Placenta Encapsulation: Cumulative Risk Assessment

An Informed Consent Analysis

Second Revision
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REVIEWS

NANCY WAINER, CPM

"When new information comes to light, it makes sense to drop our collective egos and consider it. This article contains information for every person involved with birth in any way. If you have been in favor of placental encapsulation, it is absolutely vital that you read this information. It is fresh, new material that most of us who have been involved with birth for a very long time did not know. As someone who intuitively was never a fan, I am so grateful to Sharon for the time she invested and the research she did so that I can be even more sure about the concerns I had. This information will spur new discussions that are vitally important, and spawn change. Most important of all, this information will help protect mothers and babies and serve to ensure that we thoroughly examine anything in which we become engaged too soon."

—Nancy Wainer, CPM
Coined the term VBAC now used internationally

Co-author of:
Silent Knife: Cesarean Prevention and Vaginal Birth after Cesarean

Author of:
Open Season: A Survival Guide for Natural Childbirth and VBAC in the 90's
Birthquake! A Childbirth Book for Strong Women and Women Who Want to Be Strong—and Their Partners (coming soon)

FROM A MOTHER WHO ATE THE PLACENTA

"First and foremost, as a professing Christian who deeply takes the Word of God seriously, several beautifully made points brought conviction and drew me closer to the Lord as I reflected on my own actions. I truly appreciate that this information was presented not in a wrathful way, but in a loving and thoughtful manner.

Second, I read this article through the lens of a young mother who simply wanted the best for her health, her body, and her postpartum recovery. Looking back, I can see how I participated in and bought into this "trend," though I didn't view it that way at the time. Had I been exposed to information like this, I would have been better equipped to evaluate the proposed health benefits against the scientific consequences. There is a small part of me that feels misled, though I don't believe there was any ill intent behind it.

Lastly, as someone who loves the beauty of birth, I found this article interesting, informative, and exceptionally well-presented."

—Name Withheld to Protect Privacy

DEDICATION

Dedicated to mothers who deserve complete information,
and to babies who deserve careful protection —
because love requires honesty.

Above all, this is dedicated to my Lord and Savior, Jesus Christ, who brought me up out of the miry clay, opened my eyes to the risk factors associated with placental encapsulation, and put this new song in my mouth. May you be glorified.

Psalm 40:1–3

HOW TO READ THIS ARTICLE

The following article can be read in two different ways. Since this information is very extensive and detailed, our first recommendation is to read only each **bold, Quick Summary** in succession. This provides a general overview of the information presented and makes it easier to read. For a deeper analysis of the topic, this article can also be read in its entirety—a combination of each quick summary followed by the full text.

INTRODUCTION

QUICK SUMMARY:

Given the same information about any topic in health care, not everyone will reach the same conclusion. However, without an understanding of the risks associated with a particular practice, clients may make an uninformed decision that they may later regret. To empower clients with fully informed consent regarding placental encapsulation, it is essential to provide a risk assessment of the potential repercussions of eating human placenta so that each client can determine for themselves whether the benefit outweighs the potential risk.

Each and every health care topic is not above scrutiny, including placental encapsulation. Digging deep and assessing specific risks as well as evaluating the aspect of cumulative risk, where a combined effect of multiple factors has a greater impact than each individual factor, is an essential aspect of honoring informed consent and empowering our clients with the ability to make confident, individualized decisions.

A 2018 study analyzed data from 23,242 consecutive, planned "community" (birth center or home) births attended by midwives enrolled in the MANA stats project. Nearly one-third (31.2%) of the birthing women in the study consumed their placentas. (7) However, the study stated that "limited systematic research on maternal placentophagy is available to maternity care providers whose clients/patients may be considering this increasingly popular practice." (7) As health care providers, it is our goal to advocate for full informed consent on all issues related to maternal care. What educational information can we give to support a client's informed choice on placental encapsulation when little research is available on this practice?

There are numerous placental encapsulation websites that deny any risk associated with ingesting the placenta while simultaneously making claims of benefit with little or no scientific backing. To state that *any* practice in health care is only beneficial and risk-free is a fallacy. Every choice in life has a risk-to-benefit ratio. In health care, clients must also face every decision by analyzing their own personal risk-to-benefit ratio: "Is the potential benefit worth the potential risk to me if I choose to do this?" To equip clients with the essential information needed to

analyze the claimed benefits of ingesting placenta as promoted by encapsulation providers, this article provides a risk assessment of the potential repercussions of consuming human placenta from both historical and physiological perspectives.

UNDERSTANDING THE PLACENTA

QUICK SUMMARY:
The placenta is a temporary, multi-purpose organ that removes waste products and acts as a filter, protecting the baby from toxins and infections.

A more detailed understanding of the placenta comes from the Cleveland Clinic: “The placenta is a temporary organ that connects your baby to your uterus during pregnancy. The placenta develops shortly after conception and attaches to the wall of your uterus. Your baby is connected to the placenta by the umbilical cord. Together, the placenta and umbilical cord act as your baby’s lifeline while in the uterus.” (2, emphasis mine) The placenta performs various functions to support fetal development, including facilitating blood flow & gas exchange, regulating body temperature, eliminating waste products, delivering nutrients, and serving as a protective barrier for the baby against toxins and infections. (3,5) The placenta is unique in that it is a temporary organ. Although in pregnancy it is a crucial lifeline from mama to baby, it is discarded by the body and expelled from the mother’s vagina soon after the baby is born, when it is no longer needed to support the life of the baby. After it comes out of the body, some people call it the “afterbirth.”

QUICK SUMMARY:
The placenta is genetically the same as the baby—it is the baby’s flesh & blood.

When the father’s sperm unites with the mother’s egg at around week 3 of the menstrual cycle, a new life is conceived. This new cell—this new independent life—by week 4, becomes a rapidly dividing ball of cells called a blastocyst. This blastocyst burrows deeply into the uterine muscle of the mother’s womb, like plugging an electrical cord into an outlet. This is called implantation. The Mayo Clinic explains, “Within the blastocyst, the inner group of cells will become the embryo. The outer layer will give rise to part of the placenta, which will nourish your baby throughout the pregnancy.” (4) This newly conceived life consists of both the placenta and the baby.

From the very beginning, the placenta is part of this new, conceived life. The placenta is not the mother’s body or flesh. The placenta has the same unique genetics as the baby. (5) When a baby is within a mother’s womb, the placenta is filled with the baby’s blood, and it allows the baby’s

blood to come near the mother's blood without mixing. In this way, nutrients and other substances are passed from mother to baby. Thus, the placenta holds a substantial amount of the baby's blood. At birth, the baby receives a bolus of its own blood from the placenta, which is rich in stem cells and oxygen. Health care providers can draw blood from the cord or from the placental veins to determine the baby's blood type or for genetic testing.

HUMAN PLACENTA PRACTICES THROUGHOUT HISTORY

QUICK SUMMARY:

Although animals often eat the placenta, it has not been the same for people. In the majority of all cultures across human history, the placenta was not eaten. Instead, the placenta was buried as a sign of respect.

Mothers eating the placenta is a new phenomenon in human history. It is important to repeat the fact that, in the majority of traditional cultures worldwide, the human placenta was not eaten. Instead, it was a very common practice, across cultures, to bury it. Human maternal placentophagy [mother eating the placenta] has never been documented as a traditional cultural practice. (7)

A study published in the *Journal of Ecology of Food and Nutrition* confirms:

"…We report on a cross-cultural survey of 179 human societies regarding the consumption, treatment, and disposal of human placenta, in addition to accompanying cultural beliefs and perceptions about the organ. The conspicuous absence of cultural traditions associated with maternal placentophagy in the cross-cultural ethnographic record raises interesting questions relative to its ubiquitous presence among nearly all other mammals, and the reasons for its absence (or extreme rarity) among prehistoric/historic and contemporary human cultures." (1)

Various mammals will eat placenta, but in research spanning from contemporary people groups all the way back to antiquity, the practice of people eating the afterbirth is absent from the historical record or is extremely rare

A common, unsubstantiated claim made by many who promote placental encapsulation can be summed up in this statement made on one placenta encapsulation website: "Consuming the placenta after birth is something that has been done for centuries by humans and mammals." (56) That statement is not backed by the scientific community's research into the historical record. That is not true.

MOTHERS EATING HUMAN PLACENTA: A NEW PRACTICE

QUICK SUMMARY:

The practice of eating the placenta was introduced in the United States within the last 50 years, but it has only become commonplace within the last couple of decades.

In U.S. history, as in the historical record worldwide, mothers eating the placenta was virtually unknown until about 50 years ago. (7) In the early 1990's, as a childbirth educator, I remember commenting about this "new idea" of eating the placenta to pregnant couples in class, and they would all look dumbfounded. At that time, the idea seemed so preposterous that it gave us all a good laugh. Midwife Nancy Wainer Cohen, who was a practicing midwife during the 1990's, commented in private conversation that the first she heard of eating the placenta was in a book published in the mid-1990's, *Artemis Speaks*, by California midwife Nan Koehler. This book was highly influential in the midwifery community at the time. From my experience and Nancy's comments, it appears that it was still a new concept within midwifery birth circles until at least the 1990's. However, Midwife Ina May Gaskin told me that Nan Koehler was not the first California midwife to endorse placenta-eating, and she provided an excerpt from midwife Raven Lang's *Birth Book* that sheds light on the timing of introduction to this practice in the United States.

This book was published in 1972 and appears to be introducing the practice of eating the placenta since it states:

"All other animals eat theirs, but the human animal discards hers, buries hers, or pays no attention to it whatsoever. I have known *some* women who have eaten their cooked placentas, sharing it with their family and friends." (58, emphasis mine)

So, although the practice of mothers eating placenta may have been introduced fifty years ago, potentially because of the influence of that book, it appears that the practice slowly gained recognition during the 1990's. Then, it only grew in popularity within American birth circles just within the past few decades.

Ways in which women currently consume the placenta in the postpartum period include:

- Raw (such as in a smoothie)
- Cooked (such as in a dish of food)
- Dehydrated, uncooked, and encapsulated
- Cooked/steamed, then dehydrated and encapsulated

The same 2018 study referenced at the beginning of this article states that approximately half of women (48.4%) who were eating the placenta encapsulated were consuming it in the dehydrated, uncooked, encapsulated form. (7)

QUICK SUMMARY:

A social contagion is the rapid spread of a behavior within a group, often through imitation, much like how a disease spreads. The outcome can be either positive or negative. Since the practice of mothers eating the placenta was virtually unknown in human history, we do not have the test of time to assure us that the long-term outcomes of doing so are safe or beneficial. Therefore, we should not rely solely on the recent popularity of the practice nor on unproven claims of benefit.

Returning to that 2018 study:

"The majority of women consumed their placentas in uncooked / encapsulated form hoping to avoid depression, although no evidence currently exists to support this strategy." (7) Note the statement made in this study that there was no evidence, even at that time of increasing popularity of placenta encapsulation, to prove that eating it helped women avoid depression.

In our modern age of technological communication, any unfounded claim can gain popularity and go viral, even if it isn't true or isn't true for most people. We can easily be influenced by what is approved of by the culture around us, simply because the claims of a few people have been picked up and voiced by many through a technological tidal wave. This can give any claim, even outlandish ones, a false sense of validity.

It is important to acknowledge that, when considering any new practice or behavior, even if it has become socially popular and is widely accepted, the long-term outcome is unknown. Again, a new practice can have a positive outcome, but it can also have a negative one. With new ideas, the "test of time" is not available to help us predict potential long-term repercussions since the historical evidence is lacking.

THE RISK OF EATING HUMAN FLESH

QUICK SUMMARY:

Being swayed into passively accepting a practice without thinking deeply about it is not the same as actively making a personal decision based on learning and analyzing information. Facts may be hard to hear, but knowing facts can help each person make the decision that is best for them.

Let us return to the question, "How does one decide whether or not to accept a new practice or idea?" As we previously discussed, the passive way in which people are persuaded to accept a new practice is through the influence of popularity and/or the claims of benefits voiced by others.

The flip side is to actively assess the known scientific or physiological facts associated with a new practice or idea and then analyze how that factual or scientific information can or should affect our personal decision-making. It is very different if someone chooses to eat the placenta because others say it is a good thing to do, or if they choose to do it because they have analyzed the facts. Either way, that person may still choose placental encapsulation. The final decision may remain the same. However, there remains a difference between informed and uninformed choice, and between confidence and potential regret. Therefore, the goal of this article is to foster active assessment to achieve confident, personal decision-making.

QUICK SUMMARY:

Even if eating the placenta has become popular, it is important to remember that the placenta is not the mother's own tissue. The placenta is genetically the same as the baby's body tissue and blood. It is considered the baby's organ. Upon recognizing this fact, from a moral perspective, assessing the risk of eating the placenta must also include the question, "Is it right to eat the flesh of another human being?" Additionally, looking at this fact from a physical perspective prompts the question, "Will the risks associated with cannibalism, as described later in this article, outweigh the popularity of the practice as well as any potential emotional or physical benefit from doing so?"

As stated, the first physiological fact on which to begin building an active assessment of placenta encapsulation is recognizing that it is a fetal organ. According to an article by *The American Society for Biochemistry and Molecular Biology*:

"The placenta does develop in the uterus but is considered by scientists to be a fetal organ. 'It has the same background as the fetus,' says George Saade at the University of Texas Medical Branch in Galveston. 'It may be viewed as a foreign organ to the mother.'" (6)

What is cannibalism? It is the act or practice of eating human flesh by mankind. (24) Eating the placenta is not autophagy (self-eating). Therefore, it is not the same as a mother chewing on her own hangnail. The placenta has been part of the baby from the very beginning of life. Placental tissue is not the mother's body tissue. It is another person's body tissue—the baby's tissue. It is filled with another person's blood—the baby's blood. Even if we drain most of the blood out, it is still genetically the same tissue as the baby and remains permeated with the baby's blood.

One encapsulation website offers the option of using plant-based capsules, instead of gelatin capsules, for vegans. (60) This makes me feel that women truly do not realize what they are eating. Why would a woman want to choose vegetarian capsules if they contained dried human flesh?

QUICK SUMMARY:

Many women are not aware of the fact that the placenta is the baby's tissue and blood before they make the decision to ingest it. Learning this fact, only after consumption, can potentially cause shock and/or stress for some women, which could have been prevented by having foreknowledge. Encapsulation companies are now offering bright, multi-colored flavored capsules that taste like strawberry, orange, lime, bubblegum, berry, and grape. (60) Putting the placenta into strawberry-flavored capsules is a thinly veiled disguise. It can distract us from the reality that it is still human flesh and blood.

In *The Birth Book* (1972), which currently is the earliest known reference by an American midwife on the practice of mothers eating the placenta, author Raven Lang writes frankly about the benefits of eating the baby's blood within the placenta. She writes:

"In fetal blood there is a higher concentration of amino acids, phosphorus, fructose, lactate, serum iron, calcium, ascorbic acid, and a number of minerals with soluble vitamins… One placenta will feed about six people with good appetites, more than six people if they still haven't gotten over their aversion to cannibalism." (58)

It appears to me that eating the placenta has only grown in popularity once human flesh could be disguised through encapsulation, and people forgot it was cannibalism.

Although there is little to no scientific evidence to support self-reported claims of benefits from eating placenta, such as elevated mood, nutritional value, increased breast milk production, and hormonal support, these issues will be briefly analyzed and addressed at the end of this article. Why? Will these claims be enough to convince a woman to eat the placenta, either cooked or raw, in light of an awakened recognition that the practice is cannibalism and that it carries an accumulation of risks associated with the human body's physiological response to eating human flesh?

RISK ASSESSMENT: INFECTION

QUICK SUMMARY:

One risk of eating human flesh is the risk of infection. A placenta can become infected in pregnancy, during labor, or from exposure to a hospital setting. It is safe to assume that no one would want to consume something that is infected or contaminated. What many people don't realize, however, is that a placenta can be infected with bad bacteria even if the woman who carried it shows no signs of infection. A study has shown that over 60% of placentas were infected even when the mothers showed no outward signs of infection. Placentas play a beneficial role during pregnancy by retaining infection in order to protect the baby. Therefore, women may be consuming placentas with high bacterial carriage without realizing it, thereby reintroducing pathogenic bacteria into their own bodies

through the oral route. As stated on the Texas Department of Health Consent form, "No test can completely ensure the absence of infectious disease in the placenta." (54)

Chorioamnionitis (CA) is an infection of the placenta and the amniotic fluid. (10) Some undisputed ways in which the placenta can become infected include, but are not limited to:

- An infection acquired from being in a hospital or health care facility. This is called a nosocomial infection. If people can contract infections from simply being in a hospital, so can a placenta.
- Infection acquired by the mother in pregnancy or during labor.

There are actually two types of placental infection:

1. clinical
2. histological

One type of infection presents with signs and symptoms. The other type of infection is asymptomatic—no symptoms.

Clinical chorioamnionitis (CCA) is the type of infection that is easier to identify because it is symptomatic. It is "defined based on maternal symptoms which include fever, abdominal pain, abnormal vaginal flow, and leukocytosis." (44) Maternal fever is the most important clinical sign. Any fever > 100.4 Fahrenheit persisting for more than 1 hour in labor or any fever > 101 Fahrenheit warrants investigation. (11)

Histological chorioamnionitis (HCA), on the other hand, is identified through an examination of the placenta in a lab after delivery, and it "can be present in the absence of clinical chorioamnionitis." (44,45) A histologic infection (HCA) of the placenta can be completely asymptomatic. Therefore, there may be no fever nor any other sign or symptom of infection! (45)

This makes sense from a microbial perspective. Each human body is an "apartment building" for a vast collection of microorganisms, including bacteria and viruses. This is called a person's microbiome. The goal of each of us should be to shift our personal microbiome, which lives within us, toward housing more beneficial bacteria that support nutrient absorption and optimize overall wellness, rather than toward pathogens. We should all want to reduce our overall pathogenic load. However, no person is exempt from carrying pathogens within. To some extent, infectious pathogenic bacteria live within us.

New Song New Life midwifery practice emphasizes proactive management of a mother's microbiome throughout pregnancy to help women optimize the growth of beneficial bacteria. Our goal is to enhance the important microbial seeding that is passed from mother to baby during vaginal birth. Science is beginning to document that the types of bacteria babies receive at birth can affect lifelong health, either positively or negatively. Bacteria can and do affect the human body in vast ways beyond infection.

Therefore, we routinely screen women for high urine pathogenic bacterial carriage at initiation into care in order to give women the opportunity to support a positive transfer of bacteria at birth instead of a negative one.

Even with an understanding of the human microbiome, I have been surprised that the vast majority of my clients, including clients with no current health issues or outward signs of infection, have a high carriage of pathogenic bacteria in their urine that could negatively affect the crucial microbial transfer to the baby at birth if not actively managed beforehand. It takes intentional effort on each client's part, through dietary and environmental changes throughout pregnancy, to support a reduction in that pathogenic bacterial load. From my perspective, it appears quite common for asymptomatic pregnant women to carry an infection. Therefore, couldn't the placenta, which is carried within them during pregnancy, also have the potential for a high pathogenic bacterial carriage, as well? Even if a woman actively reduces her load of pathogenic bacteria in her own body during pregnancy, could the placenta retain that infection since it was used for that purpose to protect the baby in the womb?

A 2016 study in the *Journal of the West African College of Surgeons* found that concurrent placental infection without maternal symptoms is common. Despite rigorous methods to exclude women with high risk of infection, including women with diabetes, this study determined that there was a high prevalence of placental infection of 60.8% in women who, themselves, had no symptoms of infection (HCA). Additionally, this study found no association between HCA infection and adverse maternal or neonatal outcomes postpartum. (45)

QUICK SUMMARY:

To summarize the study discussed above, when laboratory testing determined placentas were infected, even when the mothers showed no signs of infection, it did not increase postpartum infection risk for either mother or baby. That is comforting! Having an infected placenta, in and of itself, did not increase the risk of spreading infection to either mother or baby after delivery. This shows that the natural mechanisms associated with birth still work: the placenta did its job, retaining infectious bacteria to protect the baby. This also confirms the beneficial practice, performed by cultures around the world, of burying the placenta after delivery, thus reducing the risk of infection spread. But what is very important to note is that this study did not evaluate the potential risk of infection for those same asymptomatic women if they then chose to *eat* that infected placenta. Eating it could reintroduce an infection retained within the placenta back into the mother's body and into a different organ system.

While doing this research, I was often flabbergasted by the level of misinformation provided by placental encapsulation providers to potential clients. One website stated that if either the mother or baby has any kind of active infection, the placenta should not be consumed. Yet, this encapsulation website went on to define active infection as having two or more of the following symptoms: long-lasting maternal fever of 100.4+ Fahrenheit; infant fever of any kind; foul-

smelling / discolored discharge and / or amniotic fluid; foul-smelling / discolored placental tissue. (56) In light of an understanding of histologic infection (HCA), where not all infections present with symptoms, this definition, even if it appears reasonable at first, is misleading and not accurate.

This same encapsulation provider further stated on their website, "Please do not let a fever during labor convince you an infection is present. Fevers during labor can be a natural and normal process…" (56) Fever is never natural or normal during labor. It is a warning sign. Do not let a confident statement convince you of something that is untrue and could potentially cause harm by accepting it.

QUICK SUMMARY:

A placenta can become infected when a woman's water breaks. But it can also become infected even if her water doesn't break until delivery.

Infection of the placenta, before water rupture, is often caused by two germs, or mycoplasma, that are commonly found within the vagina. These germs have been identified in up to 47% of cases of placental infection in which neither the mother nor the baby had outward, classic signs or symptoms of infection.

"Infection usually happens because of multiple bacteria that can access the uterus after the water breaks, but it can also occur with intact membranes, and this appears to be especially common for…genital mycoplasmas such as *Ureaplasma* species and *Mycoplasma hominis*, found in the lower genital tract of over 70% of women... The genital mycoplasmas, *Ureaplasma urealyticum* and *Mycoplasma hominis* (genital mycoplasmas), constitute the most frequent microbes occurring in up to 47% and 30% respectively of cases of culture-confirmed chorioamnionitis [or HCA]." (11, emphasis mine)

QUICK SUMMARY:

What could happen if these two germs, or mycoplasma, which are common sources of diseased placental tissue, were then eaten and thus relocated back into the mother's body? One of these germs is known to destroy the cells that form the barrier protecting the brain. They can invade the central nervous system and potentially trigger neuroinflammation. Does this mean that a germ-filled placenta could cause a chronic brain or central nervous system infection simply by eating it? Are we only looking for classic signs of infection, but not recognizing other signs or symptoms that could be caused by eating infected tissue?

Let us take a moment to look more deeply at these two infectious microbes, which cause almost half of all asymptomatic placental infections even when membranes remain intact, and analyze what could happen if these two infectious agents were then eaten, potentially allowing the infection to translocate to another part of the body.

The first infectious microbe, *Ureaplasma urealyticum*, is a common, colonizing, low-virulence commensal (52), meaning it is normally a "good guy" commonly found in the genital tract but can sometimes do bad things. What problems could arise if a *U. urealyticum* infection in the placenta were translocated to another body system through digestion? *U. urealyticum* is known to induce cell death in the major cells (HBMEC) that make up the vital blood-brain barrier (BBB)—the protective fence around the brain. If these microbes can destroy the brain's protective fence, they can invade the central nervous system.

A study published in the *Journal of Neuroinflammation* in 2019 stated:

"…we were the first to provide in-vitro evidence of *Ureaplasma*-driven neuroinflammation…by inducing apoptosis [cell death] in …the blood-brain barrier. *Ureaplasma* spp. may provoke barrier breakdown…ultimate consequence could be invasive and long-term CNS [central nervous system] infections by *Ureaplasma* spp." (52)

If a woman ate placenta that contained an asymptomatic infection of *Ureaplasma* spp., could ingestion of this microbe increase the risk of a long-term, chronic infection of the nervous system? Can a placental infection become a chronic brain infection after eating it?

QUICK SUMMARY:

The other mycoplasma, which is a common source of placental infection even when there are no classic symptoms of infection, and can also cause infection even if a mother's water doesn't break until delivery, is a known trigger for postpartum fever, lung disease, septic arthritis, as well as scar tissue that can cause infertility.

Are we watching for symptoms of chronic central nervous system infections, the development of respiratory issues, or even infertility as potential negative outcomes to eating placenta? Or are these risks, as well as other potential symptoms of a translocated placental infection caused by eating it, going unrecognized because we don't realize there could be a correlation, and because we are only looking for classic signs of infection, such as fever?

Looking more closely at this second microbe, *Mycoplasma hominis*, which contributes to the majority of asymptomatic placental infections, is commonly found in the urogenital microbiome of women. There isn't a problem if this microbe stays where it is supposed to stay. However, Pelvic Inflammatory Disease (PID) occurs when microbes, specifically *M. hominis*, leave their normal location near the cervix and travel to the uterus and fallopian tubes. Once these microbes

translocate to the uterus or fallopian tubes, they can cause reproductive tissue to turn into scar tissue, potentially leading to infertility. *M. hominis* can also translocate to the central nervous system and trigger infection in that new location, as well.

Historically and scientifically documented, the stress of birth reduces the mother's immune response. This is why it is important for a woman to rest and recover during the postpartum period to prevent illness. The risk of infection with *M. hominis* appears to be increased during labor as well as the postpartum period:

"Roughly half of all postpartum fevers have been found to be caused by *M. hominis*-associated infections. Giving birth causes alterations in vaginal flora composition and lowers immune system responses, which allow *M. hominis* to thrive. This structural change in flora lets infection set in…" (12)

Could ingesting infected placental tissue—tissue that the body used to filter and sequester infection to maintain pregnancy—especially if that placenta tissue was eaten raw or undercooked, trigger a wide variety of chronic systemic infections during the crucial postpartum period because it is considered a time of weakened immune response?

Let us address another potential source of infection. A nosocomial infection is an infection that can be acquired simply from being in a hospital setting. One such infection is MRSA. This is a type of staph infection that is increasingly resistant to antibiotics. "MRSA is highly contagious and can survive for weeks on surfaces." (13) So, also consider the potential risk of nosocomial infection from placentophagy during this time of weakened immune response, especially in instances where the placenta is eaten raw or is undercooked through dehydration after hospital delivery.

QUICK SUMMARY:

Do providers of placenta encapsulation truly understand what could cause or increase infection risk? Would a mother want to eat a hamburger that was tainted with her own bowel movement or that of her baby? Although one provider recommended the placenta shouldn't be eaten raw if contaminated with maternal fecal matter, they encouraged encapsulation in such cases as long as the placenta was soaked in apple cider vinegar for ten minutes and heated before encapsulation. (56) Even if a claim is stated confidently, it does not necessarily make it logical. Personally, I would not want to eat a hamburger—let alone human flesh, cooked or uncooked—that has been contaminated by bowel movement, even if it was my own.

To summarize, in approximately 60% of deliveries, the placenta can be infected *even if the client or care provider does not identify any signs of infection*. A placenta can still be infected even if a woman's membranes remain intact until delivery. A placenta can harbor infection even if the mother and baby do not experience any infection during labor or postpartum. Signs of infection go beyond classic symptoms, such as fever, and can encompass chronic disease states. Keep in

mind that we have only addressed three potential pathogens that could infect people. There are many more pathogens that could infect human flesh, including placental flesh.

QUICK SUMMARY:

Beyond contamination, it is also fairly safe to assume that no one would want to eat something that is decaying and beginning to rot. However, as soon as the placenta detaches from the wall of the uterus, it dies because it is no longer receiving oxygen. This loss of oxygen causes a change in pH that triggers the growth of bacteria that begin eating placental cells, causing it to putrefy and decompose within mere minutes of detachment. *Cold temperature can delay the process of decay, but does not stop it*. Even so, it takes much longer than a few minutes after a baby's birth for a mother to acquire the placenta and refrigerate it. What types of bacteria begin to flourish in the human flesh of the placenta immediately after it has died? Could eating these bacteria that help human tissue decompose, and which only begin to grow after the placenta is no longer receiving life-giving blood flow, add an additional increased risk of infection?

The crucial point to remember is that when the placenta is no longer needed, it detaches from the life-giving blood flow and dies. A deep dive into forensic medicine explains what happens at death: "In the immediate [post-mortem] period, the body undergoes rapid biochemical and physiological changes that are primarily caused by the absence of circulation of blood and loss of regulatory mechanisms." (14) Eating placenta is eating dead human flesh. Human decomposition is a natural process of tissue breakdown after death.

So, another way that a placenta can become infected is as it decomposes:

"As soon as blood circulation and respiration stop, the body has no way of getting oxygen or removing wastes. Excess carbon dioxide creates an acidic environment, which can rupture cell membranes. The membranes release enzymes that begin eating the cells from the inside out." (13)

This process of enzymatic activity and change of pH contributes *to the growth of microorganisms and bacteria that initiate putrefaction*. (13) How fast decomposition happens depends on multiple factors, including temperature. Cold temperatures will slow decomposition, *but do not stop it.* People who offer placental encapsulation often encourage clients to place the placenta in a cooler with ice soon after birth. But "according to Dr. Arpad A. Vass, a Senior Staff Scientist at Oak Ridge National Laboratory and Adjunct Associate Professor at the University of Tennessee in Forensic Anthropology, *human decomposition begins quickly at around four minutes after a person dies.* A placenta is *rarely* delivered within minutes after it has died because of being detached from the life-giving circulation on the uterine wall. After delivery, the placenta needs to be evaluated by the care provider. That can take additional time, allowing the

decay process to continue. Even if the placenta is refrigerated soon after delivery, is the temperature cold enough to inhibit the decomposition of dead flesh that *has already begun*?

We are not aware of the various types of bacteria that cause putrefaction and could contaminate a placenta after laboratory testing and examination. The sheer number of women in America eating human placental flesh is unprecedented in human history. Are decomposition and putrefaction creating an additional risk of infection, especially when the placenta is eaten raw or undercooked? Are women aware that eating decomposing human flesh is not the same as eating animal meat?

QUICK SUMMARY:

Claims made by placental encapsulation providers do not always match science. Although human flesh starts the process of decay within four minutes after being detached from active blood flow, one provider currently recommends placental encapsulation as long as the placenta is refrigerated within four hours of delivery; refrigerated for less than five days; or frozen for less than six months. (56)

This same provider follows those recommendations with the disclosure:

"Not adhering to the above guidelines can lead to varying degrees of placenta spoilage, adding a risk of bacterial growth. If a client continues with consumption against advisement, results could be similar to food poisoning symptoms. It is up to the client to make an informed decision." (56)

Who has the right to tell other people, in light of an understanding of the immediate, natural breakdown of dead human flesh, that the risk of food poisoning or infection only increases after four hours at room temperature? Each of us can passively accept such claims—or actively decide, based on science, whether they are valid.

INTRODUCTION: PREVENTING INFECTION

QUICK SUMMARY:

If a woman ***eats* a placenta harboring infection, germs are re-entering the mother's body through the digestive tract. Is there a way to reduce the risk of infection from what we eat?**

Digestion is a common and potential entry point for bacteria. However, there are physiological mechanisms and cooking practices that protect the body from infection entering through food or drink. Let us evaluate three possible protective measures that can reduce infection transmission through the digestive tract:

- Acidic pH of stomach acid
- The barrier of the intestinal lining
- Cooking or heat

INFECTION PREVENTION: STOMACH ACID AS A PROTECTIVE BARRIER

QUICK SUMMARY:

The body uses stomach acid as a defense to protect against infections from what we eat. The acidic pH of stomach acid, which also helps us absorb protein, vitamins, and minerals from our food, destroys many ingested germs.

Stomach acid (hydrochloric acid) plays a vital role in breaking down ingested food into basic, usable building blocks of protein, vitamins, and minerals. Stomach acid is an essential transporter that escorts these building blocks into the bloodstream. Without acidity, many nutritional building blocks cannot be absorbed well.

Stomach acid also serves as a natural protective barrier. The acidic pH of stomach acid helps destroy many ingested pathogenic microbes. After you chew on a hamburger, it slides down the esophagus and lands in the stomach. Then the stomach starts to fill up with acid, like a washing machine filling up with water. This acid destroys pathogenic microbes in food.

QUICK SUMMARY:

However, when there isn't enough stomach acid, undigested food rots within the stomach and creates a different type of acid, rotting food acid, that leads to digestive upset, heartburn, and reflux. An antacid is "anti-acid," which works against acid. Taking an antacid can neutralize the acid produced by rotting food and thus temporarily relieve symptoms of digestive upset, but unfortunately, it can also neutralize protective stomach acid. Thus, the use of an antacid could potentially reduce the body's ability to absorb important nutrients and weaken the acidic barrier that protects the body from infection.

A study in the *Journal of Food Protection* states,

"The secretion of hydrochloric acid by the stomach plays an important role in protecting the body against pathogens ingested with food or water. A gastric pH of 1 to 2 is deleterious to many microbial pathogens; however, the neutralization of gastric acid by antacids or the inhibition of acid secretion by various drugs may increase the risk of food- or waterborne illnesses." (8)

What does this mean? When there isn't enough stomach acid, not only does it dramatically reduce the body's ability to absorb nutrients (secondary malnutrition), but this protective acidic barrier is diminished, and thus the risk of contracting infection through digestion is increased. What did the previous study claim could eliminate this protective acidic barrier? Antacids. Antacids are "anti-acid." They are alkaline substances and neutralize stomach acid.

The work of Dr Jonathan Wright, MD, in explaining the detrimental effects of low stomach acid, as documented in his book *Why Stomach Acid is Good for You*, represents a paradigm shift. As a medical doctor testing his patients, he determined that burping, bloating, gas, reflux, and bad breath were not signs of excess stomach acid. They were signs of too little stomach acid (hypochlorhydria). Without natural stomach acid, a compost pile of chewed food sits in the stomach because it isn't being effectively processed. It is the resulting putrefaction of that rotting food which creates digestive problems, and other symptoms of excess acid.

By taking an antacid (anti-acid), the acid from the rotting food is neutralized, temporarily alleviating symptoms and making one feel better in the short term, but unfortunately, it also neutralizes any remaining valuable stomach acid. Thus, it creates a vicious cycle of hypochlorhydria. Dr. Wright calls antacid use a multi-billion-dollar deception. Antacids neutralize the symptoms, yet the real problem of too little stomach acid remains hidden, and thus the body is slowly robbed of its building blocks over a period of time (secondary malnutrition). According to Dr. Wright, signs of body dysfunction and disease caused by malabsorption leading to body disrepair from antacid use don't always show up until 6–8 years after first starting to take antacids. By then, people don't often correlate increasing dysfunction and disease with the long-term use of antacids.

QUICK SUMMARY:

The same alkaline forms of calcium and magnesium marketed as antacids are often included in prenatal and multivitamins, potentially causing the same detrimental effects.

If you search the DailyMed database by the Food and Drug administration you can find many popular antacids that contain calcium carbonate or magnesium oxide (or hydroxide) as the active ingredient. (In magnesium, both the oxide and hydroxide forms are often considered interchangeable because the hydroxide form turns into the oxide form in the presence of water in the body). These forms of calcium and magnesium do not contain an acid (such as citric acid in calcium citrate) to help increase absorption. They are alkaline, which is the opposite of acidic, so they act like "anti-acids," thus this explains their use in over-the-counter antacid pills. The neutralization and thus the loss of stomach acid through the use of these, *as well as other "anti-acid" forms of calcium and magnesium*, will not only hinder the absorption of essential nutrients through the reduction of stomach acid, but they can also neutralize the crucial acidic barrier that helps protect us from ingested pathogenic bacteria. Unfortunately, alkaline forms of calcium and magnesium are not limited to products labeled as antacids. They are also popular ingredients in prenatal vitamins and other multivitamins, potentially neutralizing stomach acid and hindering

our ability to prevent infections and absorb crucial nutritional building blocks essential for pregnancy.

QUICK SUMMARY:

Remember, the acidic pH of stomach acid helps us not only absorb the nutrients needed to build and repair our human home but also acts as an effective acidic barrier against infection. The dangers associated with neutralizing, or reducing, this protective acid with an alkaline substance extends also to drinking alkaline water, softened water, or the current craze of drinking water with salt. According to a scientific study, sodium chloride, which is commonly used as water-softener salt, raises the pH of the stomach, making it more alkaline rather than acidic. (55)

Additionally, a common stomach infection called *H. Pylori*, which is estimated to affect one out of every two people, also acts like an antacid by creating ammonia to alkalinize the stomach for its own protection. Although a woman can have an *H. pylori* infection without having any symptoms, one potential sign of *H. pylori* infection in pregnancy can be nausea.

It is theorized that 50% of the world's population has this common infection. Studies show a correlation between *H. pylori* infection and hyperemesis gravidarum—severe nausea and vomiting in pregnancy (53). Even if asymptomatic *H. pylori* infections are going unnoticed, *H. pylori* is entrenching itself within the stomach by acting like an antacid. It produces ammonia to raise gastric pH and neutralize stomach acid, protecting itself. Even if a woman is not consuming antacid supplements nor drinking alkaline water, one out of two women could have a reduction of the stomach acid barrier that protects against infection because of harboring *H. pylori*.

QUICK SUMMARY:

How many women experience signs that they have low stomach acid in pregnancy, such as burping, bloating, gas, reflux, or bad breath? How many pregnant women are taking prenatal vitamins with calcium and magnesium that are in "anti-acid" forms, such as calcium carbonate, magnesium oxide, or magnesium hydroxide? How many women are actually popping antacid pills? How many pregnant women experience nausea in pregnancy as a result of an H. pylori infection? How many of these same pregnant women proceed to eat the placenta after delivery? Additionally, with the potential loss or reduction of the stomach acid barrier, are these women also aware of the increased risk of food poisoning from eating placenta, especially if it is raw or undercooked, through dehydration?

The CDC Foundation states that each year, 1 in 6 Americans gets sick from food contaminated with bacteria. How many women are associating symptoms of food poisoning, such as stomach pain or cramps, diarrhea or vomiting, with popping a placenta capsule along with their daily multi-vitamin containing antacid forms of calcium or magnesium each morning? Are they thinking, "I wonder if these flu-like symptoms I am experiencing are being caused by eating these placenta capsules made of human flesh that had begun to decompose and were then undercooked through dehydration, while at the same time the acidic, protective barrier of my stomach acid is being neutralized, thus creating a greater risk of increased bacterial contamination?" I highly doubt that most women are even aware that there could be a potential correlation with any of those points.

QUICK SUMMARY:

I remember reading claims on more than one placenta encapsulation website that steaming the placenta for thirty minutes kills all bacteria. One website claimed that there is no GBS infection risk with eating the placenta. Unfortunately for those making such outlandish claims, as well as for women who believe them, germs are smart critters. Not only is it well known that bacteria are adaptable and becoming antibiotic-resistant, but some are now also becoming resistant to both acid and/or heat. According to scientific study, GBS is emerging as a new foodborne pathogen, along with E. coli. We can get sick with both GBS and E. coli by ingesting them, even though traditionally, both germs should be destroyed by acid or heat. E. Coli is the most common cause of UTIs. Women who are GBS positive in pregnancy, or who struggle with UTIs, may want to reconsider eating the placenta.

It is important to acknowledge that even if someone has adequate stomach acid and therefore the natural protective barrier is intact, there still remains a risk of infection. As explained above, stomach acid is an important barrier that the body uses to destroy many infectious agents, however "many bacterial pathogens, such as Escherichia coli…can circumvent the acid conditions of the stomach by developing adaptive mechanisms that allow these bacteria to survive in acid environments." (8) Even if someone has enough stomach acid, it does not guarantee protection from all pathogenic microbes. Also, a 2019 study in the journal *Food Science Biotechnology* identified a serotype of Group B streptococcus (GBS), previously not known to be transmitted through food, as a new emerging foodborne illness. "This study suggests that possible factors other than acid or heat resistance of GBS are instrumental to its pathogenicity." (9) It is worth repeating that GBS is a new foodborne pathogen, even though it is normally destroyed by acid or heat.

Testing GBS-positive at the end of pregnancy does not necessarily indicate an infection risk to the baby. We are not debating, in this article, whether GBS can be passed to a baby at birth, nor are we determining the risk associated with GBS colonization at birth. Those are different topics. We are talking about eating human tissue that was used as a filtering agent to protect the baby in utero. It is logical that the placenta may harbor infectious agents, including GBS, as a protective measure to allow mama and baby to have a safe, normal delivery and postpartum period.

However, even having adequate stomach acid does not always guarantee protection from triggering an infection from eating the placenta filter that trapped GBS or E. coli microbes.

INFECTION PREVENTION: INTESTINAL MUCOSAL LINING—A PROTECTIVE BARRIER

QUICK SUMMARY:

There are many natural barriers in place to keep germs in the world out of the body. As we discussed, one of those barriers is stomach acid. Another barrier is the actual intestinal walls within the digestive tract. Something from the outside world can enter the mouth, travel through the digestive tract, and exit in a bowel movement, and NEVER actually enter the body. This tunnel, called the digestive tract, starts at the mouth and ends at the anus, and has a tightly regulated, protective wall—or border—that prevents germs from entering the country we call "human"—unless someone has a leaky gut. Inflammation and bad bacteria can "punch holes" in this lining, causing it to "leak" and allowing unwanted food particles or germs to enter human territory. This is called a compromised barrier integrity—when the wall is no longer acting as a barrier or doing its job.

As stated, the job of the intestinal lining is to act as a barrier, keeping bacteria, toxins, and other infectious agents inside the gut and preventing their entry into the body. If this barrier is impaired, it can allow pathogens and toxins to leak into the bloodstream. (16) A loss or reduction in stomach acid can lead to SIBO—small intestinal bacterial overgrowth. "Once present, bacterial overgrowth may induce an inflammatory response in the intestinal mucosa." (15) Inflammation is like a fire that can weaken the gut lining. Inflammation can lead to hyperpermeability, where the doors, on the intestinal wall, from the gut to the bloodstream are blown wide open, allowing larger molecules to pass through. There are other reasons for gastrointestinal inflammation. Inflammatory conditions, including celiac disease, can also affect the strength and integrity of this protective lining.

QUICK SUMMARY:

Compromised barrier integrity can lead to the onset of allergies. (17) How? Once a gut lining is "leaky", or open, particles that are not fully digested can slip into the bloodstream, and the immune system "police" begin to recognize identifiable particles of food that were not completely broken down—such as chicken, egg, dairy—floating in the bloodstream. The immune system goes on the attack and starts screaming, "Get off of my land," and triggers an allergic response. This is the allergic reaction that can occur with food particles. However, what would happen if, instead of identifiable food and animal proteins slipping into the bloodstream, identifiable human proteins slipped into the bloodstream? What could happen if a woman, who has a potentially leaky gut barrier, eats the placenta—human blood that is different than her own, as well as human cells that are different than

her own? What could happen if the foreign human proteins and blood of the placenta entered her bloodstream?

As midwives, we recognize the risk of alloimmunization in pregnancy. The most common is Rh-isoimmunization. If an Rh-negative mother gets Rh-positive fetal blood in her bloodstream during pregnancy or labor, her immune system could go on high alert and, again, scream "Get off of my land," but this time creating antibodies, not to food, but to the Rh-positive blood that is different than her own blood. This type of antibody is called anti-D. Then, the next time that woman is pregnant, if her next baby has Rh-positive blood, since antibodies were previously developed, her immune system could mount an attack against that baby's blood and seek to destroy it, creating a serious health risk. Although not as well known, the same thing can happen even if both mom and baby have positive blood but different blood types. That is called ABO incompatibility. There are also antibodies called anti-E and anti-C that can also develop when the mother's blood reacts to the baby's blood, even if, again, both have positive blood. None of these antibodies develops unless the baby's blood enters mama's bloodstream.

QUICK SUMMARY:

If an Rh-negative mom has a leaky gut and her baby is Rh-positive, that means that the placenta is also Rh-positive. If that mom had a leaky gut and ate the placenta, could it increase the risk of Rh-positive blood entering her bloodstream, causing antibodies that could affect future pregnancies?

Are inflammatory conditions that could affect gut barrier permeability, including celiac disease and allergy, taken into consideration before deciding to ingest placenta? Is the baby's blood type identified to see if it is different from Mama's before she eats it? If a woman becomes isoimmunized but it is not recognized until several years later with her next pregnancy, will she, or her provider, even stop to consider that it could have happened because of ingesting the previous baby's dried blood and placental tissue in capsule form? Will everyone simply assume isoimmunization was caused by the previous pregnancy, labor, or delivery, and not from consuming human blood with a leaky gut condition?

Let us turn our attention to another major method of reducing infection transmission through the digestive tract, through the use of heat or cooking.

INFECTION PREVENTION: THE USE OF HEAT

Heat is one method used by providers of placental encapsulation to try to reduce infection risk by steaming the placenta before dehydration and encapsulation. An organization that trains and provides encapsulation certification states on their website,

"Like other meats, placentas have the potential to harbor bacteria and viruses that can be harmful when ingested. E. Coli, Group B Strep, etc., are some of the most commonly feared. Still, we know these bacteria are relatively fragile, with death-point temperatures well within USDA-recommended food-safe temperatures. This is why [our organization] strictly follows food-safe temperature guidelines in order to ensure eradication or sufficient reduction in potentially harmful bacteria. Thus, we can reasonably assure the safety of the dried placenta." (57)

Similarly, the website of another encapsulation service assures potential clients that, "We steam all placentas for at least 10 minutes and dehydrate at 160 degrees Fahrenheit for over 18 hours to ensure bad bacteria is removed prior to encapsulation." (61) These claims sound confident. Let us dig a little deeper.

The United States Department of Agriculture (USDA) website features a chart, the Safe Minimum Internal Temperature Chart, that provides safe minimum internal temperatures for cooking various types of meat. The minimum required internal temperature to consume meat safely ranges from 145 º F (62.8 º C) to 165 º F (73.9 º C), depending upon the type of meat being cooked, such as beef, chicken, or pork. (18) Both of the encapsulation-promoting websites, cited above, according to their written description, are adhering to the food safety guidelines of the USDA Food Safety and Inspection Service if they are monitoring internal temperature. That may sound great, on the surface, but in reality, it raises serious concerns. Why?

QUICK SUMMARY:

It is true that "The oldest and most recognized agent for inactivation of microorganisms is heat" (46). It is also true that many encapsulation services likely follow proper USDA cooking temperatures for cooking meat. However, a human placenta is not the same thing as beef. If you want to flip hamburgers at a local fast-food joint or make beef jerky to sell at a farmer's market, following USDA food safety guidelines is a great idea. To legally sell beef jerky or burgers to the public, you need a food service license. Although restaurants and others who make and sell food to the public follow safety guidelines, these measures do not apply to cooking human flesh. According to the Centers for Disease Control (CDC), "No standards exist for processing placenta for consumption." (19) Read that statement from the CDC again. *No safety standards exist for processing the human placenta to be eaten by people.*

What temperatures are required to kill *human* bloodborne pathogens? According to the CDC, "The two common steam-sterilizing temperatures are 121º C (250º F) and 132º C (270º F). These

temperatures (and other high temperatures) must be maintained for a minimal time to kill microorganisms. Recognized minimum exposure periods for sterilization of wrapped healthcare supplies [products contaminated with potential human bloodborne pathogens] are 30 minutes at 121º C (250º F) in a gravity displacement sterilizer or 4 minutes at 132º C (270º F) in a prevacuum sterilizer." (46, underlined emphasis mine)

QUICK SUMMARY:

Placenta encapsulation providers are only following USDA food safety standards for cooking beef or chicken, achieving an internal temperature of 145º–165º Fahrenheit. But that temperature is nowhere near the recommended sterilization temperature for human bloodborne pathogens of 250º–270º Fahrenheit. It appears to me that it is not only the mothers who have forgotten that the placenta is human flesh and blood.

Placenta encapsulation providers also widely claim to have completed OSHA bloodborne pathogen training in accordance with the OSHA Bloodborne Pathogens Standard (29 CFR 1910.1030). This training is mandated by OSHA for any profession where contact with blood or other infectious materials is possible. It sounds good, but it does little to help protect a woman who is planning to eat her placenta. Read the standard! OSHA bloodborne pathogen training does not guide providers on how to prevent transmission of bloodborne pathogens through placental consumption.

QUICK SUMMARY:

Even through OSHA, there is no training to teach people how to safely prevent the spread of infection *from eating* a placenta. Instead, OSHA's bloodborne pathogen training is a class that teaches the provider how to *protect themselves* from getting an infection from germs in the blood of a placenta; how to clean up safely after exposure; and/or how to dispose of items contaminated with blood.

One doula who decided to become certified in placental encapsulation told me that she provides the service because the only other person in her area offering it has a filthy kitchen. She also told me that the agency that issued her certification no longer offers certification for placental encapsulation because it has determined that the practice is not evidence-based. (59)

The food-handling and OSHA standards currently employed by encapsulation providers, and which they use to assure potential clients of safety, are not standards that can be used to ensure that eating *human* flesh is safe. Remember, the CDC has stated that there are no safety guidelines for processing the human flesh of the placenta to make it safe for people to eat.

The organization that trains and certifies providers of encapsulation, referenced earlier, also makes the following unsubstantiated claims in bold, very large font on their website:

"MYTH: You can't encapsulate your placenta if you have GBS."

"FACT: Testing positive for GBS simply means that bacteria are currently present in the vaginal or rectal mucosa. This is not an infection and is considered a normal variation. When encapsulation is done using food-safe methods, it is perfectly safe to encapsulate when GBS positive." (57)

Remember that GBS is a new foodborne pathogen that is not always destroyed by heat or acid. How can someone make such blatant claims of safety that are not substantiated? This same organization, which provides encapsulation certification, also justifies eating the placenta, citing it as a centuries-old practice in Traditional Chinese Medicine (TCM). (57) What they neglect to say is that, according to the South China Morning Post in 2021, "…the black market for human placentas is thriving in China despite banning the practice more than a decade ago…" (50).

Another news report out of China quotes obstetrician Lin Xiu,

"…If mother has got infectious diseases, the placenta will also carry the virus…Furthermore, cooking the placenta with conventional methods won't kill any virus, if present. Only medical-grade surgical disinfectants will do the job. And well, that's not generally accessible to the masses." (51)

From the information that I could find, it *does* seem that there are references to using human placenta as medicine within the ancient practice of Traditional Chinese Medicine. So that is true. But keep in mind that people have only begun to develop a dawning awareness of germs since the late 1800's. Should we be enamored of traditional practices, even if they are part of Traditional Chinese Medicine (TCM), if science has now proven those particular practices to be unsafe in light of the subsequent identification of germs as well as the newly recognized human microbiome? Even in China, the placenta was removed from the official Chinese pharmacopoeia as an approved ingredient in 2015. If they stopped using it in Traditional Chinese Medicine (TCM), shouldn't we?

RISK ASSESSMENT: DENATURATION OF PROTEINS

QUICK SUMMARY:

The human body is like a building made of bricks. Each organ is built brick upon brick. Each brick is protein. Also, each body function is performed by enzymes, which are proteins. Messengers like hormones are made of proteins. Proteins are essential to our structure and function. *Each type of protein is defined by how it is folded*. If you take a blank piece of paper and fold it to make a drinking cup, that gives the paper a different function

than if you fold it to make a paper hat. Folding defines protein function—whether it functions as a hat or a cup. Proteins that make hormones are folded in a different way than proteins that are used to make hair. *How a protein is folded defines how it works*.

Now, if you unfold a protein, it destroys its function. For example, if you unfold the paper that you made into a cup, you cannot use it as a cup. If you unfold the protein that you used to make a hat, you can no longer use it like a hat.

When a protein is denatured, it means the protein has unfolded. Two mechanisms that can unfold (denature) proteins are:

- Acid
- Heat

First, let us look at how *acid* unfolds (denatures) protein. If you add an acid, like vinegar, to milk, the denatured proteins cause the milk to curdle. Stomach acid not only kills ingested pathogens but also denatures proteins in food, causing them to break down.

Now, let us look at how *heat* unfolds (denatures) protein. When meat is cooked, its proteins unfold, making it more tender. When you heat an egg to boil, the heat denatures the liquid egg white, causing the proteins to clump together and form a rubbery solid mass. (20) Interestingly, "denaturing their proteins does not affect the excellent nutritional value of eggs. This is because even though the protein function is disrupted by denaturing, the basic amino acids that make up the protein are not affected, and so their value persists." (21) This is all good. Denaturation, or the unfolding of proteins in our food, does not affect food quality.

QUICK SUMMARY:

Unfortunately, the unfolding of proteins has its bad side when it comes to human proteins. The same unfolding caused by heat that changes liquid egg white into a solid could also make a solid, rubbery mass of unfolded protein in the human body. We all know that a fever can be beneficial, helping the body kill viruses and bacteria. At the same time, very high fevers can hurt us. When someone has a sustained fever of over 104º F (60º C), it begins to damage human proteins. Most proteins in the body begin to denature, or unfold, at 105.8º F and thus lose their function. (21) Fortunately, most human proteins that become unfolded can refold and regain their function as long as the temperature rise is within the normal range of sickness.

In the *Chinese Journal of Cancer* in 2011, this process was explained in detail: "With a modest increase in temperature, a protein will lose its original 3D [folded] structure but will recover it when the temperature returns to normal. With modest increases in temperature (1 °C–2 °C), this

mild denaturation is reversible. [Remember, 1º C = 33.8º F.] At extremely high temperatures, …it may not revert to the original 3D structure because of denaturation." (23) According to the CDC steam sterilization guidelines, "Moist heat destroys microorganisms by the *irreversible coagulation and denaturation* of enzymes and structural proteins." (46, emphasis mine)

QUICK SUMMARY:

So, sterilization processes like heat, which are beneficial for inactivating viruses and bacteria, also irreversibly unfold and destroy protein function. (22) In the scientific field, there is a delicate balance in the processing of human blood products, for medical use, between using enough heat to kill bloodborne pathogens but not enough heat to unfold (denature) and damage the function of the human proteins.

Here is an example of this difficult balancing act: "The denaturation temperature of a protein is sharply defined and is different for each protein. Heating for a definite time to a temperature just below the denaturing temperature of a particular protein is used in some protein purification procedures to inactivate viruses. In the presence of a substrate, [something added to it], enzymes can be heated to temperatures 10º C higher than in the absence of a substrate. This explains how albumin was successfully stabilized." (22)

QUICK SUMMARY:

According to the CDC, as cited earlier, encapsulation providers who follow USDA guidelines do not heat placentas to temperatures high enough to destroy *human* bloodborne pathogens. But increasing the heat applied to the placental tissue is also not the answer for preventing damage to human proteins. Getting the right balance between using a temperature high enough to destroy bacteria and viruses yet low enough to protect human proteins to create a blood product safe for human use is science at its best. This is beyond the scope of encapsulation providers that follow restaurant guidelines and cook placentas at the same temperature as beef. This is evident by the following confident claim made by another encapsulation service: "The placenta steams for 30 minutes. By doing this, it rids the placenta of ANY type of bacteria, virus, or infection and makes it safe to eat. We use the same process pharmaceutical companies use." (60)

RISK ASSESSMENT: MISFOLDED PROTEIN DISORDERS

An important point to remember is: if a protein becomes unfolded, its function is destroyed. All stress stimuli, including infection, inflammation, increased reactive oxygen species (ROS), environmental factors, the aging process, *and heat*, can cause a protein to unfold. (25, 104)

QUICK SUMMARY:

So, again, heat unfolds proteins. Remember the example of how liquid egg white changes after cooking. When the egg proteins are unfolded, they become a solid, white, rubbery mass. This leads to the next point: the unfolding of proteins in the human body can cause misfolded protein disease, in which proteins malfunction and clump together.

One particular protein folding disorder, known as amyloidosis, is "characterized by accumulation of wrongly folded proteins as misfolded proteins." (26) Unfolded proteins are considered misfolded. Misfolded proteins are also called "toxic formations." (25) They are no longer in a functional shape and thus lead, instead, to body dysfunction. Alzheimer's Disease (AD) is the best-known example of this group. (26) "Alzheimer's disease is a progressive condition of the brain that affects memory, thought, and language. The degenerative changes of Alzheimer's disease lead to plaques, or clumps of misfolded protein in the brain, and the accumulation of misfolded protein inside the neuron (neurofibrillary tangles)." (34)

Parkinson's disease and Huntington's disease also have amyloid origins. (25) The general pattern of misfolded protein disorders is the abnormal tendency for misfolded proteins to clump together. (25) The example, again, of how cooked egg white proteins change into a white, rubbery mass when unfolded, is similar to what can happen when misfolded proteins abnormally clump (aggregate) together in the brain. However, "protein aggregation diseases are not exclusive to the central nervous system; they can also appear in peripheral tissues…such diseases include type 2 diabetes, inherited cataracts, some forms of atherosclerosis…among others. All these diseases have in common the expression of a human protein outside its normal context, leading to irreversible change…that makes the protein molecules interact with each other." (25)

In the presence of misfolded toxic proteins, normal body proteins are affected. Misfolded proteins begin to interact with "native copies of the same protein and catalyze their transition into the toxic state. Because of this ability, they are known as infective conformations. These newly made toxic proteins repeat the cycle in a self-sustaining loop, amplifying the toxicity and thus leading to a catastrophic effect…" (25)

QUICK SUMMARY:

It is important to clearly realize that misfolded protein disorders such as Alzheimer's Disease, Parkinson's Disease, and even type 2 Diabetes are all caused by the unfolding of proteins that have lost their function. But this is the scary part: When a misfolded protein is in the body, it can *become infectious* and, in turn, *cause other normal proteins to misfold* and become toxic and infectious, triggering a massive domino effect that becomes a growing, rubbery mass. Think about the formation of growing plaques in Alzheimer's disease. The plaques form a self-sustaining, spreading clump of misfolded proteins that continue to unfold and infect surrounding proteins.

Consider how this may apply to placental encapsulation. The placenta is made up of *human protein.* If the human placenta is heated to try to kill germs before eating it, the proteins within it could become unfolded. If those unfolded proteins were eaten and reintroduced into the body, what could be the long-term consequences of eating human placenta proteins that have potentially been made toxic by heat? Even in the absence of germs, could the proteins themselves be infectious? If so, could they trigger a domino effect, infecting other proteins in the body and leading to a growing mass of malfunctioning proteins similar to Alzheimer's Disease?

Again, the sheer number of women eating the placenta in America and spreading this practice worldwide is unprecedented. Maternal placental cannibalism is not a common historical practice, so we don't have adequate documentation of possible long-term side effects. Not only that, *who is even looking* for a correlation between disorders later in life, such as Alzheimer's or Parkinson's Disease, after consuming the placenta 20–30 years earlier? Could consuming unfolded human protein trigger a smoldering protein infection that slowly clumps together and creates symptoms later in life? *Are we even looking for those kinds of long-term consequences?*

RISK ASSESSMENT: PRION DISEASES

There is a type of protein called Prp(C) that can be found in many areas of the body, including the brain, lymphoid cells, lung, heart, kidney, gastrointestinal tract, muscle, and mammary glands. (113) Although the normal, beneficial role of this protein in the body is not completely understood, we know that it is upregulated in T-cell activation, suggesting a role in the immune system; it is required for the renewal of hematopoietic stem cells; it is highly expressed in the nervous system and may function as a metal-binding protein. (113) Prp(C) may have a direct role in helping cells resist oxidative stress or damage. (114) The Prp(C) protein also appears to be involved in the regulation of the placenta. In fact, "a direct implication of Prp in regulating placental function and pregnancy outcomes was recently documented." (27)

One serious type of dysfunction in pregnancy is pre-eclampsia. (27) "Placental tissues deriving from preeclamptic pregnancies were found to overexpress…the Prp protein." (27) This means that levels of the Prp protein dramatically increased, more than normal, in placentas of preeclamptic pregnancies. There is a strong link between oxidative stress and pre-eclampsia. "It is thus hypothesized that these increased…Prp levels could be part of a compensatory mechanism induced by a preeclamptic status." (27)

To summarize, Prp(C) is a normal protein that is part of normal placental tissue. It appears to be a beneficial protein in its folded form, helping reduce the damage caused by inflammation and oxidative stress. In preeclampsia, the placenta becomes flooded with upregulated or excessive levels of this beneficial protein to restore oxidative homeostasis and reduce damage.

QUICK SUMMARY:

All placentas are loaded with the beneficial protein Prp(C), and some placentas have even more because it helps the body fight inflammation. But what could happen if this specific, beneficial placental protein were to become *unfolded?* This is the point I am trying to make, and it leads us to the topic of prion diseases. Extensive research has shown that *a prion is essentially the misfolded PrP.*" (101, emphasis mine) This same common placental protein, which is helpful while it remains folded, becomes a prion when it is unfolded. A prion is a protein that is considered to be *infectious* because it can trigger other normal proteins in the body to fold *abnormally.* (102) What potentially could happen if a normal placenta, loaded with PrP(C), is heated after delivery in order to encapsulate it? Would the PrP(C) proteins found in the placenta become unfolded and form infectious prions, similar to "Mad Cow Disease"?

The term 'prion' was coined to designate a 'proteinaceous infectious agent' to explain the transmissible nature of prion diseases. When misfolded, Prp(C) converts to its infectious form, Prp(sc), leading to abnormal protein accumulation in the brain and multiple symptoms. Some common symptoms can include: changes in personality, impaired memory or mental deterioration, involuntary twitching, rigid or spasming muscles, lack of coordination and balance, and vision problems. (102, 108, 110)

The misfolded Prp(sc) protein is the infectious protein that is responsible for human prion diseases—a group of transmissible, progressive, and invariably fatal neurodegenerative disorders that occur in sporadic, inherited, and acquired forms. (107) Prion diseases are called Transmissible Spongiform Encephalopathies (TSEs) because infected brains become riddled with holes like a sponge. Creutzfeldt-Jakob disease (CJD) is the most common prion disease in humans. (108) If you inherit this condition, it is called *Familial* CJD. If you get it by being exposed to infected human tissue during a medical procedure, it is called *Acquired* CJD. If you develop this prion disease suddenly without any known risk factors, it is called *Sporadic* CJD. Most cases of CJD, around 85%, occur in people for unknown reasons. (108) There is another form of CJD called *Variant* CJD (vCJD). "This is an infectious type of the disease that is related to 'Mad Cow Disease.' The meat may cause normal human prion protein to develop abnormally." (102, emphasis mine). This is an important point. Eating prion proteins, which are the unfolded Prp(C), can change the normal proteins in the body of the person eating the prions and trigger the proteins in their own body to begin to unfold abnormally. "Probable secondary transmission of vCJD via blood transfusions has been reported." (107)

Can you see the direction I am going with this?

- Eating animal meat is not the same as eating human flesh.
- Even uninfected placentas have abundant Prp(C) proteins that help regulate function; and,
- If under oxidative stress, there are even more Prp(C) proteins being expressed in placental tissue to protect the body from damage either from the natural inflammatory condition of labor or because of an additional inflammatory condition such as preeclampsia; and,

- If heat is used to steam and dehydrate that placenta after birth, then it causes those Prp(C) proteins to denature and misfold, thus changing them into the toxic, infectious form of that same protein called Prp(sc); and,
- If a person eats this infectious human placental "meat" as described in Variant CJD as stated above;
- Then will that infected placental "meat" cause normal human prion proteins, within the person, to develop abnormally?

"But!" someone might argue, "No one has reported such symptoms!" Before responding to that potential objection, we need to first look at the prion disease called Kuru.

Kuru also belongs to the infectious class of misfolded prion protein diseases, called Transmissible Spongiform Encephalopathies (TSEs), discussed above. Kuru: "occurred at epidemic levels from the 1950s to 1960s among the Fore people in the highlands of New Guinea. The disease was the result of the practice of ritualistic cannibalism among the Fore, in which relatives prepared and consumed the tissues…of the deceased family members.… Disease was transmitted either through eating or by contact with open sores and wounds." (103)

QUICK SUMMARY:

Kuru is a unique prion disease because it was caused by humans eating the flesh of other humans. Cannibalism is so rare in history that the Kuru epidemic in New Guinea gave researchers rare insight into the potential effects of cannibalism. "The effects of cannibalism on the human brain are very similar to the effects of 'Mad Cow Disease' and Alzheimer's on the brain." (106) "Kuru does not immediately kill or affect its host but will slowly infect the whole brain. Through the transmission of prions, Kuru begins to eat away at the brain, resulting in death…once a human consumes another human, the prions in the body become infected and eventually change shape and function." (106)

"Kuru is caused by a similar type of prion as the one that causes CJD. During the Kuru epidemic in the 1950s, as many as 2% of the Fore population died each year of the disease. (105) Similar to other prion diseases, "Kuru has a long incubation period; it was years or even decades before an infected person showed symptoms. Because Kuru mainly affected the cerebellum, which is responsible for coordination, the first symptoms were usually an unsteady gait, tremors, and slurred speech. Unlike most of the other [prion diseases], dementia was either minimal or absent. Mood changes were often present. Eventually, individuals became unable to stand or eat, and they died in a comatose state 6 to 12 months after the first appearance of symptoms." (103)

When researchers discovered that Kuru was caused by eating human flesh, that revelation led to the tribe abolishing cannibalism. "While the Fore people stopped consuming human meat in the early 1960s, the disease lingered due to Kuru's long incubation period of anywhere from 10 to over 50 years. The epidemic finally declined sharply after half a century, from 200 deaths per year in 1957 to no deaths from at least 2010 onwards." (28) "A hallmark of all TSE-infected

hosts is their ability to harbor prion infectivity in tissues and bodily fluids throughout the protracted asymptomatic, or silent carrier, phase of disease, which can last years, decades, or perhaps an entire lifespan." (47)

QUICK SUMMARY:

Eating the human placenta is cannibalism. The placenta contains a protein that, when heated, unfolds into a prion. Kuru was a prion disease caused by cannibalism. Does it seem outrageous to hypothesize that a potential risk of eating the placenta could be a prion disease? It should seem outrageous! Eating human flesh is outrageous and unheard of except in rare instances in human history. We really don't know the full consequences of cannibalism because, as noted in the research with Kuru, cannibalism is so rare that there has not been much to study. The majority of human cultures throughout recorded time did not eat the placenta. Out of respect, they buried it. Leave it to modern culture to come up with this practice. Currently, there is no cure or treatment for any prion disease, including Kuru. (103)

So, I have two questions. First, could it be possible that no one has reported misfolded protein disease symptoms, including prion disease symptoms, after eating the placenta because they are not connecting such symptoms with eating encapsulated human flesh and blood? Second, if eating placental human flesh, in which the proteins have been potentially misfolded because of heat, has triggered a smoldering, spreading, yet symptom-less prion infection where women could be silent carriers of prion disease during an incubation period that could last decades, could it be that we may be just coming into the time period of disease progression, where symptoms may just start appearing?

"Prions are very hearty proteins. They can be frozen for extended periods of time and still remain infectious. To destroy a prion, it must be denatured to the point that it can no longer cause normal proteins to misfold. Sustained heat for several hours at extremely high temperatures (900º Fahrenheit and above) will reliably destroy a prion." (47) What implications could arise from the fact that prions are only destroyed at sustained heat of greater than 900º Fahrenheit? What could this mean for a provider of encapsulation that reuses the same equipment to repeatedly steam, dehydrate and blend the dehydrated placentas of many people? Could multiple placentas become infected from using the same equipment upon which a prion-infected placenta was processed? What could this mean for those same providers, and their families, who use their own kitchen? Prion diseases are only identified by taking a biopsy of brain tissue after the victim has died. (102)

Let me take this to another level. This next question is addressed to midwives: Since prion diseases are transmissible through blood and body fluids during a very long incubation period when there are no symptoms, what does this mean for midwives who provide care for women who eat the placenta? Could some of our clients, even now, have a smoldering, asymptomatic prion infection that could be transmitted through blood and body fluids? What could this mean

for midwives who can easily become contaminated with the blood and body fluid-infused water of water birth? With the recognition of the difficulty to kill prions, here at New Song New Life midwifery, we use disposable scissors to cut each and every baby's cord and gift the scissors to the parents as a keepsake.

RISK ASSESSMENT: HEAT SHOCK PROTEINS

QUICK SUMMARY:

One reason we may not be seeing prion diseases as a result of eating the placenta could be the work of a class of proteins called "heat-shock" proteins (HSP), which chaperone the protein-folding process. They help proteins to fold correctly. *They can also take misfolded proteins and try to convert them back into properly folded proteins*. (23) The human body is fearfully and wonderfully made. If heat unfolds and damage protein, then the body responds by releasing a flood of heat shock proteins (HSP) to try to fold those infectious, malfunctioning proteins back up again. In this way, HSP are very helpful to the body.

On the other hand, increased, or upregulated, HSP can act like a foe, either because of a stimulus like chronic inflammation or because of an excessive amount of unfolded proteins that need to be refolded. "Abundantly expressed HSP in most cancer cells promotes their growth and survival, and it has been proven that pharmacological downregulation of HSP expression, as well as blockage of their chaperone activity, resulted in tumor regression." (104) This means that very high levels of HSP have been linked to cancer growth, and using medication to reduce HSP levels has resulted in shrinking cancerous tumors.

Studies have also identified elevated levels of anti-HSP antibodies in various autoimmune diseases, including rheumatoid arthritis and celiac disease. Scientists are now looking to target HSP reduction as a potential treatment for autoimmune disease in general. (104) This means that when HSP levels are high, the immune system may go on alert and create antibodies to fight against those high HSP in a particular tissue. This is called an autoimmune response—when the body attacks itself. Could it be that, in autoimmune diseases where the immune system attacks a specific body part, such as the gut lining in celiac disease, the body is actually attacking elevated levels of HSP triggered by inflammation? Medicine is looking into targeting and reducing HSP to treat autoimmune disorders. Let up ponder this for a minute.

QUICK SUMMARY:

Are we *not* seeing signs of prion disease after placental ingestion because heat shock protein levels are being elevated to help protect us either from misfolded proteins from eating a heat-treated placenta or from infection from eating a raw or dehydrated placenta? Both heat and infection trigger elevated HSP. If we have excessively elevated heat-shock proteins (HSP), trying to refold proteins in order to prevent misfolded protein diseases like

Alzheimer's Disease or infectious prion diseases similar to "Mad Cow Disease," could women who ate the placenta face an increased risk of cancer, since HSP promotes cancer growth and survival? Or could they be facing an increased risk of a wide variety of autoimmune conditions, such as arthritis and celiac disease, because elevated HSP levels also cause the body to attack itself?

Is anyone looking for an increase in cancer rates, an increase in the myriad of autoimmune diseases, including celiac disease, or an increase in arthritis in the years following placental ingestion? Thus far, women have reported no side effects from eating the placenta. But is this really true? Or does no one really know what type of side effects they should be looking for?

REPORTED BENEFITS OF PLACENTOPHAGY

QUICK SUMMARY:

At the beginning of this article, I stated that there was little to no scientific evidence to validate the self-reported claims of benefit from eating the placenta. A few of the available studies are based on studying the same 28 placentas. But the key point is, even if there were tons of studies proclaiming the benefits of eating placenta, would it really matter? Would those claims be enough to convince one to eat placenta, either raw, dehydrated, or heated, after discussing the potential risks of doing so based upon analyzing the mechanisms of body function and malfunction?

Although there are very few scientific studies on the effects of eating the placenta, the main promotional point for encouraging women to do so is the use of testimonials from other women who report benefits. Let us briefly review some of these claimed benefits.

First claim of benefit: *Eating the placenta provides nutritional value and a source of iron.*

Of course, it does! I believe that to be true! Sand or rocks may not have much nutritional value, but everything that can be digested could potentially have some type of nutritional benefit. When protein egg white becomes unfolded (denatured), it doesn't lose its nutritional value. It stands to reason that the nutritional value of human flesh remains the same, as well.

A 2016 study, that also analyzed those same 28 placentas from non-smokers, evaluated the placentas for nutritional value. Again, this is a very small study but there are very few scientific studies available! This study found that,

"Encapsulated placenta may provide only a modest source of some trace micronutrients…" (30) This study also found that encapsulated placenta only contained 7.1% of the amount of selenium

one needs for a day (RDA); 24% of the iron one needs for the day (RDA); and a mere 1.5% of the zinc one needs for a day (RDA) (30).

Those are definitely "modest" nutritional amounts. Another study published in 2017 in the *Journal of Midwifery & Women's Health* stated,

"The current study suggests that encapsulated placenta supplementation neither significantly improves nor impairs postpartum maternal iron status for women consuming the RDA of dietary iron during pregnancy and lactation, compared to beef placebo." (29)

QUICK SUMMARY:

Eating placenta affects the iron status of women the same as eating beef. Why not just eat beef?

Second claim of benefit: *Eating placenta increases breast milk supply.*

What hormone in the body triggers an increase in breast milk? Prolactin. Why do women want increased breast milk? They want their babies to grow and gain weight. It has always been difficult to accurately determine if women make adequate amounts of breastmilk by how it feels, since women cannot always feel how much milk is actually being produced. On the other hand, measuring prolactin levels and/or monitoring baby weight gain is obviously more accurate in determining the actual effectiveness of breast milk production.

In light of this, a study published in the *Journal of Midwifery and Women's Health* found that, "Maternal consumption of steamed, dehydrated, and encapsulated placenta postpartum *does not appear* to affect maternal postpartum prolactin or neonatal weight in the first 3 weeks postpartum…" (31, emphasis mine)

QUICK SUMMARY:

So, it is difficult to prove that eating the placenta supports breastmilk production because how women feel is subjective. However, it appears that eating the placenta has no beneficial effect on the hormone needed to make breastmilk nor on baby weight gain.

Third claim of benefit: *Eating placenta restores or balances hormones*.

A study documented the presence of 17 hormones in the placenta processed for encapsulation. The study then concluded that the levels of some hormones could conceivably yield a physiological effect, *but it did not evaluate whether there were any actual effects*. I assume there are hormones in the placenta that could really influence the body

when eaten. Human flesh should contain human hormones! Right? Is this enough to make me want to eat human flesh?

Fourth claim of benefit: *Eating placenta improves mood and prevents postpartum depression.*

Mood is also very subjective. It would be difficult to evaluate whether mood improves with placenta consumption in a scientific study. However, I will admit that I really do think eating placenta does elevate mood, but not as a positive benefit. Eating human flesh and blood would likely act as a stress stimuli on the body.

So, let us look at what happens in the body as a result of a stress response: If you look out of the window and you see that the barn is on fire, or if you turn around and see that a tiger is chasing you, you need the strength to flee. Your adrenal glands kick in and release the messenger cortisol, which runs around in the body screaming, "Danger, danger, fire! fire!" Cortisol steals your muscle, converts it into sugar, and dumps it into the bloodstream. These skyrocketing blood sugar levels shoot your emotions to the moon, similar to a high on drugs. Mood is elevated, and you feel that you can put that barn fire out all by yourself. However, what goes up must come down. Shooting up to the moon does not mean that when your elevated mood comes down, it will land on level ground. If your emotions shoot up 3,000 feet to a level of giddiness, that means that when your blood sugar levels begin to drop, you land in a deep emotional pit.

I have personally seen this emotional mechanism play out, trying to wrestle the knife out of the hand of a suicidal woman coming down off a crack cocaine and crystal meth high. A drug-induced high is triggered by a dramatic spike in blood sugar from adrenal fight-or-flight. Dropping down into the pit of withdrawal after a drug-induced high is not emotionally pretty.

Over the years, I have also seen the same emotional mechanism play out, in a lesser way, with blood sugar instability triggered by nutritional malabsorption from using "anti-acid" supplementation as well as with excess sugar consumption. In these cases, the resulting blood sugar "high" that boosts emotions is just a little high and isn't as "high" as a drug. The drop into depression, or withdrawal, can lead to emotional dysfunction even if it isn't as severe as that triggered by drug use.

QUICK SUMMARY:

A blood sugar roller coaster ride can elevate our mood and then drop us low into depression. As a result, one can be tempted to self-medicate, after the drop with more sugar to pull up and out of the pit of depression, and the cycle begins again. The very act of eating human flesh and blood could potentially trigger a stress response in the human body. Could there be a stress response-induced emotional "high" triggered by eating placental human flesh and blood that elevates mood temporarily by spiking cortisol and then blood

sugar? If and when the stress-induced "high" wears off, and blood sugar levels plummet, will women be drawn to repeat the vicious cycle by eating more placenta pills, eating more sugar, or anything else that triggers a blood sugar spike? Doing anything that temporarily and briefly elevates mood at the expense of cyclically dropping back down into a pit of plummeting emotions and blood sugar levels is not a stable, long-term answer for postpartum depression.

Some midwives claim that placing a piece of the placenta or umbilical cord into the mouth of the woman who has just given birth can stop a hemorrhage. I realize that these midwives have good intent—they are not trying to harm their clients. They are trying to help stop the hemorrhage. However, I am horrified by the thought and would not do it.

It likely works by triggering the same adrenal stress mechanism described earlier—tasting human flesh and blood may activate an internal fight-or-flight response. Being chased by a tiger or tasting human blood could both trigger internal stress. How could the stress response reduce bleeding? The adrenal fight-or-flight response is a survival mechanism that constricts blood flow to extremities and conserves it for vital organs. Could the same reduction of blood flow occur after tasting human blood and tissue?

When all else fails to stop a postpartum hemorrhage, instead of resorting to placing human blood and flesh in the woman's mouth, why not use the effective and simple method of "fist bumping the belly button" (aortic compression)? After birth, the mother's abdomen is very soft and pliable. It does not require extensive training or effort to use the flat edge of the fist to press down on the woman's umbilicus toward her spine. This effectively compresses the main artery supplying blood to the uterus and lower extremities. If blood flow is temporarily stopped by compressing the main artery, hemorrhage will stop. Effectiveness can be verified by checking for absence of a pulse in the woman's groin using the free hand.

Could it be that by eating placenta to avoid postpartum depression or hemorrhage, we are simply exchanging one problem for another?

PLACENTAL CONSUMPTION: FACT OR FALLACY?

QUICK SUMMARY:

I believe we have been misled by a fallacy. A fallacy is the use of false or flawed logic. A red herring fallacy distracts attention from the real issue. The claims of benefit from eating placenta represent a red herring fallacy at its best. These claims distract us from the larger issue: we are encouraging people to eat human flesh.

Given the same information about any health care topic, not everyone will reach the same conclusion. However, after receiving information about the potential risks of eating a

human placenta, each person must assess their own risk-to-benefit ratio and "count the cost" of such a decision.

Is it worth it?

Some people will walk away from this article convinced that placental encapsulation is a good idea. However, I believe it is highly likely that women who previously ate the placenta—because they were uninformed or misled—may now experience deep regret.

To those women:

Now that you understand the potential risks of ingesting placenta, please do not direct anger toward the care provider who encouraged you to do so. Your provider did not intend harm. They wanted to help. This information may also bring them shock and dismay when they realize that their sincere efforts may have been detrimental. We are all in this together. We have all been influenced by cultural trends. This is not a time for division, infighting, or self-justification. It is time to unite and support one another.

Midwives are guardians of normal. Eating human flesh—and the risks associated with it—is not normal. Would it not be better to encourage clients to follow tried-and-true traditional methods of healing the mind and body:

- **Taking adequate time to rest from busyness and stimulation**
- **Optimizing nutrient absorption by avoiding "anti-acid" type vitamins and supplements**
- **Eating nourishing food at frequent intervals to support blood sugar stability**
- **Receiving help with housework and responsibilities for more than just a few days after birth**

Let us return to promoting normal.

CHRISTIAN VIEWPOINT

QUICK SUMMARY:

Some argue that because humans are mammals—and other mammals eat their placentas—humans should do the same. Animals instinctively eat their placentas to hide the scent of blood in order to avoid predators. Animals also eat feces. Observe your dog throughout the day. How does he greet other dogs? What does he eat from the garbage? I do not believe I am like other mammals. I am not being stalked by a predator. I am a child of God, made in His image. I am not an animal. I do not use this reasoning to defend eating the placenta.

According to 1 Corinthians 15:39: "All flesh is not the same flesh: but there is one kind of flesh of men, another flesh of beasts, another flesh of fishes, and another of birds." Human flesh is not animal flesh. Therefore, I also choose not to justify eating the placenta by

assuming it is a form of meat. It is human flesh. The Bible states that life is in the blood (Leviticus 17:11). Throughout history, eating human flesh has been recognized as pagan cannibalism, and the church has opposed it.

One of the early church fathers, Minucius Felix (A.D. 200), wrote: "So much do we shrink from human blood, that we do not even use the blood of edible animals in our food." Yet a provider of encapsulation now makes the claim that eating the placenta—an organ containing fetal blood—causes "enhanced bonding experience with baby." (60) To suggest that consuming a baby's blood enhances bonding is deeply troubling from a Christian perspective. In the year 175 A.D.—approximately only 175 years after the birth of Jesus—another early church father, Athenagoras, wrote: "For men to partake of the flesh of men is a thing most hateful and abominable, and more detestable than any other unlawful and unnatural food or act." (49)

Now, more than 2000 years after the birth of Jesus, flavored capsules and flawed reasoning have persuaded well-meaning women that eating the placenta is normal. A variation of the same, original, deceptive question echoes through time:

Hath God really said that ye shall not eat of it? (from Genesis 3)

Leviticus 26:29–30 states: "And ye shall eat the flesh of your sons and the flesh of your daughters shall ye eat…and my soul shall abhor you."

It is sobering to realize we may have been misled.

CLOSING REMARKS

QUICK SUMMARY:

Life is full of choices, but not all choices are ethical. God knows our hearts. It can be devastating to recognize that we have been influenced by the world around us without even realizing it. It can be a shock to realize we are doing wrong when we have been trying hard to do what is right. But what honors God is recognizing our mistakes and turning from them. God can and will turn all things for good if we let Him. If we have done wrong, it may help many people if we ask God to forgive us and ask for the strength to both admit it and turn away from doing it again. This is not easy.

May God give you strength.

COMPANION INFORMED CONSENT DOCUMENT

An informed consent document, that correlates with this cumulative risk assessment, entitled, "INFORMED CONSENT: Keeping the Placenta or Disposing of it" can be accessed by using the following QR code:

For Additional Information Contact:
New Song New Life LLC
P.O. Box 392
Whittemore, Michigan 48770

EDITED REFERENCE LIST

The names of encapsulation certifying agencies, providers, or their websites have been purposely omitted from this mass-distribution version of the article to protect their identities. Individuals seeking to verify references with legitimate intent may request an unedited reference list in writing.

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