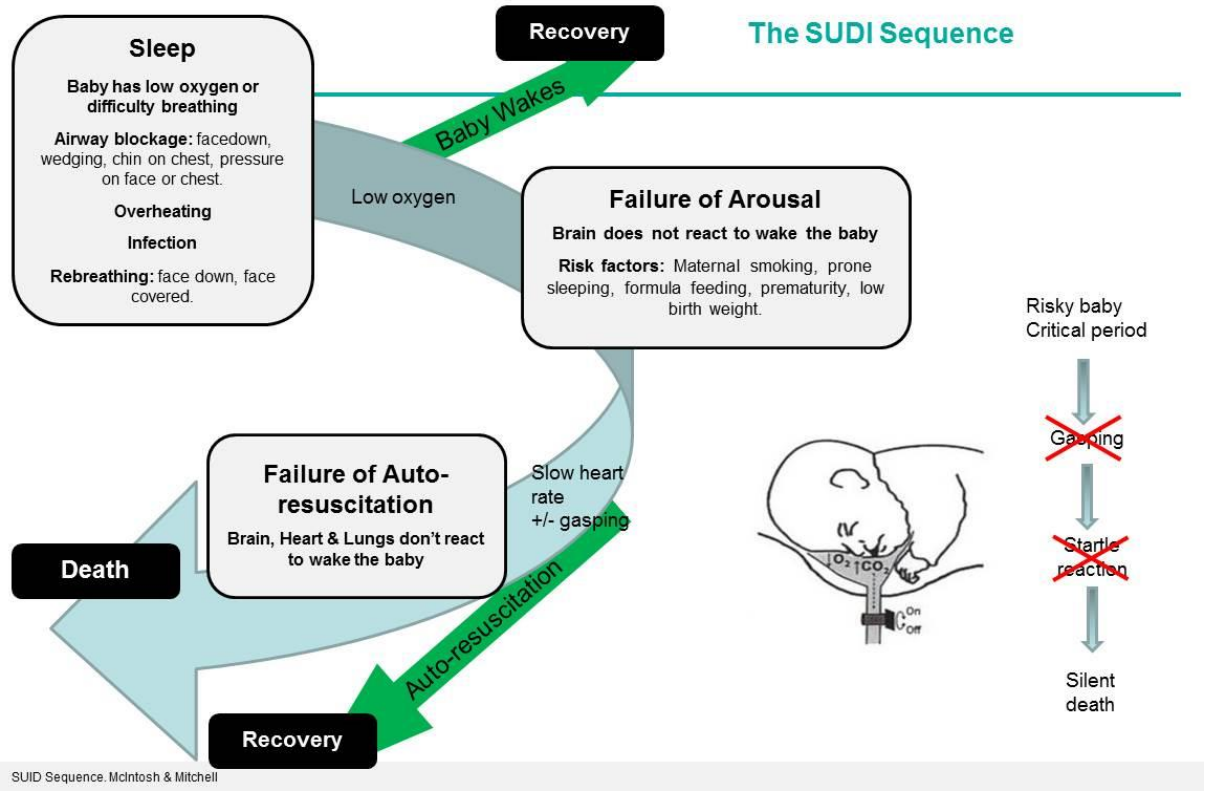
Smoking during Pregnancy is a Major Risk Factor for Sudden Unexpected Infant Death:



To understand abnormal brain development in a low oxygen environment, first let's talk about what is normal:

1. You may have all seen this in action, when your significant other is snoring and suddenly there is silence, you look over and you can see they are have stopped breathing (perhaps because their tongue has blocked their airway) – Whilst your partner is not breathing, the balance of oxygen and carbon dioxide in the blood is upset as oxygen levels lower. Their blood pressure drops as the heartbeat slows down, to around 40-50 beats per minute, breathing is affected, gasping occurs, the oxygen & carbon dioxide imbalance then stimulates the brain to bring that person to a state of arousal (wake up) so that the muscles of the tongue and throat can increase the size of the airway. You then see your significant other take a large breath and the snoring continues as before. The event of low oxygen has passed without danger because of the brainstem's auto-resuscitation mechanism is in working order.
2. Abnormal brainstem development is thought to occur in babies that are exposed to smoking during pregnancy and during infancy, as they get used to low levels of oxygen. When a mother smokes her red blood cells that normally carry the oxygen around are impacted, that is, her oxygen levels go down as the carbon monoxide from the cigarettes blocks the oxygen from attaching to the red blood cells. Baby can sometimes get up to double the carbon monoxide of what mum gets, so babies get used to low oxygen events. When that baby is born and ends up in a low oxygen event such as being accidentally overlaid or rolls into the side of a couch, their oxygen levels go down and their carbon dioxide levels go up, however the emergency brainstem response may not be triggered as baby has been conditioned to think this that a lack of oxygen is normal, so won't move or cry, and will stay in that dangerous low oxygen situation until it is sadly, too late.

The level of risk is higher for babies whose mother smoked during pregnancy. Recent research reported that these babies have a six-fold increase in the risk of Sudden Unexpected Death in Infancy.

As a collective, we can safeguard future generations from this very preventable tragedy. Thank you for contributing to infant and child health and wellbeing by supporting pregnant women and families to give up smoking.

Reference

McIntosh, C.G.; Mitchell, E.A. The evolving understanding of sudden unexpected infant death. Pediatric Annals, 2017, Vol.46(8), pp.e278-e283.

Mitchell, E.A; et al. The combination of bed sharing and maternal smoking leads to a greatly increased risk of sudden unexpected death in infancy: the New Zealand SUDI Nationwide Case-Control Study. NZ Medical Journal, 2017, Vol 130, No 1456.