

Placenta Medicine as a Galactagogue

Tradition or Trend?

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For some mothers, insufficient milk supply impacts their ability to fully breastfeed their infants. Many of these mothers seek holistic options to increase their milk supply. Placenta medicine, or postpartum placenta consumption as a purported galactagogue, appears to be a practice on the rise in the United States. There is some limited historical research, and more recently some phenomenological data, about the practice of placenta as a galactagogue. However, little is truly known about the benefits and risks of placentophagy, in general, or specifically as a galactagogue. This article reviews existing literature and proposes a further call for research regarding the safety and efficacy of placenta consumption.

Keywords: placenta medicine, galactagogue, placentophagy, human placenta, milk supply

Placenta medicine usage, or *placentophagy*, is on the rise. The practice seems to be gaining momentum around the U.S. and abroad. Placentophagy is defined as the consumption of placenta and/or related tissues and membranes. Many mothers consume their placentas, often in capsulated form, for their purported health benefits, including improving mood and boosting milk production. Many pro-placenta medicine websites cite the same few studies pointing to the benefits of placentophagy. Unfortunately, many of the studies cited are nearly 100 years old, and the methodology used in them would not hold up to today's scientific study standards. Moreover, there is a lack of updated information regarding placenta consumption among humans and even less literature on the topic of placenta as a galactagogue.

Because placenta consumption is on the rise, this article has five main goals: (a) to explore whether placentophagy is tradition or trend by reviewing past/present practices, (b) to review the available literature and research on placenta consumption, (c) to explore the ethical aspects of placenta as a galactagogue, (d) to acknowledge ethical considerations around placenta preparation, and (e) to propose a call for research regarding this topic.

Placentophagy in Portland and Beyond

Currently, there are no national U.S. statistics published comparing placentophagy practices by state. A review of approximately 1,000 client intake forms from the past 5 years of my practice showed that up

to 50% of my homebirth clients and up to 10% of the birth center/hospital families ingested their placenta after delivery. There are approximately 20,000 live births per year in the Metro Portland area (Oregon Health Authority, 2011) and a 1.96% homebirth rate in Oregon (Centers for Disease Control and Prevention, 2012). This implies that roughly 2,000 mothers per year consume their placenta in Portland alone. One recent study looking at placentophagy primarily in the U.S. and Canada found that homebirth mothers were 25% more likely to engage in placentophagy than mothers delivering in hospitals (Selander, Cantor, Young, & Benyshek, 2013, p. 100). Most babies in the U.S. are born in the hospital. Nevertheless, there does seem to be a trend regarding increased placenta medicine usage among mothers in many communities worldwide.

Modes of Preparation for Consumption

There are several modes of human placenta preparation for consumption. Encapsulation is the most popular method, with 80% of study participants choosing some form of it (Selander et al., 2013, p. 103). For encapsulation, raw or cooked placenta is dehydrated and then grounded into a powder and put into capsules. Placenta tincture, cooked placenta, raw placenta, and other methods are also used to a lesser degree. With more mothers choosing to consume their placenta, there has been an explosion in the number of professionals including doulas, childbirth educators, and midwives who are providing placenta medicine-making services.

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Although placentophagy is absent in the cross-cultural ethnographic record . . . demand for placenta-preparation services and an increase in the numbers of people becoming trained in providing the services may indicate an increasing popularity of, and interest in, the practice. (Selander et al., 2013, p. 94)

This in itself could be a concern because of the lack of oversight on training and preparation of placenta as food.

Reasons Why Mothers Consume Their Placenta

Mothers choose to participate in placentophagy for a variety of reasons. The most commonly identified reasons for placentophagy include maternal desire for improved mood and/or general health benefits; the recommendation from someone such as a midwife; and the desire to recover from birth, optimize lactation, and replace lost nutrients and minerals (Selander et al., 2013, pp. 101–102). In a phenomenological study of 189 women who had consumed their placenta (most from the U.S. and Canada, all older than the age 18 years), Selander et al. (2013) found that 92% of participants were positive about their placentophagy experience and 98% would engage in placentophagy again, even if they had a negative experience. In the Selander et al. study, the women were asked questions about demographic info, why they chose placentophagy, type of placenta preparation they used, and any perception of positive or negative effects.

In an informal survey of my clients, I found that most who engaged in placentophagy felt that it helped their mood/health to some extent or felt that “it wouldn’t hurt, so why not?” There were some mothers who said that they had negative effects. One mother felt like it increased her anxiety. Despite the fact that placenta consumption does not seem to be the norm for humans, mothers that participate in placentophagy overwhelmingly seem to find it beneficial.

Placenta Consumption in Other Mammals

Nonhuman mammals are more likely to consume their placentas. Kristal is one prominent researcher, with articles spanning from 1973 to 2012. For example, Kristal, DiPirro, and Thompson (2012) observed that most nonhuman, peripartum female mammals ingest all or a portion of the afterbirth (the amniotic fluid, the placenta, and/or associated membranes). Researchers have many hypotheses for why mammals consume their placentas: keeping the nest area clean, reducing odors that may attract predators, replenishing nutrients,

acquiring hormones, and responding to general and/or specific hunger (Kristal et al., 2012, p. 179). However, although researchers found some truth in these apparent reasons, they were not able to provide evidence to support these working hypotheses. Therefore, these researchers have speculated that there must be other reasons for *placentophagia* being the biological norm for most mammals (Noonan & Kristal, 1979).

One important finding regarding placentophagia was the discovery that when rats ingested amniotic fluid and their placentas, it helped them initiate maternal caretaking behavior (Kristal, 2009). Another important finding was that when rats ingested amniotic fluid and their placentas, it enhanced morphine-mediated pain relief, labeled placental opioid-enhancing factor (POEF; Kristal, Abbott, & Thompson, 1988). This research showed that by ingesting a small amount of amniotic fluid, the mother could receive opioid-enhancing benefits *before* the first fetus was born and that pain relief could be continued after delivery with ingestion of the placenta (Kristal, Thompson, & Abbott, 1986). Researchers went on to find that POEF did not seem to be species- or gender-specific; POEF seem to provide an analgesic effect to any mammal that consumes another mammal’s amniotic fluid and placental tissue orally (Abbott et al., 1991; Kristal et al., 1986; Thompson, Abbott, Doerr, Ferguson, & Kristal, 1991). Researchers combined these two significant placentophagia benefits into the idea that

the effect of POEF on the parturitional pain threshold seems to be based on an elegantly orchestrated system of behavioral and biochemical events, exquisitely timed, that serves to counter the pain of delivery, partially, without increasing [other chemicals/hormones] that might compromise the mother’s health . . . or her ability to care for the young. (Kristal et al., 2012, pp. 185–186)

So, it appears that placentophagia among mammals is about more than just replacing nutrients or staving off predators. There seems to be a complex, multifaceted biological imperative for the practice. One anthropological question Kristal and colleagues (2012) have raised is, “Why don’t humans engage in placentophagia as a biological imperative? Is it possible that there is more adaptive advantage in not doing so?” (p. 177).

Kristal and colleagues (2012) demonstrated that animals needed to consume raw amniotic fluid and raw placenta to optimize the pain relief and maternal–infant bonding effects. Their studies showed that the beneficial properties in the afterbirth materials were inactivated if left at room temperature for more than 24 hours or

heated to greater than 35 °C (Kristal et al., 2012, p. 189). They note that “more afterbirth is not necessarily better . . . Larger amounts ingested at one time are not effective or are possibly inhibitory” (Kristal et al., 1988; Kristal, Thompson, & Grishkat, 1985). Given the fact that the most popular human form of placenta consumption (cooked or raw and then dehydrated/encapsulated and taken for extended periods of time after delivery) is nothing like the raw amniotic fluid/placenta dose that other mammals consume after birth. Can humans expect any of the same benefits?

Placenta Medicine: Tradition or Trend?

What is the modern and historical cultural norm for consuming one’s placenta after birth? One recent study shows that 66% of male and female participants were aware of placentophagy, but only 3.3% had actually consumed placenta (Cremers & Low, 2014). Even though awareness about the practice of placenta consumption is increasing, historically, humans have only consumed placenta in very rare cases. Researchers have found that the practice has only been increasing in the last 30 years among a very small minority of individuals (Menges, 2007). Although more than 4,000 terrestrial mammal species do ingest their placenta and/or amniotic fluid, researchers hypothesize that the practice of human placentophagia does not seem to be physiologically or phylogenetically based (Menges, 2007; Young & Benyshek, 2010).

In a comprehensive cross-cultural study, Young and Benyshek (2010) examined the beliefs and traditions surrounding the placenta. Out of 179 societies around the globe, placenta consumption was very rare, with only a few isolated cases being noted. Some of the literature did reference the practice of placenta consumption as being advocated by some midwives in Mexico and the U.S. beginning around the 1970s. A few societies (primarily Vietnamese and Chinese) have traditional human placenta medicines.

In traditional Chinese medicine (TCM), human placenta is known to

tonify liver and kidneys . . . treats deficiency of yin and yang . . . nourishes the blood: . . . for insufficient lactation due to exhaustion of qi and blood . . . Use caution with long term . . . only the placentas of women without disease should be used . . . (Bensky, Clavey, & Stöger, 2004, pp. 806–808)

There are many variations of placenta preparation in TCM, often related to the province or location. Toxicity issues regarding placenta medicine have been noted in

TCM. Traditional decoctions are noted as being usually nontoxic, but several modern, injected preparations have had reported side effects of “nausea, vomiting, headache . . . diarrhea . . . in rare cases, anaphylactic shock” (Bensky et al., 2004, p. 808). In TCM, there are many benefits and contraindications for the use of placenta but is not commonly used as a routine part of postpartum care. Ingesting placenta postpartum certainly would not be recommended for everyone; it would be suggested case by case. In the U.S., the perception among certain proponents is that ingesting placenta postpartum would be good for everyone.

Most of the societies researched had various traditions regarding placenta disposal, including burial and placenta-related rituals, but none routinely ingested the placenta (Kristal, 1980; Young & Benyshek, 2010). Despite the lack of global and historical interest in routine placentophagy, the practice began gaining popularity when some of the literature in midwifery in the 1970s claimed therapeutic benefit of placentophagy. The creation of the website *Placenta Benefits* and the advent of placenta preparation training programs have both increased the popularity of placenta consumption/medicine (Selander et al., 2013).

Placenta Consumption Is Not the Human Norm

Routine placenta consumption does not appear to be the norm throughout documented human history. Kristal et al. (2012) hypothesized that perhaps there is a good reason why humans do not routinely eat their placentas and proposed two possible evolutionary reasons. The first is that humans have evolved into social beings who must rely on others to survive. If there is no placenta-induced opioid-mediated pain relief during/after delivery, then humans would be shaped to be more reliant on others to help them and their newborn survive, which would further evolutionary socialization (Kristal et al., 2012, p. 191). The second hypothesis is that there may have been some cultural transmission that, at some point, raw placenta and/or amniotic fluid became harmful to ingest whether because of direct or indirect toxins (Kristal et al., 2012, pp. 191–192; Young & Benyshek, 2010). Kristal et al. (2012) suspect that, even though most mammals consume afterbirth materials, evolution may have made it not in the best interest of humans to do so. Because of past evidence, there is a scientific imperative for researchers to find beneficial ways to use POEF, especially because it is not gender- or species-specific (Kristal et al., 2012, p. 192). Placenta medicine may have a meaningful future when it

comes to pharmacological pain management for patients in general. But not necessarily for new mothers.

Placenta as a Galactagogue: What the Literature Shows

International Board Certified Lactation Consultants need to understand how placenta consumption may impact lactation. Proponents of placentophagia claims that placenta consumption can increase milk supply. There is very little evidence to support this claim, and the research that does is almost 100 years old. McNeile and Hammett were researchers that studied placenta consumption and lactation almost 100 years ago. McNeile, based in a Los Angeles hospital, gave desiccated placenta to eight patients and used another eight patients as the control group and then examined their breast milk and infants' weights. He reported that

. . . there was apparently some change in the chemical composition of the milk . . . an increase in lactose . . . a slight increase in protein . . . a slight decrease in the percentage of fat. There was no deficiency in the amount of milk in any of the cases receiving desiccated placenta, but the reverse was true in cases which did not receive this agent. There was apparently a slight decrease in the initial loss of weight in the infants of mothers receiving the desiccated placenta, over those whose mothers did not receive it, and at the end of eleven days the babies whose mothers received the agent were about four ounces heavier than those who did not. (McNeile, 1918, pp. 377–383)

Hammett took these ideas a step further and conducted a series of experiments, primarily at Boston Lying-In Hospital (now Brigham and Women's Hospital). For one of his main studies, Hammett collected data on normal growth curves for 537 exclusively breastfed infants whose mothers had not consumed placenta. He collected data on the weights of 177 infants whose mothers were given 10 g of desiccated placenta in capsules three times per day for 2 weeks. He then compared the weights of those 177 babies against the collective growth curve of the original 587 babies whose mothers had not received placenta. He examined the effects of ingested desiccated placenta on infant growth. Hammett found, based on bedside observation, that changes in breast milk volume or breast tissue growth postplacenta ingestion were not significant. However, he found that there must be some stimulus in the placenta that gets passed through the milk and impacts infant growth (Hammett, 1918, 1919). Hammett described his findings:

The effect of the ingestion of the placenta by mothers on the growth of the breast-feeding infants is at once apparent . . .

the rate of growth of the breast-fed infants is enhanced by the maternal ingestion of desiccated placenta, for not only is the recovery to or over the initial weight generally more rapid, but the weight is almost uniformly greater . . . A large series of comparative measurements of the mammae of women taking and not taking the desiccated placenta, combined with a study of the time of onset of full milk production, failed to show either hypertrophy of the gland or an increased milk production on the part of those women ingesting the placenta . . . we conclude that there must be contained in the desiccated placenta some substance . . . capable of passing through the maternal organism . . . passed on to the infant in the milk, acting as stimuli to growth . . . these substances in utero may play an important part in the growth of the embryo and fetus. (Hammett, 1918, pp. 570–573)

A 1954 study of 27 mothers (all selected because of suspected low supply concerns; no control group was used) found that freeze-dried placenta had a positive impact on maternal milk supply among selected study participants (Soykova-Pachnerova, Brutar, Golova, & Zvolaska, 1954).

We wanted to help mothers, . . . our aim was to make good nurses of our mothers . . . we can report on 210 women who ate placenta: 71 with very good results, 110 with good, and 29 with negative results . . . In evaluating these results we make allowance for the physiological increase in milk during the first days after delivery. It should be borne in mind that the women who received this treatment were those in whom some trouble in nursing was anticipated: women with flat or unglanular breasts or multiparae who after previous deliveries had nursed badly or not at all . . . the effective substance in placenta is not protein. Nor does lyophilised placenta act as a biogenic stimulator . . . the question of hormonal influence remains open. So far it could be shown that progesterone is probably not active in increasing lactation . . . this method of treating hypogalactia seems worth noting since the placenta preparation is easily obtained, has not so far been utilized and in our experience is successful in the majority of women. (Soykova-Pachnerova et al., 1954, pp. 618–626)

Among animal studies, “There has been documentation of both beneficial and detrimental effects of eating placenta in the lactational period” (Kristal, 1980, p. 16). Some rat studies have shown that placentophagy does in fact impact prolactin and progesterone levels:

In rats that were allowed to eat the placentae after parturition concentrations of serum prolactin were elevated on Day 1, but concentrations of serum progesterone were depressed on Days 6 and 8 post

partum when compared to those of rats prevented from eating the placentae. In rats treated with PMSG to induce superovulation serum prolactin and progesterone values were significantly ($p < 0.05$) elevated on Days 3 and 5 respectively, after being fed 2 g rat placenta/day for 2 days. However, feeding each rat 4 g placenta/day significantly ($p < 0.02$) lowered serum progesterone on Day 5. Oestrogen injections or bovine or human placenta in the diet had no effect. The organic phase of a petroleum ether extract of rat placenta (2 g-equivalents/day) lowered peripheral concentrations of progesterone on Day 5, but other extracts were ineffective. We conclude that the rat placenta contains orally-active substance(s) which modify blood levels of pituitary and ovarian hormones. (Blank & Friesen, 1980, p. 273)

Even though placentophagy may impact hormones of lactation, very few humans consume raw placenta immediately after delivery (Selander et al., 2013, p. 103). Some hormones and nutrients have been studied in unprepared term placenta, and “While the exact concentration of many of these hormones and nutrients in the placenta is unknown . . . It is unclear, however, if the biological components in the placenta remain active after the organ has been prepared for consumption” (Selander et al., 2013, p. 95). Given the variety of, and lack of research on, how preparation methods alter the placenta hormonal/nutrient makeup, it is nearly impossible to extrapolate findings from animal-based research to human placentophagy.

The aforementioned studies are what pro-placenta medicine proponents usually cite. By today’s standards, these older studies have methodological flaws, poor control measures, and small samples sizes. The Selander et al. (2013) study is a phenomenological research study with self-selected participants. It does not account for the placebo effect. These studies do add to the literature, but if placenta as a galactagogue is to be taken seriously, it needs more rigorous research, such as double-blind, randomized trials, done in the future. Like Kristal et al. (2012) points out, “by today’s scientific standards, we cannot draw meaningful conclusions from [those studies], even if there is a real effect” (Kristal et al., 2012, p. 188). Given the benefits of optimal lactation, and the few pharmacological galactagogues available to mothers coping with insufficient milk supply, exploring placenta medicine is one possible option.

Ethical Concerns Regarding Placenta Preparation and Consumption

Mothers’ reports of positive placentophagy experiences cannot be ignored. Even in traditions where placenta

medicine is used, there are contraindications and risks associated with the practice which should be examined. Without further research, we cannot be certain what hormones and chemical components remain bioactive after placenta preparation and which mothers may be helped or harmed by them. With more people becoming “certified” in placenta medicine preparation, what are the legal or ethical considerations?

Can a mother even have legal access to her placenta? Mothers in various states have had to fight for their legal right to keep their placenta following a hospital birth (“Judge orders hospital,” 2007; Lauer, 2006). In such cases, all of the judges ruled to allow the mothers to take home their placenta despite the hospital pleading that it was a biohazard. In these cases, the ethical tenet of autonomy was upheld; the individual’s right to be free from “deceit, duress, constraint, or coercion” (Edge & Groves, 2005, p. 60) was respected. But beyond the concept of simply having access to one’s placenta, the idea behind ethical placenta preparation and promotion must be explored.

Veracity and nonmaleficence are basic principles of healthcare ethics. When it comes to veracity, placenta preparation professionals must be honest with themselves and their client. There may be ample anecdotal evidence about the benefits of placenta consumption but there is little empirical evidence. “Nonmaleficence is often associated with the ancient adage *primum non nocere* (‘above all [or first], do no harm’)” (Noel-Weiss & Walters, 2006, p. 208). When it comes to *doing no harm* regarding professional placenta preparation, the preparer must consider the very real possibility of contamination when handling bodily fluids/organs and the client ingesting the preparation. Upon review, several placenta preparer websites claim to adhere to federal safety guidelines as well as have training in blood-borne pathogens and even state-issued food handler cards. It does seem that businesses involved with placenta preparation are trying to be conscientious with their preparations. However, consumers must keep in mind that certification is not required or accredited by any official organization, and there are no regulations or oversight when it comes to placenta medicine at this time. Professionals, and the mothers they serve, should fully understand the risks versus benefits of placenta preparation and consumption to make an informed choice.

Conclusion and Call for Research

With the exception of some traditional, medicinal preparations, human placenta consumption postpartum seems to be a relatively new practice that is currently limited to a small subset of mothers. Evidence about the

biologically active components in various human placenta medicine preparations or consumption methods has not been researched thoroughly. Even though placentophagia proponents claim that consuming placenta has many health benefits, these claims often come from either outdated research or animal-based research that cannot readily be extrapolated to the modern styles of human placenta consumption. Despite the fact that there is little available evidence for the practice of placentophagia, phenomenological research has shown that most who do consume their placenta find it to be beneficial, and 98% of participants would do it again (Selander et al., 2013). Knowing that many mothers have found benefits from consuming their placenta, we must remember that “absence of proof is not proof of absence” (William Cowper as cited in Kristal et al., 2012, p. 187).

The claims of placentophagia need to be tested more extensively. The existing studies do not account for the placebo effect (i.e., mothers find that it works because they believe that it will). Is it belief alone that accounted for the findings? Does encapsulated placenta have an effect above and beyond the placebo effect? And does it have a negative impact on lactogenesis and/or milk production? Could it have a role in medicinal pain relief in the future? What substances are still bioactive in prepared forms of placenta medicine? There may be additional benefits of placenta consumption and optimal modes of preparation for researchers to discover, but these claims need to be evaluated via rigorous research.

Given the reality that there is little research when it comes to human placenta preparation and consumption, the ethical and legal issues around this topic must be explored further as well. Animal research has certainly shown that there are very real benefits for nonhuman mammalian placentophagy, especially when it comes to pain relief during/after labor and optimizing maternal-infant bonding (Apari & Rozsa, 2006; Kristal, 1980; Kristal et al., 2012). In addition, limited human research has shown some benefits, such as improved infant weight gain, increased supply in some cases, and overall maternal satisfaction with the practice. The possibilities for potential human applications regarding placenta ingestion certainly warrant a call for research. Although placenta medicine is still viewed as an obscure, fringe practice by many, some mothers are embracing it. As demand for this practice increases, researchers and healthcare professionals alike will have to invest more time and resources into studying human placentophagy so that we can better understand the clinical applications and risks versus benefits of this practice.

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Correction

The information listed under “These California Laws Allow You to Take Time to Nurture Your Child,” which ran on page 108 in Vol. 5, No. 3, was not accurately credited. The text was taken with permission from a poster developed by the California Work & Family Coalition, a project of Next Generation. The Coalition is an alliance of community organizations, unions, and non-profits promoting work-family policies that help parents, caregivers, children, and families thrive. Next Generation is a national think tank and strategic communications non-profit promoting solutions to the biggest challenges facing the next generation of Americans: the risk of climate change and the threat of poverty, and diminished opportunities for children and families. For more information, see thenextgeneration.org