THE MODEL HEALTH SHOW

EPISODE 638

The Science Of Body Fat & How Fat Loss Actually Works

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SHAWN STEVENSON: Welcome to the Model Health Show. This is fitness and nutrition expert Shawn Stevenson and I'm so grateful for you tuning in with me today. On this episode we're going to be talking about one of the hidden epidemics that's going on right now and it's the early onset of puberty that's surging in children a series of recent studies have found that early puberty in girls surged during the pandemic. And one of the studies published by the European Society for Pediatric Endocrinology, the number of children with early onset puberty remained relatively stable for the five years prior to pandemic shutdowns. Then in 2020, the number of children with early onset puberty more than doubled. Then it increased again in 2021 nearly tripling what it was just a couple of years prior. Now this obviously is setting the tone for something that we need to get out into the open. We need to make sure that this is known, and we need to start to do some things about it. And of course, at the end of the episode we're going to talk about some of the things we can do to help to shift this because this is something that's been unfolding for many, many years, but it's been highlighted or even accelerated during pandemic shutdowns.

Another one of these studies, and this is from the Journal of Pediatric Endocrinology and Metabolism, found that the number of girls diagnosed with early onset puberty also known as idiopathic precocious puberty during a one-year study period during the pandemic was more than double that of any of the previous three years. Now this new report again should be sobering news for all of us because the implications on how we handled things has really trickled its way down to deeply impact our children. And that's why again this is so important to address this, to acknowledge that this is happening. And to shift things as much as we possibly can moving forward. Now what's really surprising is that the researchers identified the likely causative agent for the increase in early puberty in our children is due to disruption in their circadian timing systems. It's due to alterations, genetic alterations of our biological clocks or in our children's biological clocks. Now when I was in college, when we would hear terms like circadian rhythms it sounded like a soft science. It didn't really sound very tangible.

Today we know that our biological clocks are existing within every cell in our bodies, and these are essentially clock genes and clock proteins that control the expression of other genes and proteins. This is a primary aspect of how our health is expressed It's truly controlled by our circadian timing system It's determining when everything is happening in our bodies on a daily basis, monthly basis and yearly basis. And this internal clock in our cells is synced up with the 24-hour solar day. Our bodies are synced up with the entire solar system. And we have different kind of nocturnal activities and diurnal activities as well; our bodies are doing different things at different times of the day. For example, there's a shift in our blood pressure, there's a shift in our hormone production. We're producing certain hormones at different times during the

day. There's a shift in our microbial activity, there's a shift that's taking place with our cognitive abilities depending on the time of day. And so again having this huge stressor come into our lives as the researchers are indicating, namely again through the disruption of our normal day and night cycles or light and dark cycles, so there's a huge disruption in that. And also, the increased use of light emitting screen devices that alter our internal clocks as well.

So, the researchers were pointing to this as one of the things that was really standing out in the data. That our kids went from more kind of real-world interaction and activity to spending so much more time staring into a screen that's emitting this artificial light, that then is kind of altering what's happening with our endocrine system and our nervous system. And this is all blending together in our hypothalamus in our brain. This is also the location of our suprachiasmatic nucleus. And so, this is this internal kind of pacemaker helping our body to figure out what time it is and when to do stuff. And so, this excessive display of light that our children had to endure has altered these biological clocks. And this boils down again to being a specific circadian disruptor and a tremendous stressor that our bodies are essentially just responding to. They're trying to adapt to these environmental signals. Because these environmental signals, and again if we're talking about our children, these are altering the gene expression in our kids to activate sexual maturity This is how we evolved.

We evolved not with these exposures today but based on environmental cues are going to alter our gene expression and determine when sexual maturity is going to kind of turn on. Now without proper support to healthfully modulate stress our bodies are merely adapting in the best way that they can. Now for example being under these sudden stressful conditions for our children. If we're talking about environmental signals as we evolved, what it could lean into is a signal from the environment that times are very dangerous. And we need to reach sexual maturity as soon as possible to procreate and to keep the species going and hoping that our offspring will then eventually have better conditions to live within. We are a part of the environment and the number one driving force of our species, of our cells, of our DNA is to carry on our species. And so, activating these programs sooner, again under great psychological and physical stress, is going to be one of the adaptations that our biology would incur. And again, this is what the scientists are pointing to as the reason as to why early onset puberty has skyrocketed in children in particular during pandemic shutdown.

Now let's talk about obviously just in and of itself this is an uncomfortable conversation. But we need to talk about this because it's up to us to stack conditions in our children's favor. And the choices that we make can put them in position to... We might be diverting from an infectious disease that was not necessarily very virulent to children but dramatically increased their risk of chronic diseases due to the choices that we've made. Because if we're looking at the long-term ramifications of early puberty, this is where we need to point this conversation to. Now the long-term ramifications should be understood now so that we can have more

intelligent responses to crises in the future. One of those ramifications with the early onset of puberty being a significant increase in breast cancer risk, as recent data has indicated. Another significant risk is the development of heart disease... A huge analysis that included 16,000 women found that those who experienced early onset of menstruation were 23% more likely to develop heart disease and 28% more likely to die of cardiovascular causes like heart attacks or strokes. These women also had a 22% higher overall death rate and a 25% higher risk of dying from cancer. This is according to findings published in the Journal of Clinical Endocrinology and Metabolism.

It's more than just our child experiencing the early puberty. There are long-term ramifications when this abnormal process is happening. Now let's talk about some things that we might be able to cognitively understand a little bit better. Because even the long-term ramifications we might think, "Oh well we can try to do things to prevent that stuff." But what are the instantaneous challenges that can take place for our children, and also the short-term challenges when they have an early onset of puberty? So, let's talk a little bit about the psychological implications... A 2018 study examined the psychological repercussions of early onset puberty in girls and found that girls who experience abnormally early puberty have higher levels of anxiety, and a more negative body image compared to girls who did not go through precocious or early puberty. Another study, this was published in Hormones and Behavior, analyzed the impact of early puberty on eating disorders and stated, "Both males and females experiencing early puberty had an increased incidence of disordered eating."

According to data cited in the Journal of Youth and Adolescence, early onset of puberty does in fact increase the likelihood of early sexual activity as well. Additional studies have shown that early puberty increases the incidence of depression, of substance abuse, and of social isolation. Many of these things that when we have our babies, we have a spirit of wanting to protect our children from these things, and not realizing that altering their biology with the conditions that we expose them to, greatly increase the likelihood of these things happening in our child's life. Another overlooked aspect of early puberty is the dramatically increased risk of premature menopause. Early puberty, premature menopause, and this carries with it the increased risk of death from all causes. For our children seeing this phenomenon take place, with early puberty we're seeing an increased risk of death from all causes; and this is according to data published in the Journal of the American Medical Association. Now we just scratched the surface on the early onset of puberty in children leading to dramatically increased risk of chronic diseases and also the psychological fallout that can take place. But what we need to do now is kind of dig in a little bit deeper on what this issue really is? What does it really mean if we're talking about early onset puberty?

Again, the scientific term often used is idiopathic precocious puberty. Idiopathic meaning arising spontaneously or from an unknown cause. Just happens! And if you notice idiopathic

has a same root word being idio which is the same in the word idiot. And this is how we're actually functioning when we think that this...

Just happens just because or that it's random. Nothing in our universe happens by accident. There are certain principles of causality. But what we do is we throw this term; this is the term used by clinicians idiopathic early onset puberty. Like, "We don't know! Spontaneous! That don't... Just happen, unknown!" And this is speaking to how uneducated our system of health has become because it's no longer about true investigation of causative agents it's about the treating of symptoms. And I'm going to highlight specifically. I'm going to give you specific examples on this taking place in just a moment. But let's talk about what puberty is from a biological perspective, just to kind of lean into this a little bit more. Puberty is the stage of development in which an individual becomes physiologically capable of sexual reproduction. Now seeing some of these numbers where children are having the onset of puberty when they're six years old, seven years old, which is happening again and again and again in the data. This process of maturity again is signaling. It's signaling from the environment and the biological changes to make the body physiologically capable of sexual reproduction.

These things should not even go together when we're talking about our children. Externally we witness the onset of secondary sex characteristics. In the case of girls, it's marked by the broadening of the hips, development of the breasts, appearance of body hair and the onset of menstruation. Again, speaking strictly from a biological perspective these physical changes are signaling the capacity for sexual reproduction. Now it's important for us to talk about this taboo subject and get face-to-face with the real-world ramifications of these changes happening in our children at younger and younger ages. Now this is the bigger part of this conversation to really step out and take a meta perspective. This process of early onset puberty has actually been increasing significantly in our society long before any pandemic related shutdowns. In fact, the average age of the onset of puberty has been dropping by about three months every decade. This is according to data cited in the journal of the American Medical Association Pediatrics. Some reports show that the onset of puberty in girls has fallen by as much as five years since 1920. Now to express this phenomenon in a really poignant way, here's a media segment from 10 years ago when this issue of early onset puberty started to get a little press.

Well, every parent says, "My kids are growing up too fast," but these days they really are.

Kids as young as four years old are starting puberty, Melissa McCrady has this health alert.

Melissa McCrady: *It's early puberty to an extreme one mother says that her daughter started before even seeing her first day of kindergarten... So, what's causing it? And is there anything we can do to stop it?*

Melissa McCrady: *Sitting on the couch with her new iPad you'd think six-year-old Anaya Rohl was right on track with all the other kids her age. But mom Nikki says two years ago that was put in question.*

Nikki: *She was about four years old, and I noticed that she looked like she was forming breasts.*

Melissa McCrady: *A quick trip to the pediatrician provided what appeared to be an easy answer.*

Nikki: *She told me that it was because she gained weight.*

Melissa McCrady: *But Nikki's mom instinct told her it wasn't that simple. She took Anaya to Dr. Casey Jahime for a second opinion. He ran a test on Anaya, called a bone age, the results shocking.*

Nikki: *It said that she was actually seven almost eight when she was actually four.*

Melissa McCrady: *And Nikki's daughter isn't alone. Dr. Jahime says in the last 10 years a significant number of girls as young as four or five are developing the outward signs of puberty.*

Dr. Casey Jahime: *Body odor, adult body hair growth in certain areas and breast enlargement of course and girls.*

Melissa McCrady: *So why is this happening? First and foremost, our diets have changed with our fast-paced lifestyle. And it's not just what we eat but what we eat out of from Tupperware to plates, sippy cups and bottles.*

Dr. Casey Jahime: *Plastic has a great source of chemicals.*

Melissa McCrady: *In the meantime, Anaya is on medication that will stop her development until she's taken off of it. But Nikki has a warning for other parents.*

Nikki: *If you go on to your pediatrician and you feel that your kids have breasts and they're telling you something else, I mean you need to go get a second opinion.*

Melissa McCrady: *So, what can you do? Dr. Jahime says that it helps to minimize fatty foods and the use of plastics, especially ones that are heated in the microwave such as baby bottles or food in Tupperware containers. Melissa McCrady Today's TMJ4.*

Now if you notice in this segment that should pull at your heartstrings a little bit, one of the things that they did, they did highlight a couple of the potential causes, but they also pointed to giving this little girl a drug to suppress any of these biological changes; to suppress this occurrence of puberty... So, we've identified some potential causes here but here's a drug. And with that said this newly invented drug what are the long-term ramifications for this little girl, for her endocrine system, for her nervous system, for every single cell in her body truly? Because it... There's a misnomer when we talk about this occurrence of side effects. That is, there's probably not a word that is more inappropriate because there cannot be a "side effect" in the human body because every single thing that we interact with affects every cell in our bodies. It might not be equally shared by certain cellular communities, certain organs, certain organ systems but every cell is inherently affected because every cell in your body is connected.

Everything is... It's you! Things don't just happen in isolation... So, a side effect is really a direct effect. And again, instead of removing the cause and stacking conditions in this little girl's favor, to help her body to more appropriately mature, we're going to give her a drug. We're going to experiment on this little girl. And this is the standard of care, this is the standard practice. And what you're going to know in upcoming years is the way that we've treated our children, who've had early onset puberty, with drugs you're going to see studies affirming the fallout from that. Increased risk of you name it. Now here's another media segment from 10 years ago. Again, this issue was just starting to get some press. And the proposed solution? Yeah diet, exercise, blah, blah, blah. Let's talk about giving these kids a diabetes drug, listen to this.

Amy Oshier: *School teacher Skye Fisher sees in the classroom what health experts are seeing in statistics, precocious or early puberty.*

Skye Fisher: *It's really a distraction, like in academia when we're dealing with you know bodies developing at 10, 11, 12.*

Amy Oshier: *The average age of puberty onset dropped five years in the last century. Addressing it falls to pediatric endocrinologists.*

Dr. Asjad Khan: *We see a ton of patients with growth issues, early puberty, then adrenal gland issues.*

Amy Oshier: *It's not uncommon to see a girl as young as seven begin puberty. The signs are breast tissue development, body hair and menstruation. Doctors link it to childhood obesity.*

Dr. Asjad Khan: *When you see girls especially preteen girls who are overweight, we see an increased risk of going into early puberty in those girls... So, there's definitely some factors that increase early puberty in kids who are overweight. And what we find is in your fat cells you tend to make more estrogen.*

Amy Oshier: *Hormonal changes brought on by weight also impact boys.*

Dr. Asjad Khan: *Boys and men who are overweight will tend to have gynecomastia or breast enlargement. And that is due to the estrogen coming from the fat cells. And so, all that estrogen coming in for boys and girls will lead to early puberty.*

Amy Oshier: *Hand in hand with obesity and early puberty is type 2 diabetes. While diet and exercise is the preferred treatment, a new diabetes drug may slow early puberty and reduce the risk of insulin resistance.*

Dr. Asjad Khan: *Metformin is usually the first one that we talk about. There's two benefits to metformin in these kids. It helps them decrease the insulin resistance but also helps them lose some weight. It's a vicious cycle that you know the obesity is making the puberty. The puberty is making the obesity worse.*

Amy Oshier: *Targeting obesity may take care of this developing problem. For Lee Memorial Health System, I'm Amy Oshier.*

Again, in that segment the reporters snuck in diet and exercise. But the bulk of the conversation pointed to using metformin. And that's what the public oftentimes because we've been conditioned this way is looking for, "Oh there's a drug we can take, there's a pill that we can take to help to address this. Oh, wait I can take a pill that can help me to lose weight? Give me that pill!" And it's so inappropriate. But oftentimes it's not something that's done intentionally by folks in the media. It's just how we're trained. It's the condition that we've all been inundated with. That we're going to have a pill come along or better living through chemistry where we're going to find out a "cure." Do you know how many years, how many decades they've been doing all this stuff to cure? Fill in the blank and you tell me how many cures that have we actually come up with. And you can look around our society and see the ramifications. We have the sickest society in the history of human civilization. We have the highest rates of obesity, heart disease, cancer, diabetes, liver disease, Alzheimer's, the list goes on, and on, and on. Where are the solutions?

Do we need more drugs? Guess what? Approximately 70% of United States citizens are already on prescription drugs. Around 40% of our citizens are on two or more classes of drugs. Have drugs actually improved our health as a species? Mm! Now, not to say that there cannot be

appropriate places for medication. Absolutely! Some drugs can be lifesaving and also life-altering in a positive way. Oftentimes in a short term, in an acute fashion. But we have a pharmaceutical and healthcare industry that profits from repeat customers. That's where the bulk of the money is coming from. That's where the billions upon billions is coming from, is getting people on something, and keeping them on something instead of removing the cause of the issue. And that's the issue... So, highlighting the fact that exercise and nutrition can be helpful in helping to reverse this condition is speaking to how excess body weight and obesity is one of the major culprits increasing the likelihood of early puberty. Now again, this has been happening far prior to pandemic related shutdown.

And so, let's take a little bit of a look at this issue. Since 1980, the obesity prevalence among children and adolescents has almost tripled. Today nearly one in three of our kids are overweight or obese. And this was prior to the numbers that I'm about to share. Because during pandemic related shutdowns this problem was rapidly and dangerously accelerated. According to data from the CDC, the rates of childhood obesity took an enormous leap during the pandemic. Severely obese children expected an annual weight gain increase of about 8.8 pounds prior to the pandemic. During the pandemic, their annual expected weight gain went up to 14.6 pounds. Moderately obese kids expected weight gain nearly doubled. Going from an annual weight gain of about 6.5 pounds up to 12 pounds. And even children who had a healthy weight prior to the pandemic saw their annual rate of weight gain increase from 3.4 pounds to 5.4 pounds. Now again, we might see this as a short-term stressor, short-term problem. We can get things back on track. But then we're missing out on the science around recidivism and understanding how having things happen like this related to weight gain or disease onset as a child makes it incredibly, exponentially more difficult to reach a healthy weight and healthy overall physical state.

And so, it's stacking conditions against our children when they have to suffer through these environmental inputs that increase their rates of being overweight and obese... So, we might again see this, "Okay this happened, it was a tough time for all of us, but who is speaking up for our children?" Who have been speaking up for those who are trusting in us to do the right thing for them? The group that we know specifically as the overall demographic far, far, far less likelihood of a severe infection from this virus. But dramatically increased likelihood of chronic disease onset, obesity, of psychological ramifications that they still have an entire life to live that we did not address remotely appropriately. And you already know what we've been doing here. It's giving them a voice and providing parents with real ethical scientifically validated research to help to make appropriate decisions. Because so much of what we've done has not been remotely appropriate. It's been fear without context, it's been treating all of humanity in this one-size-fits-all paradigm. Which is really the paradigm of modern medicine today.

We're going to treat people in this cookie cutter fashion. Now the truth is every single human being who's ever been and whoever will be is remarkably unique. We might share the same 20,000-ish genes but we know now through epigenetics that there are thousands of potential expressions of various genes and combinations of genes. And to top that off understanding about this interaction with the invisible world as well and the world of our microbiome. The microbes living in and on our bodies, the trillions of bacteria, they outnumber human cells significantly and each of our bacteria have their own genes. If we go gene for gene, upwards of 99% of the genes that we carry as a being here on planet Earth are microbial. And that obviously, and of course there's so much science coming out about this, has a deep impact on the expression of our human genes and the expression of our health. And speaking of which, every single human being who's ever been and whoever will be has a very unique microbial fingerprint. That's never existed, there's never been an identical copy, ever, not even an identical twin. Some of the best studies that we have today on the importance, or the health of our microbiome and our health outcomes is done on identical twins. And one of the most remarkable concentrations of this data, and this is coming from researchers in my hometown, my home city of St. Louis at St. Louis University.

The researchers found that the difference in identical twins and their microbial makeup can identify whether or not one child is going to be obese versus another. And so what they found was regardless of the children being in the same environment, eating the same diet and same inputs, their microbiome still has a very unique fingerprint. And if one of the twins would have a higher ratio of Firmicutes, so this is a category of microbes, versus Bacteroidetes, that twin was more likely to be overweight or obese. And so, we see that again, even though we might be exposed to the same things, there are so many different environmental inputs that are influencing our microbial expression. And our microbes are going to determine even drug metabolism and how drugs affect us... So again, to treat us in this cookie cutter fashion, one-size-fits-all, for newly invented therapeutics, it's just so wildly inappropriate. Now again, in an acute situation, it can be lifesaving and it's not to villainize any of this, but we need to come into this situation with a higher level of intelligence, and how we're associating with these synthetic chemicals that are inherently going to alter again the function of every cell in our bodies. And that is a fact.

Now here's one of the coolest things in this entire equation, is that even our microbial fingerprint right now, for ourselves, is not going to be identical to our microbial fingerprint tomorrow. Our microbial cascade is constantly changing. And so not only has there never been a human to have the same microbiome makeup in history or ever will be, even you, compared to yourself today versus tomorrow, is never going to be the same. We have the ability to make significant alterations to our microbiome like that very, very quickly, in particular from our dietary inputs. We can shift what's happening with our ratio of friendly flora versus our opportunistic or kind of pathogenic microbes, which everything has a place. We went to war

with what we consider to be pathogenic bacteria and has had these long tail ramifications that has suppressed our health in many different ways. Now one of the biggest dietary changes that has been altering our microbial health in negative ways, and also the reason I'm leaning into this so much right now is that the vast majority of our immune system is also located in our gut. And there's this very intimate connection between our microbes and our immune cells. And this communication is of the utmost importance.

What happens when we have damage and dysfunction going on in our gut via what we're putting into our bodies? Man, that's where the whole system starts to really get messed up... So, one of the most blatant dietary changes in recent decades is our increased consumption of ultra-processed foods. According to research published in the BMJ, the average American now consumes about 60% of their diet being ultra-processed foods. So, these are foods that are so excessively processed and adding synthetic ingredients, and artificial colors, and flavors, and preservatives, you can no longer actually tell where it came from. These foods are now food like products, we can eat them, they might not kill you immediately but they're definitely creating significant disruption to our microbial health and also our cellular health. Our DNA, including the DNA, the genes of our microbes has never associated with Doritos, it's never associated with a Twinkie, it's never associated with so many other things that have become normalized. Now, does this mean that we can't occasionally spot in a couple of these things?

No, that's okay. However, when it becomes the rule and not the exception where this is the majority of what we're eating, what do you think is going to happen? And a big part of that equation is our increased consumption of sugar in particular by our children. The average American, and this is just about a hundred years ago, was consuming around six pounds of sugar annually. Today, the average American consumes more than ten times that amount. And about 80 pounds of sugar consumed annually. That's added sugar. We're talking about added sugar to the already existing sugar in the food products that we might be eating. And so with that all compiled together, the average American is eating well over 100 pounds of sugar each year. And a significant ratio of our children's diet today is coming from sugar and its various offshoots of processed carbohydrates. Now, why does this matter so much in this conversation? Well, the consumption of excessive amounts of sugar is an express pass to metabolic dysfunction. It's an express pass to insulin resistance. Because whether we're a child or an adult, our bodies are constantly trying to shuttle any glucose that's floating around in our bloodstream into the cells, and any excess of that amount of glucose that can't be pushed into the cells can start to tear up things in our bloodstream.

Especially smaller capillaries, this is why we tend to see things like amputation of toes or the loss of vision when we have insulin resistance. There's going to be a breakdown in those micro areas that's going to then breach into the major areas as well. So, through our evolution with small inputs of sugar, our bodies can do this gracefully, can handle that without an issue. Today,

when we're able to just guzzle down a Mountain Dew or to eat a candy bar, we're flooding our system with so much sugar that it was not hardwired to be able to handle and so over time and repeatedly doing that process, that insulin response, because insulin is getting activated from our pancreas to shuttle that glucose into the cells. And if this process keeps happening and there's such an influx of insulin, which we're going to experience another adaptation happening with our system where insulin is going to tone down its production because opening up your fat cells and keep shuttling energy in there is seen as a detriment. Now we're activating higher levels of inflammation. We're turning on all these hormonals signaling that again this leads to the downstream effect of early onset of puberty in our children.

It's turning on all these processes and so working on a hierarchy of need, it's just like, "Well, let me turn down this response of insulin. There must be some kind of dysfunction taking place here, the sugar that's in our bloodstream just can't be right." And this communication starts to get screwed up. And this is where, metabolically, we're having this kind of insulin resistance or insulin getting flagged as spam. And it's not doing this to try to hurt us, it's doing this to try to protect us, it's an adaptation. So obviously, one of the important solutions here with helping to reverse this condition that's taking place with early onset puberty in our children is to start to pull back on all of the abnormal sugar that we're consuming as a society. But this starts within our own homes, and this is something that we can do. This doesn't mean that we can't have sugar, this doesn't mean that we can't have sweet things. But this does mean that, "Hey, we need to get this in check because look at the outcomes that's happening in our children." This isn't a joke, this isn't about having a little fun, "Let the kids have some funs! You know they got to have the funs, it's just a little funs! Don't be the funs police." You can have a little bit of the funs, but when it comes to creating metabolic dysfunction and destroying our health, we got to draw the line somewhere.

And so even the invention, because it is an invention of processed sugar recently in human history. And we've done a masterclass on this episode which I highly recommend you check out after this episode. And we'll put that for you in the show notes, we did a masterclass on the history of sugar, it's going to blow your mind. But it's a newly concocted thing, let's shift over and utilize more naturally occurring sugars and natural sources of sweetness. For example, unlike other sweeteners, raw honey has been found to actually improve insulin sensitivity. A recent study published in the peer-reviewed journal Nutrients detailed how raw honey intake can improve fasting blood sugar levels, improve fat metabolism, and reduce the risk of heart disease, stacking conditions in our favor again. Additionally, the scientists noted that there's a vast array of antioxidants and anti-inflammatory properties that are found in honey as well. Now this is really like nothing else on Earth, it's really difficult to even classify honey as merely a sweetener. In particular, again, raw honey, we're not talking about the little high heat-treated sugar bear, the bear with the...

All right. Now there might be some raw honey bears out there but we want to make sure that we're getting our honey from a great source. And also, raw honey possesses nootropic effects such as memory-enhancing effects, it's been found to be anti-anxiety and anti-depressant as far as its activities as well. And this was published in Evidence-Based Complementary and Alternative Medicine. The research also indicated that polyphenols found in honey are involved in helping to reduce brain inflammation. It's just like, again, there's nothing really like this on Earth. So, what if we're swapping out that other stuff and adding in high quality raw honey for our recipes and for sweetening our kid's smoothies and things like that.

Finding creative ways to add in something that's going to not only provide that sweetness but provide so many helpful benefits to our metabolism. Now if you don't know, sustainable beekeeping is of the utmost importance right now because this practice is important for so many other crops that humans eat. If we're not doing things to help to sustain the livelihood of bees, we're going to be at a serious loss as a species ourselves. And so, you want to make sure that you're getting your honey from companies that are engaging in sustainable beekeeping and actually helping to grow the field. And also, who are doing third-party testing for toxins because there's a tremendous amount of toxins found in conventional honeys as well. We're talking about heavy metals; we're talking about pesticide residues. And this is why I highly recommend you get your honey. It is a superfood honey that also has some propolis and other incredible compounds in it. And this is from Beekeepers Naturals.

And right now, as of the release of this episode, you've only got about an extra day or two to make sure that you're taking advantage of this. You can get 30% off storewide at beekeepersnaturals.com/model. Go to beekeepersnaturals.com/model right now and enjoy 30% off site wide. And this is an extended Cyber Monday special that's ending on 11/29. So, take advantage today, 30% off site wide. I always, every single day I'm utilizing something from Beekeepers Naturals. I love their incredible nootropic that's based on royal jelly. Their superfood honey I use all the time. Their propolis spray I make sure that I utilize for immune system health. And I also give this to my kids. So really special opportunity, head over there check them out asap Beekeepersnaturals.com/model for 30% off storewide. This is only as of the publishing of this episode for another day or two. But after that the usual discount will be available. But again, take advantage right now for 30% off storewide.

Now in addition to obesity being one of the culprits behind the early onset of puberty, environmental hormone disruptors are part of this equation as well. According to data cited in the Journal Human Reproduction, they found a "Association of phthalates, parabens, and synthetic phenols found in personal care products with pubertal timing in girls and boys." The lead author of the study in University of California Berkeley Associate professor Dr. Kim Harley stated, "We have known for the past 15-20 years that girls are entering puberty at an earlier age than they used to in the past. We certainly know that obesity plays a role in that but now

we also know that the hormone disrupting chemicals that are in our homes and in our environment could be an additional factor that's contributing to this."

Now the question is how on Earth are our "Safe and approved," FDA approved personal care products causing hormone disruption in our bodies? Well, many of these products contain a variety of hormone mimicking compounds. So, there's a category called Xenoestrogens. So, these are compounds that mimic the activity of estrogen in our bodies. And the crazy thing is this science has been known... We did a masterclass on this, years and years ago and talking about Xenoestrogens. And even prior to that for, it's been known for a couple of decades now, but yet and still this is still rampant in our society. As a matter of fact, it's happening at an even higher rate where there are Xenoestrogen compounds that are in our personal care products, that are in household cleaners, in cleaning agents, in air fresheners and all this different stuff, is influencing our endocrine system. It's influencing our hormones and yet there's nothing really being done about it. There are some companies who are stepping up and saying, "Hey we're not putting this into our products," but as a culture and as our government policies allow this is still happening on a bigger scale than ever. And this is why we can't wait around for somebody to come and save us, for the government to do the right thing, or for the FDA to do the right thing. We know that this.

Is hurting us and it's hurting our children. We have to stop participating in this. We have to start making smarter choices with where we're investing our dollars and helping them, because companies really, they're just concerned about their... Bottom line if we're talking about these big corporations who are making this stuff, you know, Johnson&Johnson's fancy pants lotions and things like that. As a matter of fact, you know that Johnson&Johnson has just experienced a tremendous amount of legal ramifications for hiding data for decades of a known carcinogen in their flagship baby powder. Just... They just kept hiding the data. Internal documents finally come out and now they actually are being faced with the ramifications of their crime but even as I say that we know that it's a slap on the wrist compared to all the money that they've made, compared to all of the toxic compounds and toxic products that they've marketed and integrated into our culture. And so again we've got to take back control of our minds and bodies from these corporate interests, make smarter choices. This doesn't mean that you got to be dry out there, you're like, "Shawn are these trying to have ashy knees?"

Just upgrade what we're doing. All right, we're going to go with the kind of conventional lotion. Just avoid have something that is... Has a smaller list of ingredients is always helpful. Stuff that you can actually recognize what they are, is going to be helpful. If it's a bunch of stuff you don't... You can't even read what those ingredients are? You might want to put that back down. And also, there are great things have been utilized for thousands of years, like shea butter and coconut oil, and the list goes on and on. There's so many great naturally kind of occurring products that are great for our internal and external use. And the thing is and if you're

wondering, at the end of the day, how are these you know extras getting into our body? We're talking about skin care for example, your skin eats! There are a plethora of prescribed hormone creams you rub into your skin and that's how they do their work on your endocrine system. You rub it in. Rub it in, rub it... You rub it in. All right, so please understand what you're putting on your skin, your cells are eating it. So, we definitely want to be more choosy, want to be a choosy lover. But what we're putting on to our skin. And I like to think about if you can't eat it, you might not want to put it on your skin. It's kind of having that little bit of a bias going on.

And another data Point on this and this is coming from pediatric endocrinologist Dr. Louise Greenspan and her data is demonstrating that the biggest risk Factor associated with early puberty are obesity, which we've already covered, environmental triggers, such as synthetic chemicals. So, these are environmental triggers that are altering the onset or altering the development or the expression of secondary sex characteristics, from again environment; these are environmental cues. And another thing that she noted is toxic stress. Increasing the incidence of early puberty things like food insecurity and witnessing violence, these are all noted in the data to increase the onset of puberty. And again, it's going back to what is the logical biological reason for this? Is that if there is a threatening environment that we're growing in, we need to reach sexual maturity as soon as possible to procreate keep the species going and hopefully we can outlast whatever this huge stressor is that we're living in. And so, we don't live in a time where there's looming violence from a rival tribe or being invaded for many of the developed countries. That still exists today, by the way. That still exists and we turn a blind eye to it. But we don't live in those conditions. Especially in this country, most of us are comfy... you don't have to worry about an invasion by another tribe or another country. And we take that for granted.

We don't have that we don't have food insecurity if we're talking about the ability to eat stuff. Because another not so fun fact is that a significant portion of our homeless population is experiencing obesity now. Those levels have skyrocketed even in folks who are homeless in our society. It's still easier to be obese. We have stuff to eat. Is it nourishing? Is it protecting our health? Absolutely not, but food insecurity what that really means is access to real nutritive foods. Foods that help to sustain our livelihood. Foods that we're designed to have. Foods that our genes expect us to eat. This other.

Is messing us up! And so, when we have food insecurity coming from environments, like the environments that I was raised in, where I'm just surrounded by fast food. I'm surrounded by processed food companies and liquor stores. And this is all that I know. I don't know that... I don't know what organic means. I don't know What the difference is between a bowl of Frosted Flakes and broccoli. It's just stuff you eat; I don't know the difference. It's just food because I was not aware that any of this stuff mattered. That there was a distinction. Of course, one is

going to be more attractive to me as a child raised in that, I lean towards Tony the tiger! Then ban the broccoli. Broccoli doesn't have a mascot; you know what I'm saying?

That's part of the problem. And so many studies have been done looking at children's impression of how much they enjoy a food product based on whether or not it has a mascot dramatically increases how much a child likes that particular food. If you think about it again it's very just primitive programming. And this is what these food manufacturers are doing to seduce our children and that carries on into adulthood. Many of us have been under that abuse but the great news is we don't have to point fingers, we could just take responsibility. I was doing the best that I could at the time, I'm aware now and I choose other than. I'm going to start to work on myself so that me and Tony the tiger are not having this affair anymore. Tony the tiger is not my type anymore.

So, this is really important for us to understand that the early onset of puberty is also taking place via environmental stressors. And you see this because minority children, in particular Black girls of every population, of every demographic who's having the lowest age of the onset of puberty, it's young Black girls in the United States. Now what's going on here, because I've mentioned for example this tie-in with the hypothalamus and the super charismatic nucleus, and this kind of syncing up with environmental cues is happening with all the cells in our bodies. The hypothalamus is the tip of the spear and the HPA axis, the hypothalamic-pituitary-adrenal axis. But this is just a really rudimentary way of looking at this incredible system of Hormone production and modulation and our nervous system, the HPA axis. Because along that is also the HP hypothalamic-pituitary-ovarian activation or ovarian axis, or testicular Axis. That's all happening on this information superhighway. And so, our perception of our environment, our perception of our nutrient needs, our stress exposures, our toxin exposures taking place in our brain is absolutely influencing what's happening with our sexual health, and the expression of sexual maturity.

So, if we're looking at what is the bottom line, kind of scientific feedback loop that's causing this expression? Let's look to the hypothalamic-pituitary-ovarian activation because of these environmental cues that our children are being exposed to. Now we've just covered again a recent influx of abnormal stress that's been so powerful that has increased our susceptibility to diseases, created new epidemics of mental health challenges that we've seen, and also altering the reproductive cycles of our children. What are some of the things that we can start to do right now to help to change this for the better? Because the power is truly in our hands, and it starts within our own homes. So, let's talk about some of the steps that we can take. Number one, as the researchers indicated from the data that we covered at the beginning of the show, our children's excessive use of devices, of smartphones, of laptops, just staring into these screens is altering their circadian timing system and altering their expression of secondary sex characteristics, and again leaning into the early onset of puberty.

This might sound super strange or not even real that that can even be possible, but we've got to understand again this is a new implement as a species. We've never had these devices that we're just staring into a couple feet from our face ever. We're talking about hundreds of thousands of years of environmental cues and inputs as a species similar to this form that we're in right now. And just like in the last couple, literally the last few years, just a few years, you could really count on your hands how long we've had rampant use of these smartphones. What do you think is going to happen? Here's the answer: We don't know! We don't know. We don't know how deep the ramifications are of this new behavior.

Now here's the other part. The more we're doing that, the more we're not doing other things that our genes expect us to do. But the bottom line is for number one, for us to help to turn the situation around, we've seen the ramifications what can happen, we need to make it a mandate to have better relationships with our devices. And also, to create structures within our families to have better relationships with our children and their devices. It's absolutely true that our technology has helped to get us connected. And you can look at the medium as even being neutral in some aspects and being able to help to foster relationships and education are great things to extract from it. But when we start to try to replace this kind of online or virtual reality with real reality, the ramifications again, we don't know just how unusual or even dangerous this behavior can be.

And so this is not to villainize the use of our devices because this is even allowing us to connect right now. It's to put it in a safe dose in a safe usage and to make sure that we're getting plenty of other real-world inputs for healthy genetic expression because the real-world social interactions are literally required for healthy gene expression. Real-world social interactions that we evolved having virtual relationships. This is again based on real-world data that we have, virtual relationships are not remotely the same thing. It's like having a supplement versus real food. It's not the same thing. It can help to supplement a relationship. It can help to address a few components but what we're really hardwired for is the real food of in-person social connection. And we have to make it a mandate. That's the mandate that we need because as you know, right now one of the greatest threats to our society, and it's nudging into the leading cause of disability depression is loneliness and isolation. This was prior to the pandemic shutdowns but now it's just been exacerbated. It's at a whole other level.

So make it a must to create structure within our families to ensure that we're getting real-world face-to-face time with each other. And also, our kids are getting that real-world face-to-face time and exploration. Man, I remember a time when we didn't have these devices and we just went outside. Outside was the virtual like that was... That's where we'd go out and discover and adventure and find and seek and discover and play and all the things. And today so many kids have had that stripped from them, and they're in this addiction this dopamine feedback

loop. They're just constantly going to their devices. Again, there's so many great things that we can get and fun that we can have and connection and education. So, I'm really doing my best to not villainize our devices. But we need to implore strategies to make sure that our kids are getting outside, are getting face-to-face interaction. So, on a day like today for example, my son is off school again. Today these kids I'm... That's another thing they get days off for some of everything. I don't remember getting all these days off. He's getting another random day off for some whatever and you know his friends are all off and they're online they're gaming. And so, knowing this, "Okay we're going to put a slot for you give you a time allotment for you to do that gaming," but I'm also going to put on the calendar...

Another term that we didn't have when I was a kid a play date. Play date? You know as a grown-up we even came up with that term. But to get together with family friend children or kids from school whatever. Put together a strategy because other parents want the same thing oftentimes. To where he's also having that real-world connection and if he wasn't doing that, he would hang out with me. I'm going to carve out some time, we're going to go outside, we're going to throw the ball around. I was just doing this yesterday with my youngest son who's 11 and my oldest son who's 22. We were literally formed a triangle... It's just my... Me and my youngest son, and my oldest son came out because we're... It's a ghost we came out we start throwing the trifecta. We don't... Doing the holy trinity throwing it around. Throwing around the ball and connecting. All right, so just carving out that time to connect in the real world, we can make it happen. It just has to be a priority. We can tell ourselves all these stories about this and that, and here's the thing, to identify with this, with the challenge here as a parent, sometimes you just want to be left alone sometimes you just want to break all the things, and we've given our kids these virtual pacifiers to keep them quiet whether it's an iPad or iPhone or whatever it is. Keep them preoccupied, we've got to be more mindful of doing that now. We know the ramifications that this can have on our children.

Their development and also this is going to set them up for many challenges down the road. It's not fair to them. So yes, from time to time absolutely, here you go, pull up something on the iPad, you play a game on the phone. But let's... This isn't just about our children's health; this is about our health. When we foster and focus on getting ourselves healthier, we have more energy. We have more mental space to be able to do these things with our children because the kids they just want to be happy, they just want to have fun. But it can be difficult when we're worn out. This change again, it starts with us. So, number one, creating better relationships with our devices, a little bit of smart planning. Having certain times allotted or a particular screen time parameters that your kids get. And then find out, you can even go online, again use the technology find out what are some activities for 8–10-year-olds? At home stuff like just you could just look at some articles. Grab some stuff from an art store or from the dollar store whatever the case might be. You could find all kinds of creative things to do.

One of the things that we did while the world was kind of shut down around us, I had my son to like I've got these cool kettlebells that I utilize, and I had him to like grab some paint and paint them. They have these like really cool faces like an orangutan face, or howler monkey and it's a painting project. So, they're still painting these cool things that again, we just be creative and find activities for our kids to do. The thing I got my son into really early on was doing Legos. So, he's building all these things and he's doing all these things. We we're doing a puzzle together family puzzle. And so that bad boy is a 3000 piece. All right, the last one we did we got it framed. It's on our wall at our house that we all did together. And so just finding again little inputs. It doesn't have to be perfect We have not put in enough time on that puzzle as we've intended to, because you know life happens, stuff's going on. But we have had time to you know, sit down and actually connect. And this leads into number two. So, Number One: Better relationship with our devices.

Number two: Better relationships with our kids. If we want to help to reverse this issue, this societal issue with early onset puberty we need to have better relationships with our children. According to data published in the Journal the American Medical Association Network and the Journal Pediatrics, children and adolescents are at vulnerable stages for the development of one of the key ingredients in early puberty, which is environment fostered obesity. The researchers uncovered that eating together as a family more often provides an added layer of protection against obesity and more. Their data revealed that children and young adults who share family meals three or more times per week are more likely to be in a healthy weight range and have healthier eating habits than children who share fewer than three family meals together. Three get your three, no matter what the meal is. Breakfast, lunch, dinner, just three times a week. It creates a buffer protection around your family.

It's just it's something so simple but this practice is becoming extinct in our culture and we're definitely going to talk more about this in the future but better relationships with our kids. The dinner table is a unifier and it's a time that you can connect. We have parameters where we're all together, we're not bringing the devices to the table. If you want, they've got these cool little lock boxes that you can put a timer on. Just create structure to where you can get together as a family. None of this stuff around the technology. You can play some music. "Hey Alexa!" Uh-oh, even when I said that I might turn off some people's Alexa. Play whatever, you know whatever playlist that that you like. You can play some music whatever but other than that just be there, be present. Present is a gift, right? So, just be more intentional with that. So that's Number Two: Better relationships with our kids.

Number three: And this is leaning into again helping to reduce this obesity epidemic taking place in our children, better nutrition, and exercise. These are key biological inputs that our children need for healthy expression of their genes and protection against chronic disease onset, and of course the onset of early puberty. So, what do we do here? Simple shift to start

with, simply shift the ratio of real foods to processed foods that your family is currently consuming. So, if it's maybe a 50/50 processed to whole foods just shift it to 60/40. Just make a shift, the 10% shift in the dietary inputs for your family. And just start there because every little bit is going to help, every little bit is going to help to foster better health outcomes that we can shift away from these ultra-processed foods that are degrading our health in so many different ways. In addition to that more than ever because of our environmental stressors, we need key nutrients that help our bodies to modulate and manage and process stress. A lot of those have to do with micronutrients. Key minerals are essential in running processes to help to even modulate like shifting our nervous system from the sympathetic fight or flight dominance over to parasympathetic rest and digest recovery. We need certain key micronutrients to do that. Historically in the last few decades unfortunately, we turn to these...

Multivitamins that are coming from synthetic sources. That's what I was given. My grandma gave me Flintstone vitamins. All right, I'm biting off the head of Fred and Barney and Dino. All right, and what that really is its sugar, synthetic micronutrients, artificial flavors, artificial colors, all of these things that are terrible for a growing developing human brain and body. Because the emphasis here is on synthetic versions of these micronutrients. A synthetic nutrient though it might be the same chemical makeup on paper, does not have the underlying intelligence and even more tangibly speaking the supporting elements, the cofactors found in real food concentrations that magnify its resonance with our human cells. Let's take vitamin E for example. This nutrient is important for healthy function of our cardiovascular system, cognitive performance and even the health of our skin. Well, a study that was published in the American Journal of Clinical Nutrition determined that Natural vitamin E from food concentrates has nearly twice the bioavailability of synthetic vitamin E. So again, synthetic versions of this, so these are artificially concocted versus the whole food form and also whole food concentrates, so food-based supplementations. Now all of my family, my kids in particular, I make sure that they're getting in a concentration of whole food-based micronutrients several times a week at minimum, most of the time every day.

And for me, especially for my kids and in particular with my youngest, I love the formulation of red juice and these kind of red blended red and blue hued superfoods in the Organifi red juice, because he loves the way that it tastes, and it's just packed with real food nutrition. So, in particular we've got acai that's in there. In the Journal of Agriculture and Food Chemistry found that acai actually, not just theoretically, it actually raises participants antioxidant levels demonstrating how effectively it's absorbed by our gut, by the human digestive system. We actually do absorb the antioxidants. It's not theoretical. There's a resonance here and acai actually has an ORAC value of 103,000. This means that it's about 10 times the antioxidants of most fruits that you're going to see in your produce aisle. So, it's again getting our kids' growing bodies the antioxidants and a concentrated source but it's kid tested, parent approved, tasty. Another ingredient in that red juice blend is actually blueberry and

researchers at the University of Michigan published data finding that blueberry intake can potentially affect genes related to fat burning again stacking conditions for healthy metabolism. Head over to Organifi.com/model and you get 20% off their red juice blend and also their green juice blend, the incredible gold, everything that they carry actually, it's a really, really special thing that they have going on. Go to Organifi.com/model.

That's Organifi.com/model. You get 20% off. Again, kid tested, parent approved. Definitely for our kids, red juice is a huge winner. Now again the principle: Real food first and superfood concentrates are the real insurance here, but real food is the dominant force. And again, as I mentioned today with our environmental stressors, we need a more sufficient or dense resource for micronutrients. And that's why things like this are important. I mean Flintstone vitamins doesn't have anything on Organifi and what we're able to do with real food concentrates today. Now within that again, so we're talking about the third asset here in helping to reverse this issue with early onset puberty protecting our children's health, their metabolic health. Number One: Better relationships with our devices. Number Two: Better relationships with our kids. And Number Three: Being better nutrition and exercise. So, in that exercise component this is one of those things where if we're looking at reducing obesity in the population of our children and adolescents. We know that this is an important input, but we keep taking it away from our culture. This physical fitness aspect and recess and gym time, all these things that were more consistent a couple decades ago.

It's been lessened in school formats and also so much more time at school has been replaced with being on a screen. And the same thing holds true when the kids are away from school. They're spending so much more time on screens. Now the screen again can be an input, but we have to balance that out with physical activity. And so, what I would implore you to do is to build more movement into the family culture. And so, what this can look like is something simple like instead of just being like we need to spend more time together as a family, actually plan it. Maybe on early Saturday mornings each week you guys go on a hike together or you guys go to the local gym and swim together or play basketball together or whatever the case might be. Build something into the family structure where it's consistent and in addition to that you can build in little inputs to where again if your kid is getting 90 minutes of screen time then they have the agreement. So, get them in on it, you can even talk to them and find out what kind of physical activity or what kind of play screen free play would they like to have.

Give them options like, "Okay, so would you like to build a Lego project? Would you like to play basketball? Would you like to... " Give them some options. Ping pong. Whatever the case might be for some things maybe that you know a little bit that they would enjoy. Say "Hey, you got 90 minutes of screen time then you also guarantee you got 30 minutes of this other thing." So again, build it into the family culture. Now remember, of course these changes generally aren't going to happen overnight but just taking steps in the right direction can literally have us to

end up at an completely different destination as a society and as families. And so, I hope that this was enlightening, and this is something to definitely share out. You could tag me on social media, I'm @Shawnmodel. Take a screenshot of the episode, share it out with your friends and family that way. And on Twitter as well, I'm @Shawnmodel. On Facebook, I'm @theModelHealthShow and of course you can send this directly from the podcast app that you are listening on. And if you are listening on the audio version you can pop over to the YouTube channel, subscribe to the Model Health Show there. You can also get a look at a lot of the studies that we covered today. They're going to be up on the screen so you can actually get a look at them as we've gone through this. So again, please make sure to share this one out get this education and empowerment out to our families. It's more important than ever.

I appreciate you so much for tuning into the show today. We've got some epic shows coming your way very, very soon. So, make sure to stay tuned. Take care. Have an amazing day and talk with you soon.

And for more after the show make sure to head over to themodelhealthshow.com That's where you can find all of the show notes. You can find transcriptions, videos for each episode. And if you got a comment, you can leave me a comment there as well. And please make sure to head over to iTunes and leave us a rating to let everybody know that the show is awesome. And I appreciate that so much. And take care. I promise to keep giving you more powerful, empowering, great content to help you transform your life. Thanks for tuning in.