**EtD 41. Should exposure to the smell or taste (or both) of breastmilk or formula administered with tube feeds vs. no exposure be used for preterm infants who are fed via an orogastric or nasogastric tube?**

| | |
|---|---|
| **POPULATION:** | Preterm infants who are fed via an orogastric or nasogastric tube |
| **INTERVENTION:** | Exposure to the smell or taste (or both) of breastmilk or formula administered with tube feeds |
| **COMPARISON:** | No exposure |
| **MAIN OUTCOMES:** | **Critical outcomes**<br>Mortality<br>Neurodevelopmental impairment<br>Time to full enteral feeds<br><br>**Important but not critical**<br>Adverse effects<br>Necrotising enterocolitis<br>Sepsis: proven or suspected<br>Faltering growth/body composition<br>Fully breastfed or breastmilk feeding at hospital discharge<br>Duration of initial hospital stay<br>Time to full sucking feeds<br>Bronchopulmonary dysplasia<br>Retinopathy of prematurity<br>Anaemia of prematurity<br>Cost: cost of intervention, cost of neonatal care and life-long cost |
| **SETTING:** | Neonatal care |
| **PERSPECTIVE:** | Clinical guideline recommendation - patient perspective |
| **BACKGROUND:** | Preterm infants, often struggle with oral feeding due to immature coordination of sucking, swallowing, and breathing. As a result, they rely on orogastric or nasogastric tube feeding for nutrition in the early weeks after birth. However, feeding intolerance is common in preterm infants, leading to delays in reaching full enteral and sucking feeds, which can prolong hospitalisation and increase healthcare costs. Smell and taste are key sensory stimuli that trigger physiological responses related to digestion and absorption. In term infants, exposure to the smell and taste of milk before feeding stimulates salivation, digestive enzyme secretion and gastric motility, potentially improving feeding efficiency. However, during tube feeding, milk bypasses the nasal and oral cavities, reducing sensory stimulation. Providing preterm infants with exposure to the smell or taste (or both) of breastmilk or formula during tube feeds has been proposed as a simple, non-invasive intervention to enhance feeding readiness and accelerate the transition to full sucking feeds. If effective, this intervention could lead to improved clinical outcomes, including faster attainment of full enteral feeds, reduced time to discharge and potentially improve neurodevelopmental outcomes. Evaluating the evidence on this practice is essential to determine its benefits and any potential adverse effects. |

| CONFLICT OF INTERESTS: | The following systematic review (Delgado-Paramo *et al)* co-authors are on the Guideline Development Group: Lilia Delgado-Paramo, Luling Lin and Frank Bloomfield.<br>The following DIAMOND study authors are on the Guideline Development Group: Tanith Alexander and Frank Bloomfield |
|---|---|

Assessment

## Desirable Effects

How substantial are the desirable anticipated effects?

| JUDGEMENT | RESEARCH EVIDENCE | ADDITIONAL CONSIDERATIONS |
|---|---|---|
| ○ Trivial<br>○ Small<br>● Moderate<br>○ Large<br>○ Varies<br>○ Don't know | Evidence based on Cochrane systematic review [1] and a 2-year follow-up of the DIAMOND trial [2]:<br>**Mortality**: RCT: Little or no effect on mortality for exposure to the smell or taste (or both) of breastmilk or formula 0/260 and 1/272 [Critical].<br>**Neurodevelopmental impairment**: RCT: Decreased neurosensory impairment at 2 years for exposure to the smell or taste (or both) of breastmilk or formula (93 fewer per 1,000; 155 fewer to 31 fewer) [Critical].<br>**Time to full enteral feeds**: RCT: Little or no effect on time to full enteral feeds for exposure to the smell or taste (or both) of breastmilk or formula (MD 0.16 days lower;(0.45 lower to 0.12 higher) [Critical].<br>**Necrotising enterocolitis (NEC)**: RCT: No significant reduction in NEC for exposure to the smell or taste (or both) of breastmilk or formula (5 fewer per 1,000; 38 fewer to 60 more) [Important].<br>**Sepsis**: RCT: Little or no effect on sepsis between groups 2/260 and 2/72 for both culture-proven and probable sepsis [Important].<br>**No faltering growth/body composition**: RCT: Little or no difference in fat-free mass z score at 4 months corrected age (Adj MD 0 points; 0.2 lower to 0.2 higher). No significant effect in weight z score 4 months' corrected age (Adj MD 0.12 points higher; 0.16 lower to 0.2 higher); length z score at day 14 (Adj MD 0.01 points higher; 0.11 lower to 0.12 higher); day 21 (Adj MD 0.13points higher; 0.01 lower to 0.27 higher) and at discharge (Adj MD 0.03 points higher; 0.09 lower to 0.15 higher). No significant effect in head circumference z score for exposure to the smell or taste (or both) of breastmilk or formula at day 14 (Adj MD 0.08 points higher; 0.03 lower to 0.18 higher) and 4 months' corrected age (Adj MD 0.15 points higher; 0.04 lower to 0.34 higher) [Important].<br>**Duration of initial hospital stay**: RCT: Large reduction in duration of hospitalisation for exposure to the smell or taste (or both) of breastmilk or formula (MD 4.4 days lower; 5.65 lower to 3.15 lower) [Important].<br>**Time to reach full sucking feeds**: RCT: No significant reduction in time to reach full sucking feeds for exposure to the smell or taste (or both) of breastmilk or formula (MD 1.07 days lower; 2.63 lower to 0.5 higher) [Important].<br><br>**Desirable effects for Māori** | Cochrane systematic review [1]: Infants born <37 weeks' gestation.<br><br>Aotearoa New Zealand: RCT [2]: 2-year follow-up DIAMOND trial, moderate-and-late preterm infants. |

| | | |
|---|---|---|
| | In one of the studies in the Cochrane review, the DIAMOND trial, 84 of the 532 preterm pēpi enrolled (15.8%) were Māori. While the overall results found no significant differences in body composition or time to full enteral feeds for the smell and taste intervention, the data show that Māori pēpi were well represented. | |

| Outcomes | № of participants (studies) Follow-up | Certainty of the evidence (GRADE) | Relative effect (95% CI) | Anticipated absolute effects* (95% CI) | |
|---|---|---|---|---|---|
| | | | | **Risk with no exposure** | **Risk difference with exposure to the smell or taste (or both) of breastmilk or formula administered with tube feeds** |
| Mortality | 532 (1 RCT) | ⨁◯◯◯ Very low[a,b,c] | not estimable | Study population | |
| | | | | 1/272 | **0/260** |
| Neurodevelopmental impairment: RCT assessed with: 2-years | 423 (1 RCT) | ⨁◯◯◯ Very low[a,b,c] | **Adj RR 0.7** (0.5 to 0.9) | Study population | |
| | | | | 309 per 1,000 | **93 fewer per 1,000** (155 fewer to 31 fewer) |
| Time to full enteral feeds: RCT assessed with: Days | 736 (4 RCTs) | ⨁◯◯◯ Very low[d,e,f,] | - | The mean time to full enteral feeds: RCT was **14.09 days** | MD **0.16 lower** (0.45 lower to 0.12 higher) |
| Adverse effects: RCT | Not reported (2 RCTs) | - | - | No studies provided useable data on adverse effects. 1 study noted "no apparent adverse effects", and another stated that "No adverse events or side effects, no concerns with regard to acceptability to parents and no logistical implications for the delivery of smell and taste were observed in this study" | |
| Necrotising enterocolitis: RCT | 435 (2 RCTs) | ⨁◯◯◯ Very low[a,g] | **RR 0.93** (0.47 to 1.84) | Study population | |
| | | | | 71 per 1,000 | **5 fewer per 1,000** (38 fewer to 60 more) |
| Sepsis: proven or suspected: RCT assessed with: Culture proven | 532 (1 RCT) | ⨁◯◯◯ Very low[a,b,c,] | not estimable | Study population | |
| | | | | 2/272 | **2/260** |
| Sepsis: proven or suspected: RCT assessed with: Probable | 532 (1 RCT) | ⨁◯◯◯ Very low[a,b,c,] | not estimable | Study population | |
| | | | | 2/272 | **2/260** |
| Faltering growth/body composition: RCT assessed with: Fat free mass z score at 4 months corrected age | 324 (1 RCT) | ⨁◯◯◯ Very low[a,b,f] | - | The mean faltering growth/body composition: RCT was **-0.7 points** | Adj MD **0** (0.2 lower to 0.2 higher) |
| Faltering growth/body composition: RCT assessed with: Weight z score Day 7 | 493 (1 RCT) | ⨁◯◯◯ Very low[a,b,f] | - | The mean faltering growth/body composition: RCT was **-0.91 points** | Adj MD **0.02 lower** (0.06 lower to 0.02 higher) |
| Faltering growth/body composition: RCT assessed with: Weight z score Day 14 | 428 (1 RCT) | ⨁◯◯◯ Very low[a,b,f] | - | The mean faltering growth/body composition: RCT was **-0.94 points** | Adj MD **0.05 lower** (0.11 lower to 0 ) |

| | | | | | |
|---|---|---|---|---|---|
| Faltering growth/body composition: RCT assessed with: Weight z score Day 21 | 309 (1 RCT) | ⨁◯◯◯ Very low[a,b,f] | - | The mean faltering growth/body composition: RCT was **-0.90 points** | Adj MD **0.05 lower** (0.13 lower to 0.03 higher) |
| Faltering growth/body composition: RCT assessed with: Weight z score Day 28 | 182 (1 RCT) | ⨁◯◯◯ Very low[a,b,f] | - | The mean faltering growth/body composition: RCT was **-0.84 points** | Adj MD **0.07 lower** (0.19 lower to 0.05 higher) |
| Faltering growth/body composition: RCT assessed with: Weight z score Discharge | 524 (1 RCT) | ⨁◯◯◯ Very low[a,b,f] | - | The mean faltering growth/body composition: RCT was **-0.81 points** | Adj MD **0.03 lower** (0.09 lower to 0.04 higher) |
| Faltering growth/body composition: RCT assessed with: Weight z score 4 months' corrected age | 401 (1 RCT) | ⨁◯◯◯ Very low[a,b,f] | - | The mean faltering growth/body composition: RCT was **-0.08 points** | Adj MD **0.12 higher** (0.16 lower to 0.2 higher) |
| Faltering growth/body composition: RCT assessed with: Length z score Day 7 | 469 (1 RCT) | ⨁◯◯◯ Very low[a,b,f] | - | The mean faltering growth/body composition: RCT was **-0.20 points** | Adj MD **0.06 lower** (0.17 lower to 0.04 higher) |
| Faltering growth/body composition: RCT assessed with: Length z score Day 14 | 415 (1 RCT) | ⨁◯◯◯ Very low[a,b,f] | - | The mean faltering growth/body composition: RCT was **-0.36 points** | Adj MD **0.01 higher** (0.11 lower to 0.12 higher) |
| Faltering growth/body composition: RCT assessed with: Length z score Day 21 | 299 (1 RCT) | ⨁◯◯◯ Very low[a,b,f] | - | The mean faltering growth/body composition: RCT was **-0.45 points** | Adj MD **0.13 higher** (0.01 lower to 0.27 higher) |
| Faltering growth/body composition: RCT assessed with: Length z score Day 28 | 178 (1 RCT) | ⨁◯◯◯ Very low[a,b,f] | - | The mean faltering growth/body composition: RCT was **-0.47 points** | Adj MD **0.07 lower** (0.26 lower to 0.11 higher) |
| Faltering growth/body composition: RCT assessed with: Length z score Discharge | 495 (1 RCT) | ⨁◯◯◯ Very low[a,b,f] | - | The mean faltering growth/body composition: RCT was **-0.25 points** | Adj MD **0.03 higher** (0.09 lower to 0.15 higher) |
| Faltering growth/body composition: RCT assessed with: Length z score 4 months' corrected age | 401 (1 RCT) | ⨁◯◯◯ Very low[a,b,f] | - | The mean faltering growth/body composition: RCT was **0.53 points** | Adj MD **0.07 lower** (0.27 lower to 0.13 higher) |
| Faltering growth/body composition: RCT assessed with: Head circumference z score Day 7 | 472 (1 RCT) | ⨁◯◯◯ Very low[a,b,f] | - | The mean faltering growth/body composition: RCT was **-0.27 points** | Adj MD **0.07 lower** (0.17 lower to 0.04 higher) |
| Faltering growth/body composition: RCT assessed with: Head circumference z score Day 14 | 420 (1 RCT) | ⨁◯◯◯ Very low[a,b,f] | - | The mean faltering growth/body composition: RCT was **-0.30 points** | Adj MD **0.08 higher** (0.03 lower to 0.18 higher) |
| Faltering growth/body composition: RCT assessed with: Head circumference z score Day 21 | 299 (1 RCT) | ⨁◯◯◯ Very low[a,b,f] | - | The mean faltering growth/body composition: RCT was **-0.15 points** | Adj MD **0** (0.13 lower to 0.12 higher) |
| Faltering growth/body composition: RCT assessed with: Head circumference z score Day 28 | 178 (1 RCT) | ⨁◯◯◯ Very low[a,b,f] | - | The mean faltering growth/body composition: RCT was **0.04 points** | Adj MD **0.06 lower** (0.25 lower to 0.13 higher) |
| Faltering growth/body composition: RCT | 500 | ⨁◯◯◯ | - | The mean faltering growth/body composition: | Adj MD **0.05 lower** |

| | | | | | |
|---|---|---|---|---|---|
| assessed with: Head circumference z score Discharge | (1 RCT) | Very low[a,b,f] | | RCT was **0.03 points** | (0.15 lower to 0.05 higher) |
| Faltering growth/body composition: RCT assessed with: Head circumference z score 4 months' corrected age | 401 (1 RCT) | ⨁◯◯◯ Very low[a,b,d,g] | - | The mean faltering growth/body composition: RCT was **0.58 points** | Adj MD **0.15 higher** (0.04 lower to 0.34 higher) |
| Fully breastfed or breastmilk feeding at hospital discharge: RCT | 528 (1 RCT) | ⨁◯◯◯ Very low[a,b,c] | **OR 0.89** (0.61 to 1.31) | Study population | |
| | | | | 719 per 1,000 | **24 fewer per 1,000** (110 fewer to 51 more) |
| Duration of initial hospital stay: RCT assessed with: Days | 786 (5 RCTs) | ⨁◯◯◯ Very low[d,e] | - | The mean duration of initial hospital stay: RCT was **36.80 days** | MD **4.4 lower** (5.65 lower to 3.15 lower) |
| Time to reach full sucking feeds: RCT assessed with: Days | 662 (3 RCTs) | ⨁◯◯◯ Very low[d,g] | - | The mean time to reach full sucking feeds: RCT was **37.2 days** | MD **1.07 lower** (2.63 lower to 0.5 higher) |
| Bronchopulmonary dysplasia - not measured | - | - | - | - | - |
| Retinopathy of prematurity - not measured | - | - | - | - | - |
| Anaemia of prematurity - not measured | - | - | - | - | - |
| Cost: cost of intervention, cost of neonatal care and life-long cost - not measured | - | - | - | - | - |

a. Downgraded one level for risk of bias due to concerns about lack of blinding, including outcome assessors
b. Downgraded one level for indirectness as evidence is based on a single study
c. Downgraded one level for imprecision due to low/no events
d. Downgraded two levels for high risk of bias that may influence the outcome
e. Downgraded two levels for inconsistency as I2 >80%
f. Downgraded one level for imprecision with confidence intervals crossing the line of no effect
g. Downgraded two levels for imprecision due to wide confidence intervals that cross the line of no effect

## Undesirable Effects

How substantial are the undesirable anticipated effects?

| JUDGEMENT | RESEARCH EVIDENCE | ADDITIONAL CONSIDERATIONS |
|---|---|---|
| ● Trivial<br>○ Small<br>○ Moderate<br>○ Large<br>○ Varies<br>○ Don't know | **Adverse effects:** RCT: 1 study noted "no apparent adverse effects", and another stated that "No adverse events or side effects, no concerns with regard to acceptability to parents and no logistical implications for the delivery of smell and taste were observed in this study" [Important].<br>**Faltering growth/body composition:** RCT: No significant decrease in weight z scores for exposure to the smell or taste (or both) of breastmilk or formula at day 7 (Adj MD 0.02 points lower; 0.06 lower to 0.02 higher). Reduction in weight z score at Day 14 (Adj MD 0.05 points lower; 0.11 lower to 0). No significant effect on weight z score at day 21 (Adj MD 0.05 points lower; 0.13 lower to 0.03 higher); | |

| | | |
|---|---|---|
| | day 28 (Adj MD 0.07 points lower; 0.19 lower to 0.05 higher) and at discharge (Adj MD 0.03 lower; 0.09 lower to 0.04 higher). No significant decrease in length z scores for exposure to the smell or taste (or both) of breastmilk or formula at day 7 (Adj MD 0.06 points lower; 0.17 lower to 0.04 higher); day 28 (Adj MD 0.07 points lower; 0.26 lower to 0.11 higher) and at 4 months' corrected age (Adj MD 0.07 points lower; 0.27 lower to 0.13 higher). No significant effect in head circumference z scores for exposure to the smell or taste (or both) of breastmilk or formula at day 7 (Adj MD 0.07 points lower; 0.17 lower to 0.04 higher); day 21 (Adj MD 0 points; 0.13 lower to 0.12 higher); day 28 (Adj MD 0.06 points lower; 0.25 lower to 0.13 higher) and at discharge (Adj MD 0.05 points lower; 0.15 lower to 0.05 higher) [Important].<br>**Fully breastfed or breastmilk feeding at hospital discharge:** RCT: No significant effect on infants exposed to smell or taste (or both) of breastmilk or formula who were fully breastfed or breastmilk feeding at hospital discharge (24 fewer per 1,000; 110 fewer to 51 more) [Important].<br><br>**Undesirable effects for Māori**<br>None demonstrated | |

## Certainty of evidence

What is the overall certainty of the evidence of effects?

| JUDGEMENT | RESEARCH EVIDENCE | ADDITIONAL CONSIDERATIONS |
|---|---|---|
| ● Very low<br>○ Low<br>○ Moderate<br>○ High<br>○ No included studies | Very low certainty of evidence overall | |

| Outcomes | Importance | Certainty of the evidence (GRADE) |
|---|---|---|
| Mortality | CRITICAL | ⨁◯◯◯<br>Very low |
| Neurodevelopmental impairment: RCT<br>assessed with: 2-years | CRITICAL | ⨁◯◯◯<br>Very low |
| Time to full enteral feeds: RCT<br>assessed with: Days | CRITICAL | ⨁◯◯◯<br>Very low |
| Adverse effects | IMPORTANT | - |

| | | |
|---|---|---|
| Necrotising enterocolitis | IMPORTANT | ⨁◯◯◯<br>Very low |
| Sepsis: proven or suspected: RCT<br>assessed with: Culture proven | | ⨁◯◯◯<br>Very low |
| Sepsis: proven or suspected: RCT<br>assessed with: Probable | IMPORTANT | ⨁◯◯◯<br>Very low |
| Faltering growth/body composition: RCT<br>assessed with: Weight z score Day 7 | IMPORTANT | ⨁◯◯◯<br>Very low |
| Faltering growth/body composition: RCT<br>assessed with: Weight z score Day 14 | IMPORTANT | ⨁◯◯◯<br>Very low |
| Faltering growth/body composition: RCT<br>assessed with: Fat free mass z score at 4 months corrected age | IMPORTANT | ⨁◯◯◯<br>Very low |
| Faltering growth/body composition: RCT<br>assessed with: Weight z score Day 21 | IMPORTANT | ⨁◯◯◯<br>Very low |
| Faltering growth/body composition: RCT<br>assessed with: Weight z score Day 28 | IMPORTANT | ⨁◯◯◯<br>Very low |
| Faltering growth/body composition: RCT<br>assessed with: Weight z score Discharge | IMPORTANT | ⨁◯◯◯<br>Very low |
| Faltering growth/body composition: RCT<br>assessed with: Weight z score 4 months' corrected age | IMPORTANT | ⨁◯◯◯<br>Very low |
| Faltering growth/body composition: RCT<br>assessed with: Length z score Day 7 | IMPORTANT | ⨁◯◯◯<br>Very low |
| Faltering growth/body composition: RCT<br>assessed with: Length z score Day 14 | IMPORTANT | ⨁◯◯◯<br>Very low |
| Faltering growth/body composition: RCT<br>assessed with: Length z score Day 21 | IMPORTANT | ⨁◯◯◯<br>Very low |
| Faltering growth/body composition: RCT<br>assessed with: Length z score Day 28 | IMPORTANT | ⨁◯◯◯<br>Very low |
| Faltering growth/body composition: RCT<br>assessed with: Length z score Discharge | IMPORTANT | ⨁◯◯◯<br>Very low |
| Faltering growth/body composition: RCT<br>assessed with: Length z score 4 months' corrected age | IMPORTANT | ⨁◯◯◯<br>Very low |

| | | |
|---|---|---|
| Faltering growth/body composition: RCT<br>assessed with: Head circumference z score Day 7 | IMPORTANT | ⨁◯◯◯<br>Very low |
| Faltering growth/body composition: RCT<br>assessed with: Head circumference z score Day 14 | IMPORTANT | ⨁◯◯◯<br>Very low |
| Faltering growth/body composition: RCT<br>assessed with: Head circumference z score Day 21 | IMPORTANT | ⨁◯◯◯<br>Very low |
| Faltering growth/body composition: RCT<br>assessed with: Head circumference z score Day 28 | IMPORTANT | ⨁◯◯◯<br>Very low |
| Faltering growth/body composition: RCT<br>assessed with: Head circumference z score Discharge | IMPORTANT | ⨁◯◯◯<br>Very low |
| Faltering growth/body composition: RCT<br>assessed with: Head circumference z score 4 months' corrected age | IMPORTANT | ⨁◯◯◯<br>Very low |
| Fully breastfed or breastmilk feeding at hospital discharge: RCT | IMPORTANT | ⨁◯◯◯<br>Very low |
| Duration of initial hospital stay: RCT<br>assessed with: Days | IMPORTANT | ⨁◯◯◯<br>Very low |
| Time to reach full sucking feeds: RCT<br>assessed with: Days | IMPORTANT | ⨁◯◯◯<br>Very low |
| Bronchopulmonary dysplasia - not measured | IMPORTANT | - |
| Retinopathy of prematurity - not measured | IMPORTANT | - |
| Anaemia of prematurity - not measured | IMPORTANT | - |
| Cost: cost of intervention, cost of neonatal care and life-long cost - not measured | IMPORTANT | - |

**Certainty of evidence for Māori**
No additional evidence available

## Values

| Is there important uncertainty about or variability in how much people value the main outcomes? | | |
|---|---|---|
| **JUDGEMENT** | **RESEARCH EVIDENCE** | **ADDITIONAL CONSIDERATIONS** |
| ○ Important uncertainty or variability<br>● Possibly important uncertainty or variability<br>○ Probably no important uncertainty or variability<br>○ No important uncertainty or variability | Possibly important uncertainty or variability.<br><br>**Values for Māori**<br>No additional research available. | |

## Balance of effects

Does the balance between desirable and undesirable effects favour the intervention or the comparison?

| JUDGEMENT | RESEARCH EVIDENCE | ADDITIONAL CONSIDERATIONS |
|---|---|---|
| ○ Favours the comparison<br>○ Probably favours the comparison<br>○ Does not favour either the intervention or the comparison<br>● Probably favours the intervention<br>○ Favours the intervention<br>○ Varies<br>○ Don't know | **Exposure to smell or taste (or both) of breastmilk or formula versus no exposure - very low certainty evidence**<br>Decrease in neurodevelopmental impairment at 2 years, duration of initial hospital stay<br>Uncertain effect on mortality, time to full enteral feeds, adverse effects, NEC, sepsis; weight, length, head circumference and fat free mass z scores, fully breastfeeding or breastmilk feeding at discharge, time to reach full sucking feeds<br><br>**Balance of effects for Māori**<br>No additional evidence | |

## Resources required

| JUDGEMENT | RESEARCH EVIDENCE | ADDITIONAL CONSIDERATIONS |
|---|---|---|
| ○ Large costs<br>○ Moderate costs<br>● Negligible costs and savings<br>○ Moderate savings<br>○ Large savings<br>○ Varies<br>○ Don't know | Extra nursing time to administer smell and taste with every tube feed.<br><br>**Resourcing for Māori**<br>No additional evidence available | |

## Certainty of evidence of required resources

What is the certainty of the evidence of resource requirements (costs)?

| JUDGEMENT | RESEARCH EVIDENCE | ADDITIONAL CONSIDERATIONS |
|---|---|---|
| ○ Very low<br>○ Low<br>● Moderate<br>○ High<br>○ No included studies | The costs are known.<br><br><br><br>**Certainty of evidence of required costs for Māori**<br>No additional evidence available. | |

## Cost effectiveness

Does the cost-effectiveness of the intervention favour the intervention or the comparison?

| JUDGEMENT | RESEARCH EVIDENCE | ADDITIONAL CONSIDERATIONS |
|---|---|---|
| ○ Favours the comparison<br>○ Probably favours the comparison<br>○ Does not favour either the intervention or the comparison<br>○ Probably favours the intervention<br>○ Favours the intervention<br>○ Varies<br>● No included studies | There are no studies that assess the specific cost-effectiveness of exposure to smell or taste (or both) of breastmilk or formula administered with tube feeds compared with no exposure, particularly in the context of preterm infants.<br><br><br><br>**Cost effectiveness for Māori**<br>No additional evidence available | |

## Equity

What would be the impact on health equity?

| JUDGEMENT | RESEARCH EVIDENCE | ADDITIONAL CONSIDERATIONS |
|---|---|---|
| ○ Reduced<br>○ Probably reduced<br>○ Probably no impact<br>● Probably increased<br>○ Increased<br>○ Varies<br>○ Don't know | **Equity for Māori**<br>Pēpi Māori are more likely to be born preterm and experience poorer outcomes due to ongoing systemic inequities and the effects of colonisation. Interventions that support feeding tolerance and early transition to sucking feeds may reduce hospital stays and improve developmental outcomes, but only if applied equitably. Whānau Māori may face barriers to accessing culturally safe feeding support, consistent clinical practices and lactation guidance. Incorporating smell and taste exposure during tube feeds is a low-cost, non-invasive strategy that could be highly beneficial if introduced with equitable access, cultural understanding and whānau involvement in care planning from the earliest stages.<br><br>**Equity for Pacific families** | |

| | | |
|---|---|---|
| | Pacific infants are more likely to encounter delays in feeding progression due to inconsistent access to high-quality, culturally responsive care. Exposure to the smell or taste of milk during tube feeds may offer a simple and accessible method to enhance digestive readiness and shorten hospital stays. However, if this intervention is only adopted in select units or without adequate family education and support, existing disparities may persist or widen.<br><br>**Equity for underrepresented groups**<br>Migrant and rural families may not be offered or supported to provide smell or taste exposure due to staffing limitations or communication barriers. Without understanding its benefits, families may not advocate for it. Equity means ensuring all infants have access to low-cost, evidence-based interventions that promote feeding readiness and bonding. | |

## Acceptability

Is the intervention acceptable to key interest-holders?

| JUDGEMENT | RESEARCH EVIDENCE | ADDITIONAL CONSIDERATIONS |
|---|---|---|
| ○ No<br>○ Probably no<br>● Probably yes<br>○ Yes<br>○ Varies<br>○ Don't know | Was well-accepted in the DIAMOND trial<br><br>**Acceptability for Māori**<br>No additional evidence available. | |

## Feasibility

Is the intervention feasible to implement?

| JUDGEMENT | RESEARCH EVIDENCE | ADDITIONAL CONSIDERATIONS |
|---|---|---|
| ○ No<br>○ Probably no<br>● Probably yes<br>○ Yes<br>○ Varies<br>○ Don't know | Relatively easy and quick intervention to apply in any unit<br><br>**Feasibility for Māori**<br>No additional evidence available. | |

**Summary of judgements**

| | JUDGEMENT | | | | | | |
|---|---|---|---|---|---|---|---|
| DESIRABLE EFFECTS | Trivial | Small | **Moderate** | Large | | Varies | Don't know |
| UNDESIRABLE EFFECTS | **Trivial** | Small | Moderate | Large | | Varies | Don't know |
| CERTAINTY OF EVIDENCE | **Very low** | Low | Moderate | High | | | No included studies |
| VALUES | Important uncertainty or variability | **Possibly important uncertainty or variability** | Probably no important uncertainty or variability | No important uncertainty or variability | | | |
| BALANCE OF EFFECTS | Favours the comparison | Probably favours the comparison | Does not favour either the intervention or the comparison | **Probably favours the intervention** | Favours the intervention | Varies | Don't know |
| RESOURCES REQUIRED | Large costs | Moderate costs | **Negligible costs and savings** | Moderate savings | Large savings | Varies | Don't know |
| CERTAINTY OF EVIDENCE OF REQUIRED RESOURCES | Very low | Low | **Moderate** | High | | | No included studies |
| COST EFFECTIVENESS | Favours the comparison | Probably favours the comparison | Does not favour either the intervention or the comparison | Probably favours the intervention | Favours the intervention | Varies | **No included studies** |
| EQUITY | Reduced | Probably reduced | Probably no impact | **Probably increased** | Increased | Varies | Don't know |
| ACCEPTABILITY | No | Probably no | **Probably yes** | Yes | | Varies | Don't know |
| FEASIBILITY | No | Probably no | **Probably yes** | Yes | | Varies | Don't know |

## Type of recommendation

| Strong recommendation against the intervention | Conditional recommendation against the intervention | Conditional recommendation for either the intervention or the comparison | **Conditional recommendation for the intervention** | Strong recommendation for the intervention |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| ○ | ○ | ○ | ● | ○ |

## References


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