Lecture Notes

Session 1: An Introduction to the Functional/Holistic Approach to Type 1 Diabetes: Health for Children (and Teens) with Diabetes Is More Than Just Bloodsugar Control

Welcome, welcome, welcome. I am Carla Atherton, director of the Healthy Family Formula, an initiative that brings education, resources, and support together to empower families to reverse chronic illness, prevent disease, and basically, live a full-on healthy life.

I direct my lectures to parents, but the materials and information is most relevant to participants who are caregivers of children and teens and adults with Type 1 Diabetes.

Personally, I am a book junkie, research geek, insatiably curious mother of three grown (son, age 20), almost grown (daughter, age 18), and growing (daughter, age 15) children, one of whom has Type 1 Diabetes. We live on an acreage in rural Saskatchewan, Canada, where I work from a home office with people all over the world, and I'm on a revolutionary mission to empower people to transcend our new normal of ill health and chronic disease.

Why do I do what I do? And why am I here spending this weekend teaching this workshop?

Our story is not unlike many of your stories. When we are moved to create something extraordinary, something that comes fully from who we are, from what gets us out of bed in the morning, from a clear and relentless vision, it often comes out of a place of necessity, a place of pain, from an experience or an event that narrowed your sites on a purpose.

My daughter was diagnosed with Type 1 Diabetes in February 2012. I am reluctant to talk about this event as if it is the only defining moment in my life, and I certainly do not want to make my glorious, fierce daughter into a diabetes poster child, but the fact is that that turn of events changed the life course of everyone in our family. The ripple went wide.

Gone were the carefree days of eating at potlucks and picnics, going out for ice cream, sleeping well and deeply at night taking for granted that everyone will wake up in the morning alive and relatively happy. Here came the days of tests and finger pricks and needles, of frustrating doctor's visits, of fear that was so stealthy, so quietly present, that it would coolly walk into my mind like a ghost long after I thought it was gone.

On that first day, my husband cried in the hospital kitchen asking me: "why couldn't it have been me?" as if it worked like that, as if it was his fault or as if he could take it from her.

My daughter stated to me from her hospital bed: "I am going to have this for the rest of my life," like she just knew, like some kind of wisdom came over her, and she understood what it all meant.

Me? I got busy, as I always do. I took charge and arrived at the hospital the next day with a pot of homemade soup determined to make her well.

But both my daughter and husband saw something I did not. They saw what I knew we could not focus on at the time or we would not get through. The very long road we had ahead.

My babe struggled. In the teen years, chronic illness is a tough row to tow. And even with what I know about health and about diabetes, in particular, I could not reach her or help her as much as I would have liked. Diabetes made her, at times, prickly, alone, and angry.

She was not able to be as free as a teenaged girl wants to be, and in so many ways, her body became her prison.

All of you parents out there know that once your children are born, the umbilical cord is never really severed. We feel our children's joy, but we also feel our children's pain. I once wrote in a poem that my children are "my hearts walking outside of me." They are raw and vulnerable – they make us vulnerable to every heartbreak or challenge they encounter. And we want so desperately to fix them or patch them up.

So, I've spent the last 7 years adding certification after certification to my list of credentials, researching everything from blog posts by other parents to academic articles to materials from the schools I attended. I called doctors and practitioners and met the best in person. I learned from podcasts and lessons and trainings both scholarly and the stuff aired for folks like you and me. I dug deep into what might have caused one of my own to fall and how to get her back up, again.

Yet, I didn't reach that sunny place right away. In fact, I kept chasing the horizon, and the sun kept setting. I felt alone. I felt overwhelmed. I felt that every moment that passed was another nail in my daughter's coffin.

I HAD to figure it out – what was the cause, and what could we do about it? And it got worse before it got better. My other two children had their own health struggles, one with depression and the other with severe anaemia, and my husband and I were falling apart, as well.

So, here I was, trying to make a fledgling business take flight, working, researching a minimum of 5 hours a day, lecturing and running programs, getting 3 kids off to sports 7 times a week, studying and meeting deadlines, trying to stretch the money we had to pay for testing and supplements that I was not sure were right or working, and navigating the healthcare system with forms and healthcare visits that left me hopeless that anyone at all could or would help us. I had to explain our diet and how we spent our money to relatives who could not understand. I had doctors walk out on us or silence me when I started to ask questions. I was spent, emotionally and financially depleted, and spinning my wheels. What could I do?

I just kept going. I started to make progress in what I was learning and could apply to the care of my daughter and my other two children. I got well versed in the obstacles I faced and then even better versed in how to remove them one by one, sometimes slowly like peeling back the layers of an onion, and sometimes with a fierce intensity like breaking down walls; sometimes working within the confines of a broken medical system, and sometimes by going rogue.

Almost 7 years after the big D-day, thousands of hours of research, endless study and further education, and becoming a professional in the family health arena, I wanted to bring all I have learned to other parents who no longer want to medicalize their children but put into practice the methods and strategies that will help their children to soar, despite, and maybe even *because of*, their diagnosis. Through my own experience, I have determined that the biggest obstacles to optimizing the health of our children with Type 1 Diabetes are:

Lack of time
Lack of the right information
Lack of money
Lack of direction
Lack of support

We can't be alone in this. So, we are here, this weekend, to condense essential and organized information, guidance, and direction into an affordable weekend workshop while enfolded in a community of other families seeking the same results: better health for our loved ones.

Workshop Goals

It is obvious to all of us here that better bloodsugars, better moods, less sick days, and a long and healthy life come with a healthy body and mind, *despite* a diagnosis. This weekend, I will be teaching you a holistic approach to transcending Type 1 Diabetes based on the principles of functional medicine, lifestyle interventions, and holistic therapies and practices. My goal is to have you come out of the workshop empowered with new skills, tools, support, and information that will enable you to *exponentially* elevate your children's health. Parenting children with chronic illness can be a marathon at a sprint pace, and I think it is safe to say that moving from "survive" to "thrive" is a pretty sweet ultimate goal that will enable you to slow the pace, reduce the worry and the weight and the pressure of it all. Parents, I honour and admire your strength, so wear that badge with pride; but *ease* is also an honourable pursuit, and I know that you could all use much more of that. This is what I aim to aid you with this weekend: attaining the perfect mix of strength and ease.

Defining Your Goals

At this early stage of the workshop, I would like you to determine your goal or goals for this weekend. Is it to help you to cope with the trials and tribulations of caring for a child with chronic illness? To help your child to cope? It is to help your child to have better blood sugar levels? Or do you want to go deeper into what caused your child to develop diabetes in the first place? Are you looking for strategies and solutions that have not been offered to you elsewhere? Are you interested in exploring things you can do yourself at home to improve your child's general health, elevate their mood, or enable them to simply "do life?" Are you concerned about their future health, interested in the prevention of future health complications? Are you looking for improvement or are you looking for a straight-up cure? Please do write these goals down for yourself now.

Defining Diabetes

Let's start this conversation with the not-so-basic basics of diabetes. First: what is diabetes? This question may seem to be a very basic one to pose to a group of savvy parents and caregivers of children and teens with diabetes, but please indulge me here for a few minutes. There is a method to my madness.

It is very important to differentiate between the different types of diabetes, and I don't mean just between Type 1 and Type 2. Determining the type of diabetes

your child has will enable you to fine-tune their care and therapeutic/lifestyle approaches. These issues will become very clear as we flesh them out during our sessions throughout the weekend.

The body uses glucose as a primary source of fuel. Diabetes, in general, is the inability for glucose to enter the cell, simultaneously starving the body of the fuel needed to live *and* creating an environment of high blood glucose that is highly toxic and damaging to tissues and organs. For glucose to enter the cell, it needs to be escorted by insulin, which is produced in the beta cells in the islets of langerhans in the pancreas. When the body is unable to do this, our cells die of starvation and glucose builds up in the blood to toxic levels, inflaming and damaging tissues and organs, and eventually leading to death if insulin is not administered.

Since the introduction of injectable insulin, most people can live well and healthfully if they manage their blood glucose through lifestyle modifications and usher glucose into the cells through insulin therapy. Yet, many children, teens, and adults still struggle with uncontrollable blood sugars and complications stemming from long-term and/or acute fluctuations in their blood sugar levels, the reasons for which we will be discussing in detail throughout this weekend.

The general list of symptoms (some or all of which your children have experienced) that are red flags for diabetes are:

"**Increased thirst and frequent urination.** Excess sugar building up in your bloodstream causes fluid to be pulled from the tissues. This may leave you thirsty. As a result, you may drink — and urinate — more than usual.

Increased hunger. Without enough insulin to move sugar into your cells, your muscles and organs become depleted of energy. This triggers intense hunger.

Weight loss. Despite eating more than usual to relieve hunger, you may lose weight. Without the ability to metabolize glucose, the body uses alternative fuels stored in muscle and fat. Calories are lost as excess glucose is released in the urine.

Fatigue. If your cells are deprived of sugar, you may become tired and irritable.

Blurred vision. If your blood sugar is too high, fluid may be pulled from the lenses of your eyes. This may affect your ability to focus.

Slow-healing sores or frequent infections. Type 2 diabetes affects your ability to heal and resist infections.

Areas of darkened skin. Some people with type 2 diabetes have patches of dark, velvety skin in the folds and creases of their bodies — usually in the armpits and neck. This condition, called acanthosis nigricans, may be a sign of insulin resistance."

-Taken from the Mayo Clinic website at: https://www.mayoclinic.org/diseases-conditions/type-2-diabetes/symptoms-causes/syc-20351193

But many symptoms are absent from this list, such as mental and mood problems and the myriad of other symptoms that are indicative of other conditions (comorbidities) that accompany or were caused by the diabetes, itself. The longer a person has diabetes, and especially when the diabetes has been difficult to control, the longer and more complex this list of symptoms can and will become.

Pre-Diabetes

One is said to have pre-diabetes if glucose control is impaired but not to the point to where one would be diagnosed with diabetes. This condition is called pre-diabetes because, if steps are not taken to control blood sugar levels and address what is causing the impaired insulin production, diabetes will develop.

Type 2 Diabetes

The most common form of diabetes is Type 2, precursors to which are Metabolic Syndrome, Insulin Resistance, and Pre-Diabetes. **Metabolic Syndrome** (MetS) is a health disorder that, if left untreated, greatly increases the risk of many chronic illnesses including diabetes and is diagnosed when a patient has three of the following conditions:

"High blood pressure (≥ 130/85 mm Hg, or receiving medication)
High blood glucose levels (≥ 5.6 mmol/L, or receiving medication)
High triglycerides (≥ 1.7 mmol/L, or receiving medication)
Low HDL-Cholesterol (< 1.0 mmol/L in men or < 1.3 mmol/L in women)

Large waist circumference (≥ 102 cm in men, 88 cm in women; ranges vary according to ethnicity)" (https://www.metabolicsyndromecanada.ca/about-metabolic-syndrome).

Insulin Resistance is a complex metabolic condition linked to Metabolic Syndrome where the body secretes adequate insulin, but the cells become resistant to it. Insulin Resistance is the mechanism behind Type 2 Diabetes and can lead to Type 2 if not addressed. Insulin Resistance and Type 2 diabetes are understood to be induced by poor lifestyle practices such as an unhealthy diet and lack of exercise, movement (a sedentary lifestyle), and sleep. These stressful lifestyle and nutritional practices cause an excess of insulin to be produced in the body (hyperinsulinemia) which exhausts the pancreas and causes the cells to close themselves off to the constant influx of toxic levels of insulin and glucose. This leaves the glucose to circulate in the bloodstream causing hyperglycemia (high blood glucose). Hyperglycemia causes inflammation and organ damage, particularly to the eyes, nerves, brain, liver, kidneys, and heart. When the cell no longer accepts insulin, the blood develops high levels of insulin (hyperinsulinemia), as well as high glucose (hyperglycemia).

Mainstream medicine is still teaching the public that Type 2 is an irreversible disease (as they understand most chronic illness to be), the onset of which is heavily determined by bad luck of the genetic draw. Yes, most healthcare professionals and the institutes the general population turns to for health information and guidance recognize diet and lifestyle as ways to prevent and manage Type 2 Diabetes, few educate people on the prospect of reversal. Despite the fact that even the Mayo Clinic reports that Type 2 is irreversible, this belief has been proven to be essentially flawed (and incorrect) by many scientists, researchers, practitioners, and people with diabetes who have reversed their own condition. Type 2 Diabetes is being reversed not through medications or insulin therapy, but by healthful lifestyle interventions, nourishing and whole foods diets, nutritional liver and kidney support, movement and exercise, and mind/body practices.

In Type 2 Diabetes, the pancreatic beta cells indeed produce insulin, but since the high influx of the sugar taxes and inflames the body at the cellular level, the insulin cannot get the glucose into the cell (the cell is saying, "no more!") causing metabolic syndrome, insulin resistance, then ultimately, full-blown Type 2 Diabetes.

Type 2 is categorized as a metabolic disorder, meaning that it is a problem with the metabolic workings of the body and not due to damage to the physical organs, themselves, at least, not at first. So, people with Type 2 Diabetes may have healthy pancreases and an abundance of beta cells in the beginning of the disease state, but these organs and the hormones they produce are out of balance or malfunctioning. Gestational Diabetes is also a form of Type 2 and occurs when women develop the disease only when pregnant.

Type 2 was once called Adult Onset Diabetes, but is now more often referred to as "non-insulin-dependant" diabetes as more and more children are developing Type 2 due to poor lifestyle and diet and other environmental and lifestyle factors. In fact, a doctor we once saw had a 2-year-old patient who weighed 100 pounds and was pre-diabetic. This may sound like an anomaly, but it is becoming more common; it is undeniable that the rates of obesity, pre-diabetes, metabolic syndrome, insulin resistance, and full-blown Type 2 Diabetes are on the swift rise. And yes, as we will discuss on our 3rd session, lifestyle choices such as diet and exercise are determining factors, but there are also other factors that contribute to the development of ALL types of diabetes that most people are not aware of such as toxins, genetic single nucleotide polymorphisms (SNPs), and other sources of inflammation, all of which are somewhat within our control.

Type 1 and LADA

Type 1, or "insulin-dependant" diabetes is not considered to be a condition brought on by poor diet or lifestyle, yet functional practitioners, researchers, and progressive immunologists and autoimmune experts are learning more and more about what Type 1 exactly is and the mechanisms behind it. Type 1 is explained as an autoimmune condition where the body mistakenly attacks its own tissues and/or organs, and specifically in the case of Type 1 Diabetes, the pancreatic beta cells. When enough tissue or organ damage has occurred, symptoms occur, then disease and diagnosis. But this is only part of the story. Many immunologists and autoimmune experts are expanding our understanding and assert that the immune system is not actually *confused*, but is diligently doing its job of ridding the body of foreign peptides and proteins, damaged cells, and pathogens that are not supposed to cross into the bloodstream. The problem then becomes that of friendly fire, molecular mimicry, and the eradication of infected tissue, which we will discuss in depth in Session 2. Therefore, Type 1 may be the result of the presence of auto-antibodies to insulin, beta cells, tyrosine phosphytase, or GAD, or another cause for beta cell

destruction or disruption, or both. It may even be caused by an infection directly causing damage to the pancreatic beta cells or by chronic or acute Pancreatitis where the pancreas becomes inflamed from pancreatic enzymes becoming active in the pancreas before being released into the small intestine. In any case, Type 1 Diabetes occurs when the beta cells are either destroyed or rendered inactive.

The onset of Type 1 Diabetes usually occurs in children, which is why it used to be referred to as Juvenile Diabetes. It is very often diagnosed around the age of 11, but some children are diagnosed in their infancy and some people develop Type 1 Diabetes as adults, which is then called Latent Autoimmune Diabetes of Adults (LADA) and sometimes has the characteristics of Type 1.5 Diabetes.

Type 1.5
Simply put, people who have Type 1.5 Diabetes have characteristics of both insulin resistance (Type 2 Diabetes) and Type 1. This type is also called Double Diabetes.

Maturity-Onset of Diabetes in the Young (MODY)
MODY is a rare form of *non-autoimmune* diabetes that causes beta cell dysfunction thus impairing insulin secretion but not completely impairing its production. There are 14 types of MODY identified so far, each being caused by a different genetic mutation. The top 4 mutations are as follows:

- "HNF1-alpha. This gene causes about 70 per cent of cases of MODY. It causes diabetes by lowering the amount of insulin made by the pancreas. Diabetes usually develops in adolescence or early twenties, and people with HNF1-alpha MODY generally don't need to take insulin: they can be treated with small doses of a group of tablets called sulphonylureas (often used in Type 2 diabetes).

- HNF4-alpha. This isn't as common as the other forms of MODY. People who have inherited a change in this gene are likely to have had a birth weight of 9lb or more (around 4kg). They may also have had a low blood sugar at, or soon after, birth which might have needed treatment. People with HNF4-alpha are generally treated with a sulphonylurea tablet but may progress on to needing insulin.

- HNF1-beta. People with this type of MODY can have a variety of problems including renal cysts (cysts of the kidneys), uterine abnormalities and gout, as well as diabetes. Often the renal cysts can be detected in the womb before a baby is born. The diabetes tends to develop later and insulin treatment is usually necessary, as well as following a healthy balanced diet and getting regular physical activity. HNF4-beta MODY also carries a risk of complications of diabetes.

- Glucokinase. This gene helps the body to recognise how high the blood glucose level is in the body. When this gene isn't working properly the body allows the level of blood glucose to be higher than it should be. Blood glucose levels in people with glucokinase MODY are typically only slightly higher than normal, generally between 5.5-8mmol/l. You don't generally have symptoms of this type of MODY and so it's often picked up through routine testing (eg during pregnancy). You don't need any treatment for glucokinase MODY."

(https://www.diabetes.org.uk/diabetes-the-basics/other-types-of-diabetes/mody)

Brittle Diabetes

Also called Liable Diabetes, Brittle Diabetes is a dangerous condition characterized by hard to control diabetes with large fluctuations in blood sugar levels which can move from high to low very quickly. Many children with Brittle Diabetes are frequently hospitalised. Factors that contribute to this condition are:

-not testing blood glucose levels
-not taking diabetes medications as prescribed
-illness or infection
-hormone fluctuations
-emotional stress
-eating disorders
-drug or alcohol use
-malabsorbtion, gastroparesis, and celiac disease
(some items from this list were taken from:
https://rarediseases.info.nih.gov/diseases/11900/brittle-diabetes)

Other Types We Have Yet to Define

I recently did some testing on my own daughter that I have been wanting to do for some time. I finally took the leap and invested the money into a test that I gained access to through opening an account with the lab, myself. The results put her into a category of diabetes I have yet to define but that I am sure many many others fall into, as well.

When she was first diagnosed, the only bloodwork that was the determining factor for her diagnosis was a fasting blood glucose of 11mmol/L (or 198mg/dl). The assumption was made then and there that she had Type 1 Diabetes and that her beta cells were almost all destroyed or would be so very shortly. We "enjoyed" a very lengthy "honeymoon period" with a consistent HbA1c of 5-5.5. Excellent for a Type 1 Diabetic, right?! They never did test for insulin auto-antibodies or auto-antibodies to her beta cells. Her c-peptide was not tested, either, until I asked our GP to follow up with the test. When it was done, the paediatric endocrinologist walked out on us (my husband, daughter, and I) during our check-up appointment saying we wasted the healthcare system's money on a $1000 test, which we found out later to have cost the system, in fact, $35.

That aside, what has recently become most significant is that my daughter was never tested for any sort of auto-antibodies, not insulin, beta-cell, GAD, nor tyrosine phosphatase. The significance of this we will get to in a moment. As far as I know, they didn't look for infection or signs of Pancreatitis.

We got busy and started on a very sharp learning curve. We soon eliminated gluten and dairy knowing some vague facts about why gluten and dairy could set Type 1 into motion; but as the years went on and my daughter was out of the house more and more, she began to eat these foods again without my knowing. Her blood sugars went high, like scary high, and her energy, stamina, and mood went down the toilet. There were, of course, many other factors that contributed to this down-turn, which lasted for 5 years, but one thing was for certain: the honeymoon was over.

I would like to make it known that I very much dislike the term **"honeymoon period"** as it insinuates the inevitable end to a "good" or "enjoyable" period of time. It indicates that the hammer is going to drop and things will never be as good, again. And as we will discuss throughout this weekend, this does not have to be the case.

So, a few months ago, we decided to go for it: do the tests and see what we would find. Despite knowing a great deal about how to help her and what to do, her behaviour and health were not budging, and I was determined to find out what exactly was going in that brain and body of hers. We tested for a panel of auto-antibodies and infection and ordered a food reactivity test that assesses reactivity right down to the varying peptides of each particular protein (we will discuss these tests during our Testing session). What did we find?

My daughter has auto-antibodies to cerebellar tissue in her brain. When the body produces some autoantibodies, this is useful in order to eliminate dead and dying cells, but if more antibodies are produced than cells being made, the organ or tissue begins to die or malfunction.

She has antibodies to gluten, which can cross-react with cerebellar tissue. This is called ***molecular mimicry***, where full proteins leak through a damaged GI tract or breeched blood brain barrier into the bloodstream and causes an inflammatory response. Whole proteins are not supposed to be in the bloodstream, and the immune system will attack them as a protection mechanism. In molecular mimicry, some of these foreign peptides or whole proteins look a lot like specific body tissues. For instance, gluten looks a whole lot like cerebellar cells, A1-Beta casein looks a lot like beta cells, and lentils look a whole lot like thyroid tissue. When we have intestinal hyperpermeability (which will be explained in detail in a subsequent lecture), peptides or whole proteins can leak into the bloodstream where the immune system says "what's this?!" and tags them for destruction. When the immune system tags these foreign proteins, it can also tag cells and tissues that are almost identical to the proteins that they are intending to attack, and an all out internal attack on healthy cells and tissue causing chronic inflammation and cell death is the result.

My daughter also has severe reactivity to A1-Beta casein, which is cross-reactive with the islet beta cells. The same molecular mimicry appears to be happening with her beta cells as it is with her cerebellar tissue. So, both antibodies to foreign invaders AND auto-antibodies (antibodies to her own tissues) showed up.

She also has antibodies to strep. Clinically correlating with chronically swollen lymph nodes and some symptoms of PANDAS/PANS/AE, this leads me to

further deductions about the causation of her chronically high blood sugars. Her immune system was in overdrive.

Now this is the kicker, having had a diagnosis of classic Type 1 Diabetes for 7 years, my daughter has no auto-antibodies to insulin or beta cells or GAD or tyrosine phosphatase, all of the hallmark auto-antibodies for the diagnosis of Type 1. Now, I am not saying that she does not have Type 1, but hers is not a clear and classic case, and these new discoveries lead me to a whole new world of treatment and recovery options.

What are the implications of this?

Could ingesting gluten and dairy be causing the attack of her brain and islet beta cells due to cross-reactivity (molecular mimicry)?

Could infection be exasperating an inflammatory immune response and autoimmunity? Could the presence of strep be suppressing or stressing her immune system?

Might she have been misdiagnosed and in fact have MODY?

Since she has no antibodies to her beta cells or insulin or GAD or tyrosine phosphatase, is it possible that she has a chance at beta cell regeneration if we knock out infection, adjust her diet, and give her body time to heal?

My point here is that proper diagnosis is extremely important, not so that we can put a label to a disorder and call it done, but so that we have a place to start, so that we know what treatments and strategies we need to employ, so that we know what is possible and work toward those goals. Misdiagnosis or when details that take your child out of a certain category or are ignored or explained away with made-up, ill-understood, or inaccurately-named phenomena such as "prolonged honeymoon period," rob us of a chance for further investigation and subsequent discovery of options. This functional approach requires precision medicine and a focus not on a *typical child with diabetes* (which there are none), but *your* child.

If we understand that the body is a complex system of interconnected parts and processes that are profoundly affected by the environment we expose ourselves to, it becomes quite plausible that there may even be more types of diabetes

with differing causes. But it isn't necessarily the name that will give us insight, it is the set of underlying causes and what is actually going on under the hood for each individual child that is vitally important.

Diabetes is not simply one disease but a cluster of conditions that cause the same result: high blood glucose levels and an inability of the body to control these levels without either medications or insulin therapy. Your child can experience a combination of Type 1 and Insulin Resistance, called Type 1.5 Diabetes, can have slow-progression diabetes or even start with Type 1 Diabetes then develop Type 1.5 or vice versa, can experience the complication of Brittle Diabetes, can experience comorbidities that can further complicate care and require adjustments to healing plans, can have causal factors ranging from infection to toxicity to food reactivity (which we will discuss in Session 3), or have other forms of diabetes that I in this lecture or the scientific community at large have yet to define.

Diabetes is the result of a complex set of factors such as health history, environment, genetic susceptibility (which is by no means predictive destiny), and a myriad of triggers, but if these factors can be untangled and root causes unearthed, we have the exciting opportunity to *exponentially elevate* the health of our children with diabetes or even aim for possible disease reversal.

Type 1 is considered to be irreversible by many in conventional medicine, functional medicine, and complementary medicine, but although it is not the norm, individuals have had success with reversal and recovery. I would postulate that this poor prognosis is because the focus has been on symptom management and "cures" and not on addressing root causes and employing precision and personal diagnostics and strategies. The medical profession is not looking at reversal or recovery because they think Type 1 is a done deal, but might I suggest something revolutionary here: when they do look, might they be looking in the wrong places? This is *my* daughter's story. Now let's figure out what your child's story is.

Session 2: Finding and Addressing Root Causes

Approaches to Type 1 Management

Our current conventional approach to Type 1 management has been decent in some general respects but often not thorough enough. When my own daughter was diagnosed, the dietician asked *her* how many carbs she wanted to eat per meal (as if an 11-year-old could make that decision) and what she wanted to eat, then calculated the carb count and the amount of insulin she would need to bolus in order to cover these carbs. She gave us pamphlets that reported the carbs in mini donuts and fast-food burgers and fries, you know, kid food, right?

Well, we weren't eating all that much of that food at that time, anyway, and the whole thing seemed back-asswards even to me, a mom who grew up in the 80s on Kraft Dinner and Kool Aid simply trying to feed her children a little better than many in her own generation were fed, but was by no means a diabetes or nutrition specialist. The dietician seemed to be in Lalaland, not wanting to disrupt our daughter's life with big life changes or deprivation of the things she assumed were comforting or familiar to her like junk food and soda pop. No discussion or education about food reactivity, root causes, autoimmunity, testing, infection, sleep, rest, exercise, emotional health, stress reduction. Only carbs in, insulin in. Done and done.

Well, I hated to break it to her, but *nothing* about having diabetes is *normal*, and once your child has diabetes, everything changes. No cookie or candy is going to change that. In fact, those things will cause *more* suffering and a lifetime of worsening health. I am horrified to know that 7 years later, this same paediatric diabetes team is teaching the same things to every single child who is diagnosed with diabetes within a 300-mile radius of our home city. That would mean that hundreds of families are given the same flawed, 50-year old information, and many come away with the thought, "is that all there is for my child?"

My answer, of course, is no. Heck, no.

Now, the changes diabetes can catalyse are not all bad, they just *are*. The whole family might decide to eat better and exercise more and look deeper into family routines and relationships. But the worry, the stress, the routine are constant, and playing the numbers game will not be enough to alleviate those challenges.

I know that the doctors, nurses, and nutritionists we have seen since that first encounter and the thousands of others working in healthcare systems all over the world all mean well and think they are doing all they can to make the blow of diabetes softer for kids, but we need better. We need better and more progressive education for healthcare providers, and parents empowered with information with a good handle on a more powerful, holistic approach to diabetes in order to optimize their health.

Not everyone here will have had this experience, but if you are like almost every single parent who I have worked with or met personally who has a child with diabetes, you have been given the same advice: to simply match insulin to carbs; let kids be kids; that highs are not that big of a deal for kids. They don't want to scare parents who already worry mostly all day, every day (and night), while not offering any options for recovery. I think that knowing there is better for your child and not having options is scarier than the truth. To not have the information or withhold it in order to be "nice and gentle" is not progressive nor doing us parents or our children any favours, and ultimately robs parents of the empowerment they can garner from knowing the causes--the realities and consequences of poor or wishy-washy management--and from all of the healing that can come with that empowerment. I don't know about you, but I was not interested in being handled with kid gloves. I wanted someone with knowledge to help guide us through this unknown territory. Everything changes with a diagnosis, but it is what we do *about it* and *because of it* that determines our children's fates.

That said, let's start to talk about ways we can move beyond simply counting carbs and playing the numbers game.

Even though parents are often told that eating McDonalds or Fruit Loops is fine for their child and that they simply need to give them enough insulin to cover the carbs, we all know that lifestyle approaches are almost always a component in managing any chronic illness, no matter if you are an adult *or* a child.

Now, although I just said that treating and managing diabetes is not *solely* a numbers game, there is definitely the need to match carbohydrate intake with bolused insulin and to have a steady supply of basal insulin to cover the body's constant stream of metabolic processes. Of course our children with Type 1 Diabetes need Insulin Therapy. This is an essential and life-saving therapy.

But Insulin Therapy is not the only thing our children need. Employing a whole system of wellness is most effective. So, I am going to go through a few of these systems, or better labelled, "lifestyle approaches." All of the following lifestyle approaches focus on lowering blood sugar with less insulin, bloodsugar stabilization, reducing risk of further disease progression and complications, and reducing the incidence of comorbidities; all include elements of a holistic approach to wellness and general healthful living. This seems basic and a no-brainer, to live healthfully, but there are debates over which approach is best, and often the simple basics are missed as we medicalize our health and rely on the medical profession to save or heal us.

Here are some lifestyle approaches that are based on a way of eating:

Whole Foods
-Dr. Whittaker (old school)

Low Carb
-Dr. Mona Morstein, ND
-Dr. Jody Stanislaw, ND
-Dr. Richard K. Bernstein, MD

Paleo
-Sarah Ballantyne, PhD

Super Low Carb (Ketogenic)
-Ellen Davis and Dr. Keith Runyan, MD

High Carb, Low Fat
-Cyrus Khambatta, PhD and Bobby Barbaro

Functional Medicine

Although we want to help our children to manage diabetes, we also want to help them transcend the diagnosis through a *functional approach*, which will give them a better chance at healing. I keep referring to the concept of functional health. What do I mean by that?

Functional medicine is a revolutionary approach to health that is holistic, thorough, and personalised, and focused on root cause resolution.

> "The Functional Medicine model is an individualized, patient-centred, science-based approach that empowers patients and practitioners to work together to address the underlying causes of disease and promote optimal wellness. It requires a detailed understanding of each patient's genetic, biochemical, and lifestyle factors and leverages that data to direct personalized treatment plans that lead to improved patient outcomes.
>
> By addressing root cause, rather than symptoms, practitioners become oriented to identifying the complexity of disease. They may find one condition has many different causes and, likewise, one cause may result in many different conditions. As a result, Functional Medicine treatment targets the specific manifestations of disease in each individual." (taken from the IFM website: https://www.ifm.org/functional-medicine/)

Through functional medicine practices and testing, you can:
-find the root cause of your child's diabetes
-have the chance to reduce or eliminate risk of further disease progression and complications
-have the chance to reduce or eliminate risk of developing co-morbidities
-have a better relationship with your healthcare practitioners and chose the ones that will work with you in a manner that works *for* you
-optimize your child's health through your own efforts
-explore the possibility of complete disease reversal

Dr. Jill Carnahan, my colleague and functional medicine doctor, reversed her own Type 1 Diabetes (LADA) doing what most conventional doctors could not or did not do: addressing the root causes of her illness, namely the main stressors that taxed and stressed her immune system. In her case, her major stressor was exposure to toxic mold. She practiced all of the sound strategies we will discuss during the course of this workshop, and once she dealt with the underlying cause(s) of the diabetes, was she able to reverse it. Now, I'm not saying that everyone will reverse diabetes. Although there is always a reason for the onset of Type 1 Diabetes (and most often more than one), we are not always able to uncover what those reasons are. But with every bit of information we can gather and with every effort made to live a life conducive to good health, if the right questions are asked and the right answers are found, recovery is entirely possible.

What Have We Been Missing?

Many diseases are simply a set of symptoms; the symptoms that are experienced depend on the function, organ, or tissue being affected. For most diseases or conditions, there is no one set of bloodtests or symptoms that can *definitively* define them. And in the end, it is not the identification of the disease that is important, but the *identification of the malfunction that is occurring* and then ultimately *the root causes of that malfunction* that lead us to discovery and recovery. Only once we uncover what those root causes are, is it then possible to stop and remove the offenders in order to repair and even reverse the disease or condition.

Let me explain what I mean by that. Some people can suffer from any combination of the longer list of symptoms associated with diabetes, sometimes suffering from all of them and sometimes experiencing none at all. Some people experience severe symptoms and some are mild, almost as if there is a spectrum of severity much like the way we understand autism. I would argue that most diseases and conditions are experienced on a spectrum and are not a clearly definable or a permanent diagnosis. For instance, with regards to Hashimoto's Thyroiditis, many people have auto-antibodies to their thyroid gland while some suffer from low thyroid symptoms because their intact thyroids are not getting the right signal from their brains. Some call low thyroid hormone that causes symptoms of thyroid hormone deficiency "thyroid disease," but in many cases, it is not a problem with the thyroid gland, itself, at all. It can originate in the hypothalamus and/or pituitary gland causing a disruption in the signalling to the thyroid to produce thyroid hormones, or it can be a problem in the liver or adrenals causing hormonal imbalances affecting hormone output.

In those instances, the problem is metabolic, and not a deficiency or physical problem with the organ, itself. Some illnesses are metabolic and some are physical; some dysfunction can be attributed to energetic and emotional stress; and most often times, illness exists on many planes of our being at the same time, which we will talk about in one of our future sessions.

Session 3: Comorbidities No One Is Talking About (But Absolutely *Can* Be Addressed)

What is Autoimmunity?

Since Type 1 Diabetes (at least the classic diagnosis) is an autoimmune condition, we are going to begin this lecture by defining and discussing autoimmunity. Autoimmunity occurs when the immune system attacks its own healthy tissue, hence the name, *auto*immunity. As I briefly explained in our first session, when a foreign invader is present in the bloodstream, the immune system tags that invader, marking it to be attacked and destroyed by another arm of the immune system. This is great when the immune system tags pathogens such as parasites, viruses, and opportunistic bacteria, but not so good when it tags its own healthy tissues and organs. There can be a healthy level of auto-antibodies as it is also the immune system's job to clear away dead and dying cells, but it is when there are more auto-antibodies being produced than healthy cells that healthy cell and tissue destruction will occur.

Most autoimmune diseases are similar to each other in nature; they all involve self-attack, the triad of conditions (which we will discuss in a moment), and the only thing that differentiates them is the tissue that is being attacked, hence, determining which symptoms the condition will provoke. In Hashimoto's Thyroiditis, the targeted tissue is the thyroid gland; in MS it is the myelin sheath that covers and protects the nerves; in Scleroderma, it is the connective tissue; in Rheumatoid Arthritis, it is the joints; and in Type 1 Diabetes, of course, the targets are the pancreatic beta cells. The reason the immune system attacks one tissue over another being different for each person, depends on many factors that could be where the infection is (if there is infection, which some argue that there usually is), what tissues are cross-reactive with a specific antigen, and the weakest link in that particular person's body. And it is important to note that most people already have or can develop more than one autoimmune condition.

It is apparent why the immune system attacks foreign pathogens, but why would it attack its own tissue? What makes the immune system create an excess of auto-antibodies? There are several theories that have been developed to explain this.

1. The immune system is confused. This was originally how medical science explained autoimmunity and is still how mainstream medicine understands it, but immunologists are now finding that confusion is not *exactly* what is taking place in the autoimmune process.

2. The body is targeting antigens (a foreign substance that creates an immune response) but also tags and attacks healthy cells and tissues through a case of mistaken identity called *molecular mimicry* or *cross-reactivity*. These antigens can be food proteins, heavy metals, and/or chemicals, anything that enters the body that is not supposed to be there.

Antigens can also exasperate Type 1 Diabetes as well as other chronic conditions by causing tissue and organ inflammation, as well, that is not autoimmune in nature. Chronic inflammation is the mother of all disease, and where there is smoke, there's fire.

3. The cells and tissues are infected with a pathogen such as a virus, bacteria, parasite, and/or an overgrowth of yeast and mold, and the immune system is attacking the pathogens and not intending to attack the tissues and cells, themselves.

Pathogens can also injure the organs and tissues, themselves, without causing an autoimmune response, and some have an affinity for pancreatic beta cells.

So, if the immune system is not confused or broken, how do these antigens enter the bloodstream? What triggers autoimmunity? To explain this, we must first lay out the **Autoimmune Triad**, the three conditions that must exist for the immune system to begin a self-attack, which is actually an attack on the unwelcome antigens present in the body:

1. Genetic Predisposition (or weakness)
This is a predisposition, not prediction. These genes have to be turned on to cause any problems.

2. Intestinal Hyper-Permeability
This creates a highway for antigens to enter into the bloodstream through the GI tract. We can also experience Blood Brain Barrier Hyper-Permeability, which is when the blood brain barrier is breeched, letting in all kinds of toxins into the

brain causing brain inflammation. Many autoimmune conditions, autism, mental and mood disorders, neurodegenerative disorders, and PANDAS are due to breeches in the BBB and/or brain autoimmunity.

3. Environmental Trigger
These triggers are most often the usual suspects (see below) and are usually due to many of these factors that build up, creating a total load, and to finally cause symptoms, then disease.

"Genetics loads the weapon, and environment pulls the trigger."

Epigenetics, meaning "above the gene" is an exciting scientific field that asserts that genetics are not destiny but that our genes can be turned on or off. We are all born with a specific set of genes, and some are fixed, such as eye and hair colour, but many others lie dormant waiting to be turned on or off. Very simply put, healthy diet and lifestyle habits turn on the good genes and turn off the bad; unhealthy diet, lifestyle, and stressors such as infections and metal and chemical exposures turn off the good genes and turn on the bad.

Our skin and GI tracts protect our internal environment from invasion from antigens (foreign invaders) that make us sick, disrupt our metabolic processes, and are not meant to be in the bloodstream. When there is a breach in these defences, invasion can occur, and when invasion occurs, our immune system responds. The GI Tract has tiny holes for small particles to pass through such as nutrients and minerals from fully digested food - this is called assimilation, but when the lining of the gut is disrupted and bigger holes are created (through poor diet, chemical and metal exposure, or potentially gut-damaging proteins such as gluten), antigens can make their way into the bloodstream.

All that needs to happen now is an environmental trigger to set the autoimmune cascade into motion.

So, let's talk about some of these environmental triggers in more detail.

Some of the usual suspects that can enter the bloodstream, disturb the immune system, and wreak inflammatory havoc are:

Pathogenic Infection: Parasites, Viruses, Bacteria, Yeast, and Mold.
Some of the infections most implicated in the onset of Type 1 Diabetes, in particular, are the enteroviruses Epstein Barr Virus (EBV or mono), Coxsackievirus B, Rotavirus, Mumps virus, Cytomegalovirus, and congenital Rubella, but any infection can either injure the beta cells or be the catalyst for an autoimmune attack, and any of these infections can injure other tissues and organs causing other forms of chronic illness. (please see this study for more information: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2570378/)

We also cannot rule out other infection such as Lyme Disease and Lyme co-infections as being either being a possible secondary infection or a primary one. As any antigen does, infection causes great distress within the body as well as chronic inflammation, taxing the immune system and either creating or worsening the disease state, itself, or creating complications associated with Type 1 Diabetes such as unstable blood sugar control in chronic infections and ketoacidosis in acute infection.

Bacteria and parasites can also be a causal factor in the development of Type 1 Diabetes and the complications that can accompany it in the same way that viruses can. In their study entitled "Hotspot autoimmune T cell receptor binding underlies pathogen and insulin peptide cross-reactivity" published in *The Journal of Clinical Investigation*, authors David K. Cole et al state that "T cell cross-reactivity with pathogen-derived antigens might break self-tolerance to induce autoimmune disease." (Please visit https://www.jci.org/articles/view/85679 to read the full article)

In functional medicine circles, mold is increasingly becoming identified as one of the top root causes of chronic illness and the onset of autoimmune disease. If mold is present in a home, workspace, or your child's school, it can cause great disruption in your child's immune system. There is a whole set of unique symptoms that accompany mold exposure and can range from reactivity to full-blown mold illness. In cases of chronic illness, mold cannot be overlooked. Find more information about mold illness in Dr. Jill Carnahan's blog posts https://www.jillcarnahan.com/tag/mold/, as well as on Ritchie Shoemaker's website https://www.survivingmold.com/.

These biological irritants and infections are the most detrimental yet are most often forgotten, overlooked, or completely ignored in the treatment and/or management of Type 1 Diabetes. Why? Because we mistake Type 1 Diabetes as

first and foremost a disease of the pancreas, and don't understand that it is first and foremost both an immune system (autoimmunity) and metabolic disorder.

Heavy Metals and Chemicals

Over the last 100 years (or less), our world has been doused in 1000s of chemicals, and this barrage doesn't seem to be stopping anytime soon. Chemicals are sprayed on our food (while growing, while harvesting, before and after transport). We use household cleaners and personal care products, flame retardants and vinyl flooring, plastics in and on everything from the containers we keep our food in to water bottles to baby toys; most everything we can think of is leaching chemicals into our bodies. The ramifications for this are profound and many, namely triggering or accelerating the development of autoimmune manifestations and other comorbid conditions such as reactivity (to foods and environment) and the profound disruption of the delicate microbiome.
Glyphosate (the main ingredient in the pesticide Round-up) deserves to be highlighted here as one of the most widely used and damaging chemical in our environment today. Please see Stephanie Senneff's many lectures, scientific papers, and interviews about glyphosate and heavy metals.

Heavy metals are also a major concern for children with Type 1 Diabetes. Heavy metals such as mercury, lead, aluminium, arsenic, nickel, and cadmium are among the worst offenders and disrupt the immune system and cause significant inflammation while significantly changing the structure of DNA and RNA. "Although heavy metals are elementary chemical structures, they can have profound and complex effects on the immune system" (https://www.immunolinktherapies.com/is-it-autoimmune-disease-or-is-it-heavy-metal-toxicity).

The exact mechanisms behind how heavy metals are a root cause for autoimmunity are beyond the scope of this lecture to fully discuss, but some of the evidence points to the binding of heavy metals to cells and proteins (which creates neo-epitopes: an outside compound that sticks to your tissues creating an entirely new compound), and the blocking of receptor sites necessary for neurotransmitters and hormones. As well, heavy metals are highly reactive, and combined with EMF exposure, can create even further (and devastating) inflammation to tissues and cells.

Additional Modern Assaults to Consider

Electromagnetic Fields (EMFs)

I would like to classify exposure to EMFs as a silent poison. In fact, EMF radiation is now considered by 1000s of researchers to be a form of pollution. You can't see it or touch it with your hands, and most times can't hear it, but it damages the body just as any pathogen or tangible substance we can touch, smell, and feel. We are electrical beings, and the body is an antenna. Over-exposure to these radiation and electrical fields are slowing healing, scrambling our bodies' natural signalling, mutating and breaking DNA, causing damage on the cellular level and creating a chronic state of inflammation. And as we know, Type 1 Diabetes is an inflammatory disease as are all chronic illnesses.

Children are more susceptible to EMF exposure due to the fluid content in their brains, their state of brain development. They are also inundated with these fields though our modern world of hand-held devices such as cell phones and iPads, wireless (bluetooth) gaming consoles, computers, and headphones, and wifi pumping EMFs into their environments 24/7. What is more is that EMFs kill the beneficial bacteria in the GI tract, on skin, and in the brain, which are responsible for proper neurotransmitter production, digesting and assimilating food, and protecting us from pathogenic bacteria, viruses, and parasites, essentially killing our very defence mechanisms and protection from the very assaults that cause autoimmunity.

It is essential to address EMF exposure that our children and teens are experiencing, reduce this exposure, and mitigate the effects in order to stop further assault on their bodies but to also allow them the chance to heal. Please see the books and resources list for tips on how to do this; there are also many good resources on the internet by scientists and researchers and health advocates such as Nicolas Pineault, Dr. Deitrich Klinghardt, Magda Havas, and Ann Louise Gittleman.

Comorbidities

Unfortunately, just because our children already have Type 1 Diabetes, that doesn't mean that they can't also have other conditions. In fact, most people with one chronic illness also have other conditions and often have other complications. It is important to outline what some of these conditions may be to further our investigation into what will make our children fully well.

Commonly Recognized Complications with Type 1 Diabetes
Acute complications of diabetes include:
Hypoglycemia (low blood glucose)
Hyperglycemia (high blood glucose)
Diabetic Ketoacidosis (a life-threatening condition characterized by high blood glucose, ketones in the blood and urine, and dehydration)
Hyperosmolar Hyperglycemic State (a life-threatening condition characterized by very high blood glucose and dehydration)
Long-term complications include:
Neuropathy (nerve damage)
Retinopathy (eye damage)
Atherosclerosis (hardening and narrowing of the arteries)
Nephropathy (kidney disease)
Liver Stress

We parents are all too aware of these complications. However, there are many other comorbidities and complications not on our radar, such as:

Other autoimmune conditions such as Lupus, RA, MS, Celiac Disease, Scleroderma, Hashimoto's, Hemochromatosis, etc.

PANDAS/PANS/AE (Autoimmune Encephalitis caused by infection)

General Neuro inflammation (caused by insulin, high BG, infection, chemicals, food, mold, all of them?)

Depression and Anxiety

Diabulimia (eating disorder where people with Type 1 Diabetes don't inject enough insulin in order to lose weight)

Alzheimer's (Type 3 Diabetes)

Other Metabolic Issues

Infection (both causal and resultant)

Now that we know what we could be dealing with, let's find out what we *are* dealing with, this is where functional lab testing shines.

Session 4: Functional Lab Testing for Proper Diagnosis *and* Causal Factors

So, how do we uncover the root causes? We can make assessments according to our children's health histories, but testing is an excellent way to make sure we aren't flying blind. What tests can reveal:
Causal Factors
Current Reasons for Symptoms
Give us a baseline to Monitor Progress

And we can test both our children's bodies *and* our environments.

In all of the years I have spent chasing answers, I have finally come up with my favourite labs and specific tests that can unearth most of the underlying causes we have outlined above.

Functional Bloodwork (both basics and specific to Type 1 Diabetes)
-Thyroid Panel
-Fibrinogen
-Iron
-D3
-Inflammatory markers such as c-reactive protein
-HbA1c
-Fasting insulin
-Fasting glucose
-CBC
-Triglycerides
-minerals
-vitamin B12

Vibrant Wellness Testing
-Food Zoomers (reactivity)
-Neural Zoomer
-Lyme and Co-Infections

-Heavy Metals

Armin Labs
-Various Infections

Genetics (Ancestry or 23 and Me)

Cyrex Labs
-Anti-bodies to GAD, Insulin, Beta Cell, Tyrosine Phosphytase, and more relating to autoimmune conditions such as MS, Lupus, and Hashimoto's Thyroiditis.

Nutritional Status

Micometrix
Environmental Testing for Mold (ERMI)

Alternative Testing
Bioenergetics such as the VEGA or Avatar

Now that we have some answers, we can now move on to the solutions.

Session 4: Powerful Lifestyle Interventions

So, to put together what we have learned so far and what we will unpack further in this session, in the pursuit of optimizing the health of children with Type 1 Diabetes, our goals are to: reduce stress, improve the immune system, heal hyperpermeability, and improve mitochondrial health.

Why is addressing stress so important for both our children and the people who care for them?

The state of the health of a great portion of our population in the "developed" world is rapidly declining. People are rushed and so intensely stressed out that we are literally falling apart physically, mentally, and spiritually. We are scared, rushed, and looking for answers and solutions that are fast, easy, and laid out in 5 easy steps. We want to feel better, but we often miss the point of what needs to happen.

We currently live in a culture of chronic stress. There is simply too much going on and at a breakneck pace for anyone to stop and listen to what *we* feel and think and need. For any kind of lasting change to take place for the betterment of our health, we need to stop. Listen. Manifest. Repair. We simply can't see the flowers if we're speeding down the highway. In fact, many times we'll crash. No kind of healing can take place without the gift of time.

Stressors can come in many forms; the ones we hear about most often are external stressors such as divorce and relationship issues and traffic jams and busy schedules and work deadlines…BUT there are many other stressors (internal stressors) we cannot ignore like poor nutrition and infections and hormonal imbalances and toxins and excess weight that put the body into distress. We can also become stressed when we have no spiritual, mental, mindful, or meditative practice or when we think negative, limiting, self-destructive thoughts.

Stress is the singlemost important barrier to good health; it is the single causal factor in the onset of illness and disease.

Stress Defined: Stress is anything that can be considered a threat or challenge to our health and wellbeing.

The fast pace of our lives is vastly contributing to the decline of our mental, emotional, physical, and spiritual health. We live in a culture where being busy is not only the norm but is often glorified. In this culture, there is no time for rest, for taking care of our bodies, or for listening to our bodies or each other. Just tune in to feel the insanity this is causing society as a whole: picture a traffic jam with honking horns and rude gestures or a long line-up at the grocery store at 5:00 p.m. Imagine that you are feeling unbalanced, didn't sleep long enough, are hungry, too busy, late for something, or are not feeling well with a cold or flu or worse, a chronic condition. These situations can put the body into full-on fight, flight, or flee multiple times a day.

In our modern culture, there is little time for patience, and people want things NOW! We have become accustomed to instant gratification and often don't notice the beauty of our earth, the people around us, our children, or ourselves. If we don't take notice, then it is harder to be grateful for what we have. If we don't pay attention, we don't care, and if we don't pay attention to ourselves,

then we miss the signs and symptoms of brewing disease and ill health. The speed at which modern families live gives rise to the quick fix, the medicalization of health, without addressing what is driving the decline in mental and physical health.

Human beings are not supposed to live under chronic stress. When the body gets tired and cannot cope with the stress any longer, imbalance occurs, then symptoms, then disease, and if it is bad enough, death.

In order to reduce stress and thereby give the body the opportunity to heal and ultimately become dis-ease-free, some significant shifts can be made. We can address external stressors through making changes to schedules and relationships that are toxic to us and employ stress-relieving activities such as meditation and exercise. We can also address internal stressors by first identifying them and then taking action to heal.

How does this apply to our children? Well, all of this is true for children, as well. And when a family is facing the challenges presented by chronic illness, the stressors, both internal and external, can multiply exponentially. Therefore, it is when we are being challenged the most that we don't want to ignore the seemingly frivolous things like stress reduction but double our efforts to address them.

But before we get into the psychology, let's explore a bit more physiology.

Microbiome

The human body is a walking petri dish, full of more bacteria than our own cells. Now, this is not a bad thing, not at all. The bacteria that live in and on us digest our food, excrete essential vitamins, protect us from pathogenic bacteria, and are the very foundation of our mental and physical health. Scientists have even found that children with autism, autoimmunity, and mood disorders have different microbiomes than otherwise healthy children.

Both beneficial and pathogenic microbes colonize our intestinal tract, our skin, and even our brains at all times, and when they are in balance, our physical and mental health is good. It is when there is an imbalance in these microbes that we have illness. Overuse of antibiotics (including hand sanitizers), poor diet (a good diet is needed to introduce beneficial bacteria into the body as well as to feed them), and chemical and heavy metal exposure upset this delicate balance

contributing to mental and mood problems, metabolic malfunction, and autoimmunity such as Type 1 Diabetes. Our children inherit their microbiomes at birth when they pass through the vaginal canal and when they come into contact with their families and nurse at their mother's breast. A interruption in any of these natural processes can cause significant imbalances in the microbiome. Those in the functional and immunological world are now certain that a healthy microbiome is essential to our very survival and wellbeing, and an imbalance causes disease and illness caused by the infection and immune disruption such as autoimmunity and cancer that manifest – disease and illness of both the acute and chronic kind.

Mitochondria are the powerhouses of our bodies; they make ATP, which then fuels each and every one of our cells. If the mitochondria are not functioning well, then we are not making enough energy at the *cellular level*. It is, in fact, the mcitochondria that are even further upstream than the microbiome in that scientists have recently been learning that it is these organelles that actually inform the microbiome as to how and when to do their jobs. Therefore, disease and illness are due to a malfunction in mitochondria, and it is in paying attention to the lifestyle factors in this lesson that will not only reverse disease and chronic conditions but also ensure a long and healthy life.

How do we address both internal and external stress, improve the immune system, and improve mitochondrial health?

Improve Your Child's Internal and External Environment:
-General Clean-up (Remove the Offenders) Address infection, toxins, metals, mold, chemicals, and other antigens to mitigate reactivity and cross-reactivity
-Mindfulness, meditation, and gratitude

Lifestyle: Exercise, Movement, and Sleep

Balance the Microbiome

Heal Hyperpermeability

Clean up the Liver and Support the Kidneys

Drain and Cleanse

Good Nutrition and Supplementation

Cold Laser Therapy (photobiomodulation)

Craniosacral Therapy

Cognitive Behavioural Therapy (CBT) or Eye Movement Desensitization and Reprogramming (EMDR)

Session 5: Mental and Emotional Considerations and Support

Addressing and Overcoming Trauma
-the psychological effect of diagnosis, poking, checking, monitoring, and violation

Shifting from Sickness Mentality to Healing
-demedicalizing your child

Avoiding Food Wars, ODD, and Other Power Struggles
-you are a team

Languaging Around "My Disease" and the Dangers of and Benefits of Diagnosis and Labelling
-your child does not need to own it or be one with their diagnosis

Tools for a Healthy Mindset
-address all of the above
-celebrate every success and win
-be at peace with what is, yet strive for the best

Session 6: Effects on the Family Unit, the Community, and Circle of Friends

Overcoming Obstacles and Addressing The Challenge of Parenting Children with Chronic Illness

When we become parents, we can worry and project, hope and dream, make plans and speculate, but we never really know what we may experience until we have those kids and are full-on, neck-deep into parenthood. All we can do some days is fly down the hill and hope the brakes work!

I know that I didn't expect to be an unschooling mother or an attachment parent or that I would breastfeed my youngest until she was three. I didn't even know what those things were or that people actually did that until my children were at the stages of life when those questions and opportunities arose. I didn't know that I would be teaching people about lifestyle medicine and running an online family practice or questioning big systems such as the medical, school, and foster systems, and rallying for patient autonomy and becoming a children's health advocate. I didn't know that I would question circumcision or that there was such a thing as leaky gut or that antibiotics could harm my children. I didn't know that I would no longer believe in much of the things I was told when I set out to discover these things for myself, until I became a mother, and a fierce mama bear at that.

I certainly didn't know that I would be the parent of children who struggled with mood problems, eczema, anaemia, or that the teen years would both cause me great joy but break my heart at the same time and that one of my children would be diagnosed with Type 1 Diabetes, which would change absolutely everything I understood about health. I didn't know that my husband and I would not grow old together but grow old *because of* each other, that handling all of those things could send a once insatiably energetic young mama into feeling old, tired, and beat down by life.

I didn't know that I would be torn down and have to build myself up, again.

But I also didn't know that my most joyful experiences would be the day my newborn, lost in the bliss of nursing, looked up, saw my face, and smiled an enormous smile realizing that it was his mama there with him attached to that breast, those hours and hours we spent in my king sized bed reading books until

well past bedtime, singing songs every night before falling into sleep, video recording ourselves singing to Weird Al songs, spending sunny afternoons on the river shore picking rocks, and that night when we lay on our backs blowing a single piece of fluff into the air in a beautiful, still moment of giggles and warmth when nothing else mattered in the world.

I also didn't know that illness could give me more broadened and deepened empathy for others, a wisdom I could not have acquired had our lives been perfect, and an understanding of life only the constant possibility of my own child's death could show me.

Where Does Disease Begin? Causes of Chronic Illness

The causes of childhood chronic illness are multi-factorial and involve the perfect storm of genetics and environment. It is the child's environment that determines genetic expression, and many of those environmental factors can be controlled through diet, lifestyle, and addressing both internal and external stressors. Causal factors are sometimes psychological, sometimes physical, sometimes emotional, sometimes relationship, and many have roots in family history and childhood experiences. All causes are due to the environment from which our children receive their information.

This is not to lay blame on parents or their parents before, but to recognize the causes can offer solutions and lead us toward improvement, healing, and recovery in whatever form that may take.

When it Gets Hard, and It Sometimes Will

Parenting a child with chronic illness is no cakewalk. We love our children fiercely and completely, but even with the strength of the love of a parent for a child on our side, some days we would rather be *anywhere but* at *yet another* doctor's appointment or up late sorting supplements for the next day…again. Sometimes it feels tedious, and our patience runs short, especially since healing takes time. Change is sometimes hard to see when it is gradual, and our children are not always easy to care for.

I can't tell you how often I see that look, the look of a person who has seen and been through a lot. It is not a look of wisdom or inner peace but almost as if they have some sort of insight into life that makes the rest of us look like we are

living in an unrealistic Lalaland, a look that says, "I once hoped, just like you, but I don't anymore. I know better, now, and it ain't pretty."

I started to have that look. It took 4 years from diagnosis day, but it came. I could feel it on my face, see it in the mirror. I could feel the energy it exuded precede me in the rooms I would walk into. The positive, infectious energy I once had that people always said they could feel exuding from my spirit started to become a black hole. I did not want to be that kind of energy in the world, and I certainly did not want it to affect my children. And I do not want you to succumb to it, either.

So, I had to get past whatever it was that was draining the energy from me and take charge of my own power, happiness, and ability to lead my children in this whole health journey thing. And instead of fighting it, I examined it and then knew how to move through the trauma and grief I didn't know I was denying.

Illness As a Traumatic Event
Your Child's Feelings When Diagnosed and Beyond

When your child is diagnosed with a chronic illness, the event can be traumatic for both you and your child. Children can experience a wide array of emotions such as confusion, anger, and most likely, fear. For a child, understanding what this might mean for them and how it might affect their current life situation is difficult, as are the many changes they will have to make in their once carefree lives as a child or teen. I will never forget the moment when my then 11-year-old daughter turned to me from her hospital bed and stated with such clarity and maturity: "mom, I am going to have this forever."

Sometimes they adjust well, and things get easier and become routine (I tell my daughter that taking her supplements is like brushing her teeth, just something you do every day to care for yourself), but sometimes children can get tired of the weight of it all. They can get burnt out and daunted, just as any adult can, right at that point when they start to see that their illness is either permanent, not going to go away entirely, or that their recovery will not be as fast as they want it to be.

The diagnosis, itself, can be a traumatic event as can be many events thereafter including hospital stays, emergency room encounters, health scares, poor treatment by insensitive doctors, working though the everyday ins and outs of

caring for the illness, things that happen or are said in schools and social situations – even eating in restaurants can trigger anxiety for children with food sensitivities or allergies, and fights between stressed parents can cause withdrawal and depression in both the parents and the children.

In their book, *Trauma Through a Child's Eyes: Awakening the Ordinary Miracle of Healing*, authors Peter A. Levine, PhD, and Maggie Klein say that,

> "Many "ordinary," everyday happenings that we take for granted as inevitable facts of life can become traumatic, and the younger the child, the less obviously harmful those occurrences need be in order to leave a traumatic impact. A "minor" fall, for example, can become traumatic if the child is not supported in processing it in a healthy way and especially if she is shamed for "over-reacting" or labelled as "too sensitive." An elective medical procedure can also have long-term negative effects if the child is not adequately supported and prepared, and if his reactions are not empathetically received" (Levine and Klein, *Trauma Through a Child's Eyes: Awakening the Ordinary Miracle of Healing*, Foreword by Gabor Mate).

A diagnosis of a serious chronic illness is a far cry from a seemingly normal event; therefore, it would not be uncommon for both children and their parents to experience some degree of trauma because of it. Knowing how to recognize when you or your children are showing signs of trauma will enable you to take steps to have that trauma end its cycle.

How Children Experience Trauma

Symptoms of trauma in children and teens range from emotional shut down to regression to anxiety to impulsive behaviour to sleep problems, depending upon the age of the child and the child, herself.

Children can also experience trauma due to things that we adults may not perceive as traumatic, so their trauma can sometimes be undervalued or even dismissed, entirely. Parents can also be very stressed, distracted, burnt-out, and/or trying to juggle work, financial difficulties, lack of support, and other children, therefore, can find it difficult to help their child to work through their trauma to its completion. Trauma in children is also not always identified as such, therefore, it is very important to be aware of the signs and symptoms.

The single-most important take-away from Levine and Klein's work on childhood trauma is that people are not supposed to be locked into traumas; children and adults can move through trauma and back into normalcy if that cycle can be completed successfully. Therefore, do not minimize your child's feelings regardless of whether or not you believe they should feel the way that they do or as strongly as they do. Validating their experience is a very important part of the cycle a trauma needs to complete that will bring closure to that event so that they do not have to go through it over and over, again (Levine, *Trauma Through a Child's Eyes: Awakening the Ordinary Miracle of Healing*, Foreword by Gabor Mate). Understanding how to move your children through repeated traumas will be of utmost value when parenting a child who may experience more opportunity for trauma than children who do not face such added challenges.

Parent's Feelings When Children are Diagnosed

Parents can go through a roller coaster of emotions when their child has a chronic illness. Trauma is certainly one of them, as well. Feelings of frustration, anger, guilt, pain, sadness, fear, shock, worry, and anxiety also take hold. They can experience profound depression and even experience nervous breakdowns. Depending on how long they have been caregiving and how well they have been coping and taking care of themselves while caregiving for others, parents can feel determined, strong, and more resolved than ever all the way to feeling powerless, worn down, exhausted, hopeless, bitter, and resentful. Parents can feel confused as to what to do and why this is happening, they may blame themselves or others. And they might ask the question: Why me, why my child? And wish that they could carry the load for their children.

I have felt almost each and every one of those things. Yet what I have concluded is that, whatever combination of emotions we parents experience, we must recognize and process our own difficulties in order to help our children.

Handling big health challenges changes the lives of each and every family member, and parents experience some major life changes and need to make decisions based on their new reality. Parents face added financial responsibility and strain, and the constant stress of knowing that their children are not optimally thriving, that they are not able to live the lives they hoped their children could live. The hopes, dreams and aspirations they have for their children may have to change, as do the things they saw themselves teaching

their children or experiencing with them, as well. Our beliefs and attitudes may change, for better or worse, and parents may find that they are no longer compatible or share the same worldview as their communities, extended families, and spouses. Divorce rates are high in such families, and feelings of isolation, loneliness, and depression are not uncommon among parents of children with chronic illness.

Parents go through a great deal alongside their children and have an even greater role to play that requires even greater strength than that of the children who actually have the illness, at least until those children are grown and fully responsible for their own health. And as we all know, you never stop being a parent even when your children are grown, so this desire to protect and be concerned about our children never goes away. Therefore, the only thing to do is to work through our own traumas and our own experiences with our challenges. And, fortunately, there are many very effective and liberating ways to do this.

When You and Your Child Collide

Some children can be really horrid when ill. They can lash out, be mean, uncooperative, retreat, regress, or shut down. Sometimes they have control over their actions, and sometimes, for instance, in the cases of severe brain chemical or extreme bloodsugar fluctuations or hormonal imbalances and infections that cause neurological fallout such as PANDAS, they can be literally out of their right minds.

In addition to the main health challenge, these children may have comorbidities or other troubles that *are caused by* or that *accompany* their illness such as eating disorders, mood dysregulation, body image problems, or Oppositional Defiance Disorder. They can refuse to do things essential to their healing such as eat right, sleep, rest, take supplements, and can be downright self-destructive and sabotage their parents' efforts. They might have tantrums, exhibit defiance, refuse to eat or sleep or turn off their electronics, especially children who have sensory issues.

And even if they don't act out, even the more well-adjusted children get tired sometimes, cry, get despondent or hopeless.

It is extremely difficult at times to cope with these behaviours, to get past the emotions they trigger within us. We can slip into yelling, engaging in fights with older children, engaging in power struggles or wanting to punish them. Some days we don't even *like* the children who seem to be putting us through such hell.

Yet, we have to remember that our children don't always have the capacity to be reasonable and logical at times, whether it be because of their stage of development as children's and teen's brains are not yet mature or that they are chemically imbalanced in some way due to their illness. Sometimes empathy is not at the forefront of their minds, they are not in control of their actions or thoughts due to an unconscious program or high stress situation, they are locked in a trauma, or they are simply hurting.

Parents don't always see that. We are taught that ill behaviour and strong emotions need to be suppressed, that our children need to be "good," and we don't want to give them license to behave badly or treat other people badly. It is when we *do not* let them have their process in a safe and calm manner that they become locked into stress patterns and trauma, which only serve to exacerbate their struggles.

There seems to be a fine line between letting our children act up and understanding their struggles, limitations, and capabilities. Yet, it is important to let our children feel their emotions, validate them, and then encourage a better coping strategy when the child feels safe, again. This process must be respected, even if it happens at grandma's house or in a public restaurant. It *is* possible to manage though and remove yourselves from the scrutiny of others while being respectful of your child's difficulty.

Actually, this process is much more than important, *it is essential* if we want to ensure that, although they will experience pain in their lives, that they will not become locked in it, will process it effectively, get over it, and then return to their natural state of happiness and ease that we human beings are meant to be in most of the time. We are animals, after all, and our primal biological processes will always trump logic and restraint when we are scared, hurt, frightened, or threatened. We need to allow children to move through these processes and respect their right to do so.

It is not up to you as a parent to please everyone or make them comfortable or to make a situation perfect for those around you or for your child. These situations can be embarrassing, and you can receive all kinds of criticism from those around you about how you choose to handle it. It can even cause some discontent between you and your child's other parent, but remember that how you handle such situations can profoundly affect your child, not only in that moment, but in a more lasting way, as well. You can chose to shame, silence, and potentially lock in a stress pattern, or you can validate, diffuse, and release the hold that emotion has on your child.

The status of your child's health and their ability to cope can affect their life, in general, by altering or tainting their experiences in social situations such as eating in restaurants, attending social events, potlucks, and school, and making travel difficult or impossible.

Teens with chronic illness may rebel, and young children may shut down.

Siblings may be forgotten or be overlooked, and yet experience many of the same effects their parents and siblings experience along with their own set of challenges due to having a sibling with a chronic illness. They may feel ignored, unimportant, or resentful, or on the flip-side, overly responsible, or any combination of these emotions and more.

Relationships between your family and your extended family and broader community of friends will and do change as you make adjustments to your own lives (grandma can no longer bake cookies for your child to show her love because your child can no longer eat them, or your child is left out of sport team meals because they always order pizza).

Our busy Western lifestyle does not lend itself to healing or to a slower pace necessary to make taking care of children with chronic illness easy. In fact, it is the modern conveniences that make this journey harder with packaged foods, lack of downtime, unhealthy lifestyle habits, being the odd one in your community (as we live in a sick society), and our societal belief that children should be busy to be fulfilled. Where is the time to fill supplement sorters, check blood sugars, attend appointments, make healthy meals and get adequate sleep when we live in such a world? In fact, it is becoming more and more clear that it is these practices that actually create most of our illnesses in the first place. It is that epiphany that parents of ill children can have that can alienate

them from their communities and families who are still living in ways that are potentially harmful for their own families.

These experiences can be traumatic for the parents, and depending upon how we handle them, can significantly slow progress, traumatize the child, and alter the quality of the whole family's life. Yet, with all of these things that seem to be stacked against us, the purpose of recognizing these challenges is not to throw our hands up and declare, "we're doomed," but to uncover the tools we can use to recover ourselves, our families, and our "canary in the coalmine" children.

Moving Past Our Own Trauma to Help Our Children
How Working on *You* Can Help Your Child

My dear parents, you have been through a lot. You have held yourself up and kept your children safe. And you are doing the very best you can. And now that we have been honest about the great challenges our families have been facing and will continue to face in the future, it is time to move ahead with the business of recovery.

First, **always start with yourself**. It is important to deal with our own traumas, baggage, defeatism, and fear. All of the obstacles that exist in our minds, thoughts, beliefs, and subconscious patterns hinder us from being present for our children and make us less prepared to guide them through difficult times. This is a process that is never fully complete, but *there is*, however, a level of awareness we can attain that can tell us when our emotionality is taking over and we need to step back and get a handle on ourselves in the moment. Then we can reflect on what caused that emotion or thought to surface in the quiet times when we can be alone and nurturing ourselves. Parents, self-care and self-awareness are pivotal components of not only your own health but that of your children's.

Languaging is of utmost importance, and words have massive power: when you talk about your situation, your child's illness, or your experiences, be very mindful of the language you use. For instance, when talking about how much work you have to do in regards to your child's care, try to talk less to your support about how much work it is and try to voice the discoveries you are making that is improving your life. It doesn't mean that your feelings get stuffed, but that you process them faster and re-focus on the good things your life experiences are bringing you. Ask that doctors talk to you in private if they have

something to say about your child's condition, and always try to elevate the conversation with things that will help you and your child move forward, not rehash pain and discomfort.

Observe yourself. Your tendencies may reveal to you your own negative mindset and how you can improve your own self-talk and belief system, and when you decide to look at life and your experience of that life in a new light during times of challenge, you actually shift your actual experience. Your practice of rephrasing how you want your children to see their own lives as blessings as opposed to burdens will actually change the way you *actually do* feel and how they feel, alleviating stress and reducing all of the negative emotions that may have been plaguing you and causing you some of the ill-effects we have previously discussed.

The same goes for labelling. I would encourage parents of children with diagnoses to acknowledge the conditions they are dealing with but actually *avoid labelling their children* at all costs. Let me explain. It is very important to encourage your children to be open about what is affecting their health and not afraid to discuss their health challenges when needed, but it is equally important not to label them. Being a kid who is affected by ADHD-like symptoms is different than having ADHD, and being a kid who has diabetes is not the same as being diabetic or referring to the disease as "my diabetes."

Children have an amazing capacity for recovery, so any time a child owns an illness, their future health is affected, as they may feel limited because of their current condition or they may not even know that the limits generally set for a child with their condition are never their personal destiny. They don't own any disease, and no disease defines them.

Indeed, the illnesses that *affect* them need to be acknowledged as part of their existence, part of their life experience, and never be denied, but they are not *who they are*. These children are not bubble kids or non-athletes or autistics. They are people who have their own set of circumstances just like every single other person on this earth, and theirs just so happens to have an affixable label.

Defiance has now been labelled "Oppositional Defiance Disorder," and the ill effects experienced by children who don't get enough outside time in nature has been named "Nature Deficit Disorder." We can coin new labels for every ailment known to affect human beings and beyond, and that may be helpful to

an extent. These labels do give us the language to identify a problem. Heart Disease is a disease of the heart with a set of physiological markers that make it a condition with a set of therapies that can aid in healing. But be mindful that some illnesses are not so cut and dry, and the criteria for diagnosis are not always consistent and can be highly subjective.

Labelling can be cause for limitations. I just have ADHD so I can't learn, he has autism so it's ok not to expect anything more from him, she has allergies so don't invite her to the birthday party, he has diabetes so he can't go out for the basketball team. Labels can cause beliefs about that child that can limit their lives in every capacity.

Labels can help parents to understand a set of symptoms and give us insight into how to recover or treat that particular challenge – they are indeed a starting point and help us to form a roadmap toward how we can move forward. They can validate our concerns and give us a reason for what we instinctually knew was wrong. But just remember that they are not the end result. Be aware of how you talk about your child's challenges both in front of them with doctors and officials, as well as how you talk about it at home and with them.

Protect and nurture your seedlings of hope: when you are newly starting out handling a health challenge or when you feel particularly tired after years of coping with your child's illness, it may be a time to protect yourself. Now may not be the time to worry about social faux pas such as skipping extended family dinners that tend to create stress and arguments or taking a break from visiting friends who like to drink a lot or complain about their spouses. Minimizing time spent with critical people, people who are not on the same path as you or who don't share your world view, or people who are just non-believers can be exhausting and deeply impact the healing process.

Avoiding difficult people and situations at times when you need less stress, more space, more encouragement, understanding, and gentle self-care is not a bad thing. In fact, it may be the best thing you can do for your child's health. You have a right to decide what will elevate you and your children and what will not and can choose to be in the company of people who will support you in the ways you need support.

Fill your life with positive people and thoughts, and steep your mind and heart in the messages and encouragement that take you in the direction that you want

your family to go. Stop reading the celebrity gossip and turn off the stress-inducing nightly news and listen to podcasts, read books, join positive support groups, research, attend group exercise classes, and attend social events that make you more empowered and inspired. Seek out and surround yourself with other people on the same path or that are a few steps ahead of you. Seek out joy and positivity, if that is your goal. Be open to positive possibilities, and they will reveal themselves to you.

Have high hopes but set reasonable expectations and celebrate every single success. What is success, really? Is it a complete cure of your child's illness or is it in the revelation it has given you today about a life situation you couldn't navigate before, is it in a strength that was discovered in you or your child that your challenges have brought about, or is it in a deepened family connection or a decision to stop doing something or seeing someone who was not good for you or your child? Is it in just having a good day or a good meal? We have smaller successes every single day, and your entire life is not all about one single goal. Celebrate what is and look forward to what might come.

Practice gratitude and self-care. These two things have a profound effect on your mental, emotional, and physical states of health and will allow you to lead your children by example while being able to be there for them standing in your most magnificent power as their parent. And teach your children to be grateful and to practice their own self-care.

Don't take it personally. If your child is acting out or if you are confused as to why life just got a lot harder with your once-adoring child, whatever you do, don't take it personally. Your child is dealing with some big issues and is not always in control of their own actions. And you can be their safe place. I don't at all mean that you need to take abuse and should clearly define your limitations and boundaries, but it is also your opportunity to ride it out with them while doing your best to guide them without judgment, punishment, and emotional reaction. This process will rarely, if ever, be perfect, but *it can* be healthy.

Plan healing and recovery time for when you will have the best chance at success. Whenever possible, when you are making a change to your lifestyle or eating habits or need to attend therapy appointments and the like that will take a lot of time, focus, and attention. Unless you are completely prepared or the change is an emergency, don't do things like remove gluten and dairy when you are just about to go to your parents' house for the holidays. Although many

people go cold turkey or make drastic changes with one full swoop, for many others, it is in your best interest to prepare for such changes, as some of them are difficult to make. Sometimes it is more difficult for the children, yet at other times, those changes are harder for the parents who have already lived many years potentially with the same habits and expectations. Since setbacks are inevitable, too many may diminish hope and motivation, therefore, regardless of how that looks for your family, it is important to set yourself up for your best chance at success.

Be reasonable about responsibility. Parents, in general, have a great sense of responsibility, and this can be heightened when our children face health challenges. We can sometimes want to take their pain away or shoulder it for them, or we can feel responsible for things that are out of our control, creating guilt or shame and stress. Parents usually understand that they feel overly responsible and that they should not blame themselves, but this knowledge does not always move from their heads into their hearts. We often continue to feel these painful feelings even though we know we should not. What might help is to give more responsibility to our children, as they are able to handle it. Avoid doing everything for your child that they can do for themselves as taking over everything that may be difficult for them will only steal their own sense of empowerment and can potentially make you the enemy when things don't work out or if their task is unpleasant to do. It will also give them less chance to develop their own sense of self and empowerment and resilience. Be kind, giving, and supportive, but do not underestimate your children, and they will be less likely to underestimate themselves.

Love, and love some more, both yourself and your children. Love them in their bad times and when they are at their best. I can sometimes look at my daughter when she is being particularly difficult or mean or oppositional and love her so deeply that it makes me smile instead of want to blow with emotion, because in that moment, I saw her fierceness, a fierceness that is part of who she is, a part of her power that I cheer for when I see it arising in the times that will serve her the best. I know it is my job to see that in her and to help her to make good use of it, to help her to be more appropriate in her expression and to use her superpowers for good and not evil. May you see the best in your own children in the times when you could reject them the most, see their expression of power as a strength that can be cultivated for their better good.

Address your fears of death, loss, and grief. Loss can be had on a number of levels, and one can lose a great many things, but the things that are feared most in parents of children with chronic illness are loss of the future, loss of health, loss of possibilities, loss of your hopes and dreams for your child, and loss of life.

A child is not supposed to leave this earth before her mama or papa. And what drives a lot of what we parents do for our children is the desire to prevent that from happening. We are responsible for other people's lives, and although it is a privilege and an honour, it is also a massive responsibility. As does the act of becoming a parent and bringing new life into the world, Illness reminds us that life is fragile and there are no guarantees. It reminds us of the depth of the love we have for our children and how painful it would be to be without them.

There is absolutely nothing I can say to take that fear away from parents but can only acknowledge it and honour the parent-child bond. I can only say that you will do the best that you can and those children will only be better for it. Just don't get locked into an existence that is so focused on fearing death that you forget to live.

Find meaning in illness, find meaning in recovery. We parents will mourn, process, and have every right to do these things when our kids are not well – as we have discussed, it is in going through these processes that we can better move on and not become locked in our emotionality or past experience. And then it can be a time to find meaning in it all. Existential angst is a major stressor in life, when we don't know our purpose or feel at the mercy of the "bad" things we encounter. But by exploring what you may have learned and what you can draw that is positive from your experience, it simply makes life that much more rich as well as the life of your child. Ask yourself, what has this challenge taught me? What can I do with those lessons? And what can I take from this and teach my children? What will my legacy be?

Helping Our Children Through

"…the adult's first task is to attend to his or her own emotional state as it is in the adult's calm, competent, and reassuring presence that children find the space to resolve their tensions. Who we are being is more important than what we are doing. More accurately, who we are being when facing an upsetting situation will dictate both the form and the impact of what we do" (Levine and

Klein, *Trauma Through a Child's Eyes: Awakening the Ordinary Miracle of Healing*, Foreword by Gabor Mate).

Once this step is made or the process is simply started, then parents can use other methods that will help their children through the rough stuff and beyond into a life of health and happiness.

Listening, storytelling, music, play, and soothing language are techniques that Levine says are most helpful as is preventing trauma by preparation. He asserts that trauma can and should be healed because it is not intended to be relived but to be completed as a natural response to the inevitable challenges in life.

Some more ways you, as a parent, can help your child are to:

Assess what you need (sometimes with the help of a practitioner or your doctor), then reassess whenever necessary. There will always be times when a routine or protocol needs to be adjusted according to your child's needs, so be prepared to make changes when needed.

Know that your child's healing path may not be your own and that there are many ways to recovery that may work better for them. For instance, my children don't enjoy yoga, which is one of my go-to methods, but they enjoy ice-sports as a way to access and care for their physical bodies.

Find a good team of support by way of receptive doctors, caregivers, and practitioners who align with your values and can help you toward your goals.

Find what works, and give it a good trial. Resist the urge to bounce around from therapy to therapy without a proper trial. Do your research before you begin anything, get clear on what you decide to do, then give it the time it will take for you to see improvement. Then if it is not the right therapy or protocol for your child, reassess and adjust.

Be realistic about your goals, but shoot for the stars – be open to the possibilities, but be happy with every little success along the way. Hang on to hope, but let go of expectations. What we start out thinking will be the best outcome, may be, in the end, not what you even want or need. What you may end up getting may be even better.

Trust what you know is right, and follow your instincts.

Stay connected to your children. Make sure to have one on one time with all of your children doing "normal" things. Have fun, play, release your own sense of joy and curiosity.

Don't panic and resist the "I want it to change now" quick fix mentality. It takes time to recover from illness, and patience.

Connect with yourself.

Connect with your partner if you have one and if you can.

Focus on reducing stress.

Pay attention to the special challenges for children and teens with Type 1 diabetes, their own issues with identification separate from their diagnosis where they can be left with the question: "who am I in all of this? Then ask yourself what do they need and seeing and nurture the whole child when you pursue the resources they might need. Teach them to care for themselves as you care for yourself and you will all transcend the diagnosis together.

General Areas to Pay Attention To

Address and Improve *Physical* Health
Employing a Good Healthcare Team
Therapies and Protocols That Improve Physical Health

Address and Improve *Emotional* Health
Social and Spiritual Wellbeing
Personal Wellbeing
Space for Imperfection

Address and Improve *Social* Health
Positive Social Support
Cultivating Positive Relationships
Improving Family Bonds and Entering Into What Mary Pipher, PhD, calls "*The Shelter of Each Other.*"

Address and Improve *Spiritual* Health
Gratitude
Meditation
Forgiveness
Mindfulness Practices
Purpose
Motivation
Prayer
Etc.

By addressing all of these areas, you can address your child's health in its entirety for a more complete and deep recovery and sense of health and wellbeing on every level.

Don't Forget the Rest of Life
Caring for a child with chronic illness can be an all-consuming job. It can be what gets you out of bed in the morning after bad dreams and night sweats, be the thought that you collapse into a restless sleep with at night, and can dictate the happenings of every moment of the day you and your family live in between. If you have more than one child, those children can fall to the periphery. Your job can suffer, your career aspirations may change, you may hold different values than you did before or think differently than you once did. Financial problems can put a strain on you that is so bad that you stop answering the phone or checking your emails. You may move or get a divorce, meet new friends, or become closer to your spouse than you ever imagined. Your own health may suffer, or you may find new reason to take better care of yourself. The energy in a family may shift when one of our own seems to go down, causing us to look much deeper than that child's physical ailments for deeper ways to support their healing.

However, it is absolutely possible to integrate your new normal with a good and robust life full of joy, new experiences, and well, living! Whenever I write or say that parenting a child with chronic illness has changed my life, something about that statement is not quite complete. Yes, it has changed my life, most definitely, but what things in life don't change or influence what will come in the future? No, we parents cannot know what is to come: whether our children will have brown eyes or blue eyes, whether they will be artists or lawyers or both,

whether they will never have a sniffle or will have some kind of significant struggle with their health. But we can know that life will happen and everything that happens is our story and is one more piece that informs us but does not define our future. We can only become adaptable to what may come, be open to what our experience of parenting can bring for us, do what we can, then let go of the rest.

The Tao of Parenthood

If you look at how far you have to go, then you may want to give up, but as the old cliché goes, if you take it one day at a time, you can enjoy each day of your life with your children as they happen. You will see what is around you when you slow down and let go of the pressure to go fast. The finish line is a mirage in the desert; it is ever changing and never in the same place you thought it was when you started out.

> *"Keep in mind the endless nature of being, and your journey will gain perspective."*
>
> -Vimala McClure,
> *The Tao of Motherhood.*

Session 7: Therapies Beyond the Pump, Syringes, and Technology

We can find information all over the place about new medical technology designed to make life easier for children and adults with Type 1 Diabetes. Many people do very well when employing the tips and strategies they are offered such as when to eat, how much to eat, what glucometers are easiest to use and the most accurate, which insulin works best, how to exercise without highs or lows, the list goes on. And there is a LOT of easily accessible information out there about the everyday ins and outs of diabetes care in relation to the numbers game, a game we have to play, whether we are using other methods or not. So, although I am here to offer you some tools that go *beyond* the medical toolkit, I would like to acknowledge the need to have one and go through some things in our medical toolkit that we have found useful:

Syringe vs. Pump?
-pros and cons
-pump more convenient
-pump can be more consistent and can have better control
-pump can be too convenient
-pumpers can have less control if not used correctly
-sometimes need a pumpcation
-syringes = a whole lot of poking every day
-syringes are not very convenient
-with syringes, control can be better or worse than a pump depending on the usage and the user
-using syringes takes more planning
-syringes can be painful

Continual glucometers
-one more thing to attach to your child's body
-expensive and not always accessible
-a bit behind in readings (20 minutes or so)

Various other glucometers
-finger prick
-attached meter

Apps, tracking food, and keeping detailed notes.

Some technologies like a bionic pancreas, Dr. Faustman's and a myriad of other clinical trials, and beta cell transplant do help make life a lot easier, as do all of the diabetes care items, gadgets, and supplies, but these inventions can be prohibitively expensive, risky, and not always accessible.

When we look to approaches available to us *in addition to* the medical toolkit, we can open our children up to a whole new world of healing. We can begin to understand why simple strategies such as lifestyle and diet are in no way benign, become awakened to the presence of other options (and there are many many many), and begin to take more control over our own children's health.

Hoping for a cure is not futile because it sometimes is the only thing parents can hold on to at times. I do not begrudge or berate any parent who has this hope. But we know that Type 1 Diabetes is not caused by any one thing and therefore

cannot have only one cure. Empowerment is what will turn us from victim into victor, and our children, as well. The danger of solely waiting for a cure or the next best invention is that we can forget to act or even know that we *can* act. Why wait when there is a LOT we can do right now?

So, the reasons why so many people slog along coping with chronic illness are not only that they didn't know *what* they could do, but that they didn't know they *could* do it.

Understanding Why the Simple Is Not Benign

One more note on reducing the toxic load: here is one example of the mechanisms behind how simple lifestyle changes will make a significant difference. With my own daughter, I don't just want to manage carbs in, insulin in, but understand how to give her own body the best chance at regulating its own processes. And one way to do this is to pay attention to her environment and how it might affect her.

Here is an example of what we can be mitigating when we make a lifestyle change seemingly unrelated to Type 1 Diabetes:

> Glyphosate, a synthetic amino acid and analogue of glycine, is the most widely used biocide on the planet. Its presence in food for human consumption and animal feed is ubiquitous. Epidemiological studies have revealed a strong correlation between the increasing incidence in the United States of a large number of chronic diseases and the increased use of glyphosate herbicide on corn, soy and wheat crops. Glyphosate, acting as a glycine analogue, may be mistakenly incorporated into peptides during protein synthesis. A deep search of the research literature has revealed a number of protein classes that depend on conserved glycine residues for proper function. Glycine, the smallest amino acid, has unique properties that support flexibility and the ability to anchor to the plasma membrane or the cytoskeleton. Glyphosate substitution for conserved glycines can easily explain a link with diabetes, obesity, asthma, chronic obstructive pulmonary disease (COPD), pulmonary edema, adrenal insufficiency, hypothyroidism, Alzheimer's disease, amyotrophic lateral sclerosis (ALS), Parkinson's disease, prion diseases, lupus, mitochondrial disease, non- Hodgkin's lymphoma, neural tube defects, infertility, hypertension, glaucoma, osteoporosis, fatty liver

disease and kidney failure. The correlation data together with the direct biological evidence make a compelling case for glyphosate action as a glycine analogue to account for much of glyphosate's toxicity. Glufosinate, an analogue of glutamate, likely exhibits an analogous toxicity mechanism. There is an urgent need to find an effective and economical way to grow crops without the use of glyphosate and glufosinate as herbicides.
(PDF) Glyphosate pathways to modern diseases V: Amino acid analogue of glycine in diverse proteins. Available from: https://www.researchgate.net/publication/305318376_Glyphosate_pathways_to_modern_diseases_V_Amino_acid_analogue_of_glycine_in_diverse_proteins [accessed Dec 16 2018].

When we understand the mechanisms behind disease, we can make changes such as eating organic to dramatically improve the health of our children.

Awakened to the Presence of Other Options

There are many things that I don't know about the various things available to children with Type 1 Diabetes despite having been relentlessly researching and working in this arena since my daughter's diagnosis 7 years ago. No one can know or keep up with it all. But yet, I was still surprised to find that one of the things we were doing every day may have been contributing to my daughter's struggles: the kind of insulin she was on. See, most insulin being prescribed today is biosynthetic insulin whereas the insulin used in the past was derived from pork or bovine (Hypurin). I began to read that people felt exponentially better on the pork or bovine insulin with less fatigue and better bloodsugar control. Questions flooded my mind such as, could we have been doing more damage with the "cure?" Is this why she fell flat and was always exhausted? Would the insulin she was taking cause more autoimmune conditions to develop? Is there a correlation between further autoimmunity and inability to control blood sugar levels? I had never even considered that we had any other options, or that the option we were given could be at the heart of her complications. So, when we can continue to question, we sometimes find answers to problems we didn't even know were affecting us.
(http://www.greenmedinfo.com/blog/gmo-insulin-causes-type-1-diabetes-type-2-diabetics-study-finds
https://www.acsh.org/news/2017/08/29/40-years-ago-gmo-insulin-was-controversial-also-11757

The Role of C-Peptide in Human Physiology
https://www.ncbi.nlm.nih.gov/pubmed/10780930)

Beyond the Medical Toolkit
Taking Control: What's Inside the *Healing* Toolkit?
Alright, so let's dig into *what else* there is for our children.

Medical Extras
-Low Dose Naltrexone (LDN)
-Alternate insulin therapy (Hypurin)
-Immunotherapy (such as Serum-Derived Bovine Immunoglobulin

Root Cause Resolution
-Functional Testing
-Energetic Testing
-Addressing root causes
-Preventing progression, comorbidities, complications, or disease in the first place

Lifestyle
-Exercise and movement
-Sleep
-Light
-EMFs

Diet
-Eat organic, whole foods
-Therapeutic diets

Advanced Nutritional Therapies
-Herbals
-Enzyme Therapy
-Nicotinamide Riboside (NAD)

Supplementation
-D3
-Gymnemma (an herbal)
-Probiotics/prebiotics

-Tailored to your child's bioindividual needs

Therapies
-Stem Cell Therapy
-Cannabidiol (CBD)

Whole-Person Therapies and Practices
-Cold Laser Therapy (photobiomodulation)
-Homeopathy
-Essential Oils
-Craniosacral Therapy
-Cognitive Behavioural Therapy (CBT)
-Eye Movement Desensitization and Reprocessing (EMDR)
-Refer to Extensive HFF List

With these tools at your fingertips, you can make great strides toward optimizing your child's health!

Session 8: Making Healing Plans (That Work!)

Our Goals for a Solid Healing Plan
Find Root Causes
Halt the Autoimmune Process
Address Your Child's Bioindividuality and Unique Health History and Current Situation
-testing
-health history
-keeping records
Making An Individualized Plan
-based on health history, environment, genetics (possible epigenetic expression), test results, type of diabetes, and other root causes.

Putting It All Into Action
Readiness (you and your child's)
Get Clear on Goals and Limitations
Define and eliminate personal and logistical limitations
-Empowerment:

-Getting informed
-Getting the right supports
-Getting organized
-Retrain the brain/reduce stress
-Settle physiology, different access points to doing this
-Mind, Body, Spirit, and Energy

Finding Supports
Building Your Healthcare Team
Creating a Safe and Nurturing Environment for the Whole Family
Educating Family and Friends
Let's have a look at how to get this organized!

Session 9: Moving Beyond the Diagnosis

Healing from Type 1
No one seems to want to touch Type 1 with a 10-foot pole. Some tissues are easier to repair than others and some conditions aren't as complicated. Type 1 is complicated - it is both physiological and metabolic and has a deep psychological component that can both contribute to the onset Type 1 as well as to the perpetuation and inability to heal in any way to any degree. We stop autoimmune attacks to the brain (PANDAS/PANS/AE), to the thyroid (Hashimoto's), to the myelin sheath of the nerves (MS), but few talk about stopping the attack on the pancreatic beta cells. If we understand the mechanism behind autoimmunity, then we know that Type 1 is not unlike any of these other conditions and potentially, it can be stopped.

Revisit the goals you set in Session 1. Did they change? Expand? Evolve?

As we have been discussing throughout this weekend, it is exceptionally important to identify the root causes of the diabetes, then to figure out what damage has been done and how to stop the damage and repair the tissues. But further to that, our goal can be more than to rely on cures expecting that our children would carry on as if nothing happened, but to heal both parent and child in ways that we never knew needed healing, to be awakened to the best of life, and to live better because of it.