



ADD 15 YEARS TO OUR LIFE
CAN WE? OF COURSE, WE CAN!!

Add 15 Years |

Gold standard blood tests

Every year

Worth their "weight in gold"

India/USA Edition 2020 | ENGLISH



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PREFACE

- Good Health is not a destination, it is a journey.
- This book shows how good health can be maintained with Gold Standard Blood Tests and how these tests can add 15 years to your life!
- Gold Standard Tests are a necessity in today's fast-moving lifestyle! Know why?
- The book explains why Gold Standard Tests are worth their weight in gold.
- Know all the Gold Standard Tests included by the author, which you should continue from age 18, every year to ensure check and balance in your body.
- The book gives an insight into each Gold Standard Tests in short.

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DISCLAIMER

This book has been written to provide only the general information. Please always consult a physician before starting any prescription medicine(s).

This book is not intended as a substitute for the medical advice of physicians. The reader should regularly consult a physician in matters relating to his/her health and particularly to any symptoms that may require diagnosis or medical attention.

All the medical facts presented in this book have been thoroughly revised by the medical experts. The author have tried to keep all the controversial medical facts out of the book and discussed only the approved ones (nationally and internationally) in simple and easy to understand language.

This book has been written with proactive approach into consideration to benefit maximum people. For this reason, we have presented many real- life stories and author's clinical experiences related to their patients/members. Names of the people and places have been changed in the book in order to respect the privacy of the people. In instance of any resemblance to any person is coincidental and unintentional.

Although, the author have made every effort to ensure that the information presented in this book was correct at the publishing time, the author do not assume and hereby disclaim any liability to any party for any loss, or damage, or disruption caused by errors or omissions, whether such errors or omissions result from negligence, accident or any other cause.

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Chapter 1

Good Health – How do we achieve it?

Good health!

Good health is a thing we would all love to have and achieve till the very last year of our life (about 85 to 90 years of age).



Chap1Fig1



Chap1Fig2

But good health is something we cannot wait for, and It will not happen just by our wishful thinking.

So, how do we achieve good health?

Having no symptoms,

no pain,

no fever,

no weight loss,

does not medically mean that we are “in good health”. If there is not enough iron or iodine or cholesterol in food, then our good health will start going in wrong direction; but it is a very slow process.

The answer is simple:

Our medical literature and top medical bodies have figured out important blood tests which I call “Gold Standard Blood Tests”.

These tests are so important because:

- These reflect the fundamental numbers our body maintains.
- These tests are very accurate.
- Very sensitive
- Very specific, and
- Very useful

Hence, we need to do them every year for rest of our life, starting at age 18.

Fifty years ago, in India, when we were young:

We saw in movies, doctors holding pulse of the hero or heroine, and they would exactly tell in a minute what was wrong with our “hero” or our favorite “heroine”.

We young kids were “awestruck”.

Once we became doctors ourselves, we realized that the life is exactly “*not so simple*”.

Yes, we could figure out the diagnosis by asking “tons of questions” and “doing a complete medical examination”.

In India, in 1960s and 1970s, there were no good or very reliable blood tests, even in hospitals. There were actually no labs in the neighborhood.

In those days (1960s and 1970s) in India, life was dominated by “acute infections” and unless treated within days, the risk of dying was high.

And yes, so many died just because the family was hesitant to seek hospital admission or waited too long.

Families used just “family remedy” or just wished the patient would get better with time with unfortunately resulted into fatal outcomes.

Think about it!

Can anybody realize the pain of both the Dads in the following two stories?

Our neighbour’s young son, aged 20 years, fell ill. Everyone was suspecting typhoid. His dad believed he would recover, but he did not and finally he took his son to the hospital. Unfortunately, it was “too late” and the boy died. It was very painful for all of us in such close-knit communities in 1970s and 1980s in Delhi (India) which was still like a village in those days.

Think about it!

When we entered medical school, we all got a tetanus shot.

We were surprised.

We were told that our professor’s son aged 16 years died from infection from a “scratch” while playing soccer on the field.

Everybody in India knows about “typhoid” and “tetanus shot” and everybody in USA has heard about “typhoid” and of course everybody does know about “tetanus shot”.

Only fact is typhoid is still common in India and very rare in USA.

Now, India does not see tetanus cases.

When I came to the USA in 1980s -1990s, my young colleagues had never seen a case of tetanus.

Chapter 2

Gold Standard Tests are really worth their weight in gold

They are called Gold Standard Test because information they give us is worth their weight in gold.

These tests are very simple.

These tests are very specific.

These are the tests which pretty much tell everything about the functioning of our body in day to day life, year after year.

Now companies have mass produced chips testing, whereby one can do all these tests together and that has made testing very, very cost effective today. These tests are very important and every doctor/every person in the medical profession needs this information. Results are readily available too.



Chap2Fig1

Think about it!

Think about the increased accuracy and dramatically reduction of cost of these tests. Now, if we order these tests together, for example - Complete Blood Count (CBC) then it will be:

- *Much cheaper and highly subsidized versus*
- *If we just order hemoglobin and hematocrit which by itself will be very costly.*

Chapter 3

Gold Standard Tests to be done every year starting age 18

So, we need gold standard blood test for us. These are the tests which absolutely tells us the baseline of our body and day-to-day health status of our body.

Just feeling healthy is not enough!



Chap3Fig1

Absolutely, we need to do these “Gold Standard Blood Tests” every year starting age 18, till the rest of our life.

Chapter 4

Healthcare 50 years ago in India and 100 years ago in USA

Today, most of us stay in good health till we get to age 50 and age 60 and we will still stay in good health even up to our eighties as long as we fine tune our health starting at age 18.

The reason is-

50 years ago in India (in 1970s), and about 100 years ago in USA (in 1920s)

life was dominated by life threatening infectious conditions (which are not fatal today in 2020).

For example:

- Cholera,
 - Typhoid, and
 - Tetanus,
- could kill us in hours and days.

Not only that, at least in India:

- The clinics,
 - The lab testing,
 - Hospitals, and
 - Technology
- were very primitive.



Chap4Fig1

Book knowledge was there,

But everything else was very primitive. With experience passing on from one generation to the next generation in an era without cell phones etc. (and not even landlines).

Our time in 1970s and 1980s saw family doctors visiting patients in their home.

Also, Indian families tried all kinds of remedies at home which was a very popular practice (& still is).

Everybody approached doctors/hospitals very late in their medical illness and mostly as a “last resort”.

All the delay in the patient’s diagnosis and management of the infectious conditions could cost family members their life.

Also, almost everybody took treatment from the neighborhood chemist rather than consulting a doctor, convinced that it will help their family member recover, and that consulting a physician was unnecessary.

In USA, anyone who needs medicine, sees a physician because it is illegal for chemists to give medicines without a doctor's prescription.



Chap4Fig2



Chap4Fig3

Following medical conditions are very dangerous and fatal if treatment and medical care is delayed:

- Tetanus,
- Meningitis,
- Pneumonia, and
- Typhoid

These lead to a very high mortality rate in India 50 years ago, as the infection will spread to the blood and it becomes impossible to save the family member.

Fundamentals of medical care for urgent attentions have not changed, but everything has changed in 2020.



Chap4Fig4

Chapter 5

It is so different in 2020 and technology is same in India & USA

Today, both in India and USA, everybody is much more aware, thanks to:

- *Google*
- *Facebook*
- *Mobile phones*
- *Globalization of technology*
- *Increased Indian prosperity*
- *Educated girls, wives and moms*



Chap5Fig1



Chap5Fig2

Gold Standard Blood Tests are very good to detect any health issues in our body.

Doctors are also much more knowledgeable and today technology is also very advanced.

Also, everybody in middle class in India, is much more prosperous now and obviously USA has dramatically advanced with infectious conditions literally disappearing from the USA.

Everything has changed in 2020.

Think about it!

Here, in USA, the top medical body Centers for Disease Control & Prevention (CDC) is very aggressive in managing all kinds infectious conditions. Suppose 3 people develop jaundice, (Hepatitis A through food); the medical body will move so fast, that they will not let the 4th person develop jaundice from others.

The above is applicable to the COVID-19 virus situation also today, around the world. But unfortunately, we have not done so well in USA.

In India, the leadership has been very aggressive in controlling the spread of Coronavirus in huge

USA medical bodies, while they were very aggressive, the control of pandemic was delayed by at least by 2 months and this has caused a dramatic setback for USA.

Dramatic setback as more than 100,000 deaths have been registered from COVID 19 in just about April and May 2020.



Chap5Fig3

Chapter 6

India's life expectancy increased from 30 years in 1950s to 65+ years in 2020. USA today is about 85 years.

The only reason why life expectancy has improved today in India, from approximately 30 years (post Indian independence in 1947) to 65 years today in 2020, is because of the dramatic improvement in the public health practices. More awareness of public about clean hands, clean water and clean food.

But in 2020, we can do much better as middle class and easily achieve good health from 65 to 85 years of age. Yes, we can!

However, in India, because of

- Lack of trust in doctors, and
- Expenses,

people are still shying away from the knowledge and talents of doctors in 2020.

This philosophy was never correct 50 years ago and it is absolutely not correct even today irrespective of “lack of trust” in doctors and “expenses”. There are solutions.
Avoiding doctors is not a “good one”!

Chapter 7

A 2-degree deviation in health (+) or (-) starts at age 18 can either add 15 years or take away 15 years from our lifespan.

A 2-degree deviation at age 18 from our “healthy” baseline can have serious consequences by the time we get to 50+ age (with no symptoms)

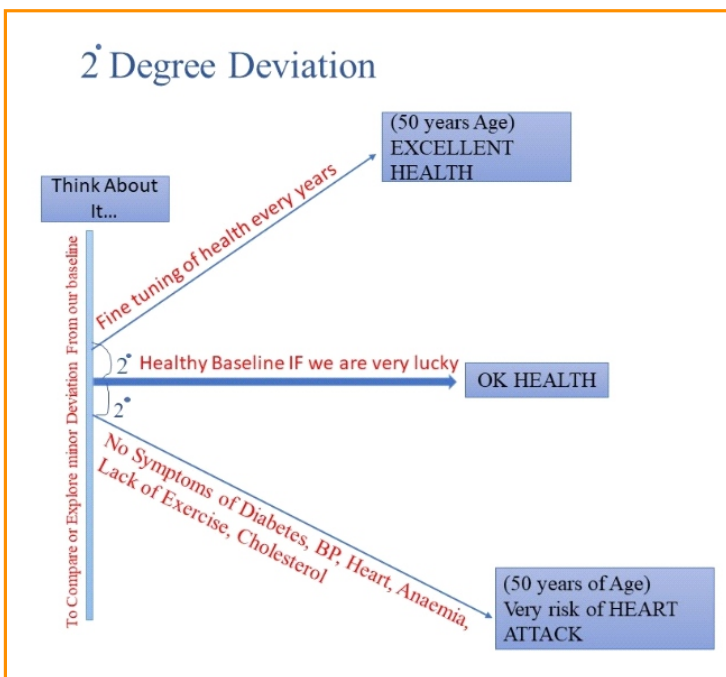
We may not realize this, but we have to do “Gold Standard Blood Tests” every year after age 18 till the rest of our life.

Absolutely, it is a must to fine tune and stay healthy till very last year of our life which should be 85 plus years of age!!

One has to understand that even with no symptoms, our body will keep evolving each day, every year.

However, with each day, our body-functions adapt with our age and therefore even minimal health issue if not addressed in a timely fashion, can lead to serious consequences.

These yearly tests form our baseline at age 18 or whenever we start testing, also act as a baseline for all our future reports, and can help a doctor to evaluate any deviation, from our healthy baseline.



Chap7Fig1

Why every year and rest of our life?

Think about it!

It was mindboggling for me when I moved to USA as a young physician and saw that the medical practice in USA was almost dominated by blood tests and technology. We did not wait for people to get sick.

If a patient's potassium was low, we wanted to know why his/her potassium was low and when the potassium was high, we wanted to know why was it high!! Patient himself/herself never had any symptoms.

Think about it!

My wife had anemia (i.e. a low amount of hemoglobin), both times she was pregnant. She was a young woman undergoing medical

training. We wouldn't have possibly known this without a blood test. It is well known how risky can a pregnancy be for a baby and the mother if the mother is anemic. We all doctors know that with anemia baby is born “small for date”.

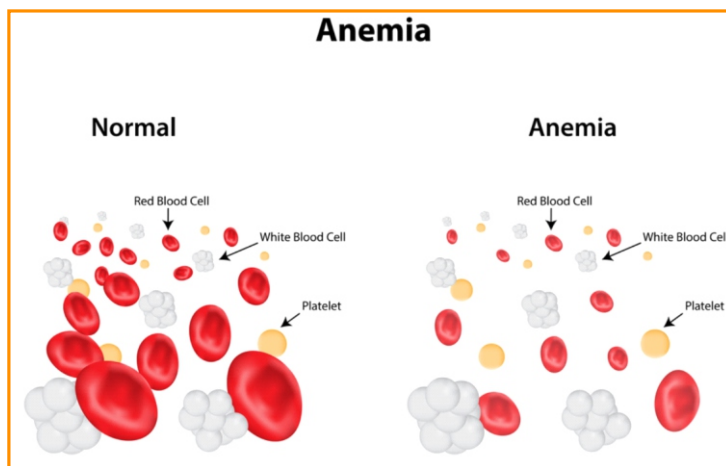
An interesting fact:

In India, all my brothers (including myself) were born at home. Those were the days in 1950s, 1960s, 1970s.

Think about it!

During my visits to India in last few years, I saw that almost every young girl in India was anemic, because of their monthly cycle, loses a lot of blood and hence as a result of losing a lot of iron, it becomes a reason for them to become anemic.

Even more surprising, girls knew they were anemic but denied any symptoms. “We feel ok, Dr. Goel !”



Chap7Fig2

It happens so slowly and without any visible signs/symptoms that girls/women get used to of it. Day to day level of energy becomes the new normal for them.

They just feel tired which they think is because of overwork or their busy lifestyle. A young girl should be full of energy all day.

Different blood tests have a normal range in terms of normal numbers, but our own specific numbers remain pretty much constant over the years.

Think about it!

Those days are gone when we had the luxury to wait for our numbers to go very wrong, because, in so many situations, we do not have any symptoms at all for years and years. The only way we have to figure what is wrong with our body is to get a blood test.

Even though we are healthy, reason to get Gold Standard Tests is that our blood tests are almost like our fingerprints. Just compare your last year ECG (EKG) with this year ECG (EKG).

Think about it!

The first time a COVID Test came to our clinic, it took us 8 days to get the results. Even today, the delay can be very frustrating.

One of our patients called us every day for COVID test results. We had no choice but to wait for the results. He could not go to work, because we could not clear him. Eventually his test turned out to be negative.

Now, over just few months, we have developed rapid tests, which can give results in hours. But these are still not widely available and can be very costly.

Chapter 8

Just like check and balance we need in our life, we need in our health also

One has to understand that these Gold Standard Blood Tests, which have been recommended by top medical bodies and been paid for annually by every insurance company in USA, are very helpful in maintaining and fine tuning our health.

In USA, health insurance costs thousands of dollars each month. Now Indians in USA, actually go to India for their medical care.

Think about it!

Any girl with a low amount of hemoglobin will wonder why the girl next door can function all day and still look energetic in the evening. This is because she has normal amount of blood to provide all the food and oxygen needed for that “*all day energy*”.

These tests create check and balance we need in our busy lifestyle, in relation to our health, such that, if we realize a deviation from our baseline numbers, then we can look for the reasons and correct and fine tune our health.

Chapter 9

Gold Standard Blood Tests

There are some “Gold Standard Blood Tests” everyone should do every year after age 18 till the rest of our life, absolutely. Parents take care of us till the age of 18 anyway. [Age 18 is the usual age of independence in USA. In India, you are independent only when your parents say so, especially true even today in case of our girls and daughters.](#)

What we need to test every year:

1. Complete Blood Count (CBC)
2. Kidney Function Test (includes electrolytes and glucose)
3. Liver Function Test
4. Lipid Profile (cholesterol profile including so called bad cholesterol)
5. Vitamin D (we do not spend much time in the sun and hence lack Vitamin D in our bodies)
6. Vitamin B12 (communities especially in India are vegetarian and hence low in Vitamin B12)
7. HbA1c – It is a gold standard test for diabetes today, independent of daily fluctuation of glucose in our blood. There is a dramatic rise of diabetes all over the world and is happening in younger population too.
8. Age appropriate Cancer screening tests (for example: Prostate- specific antigen (PSA) test for cancer and PAP Smear Test for screening Cervix cancer)
9. TSH (Thyroid stimulating hormone)
10. Although not blood test but these tests are gold standards for our health:
 - Body Mass Index (BMI)
 - Blood Pressure
 - Urine Dipstick test, which is not a blood test, but easy to do at home, should also be done yearly.

Chapter 10

I am sure you want to know – “How much they cost?”

In India, Gold Standard Blood Tests, usually cost between INR 3000 to INR 5000. These tests usually come as a package.

An approximate cost of these tests is as follows:

Test Name	India (In INR)	USA (In \$)
CBC	INR 350	\$15
CMP	INR 2000	\$45
Kidney Function Test	INR 800	\$25
Lipid Profile Test	INR 500	\$57
TSH	INR 380	\$34
HbA1c	INR 440	\$19
Vitamin D 25 Hydroxy	INR 1550	\$45

We really cannot compare the buying power of rupees and dollars. One may be very poor with 2000 dollars per month in USA and the same person can be very rich with INR 2000 per month in India.

Chapter 11

In India we do not need a doctor to order a blood test; It can lead to serious medical mistakes

Believe it or not, in India, we do not need a physician for these tests. We can directly request the lab to collect our blood for the test.

It makes our life easy, but it is totally a wrong practice. We in medical practice strongly discourage this.

We should first visit a M.D medicine/physician, especially when we are feeling okay. We need to do these tests just once a year, if the doctors says everything is okay with our gold standard blood test reports.



Chap11Fig1

Time has come that we must save 25% of our income for our family (healthcare) each month.

Money can be used this month or each month in future but exclusively for health issues only.

Trust me, sounds extreme, but it is absolutely necessary.

Healthcare includes:

- Various blood tests
- Radiology (if needed)
- Dental medicines
- Pregnancy
- Any unwanted health issues
- Health prevention for travel
- Money we will need from age 18 to age 85 in outpatient form.

Biggest reason in India that nobody goes to a doctor till they are really sick is “money”.

Outpatient insurance for doctors, medicines, tests, vaccines is not going to come to India. Any insurance company will go bankrupt with no check and balance in India.

Chapter 12

Things are different in USA

One absolutely requires a M.D or physician to write the tests for us. Reason is simple common sense. What we do with our:

- Out of range, or
- Normal, or
- Abnormal, or
- Even critical lab tests (Critical here means life threatening)

For example: Potassium level of more than 6 is critical. WBC of 50,000 is life threatening.

Thing is, whether USA or India, only a physician can take responsibility, for blood test results, especially if there is any deviation from normal baseline.

At least in USA, doctors can explain you risks and benefits of intervention to improve health once you visit them.

A physical visit to a doctor's clinic (when we have spent our time and money) sees long-long way to keep us healthy.

We all want you to be healthy and we want you to pay us to keep you healthy, "*we can do that*" – I assure you!

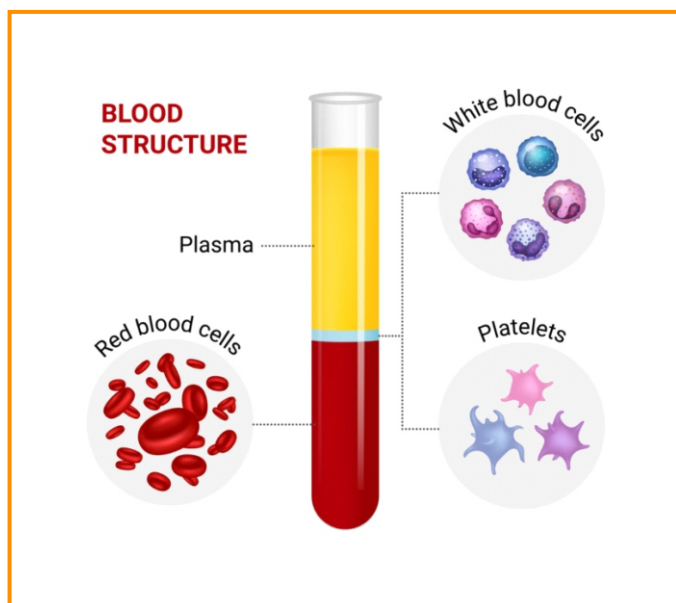
Chapter 13

Complete Blood Count (CBC)

CBC or Complete Blood Count tells us the amount of blood and different amount and type of blood cells in our body (blood circulation).

CBC includes:

- Our white blood cells,
- Red blood cells, and
- Platelets



Chap13Fig1

CBC includes:

- The hemoglobin (Hb) (amount of blood); and
- Hematocrit (HCT) (% of blood)

And the parameters of the red blood cells to include:

- “Mean corpuscular volume” (MCV),
- “Mean corpuscular hemoglobin” (MCH), and
- “Mean corpuscular hemoglobin concentration” (MCHC)

which help us to differentiate,

What is causing anemia when we have a decrease in Hb/HCT.

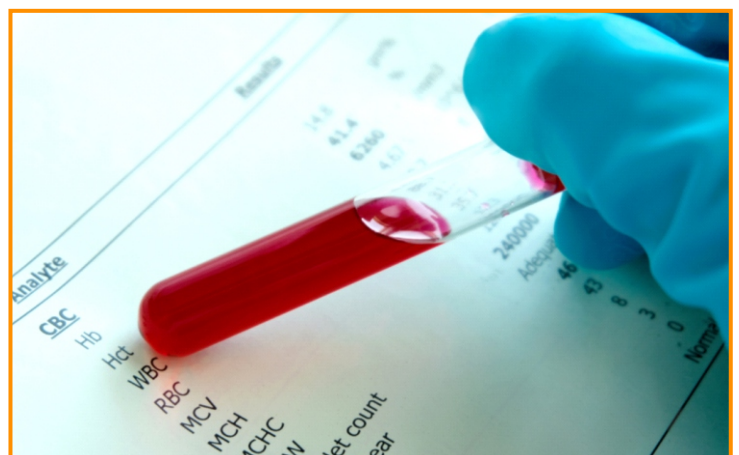
When we have a low amount of blood in our body, we need to find out the reason for it. It happens so slowly, that there may not be any symptoms for years!

RBC parameters help to figure out:

- Is it because of the lack of iron; or
- is it because of the lack of vitamin B12; or
- is it because of the lack of folic acid?

Deficiency of iron (Fe) is most common cause of anemia all over the world.

The parameters given in the Complete Blood Count (CBC) really help us to point in the direction that what could be the reason for anemia!



Chap13Fig2

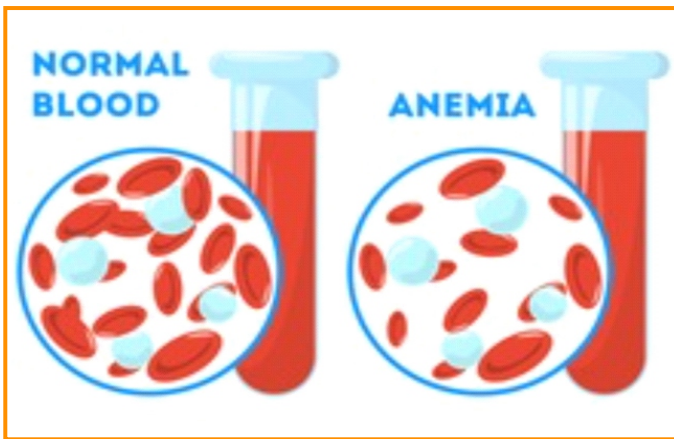
Chapter 14

Low Hemoglobin/Hematocrit (moderate anemic) can lead to heart failures over years

Think about it!

Trust me if a young girl remains anemic for several years, she may not have any symptoms, but she will feel tired easily and because of moderately severe anemia her heart can fail over years (yes, it is true)!

With the normal amount of blood, a young woman can feel very energetic and a young woman can feel the dramatic difference if you correct the anemia in other woman with low amount of blood.



Chap14Fig1



Chap14Fig2

Absolute anemia over years can lead to heart failure.

Our body needs:

- Food
- Energy
- Oxygen, and
- The heart pumps the blood to lungs and various parts of the body so that food and oxygen is carried to every part of our body.

If there is not enough blood, then heart has to work harder just like a hand pump.

If only small amount of water is coming, we have to pump harder and for a longer time to fill up with water with hand pump.

Same principle applies to the heart also. Over years, the heart muscle becomes thick and has a tendency to fail because heart itself has a very limited blood supply.

As heart muscle becomes thick it cannot increase its own blood supply, so overworked heart becomes exhausted and starts failing.

We can break this vicious cycle and detrimental effect on heart by correcting the amount of blood in our body, provided that we are aware of it.

Chapter 15

Fe deficiency/anemia is most common in world and almost always in girls/women (rare in boys/men)

Almost universally, anemia happens in women/girls.

To see anemia in a young man is a very rare in our medical profession.

There is only one reason – that is – girls from a very young age, loose blood (iron) In their monthly cycle. Also, most of our foods are really very low in iron.



Chap15Fig1

Chapter 16

Comprehensive Metabolic Panel (CMP)

Comprehensive metabolic panel (CMP) or chemistry include:

- Kidney function test;
- Liver function test; and
- Lipid (cholesterol) profile to give us a proper analysis of the functioning of our body.

All these different types of Gold Standard Blood Tests are so important, that in this book we have gone through basic discussion and information.

Each of these tests deserve its own simple and to the point book.

Chapter 17

Kidney Function Tests, Glucose and Electrolytes

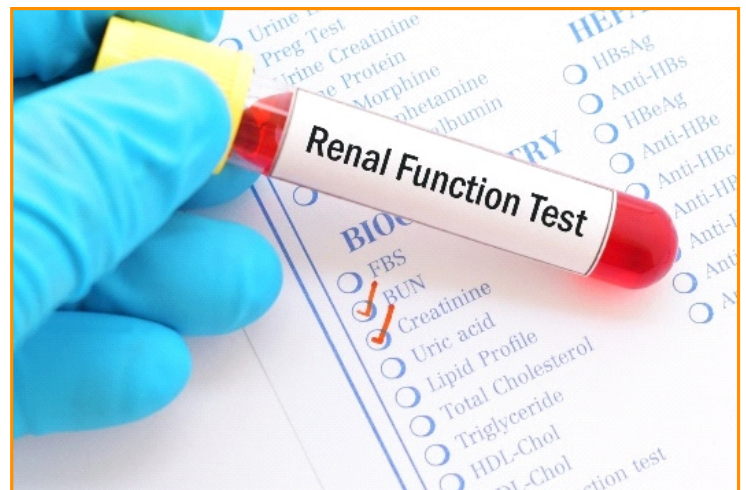
Think about it!

When our kidney starts failing, we really do not have much symptoms because even one kidney can do all the functions. Everyone knows for kidney transplant we need only one kidney. In other words, we can lose 50% of our kidney function without any symptoms in our routine life.

Kidney function tests include glucose and electrolytes, besides markers of kidney dysfunction:

- Creatinine
- BUN (Blood Urea Nitrogen)
- Glucose
- Sodium (Na⁺)
- Chloride (Cl⁻)
- HCO₃ (Bicarbonate)

These are very important markers of kidney functions. The number of these markers remains very stable in our body, especially the creatinine.

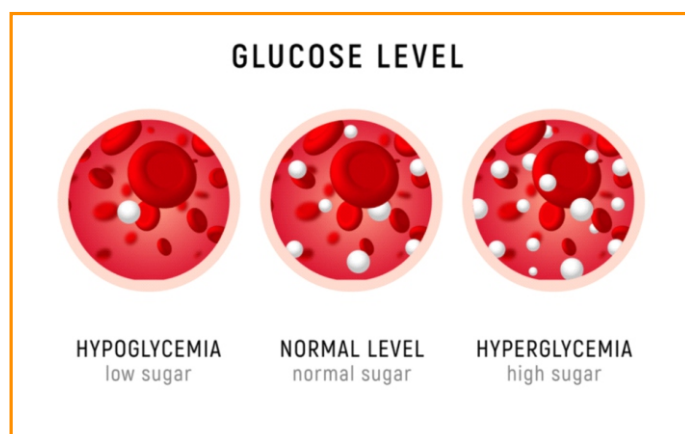


Chap17Fig1

Glucose:

Glucose is routinely done along with kidney function tests.

Glucose is the energy source for our body especially brain. Our body has to maintain a constant level of in the blood.



Chap17Fig2

We all know about “Diabetes” or “sugar” and have all heard about kidney failure and dialysis.

Electrolytes:

Electrolytes are also routine part of kidney function tests

Electrolytes include:

- Sodium,
- Potassium,
- CO₂ (bicarbonate or carbon dioxide), and
- Chloride.

Normal range for potassium varies between 4 to 5 and kidney really maintains the level of potassium in our body.

In the electrolytes, potassium dominates in our day to day medical progression.

Actually, all electrolytes are very important for our body. But high K^+ or low K^+ is most dangerous and creates a medical emergency.

Both high K^+ or low K^+ can cause heart failure. In case of high K^+ , we must rush to a hospital.

In case of low K^+ , ask the patient to eat one banana. One banana is equal to one pill of K^+ .

Potassium, calcium and chloride are also important for the electrical conductivity of the heart and nerves.

Chapter 18

Liver Function Test

There is no question

- ALT ('alanine aminotransferase') (formerly SGPT) and
 - AST ('aspartate aminotransferase') (formerly SGOT)
- are the most well-known markers for liver function in our medical profession.

Think about it!

If we drink alcohol or we take any medicine or anything that hurts the liver, it raises ALT and AST.

Liver function test includes:

- ALT (alanine amino transferase) (formerly called Serum Glutamic Pyruvic Transaminase)
- AST (aspartate amino transferase) (formerly called Serum glutamic oxaloacetic transaminase)
- ALP (alkaline phosphatase)
- Total bilirubin

Increased bilirubin is responsible for yellow color or jaundice as we all know it, which is basically a sign that something is really wrong with our liver.



Chap18Fig1

Whatever we eat, digested food, along with other metabolic products, goes through the liver and the liver then synthesizes albumin.

If albumin is normal then it shows that our digestive system is functioning well.

These four tests are the most important tests and reflection of how well our liver is working.

Protein:

The total protein is very important for our body and especially albumin which is synthesized only by the liver.

If we are not making enough albumin, then something is not right:

- either with our digestive system
- either we are not eating enough protein,
- either our liver is not working well,
- either we are losing protein in our urine.

Either of these conditions are not good for our health and can easily reduce several years from our life, if not corrected as soon as possible.

Globulins:

Globulins are important part of proteins needed by our body. Most of the time we do fine.

They represent our immunoglobulins (all are called antibodies).

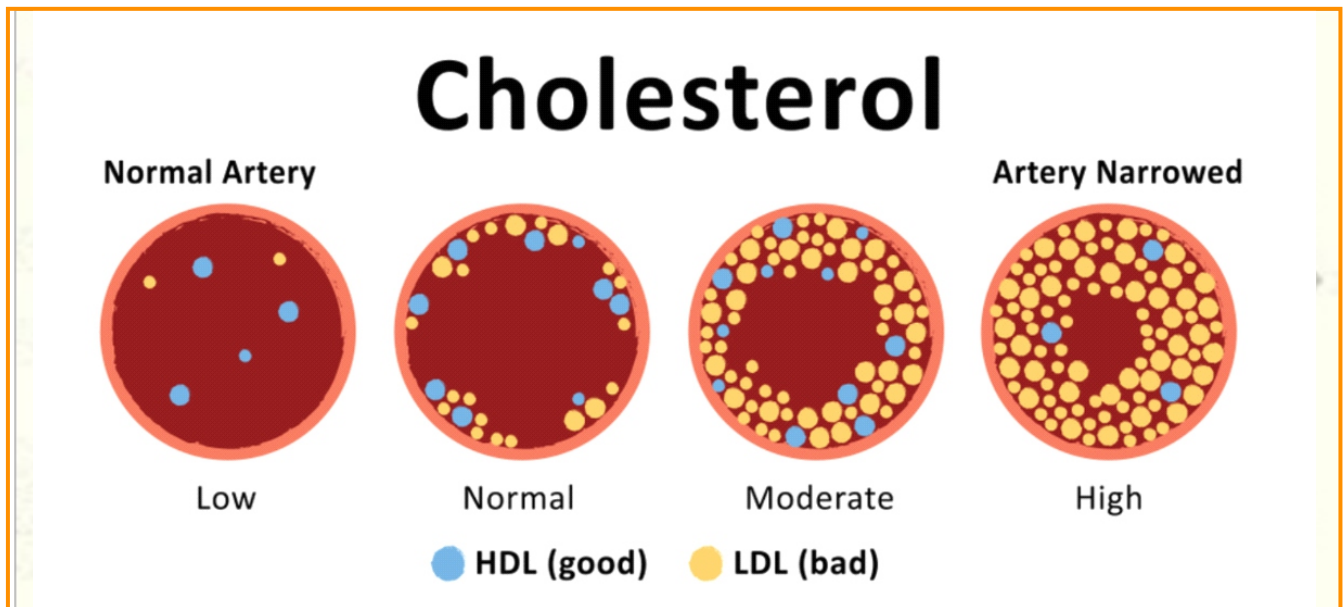
Chapter 19

Lipid Profile

We all talk about Cholesterol – Good Cholesterol (HDL) and Bad Cholesterol (LDL).

HDL is High Density Lipoprotein (fancy word for good cholesterol) and LDL is Low Density Lipoprotein (fancy word for bad cholesterol).

Cholesterol is essential for life, but increased bad cholesterol is not good. Low Density Lipoprotein (LDL) should be low. Bad cholesterol clogs our blood tubes everywhere (including our heart tubes) and can cause a heart attack.



Chap19Fig1

Chapter 20

Vitamin B12, Vitamin D and Calcium

Following tests should also be considered as part of the Gold Standard Tests and must be done every year.

Think about it!

Doctors in England were puzzled to see anemia in patients coming from India. Finally, doctors figured it out that it is because of their vegetarian diet they are deficient in vitamin B12 which is stored in our body

Vitamin B12:

In other words, in this day and age, we should definitely screen ourselves for vitamin B12, especially if one follows a vegetarian diet.

Fe, B12 and Folic acid are absolutely essential for our blood synthesis.



Chap20Fig1



Chap20Fig2

Vitamin D:

We all know Vitamin D and its association with “sun”.

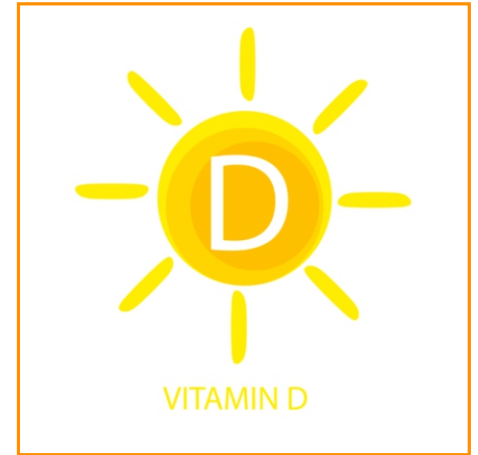
Vitamin D test today has become a very important test as we do not get enough of sun these days and from a very young age, literally, we all, children and grown-ups are deficient in Vitamin D.

Think about it!

I was on a trip to India in 2004, when an article in Hindustan Times – (renowned newspaper in India, by a renowned pediatrician), caught my eye. It stated that almost every child in India is Vitamin D deficient and at high risk of developing rickets (bowed bones).

I agree! It is so true!

For vitamin D, solid standard test is 25-hydroxy vitamin D (also known as calcidiol).



Chap20Fig3

The optimal levels are usually within 20 to 40 ng/mL. Any time vitamin D levels are below 20 ng/mL, we consider it a deficiency of vitamin D.

So, grown-ups who do not get the sun exposure all year around (which pretty much include all of us) should supplement their diet with vitamin D3 (also called calciferol)

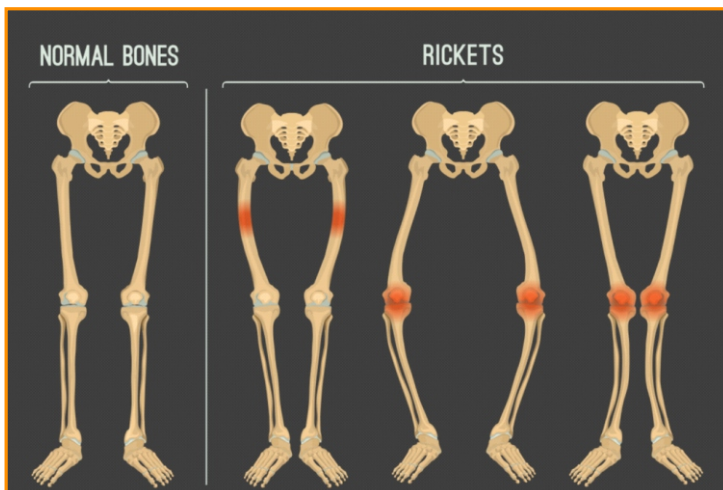
Think about it!

Iron (Fe), Vitamin B12, Folate, Vitamin D are relatively very cheap in the market and easily available and absolutely safe to consume.

Globally, now vitamin D deficiency is becoming more and more common as indoor jobs are becoming more and more popular.

Vitamin D is very important in maintaining health of our bones and also the calcium and phosphorus balance in our body which is required for our bones.

Vitamin D deficiency in children leads to rickets (bowed legs) and lack of vitamin D leads to osteomalacia in adults.



Chap20Fig4

Basically, there is demineralization of the bone which leads to

- Bone pain
- Tenderness
- Muscle weakness
- Fracture
- And of course, difficulty in walking.

All these years since I have been in the USA, I see that the milk here is fortified with vitamin A and vitamin D.

There are different forms of vitamin D available in the market today. Medical literature recommends vitamin D3 which is called calciferol which comes in different unit capsules.

Once we realize that we are vitamin D deficient then we should take vitamin D supplements in consultation with the doctor and then, probably we should check our vitamin D levels again, after taking three to four months of vitamin D supplements.

Think about it!

Calcium is chalk which is used in schools. The only difference is that the chalk we use is medically pure. Vitamin D controls calcium absorption in our body. However, very little amount is absorbed and hence we must take 2gm a day for a healthier body.

Vitamin D control the absorption of calcium in our body.

Vitamin A:

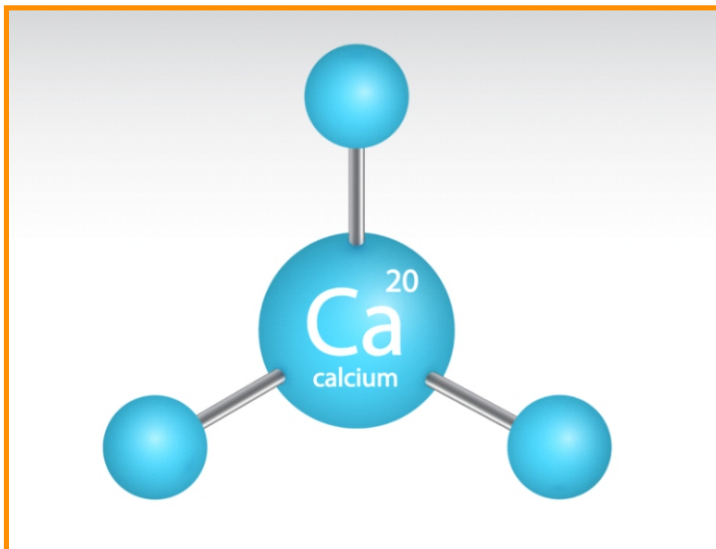
We also do not get enough amount of Vitamin A.

Lack of Vitamin A was a leading cause of blindness in 1970's and 1980's in India. Today, diabetes is the number one cause of blindness all over the world.

Calcium:

Think about it!

Usually, the body will do anything to maintain ionized calcium within the human system. It will breakdown our bones to release calcium in our body because body needs calcium for the electrical conductivity in the body.



Chap20Fig5

Calcium is very important, not only for our bone health, but also very important (ionized calcium) for the electrical conductivity of our heart.

Chapter 21

HbA1c

Suffice is to say that HbA1c is today a Gold Standard Blood Test for diabetes and not really fasting blood sugar.

Why?

Because HbA1c:

- Does not require fasting,
- It tells us the 3-month average sugar (we also call it the 3-month test for this very reason)
- If increased it also tells us “please wake up” or *you are going to get diabetes in the coming years*. With years, your kidney will fail, you will have heart attack and you will go blind!
Please do something!

Chapter 22

Thyroid Stimulating Hormones (TSH)

We should definitely do thyroid hormone sufficiency test once a year.

The test which we use is **Thyroid Stimulating Hormones (TSH)**.

Doctors love this test as it is:

- very sensitive; and
- very specific.

Why we need to check on our thyroid hormone?

Because thyroid hormone needs iodine. There is not enough iodine in the soil, especially in the Himalayan region in India.

In the USA, now everyone uses iodized salt (iodine (I₂) and sodium chloride (NaCl) added to normal salt).



Chap22Fig1

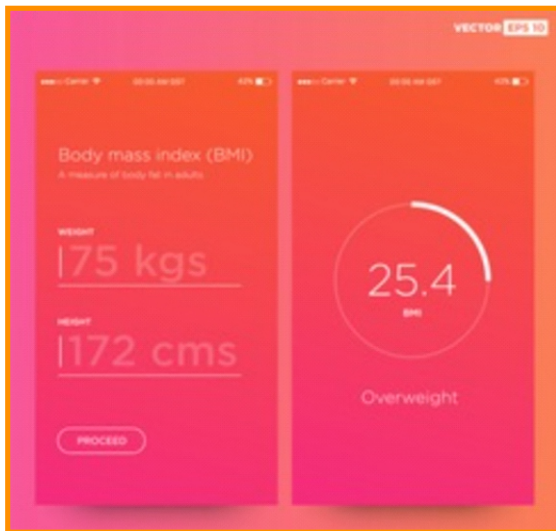
Chapter 23

Body Mass Index & Blood Pressure

Although these are not blood tests. But they can be easily done by any of us at home.

For calculating Body Mass Index (BMI) one needs:

- our weight;
- our height; and
- a mobile app (Just 1 out of > 1000 available on android and apple platforms)



BMI now is a “gold standard” for us to assess if anyone is:

- Normal weight, or
- Overweight, or
- Obese

Blood Pressure:

Our normal Blood Pressure (BP) is 120/80.

A 5-degree increase will cut down our life by 5 years.

BP machines are easily available on Amazon.in or Amazon.com for a very nominal price:

- These are simple to use,
- They are very accurate,
- Next time you visit a physician please take your machine with you and physician will double check your machine.



Chap23Fig2

Chapter 24

Age appropriate Cancer screening tests

Not blood tests but these are Appropriate Cancer Screening Tests. Statistically proven to be life-saving if done as advised.

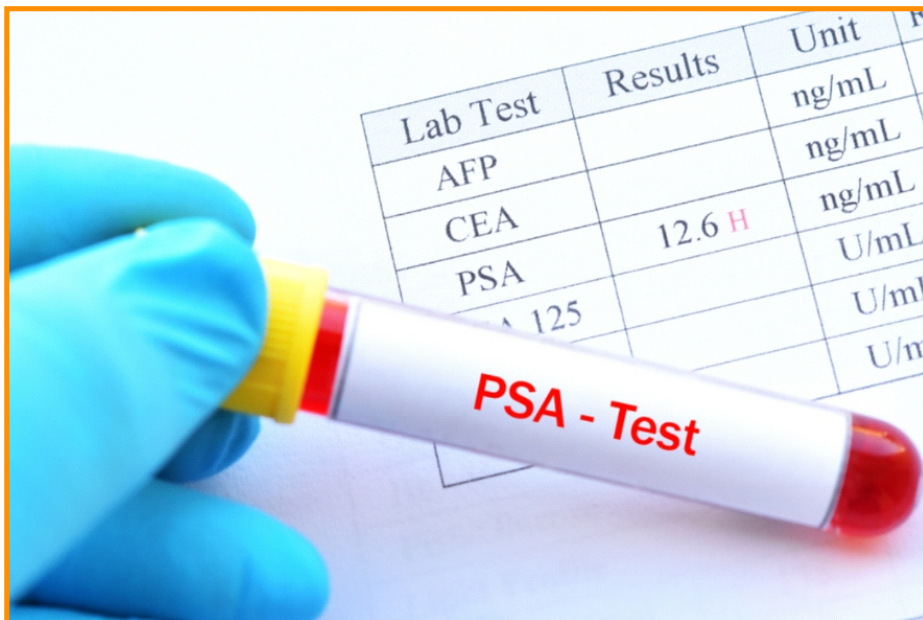
It is a very important gold standard test.

For example:

- Mammogram for breast cancer
- Prostate-specific antigen (PSA) test for prostate cancer

Prostate-specific antigen (PSA) test has become popular for diagnosing prostate cancer. Prostate actually is a very slow growing tumor.

By the way, in a medical research, biopsies of prostate glands from humans who were 100 years old were taken, all biopsies 100% had small foci of prostate cancer in the prostate.



Chap24Fig1