



**BioGaia**<sup>®</sup>  
Probiotics grounded in evolution  
Driven by science



# Boost your baby before it's born

BioGaia probiotics during  
pregnancy and early infancy

# Probiotics for expecting mothers

Being pregnant is a fantastic experience but it is also a major adjustment for your entire body.

You are no longer alone in your decisions and actions, but sharing everything with a tiny baby.

In many ways, your days as a mother have already begun.

Probiotics can, by promoting a healthy microflora, prevent or relieve common pregnancy problems like constipation.

Probiotics can also increase your overall immunity for infections and may even help boost the immune system for your unborn baby.

# Mother to Fetus through microbial communication

It has long been believed that the fetus is sterile in utero and that microbial colonization of the newborn starts first during and after birth.<sup>1</sup> But discoveries now point to pregnancy as the beginning of the bacterial exposure for the developing fetus suggesting that an efflux of bacteria through the placental barrier may occur already during pregnancy.<sup>1-8</sup>

The maternal microbes are transferred from mother to baby during vaginal birth, by breast milk and possibly through the placenta. However, a hectic lifestyle can create a dysbiotic maternal microbial environment, unexpected events can force delivery through C-section or prevent the breast feeding from functioning properly – all delaying the establishment of favorable bacteria in the intestine of the offspring.

An imbalanced maternal microbial environment can result in developmental abnormalities in the fetal intestine.<sup>9</sup> This may lead to a low-grade inflammation and abnormal intestinal metabolism, resulting in colic symptoms for the newborn baby.<sup>10</sup>

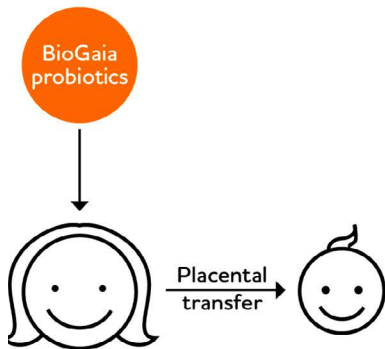
For the pregnant woman probiotics can also help alleviate common pregnancy problems, like constipation<sup>11</sup> as well as increase the overall immunity for infections.<sup>13</sup>

BioGaia probiotics can help improve the gastrointestinal balance for both mother and baby from pregnancy through infancy and beyond.

It is also one of the most well-researched probiotics in the world and has in numerous clinical studies proved to be safe for both mother and child.<sup>14, 15</sup>

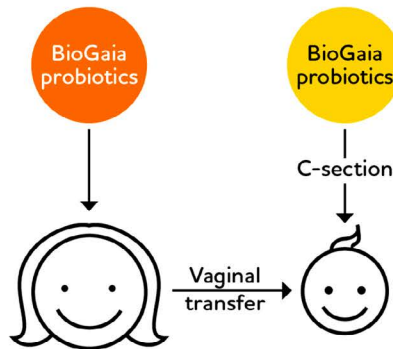
## Pregnancy

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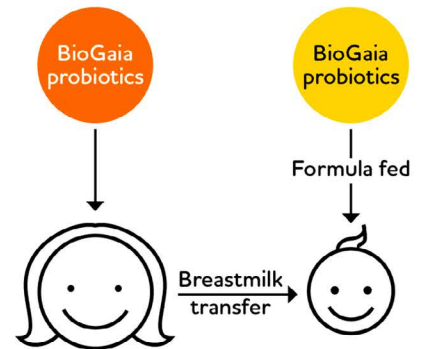
## Birth

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## Infancy

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# Avoid constipation during pregnancy

Feeling bloated and constipated?  
You are far from alone.

Up to 50% of all pregnant women suffer from constipation at some point during the pregnancy.<sup>15</sup> Constipation can put a damper on most pregnancies but can also lead to, or worsen, hemorrhoids.

Try to improve your bowel movements by eating more fibers, drinking a lot of water and exercising.

BioGaia *L. reuteri* (DSM 17938) affects gut motility which is important for proper food digestion and constipation relief and can increase the number of bowel movements with approximately 30%.<sup>11</sup>



# Protect yourself from infections

Staying healthy with a strong immune system is always important, but even more so during pregnancy. Although pregnant women aren't more susceptible to initial infection in general, the physiological changes of pregnancy (e.g., decreased lung capacity, urinary stasis, changes in blood flow, and hormonal shift) may make a disease more severe than it normally would be.<sup>16</sup>

Our modern lifestyle, with too little exercise, unhealthy food and high levels of stress can further increase the risk of getting sick. Since 80% of the immune system is located in the gut, taking good care of your stomach is an important first step.

# Antibiotic-associated side-effects

Since a severe infection may risk the health of both mother and child, affected women are often treated with antibiotics.

Although antibiotics may be great for beating out ongoing infections they are unfortunately equally efficient in killing healthy and helpful bacteria, and can cause adverse effects such as nausea, vomiting and skin rash.<sup>17, 18</sup>

*L. reuteri* (DSM 17938) has proved to reduce the number of days and episodes with fever, doctor visits, absence from work and day-care due to infections<sup>19</sup> as well as antibiotic-associated side-effects.<sup>20</sup>





# Promote the microbiota after C-section

Staying healthy with a strong immune

One of the benefits of giving birth vaginally is the microbial transfer. During vaginal delivery the baby is colonized by maternal vaginal and fecal bacteria<sup>21</sup>, while babies born via cesarean section instead are colonized by bacteria associated with the skin and the hospital environment<sup>22</sup>, and the establishment of favourable bacteria is thereby delayed.<sup>23</sup>

Birth by C-section has been associated with the development of allergy and asthma, as well as type I diabetes, celiac disease and obesity, which may be linked to the altered microbiota colonization in those babies.<sup>12</sup>

New evidence suggests that probiotic bacteria could prevent early microbiota dysbiosis induced by C-section delivery.

A recent study showed that supplementation with *L. reuteri* (DSM 17938) modulated the early development of the microbiota in babies born by C-section, making their microbiota more similar to that of vaginally born babies.<sup>13</sup>



## Improve infantile colic

As many as 26% of all babies are diagnosed with colic in their first weeks of life.<sup>26</sup> This condition of constant fussing and crying can many times leave parents feeling frustrated and helpless.

But remember that there is nothing you as a parent have done wrong that has caused the colic to appear.

If the basics of feeding, burping and changing the diaper have been covered, try soothing the baby by swaying, gentle bouncing or going for a walk.



No one knows exactly what causes colic. It can be overproduction of intestinal gas, forceful intestinal contraction, hypersensitivity to cow's milk protein, changes in intestinal microbiota or maybe all of them combined. Usually it gradually gets better within 3-4 months.

Growing evidence has linked the gut microflora to colic in infancy. An imbalanced microflora may be the reason for abnormal gut motility and increased gas production.<sup>27</sup>

*L. reuteri* (DSM 17938) is the only probiotic recommended to both treat and prevent infantile colic.<sup>28</sup>

Supplementation of *L. reuteri* (DSM 17938) to healthy babies reduced the daily crying by more than 50%.<sup>29, 30</sup>

# BioGaia Probiotics

BioGaia is an innovative Swedish healthcare company and a world-leader in probiotics with more than 25 years of experience in the field of probiotic lactic acid bacteria.

Our probiotic strain *Lactobacillus reuteri* (DSM 17938) is a natural probiotic supplement that is safe and suitable for long term use.

The health effects are documented in more than 130 completed clinical studies conducted on more than 12,300 individuals including infants, children and adults.



# The BioGaia Pathway

*Prenatal supplementation*

*Supports a healthy maternal microflora*

*Transfers to breast milk*

*Contributes to a healthy breast milk composition*

*A source for colonization of the breastfed infant's developing gut*

*Provides microbial stimulation for the breastfed infant's developing immune system*



**Mom's Choice Award  
Gold Recipient Winner**



**THE PROBIOTIC FOR  
PREGNANT & LACTATING MOMS**

# THE PROBIOTIC FOR PREGNANT & LACTATING MOMS



**Mom's Choice Award  
Gold Recipient Winner**

## BIOGAIA BABY DROPS FOR GUT COMFORT

The only probiotic with scientific evidence  
in infantile colic.

BioGaia is special.  
It is derived from human mother's milk.

Safe for 0-3 years old.





# BioGaia®

Probiotics grounded in evolution  
Driven by science



## References:

1. Thum C, et al. J Nutr. 2012;142: 1921-1928. 2. Jimenez E, et al. Res Microbiol. 2008;159: 187-193. 3. Jimenez E, et al. Curr Microbiol. 2005;51: 270-274. 4. Aagaard K, et al. Sci Transl Med. 2014;6: 237ra265. 5. Romano-Keeler J, Weitkamp JH. Pediatr Res. 2015;77: 189-195. 6. Funkhouser LJ, Bordenstein SR. PLoS Biol. 2013;11: e1001631. 7. Wassenaar TM, Panigrahi P. Lett Appl Microbiol. 2014;59: 572-579. 8. Satokari R, et al. Lett Appl Microbiol. 2009;48: 8-12. 9. Gohir W et al. Pediatr Res. 2015 Jan;77(1-2):196-204. 10. Orel R. Zdrav Vestn 2013;82 suppl 1:-I-83-93. 11. Ojetti V et al. J Gastrointestin Liver Dis. 2014;23:387-397. 12. Schlagenhaut U et al. J Clin Periodontol. 2016;43:948-954. 13. Tubelius P et al. Environmental Health 2005;4:25. 14. Weizman Z, Alsheikh A. J Am Coll Nutr. 2006;25: 415-419. 15. Mangalat N, et al. PLoS ONE. 2012;7: e43910. 15. Johnson P et al. Acta Obstet Gynecol Scand 2014; 93:874-879. 16. Kourtis A.P. Read J.S. & Jamieson D. J. (2014). The New England Journal of Medicine, 370(23), 2211-2218. 17. Gyte GML et al. Cochrane Database of Systematic Reviews 2014, Issue 11. 18. Miller JE et al. International Journal of Epidemiology 2018. 19. Gutierrez- Castellon P et al. (2014). Pediatrics 133:e904-e909. 20. Lionetti E et al. Aliment Pharmacol Ther. 2006;24:1461-1468. 21. Dominguez-Bello MG et al. Proc Natl Acad Sci U S A 2010;107:11971-5. 22. Jakobsson HE et al. Gut. 2014;63(4): 559-66. 23. Neu J et al. Clin Perinatol. 2011;38:321-331. 24. Rodríguez JM et al. Microb Ecol Health Dis. 2015;26:26050. 25. Garcia Rodenas et al. JPGN 2016;63: 681-687. 26. Rosen LD et al. Pediatrics in Review, 2007: 28:381-385. 27. Savino F et al. J Pediatr. 2018 Jan;192:171-177. 28. Cruchet S et al. Paediatr Drugs. 2015;17:199-216. 29. Indrio F et al. JAMA Pediatr. 2014;168:228-233. 30. Savino F et al. Pediatrics 2010;126:e526-e533.

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