BACK TO BASICS.

TESTOSTERONE

THE COMPLETE GUIDE

How to get tested properly, what every number on the page means, and what to fix before anyone writes you a prescription.

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BACK TO BASICS

WHAT'S INSIDE

READ THIS BEFORE ANYTHING ELSE

This book does not diagnose you and it does not treat you. Testosterone is a prescription medicine and a controlled substance, and every decision in here belongs to you and a doctor. What this gives you is the ability to walk into that room knowing what to ask for and what the answers mean.

01

START HERE

Two men need this book, and they are in opposite situations.

The first man feels it slipping. Tired by three, short with his wife, drive gone, softer round the middle no matter what he does. Somebody told him it sounds like low testosterone. He has never had it measured.

The second man is already on it. He got a script, he takes his shot, and he felt good for a while. Nobody has run a full panel in a year. He does not know his own numbers.

Both men are guessing. One about whether he has a problem at all. The other about a drug he will probably take for the rest of his life.

THREE THINGS TO KNOW BEFORE PAGE FOUR

- **Most men with those symptoms test normal.** Confirmed low testosterone runs at roughly two to seven men in a hundred aged 30 to 55.
- **One blood draw proves nothing.** A diagnosis needs two morning tests, and close to a third of low results come back normal on the second.
- **The biggest lever is free.** Body fat and sleep move this number further than anything you can buy.

Nobody here is against treatment. Plenty of men need it and it changes their lives. What costs men is starting it, or staying on it, without ever knowing the numbers.

02

WHAT TESTOSTERONE DOES

Testosterone is the main male sex hormone. Your testes make nearly all of it, on instructions sent down from your brain, and the amount rises and falls through the day. It runs highest in the morning, which matters more than you would think.

WHAT IT GENUINELY DRIVES

- **Sex drive and erections.** The clearest link of the lot, and the symptoms that track measured levels most closely.
- **Muscle and bone.** How much lean tissue you hold and how dense your skeleton is.
- **Red blood cell production.** Which is why too much of it thickens your blood.
- **Where you store fat,** particularly around the middle.

> **THE PART NOBODY SELLING IT WILL TELL YOU**
>
> Tiredness, low mood and brain fog are the three complaints used hardest in advertising and the three that predict a low result worst. Researchers followed more than three thousand men and checked which symptoms tracked measured testosterone. The sexual ones held up. Fatigue and mood did not.

WHERE IT COMES FROM

Your brain sends two signals down, called **LH** and **FSH**. LH tells the testes to make testosterone. FSH tells them to make sperm. Remember those two names. On page 9 those two numbers tell you whether your problem can be repaired or only replaced.

> **ESTROGEN IS NOT THE ENEMY**
>
> Men make estrogen too, out of testosterone, and they need it. It protects your bones and it is part of your sex drive rather than the opposite of it. Crushing it down does real harm. Hold that thought until page 12, because it sits behind one of the most common mistakes made to men already on treatment.

03

LOW, OR SOMETHING ELSE

Everything low testosterone feels like, other things feel like too.

The honest problem with this subject is that the symptoms are real but not specific. They point at a dozen possible causes, and testosterone is only one of them.

THE SAME PICTURE, OTHER REASONS

CAUSE	WHY IT LOOKS IDENTICAL
Sleep debt	Flattens drive, mood and energy, and lowers testosterone on its own
Sleep apnea	You are in bed eight hours and rested for none of them
Depression	Low drive, low mood, no interest. Reads exactly the same from outside
Thyroid trouble	Cold, tired, slow, gaining weight, one cheap blood test away
Iron problems	Fatigue and breathlessness. Both too little iron and too much
Alcohol	Wrecks sleep, mood and the hormone itself
Blood sugar	The afternoon crash men blame on age
Carrying too much fat	Genuinely lowers testosterone, and is the most common reason it is low
Certain medicines	Opioids especially, plus steroids and some antidepressants
Long term stress	Raised cortisol works against testosterone at every level
Steroids you used before	Can suppress your own production for years afterwards

Several of these show up on the same blood draw as your testosterone, which is why page 7 asks for more than one number.

THE QUESTIONNAIRE IS NOT A DIAGNOSIS

The screening quiz used in most clinics catches nearly everyone who has the problem, but it is only about 60 percent specific. In plain terms, **roughly four in ten men who screen positive do not have low testosterone.** It runs the other way too. Among men over 50 who genuinely do have low levels, almost half have no symptoms at all. A quiz tells you to go and get tested. It never tells you the answer.

04

HOW TO GET TESTED PROPERLY

More men are misdiagnosed by a badly taken blood test than by anything else in this book. The rules are simple and almost nobody follows all of them.

1. **Early morning.** Between 7 and 10 am. In men your age the level runs **20 to 25 percent lower by late afternoon.** In one study, seventeen men looked deficient on an afternoon draw and tested normal on every single morning visit.

2. **Fasted.** Food drops it hard and fast. After a normal mixed meal, **more than half of the men tested fell below the cutoff** for a few hours. Eat breakfast before your blood draw and you can hand yourself a diagnosis.

3. **Twice, on two separate days.** One low reading is not a diagnosis. Around a third come back normal on the retest.

4. **Same lab, same test, both times.** Different machines give different answers on the same blood. Comparing across labs is comparing nothing.

5. **Not while you are ill or wrecked.** Testosterone can halve within a day of injury, surgery or serious illness, and comes back on recovery. A run of bad nights or a hard training block does a smaller version of the same thing.

> **ASK FOR ONE SPECIFIC THING**
>
> Ask whether the lab uses **mass spectrometry** rather than the standard automated test. That method is more accurate and the research runs on it. If your clinic cannot tell you which they use, that is worth knowing on its own.

WHAT MAKES A RESULT MEANINGLESS

An afternoon draw. A single test. A result taken the week you had flu, or the week you slept five hours a night. Any of those and you are making a lifelong decision off a bad photograph. Keep the two draws at least two days apart.

> **WRITE YOUR OWN NUMBERS DOWN**
>
> Get a copy of the report every time, not a phone call telling you it is fine. Fine is not a number. The trend over three years tells you more than any single morning will.

05

THE PANEL

Most men get one test. Total testosterone, once, and a verdict. Here is what a proper workup contains and what each line is for.

TEST	WHAT IT TELLS YOU
Total testosterone, twice	The headline number. Means little on its own
LH and FSH	Whether the fault is in the testes or the brain. Changes everything
SHBG	The protein that holds testosterone captive. Explains a normal number with real symptoms
Albumin	Needed to work out free testosterone properly
Free testosterone	The part available to you. Calculated, not measured directly
Estradiol, sensitive	Your estrogen. Only worth running on the sensitive assay
Prolactin	Rules out a pituitary tumor. Rare, treatable, disastrous if missed
Full blood count	Hematocrit and hemoglobin. The main safety marker on treatment
Iron and ferritin	Iron overload is a real and reversible cause
PSA, over 40	Prostate baseline before anyone starts you on anything
Thyroid, HbA1c, lipids	Not part of the hormone workup. Rule out the copycats on page 5

Ask for all of it in one draw. Splitting it across three appointments means three mornings, three fasts, and results taken weeks apart that cannot fairly be compared.

If your doctor will not run the full list, most of it can be ordered privately for less than the cost of a month of most treatments. Take the results back to him rather than acting on them alone.

THE TWO MOST OFTEN SKIPPED

LH and SHBG. Skip LH and nobody knows whether your problem could have been fixed instead of medicated. Skip SHBG and a man with a normal looking total and barely any free testosterone gets sent home and told he is fine.

06

READING YOUR NUMBERS

TOTAL TESTOSTERONE

Measured in nanograms per deciliter. The reference range built from healthy young men, using the accurate method, is **264 to 916 ng/dL.**

YOUR RESULT	WHAT IT MEANS
Under 300, twice	The usual cutoff for a diagnosis, with symptoms
300 to 400	The gray zone. Free testosterone and SHBG decide it
Over 400 with symptoms	Look at page 5 again. Something else is going on
Under 150	Needs a proper investigation, including a scan of the pituitary

FREE TESTOSTERONE AND SHBG

Most of your testosterone is bound to a protein called SHBG and cannot be used. Free testosterone is the small share that can. **High SHBG makes a healthy looking total useless to you.** Low SHBG does the reverse, and a man can feel fine on a total that reads low.

ONE NUMBER TO REFUSE

There are two ways to get free testosterone. The good way calculates it from your total, your SHBG and your albumin. The cheap way measures it directly with what is called an analog assay, and it is unreliable enough that the specialists who write the guidelines call it inaccurate. If your report shows free testosterone but no SHBG next to it, you are almost certainly looking at the unreliable one.

ESTRADIOL

Ask for the **sensitive** estradiol test. The standard one was built for women and reads unreliably at the levels men run at. Plenty of men are medicated to lower an estrogen number their lab could never measure accurately in the first place.

NORMAL IS NOT ONE NUMBER

Labs print different ranges because they use different machines, and a result near the bottom at one lab can sit mid range at another. Your number means something next to your symptoms, your SHBG and your last three results. It means very little on its own.

07

WHERE THE PROBLEM SITS

The most important page in this book, and the test behind it costs almost nothing.

Your testosterone is low. There are only two places the fault can be, and **LH tells you which.**

IF YOUR LH IS	THE FAULT IS	WHAT THAT MEANS
High	In the testes	The brain is shouting and the testes cannot answer. Replacement is the treatment
Low or normal	In the brain	The signal is not being sent. Often fixable, and the cause must be hunted down first

A normal LH alongside a genuinely low testosterone is not reassuring. It is abnormal, because that LH should have risen.

THINGS WORTH HUNTING BEFORE ANYONE MEDICATES YOU

- **Carrying too much fat.** The most common reason in your age group, and it reverses.
- **Opioid painkillers.** Pooling fifty two studies, **roughly six in ten men on long term opioids have low testosterone.** It is the least asked question in the room.
- **Sleep apnea and long term sleep debt.**
- **Heavy drinking.**
- **A pituitary tumor,** which prolactin picks up.
- **Iron overload,** which ferritin picks up. Rare, and it damages permanently if missed.
- **Steroids you took years ago,** whether or not you have mentioned them.

> **WHY THE ORDER MATTERS SO MUCH**
>
> If the fault is in the brain and you want more children, there are treatments that lift your own production and keep your fertility. Start testosterone first and that door closes, and the underlying cause becomes far harder to find. **Once you begin, your own production shuts down.** That is not a reason never to do it. It is a reason to know which problem you have before you start.

08

WHAT MOVES IT

Two things move this number properly, and both are free.

1. LOSING BODY FAT

The biggest lever there is. Pooling twenty four studies, men who lost weight through diet raised total testosterone by roughly **80 ng/dL,** and the more weight came off, the bigger the rise. Fat tissue converts testosterone into estrogen and interferes with the signal from the brain, so losing it fixes the cause rather than covering it.

> **THE FINDING THAT SHOULD CHANGE HOW YOU THINK ABOUT AGE**
>
> The decline everyone accepts as part of getting older mostly is not. When researchers measured hundreds of men over 40 who were in genuinely good health, **testosterone did not fall with age at all.** What it fell with was body weight, at around 10 ng/dL for every point of BMI. Men who stay lean largely keep their levels. The years get blamed for what the waistline did.

2. SLEEPING PROPERLY

Healthy young men were cut to under five hours a night for eight nights. Their daytime testosterone dropped **10 to 15 percent,** which the researchers put at the equivalent of ageing 10 to 15 years. Eight nights. Nothing else changed.

Sleep debt is also why plenty of men test low who are not. Turn up for a morning blood draw after a bad month and the number you get is your sleep, not your baseline.

> **THE HONEST THIRD ITEM**
>
> Cutting heavy drinking. Alcohol suppresses this at both ends of the system and it is a recognized reversible cause. There is no clean study putting a number on it, so nobody should be quoting you one, but it belongs on the list.

09

WHAT DOES NOT

Five things sold hard to men in your position. None of them do what the label says.

1. TESTOSTERONE BOOSTERS

Thirteen herbs were reviewed across thirty two trials. Only nine showed any rise at all and only six of the studies were well run. The two with any real support, ashwagandha and fenugreek, moved the number about 50 to 100 ng/dL in young men over a couple of months. Losing twenty pounds beats that, and sleeping eight hours instead of five beats it by more.

2. LIFTING TO RAISE YOUR TESTOSTERONE

Eleven trials, four hundred men. The effect of training on resting testosterone came out at **zero.** The spike after a hard session is real and it is gone within hours. Training raises your levels the slow way, by taking fat off you and helping you sleep. Lift for every other reason. Not for this one.

3. A CPAP MACHINE

Two separate reviews found treating sleep apnea does not raise testosterone. The link between apnea and low levels is real, but it runs mostly through body weight. Treat the apnea because untreated apnea will hurt you. Do not expect the hormone to follow.

4. VITAMIN D

The often quoted study was a side finding in a weight loss trial. When it was tested properly, with a hundred men and a real control group, there was no effect on testosterone at all. Fix a genuine deficiency because your bones need it. Not for this.

5. ZINC, UNLESS YOU ARE SHORT OF IT

The whole idea rests on a study of four men in one arm and nine in the other. Correcting a real deficiency is sound. There is no evidence that piling zinc into a man who already has enough does anything, and too much of it causes its own problems.

HOW TO SPOT THE NEXT ONE

If a product claims to raise your testosterone, ask what it was compared against, in how many men, and for how long. Almost every one of these traces back to a study of twenty men over six weeks, funded by the people selling it.

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ALREADY ON TRT

If you are on it, this is your page. Five things go wrong most often.

1. NOBODY IS WATCHING YOUR BLOOD

Testosterone thickens your blood. In one group of men followed for three years, **57 percent went over a hematocrit of 46 and 5 percent went past 54,** where the guidelines say to act. Only half of those crossed the line in the first year, so a clean set of labs in year one means nothing about year three. This needs checking at three to six months, at twelve months, and then every year for as long as you take it.

2. GIVING BLOOD TO FIX IT

Standard advice in every forum, and it is not supported. There is no evidence that donating blood makes this safer, and it strips your iron while it is at it. The guidelines say to **lower the dose.**

3. BEING MEDICATED FOR AN ESTROGEN NUMBER NOBODY COULD MEASURE

Aromatase inhibitors get handed out to bring estrogen down. No guideline recommends using them routinely, and the standard estrogen test cannot read male levels accurately anyway. So the drug is often prescribed off a number that was never reliable, to fix something that was probably not a problem, and men end up with sore joints, no drive and thinning bones.

4. CHASING A NUMBER INSTEAD OF A LIFE

The guidelines aim for the middle of the normal range, roughly **450 to 600 ng/dL.** Nobody who writes them recommends running you at 900 or 1,200, and no trial shows better outcomes up there. What you get instead is thicker blood and more side effects.

5. TREATING THE SHOT AS THE WHOLE PLAN

Testosterone does not make you lean, and it does not make you disciplined. Men who fix their sleep, their food and their training alongside it get the result they were promised. Men who only take the shot get a better blood test and the same life.

> **YOUR MINIMUM EVERY YEAR**
>
> Total testosterone, hematocrit and hemoglobin, and PSA if you are over 40. Plus a real conversation about how you feel, which no lab prints.

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BEFORE YOU START

If it turns out you do need it, that is a decision worth making with your eyes open. Five things men are not told often enough.

1. IT IS ALMOST ALWAYS FOR LIFE

Take it and your own production shuts down. Stop and you may spend months feeling worse than you did at the start, sometimes longer. This is a decision to keep making every month for decades, not a course of treatment.

2. IT WILL AFFECT YOUR FERTILITY

Around **four in ten men on testosterone stop producing sperm altogether,** and most of the rest drop severely. It usually recovers after stopping, with most men back within a year, but the good recovery data comes from young healthy men on short courses. If you want more children, say so before you start, because there are other routes that protect it.

3. THE HEART QUESTION IS BETTER THAN IT WAS, AND NOT SETTLED

The big trial, five thousand men over three years, found **no increase in heart attacks or strokes.** That was real reassurance after a decade of worry. The same trial also found more irregular heart rhythms, more blood clots on the lung, and more broken bones in the men taking it. It tested a gel at a normal dose in older men with confirmed low levels. It does not clear injections, high doses, or men who never needed it.

4. SOME MEN SHOULD NOT TAKE IT AT ALL

Breast or prostate cancer, a raised PSA, untreated severe sleep apnea, a hematocrit that is already high, or plans for a child in the next year. Any of those and the answer is no for now.

5. WHERE YOU GET IT MATTERS

A doctor who runs your full panel, checks you again at three months and adjusts the dose is doing the job. A website that ships after a two minute form and never asks for blood again is not. The second one is cheaper for a reason.

THE ONE THING WORTH DOING FIRST

If your problem sits in the brain rather than the testes, and the cause is your weight, your sleep or your drinking, then six honest months at those three will tell you something no lab can. Plenty of men who fix those never need the conversation. Plenty still do, and they walk in with a clean case rather than a guess.

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WHAT TO ASK YOUR DOCTOR

Take this page with you. Every question here is one a good doctor will be glad you asked.

IF YOU HAVE NOT BEEN TESTED

1. Can we do this fasted, before 10 am, and repeat it on a second day?
2. Can we run LH, FSH, SHBG and albumin alongside the total?
3. Can we add thyroid, iron, ferritin, HbA1c and a full blood count?
4. Does the lab use mass spectrometry or the standard automated test?
5. Can I have a copy of the full report?

IF YOUR RESULT COMES BACK LOW

1. Is my LH high, or low or normal? What does that tell us about where the problem sits?
2. What reversible causes have we ruled out?
3. What would six months of weight, sleep and drinking work do to this number?
4. Do I need a prolactin test or a scan?
5. If I want more children, what does that change?

IF YOU ARE ALREADY ON IT

1. What is my hematocrit now, and what was it before I started?
2. What level are we aiming for, and why that one?
3. When was my last full panel, and when is the next?
4. If I am on an estrogen blocker, what was the reason, and was it a sensitive estradiol test?

If you get brushed off. Told you are fine off one afternoon draw? You are allowed to ask for a fasted morning retest, and for LH and SHBG. If the answer is still no, get a second opinion. Do not buy it online instead.

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QUESTIONS

DOES TESTOSTERONE DROP ONE PERCENT A YEAR AFTER 30?

Across a population, roughly. In men who stay lean and healthy, barely at all. Weight gain does most of what gets blamed on birthdays.

MY CLINIC SAID 38 PERCENT OF MEN OVER 45 HAVE LOW TESTOSTERONE.

That figure comes from men who walked into a clinic, tested once, with no retest and no symptoms required. In the general population the confirmed rate is closer to two to seven in a hundred. It is the most quoted number in this industry and the least honest.

CAN I JUST ORDER MY OWN BLOOD TEST ONLINE?

You can, and it is a reasonable start. Follow page 6, get the full panel rather than the cheap one, and take the results to a doctor rather than a forum.

WHAT ABOUT CLOMIPHENE OR HCG INSTEAD?

They push your own production up, so they only do anything if the fault is in the brain rather than the testes. For the right man, prescribed and monitored, they are legitimate and they protect fertility. Sold online as a natural alternative for everybody, they are neither.

MY TOTAL WAS NORMAL BUT I FEEL TERRIBLE.

Get SHBG and calculated free testosterone. High SHBG can leave a man with a respectable total and very little he can use. If those come back clean too, the answer is on page 5.

IS IT WORTH IT IF MY LEVELS ARE FINE?

No. Taking testosterone you do not need buys you thicker blood, shut down production and a fertility problem, in exchange for nothing. Every trial showing benefit was run in men who were genuinely deficient.

I FEEL SHARP FOR THREE DAYS AFTER MY SHOT AND FLAT BY DAY SIX.

That fits how the drug behaves. A big dose at a long interval spikes you above normal, then drops you to the bottom of the range before the next one. Smaller, more frequent doses flatten that curve. The rise and fall is well established. Whether symptoms track it that closely has never been properly tested. Take the pattern to your doctor.

CAN I COME OFF IT ONCE I AM ON?

Sometimes, with a doctor and a plan, and it is rarely comfortable. Your own production takes months to return and some men never fully get back to where they started. Ask before you start, not after.

Remember this

GET TESTED. STOP GUESSING ABOUT YOUR OWN BODY.

MYRON JACKSON

BACK TO BASICS

WHEN YOU NEED MORE

This book tells you what to measure and what it means. It cannot read your results, weigh your history, or sit in the room with your doctor.

Most men who come to me have already tried. Gym memberships. Programs online. Meal plans. Some of it worked for a while. Most of it did not last. That was not a discipline problem. It was built for nobody in particular.

Back To Basics is built for one man at a time. We look at what is going on inside your body before we build anything. We work alongside your doctor, never around him. And you are never doing it alone.

1. Apply. It takes about two minutes.
2. We look at it, and you book a call.
3. We decide together whether this is the right fit.

APPLY NOW

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