

## Topical Medications in Pregnancy and Lactation

When pregnant or lactating women use topical medications, there is concern that the fetus or infant may be exposed. Some topical medications can be absorbed into the maternal circulation and cross the placenta or be excreted into breast milk. Nursing infants could also be exposed via direct contact with medications on the mother's skin. **Generally, avoid use of topical medications where the infant could come into contact with treated skin, or ingest the product directly (e.g., near the nipple).**<sup>6</sup> Polymyxin B, nystatin, clotrimazole, miconazole, calcipotriene (calcipotriol) (without betamethasone), and low- or mid-potency corticosteroids can be applied to the nipple area, although excess cream should be removed before nursing.<sup>6,8</sup> Ointment could expose the child to high levels of mineral paraffins.<sup>6</sup> The table below lists topical medications that can be considered, or that should be avoided, during pregnancy and lactation. Each recommendation's rationale and additional clinically relevant information is given.

| Drug Class, Topicals | Use in Pregnancy (rationale, additional information)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Use in Lactation (rationale, additional information)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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| Acne Medications     | <p><b>Consider:</b></p> <ul style="list-style-type: none"> <li>Azelaic acid (minimal data; no known fetal effects; skin absorption 4% to 8%; ACOG-recommended)<sup>8,20</sup></li> <li>Benzoyl peroxide (low systemic absorption [5%]; ACOG-recommended)<sup>8,20</sup></li> <li>Clindamycin (low systemic absorption; no known association between topical use and malformations)<sup>5,8,21</sup></li> <li>Erythromycin (low systemic absorption; most data do not suggest risk with systemic use)<sup>5,21</sup></li> <li>Salicylic acid (amount absorbed less than with low-dose aspirin, which does not increase malformations or pregnancy complications; ACOG-recommended)<sup>20,21</sup></li> </ul> <p><b>Avoid:</b></p> <ul style="list-style-type: none"> <li>Retinoids (tretinoin, adapalene, tazarotene, "cosmeceutical" retinoids) (case reports of retinoid-like teratogenic effects with tretinoin; case report of ocular malformation with adapalene; tazarotene contraindicated [teratogenic in rats and rabbits]).<sup>5,22</sup> Check pregnancy test within two weeks before starting tazarotene, and start during normal menstrual cycle.<sup>5</sup></li> <li>Dapsone (better-studied options are preferred)<sup>21</sup></li> </ul> | <p><b>Consider:</b></p> <ul style="list-style-type: none"> <li>Azelaic acid (low systemic absorption [4% to 8%]; present in milk, wheat, rye, and barley naturally)<sup>8</sup></li> <li>Benzoyl peroxide (low systemic absorption [5%])<sup>6,8</sup></li> <li>Clindamycin (infant side effects unlikely; breast application could cause diarrhea)<sup>6</sup></li> <li>Erythromycin (infant side effects unlikely; breast application could cause diarrhea)<sup>6</sup></li> <li>Salicylic acid (unlikely to be significantly absorbed)<sup>6</sup></li> <li>Retinoids (tretinoin, adapalene, tazarotene) (tretinoin and adapalene poorly absorbed, but limit use of adapalene and tazarotene [e.g., apply tazarotene to no more than 20% of body surface area]).<sup>6</sup></li> </ul> <p><b>Avoid:</b></p> <ul style="list-style-type: none"> <li>Dapsone (case of hemolytic anemia in breastfed infant of mother taking oral dapsone; alternatives preferred).<sup>5,6</sup></li> </ul> |

| Drug Class, Topicals | Use in Pregnancy (rationale, additional information)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Use in Lactation (rationale, additional information)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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| Analgesics           | <p><b>Consider:</b></p> <ul style="list-style-type: none"> <li>Lidocaine (<i>Lidoderm</i>) (systemic use compatible; low systemic absorption)<sup>2,5</sup></li> </ul> <p><b>Avoid:</b></p> <ul style="list-style-type: none"> <li>NSAIDs (constriction of ductus arteriosus reported with diclofenac)<sup>3,4</sup></li> <li>Salicylates (teratogenic effects and constriction of ductus arteriosus reported with methyl salicylate)<sup>4</sup></li> </ul>                                                                                                                                     | <p><b>Consider:</b></p> <ul style="list-style-type: none"> <li>Diclofenac (low or undetectable levels in breast milk with systemic maternal use)<sup>6</sup></li> <li>Lidocaine (<i>Lidoderm</i>) (low levels in breast milk with systemic maternal administration; ingested lidocaine poorly absorbed by infant)<sup>6</sup></li> </ul> <p><b>Avoid:</b> Salicylates (no data)</p>                                                                                                                                                                                                                                                                                             |
| Anesthetics          | <p><b>Consider:</b></p> <ul style="list-style-type: none"> <li>Lidocaine (systemic use compatible)<sup>5</sup></li> <li>Dibucaine (systemic levels likely minimal)<sup>13</sup></li> <li>Pramoxine (not thought to be absorbed)<sup>5</sup></li> <li>Prilocaine (no fetal harm in rats)<sup>13</sup></li> <li>Benzocaine (absorption poor from intact skin, but avoid on mucous membranes or damaged skin due to paucity of data)<sup>5</sup></li> </ul>                                                                                                                                         | <p><b>Consider:</b></p> <ul style="list-style-type: none"> <li>Pramoxine (not thought to be absorbed)<sup>5</sup></li> <li>Dibucaine (systemic levels likely minimal; unlikely to affect infant)<sup>6,13</sup></li> <li>Lidocaine (<i>Lidoderm</i>) (low levels in breast milk with systemic maternal administration; ingested lidocaine poorly absorbed by infant)<sup>6</sup></li> <li>Prilocaine (low excretion of anesthetics into breast milk)<sup>6</sup></li> <li>Benzocaine (absorption poor from intact skin, but avoid or limit use on mucous membranes or damaged skin)<sup>5</sup></li> </ul> <p><b>Note:</b> Avoid direct ingestion by infant.<sup>6,17</sup></p> |
| Antibiotics          | <p><b>Consider:</b></p> <ul style="list-style-type: none"> <li>Bacitracin (data limited, but no association with malformations)<sup>5</sup></li> <li>Clindamycin, <b>topical</b> (low systemic absorption; conflicting first trimester data)<sup>5,21</sup></li> <li>Clindamycin, <b>vaginal</b> (per CDC, newer data demonstrate safety).<sup>14</sup></li> <li>Erythromycin, (low systemic absorption; most data do not suggest risk with systemic use)<sup>5,21</sup></li> <li>Metronidazole, <b>topical</b> (plasma level ~1% of peak level after a 250 mg oral dose)<sup>6</sup></li> </ul> | <p><b>Consider:</b></p> <ul style="list-style-type: none"> <li>Bacitracin (poor systemic absorption)<sup>6</sup></li> <li>Clindamycin, <b>topical</b> (low systemic absorption); unlikely to cause infant side effects<sup>6,21</sup></li> <li>Clindamycin, <b>vaginal</b> (30% absorbed, but unlikely to cause infant side effects)<sup>6</sup></li> <li>Erythromycin (low systemic absorption; infant side effects unlikely)<sup>6,21</sup></li> <li>Metronidazole (neither topical nor vaginal have been studied during breastfeeding. After vaginal administration, plasma levels are &lt;2% of those after a</li> </ul>                                                    |

Continued...

| Drug Class, Topicals                                                                                                                                                                        | Use in Pregnancy (rationale, additional information)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Use in Lactation (rationale, additional information)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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| Antibiotics, continued                                                                                                                                                                      | <ul style="list-style-type: none"> <li>Metronidazole, <b>vaginal</b> for <b>bacterial vaginosis</b> (most data do not suggest significant risk).<sup>5</sup></li> <li>Mupirocin (low systemic absorption [<math>&lt;1\%</math>]; no fetal harm in rats or rabbits; quickly metabolized and eliminated)<sup>5,6</sup></li> <li>Neomycin (no association with malformations; risk of deafness not investigated, but expected to be small even with systemic maternal use)<sup>5</sup></li> <li>Polymyxin (no association with malformations)<sup>5</sup></li> </ul> <p><b>Avoid:</b></p> <ul style="list-style-type: none"> <li>Metronidazole, vaginal for <b>trichomoniasis</b> (ineffective).<sup>14,15</sup></li> </ul>                                                                                                                                                                                                                                                                                                                               | <p>500 mg oral dose. After topical administration, blood levels are about 1% of the peak plasma levels after a 250 mg oral dose.)<sup>6</sup></p> <ul style="list-style-type: none"> <li>Mupirocin (low systemic absorption [<math>&lt;1\%</math>]; quickly metabolized and eliminated)<sup>5,6</sup></li> <li>Neomycin (clinically insignificant amounts expected in breast milk)<sup>6</sup></li> <li>Polymyxin (poor systemic absorption)<sup>6</sup></li> </ul>                                                                                                                                                                                                                                                                            |
| <p>Antifungals (topical, intravaginal)</p> <p><b>Note:</b> a seven-day treatment course with a topical azole is recommended for vulvovaginal candidiasis during pregnancy.<sup>14</sup></p> | <p><b>Consider:</b></p> <ul style="list-style-type: none"> <li>Nystatin (topical antifungal of choice; no association with malformations; poorly absorbed from intact skin and mucosal membranes)<sup>5,8</sup></li> <li>Ciclopirox (minimal systemic absorption [1.3% with occlusion]; not teratogenic in animals)<sup>5,9</sup></li> <li>Clotrimazole (minimal absorption from skin and vagina; no association with malformations, but some evidence suggests vaginal use in the first trimester may be associated with pregnancy loss.)<sup>5</sup> See <b>note</b>.</li> <li>Miconazole (small amounts absorbed from vagina; no association with malformations, but vaginal use in first trimester associated with pregnancy loss.)<sup>5</sup> See <b>note</b>.</li> <li>Selenium disulfide/sulfide (limited data; short-term use acceptable)<sup>8</sup></li> <li>Terbinafine (minimal systemic absorption [<math>&lt;5\%</math>]; human data lacking, but not teratogenic in rats or rabbits; not a preferred option.)<sup>5,8</sup></li> </ul> | <p><b>Consider:</b></p> <ul style="list-style-type: none"> <li>Nystatin (an antifungal of choice; has the most data; poor absorption from intact skin and mucosal surfaces)<sup>5,6,8</sup></li> <li>Ciclopirox (minimal systemic absorption [1.3% with occlusion; likely safe])<sup>5,6,9</sup></li> <li>Clotrimazole (an antifungal of choice; has the most data; poor absorption from skin and vagina; likely safe)<sup>5,6,8,9</sup></li> <li>Miconazole (no data; poor absorption from skin and vagina; no risk expected)<sup>5,6</sup></li> <li>Selenium disulfide (a single case report of lactation suppression)<sup>8,9</sup></li> <li>Terbinafine (systemic absorption <math>&lt;5\%</math>; likely safe)<sup>5,6,9</sup></li> </ul> |

| Drug Class,<br>Topicals                      | Use in Pregnancy (rationale, additional information)                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Use in Lactation (rationale, additional information)                                                                                                                                                                                                                                                                                                                                                                                                |
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| Antivirals                                   | <p><b>Consider:</b></p> <ul style="list-style-type: none"> <li>Acyclovir (not associated with malformations)<sup>5</sup></li> </ul> <p><b>Avoid:</b></p> <ul style="list-style-type: none"> <li>Imiquimod (limited human data)<sup>5</sup></li> </ul>                                                                                                                                                                                                                                                                       | <p><b>Consider:</b></p> <ul style="list-style-type: none"> <li>Acyclovir (even with the highest maternal systemic doses, the amount in breast milk is only about 1% of the typical infant dose)<sup>6</sup></li> <li>Imiquimod (poor systemic absorption; amount in breast milk probably clinically insignificant)<sup>5,6</sup></li> </ul>                                                                                                         |
| Corticosteroids<br>(ointments and<br>creams) | <p><b>Consider:</b></p> <ul style="list-style-type: none"> <li>Low- to mid-potency agent (e.g., hydrocortisone) (not associated with malformations)<sup>8</sup></li> </ul> <p><b>Avoid:</b></p> <ul style="list-style-type: none"> <li>High-potency agents (e.g., clobetasol) (possible association with low birth weight)<sup>8,10</sup></li> </ul> <p>See our chart, <i>Comparison of Topical Corticosteroids</i>, for help identifying low, medium, or high-potency agents (US)(Canada).</p>                             | <p><b>Consider:</b></p> <ul style="list-style-type: none"> <li>Any (minimal risk of infant exposure, but prudent to use least potent agent necessary on smallest area necessary)<sup>6,9</sup></li> </ul> <p><b>Avoid:</b></p> <ul style="list-style-type: none"> <li>High-potency agent on nipples (case report of hypertension in infant)<sup>9,10</sup></li> </ul>                                                                               |
| Hemorrhoid<br>Products                       | <p><b>Consider</b> (for <b>external</b> application only<sup>19</sup>):</p> <ul style="list-style-type: none"> <li>Anesthetics (see above)</li> <li>Hydrocortisone<sup>23</sup> (see “Corticosteroids, above, for details)</li> <li>Witch hazel<sup>16,23</sup></li> </ul> <p><b>Avoid:</b></p> <ul style="list-style-type: none"> <li>Phenylephrine (may reduce uterine blood flow; risk of minor malformations, inguinal hernia, and clubfoot with 1<sup>st</sup> trimester use of nasal spray)<sup>5,23</sup></li> </ul> | <p><b>Consider:</b></p> <ul style="list-style-type: none"> <li>Hydrocortisone (rectal cream or suppository poses very little risk to infant)<sup>6</sup></li> <li>Pramoxine (thought not to be absorbed)<sup>5</sup></li> <li>Phenylephrine (no human data; probably compatible, but could theoretically reduce milk supply)<sup>5,6</sup></li> <li>Witch hazel (insufficient evidence, but recommended in pregnancy)<sup>16,23,24</sup></li> </ul> |

| Drug Class, Topicals         | Use in Pregnancy (rationale, additional information)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Use in Lactation (rationale, additional information)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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| Lice and Scabies Treatments  | <p><b>Consider:</b></p> <ul style="list-style-type: none"> <li>• Permethrin (<math>\leq 2\%</math> absorbed; neither animal nor limited human data suggest risk to embryo or fetus; a preferred option for scabies or lice)<sup>5,8</sup></li> <li>• Pyrethrins with piperonyl butoxide (poor absorption; a preferred option for lice)<sup>5,8</sup></li> <li>• Crothamiton (<math>&lt; 1\%</math> absorbed; considered safe)<sup>8</sup></li> <li>• Ivermectin (no data for topical product; systemic administration teratogenic in animals at maternally toxic dose, but no evidence of teratogenicity in humans)<sup>5</sup></li> <li>• Spinosad (<i>Natroba</i> [US]) (spinosad not systemically absorbed; also contains benzyl alcohol, but significant embryo/fetal exposure unlikely)<sup>5</sup></li> <li>• Malathion (<math>&lt; 10\%</math> absorbed; not teratogenic in rats or rabbits)<sup>18</sup></li> </ul> <p><b>Note:</b> CDC guidelines recommend permethrin or pyrethrin/piperonyl butoxide for public lice, and permethrin for scabies, in pregnant women.<sup>14</sup></p> | <p><b>Consider:</b></p> <ul style="list-style-type: none"> <li>• Permethrin (minimal absorption [<math>\leq 2\%</math>]; rapid metabolism; used in infants)<sup>5,6</sup></li> <li>• Pyrethrins with piperonyl butoxide (poorly absorbed)<sup>5</sup></li> <li>• Crothamiton (<math>&lt; 1\%</math> absorbed; minimal data; likely safe)<sup>8</sup></li> <li>• Ivermectin; no data for topical product, but poorly excreted into breast milk after oral administration)<sup>6</sup></li> <li>• Spinosad (<i>Natroba</i> [US]) (spinosad not systemically absorbed; also contains benzyl alcohol, but significant infant exposure unlikely)<sup>5</sup></li> </ul> <p><b>Avoid:</b></p> <ul style="list-style-type: none"> <li>• Malathion (<math>&lt; 10\%</math> absorbed; limited data; may cause respiratory depression)<sup>6,9</sup></li> </ul> <p><b>Note:</b> CDC guidelines recommend permethrin or pyrethrin/piperonyl butoxide for public lice, or permethrin for scabies, in lactation.<sup>14</sup></p> |
| Nasal Sprays (cold, allergy) | <p><b>Consider:</b></p> <ul style="list-style-type: none"> <li>• Saline nasal spray<sup>12</sup></li> <li>• Beclomethasone (no association with malformations)<sup>5,11</sup></li> <li>• Budesonide (extensive human safety data; <math>\sim 20\%</math> absorbed; agent of choice)<sup>5,7,11,12</sup></li> <li>• Ciclesonide (no human data; likely only minimal amounts cross the placenta)<sup>5,11</sup></li> <li>• Flunisolide (limited human data (inhaled route); 50% of dose reaches systemic circulation, and amount reaching embryo/fetus may be even less)<sup>5</sup></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <p><b>Consider:</b></p> <ul style="list-style-type: none"> <li>• Saline nasal spray<sup>12</sup></li> <li>• Corticosteroid nasal sprays (amounts in breast milk probably too small to cause harm)<sup>6</sup></li> <li>• Phenylephrine (less likely to reduce milk production than oral agent)<sup>6</sup></li> <li>• Oxymetazoline (little expected to reach infant. Recommended over oral decongestants.)<sup>6</sup></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

| Drug Class,<br>Topicals                                                   | Use in Pregnancy (rationale, additional information)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Use in Lactation (rationale, additional information)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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|                                                                           | <ul style="list-style-type: none"> <li>Fluticasone (no risk identified with inhaled or nasal use; significant embryo/fetal exposure unlikely; considered safe)<sup>5,11,12</sup></li> <li>Mometasone (no human data; systemic absorption virtually undetectable; considered safe)<sup>5,11</sup></li> </ul> <p><b>Avoid:</b></p> <ul style="list-style-type: none"> <li>Phenylephrine (risk of minor malformations, inguinal hernia, and clubfoot with 1<sup>st</sup> trimester use; could reduce uterine blood flow)<sup>5</sup></li> <li>Oxymetazoline (potential risk of renal malformations with 2<sup>nd</sup> trimester use, and pyloric stenosis with 1<sup>st</sup> trimester use; could reduce uterine blood flow)<sup>1,5</sup></li> <li>Triamcinolone (association with respiratory tract defects)<sup>5,11</sup></li> <li>Xylometazoline (risk of pyloric stenosis with 1<sup>st</sup> trimester use; could reduce uterine blood flow)<sup>1,5</sup></li> </ul> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Psoriasis Medications<br><br><br><br><br><br><br><br><br><br>Continued... | <p><b>Consider:</b></p> <ul style="list-style-type: none"> <li>Moisturizer (considered safe)<sup>10</sup></li> <li>Low- to mid-potency topical corticosteroid (e.g., hydrocortisone) (not associated with malformations)<sup>8,10</sup></li> </ul> <p><b>Avoid:</b></p> <ul style="list-style-type: none"> <li>High-potency corticosteroid (e.g., clobetasol) (possible association with low birth weight)<sup>8,10</sup></li> <li>Calcipotriene/calcipotriol (fetal skeletal abnormalities in animals; could use small amount if no alternative)<sup>8,10</sup></li> <li>Calcineurin inhibitors (tacrolimus, pimecrolimus; little topical safety data available; oral tacrolimus associated with prematurity and low birth weight)<sup>8,10</sup></li> <li>Coal tar (mutagenic/carcinogenic)<sup>8</sup></li> </ul>                                                                                                                                                        | <p><b>Consider:</b></p> <ul style="list-style-type: none"> <li>Moisturizer (considered safe)<sup>10</sup></li> <li>Corticosteroids, any (minimal risk of infant exposure, but prudent to use least potent agent necessary on smallest area necessary)<sup>6,9</sup></li> <li>Tacrolimus (low systemic absorption)<sup>5,6</sup></li> <li>Pimecrolimus (low systemic absorption; high plasma protein binding [i.e., minimal passage into breast milk])<sup>5,6</sup></li> <li>Calcipotriene/calcipotriol (poor systemic absorption; vitamin D analogue; probably low risk)<sup>5,6</sup></li> </ul> <p><b>Avoid:</b></p> <ul style="list-style-type: none"> <li>Coal tar (mutagenic/carcinogenic; if absolutely needed, use on smallest area possible)<sup>6</sup></li> </ul> |

| Drug Class,<br>Topicals                | Use in Pregnancy (rationale, additional information)                                                                                 | Use in Lactation (rationale, additional information) |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|
| Psoriasis<br>Medications,<br>continued | See our chart, <i>Comparison of Topical Corticosteroids</i> , for help identifying low, medium, or high-potency agents (US)(Canada). |                                                      |

**Abbreviations:** ACOG = American College of Obstetricians and Gynecologists

*Users of this resource are cautioned to use their own professional judgment and consult any other necessary or appropriate sources prior to making clinical judgments based on the content of this document. Our editors have researched the information with input from experts, government agencies, and national organizations. Information and internet links in this article were current as of the date of publication.*

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