



Migraine and Breastfeeding – can you treat symptoms and still breastfeed?

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Grandmother



What I want to cover today

- Relationship between breastfeeding and migraines
- How drugs get into breastmilk
- Treatment of migraine during breastfeeding
- Prevention of migraine during breastfeeding
- Why healthcare professionals may say breastfeeding and migraine treatments can't co-exist

Breastfeeding and Migraine

“I battled with breastfeeding my two sons over a period of 5 years, through chronic migraine and spent many a tearful hour on the phone checking my medicines would be ok to take and weighing up all the facts etc.”

“It was hard work and stressful because none of the medicines are tested in this county and you feel that you are constantly swinging between guilt and chronic pain.”





Triggers?

“I suffer from migraines and am very limited to what I can take (basically paracetamol and ibuprofen).

Ironically with my daughter breastfeeding massively reduced my migraines but with my son they are pretty frequent unfortunately.”

- Broken sleep cycles/ lack of sleep does not help so it is a bit of a nasty cycle with migraines and breastfeeding
- Eating regularly when you have babies isnt always easy
- Too much caffeine may be needed to “survive “ the fatigue

Incidence

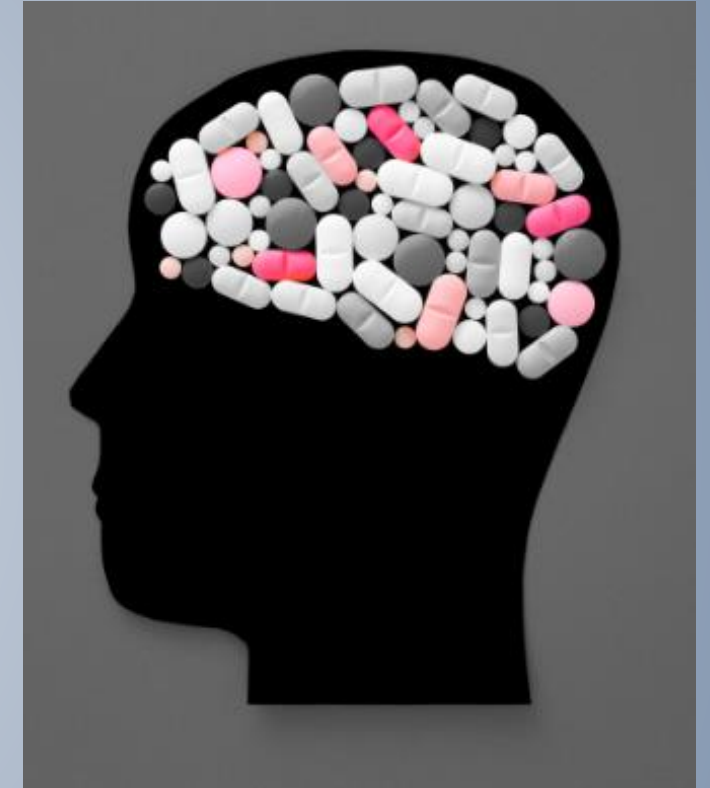
- Migraines affect 1 in 7 people.
- More women than men are affected (may be as high as 1 in 3).
- Migraines may reduce in frequency in the second and third trimesters of pregnancy
- May reoccur after birth or when periods return, particularly for those whose symptoms are predominantly premenstrual.





Medicines over use headache

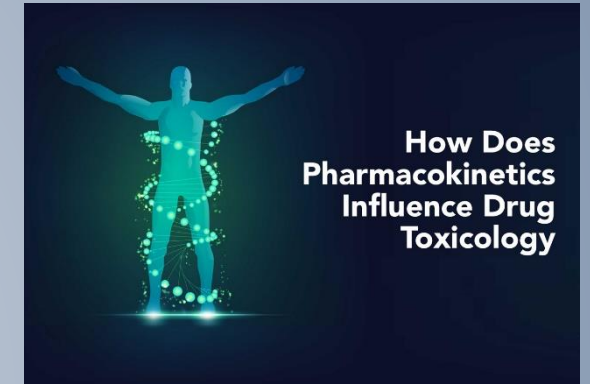
- If taking paracetamol and NSAIDs (simple analgesics) on 15 or more days per month
- Or taking triptans, opioids as well as combination painkillers on 10 or more days per month.
- In medication-overuse headache, a dull constant headache is present on most days or a part of every day
- Means stopping all acute medication
- Use drugs to prevent migraines and look at lifestyle triggers for migraines





How do drugs get into milk?

- Most professionals have not had any training on breastfeeding or on how drugs pass into milk
- They are scared of being sued and of problems like those caused by thalidomide
- The breast is actually a much better filter of drugs and side effects are generally short lived e.g. drowsiness or diarrhoea
- The leaflets in all packs usually say “ don’t take if you are breastfeeding”
- For migraines the only drug you can’t take is ergotamine (Migril) which I believe is no longer made.

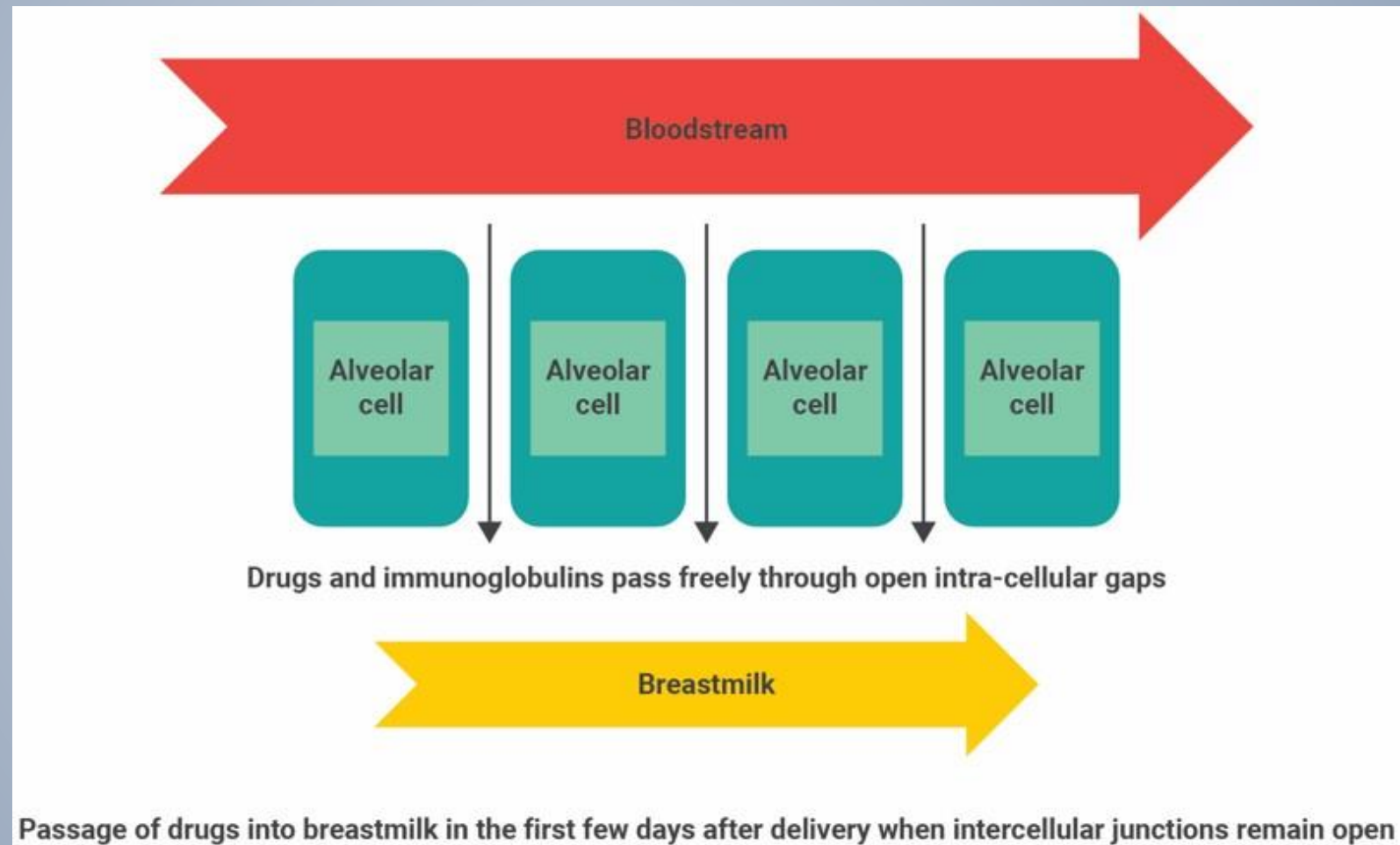




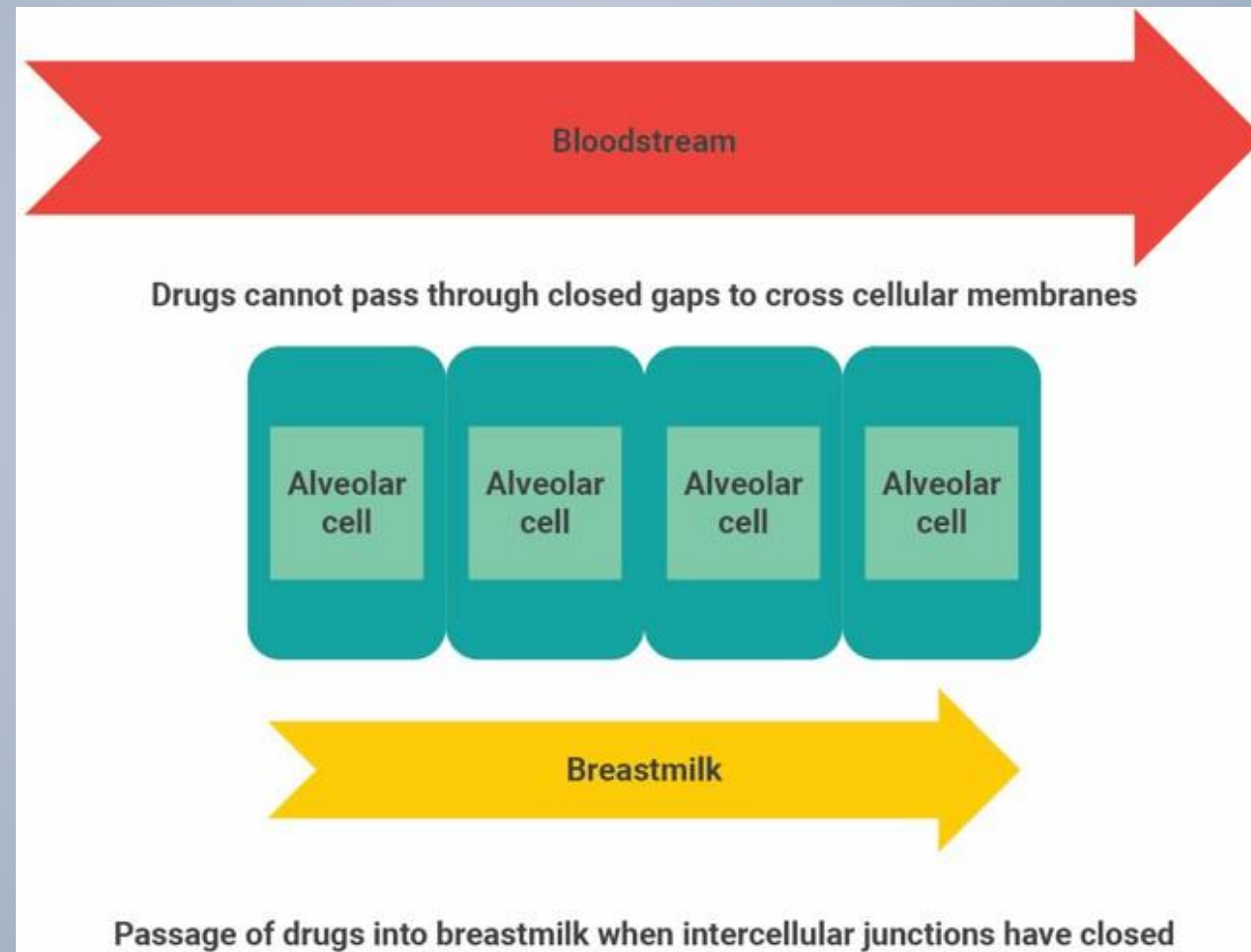
The science bit!

- Most drugs have to pass through the cell membrane to get into milk (except in the first 2-3 days after birth)
- The more that a drug is bound to the proteins in your blood the less is free to pass through the membrane into milk
- The half life controls how long the drug is in your system
- Drugs aren't stuck in milk and pass back out as the level in your body falls
- Some drugs are so big they cant be absorbed from milk e.g. anything given to you by an injection because no oral form available.

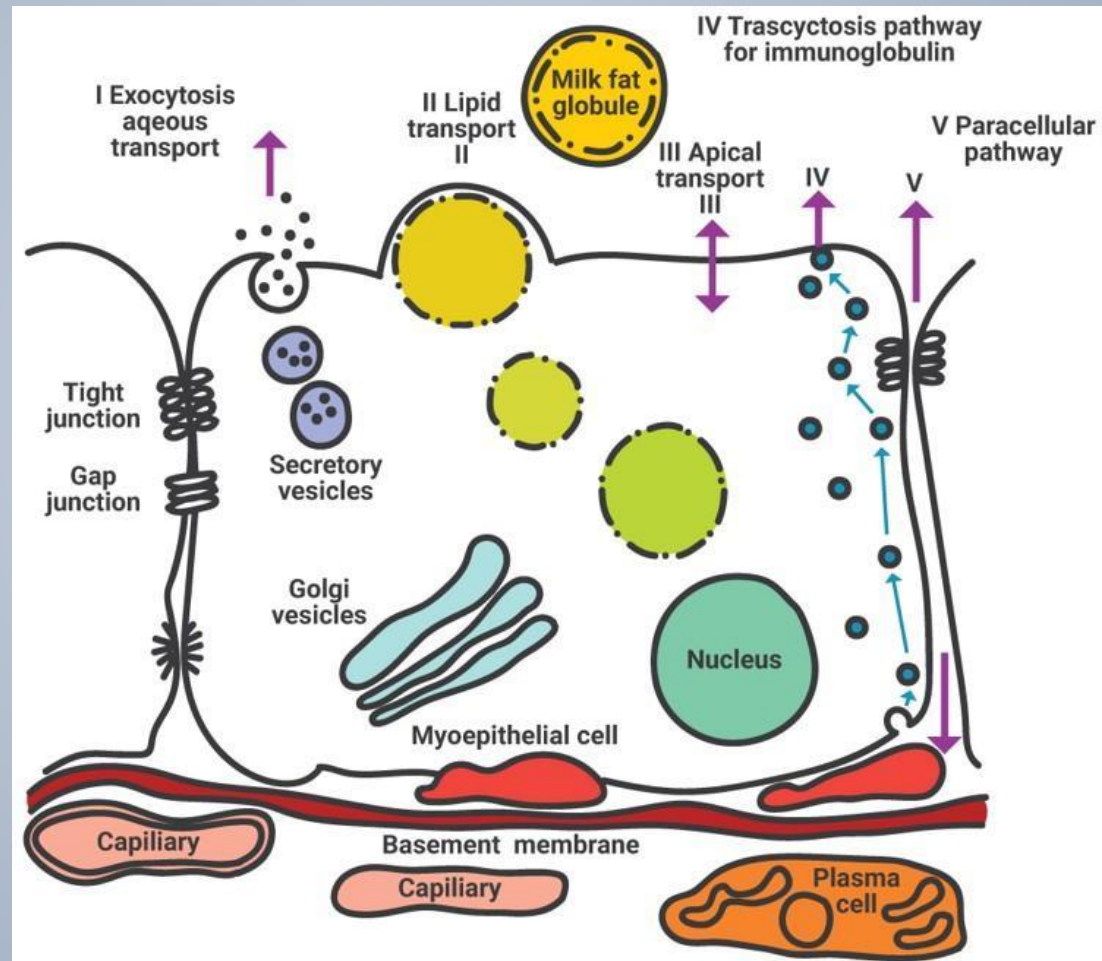
The first few days



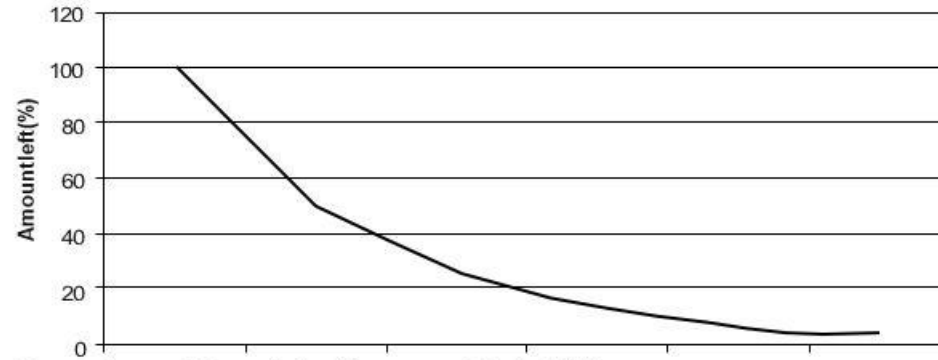
Once the milk comes in



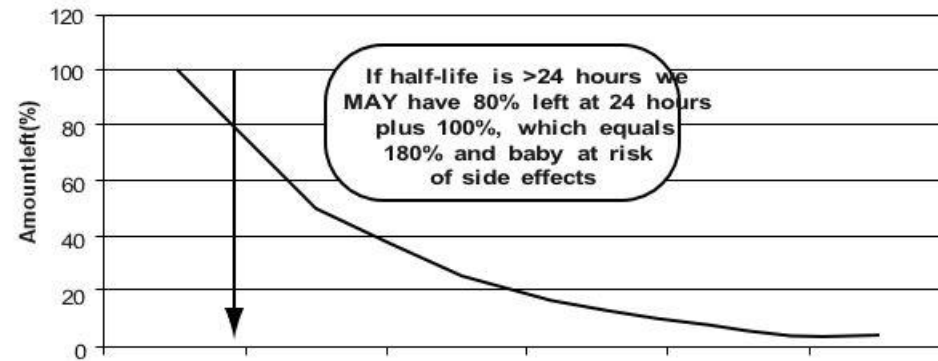
The cell membrane



The half-life of the drug

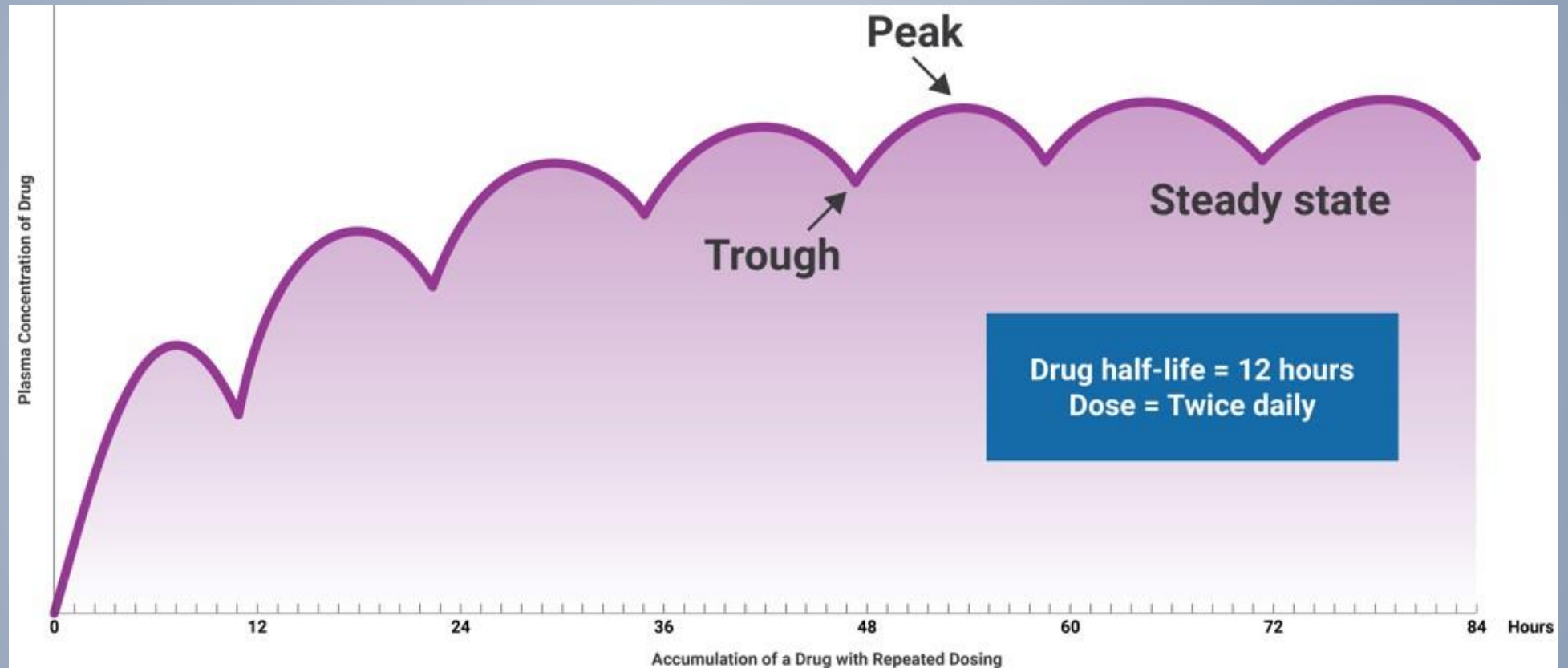


Percentage of drug left with respect to half life



Percentage of drug left with respect to drug with half-life of more than 24 hours.

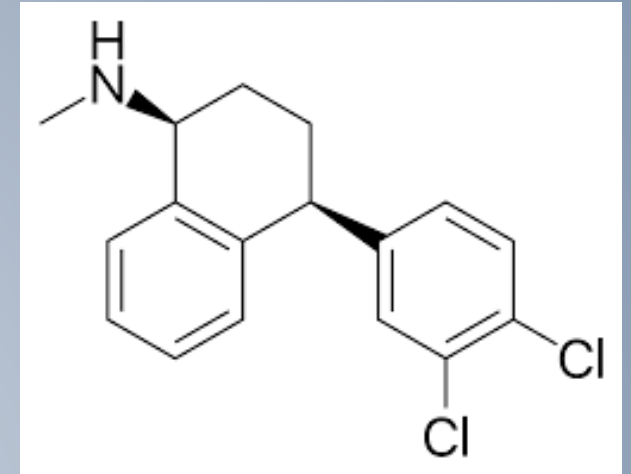
Timing of medication taken regularly



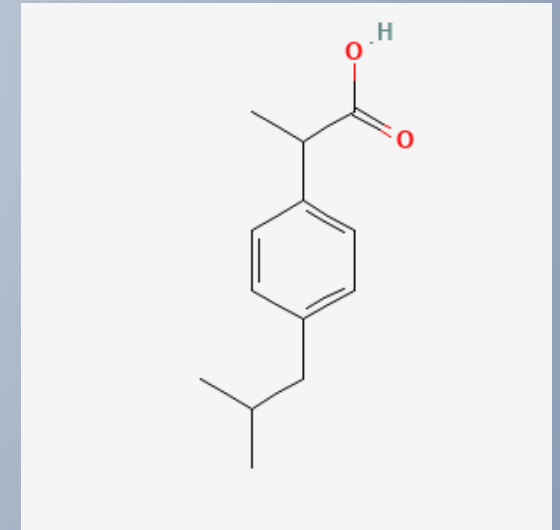
Maternal factors that affect the rate of drug transfer (Plasma levels, molecular weight, oral bioavailability, protein binding)

Plasma Protein Binding

- Drugs which are highly bound to proteins in the maternal plasma are unable to transfer into breastmilk in high levels
- Ideal drug for breastfeeding mother is highly protein bound >90%
- Data is only available in specialized texts not the book or computer system usually in a surgery
-



Sertraline 98%



Ibuprofen >99%



Relative infant dose

- Ideally we want a ratio <10%.
- RID is just a ratio comparing the amount of drug in the mothers blood with the amount measure in the baby
- Not in standard UK books other than mine

Relative Infant Dose

$$\text{RID} = \frac{\text{Dose.infant} \left(\frac{\text{mg}}{\text{kg}} \right)}{\text{Dose.mother} \left(\frac{\text{mg}}{\text{kg}} \right)}$$

Dose.infant = dose in infant/day

Dose.mother = dose in mother/day

Treatments for migraines

- Paracetamol and/or ibuprofen
- Aspirin
- Triptans
- Opioids
- Anti emetics
- Over the counter remedies



Paracetamol and Ibuprofen

- Full doses of both compatible with breastfeeding (2 x 500mg paracetamol 4 times a day plus ibuprofen 400mg three times a day). Soluble forms often work faster
- Naproxen and diclofenac alternatives to ibuprofen
- Taking an anti-emetic with them may facilitate absorption e.g. an over-the-counter travel sickness tablet, prochlorperazine (Buccastem™), domperidone, metoclopramide or cyclizine



Aspirin

- A single dose of 900mg aspirin can be effective for some when nothing else works
- Breastfeeding should be avoided for 2-3 hours if possible
- No link between the amount passing through milk and Reye's syndrome
- If possible, avoid aspirin



Opioids

- Codeine
- Dihydrocodeine
- Oral morphine
- Often found in the combination over the counter drugs



Triptans

- Sumatriptan – leaflet says don't breastfeed for 12 hours but poorly bio-available hence nasal sprays and injections. The amount of sumatriptan that reaches the infants circulation is expected to be exceedingly low (less than 1%).”
- No data on naratriptan, zolmitriptan, rizatriptan, almotriptan but we might assume class effect although cant prove it. Use sumatriptan if possible.



Half life 2-3 hours,
plasma protein binding < 21%,
oral bioavailability 14%
RID 3.5%



Over the counter remedies

- Migraleve TM
- Syndol TM
- Solpadeine TM
- Nurofen migraine TM
- Nurofen tension headache TM
- Sudafed congestion & headache relief max strength TM
- Boots Cooling Headache and Migraine Pads
- Kool 'n' Soothe Migraine Sheets
- 4head Quickstrip

Rimegevant (Vydura®)



- Indicated for adults who have at least 4 migraine attacks per month but less than 15.
- Taken as a wafer which dissolves under the tongue. It works by stopping the release of a protein around the brain that is responsible for the severe pain associated with migraine attacks.
- Recommended as an option for preventing episodic migraine in adults where at least 3 previous preventive treatments have failed (NICE May 2023)
- 12 breastfeeding mothers 18-40 years, plasma and breastmilk samples were collected over a 36 hour period.
- Highly protein bound 96%, oral bioavailability 64%, milk plasma ratio 0.2
- On a weight-adjusted basis, infants received an estimated dose that was approximately 0.51% of the maternal dose.

› Baker TE, Croop R, Kamen L, Price P, Stock DA, Ivans A, Bhardwaj R, Anderson MS, Madonia J, Stringfellow J, Bertz R, Coric V, Hale TW. Human Milk and Plasma Pharmacokinetics of Single-Dose Rimegepant 75 mg in Healthy Lactating Women. Breastfeed Med. 2022 Mar;17(3):277-282



Fremanezumab (Agovy™)

- Humanised monoclonal antibody that binds to the calcitonin gene-related peptide (CGRP) ligand, inhibiting the function of CGRP at its receptor, and thereby preventing migraine attacks
- Recommended for patients who have 4 or more migraine days a month and for whom at least 3 preventive drug treatments have failed and the drug is supplied by the company under a commercial agreement agreed with NICE
- It is unclear if fremanezumab works better than botulinum toxin type A
- It has a molecular weight of 148,000 and assumed low oral bioavailability





Prevention of migraines (prophylaxis)

- Beta blockers e.g. propranolol
- Tri cyclic anti-depressants e.g. Amitriptyline or Imipramine
- Topiramate
- Pizotifen
- Botox
- Riboflavin
- Magnesium
- Co-enzyme Q10



Propranolol

- In adults it may be used to lower blood pressure, to relieve symptoms of hyperthyroidism, to prevent migraines or to prevent panic attacks.
- Estimated (from studies) that the maximal dose of cumulative propranolol to which a breastfed infant would be exposed at a maternal dose of 40 mg four times daily would be 21 μg per 24 hours.
- No reports of adverse effects



Half life 3-6 hours,
plasma protein binding 90%,
extensive first pass metabolism,
used in children
RID <0.5%

Amitriptyline

- Used in the past for depression but also to treat chronic pain
- Study followed-up a group of 20 breastfed infants whose mothers were taking for up to 3 years and found no adverse effects on growth and development even at a dose of 150 mg daily
- Amount in breastmilk too small to be harmful but be careful with co sleeping as can cause maternal drowsiness



Half life 31-46 hours,
plasma protein binding 94.8%,
extensive first pass metabolism,
RID <2.8%

Topiramate

- Also used to control epilepsy but at higher doses
- At 50mg twice daily. at least a 50% reduction in migraine frequency was seen in a study (2006) with 6% becoming migraine free.
- Infants exposed to topiramate through breastmilk, should be monitored for drowsiness, diarrhoea and adequate weight gain



Half life 21 hours,
plasma protein binding 15-41%,
RID 25-56%

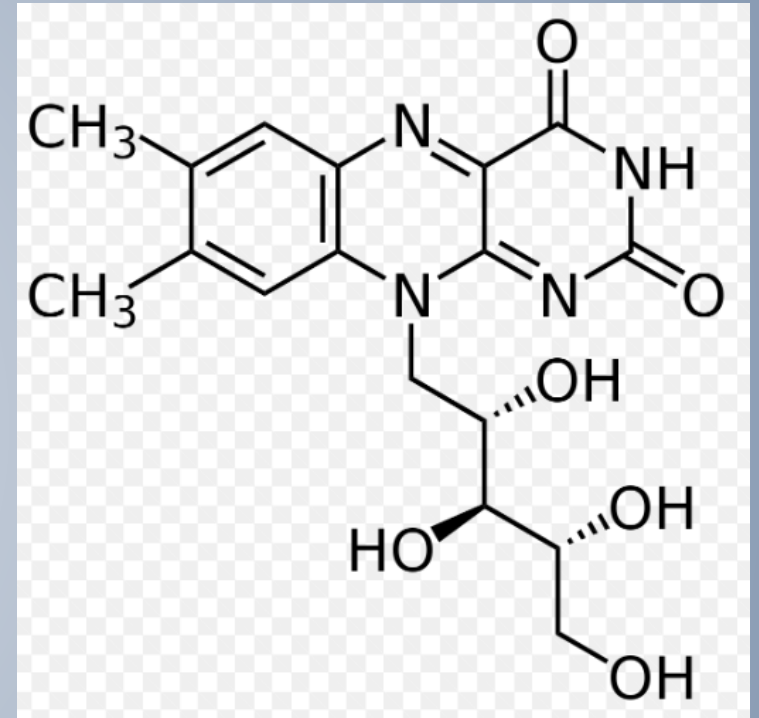
Botox

- There are no studies into the passage of Botox but in a baby exposed to botulinum toxin via his mother's milk, one infant was safely breastfed and no botulinum toxin was detectable in the mother's milk or infant.
- The doses used medically are far lower than those that cause botulism, amounts ingested by the infant, if any, are expected to be small and not cause any adverse effects in breastfed infants
- Large molecule not orally bioavailable



Riboflavin

- High-dose riboflavin (400 mg per day) has been proposed for migraine prophylaxis, although the evidence regarding efficacy is controversial.
- No studies have been published examining this dosage in breastfeeding women. However, no toxic dose of this vitamin has been established in humans.
- Might produce yellow urine in baby but not reported by 1 mother





Supplements

- One placebo controlled trial of 80 patients suggested that 220 mg daily of **zinc** resulted in a significant reduction in headache severity in migraine sufferers. However, the duration of attacks and headache daily results were not altered following zinc supplementation.
- The evidence available suggests **magnesium** may be effective as a preventive treatment for migraine. Some people experience side effects including an upset stomach or diarrhoea.
- The available evidence suggests **co-enzyme Q10** may be an effective preventive, but more research needed.



A mother's story

I managed to secure Botox injections after other medications did not work. I had to argue my case with my neurology team and give them time for them to check it out with their own pharmacists too - who agreed with you. The consultant still wanted me to pump & dump for 24 hours after injection.! I also take rizatriptan (sumatriptan is not effective enough for me) At one point,

I was advised to take high dose aspirin when I run out of permitted rizatriptan doses.

I am now tandem feeding my 2yo and 5-month old and still on the injections.

I will not get to have my next treatment due to them being cancelled as a result of coronavirus. I am so scared about how I will care for myself and my children when my migraines return to their unmediated levels of almost every day.

I do not know when I will be able to function properly again.

So, when you see a healthcare professional?

- You may be told that you can't take a drug if you are breastfeeding
- You may be told you have to stop breastfeeding to take a drug
- 2 versions of the same advice
- If you and your nursing aren't ready to stop we can look at the available information in specialist sources
- Breastfeeding has positive health benefits for you and your baby, not just immediately but throughout life
- Breastmilk doesn't lose its magic after 6 months, a year or 6 years



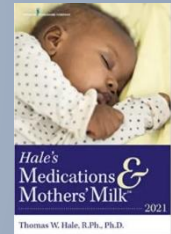
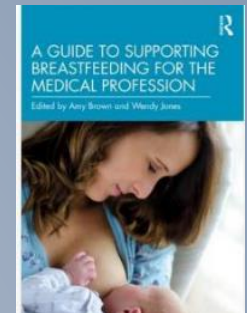
Remember

- Most people don't know about the specialist sources, they look in the BNF
- Manufacturers don't take responsibility for the use of drugs during breastfeeding
- The onus is with the prescriber who may never have been taught any of this
- The professional you see may have formula fed their own baby
- There are usually drugs which you can take and breastfeed on
- You should be involved in the decision on what you take and whether you breastfeed
- Your decision to breastfeed should be respected

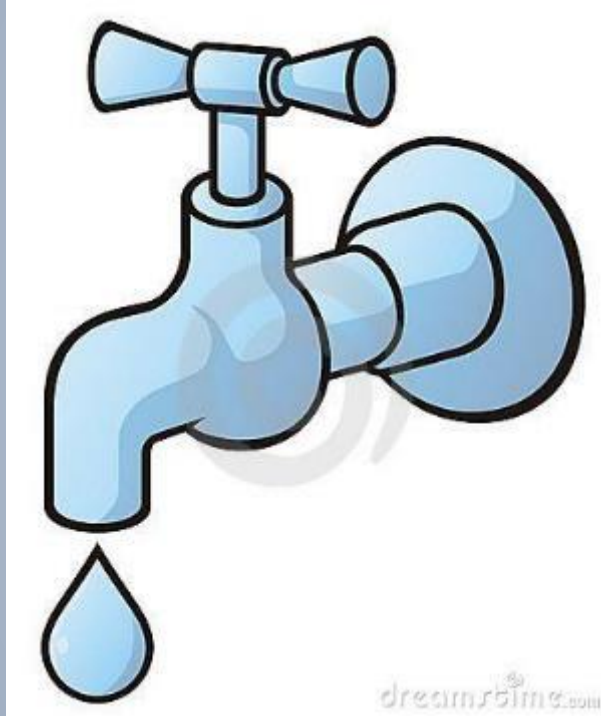


Resources

- **LactMed** – free to access
www.ncbi.nlm.nih.gov/books/NBK501922/
- **UKDILAS** – Part of UK Medicines Information and free to access
<https://www.sps.nhs.uk/articles/advising-on-medicines-during-breastfeeding/>
- **Hale** – Medications and Mothers Milk –subscription or book
www.halesmeds.com/
- **BfN** Factsheets free to access
www.breastfeedingnetwork.org.uk/drugs-factsheets/
- **Breastfeeding and Medication** website free to access factsheets
<https://breastfeeding-and-medication.co.uk/fact-sheet/list-of-factsheets-available-on-breastfeeding-and-medication>
- **E-lactancia** free to access <https://www.e-lactancia.org/>



First do no harm?



Breastmilk does not turn
off like a tap

Risks of suddenly interrupting
breastfeeding

- Mastitis
- Baby refuses to feed from formula
- Baby intolerant of formula
- Milk supply drops
- Difficult to restimulate supply
- **In trying to do no harm we can cause harm**

**We can use evidence-based
sources to check the safety of
drugs to treat migraines in
breastfeeding mothers**

**There are options to prevent and
relieve symptoms**

Contact details

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www.facebook.com/breastfeedingandmedication

