Always use safe, natural red-brown henna in your henna work. Never use any “black henna” product containing para-phenylenediamine to stain skin. Para-phenylenediamine may cause severe injuries to both artist and client.
Hennaing a woman after she gives birth is a traditional way to deter the malevolent spirits that cause disease, depression, and poor bonding with her infant. The action of applying henna to a mother after childbirth, particularly to her feet, keeps her from getting up to resume housework! A woman who has henna paste on her feet must let a friend or relative help her care for older children, tend the baby, cook, and clean! This allows her to regain her strength and bond with her new baby. She is also comforted by having friends who care about her well-being, and is helped to feel pretty again. The countries that have these traditions have very low rates of postpartum depression.

**Biological, Social and Metaphysical Aspects of Childbirth and Postpartum**

Non-western societies have postpartum rituals within the popular expression of their religions that directly address the needs of a mother in the eight-week period after birth. These ritual actions serve to support her physically and emotionally after birth, and reintegrate her into the community after recovery. Though some ritual actions would not be appropriate or achievable in western society because of intrinsic hazards or
unavailable materials, others are harmless, obtainable, and serve to support the woman’s postnatal care. Henna traditions within popular religion practices of Islam, Sephardic Judaism, Hinduism, and Coptic Christianity are part of the management system for postpartum depression in India, North Africa and the Middle East. Henna is becoming more widely available in western countries at present due to the popularization of henna body art in western pop culture (Maira S, 2000), so childbirth and postpartum henna traditions would be performed. Henna’s association with beautification and protection from evil are comforting. Henna’s requirement that a woman be still for several hours during and after application insures that a mother will rest and allow others to take care of her! During the weeks after ornate henna patterns are applied, a woman is ritually allowed to not do household tasks that would spoil the beauty of the stains. This increases the likelihood that she will rest properly to regain her strength after giving birth.

*Rajasthani village henna patterns symbolizing the sun, a symbol of blessing and fertility*

A woman goes through a social status change when she becomes a mother, and her relationship with her husband, other family members, and social group is changed. Caring for and nursing a neonate requires much from woman’s physical and emotional resources. These stresses added to the precipitous fall in estrogen and progesterone levels following birth, coupled with the elevation of prolactin in the first week postpartum are believed to give rise to irritability, mood changes, tearfulness, guilt, anxiety, fatigue, and feelings of inadequacy. In extreme cases, the symptoms of postpartum psychosis include agitation, confusion, hallucinations, fatigue, delirium, and diminished thinking (Stern and Kruckman, 1983). Though women universally experience the biological processes of the postpartum adjustment, they conceive of these changes through their social and religious constructs (Kleinman, 1978; and Cosminsky, 1977). Malevolent spirits or the Evil Eye may be conceptualized as the bringers of depression. When rituals are performed to relieve the woman of the stresses of social reintegration, childcare, and fatigue, the conceptualized demons of postpartum depression may be averted as the biological
adjustments are buffered. Henna is frequently used within performance of ritual actions in North Africa, the Middle East and South Asia to deter the evil eye. Henna applications also force a woman to stop, be still, and let other people take care of her while the henna stains the skin, thus insuring that the mother will rest and allow other people to do her regular tasks.

Western neonatal practice screens for postpartum depression, recognizes that it exists in several degrees of severity, that it is a clinically recognizable affective disorder, and that there are statistically predisposing socio-economic factors. Traditional cultures recognize that a woman is in a fragile, stressed state after giving birth, and that timely assistance from ritual actions of popular religion helps the mother reintegrate into society. In contrast, western medicine conceptualizes postpartum depression as a psychobiological phenomenon to be addressed by medication rather than a socio-magical phenomenon to be addressed by ritual performance.

Childbirth and Postpartum Ritual Actions with Henna and Rangoli in Rural Rajasthan

Postpartum practices in Rajasthan are typical of those throughout rural regions in India. In rural Rajasthan, ritual actions surrounding childbirth include henna applications and rangoli. A woman in the eighth month of her first pregnancy has an Athawansa ceremony. She rubbed with scented oils, bathed in perfumed water, and ornamented with henna, on her hands, feet, up to the wrist and ankle, in a manner similar to her wedding

1 Rangoli, also known as Mandana, Alpona and Kolam, are designs executed by women using rice flour, turmeric, spices, flowers, or henna on domestic floors and walls. The designs are auspicious and have ritual significance for the occasion. They purify the domestic space, honor and invite the presence of a deity. In the case of birth patterns, the soul of the child is welcomed with these patterns and directed to the proper place.
henna. She is dressed in new clothing and ornaments. She is seated on a cauki, ceremonial wooden seat. Women friends and family fill her lap (god) with sweets, fruit, and a coconut. This ritual is god bharna, or the filling of the lap. Women ornament the floor with rangoli called “Athvansa-ko-cowk” (Saksena 1979:121). The patterns used are acknowledged to bring health, protection, and luck to the new mother and her child by inviting the aid of supernatural forces. Primiparous women are statistically most at risk for postpartum depression, and prenatal screenings for depression are often carried out in western medicine at this period (Stern and Kruckman, 1983). The eighth month ritual may serve to establish the woman’s “social safety net” within her community, who will help her through birth and reintegrate her after childbirth. The similarity of this henna to her wedding henna may remind her of the joyous occasion of her wedding, and raise her spirits if she has become anxious. Women are reminded that pregnancy and birth are the successful fulfillment of their marriage. At birthing, the mother is ornamented with henna before being escorted out of the delivery room. After the woman has given birth, she must have all of her fingernails and toenails hennaed in a ceremony known as Jalva Pujani, as henna is considered a medium for purging the pollution incurred from the process of giving birth (Saksena 1978, 75).

Rajasthani henna patterns symbolizing the sun, a symbol of blessing and fertility

If she is not properly hennaed at this time, she is considered at risk of not recovering from birth. For the first nine days after birth, the woman is secluded and attended to by female relatives. The Rajasthani-enforced rest, and physical and emotional support during the establishment of maternal bonding and lactation may be crucial in preventing or relieving postpartum depression, and are similar to those observed in Nepal which are also considered to manage postpartum stress (Upreti, 1979).

On the tenth day after giving birth, the mother comes out of her rooms for the first time for the Suraj ceremony. This is the Namakarana Sanskar Divas, or the name-giving day,
and the child is shown to the Sun to obtain the deity’s blessings. Solar symbols are applied in henna to the mother and to the child. Solar symbols are drawn in *rangoli* in the household courtyard. The child is presented to the deities, the community and the mother assumes her new social status. The sun, in Hindu religious iconography, is understood to be a caring and protective deity, providing relief from infertility, hunger, and the sorrows of old age and death (Malville and Singh, 1995). Ritually integrating the mother and child with the benevolent forces of the sun serve to smooth the transition from ritual postpartum seclusion back into active village life, and have a buffering effect against the stresses of new motherhood. If an immigrant woman does not have access to her accustomed rituals: henna, rice flour to create rangoli, and friends and practitioners to assist her, apply the henna, and paint the patterns, her anxiety and fatigue following birth may be unrelieved and develop beyond “baby blues” into a prolonged disorder (Stern and Kruckman 1983).

*Rajasthani village henna patterns symbolizing the sun, a symbol of blessing and fertility*
Women arriving in the west as refugees from North African famines and wars often speak insufficient English to express their concerns to medical personnel, leading to misunderstandings about their need for performance of ritual actions surrounding childbirth. Westermarck (1926) and Legey (1926) recorded meticulous descriptions of the henna traditions and other ritual performances surrounding childbirth in Morocco in the early part of the 20th century. These are comparable to traditions practiced throughout North Africa prior to modernization in those countries. Contemporary urbanized North African women now often regard these traditions as “country,” but they are still practiced in rural areas, and may be reconstructed by women who have nostalgic feelings for their traditions, or who feel comforted by the old rituals.
Amazigh village patterns to protect a mother from the Evil Eye

Women routinely arrive in North African maternity clinics with hennaed hands and feet. If they have immigrated to western countries, physicians unfamiliar with the tradition may mistake their henna patterns for skin disease, creating a stressful misunderstanding between doctor and patient. Physicians are often unaware that henna ing fingernails and toenails does not alter pulse oxymetry readings (Al-Majed, Harakati, 1994) as does fingernail polish, and may insist that the woman try to remove the henna.

Amazigh village henna patterns to protect a mother from the Evil Eye

In most of the tribal groups, women were hennaed, and ornamented with kohl (a traditional black makeup made of antimony) and swak (a traditional dark lip stain made
of walnut root) as if they were brides before they go into labor. These not only deterred malicious spirits, but also prepared the woman for the possibility of dying in childbirth. If a woman died in childbirth, she was believed to enter paradise as a bride, and should be appropriately adorned (Westermarck II, 1926, 383). A woman who died in childbirth was believed to have no punishment after death (Legey, 1926: 119). Women in western maternity clinics are well supported medically to prevent death in childbirth, but no attention is given to her potential entrance into afterlife.

An Amazigh woman who gave birth to twins was regarded as full of *baraka*, blessedness, and those who visited her after birth would kiss her hand and address her as *lalla*, “my lady”. If a woman gave birth to triplets she was regarded as holy. Even an ordinary birth was believed to have *baraka* (Westermarck I, 1926, 47). Though birth is regarded as a wonderful event, an immigrant woman in a western hospital maternity ward is unlikely to feel very special. If she gives birth to twins or triplets, they are swiftly removed to a neonatal intensive care unit for monitoring and health support, and treated as a medical emergency rather than being celebrated. Multiple births in the have a high statistical correlation with impaired maternal bonding and postpartum depression in western pediatrics (Stern and Kruckman 1983).

![Amazigh village henna patterns to protect a mother from the Evil Eye](Image)

The midwife attending the birth in North Africa took care to assure the woman that malicious supernatural spirits were dispelled. This was accomplished with henna, incense, amulets, and ritual actions. In Moroccan Jewish households, a magic circle was drawn in the air around the laboring woman with a large sword to deter evil spirits. At the moment of birth in Amazigh Morocco, the mother was kept covered, with only the
midwife can attending her, so the Evil Eye could not catch sight of her genital organs and cause her harm (Legey, 1926: 124). A laboring woman was therefore in a secure and familiar place, undistracted, accompanied only by one trusted helper. Several strangers peering between her legs, bright lights, and machines surround a woman in a western obstetric ward. These are helpful in insuring hygiene and medical expertise, and optimize chances for a healthy delivery, but can be unsettling to the mother if she is not familiar with western medical practice.

The child’s umbilical cord was dabbed with henna, and was disposed of through ritual action in most North African and Middle Eastern groups. When an Ait Yusi child’s umbilical cord fell off, it was buried under the household’s roof-pole, with barley, salt and henna, to protect the child from jealous spirits. The knife used to cut the umbilical cord was first put under the child’s head to protect it from malicious spirits, and then was used to cut the meat of a sheep or goat sacrificed on the seventh day after birth. Among the Hiana, the cord and swaddling clothes were buried or thrown into a river, along with the knife that cut the cord, lest an enemy find these things and practice magic with them. In Andjra, the midwife daubed henna on the umbilical cord and buried it with the afterbirth at a local saint’s shrine to insure supernatural protection (Westermarck 1926, II, 372-3). Western obstetrical practice may conserve the placenta and umbilical cord for research purposes. The birthing surgical instruments and linens are be autoclaved and reused, or if disposable, will be incinerated or sent to a landfill. If a woman believes that strangers or spirits may access these and thus deliberately or accidentally harm her and her child, her anxiety may contribute to postnatal depression.

Amazigh henna patterns to protect a mother from the Evil Eye
Not all henna rituals following birth are advisable in the urban setting. Though henna is quite safe for a woman, it is not safe for a newborn\(^2\) (Raupp, Hassan, Arughese, Kristiansson, 2001, 411-412). Henna was applied to an infant soon after birth in most North African and Middle Eastern cultures to deter evil spirits. The henna was mixed with oil or butter and applied as a cleansing massage to the child during the seven days after birth (Westermarck II 1926: 383-5). Henna is a sunblock and anti-dessicant, as well as having mild antibacterial and antifungal properties, which would have had some benefit in desert nomadic circumstances. Because the child was not washed for the first seven days, the henna rub may have helped cleanse the baby, and would have been more benign than a contaminated water supply. However, it is not medically advisable to henna a child, as henna can haemolize the blood cells of a G6PD deficient newborn, causing fatal haemolytic crisis (Kandil, Al Ghanem, Sarwat, Al-Thallab, 1996, 287-91). Full body henna application can also hemolyze blood cells in a normal newborn, and exacerbate neonatal anemia, with potentially fatal results in premature children (Zinkham, Oski, 1996, 58 –76). In rural Saharan conditions, henna mixed with olive oil or butter was probably less apt to kill a newborn than a polluted water resource.

An Amazigh woman was repeatedly ornamented with henna during the seven days after birth, as well as having her eyes rimmed with kohl.\(^3\) She was kept secluded, and only the midwife was allowed to attend her behind her curtain. This was seen as a safeguarding the mother against malicious spirits and witchcraft that would cause her illness, depression, and death (Westermarck II, 1926, 385). The effect of these ritual actions was to allow the mother to rest and be cared for by an experienced attendant during the ten day period required for her estrogen, progesterone and prolactin levels to stabilize and for her to recover her strength (Stern and Kruckman 1983), as well as being comforted by ritual actions familiar from her wedding. Neither mother nor child were washed with water during this period, but were cleaned with oil and henna. At each application of henna, the woman would have to remain still for several hours, resting, and allowing others to take care of household tasks, ensuring that she would regain her strength quickly.

On the seventh day after birth, the child was washed and named. A Bishmillah\(^4\) was spoken, the child’s name announced, along with the parent’s names, so that if a child died in infancy it could find its parents in the afterlife. If the child was a son, a ram was slaughtered in its honor, and the child’s name was spoken at the moment of sacrifice. A feast was prepared for the mother and child and the mother’s secluding curtain would be opened. In Andjra, the midwife again adorned the mother with henna, and dressed her in clean clothing. The child was also hennaed on the head, neck, navel, feet, and fingernails, in its armpits and between the legs, all in an effort to avert malicious spirits.\(^5\)

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\(^{2}\) Henna can cause haemolytic crisis and death in infants with G6PD deficiency. For further information, read the subsequent article: “Henna and Glucose-6-phosphate dehydrogenase deficiency”

\(^{3}\) Some kohl mixtures contain lead and should not be used by pregnant or nursing women. For further information, read the subsequent article, “Kohl as a potential source of lead Poisoning in mothers and their infants.”

\(^{4}\) Bishmillah allahu akbar ‘ala ----In the name of God, God who is Great ---(the name of the child) ben (son) or bent (daughter) – (of so and so)

\(^{5}\) Henna can cause haemolytic crisis and death in infants with G6PD deficiency. For further information, read the subsequent article: “Henna and Glucose-6-phosphate dehydrogenase deficiency”
The mother was dressed with slippers on her feet, and her head was covered, leaving only eyes, nose and mouth uncovered, so that witchcraft or malicious spirits would not cause her mental or physical illness. The mother still abstained from work at this time, though she directed household tasks. Women in the house trilled a zgrit\textsuperscript{6} several times at the birth of a son, fewer at the birth of a daughter (Westermarck II, 1926: 386 – 94) to dispel evil spirits.

Amazigh henna patterns to protect a mother from the Evil Eye

At the seventh day and days following, the family put on as extensive celebration as could be afforded. Female relatives who visited during this period assisted household tasks so the mother could continue to rest. Music and feasting was arranged to celebrate the birth, and the mother was dressed in fine clothing, hennaed, harquused, her hair dressed in fragrant oil and rosewater as if she were a bride. She was given the heart and fat of the sacrificed animal to eat (Westermarck II 1926: 397), one of the few times that a woman was guaranteed abundant calories and protein. Again, elaborate henna ensured that the mother would rest for several hours during and after the application. She would be excused from household chores for the following weeks to keep her henna stains beautiful, so the henna encouraged continued rest and recovery.

For forty days after giving birth, the woman was regarded as unclean and in a delicate state of transition. The phrase often spoken was that “her grave is open”. Marital intercourse was not resumed until forty days after birth in most of the communities, though a man could return to sleeping by his wife after the seventh day. For forty days, if

\begin{flushright}
\textsuperscript{6}Zgrit: a North African and Middle Eastern loud, shrill celebratory ritual exaltation done by women. The sound is made by loudly singing a high note while flicking the tongue back and forth across the upper front teeth. The Zgrit is intended to frighten away evil spirits. Women in an Amazigh house trill a zgrit seven times at the birth of a son, three times at the birth of a daughter.
\end{flushright}
not longer, the child was kept in swaddling clothes, and never left alone, lest malicious spirits come and steal it, exchanging it for their own (Westermarck II, 1929: 398-9). During this period, maternal bonding was not impaired by separation as is common in western medical obstetric practice. A woman suffering postpartum depression may assert, “The child is not my own”, or “I am afraid of my baby.” (Brockington et al, 2001: 136 - 8). The North African ritual actions managed the risk of postpartum psychosis by keeping mother and child together, supported and undistracted during the forty-day period when depression is most likely to appear. If a depression or psychosis did develop and woman felt that her child had been stolen and replaced by a supernaturally evil creature, (medical literature notes postpartum psychoses can take the form of the mother believing the child to be evil or malicious (Brockington et al, 2001)) rituals were be performed to retrieve the natural child so maternal bonding could be re-established. The infant believed to be a changeling, a mebeddel, had to be taken back to the jnun, supernatural spirits, and exchanged for the human child. The mother took the evil creature to a cemetery, looked for a demolished tomb, and put the changeling child there, with an offering of meat for the jnun. She withdrew, to avoid contact with the spirits as they came to collect the meat. As soon as the child cried, she reclaimed it, and washed it with holy water, and exclaimed, “I have taken my own child, not that of the Other People” (Legey, 1926: 154 – 5). Thus the postnatal ritual actions acted to buffer depression, and offered an option for reinstating maternal bonding in the instance of psychosis.

Popular Religious Ritual in Addition to Formal Religious Ritual and Standard Medical Practice Can Assist Immigrant Women After Childbirth

Formal religious ritual addresses the metaphysical needs of a mother and child after a birth. A baptism, priest’s blessing, or circumcision secures the child’s soul into the formal religious community. The mother and child’s souls and their relationship with God are established and renewed through prayer, visits to a religious edifice, reading scripture, and blessings by clergy. These formal rituals and blessings are largely directed towards integrating the child into the metaphysical community, but there are no comparable formal rituals for the mother’s status adjustment. Mosques, temples, and the other expressions of formal religion may be established within an immigrant community as soon as there is enough economic base to support such. Though these supply the formal metaphysical needs of mothers and children, they may not provide the popular rituals for social and emotional support during the postpartum period. Adopting pluralist approaches to popular as well as formal religious practices may assist immigrant women in adjusting to motherhood with more moderate rates of postpartum depression than are currently experienced.

Performance of postpartum rituals, particularly those which include henna, for South Asian, Middle Eastern and North African women during the forty days after birth may reduce their high levels of depression in their host countries to levels found in their indigenous countries. It is notable that these rituals are performed to provide physical and emotional assistance, and enable the woman to recuperate and bond with her infant through the period wherein the woman is most at risk for postpartum depression due to
hormonal adjustment. In particular, the henna applications during this period require a woman to rest quietly for hours during the process, and abstain from household tasks that would spoil the patterns for three or four weeks following. This enforcement of inactivity ensures that a woman will rest during the period of hormonal stabilization and bond with her infant. If ritual performance can achieve similar reduction in depression to SSRIs, and do not directly interfere with medical practice, then religious pluralism may be practical medical policy.

Diversity in formal religious practice is acknowledged and respected in western medical practice. Popular religious practice, particularly when directed towards healing, is often viewed doubtfully, if not rejected by western medicine. Formal religious practice tends to a mother and child’s metaphysical needs, but popular religious ritual provides comfort and relief of their emotional and physical needs. An immigrant woman may have access to her formal religious rituals, but not to her accustomed popular rituals in the forty days following birth, and the absence of those popular religious rituals may put her at increased risk for postpartum depression.

Rajasthani village henna patterns symbolizing the sun, a symbol of blessing and fertility

Women recently immigrated into western countries have up to ten times the incidence of postpartum depression in comparison to their peers in their native non-western countries and in comparison to women acculturated to the west (Bashiri and Spielvogel, 1999). New mothers in non-western cultures display few symptoms of postpartum depression; some sociologists believe that the women may be so well supported by their postpartum rituals within their countries of origin this affective disorder is nearly eliminated (Stern and Kruckman, 1983). Other studies demonstrate that the physical and emotional stresses following childbirth are well identified and managed by ritual in the indigenous community, so that the experience of depression is minimized (Pillsbury, 1978). Immigrant women’s lack of access to their postpartum rituals in their host country has been proposed as a cause of this elevation in psychiatric morbidity (Lee et al, 1998;
Moon Park and Dimigen 1995). In North Africa, women who feel they are suffering from postnatal illness seek help from a traditional healer rather than from a physician (Cox, 1983), and such preference is common in other countries. The women feel that their needs for postpartum reorientation and support are better met by popular religious ritual rather than formal religion or western medical practice. When they are immigrants into a western country, the formal religion may be available, but performance of appropriate popular religious rituals for childbirth may be impossible due to lack of knowledgeable practitioners and implements for performance.

**Western Medical and Popular Religious Ritual Approaches to Birth and Postpartum Depression**

Western doctors understand that their patients are religiously and ethnically diverse, but they are selective about which religious/medical actions they are willing to tolerate or perform. Western neonatal practice is willing to perform male circumcision, but not female circumcision. A priest may be admitted into a hospital setting to bless a child, but a large group of women loudly trilling a *zgrit* to bless a child (Westermarck 1926, II, 375) might be unwelcome. A woman may be able to order kosher or vegetarian food for her hospital stay, but not exotic foods required by popular religious ritual in her country of origin. Women in obstetric wards receive flowers from a florist, but are usually discouraged from decorating their bedposts with traditional textiles to deter evil spirits, as only sterilized bedding and autoclaved instruments are permitted. An obstetrical room will be cleansed with antibacterial spray, but anti-smoking regulations may be interpreted to prohibit cleansing censing with *gum-sandarach*, which rural Moroccan women believe to excite fear in malevolent spirits (Westermarck 1926, II, 382). A woman going into surgery is required to remove all jewelry, even if that includes amulets and talismans that she feels are crucial to insure a safe delivery. Western physicians often mistake henna for skin disease, and may dismiss other traditional postnatal rituals as unhygienic or medically useless. If performance of postnatal rituals can be demonstrated to significantly reduce maternal psychiatric morbidity incidence in immigrant women, they are NOT medically useless! In addition, there is concern that selective serotonin reuptake inhibitors prescribed by physicians to depressed mothers are found in their breast milk. The long-term effect of antidepressants consumed by infants through breast milk has not been assessed for possible side effects, though it is noted to cause sleep disturbance (Schmidt, Olesen, Jensen, 2000). A mother may be asked to choose between breastfeeding and depression if a western doctor offers her only SSRIs to assist her postpartum depression. If performance of traditional postpartum rituals could reduce depression to levels achieved with medication, such a choice might be avoided.

Though the formal religious practice may be established in the host country, the social network and implements necessary for popular religious ritual may be unavailable (McCarthy and Barnett, 1997). Popular religious rituals often require implements rarely available outside of a country of origin: indigenous plant and animal products may only be imported where there is a community large enough to make such economically practical. Henna, rice flour, live rams for sacrifice, kumkum powder, kohl, incenses, mustard oil, talismans, amulets and similar articles used within ritual performance may

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not be available, and if found, there may be no practitioners capable of performing the rituals. An immigrant woman may thus be unable to access the rituals she regards as necessary for purifying and reintegrating her into society after giving birth. This has been considered contribute to the elevated and prolonged postpartum depressions observed among immigrant women (Williams and Charmichael, 1985). The immigrant’s lack of the usual support network to perform popular religious rituals following birth has been associated with the elevated maternal psychiatric morbidity in their host countries (Upadhyaya et al, 1989, Watson and Evans, 1986).
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Henna and Glucose-6-phosphate dehydrogenase deficiency:

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Henna can cause a haemolytic crisis in G6PD deficient infants. G6PD deficiency is an inherited condition, and any infant who is diagnosed with this condition MUST NOT have henna. Henna can cause severe anaemia in G6PD deficient infants by penetrating the thin, fragile skin of infants and causing oxidative haemolysis of their blood cells.

G6PD deficiency is a recessive x-chromosome sex-linked inheritable trait. If males have that trait on their x chromosome, they will be affected. If females have the trait on one of their x chromosomes, they will not be affected. If both of a female's x chromosomes are G6PD deficient, they will be affected. Therefore, in populations that have G6PD deficient individuals, males will be twice as likely to be adversely affected by henna as females. The populations that have this trait are mostly in the Middle East and North Africa. This may be why men rarely have henna, or have henna in small applications, while women have extensive and frequent henna in those regional traditions.
The natural red tannin dye in henna is Lawsone (2-hydroxy-1,4 napthoquinone). This is similar in structure to 1,4 napthoquinone, a naphthalene metabolite which strongly oxidizes G6PD deficient cells. Strong oxidants, such as are found in fava beans and naphthalene fumes (most commonly encountered in mothballs) cause similar haemolytic crisis in children, and in large amounts, can endanger G6PD deficient adults.

Pediatricians in hospitals in Kuwait, Oman, and Arabia screen newborns for hyperbilirubinemia and G6PD deficiency, and warn parents to NOT henna their children if they are G6PD deficient, or are in a family carrying the deficiency.

Many Middle Eastern and North African mothers henna their infants at one or two months of age. They may henna their soles and palms, or even henna the full body, as a blessing and protection. Most infants suffer no ill effects from the henna, but G6PD deficient infants become lethargic and jaundiced within twentyfour hours and require phototherapy and blood transfusions. If the child is not treated promptly after onset of symptoms, the child may die. Loving mothers also henna pre-school age children for holidays and family celebrations. For most children henna is a delight, and they enjoy henna as part of the year’s cycle of celebrations. However, G6PD deficient children at three and four years of age have also been admitted to hospitals for jaundice, lethargy and vomiting following their henna. After blood transfusions, the jaundice subsided and they survived.

It is never advisable to henna an infant, particularly if you do not know if the child is G6PD deficient. The results can be life threatening, and result in hospitalization. A healthy G6PD deficient adult may safely have small applications of henna. If the G6PD deficient adult is anemic, or suffering an infectious disease, henna is inadvisable.

Some groups of people rarely have G6PD deficiency. Indigenous people of South America and northern Europeans are rarely G6PD deficient, but fifty percent of Kurdish Jewish males are G6PD deficient. In the US population, about twelve percent of Afro-American males are G6PD deficient. Most people are aware of this trait through anemic episodes from eating fava beans or anemia from exposure to naphthalene from mothballs.

If you are a henna artist, do not apply henna on a child under the age of six unless you know for certain they DO NOT have G6PD deficiency.

If you are a henna artist, and a person wants henna that might be G6PD deficient, ask them if their physician has ever told them they are G6PD deficient. Ask them if fava beans make them anemic. If they do not know, ask if a physician has ever strongly cautioned them against using:

- aspirin
- nonsteroidal anti-inflammatory drugs
- fava beans
- quinine
- naphthalene fumes
- mothballs
If they respond in the affirmative, it is advisable to keep their henna to a minimum. If you are sure they do not have G6PD deficiency ... have fun and henna as much as you like!

The G6PD deficiency and henna haemolysis is entirely unlike, and has nothing to do with, para-phenylenediamine "black henna" injuries.
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Kohl as a potential source of lead poisoning in mothers and their infants
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www.harquus.com

Detail: Marchand d'oranges, Union Postale Universelle Egypte Carte Postale
Author’s private collection

Early 20th century woman and children from Cairo: The daughter’s palms and soles are dyed with henna; the baby’s soles are dyed with henna. The mother and daughter have kohled eyebrows and eyelids. The baby’s eyebrows appear to be painted with kohl.

Henna and tattooing have been used in combination with black eye and eyebrow cosmetics since the Bronze Age. Eye paints were nearly universal across North Africa, the Middle East, and South Asia. The black paint provided relief from the glaring sun and reflection from the sand before sunglasses were invented. Lamp-black was the most common source of pigment, though galena, (lead sulphide), and stibnite (an antimony compound), were also used for black, and copper compounds for blues and greens. These metals were toxic to bacteria carried by flies and contaminated water, so they provided some relief from conjunctivitis and other bacterial eye infections. The irritation from having soot in one’s eyes caused tearing, which kept the eyes washed clean of contaminants, grit, and bacteria. However, these toxic metals also entered the bloodstream of the wearer and the traditional formulae with these metals should never be used when there is safer cosmetic eye paint available.
Some women believed that blackening their eyelids and eyebrows would protect them from the glance of the Evil Eye, and also prevent them from transmitting the Evil Eye to another person. Most women applied kohl every week, or for any social occasion, except during Ramadan, when kohl and all hennas were set aside.

Mothers applied kohl to their infants soon after birth. They blackened the baby’s eyes, dabbed kohl on their umbilical cord, and darkened their eyebrows. Some mothers did this to “strengthen the child’s eyes,” and others did it to prevent the child from being attacked by the Evil Eye. Mothers often marked the tip of the baby’s nose with a dab of kohl. Moroccan Jewish mothers drew a line in harquus or kohl across their infants’ forehead to protect them from the Evil Eye. Mothers applied kohl to their children, both male and female, until they were old enough to apply it themselves. As adults, females used kohl more frequently than males.

Please see these online resources about the toxicity of kohl and surma before using any imported eye cosmetic!

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