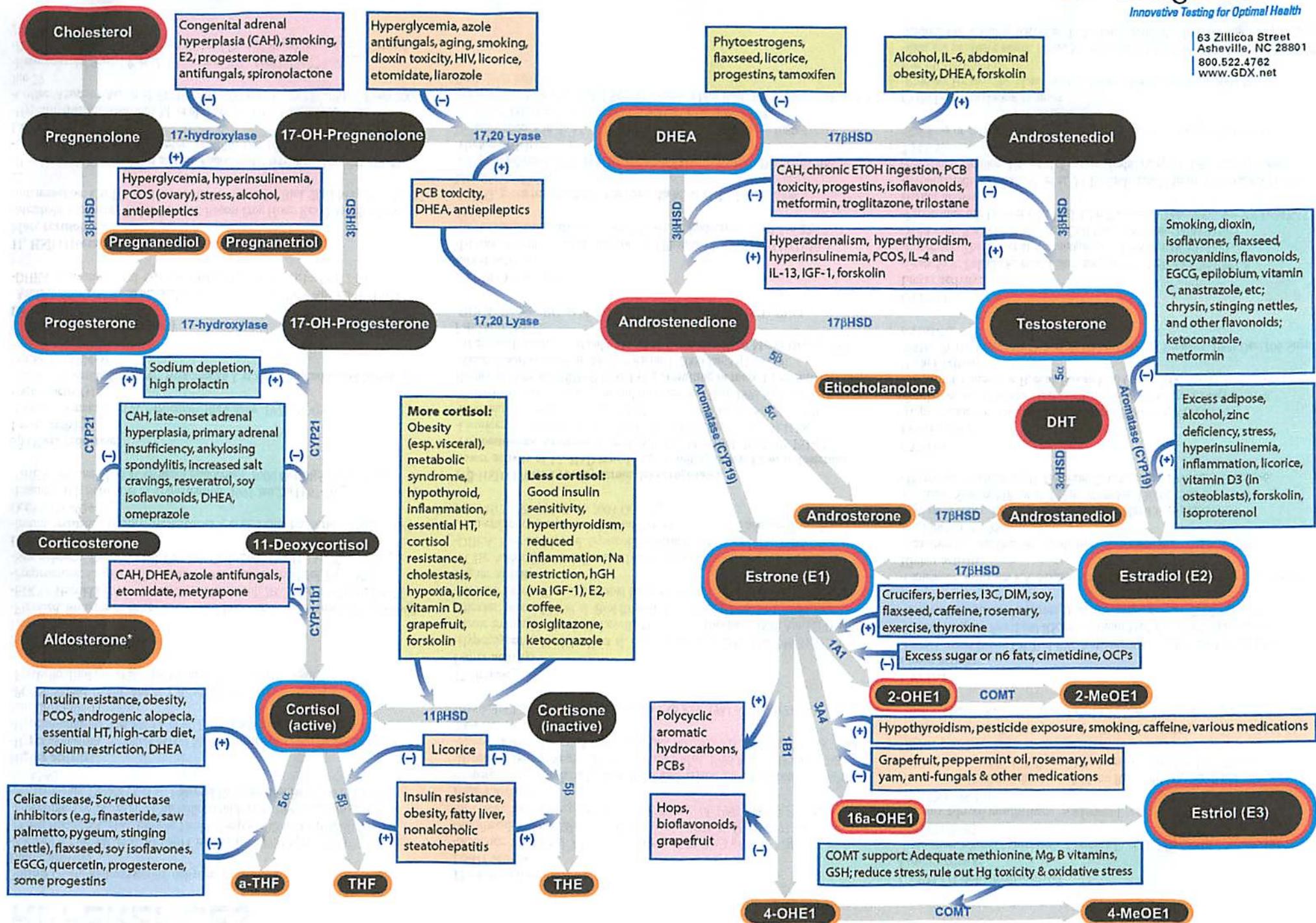


Steroidogenic Pathways



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- Lower activity:
- Alcohol: Chiao YB, et al. *Alcohol Clin Exp Res*. 1981 Spring;5(2):230-6.
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 - Hyperinsulinemia: DeClue TI, et al. *J Clin Endocrinol Metab*. 1991 Jun;126(1):108-11.
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- Lower activity:
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 - EGCG: Hirapaka RA, et al. *Biochem Pharmacol*. 2002 Mar;63(6):1165-76.
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 - Saw palmetto: Dreia J, et al. *Cas Lek Cesk*. 2002 Oct 11;141(20):630-5..
 - Higher activity:
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 - Insulin resistance, obesity: Westerbacka J, et al. *J Clin Endocrinol Metab*. 2003 Oct;148(10):924-31.
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 - Higher activity:
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- CYP11B1 (11 β -hydroxylase)**
- Lower activity:
- Azole antifungals: Ayub M, et al. *J Steroid Biochem*. 1989 Apr;22(4):515-24.
 - DHEA: Stomati M, et al. *Gynecol Endocrinol*. 2000 Oct;14(5):342-63.
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- Lower activity of 17 β -HSD type 1 (e.g., resulting in less E2 or testosterone)
- Phytoestrogens: Krazeisen A, et al. *Adv Exp Med Biol*. 2002;505(5):51-61.
 - Licorice: Armanini D, et al. *N Engl J Med*. 1999 Oct;341(15):1158.
 - Pasqualini JR, Ebert C. *Gynecol Endocrinol*. 1999 Jun;13 Suppl 4:11-9.
 - Tamoxifen: Spiers V, et al. *J Steroid Biochem Mol Biol*. 1993 Nov;46(5):565-11.
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- 17 β -HSD (17 β -hydroxysteroid dehydrogenase)**
- Lower activity of 17 β -HSD type 1 (e.g., resulting in less E2 or testosterone)
- Excess omega 6 fats: Lord RS, et al. *Altern Med Rev*. 2002 Apr;7(2):112-29.
 - Oral contraceptives: Jemstrom IL, et al. *Carcinogenesis*. 2003 May;24(5):991-1005.
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