

Understanding Lab Reports

(Part II)

Old Website: [Healthy Christian Living - Living by the Blueprint](#)

New Website: [Remnant Hope](#)

#8: **CBC**

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

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

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

NOTE: 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

Its 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 \(CBC\)](#) count.

HIGHER THAN NORMAL LEVELS OF HEMOGLOBIN MAY BE CAUSED BY:

- Congenital heart disease.
- Cor pulmonale.
- Pedomonary fibrosis.
- Polycythemia vera.
- Increased [red blood cell \(RBC\)](#) production caused by an excess of erythropoietin.

LOW LEVELS OF HEMOGLOBIN MAY BE DUE TO:

- Anemia
- Erythropoetin deficiency
- RBC destruction
- Hemorrhaging (bleeding)

- Lead poisoning
- Malnutrition.
- Iron deficiency
- Folate deficiency,
- Vitamin B12 deficiency
- Vitamin B6 deficiency.
- Overhydration.

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

Both(hemoglobin and hematocrit) 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 an 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.
Q: 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

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- **Papaya Leaf Extract + chlorophyll are a great combination 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 is the underlying cause.

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' AS WELL AS → Black Walnut Hulls**

#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 (and we want it from food, not a supplement)

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#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 30-100.
Others are saying 50,

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 and then 30 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 many other 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, use -> NATURE'S ANSWER from Vitacost.com
4,000 IU's = 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(from the Vitamin D Council):

- 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=jlZC9E6azVk>

DR. SCOTT GRIVAS ON VITAMIN D(he's a wonderful SDA doctor):

- 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=LobJpngFfls>
- Part 4: <http://www.youtube.com/watch?v=hDARDfsyvrM>
- Part 5: <http://www.youtube.com/watch?v=zTIN-C3T0FU>
- Part 6: <http://www.youtube.com/watch?v=6IKPLY5vpjg>

#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 underlying problem is

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Sites:

- <http://www.medicinenet.com/electrolytes/article.htm>
- <http://ods.od.nih.gov/factsheets/magnesium/>
- <http://ibdcrohns.about.com/od/diagnostictesting/p/testthemo.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>

NOTE: A lot of the information in this document is from Dr. Scott Grivas (SDA)

ALSO FROM

- **DIAGNOSTIC BOOK:**
SPRINGHOUSE HANDBOOK OF DIAGNOSTIC TESTS: 2nd Edition:
https://www.ebay.com/p/933473?iid=143517266822&chn=ps&norover=1&mkevt=1&mkrid=711-117182-37290-0&mkcid=2&itemid=143517266822&targetid=883510870682&device=c&mktype=pla&googleloc=9029617&poi=&campaignid=9250237609&mkgroupid=93913847756&rlsarget=pla-883510870682&abclid=1145977&merchantid=107435593&gclid=EA1aIQobChMI2drQkPd6AIVMR-tBh307QaFEAQYASABEgIQ8PD_BwE

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(Part II)

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 white 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. _____
- ***continue on next page*****
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