

PREVIEW CHAPTER

THE STRETCH MARK

SECRET

The FIRST book to
explain the hormone
connection behind
stretch marks and
what you can do to
get rid of them!

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CHAPTER 2 – THE PUBERTY PARADOX

Due to the modern lifestyle in the Western World, more and more people become overweight or even obese. Not only adults are affected by this development.

1 in 3 children in America is now considered to be overweight, and 1 in 6 children is deemed to be obese. These are alarming trends.

While the majority of overweight adults is suffering from stretch marks, we can rarely see this problem in overweight children. Even if the child's skin gets stretched a lot by the fat deposits underneath it, the child rarely suffers from stretch marks. Instead, the skin looks healthy and elastic. This is a fascinating observation. And things get even more interesting.

The German physician Dr. Wolfgang Lutz noticed that in the vast majority of his patients, the onset of stretch mark development directly coincided with the beginning of puberty. He documented his findings in the German version of his book *Life Without Bread* called *Leben Ohne Brot – Die wissenschaftlichen Grundlagen der kohlenhydratarmen Diät*.

Overweight girls, who had perfectly intact connective tissue as children, would suddenly develop stretch marks at the very same time when they started having their first periods. The formation of stretch marks happened almost overnight.

We're not talking about individual cases here, but a majority of over 90% of Dr. Lutz's young patients.

The weight of the patients didn't change during this short time period either. Even though the girls were the same weight as before, they had suddenly developed stretch marks on their skin. It seemed like they came out of nowhere.

The overweight boys showed the exact same phenomenon. Boys don't get periods, but the onset of puberty can be tracked down to a change in the hormonal makeup of the body. The onset of sex hormone production correlated with the appearance of stretch marks.

A growth spurt during puberty as a cause of stretch marks can be ruled out since stretch marks appeared independently from a growth spurt. They also showed up on the skin way quicker than a growth spurt could stretch the skin.

In both sexes, the development of stretch marks directly correlated with the onset of sex hormone production.

How can this be possible? If sex hormones were responsible for stretch marks, why do many lean people not have striae then? Sex hormones alone are obviously not the single cause of the formation of stretch marks.

THE HORMONE CONNECTION

To find out about the hormonal difference between overweight and normal weight people, let's take a look at the hormonal balance of the body.

We can categorize most of our body's hormones into two different groups: *anabolic hormones* and *catabolic hormones*.

- **Anabolic hormones build up new tissues in the body.** They are responsible for the generation of new cells. Even as a fully grown adult, your body regenerates millions of fresh new cells every single second. You might have heard of professional bodybuilders who use anabolic steroids for massive muscle growth. These professional bodybuilders use a synthetic form of these hormones. Your own body produces natural amounts of these exact same anabolic hormones every single second to build new cells and replace old worn out cells.

- **Catabolic hormones, on the other hand, break down old body tissue as their primary function.** They make sure that old cells get properly broken down to make way for new cells. Without catabolic hormones, these old cells would start to malfunction and turn into cancer cells. It's important that old worn out cells get destroyed to make way for healthy young cells.
- **The second function of catabolic hormones is to provide us with energy during stressful situations.** Stress hormones are catabolic hormones. If you are in a fight or flight situation, these hormones break down tiny parts of your body tissue and convert it into energy which you can then use to run or fight. This mechanism was critically important in prehistoric times. Whenever a wild animal attacked our ancestors, they needed instant energy within split seconds.

One example of a rapidly acting catabolic hormone is *adrenaline/epinephrine*, which provides you with instant energy and makes you extremely alert. Think of a horror movie with some unexpected jump scare scenes in it. BOOM! Now you're super alert due to a sudden rush of adrenaline/epinephrine.

- **The third function of catabolic hormones is their anti-inflammatory activity.** *Cortisol* is the best known anti-inflammatory catabolic hormone. Doctors often prescribe it as cortisone cream against inflammatory diseases. Unlike the fast acting adrenaline/epinephrine, cortisol is a slow acting catabolic hormone. When cortisol is released, you won't feel an intense rush like the one you get from adrenaline/epinephrine, but cortisol is still a catabolic hormone that slowly breaks down body tissue.

Now let's take a look at the most important hormones from both the anabolic and the catabolic family:

Anabolic hormones:

- *HGH (Human Growth Hormone)*: Builds new cells, required for hair growth and tissue repair from injuries and normal aging
- *Insulin*: Transfers nutrients into existing cells and fills them up
- *Sex hormones* (e.g., *estrogen* or *testosterone*): Build up sexual characteristics, such as wider hips and breast tissue in women (estrogen), or broader shoulders and longer vocal cords in men (testosterone)

Catabolic hormones:

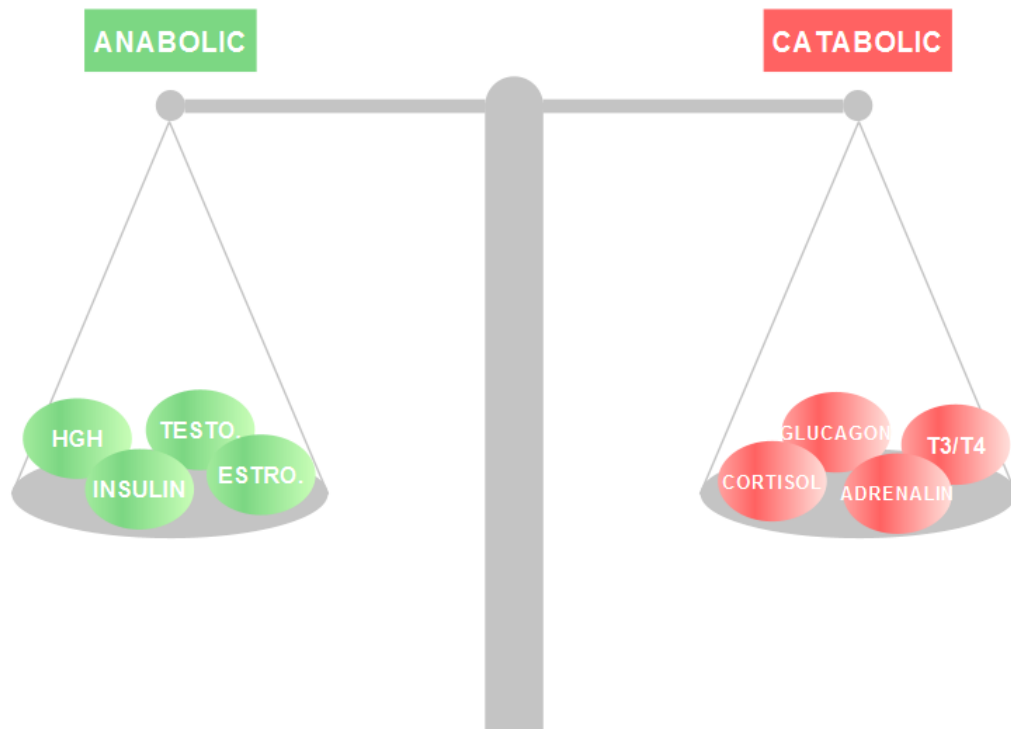
- *Cortisol*: Lowers inflammation, breaks down old cells (cortisol is the antagonist of human growth hormone HGH)
- *Glucagon*: Releases nutrients from cells and empties them (glucagon is the antagonist of insulin)
- *Adrenaline/Epinephrine*: Stress hormone that provides you with rapid energy by breaking down tiny bits of your body's tissue and converting them into sugar for immediate energy
- *T3&T4*: These are your thyroid hormones. They keep your metabolism running and your energy levels up. Thyroid hormones break down fat but not connective tissue.

There are many more hormones in your body, but I don't want to complicate things too much. This is already a lot of knowledge to digest.

It is crucial for your body always to keep a balance between anabolic and catabolic hormones.

Dr. Lutz illustrated this hormonal balance in his book *Leben Ohne Brot* with a picture of a balance scale. The English translation *Life Without Bread* also features this scale. (Unfortunately, many other aspects of the book didn't make it into the shortened English translation. So if you're interested in this book and you do speak German, you should get the original version of it.)

This scale shows you what a healthy hormonal balance looks like:



Anabolic and catabolic hormones create a hormonal balance in the body.

On the left side, you can see the anabolic hormones: Insulin, HGH (human growth hormone), and sex hormones (estrogen and testosterone).

On the right side, we have the catabolic hormones: Cortisol, glucagon, adrenaline, and T3&T4.

Everything looks fine. The scale is in balance, and the body runs smoothly. The weight of the anabolic hormones equals the weight of the catabolic hormones. Old cells get properly broken down by the catabolic hormones and are then replaced with new cells by the anabolic hormones.

This balance is called *hormonal homeostasis*.

The graphic shows what the hormonal balance of a healthy person looks like most of the time. Of course, this can temporarily change in different situations. For example, if this person watches a horror movie, adrenaline

will shoot up and be temporarily elevated. But it will go back to normal after a little while. Temporary imbalances are perfectly fine and nothing to worry about.

Things only get problematic when the scale gets out of balance for a prolonged period, and things become chronic. This is precisely what happens in the case of overweight people.

To understand the problem, we first need to focus on one hormone: Insulin. The purpose of insulin is to down-regulate blood sugar. I already told you that insulin transports nutrients into the cells. This is especially important for the blood sugar that's circulating in your blood vessels.

If blood sugar levels stay elevated for a prolonged time, they can destroy the blood vessels. Sugar can become highly acidic and can burn the blood vessels.

When blood sugar levels are too high for too long, small capillaries get destroyed. This is the reason why some people with diabetes can lose their eyesight or become deaf. The chronically elevated blood sugar destroys the tiny blood vessels in their eyes and ears, and as a result of this, the surrounding tissue dies off since no more nutrients are supplied to keep them alive.

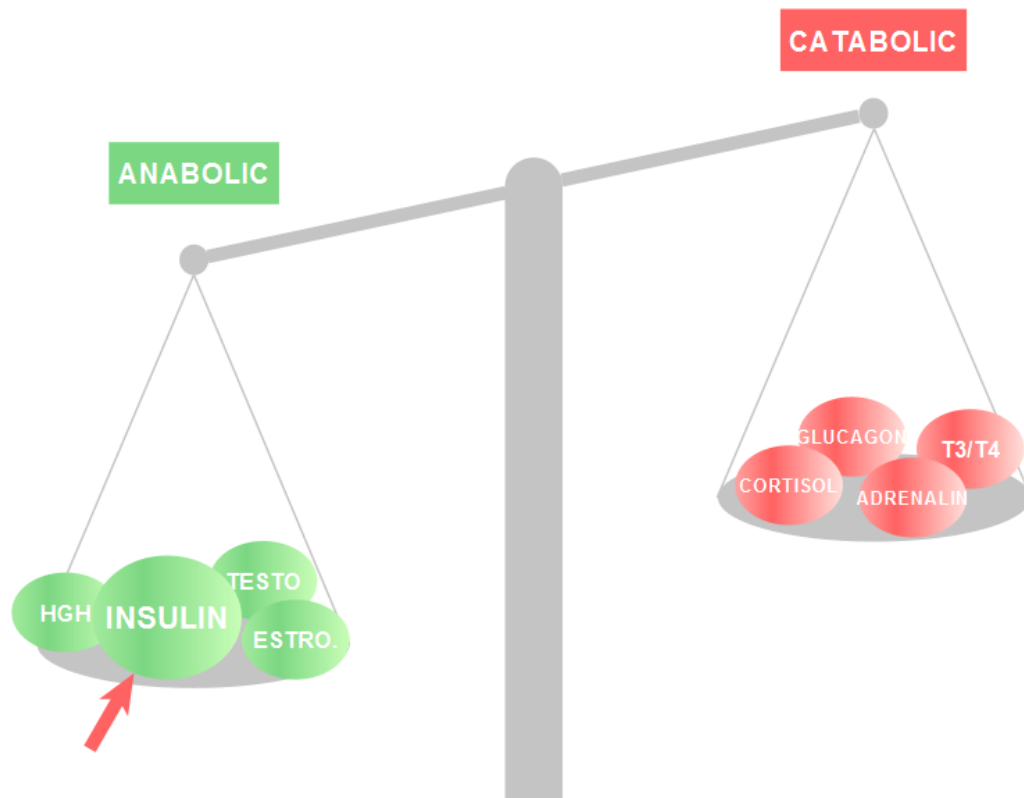
Elevated blood sugar can even destroy larger blood vessels in the extremities. In some extreme cases of diabetes, people even lose their legs.

But this only happens in severe cases, so don't panic. This is just an example to illustrate and better understand the importance of insulin.

You can be thankful to have the hormone insulin on your side, which stores the dangerous blood sugar into the cells and away from the bloodstream.

As you can imagine, many overweight people have chronically elevated blood sugar levels because of overeating sugar. To combat all that sugar and prevent the blood vessels from damage, the body has to produce more insulin.

Now watch what happens to the hormonal scale.



Hyperinsulinemia disrupts the body's hormonal balance.

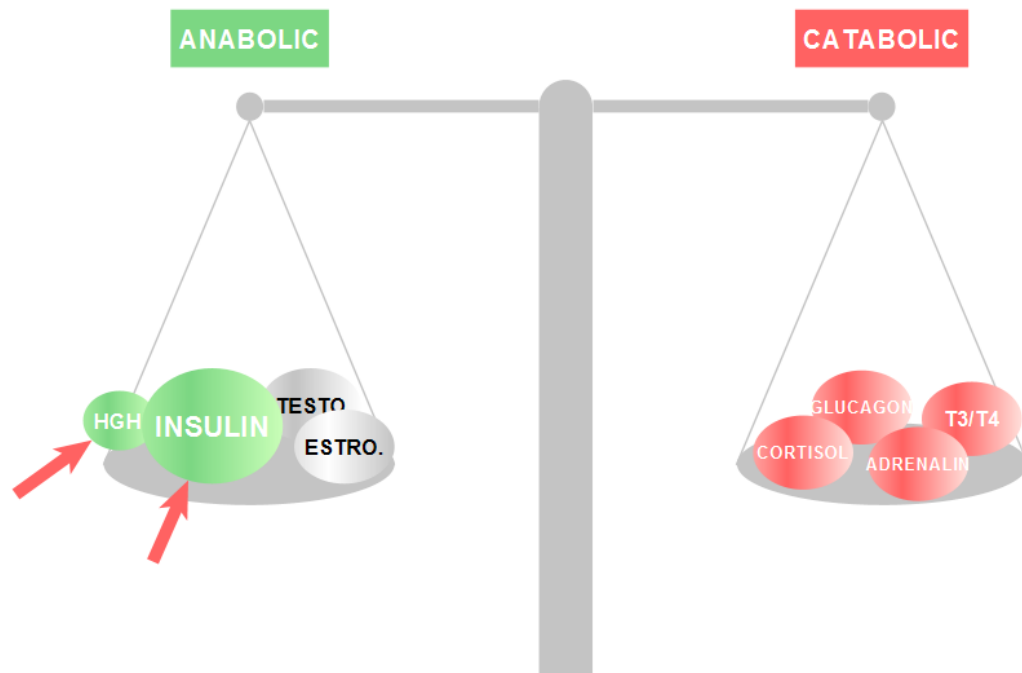
As you can see, there is now an overabundance of insulin on the anabolic side, which makes the scale tilt to the left. The whole body has now moved out of hormonal homeostasis.

Since many overweight people have chronically elevated blood sugar levels, this imbalance is also not a temporary thing anymore. Insulin stays elevated for too long in these people. This chronic elevation of insulin is a problem that the body needs to address.

The body needs to find a way to bring the scale back to balance and restore hormonal homeostasis.

So what can the body do to make the anabolic side of the scale lighter again?

The solution to this problem is to lower the production of HGH (human growth hormone). Less HGH means there will be less weight on the anabolic side. As a result, the scale moves back to hormonal homeostasis.



Hyperinsulinemia leads to low growth hormone levels.

However, as you can see, this is not the same homeostasis as it was in the beginning. Sure, the anabolic and the catabolic side are even again. But the anabolic side now has a shortage of HGH, to compensate for the excess insulin.

The excess insulin appears like a young cuckoo chick in another bird's nest kicking out the HGH right beside it. [1]

We can see this shortage of HGH in the fact that overweight children are shorter on average than their normal-weight peers. The entire American population has become shorter in recent years as a result of the obesity epidemic. People have too much insulin and therefore too little HGH. The

less HGH a person produces during childhood and adolescence, the shorter they will be as an adult.

The body of a child can balance out the excess insulin by producing less HGH. This shortage of HGH makes the child grow at a slower rate than usual, but the quality of the connective tissue is not affected by this hormonal change - yet.

As you can see in the graphic above, both testosterone and estrogen are gray. This highlights the fact that prepubescent children produce only small amounts of sex hormones.

By the time a child hits puberty, the internal hormonal environment starts to change drastically. The onset of puberty is marked by the production of sex hormones. The sex hormones, in turn, have a new impact on the hormonal scale.

As you already know, sex hormones are also part of the anabolic family. The purpose of sex hormones is to build and grow all sexual characteristics that turn boys into men and girls into women. Anabolic processes start to take place in various parts of the body and transform it into its new adult shape.

For our hormonal scale, this means the sex hormones are entering the stage and are also placed on the anabolic side, next to insulin and HGH. And this is where the problem of stretch mark development sets in.

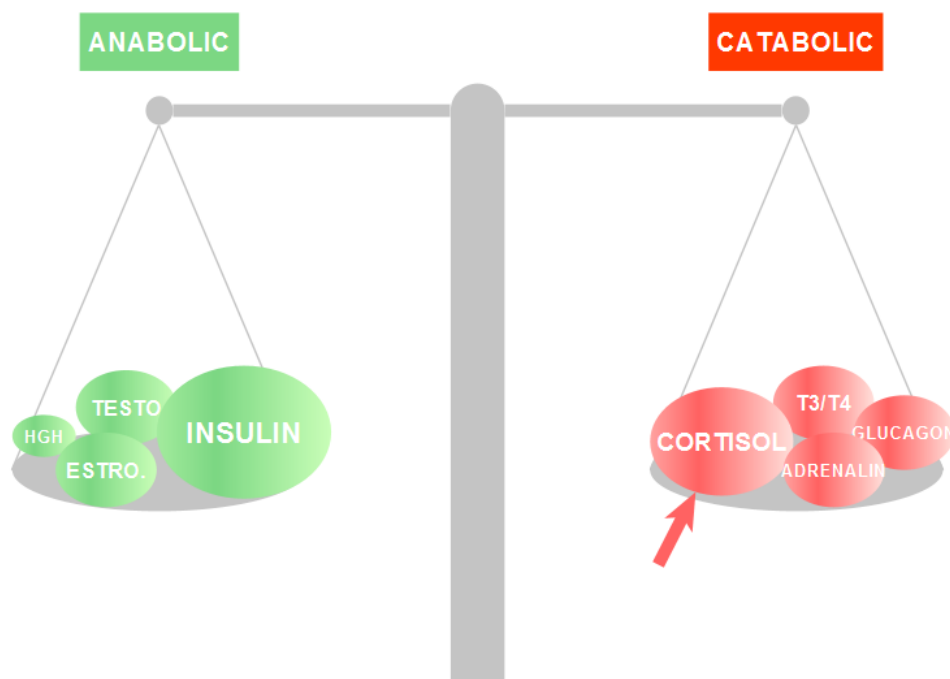
Now, we're not only dealing with insulin which is pushing down the scale but also the sex hormones on top of that. The scale tilts to the anabolic side once again and moves out of balance.

What should the body do now to balance things out? It's already producing less HGH than usual. Lowering the HGH production even further isn't possible since the body needs a certain baseline amount of HGH to maintain its vital functions.

If the body would lower the production of HGH even further than it already does, it would simply die, because it wouldn't be able to build enough new cells to keep itself alive. Lowering the production of insulin isn't an option either. The elevated blood sugar would wreak havoc on the circulatory system and destroy the blood vessels. And finally, stopping the production of sex hormones wouldn't work either, since that would prevent sexual development. The person would remain in a child-like state for the rest of their life. None of these three options are acceptable.

At this point, the body changes its whole strategy to cope with this new situation. To bring the scale back to balance, the body needs to put more pressure on the other side of the scale, the catabolic side.

So the adrenal glands start producing more cortisol to put more weight on the catabolic side to counterbalance the insulin. With this new strategy, the body can restore the inner hormonal homeostasis once again.



The body produces more cortisol to counterbalance the excess insulin.

Unfortunately, the increased cortisol production comes at a price.

We know by now that cortisol is a catabolic hormone, which means it breaks down body tissue. And since cortisol is now elevated beyond its normal level, it breaks down more body tissue than it is supposed to. It also actively downregulates the synthesis of collagen. [2]

Obviously, your body wouldn't allow cortisol to break down the tissue of your inner organs since this would lead to organ failure and subsequent death. So instead, cortisol gets directed towards a particular type of body tissue that isn't crucial for survival: the connective tissue.

The excess cortisol gets dumped onto the connective tissue where it then proceeds to break it down. All this cortisol was initially produced to counteract the excess insulin, but now that it's already there it can't help it but do its job of breaking down body tissue. It is like a waste product that gets dumped into nature and destroys the environment.

The result of the weakened connective tissue then shows up in the form of stretch marks.

This means that the very term "*stretch marks*" is misleading. The primary cause of stretch marks isn't the mechanical stretching of the skin but a disruption of the hormonal balance. Therefore, stretch marks should be called *hormonal disruption marks*, or more precisely *cortisol marks*.

This theory is confirmed by the fact that excessive usage of cortisone creams or oral administration of cortisone pills can cause Cushing's syndrome, which features stretch marks as one of the main characteristics.

Now you know the hormonal cascade that leads to stretch marks. Let's recap.

1. Elevated blood sugar levels lead to an overproduction of insulin.
2. All the excess insulin then pushes down the anabolic side of the scale and brings it out of balance.
3. The body then counteracts this with a decrease of HGH production. This strategy only works for children since they don't produce any significant amount of sex hormones yet.
4. As soon as sex hormones enter the stage (puberty sets in), the anabolic side becomes even heavier.
5. Now the body has to stimulate the adrenal glands to produce more cortisol in order to put more weight on the catabolic side and bring the hormonal scale back to normal.
6. The now elevated cortisol then breaks down connective tissue which finally shows up on the skin as stretch marks.

*"Obesity is the signature of excess insulin.
Stretch marks are the signature of excess cortisol."*

~ Dr. Wolfgang Lutz (Life Without Bread)

Normal weight people can also develop stretch marks during puberty if they have too much hormonal pressure on the anabolic side of the scale. But usually, the sex hormones alone don't bring the scale out of balance. Normal weight people usually develop stretch marks due to increased levels of inflammation. And since cortisol is also an anti-inflammatory hormone, it has to jump in and blow out the fire of inflammation. The side effect of elevated cortisol remains the same: stretch marks (more on that in chapter 11).

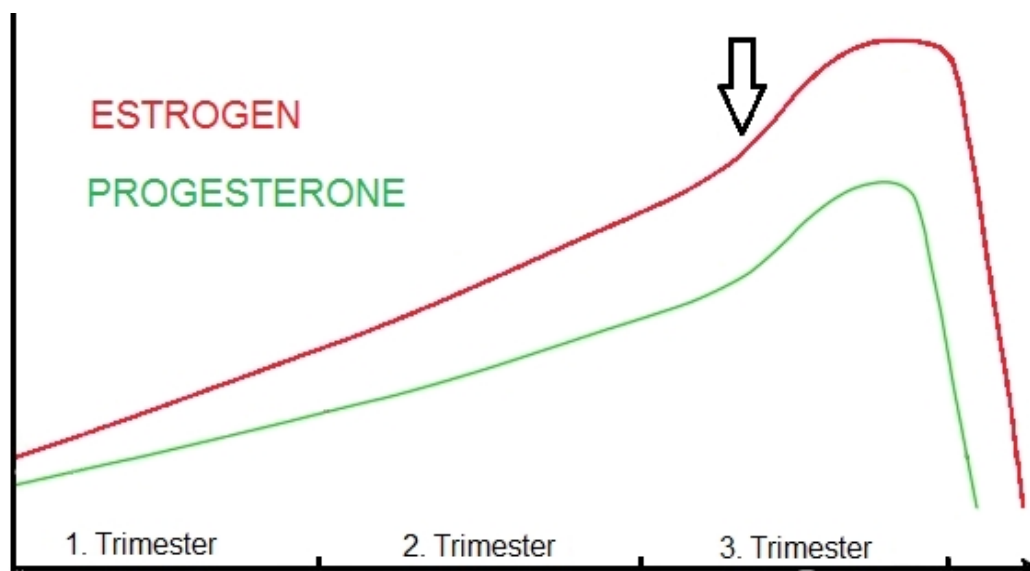
Let's also take a brief look at the hormones during pregnancy.

What's interesting is that most women develop stretch marks at later stages of their pregnancy. It's also important to note that in many cases the stretch marks don't just show up on the abdomen but in other areas as well, such as the breasts, thighs, hips, buttocks, and the lower back.

This gives us an indication that the mechanical stretching of the belly can't be the sole reason for stretch marks or else they wouldn't appear in all those other areas, too.

Again, it's a hormonal issue.

During pregnancy, we can see an increase in estrogen and progesterone. During the third trimester, there is a sudden surge of these two hormones (see arrow).



The sharp rise of estrogen and progesterone increases the risk of stretch mark development in the late stages of pregnancy.

We already know that estrogen has anabolic effects. It builds all kinds of tissues, but unfortunately, it's not anabolic in the connective tissue but mainly in adipose tissue. Estrogen builds fat but not connective tissue. Estrogen just puts additional pressure on the anabolic side of the scale.

Let's see how high levels of progesterone affect the body.

In this study [3], we can find the following:

*"Progesterone has important effects on carbohydrate, lipid, and protein metabolism. **This steroid induces hyperinsulinemia**, possibly by direct action on pancreatic islets, while promoting glycogen storage in the liver. Paradoxically, it antagonizes the effects of insulin on glucose metabolism in adipose tissue and skeletal muscle. **Progesterone stimulates deposition of body fat but had catabolic effects on protein metabolism.** [...]"*

So progesterone induces hyperinsulinemia, which means it makes the body produce tons of insulin. This leads to all the unwanted hormonal consequences we just covered.

And on top of that, progesterone acts as an *anabolic* hormone on the adipose tissue while simultaneously being *catabolic* on protein structures like the connective tissue. In other words, progesterone builds fat tissue and breaks down protein tissue like the connective tissue.

Progesterone has a catabolic effect on the connective tissue to increase the laxity of ligaments in the body, which makes the process of childbirth easier. [4]

The elevation of estrogen and progesterone during pregnancy can become a burden for the body's hormonal homeostasis and thus contribute to the stretch mark problem. This doesn't mean that estrogen or progesterone are harmful hormones, per se. They are very important, just like any other hormone in the body. Without them, pregnancy wouldn't be possible.

Remember, the main problem comes from out-of-balance insulin, cortisol, and HGH levels, not estrogen or progesterone.

But nonetheless, restoring hormonal homeostasis is twice as important for pregnant women since they have to deal with estrogen and progesterone on top of other hormonal processes, so they need an even bigger buffer of low insulin and low cortisol.

High HGH levels ensure that all types of body tissue remain strong and resilient. And low cortisol levels will leave your connective tissue in peace and give it time to regenerate.

SUMMARY CHAPTER 2: THE PUBERTY PARADOX

- Anabolic hormones build tissue, catabolic hormones break it down.
 - Anabolic hormones: growth hormone (HGH), insulin, sex hormones
 - Catabolic hormones: cortisol, glucagon, adrenaline, thyroid hormone
 - The body keeps these hormones in balance (hormonal homeostasis).
 - Elevated insulin leads to low HGH and high cortisol (=> stretch marks).
1. Goal: Reduce insulin to restore hormonal balance.
 2. Goal: Reduce cortisol to end the attack on the connective tissue.
 3. Goal: Increase HGH to rebuild the connective tissue.

THE END OF THE PREVIEW

If you want to read the full book, go to stretchmarksecret.com

The book will show you:

- How to **magically dissolve scar tissue**.
- How to **hydrate your skin effectively** (just drinking more water isn't enough).
- How to **avoid specific foods and substances that damage your connective tissue**.
- How to **lose weight in a controlled manner** to prevent your body from destroying its own connective tissue.
- The **most effective anti-aging substances in nature**.
- How to **re-activate specific skin growth factors that are only active in babies but dormant in adults. AND MUCH MORE!**