**Understanding Lab Reports**

**(Part 2)**

***Website:*** [Healthy Christian Living - Living by the Blueprint](https://livingbytheblueprint.com/)

**#8:** **CBC**

**a.** **White Blood Cell Count** (WBC)

This is part of the immune system to combat infection, inflammation, cancer.

**Normal ranges** **=** 4,000 - 10,800

Cortisone, which is a steroid, elevates the white blood cells.

\*\*\***An average vegetarian normally runs low 3,000 to low 4,000** (the purines in the meat increase the count)

\*\*\***An acute infection, like bacterial infection, the White blood cells rise Neutrophils are the ones that usually respond.**

\*\*\***In viral infections, you may see a little bit of rise in the white blood cell count, a normal count or a depressed blood count**...

**Not a predominance of Neutrophils, but of Lymphocytes**...

\*\*\*In certain blood borne diseases, you can get abnormalities in these white cell ratios...If it is seen that there is a slight increase in the white count, but if the lymphocytes predominate, it's a red flag, because normally, your neutrophils are to be in predominance over the lymphocytes normally.  It can be a precursor to a disorder.

**b.** **Hemoglobin**

**Reflects Anemia**

It’s that part of the Red Blood Cell that Contains a Protein fraction and an Iron fraction.

The Heme Portion.  That's why they call it “Hemoglobin”

**Globin =** the protein...that is the part in the red blood cell that carries the Oxygen

**If you have low Hemoglobin, it is normally a reflector of LOW RED CELL COUNT and you are**

**ANEMIC**

* **NORMAL LEVELS:**
* **An adult woman is 12-16 gm/dl**
* **Adult male is 14-18 gm/dl.**

\*\*\***Hemoglobin is a protein contained in red blood cells that carries oxygen to, and carbon dioxide away from,** **the body's cells**.

A hemoglobin test is typically ordered as part of a [complete blood cell (CBC)](http://ibscrohns.about.com/od/diagnostictesting/p/testcbc.htm) count.

**Higher than normal levels of hemoglobin may be caused by**

* Congenital heart disease.
* Cor pulmonale.
* Pedomonary fibrosis.
* Polycythemia vera.
* Increased [red blood cell (RBC)](http://ibscrohns.about.com/od/diagnostictesting/p/testrbc.htm) production caused by an excess of erythopoeitin.

**LOW LEVELS OF HEMOGLOBIN MAY BE DUE TO**

* Anemia
* Erythropoetin deficiency
* Folate deficiency
* Hemorrhaging (bleeding)
* Iron deficiency
* Lead poisoning
* Malnutrition
* Overhydration
* RBC destruction.
* Vitamin B12 deficiency
* Vitamin B6 deficiency

**c.** **Hematocrit = a ratio of the Red Blood Cell Mass to the liquid compartment of the blood.**

 Both usually go down in Anemia...

 The hematocrit is usually 3 x the amount of the Hemoglobin...

**d.  MCV = Mean Corpuscular Volume**
      \*\*\***It has to do with the size of the Red Blood Cell.** As the Red Blood Cell gets smaller and smaller and smaller, the MCV gets less and less and less.  As it gets larger, the MCV gets larger and larger and larger.  By looking at that, the Physician can tell how to categorize the Anemia.  Most Anemias are normal, meaning the **MCV is normal.**

If you have an iron deficiency from a female cycle...

The elderly can lose blood from the bowel...If it's 10, and she has heavy bouts of bleeding...this person needs iron rich foods.

If the lady is 56, and she is anemic and hasn't had a cycle in many years, and has an MCV of 65, there could be some occult bleeding going on in the bowel and she's losing blood...THE MCV lets us know what types of Anemia are most likely.

Some of your inherited Anemias...When the MCV is very small, think of a inherited hemoglobin problem...If you start to get large Red Blood Cells, and the MCV is going up, but the total blood count like the Hemoglobin and Hematocrit are going down, then we think about diseases like B-12 deficiencies...Poor Nutrition that can get Folate deficient can cause LARGE RED BLOOD CELLS...And there are certain lympho proliferative disorders that cause a problem in the Bone Marrow with the maturation of the cells; these are usually pre-malignant or malignant.  They can cause Large Red Blood Cells

**e.  MCH = Mean Corpuscular Hemoglobin**
**f.  MCHC = Mean Corpuscular Hemoglobin Concentration**
 \*\*\*These usually go up and down as the MCV does

**g.   Platelet Count**

* **Platelets are those substances that float around in the blood cell which help the blood to clot and you can get certain problems with low platelet counts**; **high platelet counts**.  **You may see primary disorders where there is an overproduction of platelets that cause a pre-malignant or malignant disorder**.
* **You may see platelet counts that are low for a variety of reasons**.
* Certain infections like someone with Hepatitis or Chronic Hepatitis.  They may have a low platelet count.
* There can be certain auto-immune disorders that consume platelets, destroying them, like ITP (Idiopathic Thrombocytopenic Purpura.  If you cut your skin, why don't you just keep losing blood? Because God put these platelets in there, and when they sense any irregularity, they stick.  They begin to form a plug and release certain clotting factors that activates certain mechanisms in the blood...We are fearfully and wonderfully made.
* **NORMAL RANGE =** **150,000 to 400,000**
* **Cayenne Pepper (90,000 Heat Units) is effective in helping the blood clot**
* **Great for someone**

Hemorrhaging

Bleeding from a gunshot

Bleeding from a stab wound

* **Papaya Leaf Extract + one other things is excellent for low platelets.**
* Low platelets + Low Hemoglobin + Low Hematocrit….. You are looking at possible Leukemia

**h. RDW = Red Blood Cell Distribution Width**
 What it is, is a measurement, a dimension of the Red Blood Cell.

It has to do with mixed types of Anemias like B-12 deficiency and an Iron deficiency.

It gives a clue because the RDW is increased.

 It's not used very much unless a person is anemic and the doctors want to see what the underlying cause is.

**i.** **Eosinophils**

* **An eosinophil is a type of white blood cell.**
* Eosinophils are produced in the bone marrow and are normally found in the bloodstream and the gut lining.
* These are there in increased concentration states if you have allergies;
* if you have parasitic disease

 or

* if you have primary eosinophilic infiltrated disease processes.

**#9:** **TSH**

* **Thyroid Stimulating Hormone**
* **Normal ranges** **= 0.4-4.5**
* The TSH level comes out of the pituitary.
* It drives the thyroid.
* If the thyroid gland is not functioning well, and doesn't put out the normal hormones T-4 and T-3, the brain senses that and the pituitary will release increasing amounts of stimulating hormone.
* It will act upon that thyroid and try to stimulate it to produce more hormone.
* One of the earliest signs of hypothyroidism is normal levels of thyroid hormone, but a rising of the TSH level.
* That's called "subclinical hypothyroid".
* It will finally come to the point where the gland can't keep up enough with that driving Thyroid stimulating level and it will fall even though that high TSH level is there.
* If you see a High TSH, let it be an indicator that a hypo-thyroid state is coming on or is present.

**Q:  WHAT IS A MAIN CAUSE FOR AN UNDERACTIVE THYROID**?
 **A:  Low Iodine** (explain simple test to see if one is deficient)

 **B: Lack of Exercise**

 **C: Lack of Sunshine** (or wearing sunglasses when out in the sun)

 **D: Going To Bed Too Late;** Improper Rest

* You can get Iodine from the ‘Pink Himalayan Sea Salt’

**#10:  B-12 = A MEASUREMENT OF THIS VITAMIN.**
          **Normal levels are from 200-1100**
But you can have clinical B-12 deficiency states with levels up to 350-400.

If they suspect a person has B-12 deficiency, they do another test called MMA (Methylmalonic Acid).

This will be high if there is a cellular level of B-12 deficiency, even though serum levels may be within the normal ranges.
\*\*\*You will see a high B-12 level if a person is taking too much of this supplement. You only need approximately 6 mcg/day.

**#11.**  **VITAMIN D**

* **25-Hydroxy**
* **NOT 125-Hydroxy**
* This is the incorrect test.
* 30% of doctors do this incorrect test. Be sure to let them know what you want.
* **Normal Levels:** Some doctors and hospitals are saying 25-100. Others are saying 25, **but Vitamin D experts are saying at least 80-100 to promote good health**. **Most of the Medical people do not agree with the current standard. As a matter of fact, it was recently raised from 20 to 25 as the minimum level**.

If you have low levels, you could be facing an increased risk of heart disease, osteoporosis,dementia, diabetes, depression, arthritis, thyroid issues, a variety of cancers, and so manyother problems.

**Q:  HOW DO WE INCREASE THESE LEVELS?
A:  The sunlight is the best way**.

* Only a quarter size of skin is required for proper Vitamin D or a liquid Vitamin D supplement, preferably D3 and make sure it is plant based, but medical science is now saying this is not the best if you do use it, NATURE’S ANSWER 4,000 IU’s per 2 drop it’s in an olive oil base because Vitamin D is a fat soluble vitamin.

**VIDEOS TO WATCH ONLINE ABOUT VITAMIN D:**

**ESSENTIALS OF VITAMIN D VIDEO SERIES BY DR. JOHN CANNEL:**

**Part 1:** <http://www.youtube.com/watch?v=-AK6qjCViyw>

**Part 2:** <http://www.youtube.com/watch?v=gnRDWcVySa0>

**Part 3:** <http://www.youtube.com/watch?v=WQ67fUnaUkw>

**Part 4:** <http://www.youtube.com/watch?v=jIZC9E6azVk>

**DR. SCOTT GRIVAS ON VITAMIN D:**

**Part 1:** <http://www.youtube.com/watch?v=ncl-Ljjh8k0>

**Part 2:** <http://www.youtube.com/watch?v=28SM2aVR85I>

**Part 3:** <http://www.youtube.com/watch?v=LobJpnqFfIs>

**Part 4:** <http://www.youtube.com/watch?v=hDARDfsyvrM>

**Part 5:** <http://www.youtube.com/watch?v=zTlN-C3T0FU>

**Part 6:** <http://www.youtube.com/watch?v=6lKPLY5vpjg>

**#12**.  **SEDIMENTATION RATE OR (ESR) ERYTHROCYTE SEDIMENTATION RATE**  **Normal Ranges:**

**Men = 0-15**

**Women = 0-20**

**This test is to check for inflammation in the body.** It's a very simple test. Blood is put in the tube and they stand it up and you watch how fast it sediments in one hour.

 \*\*\*The blood falls faster when there is inflammation in the body, cancer, infectious diseases.

Any time there is a high sedimentation rate, it doesn't say what is wrong, but it tells you there is something wrong so they check in other areas to find out what exactly is wrong.

**Example:** Lupus will cause it to be high, but the doctors don't know right away, just because a person with this disease has joint problems, that Lupus is what

**WEBSITES:**

* <http://www.medicinenet.com/electrolytes/article.htm>
* <http://ods.od.nih.gov/factsheets/magnesium/>
* <http://ibdcrohns.about.com/od/diagnostictesting/p/testhemo.htm>
* <http://www.beckmancoulter.com/literature/ClinDiag/buffalo.pdf>
* <http://www.itp-helper.com/what_is_ITP.php>
* <http://health.usnews.com/health-news/managing-your-healthcare/diabetes/articles/2010/03/25/why-you-may-not-need-that-vitamin-d-test-after-all>

**DIAGNOSTIC BOOK:**

**Springhouse Handbook of Diagnostic Tests:** 2nd Edition

**Understanding Lab Reports – Part 2**

**(Questions)**

1. What does WBC stand for? \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_ \_\_\_\_\_\_

2. What are the normal ranges \_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_

3. What does an average vegetarian usually run? \_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_

4. In what kind of infection do you see the while blood cells rise? \_\_\_\_\_\_\_ infection

5. List the 3 things you may see in a viral infection:

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. What does the Hemoglobin reflect? \_\_\_\_\_\_\_\_\_\_\_\_

7. What 2 fractions does the Hemoglobin of the Red Blood Cell contain?

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. What are the normal levels of Hemoglobin in an Adult Female? \_\_\_ to \_\_\_

9. What are the normal levels of Hemoglobin in an Adult Male? \_\_\_ to \_\_\_

10. Hemoglobin is a \_\_\_\_\_\_\_\_\_\_\_ contained in red blood cells that carries \_\_\_\_\_\_\_\_\_\_\_\_ to and \_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_ away from the body’s cells.

11. List the 5 possible reasons why the Hemoglobin may be higher:

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

12. Please list the 11 reasons why Hemoglobin levels may be low:

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

11. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

13. The Hematocrit levels are usually \_\_\_ x the amount of the Hemoglobin which would be? \_\_\_\_ to \_\_\_\_

14. What does MCV stand for? \_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_

15. The MCV has to do with the \_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_

16. What could be the reason of an MCV at 65 in a 56 year old woman who is anemic and hasn’t had a cycle in

 many years?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

17. What does MCH stand for? \_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

18. What does MCHC stand for? \_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

19. The MCH and MCHC usually go up and down when the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

20. What are platelets? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

21. List 2 reasons why you can see low platelet counts:

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

22. What are normal platelet levels? \_\_\_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_\_\_

23. What natural herb is very effective in helping the blood clot? \_\_\_\_\_\_\_\_\_\_\_\_ pepper

24. Cayenne Pepper is great for someone:

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

25. What should the heat units of the cayenne be in order for it to be medicinal? \_\_\_\_\_\_\_\_\_\_\_\_ heat units

26. List two things that are good for Low Platelet count

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

27. Low Platelets + Low Hemoglobin + Low Hematocrit = Possible L\_\_\_\_\_\_\_\_\_\_\_

28. What does RDW stand for? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

29. What is it? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

30. What does it have to do with? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

31. Give 2 types of Anemias

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

32. What is an Eosinophil? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

33. Where are Eosinophils produced? In the \_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_

34. List 3 things that causes them to increase?

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

35. What does TSH stand for? \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_

36. What are the normal ranges? \_\_\_\_ to \_\_\_\_

37. From where does the TSH level come out of? The \_\_\_\_\_\_\_\_\_\_\_\_

38. It drives the \_\_\_\_\_\_\_\_\_\_\_\_

39. What is one of the earliest signs of hypothyroidism? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

40. What is it an indicator of if you see a High TSH level? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

41. What are 4 main causes of an underactive thyroid?

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

42. Where can you get Iodine from? Pink \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Sea salt

43. List 2 other sources of Iodine:

1. Norwegian \_\_\_\_\_\_

2. Norwegian \_\_\_\_\_\_\_\_

44. What are the normal levels for vitamin B-12? \_\_\_\_\_ to \_\_\_\_\_\_

45. Can you have clinical B-12 deficiency with levels up to 350 to 400? YES or NO

46. What other test is done if a person is suspected of having a vitamin B-12 deficiency? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

47. Also known as what Acronym? \_\_\_\_\_

48. What is the correct name for a Vitamin D test? \_\_\_ \_\_\_\_\_\_\_\_\_

49. What is the incorrect test name? \_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_

50. What percentage of clinics and hospitals do the incorrect test? \_\_\_\_%

51. What levels do vitamin D experts say are best? \_\_\_ to \_\_\_\_

52. What levels do hospitals say are best? \_\_\_ to \_\_\_\_

53. List 8 health problems besides rickets that are related to low vitamin D levels:

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

54. What is the best way to increase one’s vitamin D levels? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

55. What size of the skin is all that is required in order to get proper vitamin D levels?

56. Should a person use a vitamin D supplement prescribed by a doctor? YES or NO

57. Please explain your answer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

58. Vitamin D is a \_\_\_\_ soluble vitamin

59. What kind of base should vitamin D liquid come in? O\_\_\_\_\_ o\_\_\_ base

60. What does ESR stand for? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_

61. What are the normal ranges in: Men: \_\_\_ to \_\_\_ Women: \_\_\_ to \_\_\_

62. What does this test check for in the body? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

63. Will Lupus cause it to be high? YES or NO