



Analgesic and Antibiotic Contraindications and Cautions Supplement May 2021

Some drugs prescribed in dental practice have important contraindications and cautions for patients with certain conditions, such as heart or circulatory conditions, renal or hepatic impairment or those at increased risk of gastrointestinal adverse effects. Where a drug is **contraindicated** for a particular condition, the drug should be avoided in patients with that condition. Where a drug has a **caution** listed for a particular condition, the drug may be prescribed for a patient with that condition if a safer alternative cannot be found. However, the patient should be monitored for adverse-effects or deterioration in their condition and a dose reduction might be advisable in some cases.

This document provides details of the contraindications and cautions which should be taken into account when prescribing analgesics or antibiotics in dental practice. Much of the content was originally developed as part of the response to the COVID-19 pandemic but is now provided as a supplement to the SDCEP [Drug Prescribing for Dentistry](#) guidance.

General Advice

- Most odontogenic pain can be relieved effectively using paracetamol and/or ibuprofen to provide optimal analgesia.¹
- The prescribing of antibiotics **must be kept to a minimum** and used only where there is a clear need. Treat dental abscesses in the first instance by using local measures to achieve drainage, with removal of the cause where possible. Antibiotics are not indicated in the absence of swelling or other signs of infection.
- Where analgesics and/or antibiotics are necessary, an up-to-date medical history should be obtained from the patient. This should include details of any medical conditions, current medications (including over-the-counter drugs, e.g. analgesics) and allergies that the patient might have.
- It is also important to establish the patient's self-management to date **to check for possible overdose of analgesics**.
- Be aware that prescribing for some patient groups, such as the elderly, patients who are immunocompromised or with hepatic or renal problems, patients who are pregnant and nursing mothers might differ. Refer to the BNF (bnf.nice.org.uk) for further details.
- If the patient has a relevant underlying health condition, consider liaising with their general medical practitioner or specialist.
- Advise patients to contact the practice if their symptoms persist or worsen.

¹ **Optimal analgesia** is defined as the lowest effective dose of painkillers taken for the shortest duration necessary to control symptoms without exceeding the maximum dose and taking into account the patient's age, weight and relevant health conditions.

Contraindications and cautions - analgesics

The contraindications and cautions most relevant to analgesics commonly prescribed for odontogenic pain (see Chapter 7 of SDCEP *Drug Prescribing for Dentistry*) are presented here. Refer to the BNF (bnf.nice.org.uk) for more comprehensive information on contraindications and cautions, and advice on drug interactions and side effects.

It is essential to first check the patient's current use of analgesics before advising or prescribing analgesics. In particular, overdose with paracetamol is dangerous because it can cause hepatic damage that is sometimes not apparent for 4–6 days and can be fatal. Paracetamol is present in many over-the-counter preparations and you should identify all paracetamol-containing medications that a patient has ingested.

A patient who ingests a therapeutic excess of paracetamol (defined as more than the recommended daily dose [8 x 500 mg tablets for adults] **and** more than or equal to 75 mg/kg in any 24-hour period) should be referred for assessment in an emergency department.

Drug regimens that may be recommended or prescribed by a dentist for an **adult** patient with dental pain are shown in the following table with the order of the drug regimens from left to right reflecting a stepwise approach to achieving optimal analgesia.² Health conditions are listed with contraindications or cautions for each drug regimen indicated as follows:

✓	Can be prescribed/advised for these patients
C	Prescribe/advise with caution
X	Do not prescribe/advise for these patients*

It is essential to refer to the numbered cautionary note indicated. Depending on the condition, a reduced dose, liaison with a medical practitioner or monitoring might be required.

*Either contraindicated or not recommended for prescription by dentists in this guide due to high risk of adverse effects (see relevant numbered cautionary note).

While the information in this table is primarily relevant to adult patients, some cautions for paracetamol and ibuprofen may also be relevant to children, for example those with asthma.

If uncertain about a patient's medical conditions, current medication or suitable analgesia, contact their general medical practitioner (GMP) for advice.

² **Optimal analgesia** is defined as the lowest effective dose of painkillers taken for the shortest duration necessary to control symptoms without exceeding the maximum dose and taking into account the patient's age, weight and relevant health conditions.



Adult Analgesic Dose	Paracetamol (up to 4 x 1g daily)	Ibuprofen (up to 4 x 400 mg daily)	Ibuprofen (up to 4 x 600 mg daily)	Ibuprofen (up to 4 x 400 mg daily) + Paracetamol (up to 4 x 1 g daily)	Ibuprofen (up to 4 x 600 mg daily) + Paracetamol (up to 4 x 1 g daily)	Diclofenac (up to 3 x 50 mg daily) + Paracetamol (up to 4 x 1 g daily)
Condition						
None	✓	✓	✓	✓	✓	✓
Existing non-dental NSAID use (excluding low dose aspirin)	✓	C ¹	C ¹	C ¹	C ¹	C ¹
Low dose aspirin	✓	C ²	C ²	C ²	C ²	X ²
Elderly patients >65 yrs	✓	C ³	X ³	C ³	X ³	X ³
Low body weight, alcohol dependence, chronic alcoholism, chronic malnutrition, or dehydration	C ⁴	C ⁵	C ⁵	C ^{4,5}	C ^{4,5}	C ^{4,5}
Pregnancy	✓	X ⁶	X ⁶	X ⁶	X ⁶	X ⁶
Breastfeeding	✓ ⁷	C ⁷	C ⁷	C ⁷	C ⁷	X
Allergic						
History of hypersensitivity/severe allergic reaction to an NSAID (including aspirin) e.g. asthma, rhinitis, angioedema or urticaria	✓	X	X	X	X	X
History of hypersensitivity to paracetamol	X	✓	✓	X	X	X
Allergic disorders (e.g. allergy to other medicines, foods, latex or pollens)	✓	C ⁸	C ⁸	C ⁸	C ⁸	C ⁸
Respiratory						
Asthma	✓	C ⁹	C ⁹	C ⁹	C ⁹	C ⁹
Cardiac/circulatory						
Severe heart failure	✓	X	X	X	X	X
Mild to moderate heart failure	✓	C ¹⁰	X ¹⁰	C ¹⁰	X ¹⁰	X
Ischaemic heart disease, cerebrovascular disease, or peripheral arterial disease	✓	C ¹¹	X ¹¹	C ¹¹	X ¹¹	X
Hypertension	✓	C ¹²	X ¹²	C ¹²	X ¹²	X ¹²

Adult Analgesic Dose	Paracetamol (up to 4 x 1g daily)	Ibuprofen (up to 4 x 400 mg daily)	Ibuprofen (up to 4 x 600 mg daily)	Ibuprofen (up to 4 x 400 mg daily) + Paracetamol (up to 4 x 1 g daily)	Ibuprofen (up to 4 x 600 mg daily) + Paracetamol (up to 4 x 1 g daily)	Diclofenac (up to 3 x 50 mg daily) + Paracetamol (up to 4 x 1 g daily)
Condition						
Gastrointestinal						
Active gastrointestinal (GI) bleeding or GI ulcer <i>or</i> History of GI bleeding or ulcer related to previous NSAID use <i>or</i> History of two or more GI bleeds or ulcers	✓	X	X	X	X	X
History of one previous bleed or ulcer not associated with NSAID use	✓	C ¹³	C ¹³	C ¹³	C ¹³	C ¹³
Inflammatory bowel disease	✓	C ¹⁴	C ¹⁴	C ¹⁴	C ¹⁴	C ¹⁴
Hepatic						
Severe hepatic impairment (serum albumin <25 g/l or Child-Pugh score of 10 or more)	C ¹⁵	X	X	X	X	X
Hepatic impairment (mild to moderate)	C ¹⁵	C ¹⁶	C ¹⁶	C ^{15,16}	C ^{15,16}	C ^{15,16}
Renal						
Severe renal impairment (eGFR <30 mL/minute/1.73 m ²)	C ¹⁷	X	X	X	X	X
Renal impairment (mild to moderate)	✓	C ¹⁸	C ¹⁸	C ¹⁸	C ¹⁸	C ¹⁸
Bleeding tendencies						
Anticoagulant use	✓	C ²⁰	C ²⁰	C ²⁰	C ²⁰	C ²⁰
Bleeding disorders	✓	C ²¹	C ²¹	C ²¹	C ²¹	C ²¹

1. Patients already taking an NSAID (prescribed or not) regularly for a non-dental condition should not take an additional NSAID to control dental pain.
2. Prescribe ibuprofen with caution for patients taking low dose aspirin. Addition of an NSAID may reduce the cardioprotective benefit of low dose aspirin and increases the risk of GI bleeds. In patients taking low dose aspirin, if an NSAID is necessary to control the pain, consider the use of ibuprofen up to 1200 mg maximum daily with a PPI or contact the patient's GMP for advice. Diclofenac is not recommended in this guide for patients taking low dose aspirin because some will have a condition for which diclofenac is contraindicated.

3. Elderly patients are at increased risk of cardiovascular, renal and serious GI adverse effects (including GI bleeding and perforation, which may be fatal).
Prescribe ibuprofen with caution. Do not exceed 1200 mg ibuprofen per day. A PPI should be co-prescribed – liaise with the patient's GMP if a PPI is not currently prescribed.
Monitoring blood pressure, renal function, and features of heart failure may be required 1–2 weeks after starting or increasing the dose of an NSAID. Liaise with the patient's GMP to discuss.
Diclofenac is not recommended in this guide due to increased cardiovascular risk in the elderly.
4. Prescribe paracetamol with caution for people who weigh under 50 kg, using clinical judgment to adjust the dose.
Prescribe paracetamol with caution if there is alcohol dependence, chronic alcoholism, chronic malnutrition or dehydration.
5. NSAIDs should be avoided in people with dehydration, due to risk of acute kidney injury.
For patients with chronic alcoholism and alcohol dependence the GI risk is increased with NSAIDs. Avoid NSAIDs if possible or prescribe with a PPI.
6. Paracetamol is the analgesic of choice during pregnancy.
As NSAIDs should be avoided in pregnant patients unless the benefits outweigh the risks, they are not recommended in this guide. If necessary, a GMP may prescribe an NSAID, using the lowest effective dose for the shortest time possible. NSAIDs must not be used from 30 weeks of pregnancy without specialist advice and regular foetal monitoring.
7. Paracetamol is the analgesic of choice for women who are breastfeeding. Seek expert advice if the infant is pre-term, or low birthweight. Absorption, distribution, metabolism, or excretion of paracetamol may be affected by an underlying medical condition.
Use NSAIDs with caution. If an NSAID is necessary, ibuprofen is preferred using the lowest effective dose for the shortest time possible.
8. Prescribe NSAIDs with caution to people with allergic disorders as they may be at increased risk of NSAID induced allergy.
Advise the patient to look out for allergic symptoms and to stop taking the NSAID if these occur.
9. Prescribe NSAIDs with caution to people with asthma. All NSAIDs have the potential to exacerbate asthma, either acutely or as a gradual worsening of symptoms.
Warn the patient of the potential for development of NSAID induced asthma, particularly late in life.
Advise the patient to look out for symptoms, follow their usual plan for worsening of symptoms and to stop taking NSAID if these occur.
10. Prescribe ibuprofen with caution to people with cardiac impairment or mild to moderate heart failure (NSAIDs may impair renal function). Do not prescribe NSAIDs in severe heart failure.
Prescribe **ibuprofen up to 1200 mg per day** as a first-line option (note that this is a lower dose than the 4 x 400 mg per day regimen recommended in the BNF for dental pain). For higher doses liaise with the patient's GMP.
Monitoring of blood pressure, renal function, and features of heart failure may be required 1–2 weeks after starting or increasing the dose of an NSAID. Liaise with the patient's GMP to discuss.
If in doubt about the severity of the patient's heart failure or appropriate analgesics, consult with their GMP.
11. Prescribe ibuprofen with caution to people with cerebrovascular disease, ischaemic heart disease, peripheral arterial disease, or risk factors for cardiovascular events (for example, hypertension, hyperlipidaemia, diabetes mellitus, smoking).
Prescribe **ibuprofen up to 1200 mg per day** as a first-line option (note that this is a lower dose than the 4 x 400 mg per day regimen recommended in the BNF for dental pain). For higher doses liaise with the patient's GMP.
Monitoring of blood pressure, renal function, and features of heart failure may be required 1–2 weeks after starting or increasing the dose of an NSAID. Liaise with the patient's GMP to discuss.

12. Prescribe NSAIDs with caution to people with hypertension (NSAIDs may impair renal function). Prescribe **ibuprofen up to 1200 mg per day** as a first-line option (note that this is a lower dose than the 4 x 400 mg per day regimen recommended in the BNF for dental pain). For higher doses liaise with the patient's GMP. Monitoring of blood pressure may be required 1–4 weeks after starting long-term treatment or increasing the dose of an NSAID. Liaise with the patient's GMP to discuss.
Diclofenac is not recommended in this guide for patients with hypertension due to cardiovascular risk.
13. Prescribe NSAIDs with caution to people with a history of GI ulceration or bleed or people at high risk of GI adverse effects. Risk factors for NSAID-induced gastrointestinal (GI) adverse events include:
 - Aged over 65 years
 - A high dose of an NSAID
 - A history of gastroduodenal ulcer, GI bleeding, or gastroduodenal perforation
 - Concomitant use of medications that are known to increase the likelihood of upper GI adverse events (for example, anticoagulants, corticosteroids, selective serotonin reuptake inhibitors)
 - A serious comorbidity, such as cardiovascular disease, hepatic or renal impairment (including dehydration), diabetes, or hypertension
 - Heavy smoking
 - Excessive alcohol consumption
 - Previous adverse reaction to NSAIDs
 - Prolonged requirement for NSAIDsA PPI should be co-prescribed with an NSAID – liaise with the patient's GMP if a PPI is not currently prescribed. If in doubt about the patient's level of GI risk or appropriate analgesics, consult with their GMP.
14. Prescribe NSAIDs with caution to people with inflammatory bowel disease (NSAIDs may increase the risk of developing or cause exacerbations of ulcerative colitis or Crohn's disease).
15. Paracetamol is considered to be a suitable analgesic option in most people with liver disease. However, the manufacturer advises caution. Dose reduction might be required for some patients, for example those with moderate or severe acute hepatitis.
16. Prescribe NSAIDs with caution to people with mild to moderate hepatic impairment (do not prescribe in severe hepatic impairment). Dose reductions and monitoring of liver function may be necessary.
17. Prescribe paracetamol with caution to people with severe renal impairment. Dose reduction might be required; liaise with the patient's GMP to discuss.
18. Prescribe NSAIDs with caution to people with mild to moderate renal impairment; avoid if possible (do not prescribe in severe renal impairment). Sodium and water retention may occur leading to a deterioration in renal function and, possibly renal failure.
If the patient cannot avoid using an NSAID and has impaired renal function, monitoring of renal function is required 1–2 weeks after starting or increasing the dose of an NSAID. Liaise with the patient's GMP to discuss.
19. For people taking anticoagulants paracetamol is considered safer than aspirin or NSAIDs because it does not affect platelets or cause gastric bleeding. Patients should have their usual INR check planned and inform their clinician if they have been using paracetamol regularly.
20. Avoid concomitant use of NSAIDs with anticoagulants (e.g. warfarin, dabigatran) if possible. All NSAIDs can cause GI irritation and reduce platelet aggregation, which can worsen any bleeding event. If concurrent use is necessary be aware of the potential risks of bleeding. Consider giving gastroprotection. Liaise with the patient's GMP if a PPI is required but is not currently prescribed.
21. Prescribe NSAIDs with caution for patients with bleeding disorders (e.g. Haemophilia, von Willebrand disease and clotting factor deficiencies). Consult with the patient's GMP or haematologist.

Sources

The primary sources of information on contraindications and cautions for analgesics included in this resource are:

NICE Clinical Knowledge Summaries: NSAIDs - prescribing issues
(<https://cks.nice.org.uk/nsaids-prescribing-issues>) (accessed 25 May 2021)

NICE Clinical Knowledge Summaries: Analgesia - mild to moderate pain
(<https://cks.nice.org.uk/analgesia-mild-to-moderate-pain>) (accessed 25 May 2021)

Other sources include:

Stockley's Drug Interactions
(www.medicinescomplete.com/#/interactions/stockley) (accessed 25 May 2021)

BNF Prescribing in the Elderly
(<https://bnf.nice.org.uk/guidance/prescribing-in-the-elderly.html>) (accessed 25 May 2021)

BNF Drugs – Paracetamol
(<https://bnf.nice.org.uk/drug/paracetamol.html>) (accessed 25 May 2021)

BNF Treatment summary - Non steroidal anti-inflammatory drugs
(<https://bnf.nice.org.uk/treatment-summary/non-steroidal-anti-inflammatory-drugs.html>) (accessed 25 May 2021)

Specialist Pharmacy Service – Can nonsteroidal anti-inflammatory drugs be used in adult patients with Asthma?
(www.sps.nhs.uk/articles/can-nonsteroidal-anti-inflammatory-drugs-be-used-in-adult-patients-with-asthma/) (accessed 25 May 2021)

Summary of product characteristics, ibuprofen (Brufen) 400 mg tablets
(www.medicines.org.uk/emc/product/6713/smpc) (accessed 25 May 2021)

Summary of product characteristics, diclofenac sodium 50 mg gastro-resistant tablets
(www.medicines.org.uk/emc/product/2660/smpc) (accessed 25 May 2021)

Summary of product characteristics, paracetamol 500 mg tablets
(www.medicines.org.uk/emc/product/5164/smpc) (accessed 25 May 2021)

Contraindications and cautions - antibiotics

The contraindications and cautions most relevant to antibiotics commonly prescribed for dental bacterial infections (see Chapter 4 of SDCEP *Drug Prescribing for Dentistry*) are presented here. Refer to the BNF (bnf.nice.org.uk) for more comprehensive information on contraindications and cautions and advice on drug interactions and side effects.

Amoxicillin/phenoxymethylpenicillin

Contraindications

Do not prescribe amoxicillin or phenoxymethylpenicillin to people with a history of anaphylaxis, urticaria or rash immediately after penicillin administration as these individuals are at risk of immediate hypersensitivity, including anaphylaxis and rashes.

Cautions

Prescribe amoxicillin and phenoxymethylpenicillin with caution for:

- people with hypersensitivity to cephalosporins since there is some evidence of partial cross-allergenicity.
- people with renal impairment. Dose reduction may be required in cases of severe renal impairment.
- people taking warfarin, since amoxicillin or phenoxymethylpenicillin potentially alter the anticoagulant effect of warfarin. If either antibiotic is prescribed for patients taking warfarin, the INR should be checked 4-7 days after the antibiotic course has started.

Metronidazole

Contraindications

Do not prescribe metronidazole to:

- people with known metronidazole or nitroimidazole hypersensitivity.
- people taking warfarin.

Cautions

Metronidazole has a disulfiram-like reaction with alcohol therefore advise patients to avoid alcohol when taking metronidazole.

Sources

The sources of information on contraindications and cautions for antibiotics included in this resource are:

BNF Drugs - Amoxicillin

(<https://bnf.nice.org.uk/drug/amoxicillin.html>) (accessed 25 May 2021)

BNF Drugs - Phenoxymethylpenicillin

(<https://bnf.nice.org.uk/drug/phenoxymethylpenicillin.html>) (accessed 25 May 2021)

BNF Drugs - Metronidazole

(<https://bnf.nice.org.uk/drug/metronidazole.html>) (accessed 25 May 2021)

NICE Clinical Knowledge Summaries: Dental abscess

(<https://cks.nice.org.uk/topics/dental-abscess/prescribing-information/amoxicillin/>) (accessed 25 May 2021)

(<https://cks.nice.org.uk/topics/dental-abscess/prescribing-information/phenoxymethylpenicillin/>) (accessed 25 May 2021)

(<https://cks.nice.org.uk/topics/dental-abscess/prescribing-information/metronidazole/>) (accessed 25 May 2021)

Summary of product characteristics, amoxicillin 250 mg capsules

(<https://www.medicines.org.uk/emc/product/10637/smpc>) (accessed 25 May 2021)

Summary of product characteristics, phenoxymethylpenicillin 250 mg film-coated tablets

(<https://www.medicines.org.uk/emc/product/10628/smpc>) (accessed 25 May 2021)

Summary of product characteristics, metronidazole 400 mg film-coated tablets

(<https://www.medicines.org.uk/emc/product/11952/smpc>) (accessed 25 May 2021)

About this resource

This resource was originally developed as part of the response to the COVID-19 pandemic and is now provided as a supplement to the SDCEP *Drug Prescribing for Dentistry* guidance. The information contained is derived from several sources, including the British National Formulary (BNF), the National Institute for Health and Care Excellence (NICE) and the Electronic Medicines Compendium (EMC).

This resource has been developed by the SDCEP guidance development team in consultation with a range of experienced and expert dental and pharmacy professionals.

Please refer to the Disclaimer included in *Drug Prescribing for Dentistry*, available at www.sdcep.org.uk.

As with all SDCEP guidance, the information presented here does not override the individual responsibility of the health professional to make decisions appropriate to the individual patient.



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