEA-S levels in women also vary according to the menstrual cycle, with the follicular and luteal phases showing lower levels than midcycle.</p> <p>DHEA-S may be elevated in PCOS, CAH and with adrenal cortical tumours (higher levels seen with carcinomas than adenomas).</p> <p>DHEA-S is not elevated in women with virilising ovarian tumours.</p> <p>Glucocorticoid administration for several days suppresses DHEA-S in patients with adrenal hyperplasia.</p>
Collection Conditions	N/A
Frequency of testing	Minimum retesting interval in female androgen excess – 1 year.