Starting dosages for opioid analgesics in opioid-naive children (1–12 years)

Medicine	Route of administration	Starting dose
Morphine	Oral (immediate release)	1–2 years: 200–400 mcg/kg every 4 hrs 2–12 years: 200–500 mcg/kg every 4 hrs (max 5 mg)
	Oral (prolonged release)	200–800 mcg/kg every 12 hrs
	IV injection[c]	1–2 years: 100 mcg/kg every 4 hrs 2–12 years: 100–200 mcg/kg every 4 hrs (max 2.5 mg)
	SC injection	
	IV Infusion	Initial IV dose : 100–200mcg/kg[c], then 20–30 mcg/kg/hr
	SC infusion	20 mcg/kg/hr
Fentanyl	IV injection	1–2 mcg/kg[c], repeated every 30–60 minutes
	IV infusion	Initial IV dose 1–2 mcg/kg[c], then 1 mcg/kg/hr
Hydromor-phone	Oral (immediate release)	30–80 mcg/kg every 3–4 hrs (max 2 mg/dose)
	IV injection[c] or SC injection	15 mcg/kg every 3–6 hrs
Methadone[d]	Oral (immediate release)	100–200 mcg/kg every 4 hrs for the first 2–3 doses, then every 6–12 hrs (max 5 mg/dose initially)[e]
	IV injection[e] and SC injection	
Oxycodone	Oral (immediate release)	125–200 mcg/kg every 4 hours (max 5 mg/dose)
	Oral (prolonged release)	5 mg every 12 hours

Titration: After a starting dose according to the dosages above, the dosage should be adjusted to the level that is effective (with no maximum), but the maximum dosage increase is 50% per 24 hours in outpatient settings. Experienced prescribers can increase up to 100% with close monitoring of the patient.
(See also note e on methadone)

Weaning: After short-term therapy (7–14 days), the original dose can be decreased by 10–20% of the original dose every 8 hours increasing gradually the time interval. After long-term therapy, the dose should be reduced not more than 10–20% per week.

For more details see WHO guidelines on the pharmacological treatment of persisting pain in children with medical illnesses, *Geneva 2012*.

Notes:

a Slowly over at least 5 minutes.

b Lower doses are required for non-ventilated neonates.

c Slowly over 3–5 minutes.

d Due to its complex pharmacokinetics, methadone should only be commenced by experienced practitioners.

e Methadone should initially be titrated like other strong opioids. The dosage may need to be reduced by 50% 2–3 days after the effective dose has been found to prevent adverse effects due to methadone accumulation. From then on dosage increases should be performed at intervals of one week or over and with a maximum increase of 50%.

ANALGESIC STARTING DOSAGES FOR CHILDREN

World Health Organization

Dosages for oral non-opioid analgesics for the relief of pain in neonates, infants and children

	Paracetamol	Ibuprofen
Neonates from 0 to 29 days	5–10 mg/kg every 6–8 hrs max 4 doses/day	
Infants from 30 days to 3 months	10 mg/kg every 4–6 hrs max 4 doses/day	
Infants from 3 to 12 months or child from 1 to 12 years	10–15 mg/kg every 4–6 hrs max 4 doses/day, max 1 gram at a time	5–10 mg/kg every 6–8 hrs

Starting dosages for opioid analgesics for opioid-naive neonates

Medicine	Route of administration	Starting dose
Morphine	IV injection[a]	25–50 mcg/kg every 6 hrs
	SC injection	
	IV infusion	Initial IV dose[a] 25–50 mcg/kg, then 5–10 mcg/kg/hr
Fentanyl	IV injection[b]	1–2 mcg/kg every 2–4 hrs[c]
	IV infusion[b]	Initial IV dose[c] 1–2 mcg/kg, then 0.5–1 mcg/kg/hr

Starting dosages for opioid analgesics in opioid-naive infants (1 month – 1 year)

Medicine	Route of administration	Starting dose
Morphine	Oral (immediate release)	80–200 mcg/kg every 4 hrs
	IV injection[a]	***1–6 months***: 100 mcg/kg every 6 hrs ***6–12 months***: 100 mcg/kg every 4 hrs (max 2.5 mg /dose)
	SC injection	
	IV infusion[a]	***1–6 months***: Initial IV dose: 50 mcg/kg, then: 10–30 mcg/kg/hr ***6–12 months***: Initial IV dose: 100–200 mcg/kg, then: 20–30 mcg/kg/hr
	SC infusion	1–3 months: 10 mcg/kg/hr 3–12 months: 20 mcg/kg/hr
Fentanyl	IV injection	1–2 mcg/kg every 2–4 hrs[c]
	IV infusion	Initial IV dose 1–2 mcg/kg[c], then 0.5–1 mcg/kg/hr
Oxycodone	Oral (immediate release)	50–125 mcg/kg every 4 hours