

## Hormonal Intricacies

### DHEA and Androstendiol

1. These are considered what type of hormones?
  - a. Cross road hormones
2. Why?
  - a. Because they will become other sex hormones
3. These have an effect on what body system?
  - a. The immune system and connective tissue formation, i.e., ligaments and tendons.
4. Therefore, what is checked on the patient?
  - a. If they have Lupus, MS, fibromyalgia, connective tissue disease, etc. (80% of pt.'s checked have low DHEA that have these diseases).
5. DHEA and Androstendiol are contraindicated in what condition?
  - a. Sex organ cancers (they don't cause cancer, but will help the cancer grow).
6. Why?
  - a. Because of their [DHEA and Androstendiol ability to convert into sex hormones and feed the cancer/tumor.
7. How can DHEA be increased naturally?
  - a. Paleolithic diet
8. What nutrients decrease DHEA?
  - a. Alcohol, caffeine, sweets, pasta and milk.
9. What hormones increase DHEA?
  - a. Test, DHT and thyroid.
10. What hormones decrease DHEA?
  - a. Cortisol and oral estrogens.
11. When should the dose of DHEA be increased?
  - a. When the patient is under stressful conditions
12. When should the dose of DHEA be decreased?
  - a. When the patient is in an un-stressful condition.
13. What are the symptoms of DHEA overdose?
  - a. Oily skin, acne, increased body hair, therefore, decrease sugar intake.

**\*\*NOTE:** High sugar intake leads to high conversion of sugar to fat which leads to increased oil (sebum) production which leads to acne. \*\*

14. High DHEA can lower what hormone?
  - a. Cortisol
15. Which can precipitate what?
  - a. Hypotension
16. DHEA + Alcohol + Caffeine =?
  - a. Estrogen—due to aromatase of testosterone.
17. Foods high in fiber steal what from the GI tract?
  - a. Steroids—fiber traps steroids that would normally be reabsorbed in the bowel.

### Pregnenolone

18. Low pregnenolone levels cause what?

- a. Poor memory, decreased color vision, decrease in awareness, low energy, increased joint pain, increase in dry skin, decreased libido, low mood, increased anxiety and decreased thinking.
- 19. A decrease in sex hormones can lead to what?
  - a. Low pregnenolone
- 20. An overdose of pregnenolone may cause what?
  - a. Nightmares and increase of sex hormone production

### **Aldosterone**

- 21. Low aldosterone levels cause patients to feel how?
  - a. Like a "zombie"
- 22. Patients feel better when?
  - a. When lying down
- 23. What do they experience when they are standing?
  - a. Vision focus problems
- 24. What other symptoms are evident?
  - a. Salt cravings, polyuria, low blood pressure, hollow dehydrated look, teeth marks are left on tongue and skin "tenting".
- 25. How is a low aldosterone level treated?
  - a. Fludrocortisone 0.05 mg to 0.2 mg QD
- 26. It is contraindicated in whom?
  - a. Patients with easy leg edema
- 27. One can increase the aldosterone levels by doing what?
  - a. Eating salt, drinking water and moving around—DON'T STAND OR SIT TOO LONG!!!

### **Prolactin, LH, FSH**

- 28. Elevated prolactin levels indicate what?
  - a. Deficiency in sex hormones and elevation of LH and FSH
- 29. LH is elevated when?
  - a. During the 13/14<sup>th</sup> day(s) of the menstrual cycle
- 30. Low Sex Hormone Binding Globulin (SHBG) =?
  - a. Low Estradiol (E2) or T3 deficiency or high androgens
- 31. High Hormone Binding Globulin (SHBG) =?
  - a. High T3 or low androgens and/or GH
- 32. How can we "boost" sex hormones?
  - a. An organic Paleolithic Diet
- 33. What should be avoided?
  - a. Caffeine, soft drinks, pasta, whole grains, bread, bran and milk products.
- 34. What must be done?
  - a. Lose weight (NO OBESITY)
- 35. Men must avoid what?
  - a. Tight fitting underwear
- 36. All patients should avoid what?
  - a. Chronic stress and smoking of any kind

Strong Stimulators of E2/P4	Strong Inhibitors of E2/P4
GH	
Cortisol at low doses	Too much Cortisol
Thyroid at low doses	Too much thyroid

### Estrogen/Progesterone

37. Typical estrogen complaints and signs are what?
  - a. Vaginal dryness, hot flashes and flabby breasts
38. What's the solution?
  - a. Double the dose of Estradiol (E2) using the "1/2 method" (see previous notes).
39. A short menstrual cycle with droopy breasts is caused by?
  - a. Low estrogen
40. A short menstrual cycle with swollen breasts is caused by?
  - a. Low progesterone (P4)
41. A long menstrual cycle with droopy breasts is caused by?
  - a. Low estrogen
42. Being depressive with low energy is caused by?
  - a. Low estrogen and catecholamines
43. Being premenstrual depressed is caused by?
  - a. Low estrogen and catecholamines and catechol estrogens.
44. Menstrual hot flashes are caused by?
  - a. Low estrogen
45. Droopy breasts are caused by?
  - a. Low estrogen
46. Small breasts are caused by?
  - a. Low estrogen from childhood
47. An estrogen overdose may cause?
  - a. Nervousness, tension, anxiety, outbursts of anger, painful menstruation migraines pre-menstrually and swollen painful breasts.
48. What's the solution?
  - a. First: double the dose of progesterone (P4)
  - b. Then: decrease the estrogen.
49. Heavy menstrual bleeding is caused by?
  - a. An excess of Estradiol (E2) or a progesterone (P4) deficiency.
50. What's the solution?
  - a. Give a dose of progesterone (P4) the first 14 days of the menstrual cycle then double the dose the last 14 days of the menstrual cycle,
    - i. i.e., Days 5-14 give 100 mg and Days 15-28 give 200 mg.
51. Why?
  - a. B/C progesterone is produced in the ovaries and naturally rises during the latter half of the menstrual cycle and we are wanting to mimic the menstrual cycle.
52. Uterine fibroids are caused by?
  - a. Long term progesterone (P4) deficiency
53. Cysts in the breasts are caused by?

- a. Long term progesterone (P4) deficiency with elevated estrogen levels
- 54. Large breasts are caused by?
  - a. Low progesterone (P4) deficiency with elevated estrogen levels
- 55. If a patient is taking progesterone and they are not receiving the progesterone effect, what's too high?
  - a. Estrone (E1)
- 56. What's the solution to this?
  - a. Give D:M
  - b. Change from oral estrogen to topical estrogen
- 57. Progesterone does what?
  - a. It will convert Estrone (E1) to Estradiol (E2), which cause a more estrogen effect.
- 58. If the patient is experiencing a "roller coaster" effect progesterone therapy, what should be done?
  - a. Check the diet, i.e., decrease sweets intake, carbs and increase boiled/steamed meats and veggies, respectively, and avoid fruits for 2-4 days
  - b. Check vitamin D

**\*\*REMEMBER:** If the patient uses skin lotion, it can block hormone absorption. **\*\* \*\*REMEMBER:** Three types of breast pain—a, sides of breast = too much P4; b. inside/center of breast = too much estrogen; c. sensitive nipple(s) = too much testosterone.

- 59. If a patient is suffering with menorrhagia, what should be done?
  - a. Increase the progesterone during the latter of the menstrual cycle (days 14-28) double as needed
- 60. If a patient has cyclical migraines and droopy breasts, what is to be given?
  - a. Estrogen and progesterone
- 61. If a patient has cyclical migraines and breast tenderness, what is to be given?
  - a. Progesterone ONLY
- 62. Swollen breasts are caused by what?
  - a. Low progesterone
- 63. Swollen, puffy face, swollen calves, hands and feet is caused by?
  - a. Low thyroid
- 64. Swollen feet and ankles are caused by?
  - a. A low protein diet
- 65. Muscle cramping is caused by?
  - a. Low magnesium
- 66. Muscle weakness is caused by?
  - a. Low potassium
- 67. Hypertension in the evening is caused by?
  - a. Low cortisol

### Testosterone in Women

Low Testosterone Signs and Symptoms	
Nervousness	Lack of Interest
Depression all day	Dry skin
Anxiety	Urinary incontinence
Fears	Low libido
Low stress tolerance	Low orgasm
Hysterical reactions	Low nipple sensitivity
Lack of mental firmness	Painful intercourse
Submissive	Lack of body hair
Hypochondrial	Pale
Abdominal obesity	Lack of sexual body scent
Hot flashes	Poor muscle tone
Fatigue	Thighs w/ cellulite
	Varicose veins

**\*\*NOTE:** For females—if all other hormones are in high normal range, give 6 mg of testosterone daily 3 mg in am and 3 mg in pm. Start with 2 mg per day (1 mg in am and pm) and increase by 1 mg daily every 60-90 days.

68. How is testosterone in women "boosted"?

- a. Paleolithic diet
- b. AVOID: alcohol, vinegar, caffeine, and sugar, soft drinks, cookies, and bread, pasta, cereal and milk products.

When to Lower Test Dose	When to Raise Test Dose
High protein diet	Low protein diet
High fat diet	High cereal diet
High calorie diet	Low calorie diet
Low physical activity	Diarrhea
	High physical activity
	High stress
	High thyroid function/levels
	Oral estrogens
Excessive Testosterone Signs	
Oily skin	Authoritative
Acne	Excessive muscle development
Oily hair	Male pattern baldness
Excessive sex drive	Excessive body hair
Excessive clitoral swelling	

69. Solution to acne?

- a. Decrease sweets intake
- b. Decrease androgens

70. Solution to feet edema?

- a. Increase potassium
- b. Decrease androgens

71. Solution to painful engorged clitoris and excessive libido?

- a. Decrease androgens

72. Solution to male pattern baldness and excessive body hair?

- a. Decrease testosterone dosages
- b. Eat less red meat.

**\*\*NOTE:** If the patient has side effects of swelling, oily hair, body hair overgrowth THINK: wrong food intake, i.e., high salt or obesity

**\*\*NOTE:** It is important to know that too much of any androgen can first raise the other androgens, but, in the long run, will depress the other androgens.