TESTOSTERONE DEFICIENCY — CLINICAL QUICK REFERENCE

WHO IS SCREENED

- All male SMs age 30+ at the PHA (structured symptom and risk assessment)
- SMs under 30 upon request

HOW IT IS CONFIRMED

- Two morning fasting total testosterone levels (0700–1000) on separate days
- One LH/FSH set with the repeat draw
- Assess free T when total T is in range and symptoms persist

WHEN NOT TO TEST

- Within 30 days of training involving extreme physical or mental distress and/or sleep deprivation
- During acute illness, or within 30 days of recovery of that illness

DIAGNOSIS	▪ Total T < 300 ng/dL on two morning fasting specimens PLUS consistent symptoms ▪ Total T in range but low free T (<66pg/ml) PLUS consistent symptoms (LH and FSH once, with the repeat draw, to determine the level of the defect) (Figures 1 and 2)
BEFORE TREATING	▪ Hematocrit is mandatory before treating ▪ If over 40, PSA before treating — above 3 ng/mL, refer to Urology ▪ Baseline labs: total T ×2 (free T if indicated), LH/FSH, Hgb/Hct, PSA if over 40 ▪ Offer lifestyle intervention for reversible causes (i.e obesity) — but do not withhold treatment during this time ▪ Ask about fertility intent before any prescription (Figure 3)
IF FERTILITY DESIRED	▪ Do NOT start exogenous testosterone ▪ hCG (on label) or clomiphene (off label) — see Appendix E ▪ Offer optional baseline semen analysis and discuss sperm cryopreservation (when appropriate) before starting any therapy
DOSING	▪ Select by compliance, ability to achieve appropriate blood concentrations, and convenience ▪ Injections (SQ or IM): cypionate or enanthate 100 mg weekly, or 50 mg twice weekly ▪ Oral undecanoate: 200–237 mg BID with a fatty meal (> 15 g). Gel 1.62%: 40.5 mg once daily
TARGET	▪ Titrate on trough, drawn before the next dose or the day it is due ▪ Trough < 300 ng/dL → increase. 300–600 ng/dL → maintain. ≥ 600 ng/dL → decrease ▪ Symptomatic within target → evaluate free T and SHBG (Figure 4)
MONITORING	▪ Trough T and hematocrit at 4–6 weeks after initiation or any dose change, then every 6 months ▪ Labs at minimum: testosterone and hematocrit every 6 months; PSA annually if over 40 ▪ Target trough achieved with no meaningful symptom improvement by 6 months → reconsider the diagnosis
ERYTHROCYTOSIS	▪ Baseline HCT > 50%: do not start until the etiology is explained (i.e. OSA, polycythemia vera, tobacco) ▪ On therapy > 52%: recommend blood donation or therapeutic phlebotomy, reducing the dose, or withholding ▪ On therapy ≥ 54%: stop until below 50%; suggest donation or phlebotomy (Figure 5)
DEPLOYMENT	▪ May initiate testosterone within 90 days of deployment and may be deployed if testosterone levels are stable and no longer require titration prior to deployment ▪ Stable on therapy does not require a waiver for deployment ▪ Confirm supply for the deployment plus 90 days — see Appendix C

PERFORMANCE METRICS

- Documented symptom and risk assessment at the PHA
- Specimens drawn under valid pre-test conditions
- Diagnosis supported by two morning fasting specimens
- Hematocrit obtained before treating
- Fertility intent documented before prescription
- Trough level and hematocrit at 4–6 weeks and every 6 months

Figure 1. Screening and specimen validity.

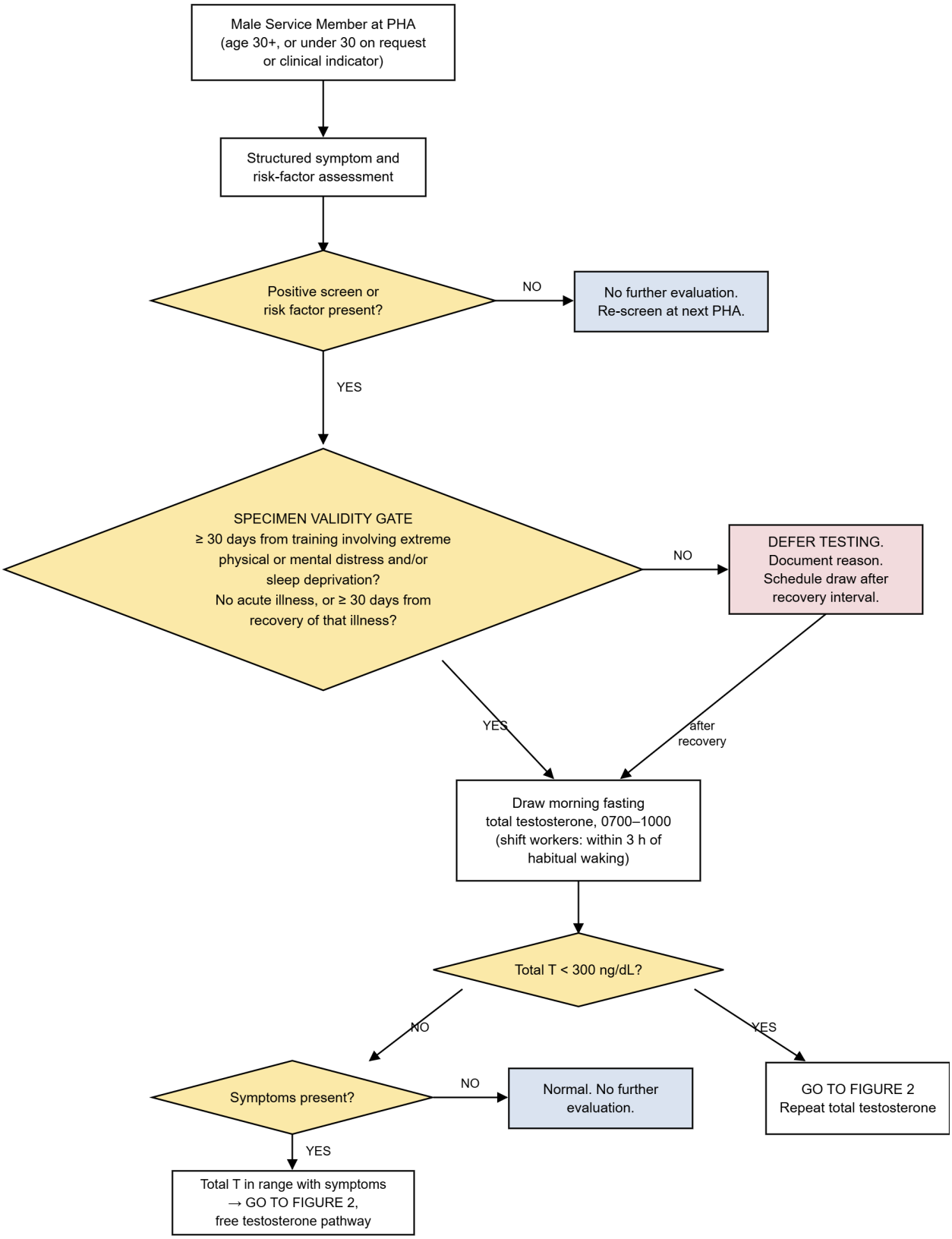
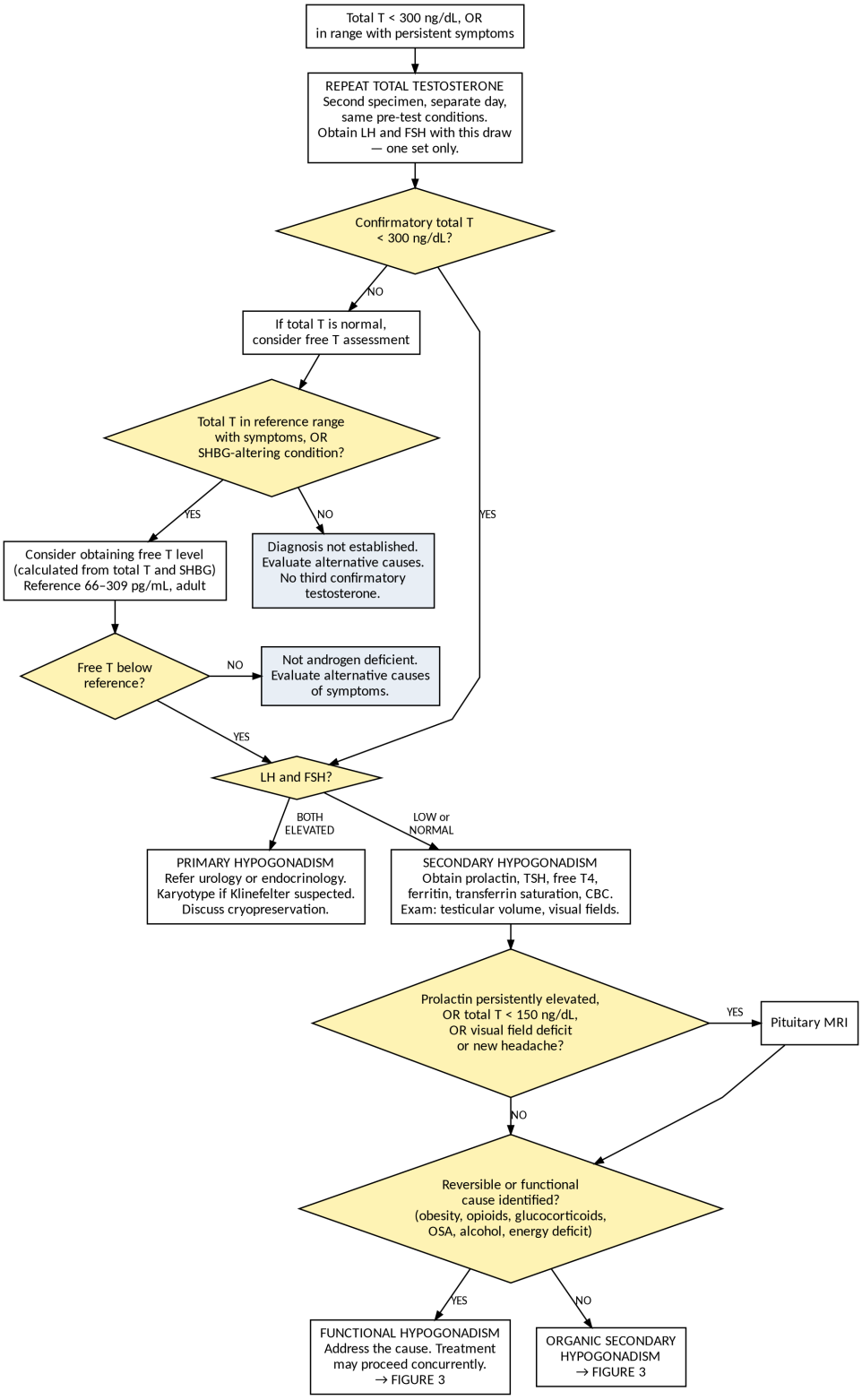


Figure 2. Diagnostic evaluation.



Adapted from the American Urological Association Testosterone Deficiency Guideline (2018).[2]

Figure 3. Treatment pathway selection.

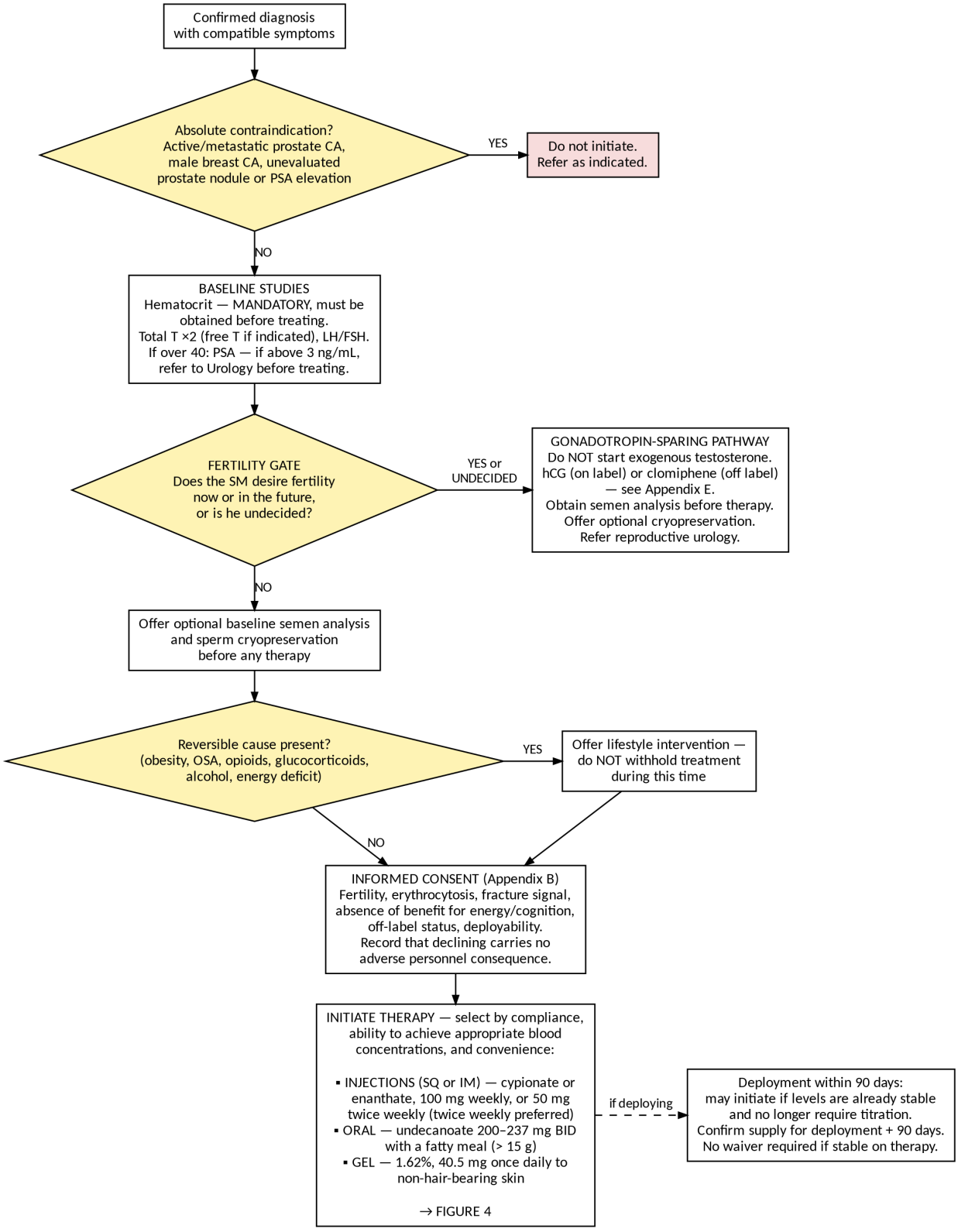


Figure 4. Titration and dose adjustment.

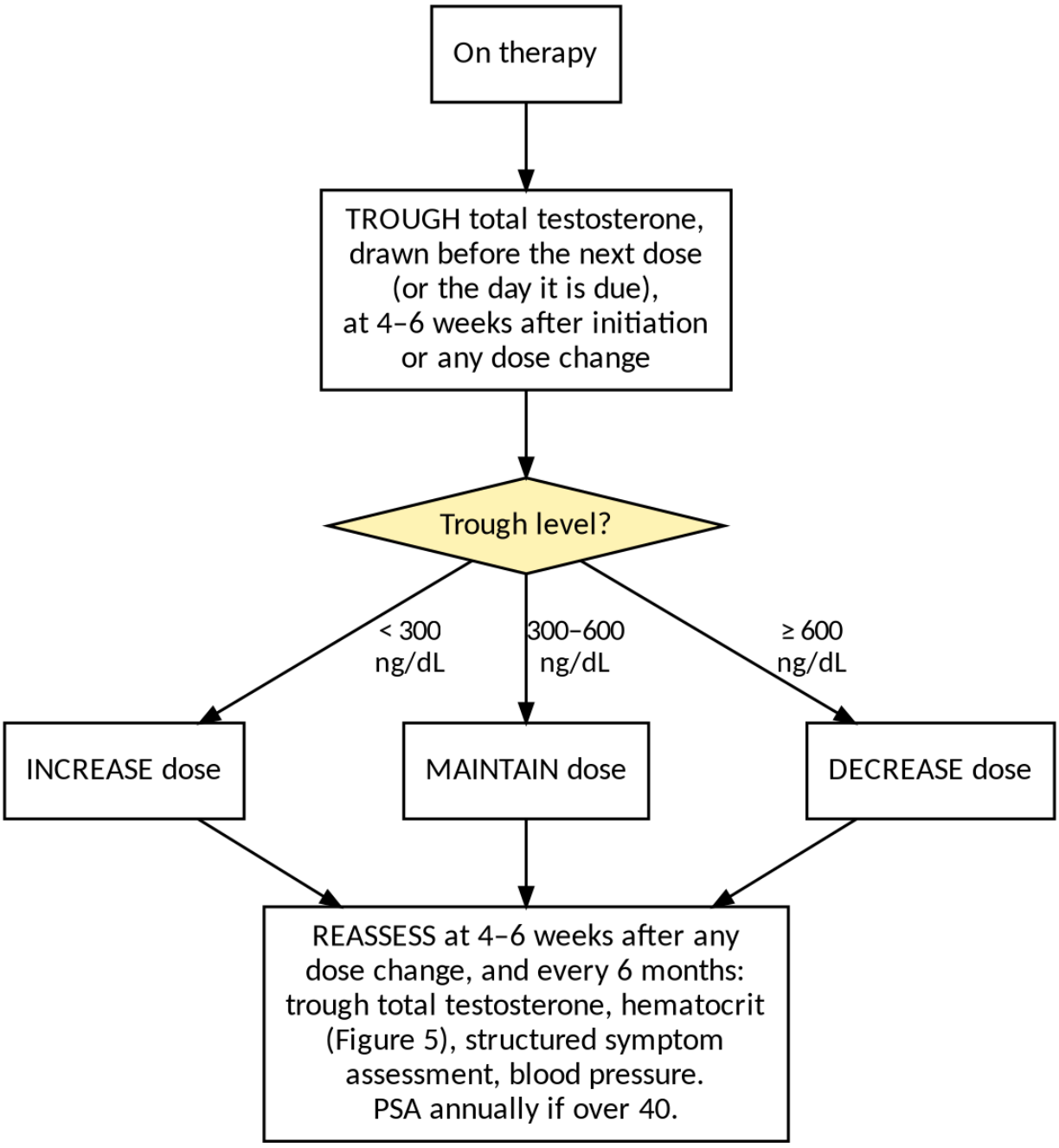
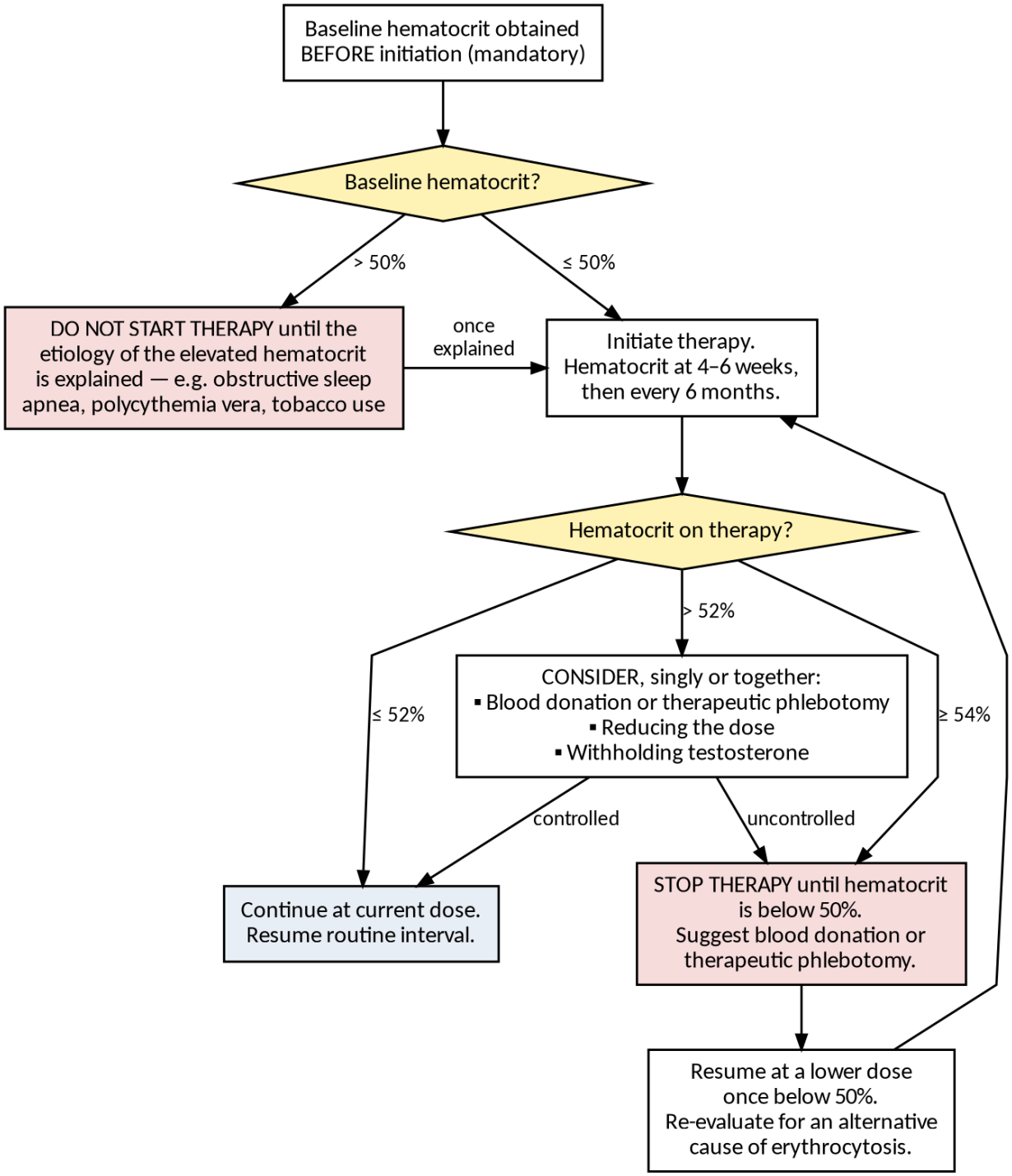


Figure 5. Erythrocytosis management on therapy.



APPENDIX A: DIAGNOSIS AND TREATMENT REFERENCE TABLES

Table A-1. Diagnostic pathway.

Finding	Action
Positive screen, age 30+	Confirm pre-test conditions are met. Obtain morning fasting total testosterone, 0700–1000, at least 30 days from training involving extreme physical or mental distress and/or sleep deprivation.
Total T ≥ 300 ng/dL, symptoms present	Obtain total testosterone and SHBG to calculate free testosterone. Reference 66–309 pg/mL, adult. Evaluate alternative causes in parallel.
Total T < 300 ng/dL	Repeat on a separate day under the same conditions. Obtain LH and FSH with this draw — one set only. No third confirmatory testosterone.
Low T, elevated LH/FSH	Primary hypogonadism. Refer to urology or endocrinology. Karyotype if Klinefelter suspected. Discuss cryopreservation.
Low T, low or normal LH/FSH	Secondary hypogonadism. Obtain prolactin, TSH, free T4, ferritin, transferrin saturation, CBC. Focused exam including testicular volume and visual fields.
Prolactin persistently elevated, or total T < 150 ng/dL, or visual field deficit	Pituitary MRI.
Obesity, workup otherwise unremarkable	Adiposity-associated functional hypogonadism. Offer lifestyle intervention; do not withhold treatment during this time.
Total T above reference range, not prescribed testosterone	Obtain LH and FSH. Suppressed gonadotropins suggest exogenous androgen exposure. Elevated or normal gonadotropins warrant endocrine referral.

Table A-2. Formulations, dosing and monitoring.

Formulation and route	Dose	Level monitoring	Notes
Injection — testosterone cypionate or enanthate, subcutaneous or intramuscular	100 mg once weekly, or 50 mg twice weekly (twice weekly preferred)	Trough, before the next dose or the day it is due. Target 300–600 ng/dL.	Lowest peak-to-trough excursion when divided twice weekly. Vial products given subcutaneously are off-label.
Oral — testosterone undecanoate	200–237 mg twice daily with a fatty meal (> 15 g)	Per product labeling	Requires a fatty meal for absorption. Blood pressure monitoring required.
Gel — testosterone 1.62%	40.5 mg once daily to non-hair-bearing skin; titrate as necessary	2–6 hours after application, 4–6 weeks after initiation or change	Lower hematocrit effect. Counsel on secondary transfer.
hCG	Per specialist direction	Total testosterone; semen analysis where fertility is pursued	FDA-approved for hypogonadotropic hypogonadism in males. Preserves intratesticular testosterone and testicular volume.
Clomiphene citrate	Per specialist direction	Total testosterone, estradiol, LH, FSH	Off-label for this indication. See Appendix E.