



A recent study confirmed that among pregnant women with confirmed influenza, the risk of fetal death was nearly doubled¹²



influenza and pregnancy

a guide for doctors and midwives

Risks of influenza during pregnancy

Influenza is a potentially fatal disease. In Australia influenza and its complications is estimated to cause between 1,500 and 3,500 deaths and more than 18,000 hospitalisations per year.¹ The risk of hospitalization with H1N1 influenza for pregnant women compared to non-pregnant women is increased by about fivefold.²

As the immune system is naturally suppressed during pregnancy, this leads to increased chance of contracting the flu. Due to this, pregnant women are at higher risk of severe complications associated with the virus. With respect to pregnancy complications, influenza infection increases the risk of stillbirth, premature birth and suboptimal fetal growth. Importantly, maternal flu vaccination protects against these three complications.^{8,12,13} Under the National Immunisation Program (NIP), pregnant women are eligible to receive the flu vaccine for free. The vaccine is important for pregnant women or women trying to get pregnant, especially if they qualify for more than one at risk group.

The flu vaccine is safe for pregnant women, including in the first trimester. In a recent study¹² it was shown that the flu vaccine is not associated with an increased risk for fetal death, and in fact appears to be protective against this. Getting the shot during pregnancy reduced the risk of the mother getting the flu by about 70%. Among pregnant women with confirmed influenza, the risk of fetal death was nearly doubled. In all, there were 16 fetal deaths among the 2,278 women who were diagnosed with influenza during pregnancy. Vaccinating against flu during pregnancy also provides protection for the baby during the first vulnerable months of life.

The ISG recommends annual influenza vaccination for optimal protection.

Who should be vaccinated?³

Annual influenza vaccination is recommended for any person (6 months+) who wishes to reduce the risk of becoming ill with influenza.*

People at increased risk of influenza complications:

- Older adults (65+)
- Indigenous Australians (15+)
- Those (over 6 months old) with underlying medical conditions such as
 - Pregnant women
 - Heart conditions, severe asthma, lung conditions, diabetes (type 1 and 2), chronic neurological disease, renal and metabolic disease, and impaired immunity
 - Residents of nursing homes and other long-term care facilities
 - People who may transmit flu to high-risk individuals.

* This group may qualify for free vaccine under the Australian Government's National Immunisation Program



Influenza vaccination and pregnancy

The World Health Organization (WHO) Strategic Advisory Group of Experts (SAGE) has identified pregnant women as the most important risk group for seasonal influenza vaccination.³ Antibodies in a pregnant woman's blood are actively transported to the fetus, especially in late pregnancy. Scheduling vaccines during pregnancy is not new, mimicking 'mother's gift of immunity to her offspring'.⁴ Administration of killed influenza virus vaccines during pregnancy was common for much of the last 50 years in the USA, and then became widely used again around the world during and after the 2009-10 H1N1 pandemic.⁵⁻⁹

For pregnant women, influenza vaccination protects against well-recognised morbidity and mortality of influenza infection.¹⁰

For babies aged 6 months or younger, maternal influenza vaccination during pregnancy is the most effective way to protect young babies at an age when they are most susceptible to disease but least responsive to vaccines.¹⁰ Inactivated influenza vaccination during pregnancy has been consistently shown to be safe for the unborn baby and during short and long term follow up of those exposed in utero.¹¹

REFERENCES:

1. Newall AT, Wood JG, MacIntyre CR. Influenza-related hospitalisation and death in Australians aged 50 years and older. *Vaccine* 2008;051:3.
2. Australian Immunisation Handbook. 9th Edition. 2008.
3. World Health Organisation. SAGE Meetings. (2012) http://www.who.int/influenza/vaccines/SAGE_information/en/
4. Healy CM. Vaccines in pregnant women and research initiatives. *Clin Obs Gyn* 2012, 55(2): 474
5. Englund J, Glezen PW, Piedra PA. Maternal Immunisation Against Viral Disease. *Vaccine* 1998;16:1458.
6. McCarthy EA, Pollock WE, Nolan T, Hay S, McDonald S. Improving influenza vaccination coverage in pregnancy in Melbourne 2010-2011. *Aust N Z J Obstet Gynaecol.* 2012 Aug;52(4):334-41. doi: 10.1111/j.1479-828X.2012.01428.x. Epub 2012 Apr 9.
7. Jit M, Cromer D, Baguelin M, Stowe J, Andrews N, Miller E. The cost-effectiveness of vaccinating pregnant women against seasonal influenza in England and Wales. *Vaccine.* 2010 Dec 10;29(1):115-22. doi: 10.1016/j.vaccine.2010.08.078. Epub 2010 Nov 4.
8. Källén B, Olausson PO. Vaccination against H1N1 influenza with Pandemrix® during pregnancy and delivery outcome: a Swedish register study. *BJOG.* 2012 Dec;119(13):1583-90. doi: 10.1111/j.1471-0528.2012.03470.x. Epub 2012 Aug 20
9. RANZCOG statement C-Obs 45 Influenza Vaccination during Pregnancy. 1st Endorsed: November 2011, Review: November 2014 http://www.ranzcog.edu.au/component/docman/doc_download/978-c-obs-45-influenza-vaccination-for-pregnant-women.html?Itemid=341.
10. Zaman K. et al Effectiveness of maternal influenza immunization in mothers and infants. *NEJM* 2008;359:1555-64.
11. Tamma PD, Ault KA, del Rio C, Steinhoff MC, Halsey NA, Omer SB. Safety of influenza vaccination during pregnancy. *Am J Obstet Gynecol.* 2009 Dec;201(6):547-52
12. Häberg, SE et al. Risk of fetal death after pandemic influenza virus infection or vaccination. *N Engl J Med* 2013;368:333-40
13. Omer SB, Goodman D, Steinhoff MC, Rochat R, et al. (2011) Maternal Influenza Immunization and Reduced Likelihood of Prematurity and Small for Gestational Age Births: A Retrospective Cohort Study. *PLoS Med* 8(5): e1000441. doi:10.1371/journal.pmed.1000441

"Vaccinating pregnant women against influenza gives a 3 for 1 benefit:

- protects the woman during pregnancy and in the early months of motherhood
- protects the young infant by transplacental antibodies
- protects the young infant by antibodies in breast milk."

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