

Causes of 'low supply': milk production that doesn't meet infant's caloric needs

MOST COMMON CAUSES	Comments
 Poor milk transfer due to positional instability and breast tissue drag resulting in inadequate milk removal Nipple pain Fussing at breast 	It's often said that baby is pulling off breast and fussing due to low supply. But this typically occurs due to positional instability. Hungry babies typically marathon feed, and feed excessively frequently, but will stay on breast suckling indefinitely in context of poor milk transfer, as long as they are positionally stable.
Not offering breast frequently enough	12 times/24 hour period each breast; use breast as tool to dial baby down
Offering one breast a feed to 'drain breast'	Undermines supply for many women
Feed spacing	This often occurs with a routinised approach to sleep, or sleep training
Breast inflammation – engorgement/mastitis	Known to decrease supply if severe
Supplemental feeds - formula	



OTHER CAUSES to be excluded	Comments	Maternal investigation
Prematurity		
Retained placental products	Excessive vaginal bleeding or signs of infection with discoloured or malodorous vaginal discharge	Pelvic ultrasound
Significant blood loss during or after birth		
Postpartum haemorrhage with Sheehan's syndrome	Intra- or postpartum haemorrhage may produce a transient hypotensive insult and temporary pituitary ischaemia which inhibits prolactin, and affecting secretory activation ¹	Prolactin
Birth complications: Caesarean section (elective or emergency) ² More than an hour in pushing stage of labour Longer duration of total labour and stage II ³ Hypertension PET ⁴	Does birth complication disrupt hormones? I expect it is more due to mechanical effects on breast milk removal, resulting in low supply Effect of hypertensive disorders on breastfeeding outcomes likely to be multifactorial incl separation from infant ⁴	
	Caesarean section predicts poorer long-term breastfeeding outcomes because of negative impact on early breastfeeding behaviours. 1. Delayed skin-to-skin contact for switching on suckling reflexes 2. Drug residue after epidural or anaesthetic impairs infant suckling reflexes (less time suckling, though good at arousing, rooting, fixing) 3. More likely to use formula. Therefore, intensive breastfeeding support is required to attempt to mitigate against the negative effect of CS ⁵	
Ingestion of placenta capsules		
Hypothyroidism		Thyroid function tests
Postpartum thyroiditis		Thyroid function tests
Breast surgery	Inadequate active glandular tissue if reduction surgery; beware of fit and hold challenges if augmentation behind	



	pectoral muscle; almost complete loss of functional	
	glandular tissue if augmentation in front of pectoral muscle	
Polycystic Ovary Syndrome ⁶	 No definitive links between PCOS and milk supply problems. Underresearched. Diagnosed as cause of low supply in retrospect once all strategies for optimising supply have been put in place Hypothesised to interfere with hormones involved with breast development and milk synthesis 	Although some women with PCOS have no problems breastfeeding, there appears to be a group of PCOS with insufficient glandular tissue
Liver pathologies		Liver function tests
Diabetes Type 1, Type 2 ⁷	Main determinant of breastfeeding on discharge from hospital is that the first feed was at the breast	Glucose
Gestational diabetes	Colostrum situation ⁷	Glucose
Obesity		BMI
Greater than 16 kg weight gain in pregnancy		
Iron deficiency or anaemia	Iron infusions used liberally in Australia with improved supply?	Haemoglobin, ferritin
Insufficient glandular tissue	Anatomic markers not necessarily useful: tubular breasts, wide intra-mammary space Retrospective diagnosis after all strategies to optimise supply put in place	
Alcohol in pregnancy		
Oestrogen, pseudoephedrine		
Cigarette smoking ¹	Smoking over 15 cigs/day decreases supply. Donath and Amir Acta Paediatr 2004 ¹	
Postpartum depression	Behavioural impacts on milk removal and feed frequency; breastfeeding problems can cause postpartum depression which is then associated with increased weaning	
Poor antenatal sleep efficiency and	Behavioural impacts not hormonal, and can be mitigated	
tragmented night sleep	with education Possums sleep program	



True inverted nipples ³	Backpressure, poor ductal development; usually fibrosed and underdeveloped nipples and not possible to breastfeed	
Pregnancy		Beta-HCG, follow over time if high
Medications		
Theca lutein cyst		Testosterone
Prolactin	This will be normal even if only low volumes of milk; only	Check 10 minutes after pumping
	abnormal if no milk produced at all	Prolactin levels usually about 100 ng/ml during
		early lactation, 50 at six months, but range from
		20-210 or so – highly variable

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