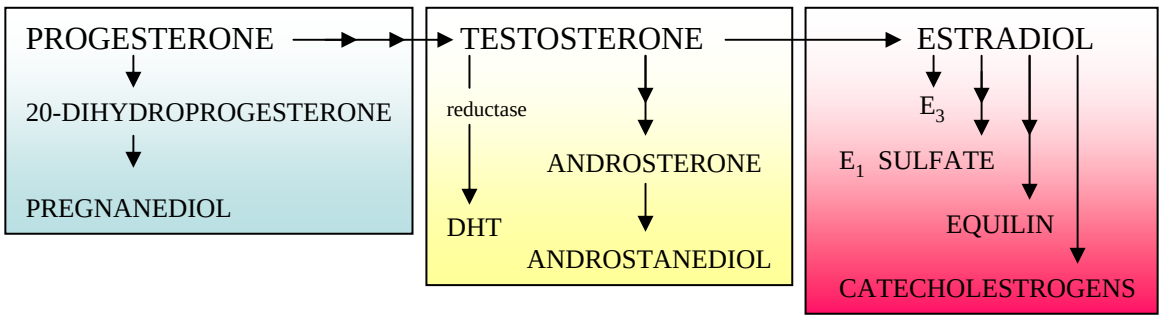

Figure 2-20. Metabolic fate of gonadal steroid hormones. Progesterone is converted into the relatively inactive metabolites, 20-dihydroprogesterone and pregnanediol. Testosterone can be converted to more active metabolites within target tissues, such as (nonaromatizable) DHT or estradiol, or can be transformed into inactive products by processing within the liver (eg., androsterones and androstanediols). Estrone sulfate is a major circulatory product of hepatic metabolism of estradiol. Hydroxylation of estradiol at the 2-position within hypothalamic tissues produces a unique group of compounds called catecholestrogens; these substances lack estrogenic activity, but are closely related from a structural standpoint to the catecholamines. The placenta metabolizes estrone to the weak estrogen, estriol (E_3). Bioactive B-ring unsaturated estrogens are present in urine of pregnant mares (eg., equilin); these compounds may be derived in part by steroidogenic pathways not involving cholesterol. Conjugation of steroid hormones with glucuronic acid or sulfate usually takes place at the 3- or 17-position.