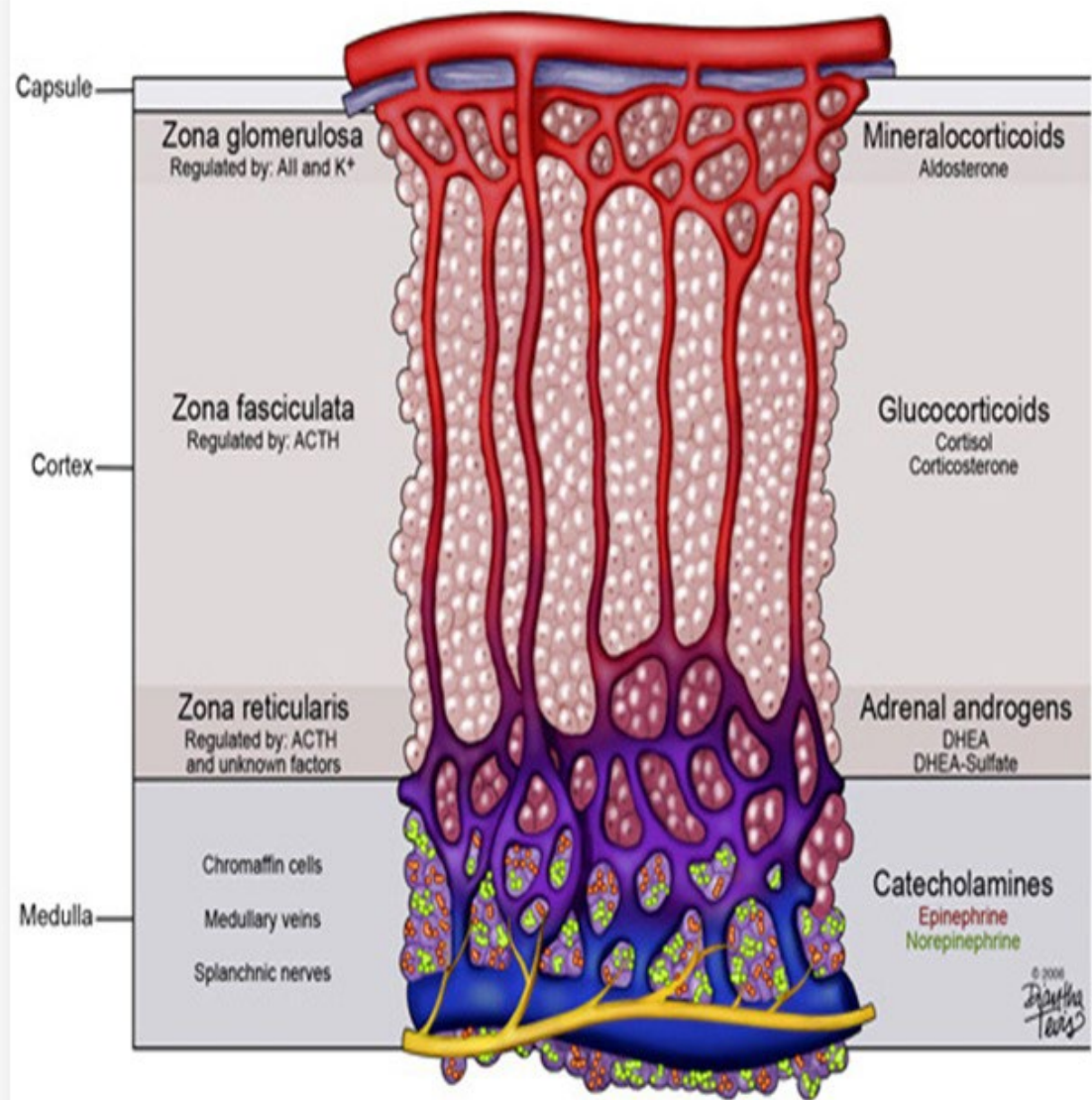
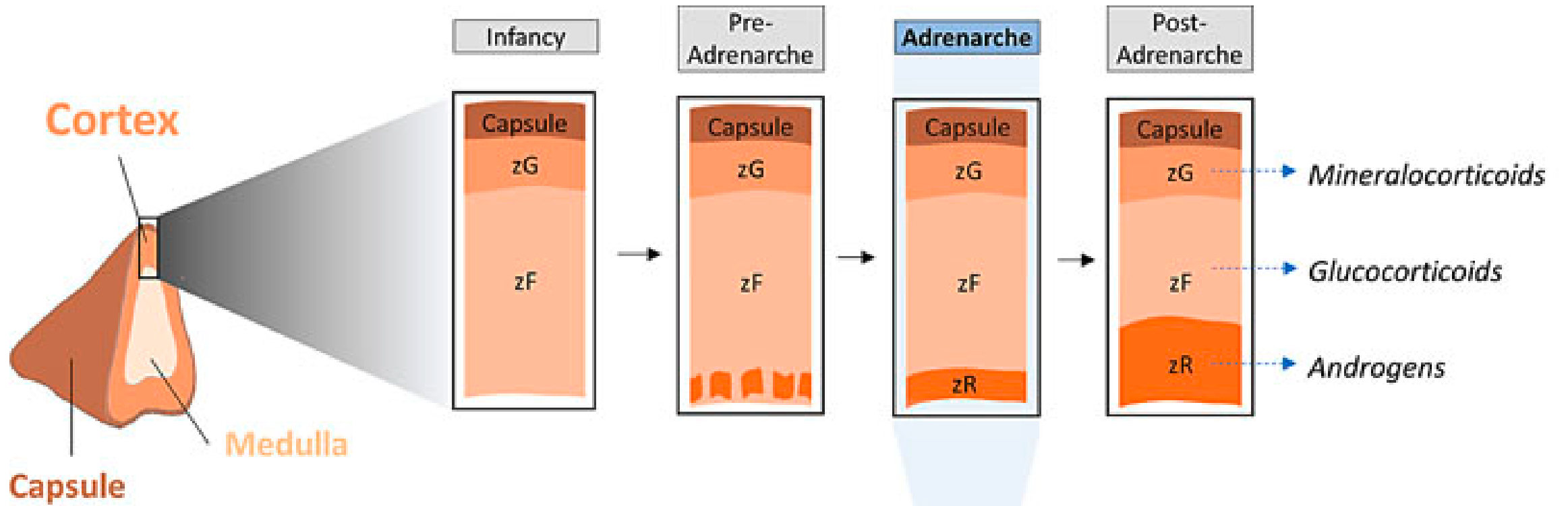




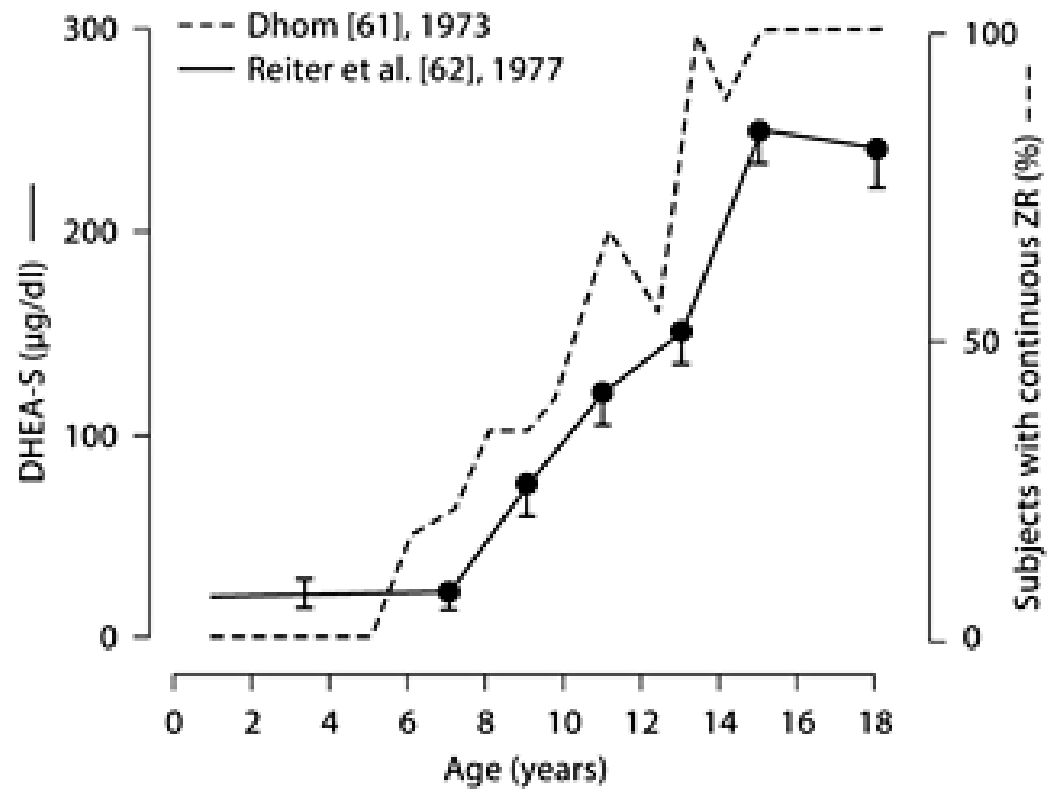
Adrenarचे





Adrenarche

- Klinisk bild
- Hudpubertet, oljig hy
- Axillar behåring
- Pubesbehåring
- Tillväxt
- Skelettmognad
- Premature adrenarche
- Androgena symptom
- Före 8 för flickor
- Före 9 för pojkar

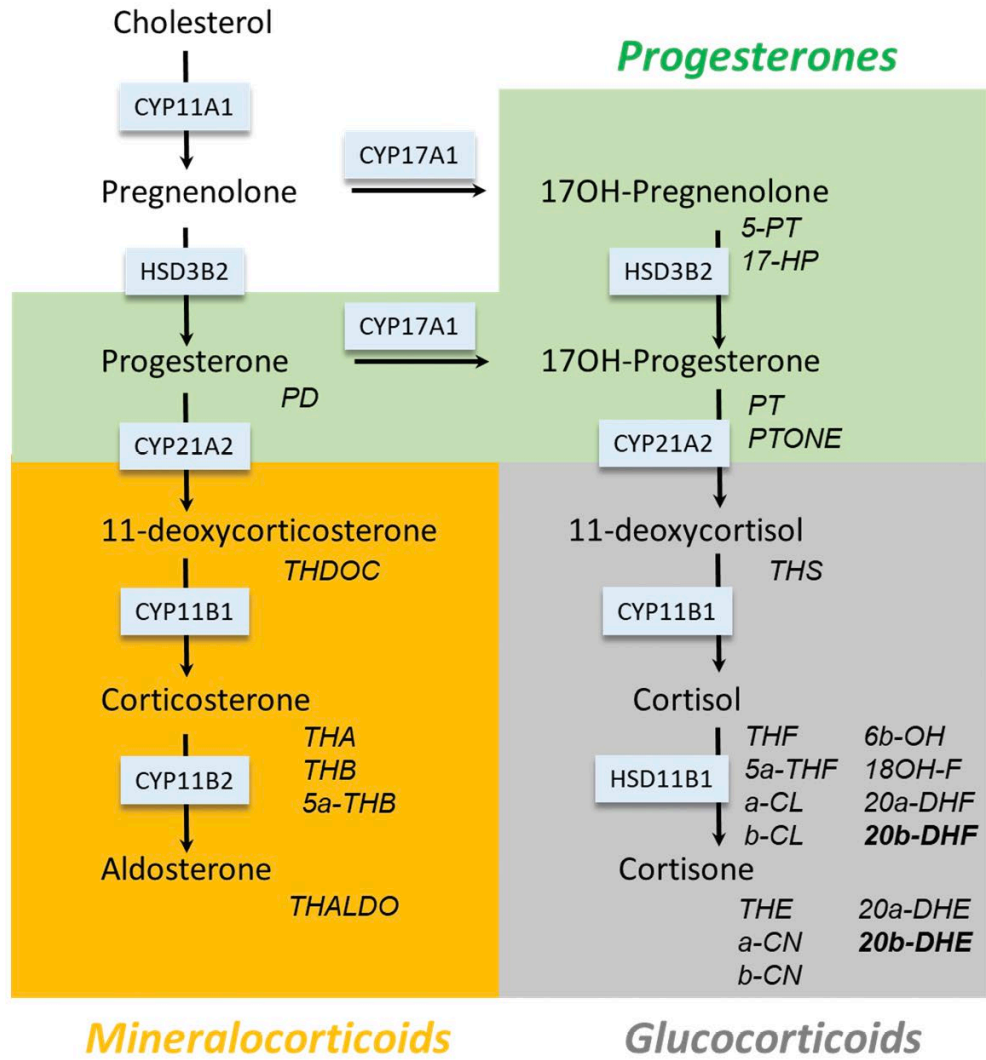


Hyperandrogenism

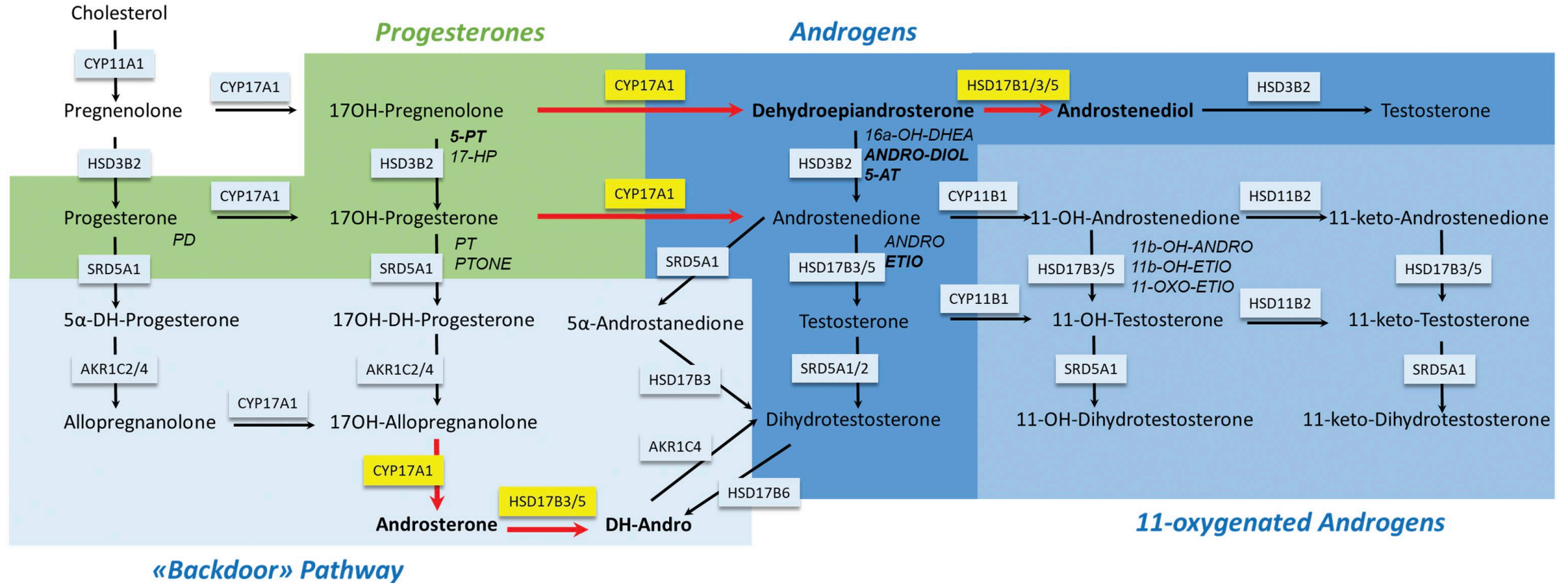
- Enzymdefekt i binjurens steroidhormonsyntes
- CAH
- Annan enzymdefekt

- Tumör

(a) Mineralocorticoid and glucocorticoid pathways

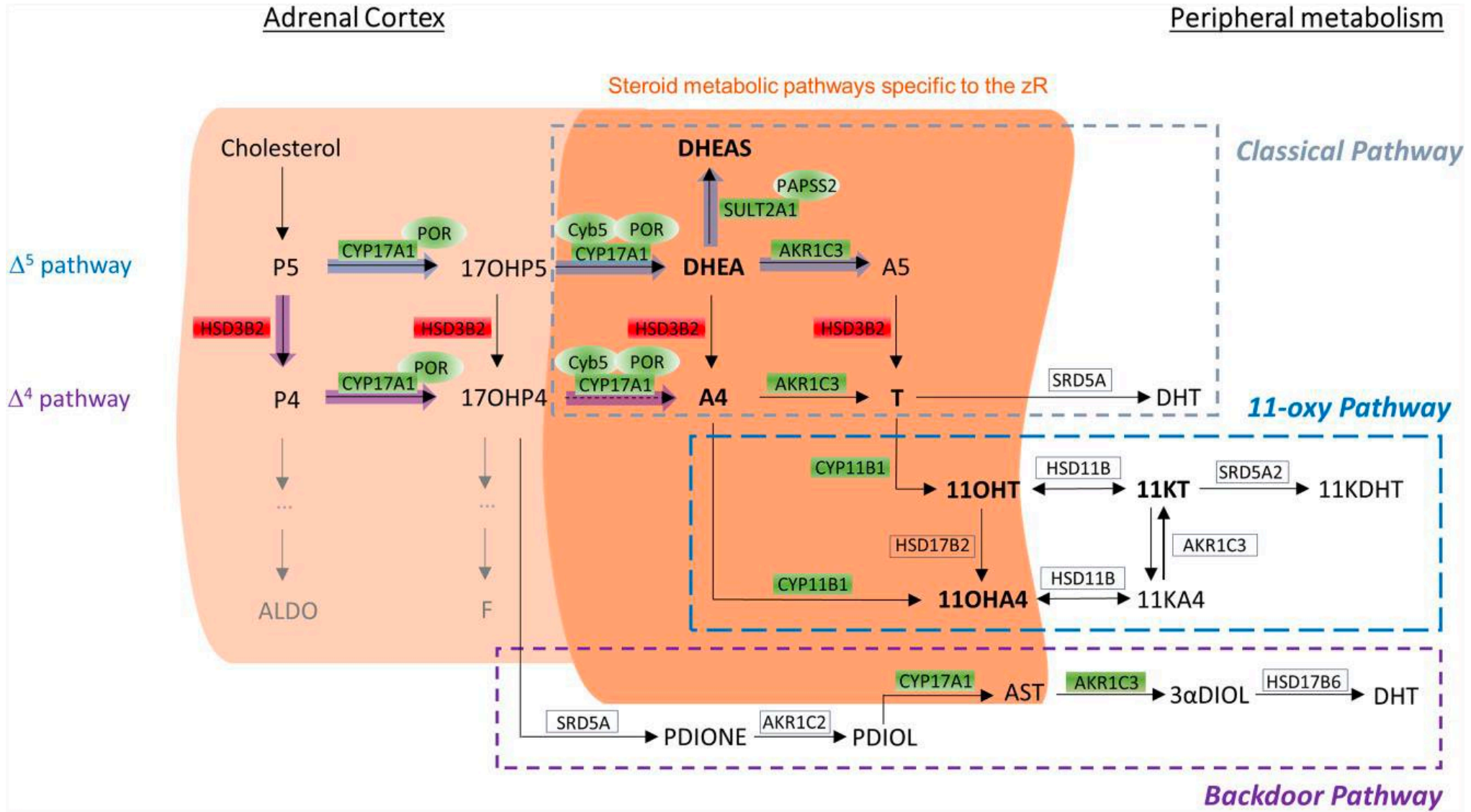


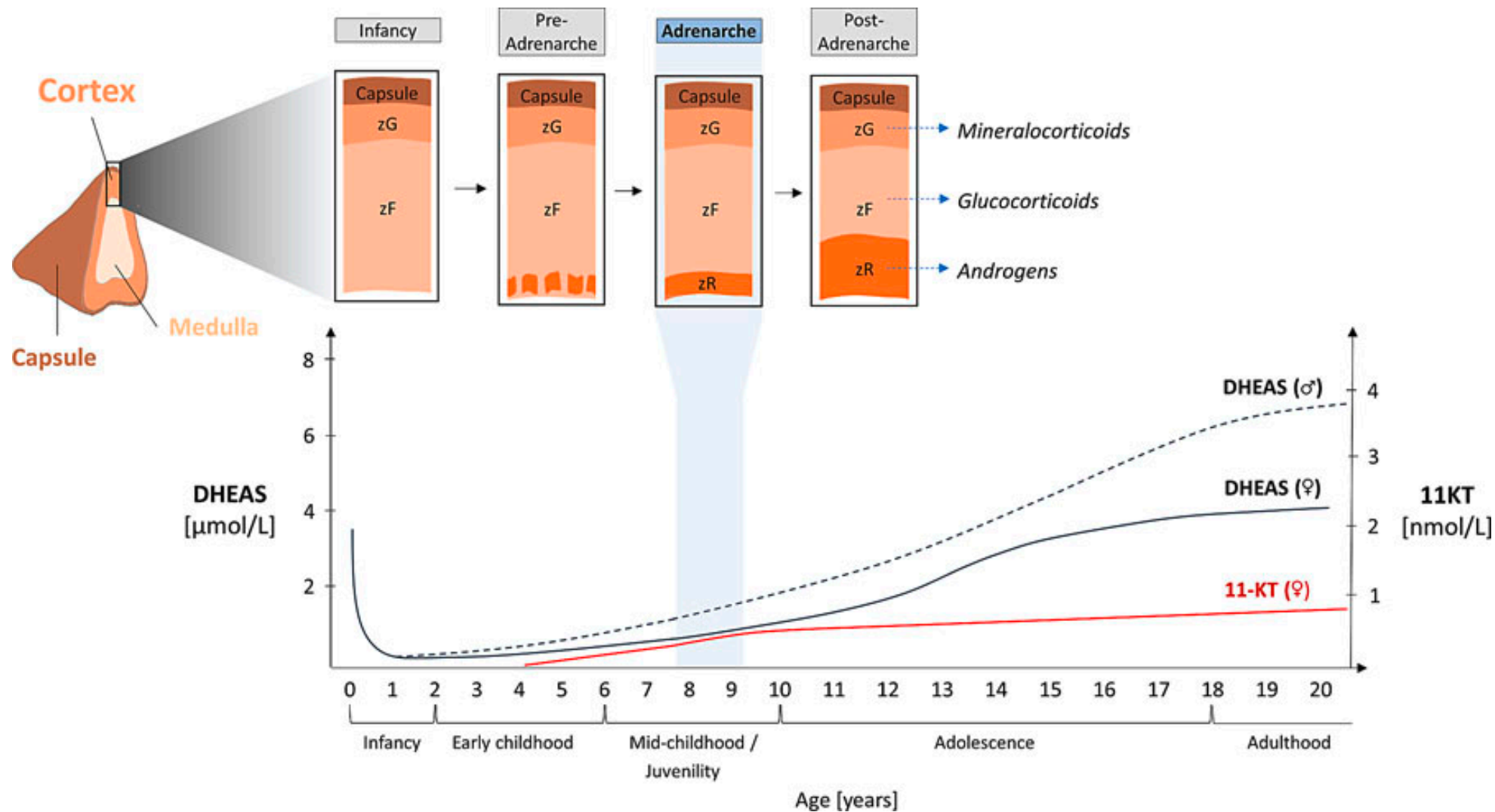
(b) Androgen pathways



Adrenarche

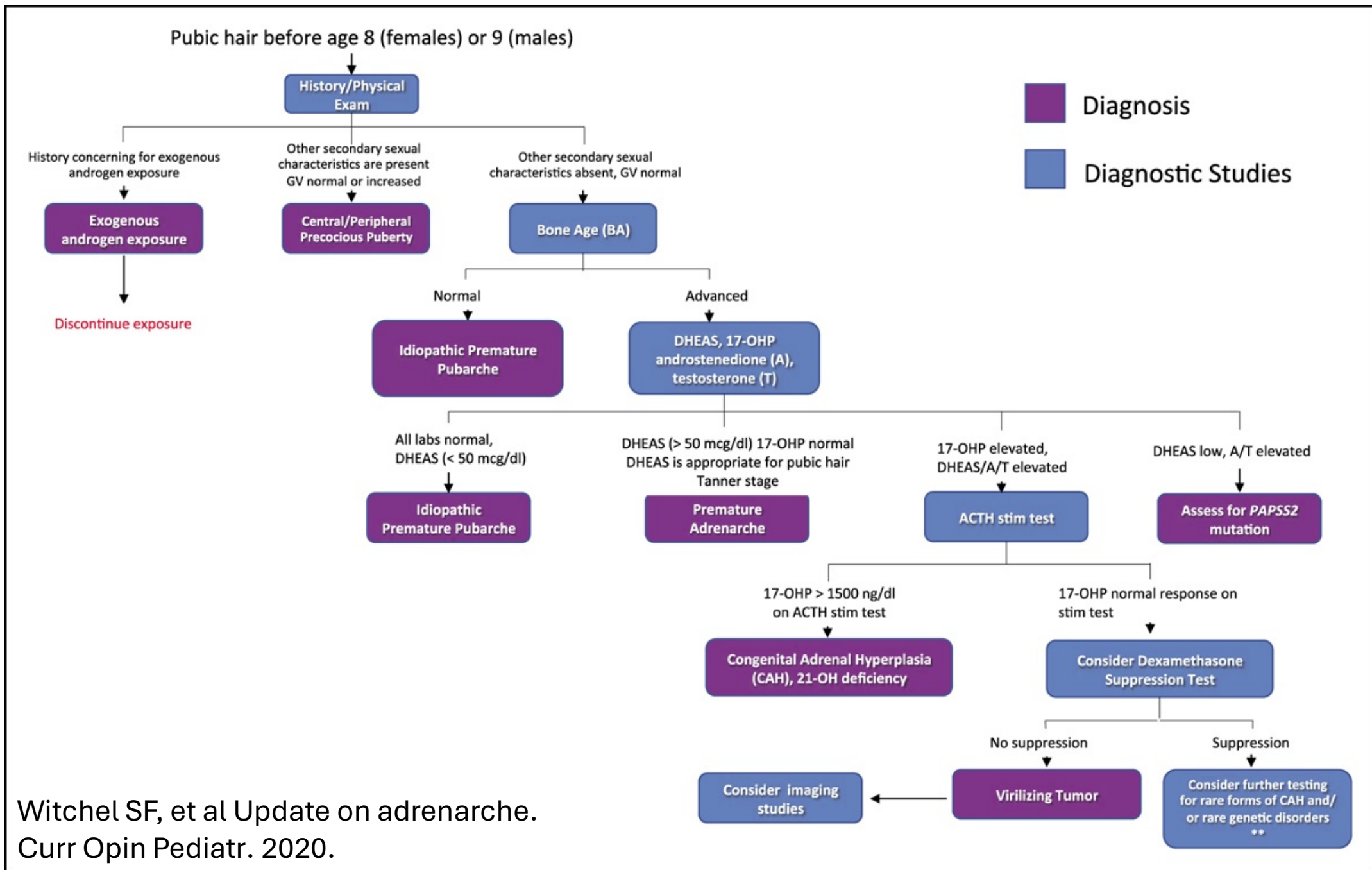
- Normal utveckling?
- Uteslutningsdiagnos
- Långsamt förlopp
- Opåverkad tillväxthastighet
- Enzymdefekt i binjurens steroidhormonsyntes
- CAH
- Annan enzymdefekt
- Tumör



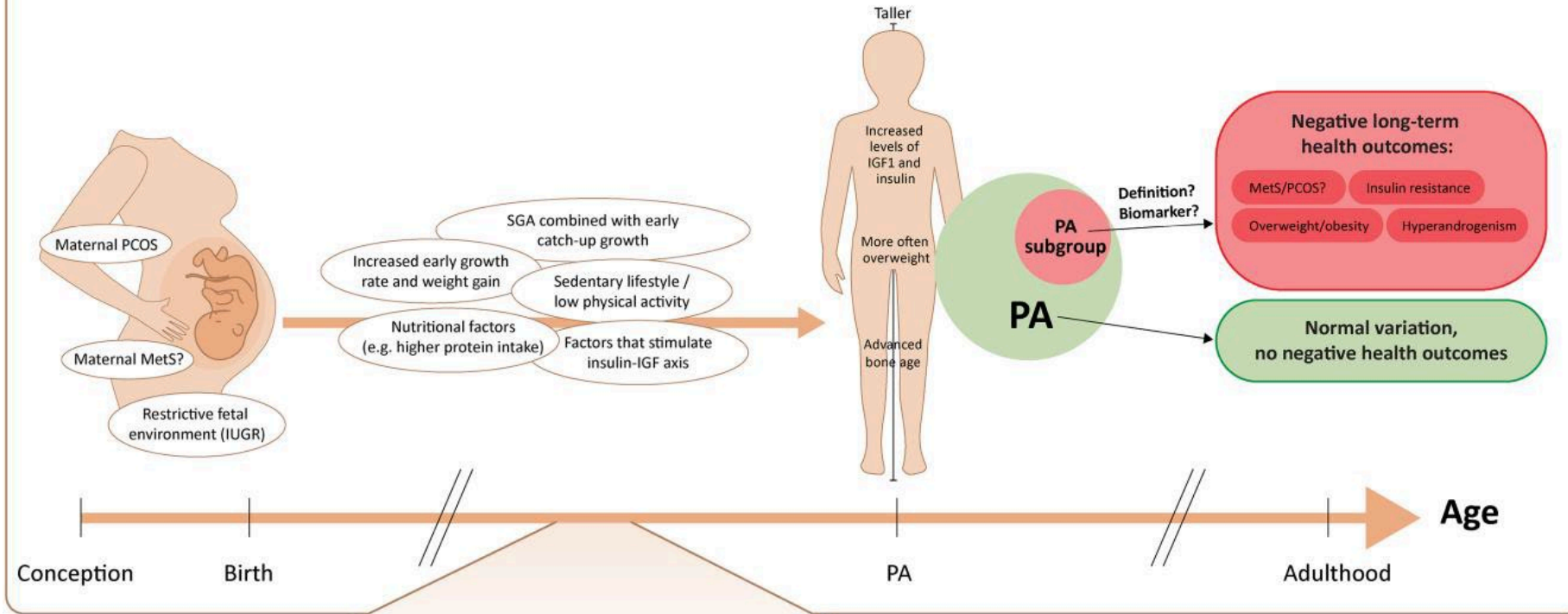


Adrenarche

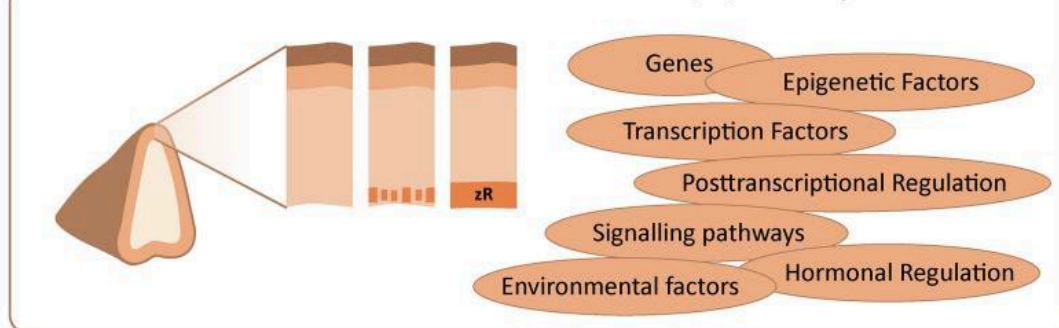
- Vad är orsaken till androgen produktionen?
- Vad har prematur adrenarche för betydelse för senare risk?
- PCOS
- Metabola syndromet
- CVD etc ?
- Vilka ska vi utreda?

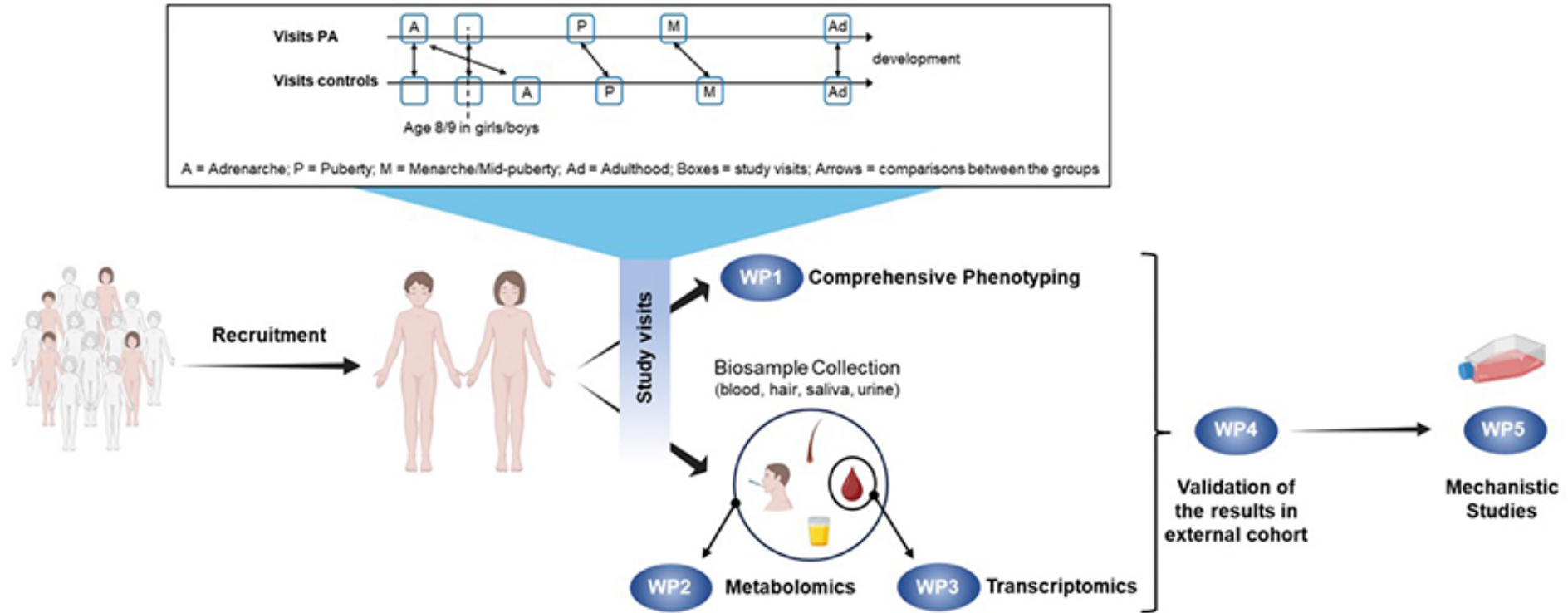


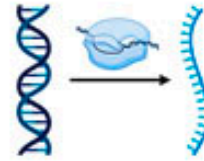
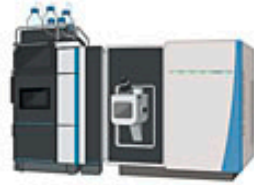
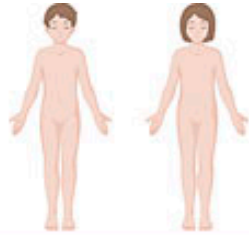
Factors that may favor premature adrenarche (PA) development



Factors that modulate zona reticularis (zR) development







WP1

Comprehensive phenotyping

- History and parental factors
- Environmental factors
- Growth
- Body size and composition
- Sexual development

WP2

Metabolomics

- Steroids
 - LC/GC-MS/MS
- Metabolites
 - LC-MS/MS
- Cardiovascular risk factors

WP3

Transcriptomics

- Genetic factors
 - DNA-seq, methylation, GWAS
- mRNA
 - RNA-seq
- small ncRNAs (especially miRNAs)
 - RNA-seq

WP4

Validation in an external cohort

- The most significant findings will be validated in-between Kuopio and Bern cohorts

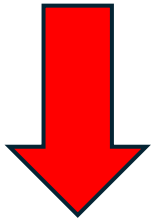
WP5

Mechanistic studies

- The effects of potential candidate factors on steroid metabolism will be investigated in an *in vitro* models

Adrenarche

- Uteslutningsdiagnos
- Normal utveckling?
- Androgena tecken och ökad tillväxthastighet

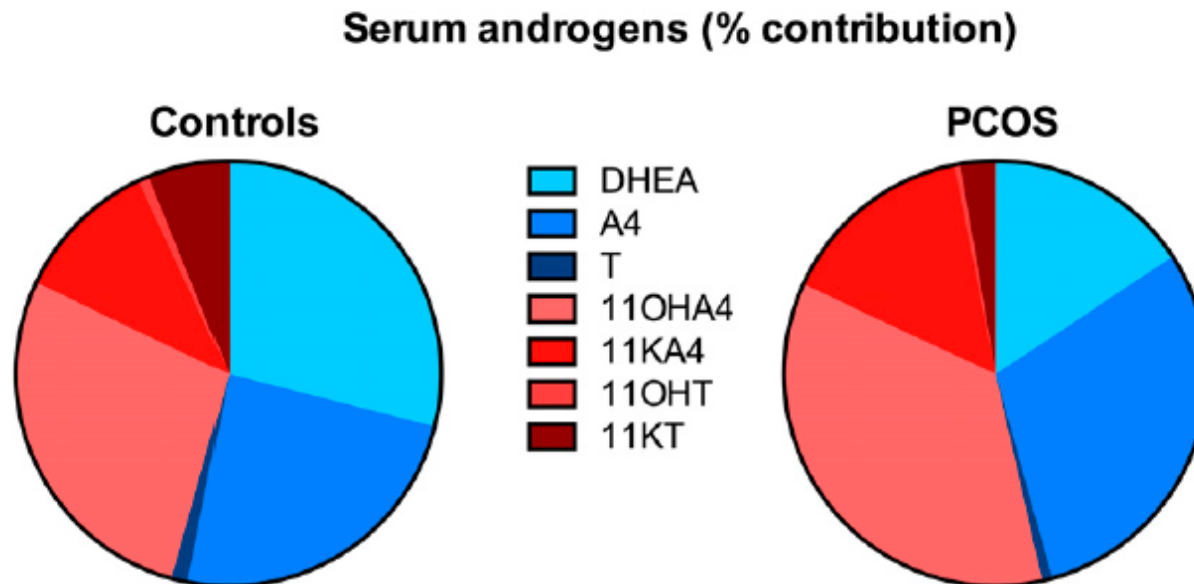


- Utred alltid

11-oxy-androgens in PCOS

- Serum
- 11-OHA4 and 11KA4
- correlated significantly with markers of insulin resistance.

- Contribution of
- 11-oxygenated vs total serum androgens
- significantly higher in patients with PCOS compared with control subjects



- 53.0% (48.7 to 60.3) vs
- 44.0% (32.9 to 54.9); P , 0.0001

