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. Fludrocortisones 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\textsuperscript{th} 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
<table>
<thead>
<tr>
<th>Strong Stimulators of E2/P4</th>
<th>Strong Inhibitors of E2/P4</th>
</tr>
</thead>
<tbody>
<tr>
<td>GH</td>
<td>Too much Cortisol</td>
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<tr>
<td>Cortisol at low doses</td>
<td></td>
</tr>
<tr>
<td>Thyroid at low doses</td>
<td>Too much thyroid</td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>Nervousness</th>
<th>Lack of Interest</th>
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</thead>
<tbody>
<tr>
<td>Depression all day</td>
<td>Dry skin</td>
</tr>
<tr>
<td>Anxiety</td>
<td>Urinary incontinence</td>
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<tr>
<td>Fears</td>
<td>Low libido</td>
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<tr>
<td>Low stress tolerance</td>
<td>Low orgasm</td>
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<tr>
<td>Hysterical reactions</td>
<td>Low nipple sensitivity</td>
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<tr>
<td>Lack of mental firmness</td>
<td>Painful intercourse</td>
</tr>
<tr>
<td>Submissive</td>
<td>Lack of body hair</td>
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<tr>
<td>Hypochondrial</td>
<td>Pale</td>
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<tr>
<td>Abdominal obesity</td>
<td>Lack of sexual body scent</td>
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<tr>
<td>Hot flashes</td>
<td>Poor muscle tone</td>
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<tr>
<td>Fatigue</td>
<td>Thighs w/ cellulite</td>
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<td></td>
<td>Varicose veins</td>
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**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.

<table>
<thead>
<tr>
<th>When to Lower Test Dose</th>
<th>When to Raise Test Dose</th>
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<tbody>
<tr>
<td>High protein diet</td>
<td>Low protein diet</td>
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<tr>
<td>High fat diet</td>
<td>High cereal diet</td>
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<tr>
<td>High calorie diet</td>
<td>Low calorie diet</td>
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<tr>
<td>Low physical activity</td>
<td>Diarrhea</td>
</tr>
<tr>
<td></td>
<td>High physical activity</td>
</tr>
<tr>
<td></td>
<td>High stress</td>
</tr>
<tr>
<td></td>
<td>High thyroid function/levels</td>
</tr>
<tr>
<td></td>
<td>Oral estrogens</td>
</tr>
</tbody>
</table>

#### 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.