Your Pain Relief for Labour and the Environment

The pain relief options available to you in labour will vary depend on where you deliver your baby and your obstetric and medical history. In addition to the benefits and risks of different pain relief options, you may wish to compare their environmental impact when choosing your pain relief for labour.

Environmental impact of pain relief for labour

Equipment and medications used for labour and delivery, and the energy need to make and transport them, all come with a carbon footprint. A lot of medical equipment is 'single use' and must be discarded after each patient. To prevent cross-contamination, many medical items have to be incinerated, adding to the carbon footprint of their use.

Gas and air (Entonox) contains nitrous oxide, which is a greenhouse gas. This means that when it is released into the atmosphere it causes a warming effect (global warming). As nitrous oxide remains in the atmosphere for over 100 years, it has a significant greenhouse gas impact. The environmental impact depends on the how much nitrous oxide enters the atmosphere.

What is a carbon footprint?

A carbon footprint relates to the total amount of greenhouse gas released by our actions. We use the term carbon dioxide equivalence (CO_2e) to compare the effects of different greenhouse gases. It is the amount of carbon dioxide that would create the same amount of warming.

Why do we need to limit global warming?

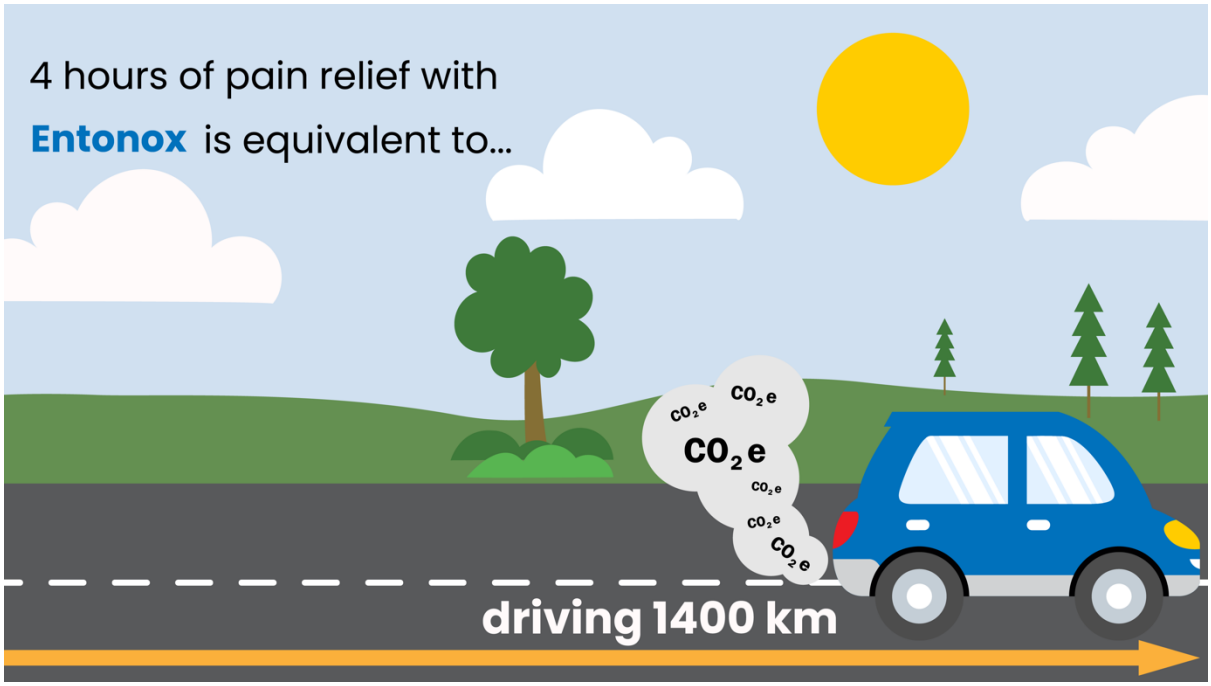
Rising global temperatures result in extremes of weather like flooding, heat waves and droughts. As well as causing injuries and death directly, these weather extremes can affect our ability to grow crops for food and have enough safe water to drink.

Comparing the global warming effect of labour pain relief options

To help illustrate the warming effects of some different options for pain relief, we have worked out the CO_2e of using them over a 4-hour period during labour.

Entonox (Gas and air)

The warming effect of using Entonox depends on how much of it is breathed out. So, using it all the time will have a greater warming effect than only using it intermittently. If you are having regular contractions and only using it during a contraction then 4 hours of pain relief with Entonox produces 237kgCO_2e, equivalent to driving 1400km (870 miles) in an average car.



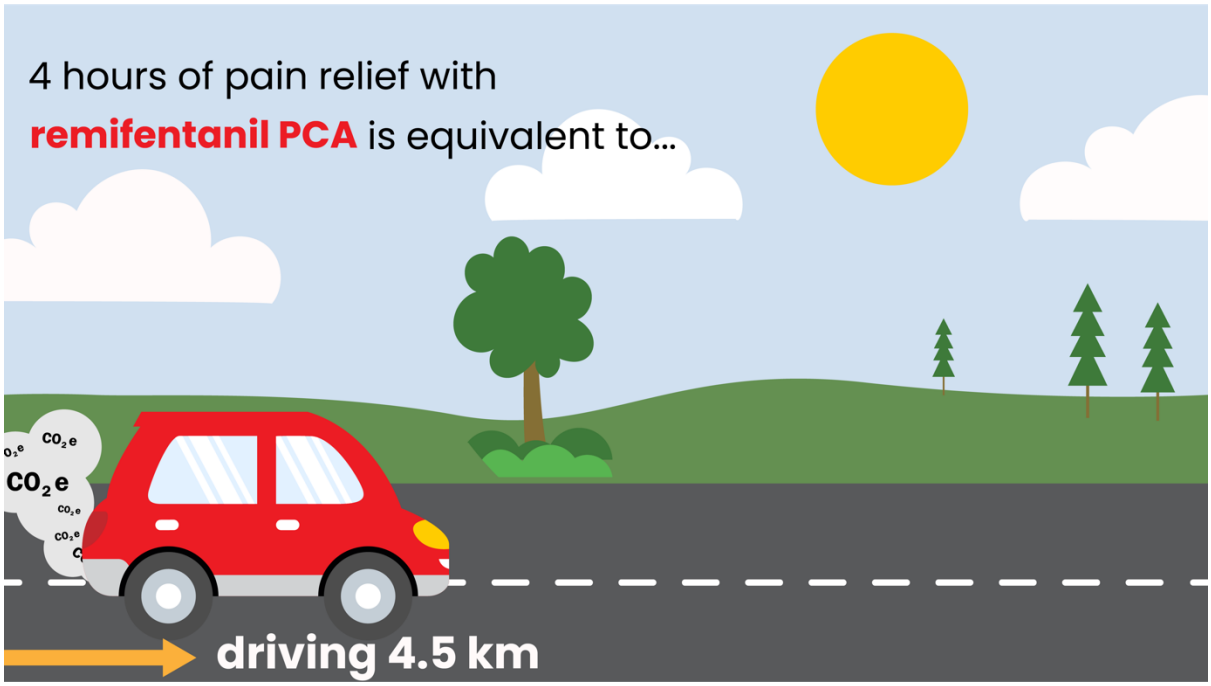
Epidurals

The carbon footprint of epidurals is mainly due to the single use equipment needed to put it in. So using an epidural for longer doesn't add much to the overall warming effect, another reason to request it early if you would like one. 4 hours of pain relief with an epidural produces 1.2kgCO2e, equivalent to driving 7km (4 miles) in an average car.

Remifentanil PCA

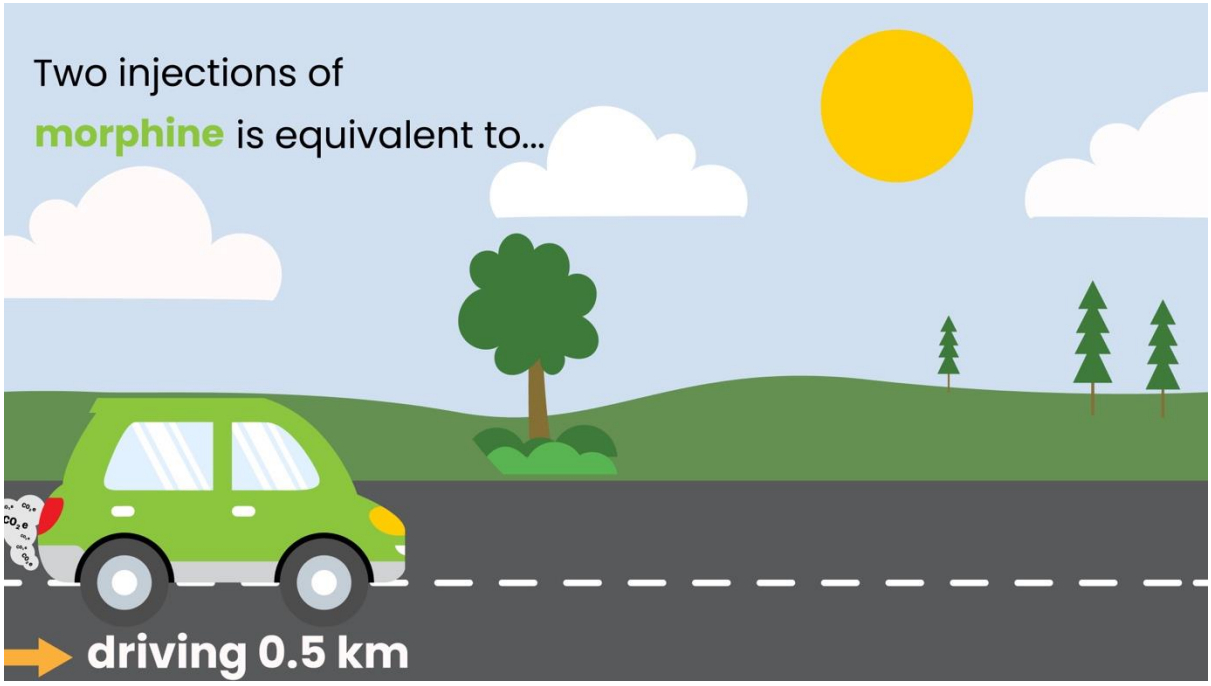
Remifentanil PCA is a type of pain relief where a short-acting pain-relieving drug is given via a drip that's connected to an electronic pump you control with a button. The drug itself has a very low carbon footprint compared to the plastic syringe, drip tubing and oxygen tubing

that is needed to give it. 4 hours of pain relief with a remifentanil PCA would produce 0.75kgCO2e, equivalent to driving 4km (2.5 miles) in a car.



Opioid injections

Opioids are a group of pain-relieving medications (morphine, diamorphine, pethidine, meptazinol) that may help relieve labour pain. They can be given via an injection into your muscle. The drugs themselves have a very low environmental impact compared to the syringe needed to give them. As an example, 2 injections of morphine would emit 0.08kgCO2e, equivalent to driving 0.5km (0.3 mile) in an average car.



How can you reduce the environmental impact of the pain relief you choose for labour?

If you would like an epidural or remifentanil PCA, ask for them early in labour so that you can get the most benefit from them. If using Entonox, aim to use it only when you are having a pain and stop breathing it in when you are comfortable. If you find that Entonox isn't helping your pain, stop using it and ask about other options for pain relief.

Is there a way that Entonox can be more environmentally friendly?

There are machines that can break the greenhouse gas in Entonox down into harmless gases (catalytic destruction). To do this, the Entonox you breathe out has to be captured and then passed through the machine. These are not routinely available in birthing units but will hopefully become more widespread over time.

If using Entonox with a capture device, it helps to form a good seal between your mouth and the mouthpiece or mask when you breathe out. This reduces the amount that leaks out into the environment, minimising the greenhouse gas impact.