



Advising women with a healthy, uncomplicated, singleton pregnancy on: **shift work and the risk of miscarriage and preterm delivery**

This advice sheet is based on the findings from a systematic literature review and associated evidence based guideline on the risk of working shifts on five specific pregnancy outcomes: miscarriage, preterm delivery, small for gestational age, low birthweight, pre-eclampsia / gestational hypertension.

This advice does not cover any other potential adverse outcomes of pregnancy and these would need to be considered separately.

Background risk and definitions

- > On average, 6.7% of pregnant women (1 in 15) have a preterm delivery (birth of a baby before the 37th week of pregnancy), whether or not they work shifts.
- > Around 12% (1 in 8) of all recognised pregnancies in the UK end in miscarriage (loss of a recognised pregnancy before the 24th week of gestation)
- > Shift work may be night shift working, evening shift work or rotating shift work.
 - + Fixed night shift work – work always at night
 - + three-shift schedule – a rotational shift pattern involving time worked in blocks, sometimes during the day, sometimes the evening and sometimes at night.

Added risks from shift work

- > It is uncertain whether or not shift work in pregnancy puts women at increased risk of either preterm delivery or miscarriage. It is possible that shift work has no effect on either risk, but the balance of evidence suggests a very small increase in risk for preterm delivery and an increased risk of miscarriage.

- > If risks are increased, then there is very good evidence that any increase in preterm delivery is likely to be very small; the evidence supporting the increase in risk of miscarriage is comparatively weak and limited.
- > A best estimate of risk is that there could be:
 - + 0.3 extra cases of preterm delivery for every 100 deliveries, among women working shifts (including night shift working),
 - + 1.4 extra cases of miscarriage per 100 pregnancies amongst women working a three shift system
 - + 6.1 extra cases of miscarriage per 100 pregnancies amongst women working a fixed night shift system.

It may be easier to visualise these as in the pictures below rather than in numbers.

- > Available evidence does not indicate an increase in risk in relation to small for gestational age, and there is not enough evidence to draw firm conclusions about the risk of pre-eclampsia and gestational hypertension, although such evidence as exists suggests that risks are probably no more than small.

Other considerations

It should also be recognised that there may be disadvantages to changing a pregnant workers' shift pattern, or refraining from work, and these are not captured in the diagram. Some women make a lifestyle choice to work fixed nights and may find an imposed change to their shift pattern disruptive and stressful in itself. >>>

What this means

- > Because the risk of preterm delivery is likely to be very small, if present at all, and the evidence of an increased risk of miscarriage is comparatively weak and limited, we do not recommend a mandatory change to shift patterns.
- > If a pregnant woman experiences psychological distress about the risk of either preterm delivery or miscarriage that is not allayed by the explanation of risks above, she should

be advised to discuss this with her employer and consider altering her shift patterns.

- > In women encountering difficulties at work as the pregnancy progresses, working arrangements and associated symptoms should be reviewed with the employer or line manager and those involved in the employee's obstetric care. ■



Background risk ●
Extra cases ●

Shift working (including night shift working) and risk of preterm delivery

- > 6.7 women in 100 have a preterm delivery [dark purple].
- > Among pregnant women working shifts, an extra 0.3 women [light purple] may suffer preterm delivery because of shiftwork.



Background risk ●
Extra cases ●

Shift working and risk of miscarriage Three shift schedule

- > Approximately 12 women in 100 with a recognised pregnancy have a miscarriage [dark purple].
- > Among pregnant women working a three shift schedule an extra 1.4 women may suffer a miscarriage because of this shift pattern [light purple].



Background risk ●
Extra cases ●

Shift working and risk of miscarriage Fixed night shift work

- > Approximately 12 women in 100 with a recognised pregnancy have a miscarriage [dark purple].
- > Among pregnant women working fixed night shifts, an extra 6.1 women may suffer a miscarriage because of this shift pattern [light purple].

