

Trekking whilst pregnant

Introduction

Whilst the effect of altitude on an unborn baby is the primary concern of pregnant women, when discussing the potential risks of trekking in Nepal, other health issues relevant to pregnant women must not be overlooked. This includes long haul air travel, traveling in remote areas, diarrhea and other related travel illnesses. With the aim of minimizing the risk to mother and unborn child, the following article is intended to help pregnant women decide on whether to travel to Nepal and how to plan their holiday having decided to spend some time here.

The stages of pregnancy and the associated potential problems

1. The first trimester (three months): the two main problems faced are ectopic pregnancy and miscarriage. An ectopic pregnancy is a pregnancy that is developing outside the womb (uterus). The most common site for an ectopic pregnancy to develop is in one of the fallopian tubes. If this occurs the enlarging pregnancy will stretch the tube and eventually the tube may rupture resulting in considerable pain and blood loss. An ectopic pregnancy usually is evident before four weeks but may not present until six weeks. Rarely it will go un-noticed and occasionally will present before a woman even realizes she is pregnant. Women most at risk from an ectopic pregnancy are those who have had previous tube infections, endometriosis, a previous ectopic pregnancy or surgery on their tubes.

Women who fall pregnant while using the "coil" (IUCD) are more likely to have an ectopic pregnancy. A miscarriage is the loss of an early pregnancy that is then expelled causing pain and bleeding. This almost always happens before 15 weeks.

Both of these conditions usually require emergency surgery and occasionally blood transfusions. We would not normally recommend surgery be undertaken in Nepal but in an emergency you will have no choice. Blood should be properly screened, but many things that should happen in Nepal, seem not to happen.

2. The second three months (trimester): The second trimester is the time to establish that your baby is healthy and growing normally. Most screening tests and scans are performed during this period and these are not reliably performed in Kathmandu. The greatest threat during this period is from early labor and sudden bleeding, usually from the placenta if it becomes detached. Blood pressure problems and diabetes of pregnancy occasionally become evident in the second trimester.
3. The third trimester: the baby is growing and preparing for birth. With modern baby units, a baby born early during the last three months has a good chance of surviving, especially after 30 weeks. A baby born prematurely will often need ventilating on a special unit. There are no special care baby units in Kathmandu and the few

neonatal (baby) ventilators that do exist are often broken or lack a doctor with the expertise needed to operate them. With no special care units there is no training programme for doctors or nurses on neonatal care. A baby born prematurely in Kathmandu and needing ventilation has a poor chance of survival.

Risk due to maternal factors

Number of pregnancies: A woman who is pregnant for the first time may not necessarily be at great risk of complications for that pregnancy but she will not yet know if she is prone to problems during pregnancy or delivery. Women carrying their first child have a slightly higher incidence of complications than women carrying their second child.

A woman in her twenties who has had an uneventful first pregnancy and delivery and who is otherwise in good health would be considered to have the lowest possible risk for a second pregnancy. The risk of complications then rises steadily as the number of subsequent pregnancies rises.

Maternal age: The risk of complications in pregnancy is quite high for young girls in their early teens, drops to a minimum risk for women in their early to mid-twenties and starts to rise again for women in their thirties before rising steeply for women in their forties. This is a general statement of risk and individual risk can not be assessed purely on age as obviously problems may happen to women in their twenties and women of fifty have had uneventful pregnancies and deliveries.

Maternal health: Diabetic and epileptic women have special health considerations when pregnant. In addition women with heart or lung disease may experience problems. Asthma may worsen during pregnancy (but it usually improves). Women with a concurrent depressive or other psychiatric illness will need close follow up during pregnancy.

Air travel during pregnancy

The two main concerns of air travel in pregnancy are the effects of low oxygen and the effect of cosmic radiation on the unborn child. There is good experimental evidence that the low oxygen content of the inside of an airplane does not interfere with the oxygen delivery to the baby as measured using fetal heart monitoring during flight. There is no evidence that babies are harmed by long haul air travel. The newer debate of the effects of cosmic radiation on developing babies is not resolved. Most airlines continue to allow pregnant cabin crew to work and there is no good evidence that the increased level of radiation in an airplane is detrimental to a developing baby. The following are reasons for considering not flying whilst pregnant:

1. A previous history of miscarriage or premature labor/delivery
2. Severe anemia
3. Uncontrolled blood pressure

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4. A previous history of ectopic pregnancy and lack of confirmation as to the site of the current pregnancy. (You should confirm that the pregnancy is sited in the womb and not elsewhere - usually a scan is required).
5. A previous history of a blood clot in the leg or the lung.

Note: Most airlines will not allow pregnant women on a plane beyond 32 weeks. Thai airways will usually allow women to fly to Bangkok from Kathmandu at 36 weeks, as long as they have a letter from an obstetrician stating they are well and unlikely to deliver on the plane. An accompanying letter is mandatory for all pregnant women traveling by air.

Altitude and pregnancy

There is limited information available about the effect of short-term exposure to altitude on pregnant women and their unborn babies. Most data available is on the effect of moderate altitude only and shows that pregnant women acclimatize to altitude and this in turn is protective to the fetus. It is widely recognized that there is an individual response to altitude acclimatization and this is also the case for pregnant women. So while acclimatization to altitude occurs during pregnancy it is not possible to predict how well an individual, pregnant or not will respond to altitude.

Trekking is hard work and exercise at altitude while pregnant has been the subject of some research. The evidence is that most pregnancies show good exercise tolerance at altitude but problems such as bleeding and preterm labor have been noted to be the most common complications of pregnancy at altitude. The risk of one of these complications has been shown to increase with strenuous exercise, dehydration and rapid ascent without acclimatization. Exercise without full acclimatization (as can occur during a trek) has also been shown to impair fetal oxygenation.

Long term exposure to altitude while pregnant has been shown to retard fetal growth and it has been acknowledged that women tend to give birth to small babies if they spend much of their pregnancy at altitude. Small babies have their own set of problems at birth such as hypothermia, low blood sugar and a higher rate of breathing problems and a need for intervention. This is more a problem of longer-term exposure to altitude and it is difficult to predict the effect of a short visit to altitude when pregnant. It seems probable that a two-week visit to moderate altitude (less than 3,000 meters) is unlikely to affect the final birth weight of a baby.

Other considerations for the pregnant trekker

Isolation: Trekking in Nepal takes you into remote regions, some more so than others. That is part of the appeal of trekking but it also contributes to the risk. The two most popular trekking regions of Khumbu and the Manang valley in the Annapurna region have health posts staffed

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by western doctors during the trekking seasons. They are positioned in two areas where the risk of altitude sickness is high but they can also deal with other medical emergencies. Virtually no other health facilities exist in any other trekking area and the only other available medical support would be from a passing doctor or through evacuation to Kathmandu. The lack of medical support on most trekking routes must be considered by pregnant women planning a trek.

Diarrhea: (see the articles on diarrhea in Nepal) The most common travel related illness, it almost certainly will happen to you during a visit to Nepal. The antibiotics that are effective in treating diarrhea are contra-indicated in pregnancy so pregnant women need to pay meticulous attention to maintaining their hydration. As mentioned above, dehydration can lead increased risk of complications and diarrhea at altitude is fairly effective at causing dehydration, especially if vomiting is also present.

Hepatitis E: This is a disease caused by a virus that results in inflammation of the liver leading to jaundice. It is very like Hepatitis A with one exception, it seems to be particularly dangerous to pregnant women. There is no vaccine available (yet) and it is very prevalent in Nepal. It is transmitted via the fecal-oral route i.e. by drinking contaminated water or eating contaminated food so is very difficult to avoid, even with meticulous food and water preparation.

Conclusion

Trekking while pregnant carries with it a certain degree of risk for both mother and child. Altitude on its own may not necessarily pose the greatest threat; in fact there is good evidence to suggest that it is quite safe to spend a brief period at moderate altitude with the necessary time taken to acclimatize. There are however a host of other factors about trekking in Nepal that may conspire to make it a hazardous trip. The hills of Nepal are changing slowly but they will without doubt be worth visiting for a long time to come. Pregnancy is a temporary condition and if having had your baby, you still feel a strong pull to visit Nepal, it may be safer and more fun to do it with your young child (see "**trekking with children**").

The following are situations where pregnant women would be wise to consider postponing a trekking trip to Nepal:

1. Any woman with a history of miscarriage, especially during the first three months.
2. Any woman with a concurrent medical condition or who smokes.
3. Any woman pregnant for the first time.
4. Any woman with a history of complicated pregnancy requiring hospital admission (except for delivery).

If you are determined to trek whilst pregnant there are a few things that are mandatory:

1. Make sure you have had at least one scan and it has been confirmed the pregnancy is in the womb (beware a second pregnancy in one of the tubes), that the placenta is not "in the way" i.e. a placenta praevia.

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2. Make sure that you are not anemic or have high blood pressure and be sure that you are not developing diabetes. Have your urine checked for the presence of protein and sugar.
3. Check you are immune to Rubella (German Measles). A rare disease in the West but not uncommon in Nepal as the MMR vaccine is not commonly taken up by the Nepalese. Rubella infection is very damaging to an unborn child.
4. Make sure your ascent is slow and that you acclimatize well. Build in plenty of rest days, keep well hydrated and be prompt in your decision to descend if you are feeling unwell (see the articles on altitude sickness).
5. Get the best medical insurance you can and make sure it covers you for evacuation off the trail and out of the country.

If you have any specific questions regarding pregnancy and trekking, please contact the clinic