

# Newton is pregnant

**Or: Why does our back want us to learn about physics *now*, when we can barely remember what we want to say...**

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## Introduction

For nine months, life is different. Everything seems to be in a constant state of change. How many hours you sleep, your appetite, flavors and smells, mood swings... And this is nothing compared to how the shape and size of your body is changing, and the many strange and diverse things you're experiencing...

That's what being pregnant is like. A wonderful and emotional time that is also challenging and strange.

Every pregnancy is special and different, but one thing's for sure - in every pregnancy, you and your body change.

The very fact that your body is "hosting" a small person means that you are becoming more flexible and changing according to your "guest", who never stops growing and developing. (And just between the two of us, this is pretty good preparation for parenthood, which is a constant state of change, sometimes unexpected, and never truly under our own control.)

## Knowledge is power

One of the things that helps us get through this sensitive time is information. It seems that women who learn about pregnancy can prepare themselves better for the many things that happen.

The purpose of this article is to shed light on an important issue that is marked by dramatic changes in pregnancy - our posture. As opposed to many effects of pregnancy we cannot control, when it comes to our posture, we can have an impact, and our awareness

can truly make our pregnancy more pleasant and healthy.

## Posturing posture in pregnancy?

One of the dramatic changes during pregnancy is our weight: We add about 8-20 kg to our bodies in nine months. Of this weight gain, about 7 kg is centered in a single area and includes our dear offspring and "accessories" such as amniotic fluid, placenta and the uterus itself.

There's no posturing posture. Throughout our adult lives (unless we are injured), changes in our posture are generally small, gradual and slow (due to weight gain or old age, for example). This is why pregnancy is such a special period for our posture. Seven additional kilos concentrated in our lower abdomen is no laughing matter.

Add to this the fact that during pregnancy our bodies secrete hormones that soften the joints, making them more vulnerable. So, the way we carry ourselves during pregnancy is something we should really think about.

## Newton's pregnant

To understand how the treasure growing in your womb affects your posture, let's look at the concept, "**center of gravity**". The center of gravity is a concept taken from physics. It is defined as, "the point in a system, at which the system's whole mass can be considered to be concentrated" ([www.Wikipedia.org](http://www.Wikipedia.org)).

We'll spare you the formulas and theoretical explanations (after all, who wants to deal with them, especially when you're pregnant?!), and instead give you a simple and even simplistic explanation:

Let's assume we took Newton's apple and

somehow managed to empty it and leave the apple skin whole. We would form a tightly rolled ball out of the apple content. In other words, the entire weight of the apple would be concentrated in that ball. Now we return the tightly wound ball to the empty skin. As long as the heavy point ("center of gravity") is located in the center of the apple, it will stand on its base. If we attach it to the inside of the skin Our apple will roll onto its side. Make sense?

Now let's imagine something similar with our own bodies. Our center of gravity is located exactly in the center, between the hip joints, slightly higher towards the navel and above our knees. That's how we stay vertical without falling over. Imagine what would happen if our center of gravity moved to our right hand or the tip of our nose... That could make for a very ugly fall...

And during pregnancy? As the uterus and fetus grow, develop and gain weight - a woman's center of mass moves upward and forward to her pregnant stomach. So how, despite this, do pregnant women manage to maintain their balance and not fall forward, in the direction of their big stomachs? Fortunately, we have a system of muscles that can work against gravity, and even move and "reorganize" the location of our organs.

### **"The challenge of the gestational center of gravity and me"**

And here, my pregnant sisters, we are divided into two groups based on our strategy to cope with our gestational center of gravity challenge:

One way is to create an opposing force. It's as if our bodies say, "OK, I see that a strong force is pulling me forward. I'll direct more weight to the back and balance things out." Then we roll our pelvis back and out, but when our stomachs are very big, this isn't

enough. What's our pelvis (despite what happens to it when we're pregnant!), compared to our massive stomach? That's why we pull our shoulders back, so that their weight and the weight of our chest are added to the pelvis to balance out the distribution of weight: stomach pulls forward - pelvis and shoulders pull back. The desired balance is achieved. With two hands supporting the lower back, we have a classic and common pregnant pose. Almost as common as backaches during pregnancy... And this is the problem with the "opposing force strategy". It comes with a price, and it's our back that pays it.

To provide an opposing force, we need to strongly arch our lower back. Experts call this, "increasing lumbar lordosis". The result - pressure on the lower back muscles and a heavy load on the neck muscles.

And as our stomachs grow - the lordosis grows with them, and our backs ache more.

Unfortunately, many women provide the oppositional force without paying attention, and their bodies just implement this strategy by default. But there is another option:

My pregnant sister, don't give up your center of gravity! Just because you are pregnant and everything you knew about yourself has gone topsy turvy, doesn't mean that you can't take a stance! So your center of gravity wants to take a hike north? You can tell it to fall back into line. Even if this means being a little more rigid, or more precisely: aware, consistent and responsible.

The task is to pull the center of gravity back again, towards the center of the body, as if trying to put it back into place. A tucked-in pelvis, strong stomach muscles and long, powerful back muscles participate in this mission. And this requires practice. (It is important to note that we are not putting the

center of gravity back in place by curving the back forward - kyphosis.)

There are many, many professionals who deal with posture and movement who would be happy to help you "reorganize" the distribution of the load and maintain good posture. This may even be an opportunity to "correct" our regular posture habits, which have an impact on how we breathe and feeling burdened and tired in our backs, necks and feet.

### **How does FreeChair fit in?**

There's another option - while it is not a substitute for professional guidance, it has a quiet and pleasant way to help - FreeChair. A small, swaying chair that does great things for your posture.

FreeChair creates a unique opportunity for you to practice holding your back correctly. On the one hand, you're seated, so there is no load on the legs (admit it, during pregnancy this is more important than ever), and on the other, the back needs to hold itself upright independently.

The design of the chair directs us to sit exactly above the sitting bones. In other words, it directs us to sit correctly, to hold ourselves upright over a strong basis, above the part of our body designed to bear our weight. And here is the real advantage - the gentle back-and-forth motion of FreeChair shows us what happens in the body when the center of gravity moves forward and when we put it back where it belongs.

Sitting on FreeChair throughout pregnancy also allows you to adjust the angle of how you

sit each time, in keeping with the changes in your body, and finding the right balance as your center of gravity shifts.

Your body can then take what it "learns" while sitting and implement it when standing.

And finally - if in somebody who has fully adopted the opposing force strategy, the gentle swaying on FreeChair is an excellent way to give a relaxing, internal massage to a tired and suffering pregnant back.

### **Epilogue**

Every pregnancy eventually comes to an end. When we give birth, the "seven-kilo ball" leaves our body and a sweet, little bundle of magic is born. And then? It's clear. The apple doesn't fall far from the tree - if during pregnancy we carried the baby inside our body, now we carry the baby on our body. In a sling or in our arms, our baby continues to grow, with us carrying the weight. Thinking about our posture and center of gravity remains relevant, and FreeChair continues to play a role in parenthood - recovering from childbirth, nursing, soothing rocking and putting the baby to sleep, not to mention playing together on the floor.

Until one day, you discover that somebody has "stolen" your FreeChair. That's what happens when your "center of gravity" now sits on his/her own...