

## Use of the SNAP Regimen for the Treatment of Paracetamol Toxicity in adults and children

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Paracetamol toxicity has traditionally been treated with a 21-hour infusion (three separate infusions) of Acetylcysteine (AC). Another treatment regimen for the treatment of paracetamol toxicity known as the Scottish and Newcastle Acetylcysteine Protocol (SNAP) is also available and only requires a 12-hour infusion (two separate infusions). Although the MHRA issued a position statement advising there was insufficient evidence to recommend the use of SNAP in 2017, a wealth of data to support the safety of the protocol was published in 2019 [1]. There is little published evidence for the use of SNAP regimen in children, however, use in children is becoming more common. The SNAP regimen for both adults and children can be found on the National Poisons Information Service / Toxbase website [2].

RCEM recommends that the use of the SNAP regimen to treat paracetamol toxicity should become the default standard practice in all emergency departments. It has been shown to be as effective as the traditional regimen in preventing liver injury, with fewer adverse reactions (anaphylactoid reactions).

RCEM supports the routine use of the SNAP regimen in both adult and paediatric patients. Paediatric patients derive the same benefit in terms of shortened treatment time as adults. To date, as experience with the SNAP regimen in emergency departments has expanded to include the paediatric population there is no compelling data to suggest the SNAP regimen is associated with less efficacy than the 21-hour regimen or associated with more adverse events. In both adults and children, the blood sampling regimen employed as part of the SNAP regimen potentially enables quicker recognition of fulminant hepatic failure as well as the ability to deliver higher doses of AC over a shorter time period, if required.

The SNAP regimen not only offers significant benefits to patients in terms of fewer side effects but also reduced length of stay in hospital [3].

The reduced length of hospital stay can play an important part in hospital patient flow, helping to mitigate against Emergency Department crowding. It should however be noted that the reduced length of hospital stay can only be realised if the appropriate mental health liaison services are in place to support safe discharge throughout the 24-hour day. Mental health assessments should not routinely be deferred until after the completion of the SNAP regimen [4,5].

Emergency departments should be familiar with the procedure for commencing the SNAP regimen, particularly in setting of a staggered overdose, but also the procedure required to ensure that the infusion has been successful as measured by haematology and biochemical blood sampling at or just before the end of the 12-hour infusion.

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The introduction of the SNAP regimen should involve liaison with your trust's clinical biochemist, as it may involve measurement of paracetamol levels during acetylcysteine infusion, and some paracetamol assays may not be suitable for this purpose.

RCEM accepts that there may be occasions when a senior clinician feels it may be more appropriate to use the traditional AC regimen.

Patients who have received AC therapy should receive an appropriate patient information leaflet.

## References

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<https://www.toxbase.org/>
3. Humphries C, Roberts G, Taheem A, Abdel Kader H, Kidd R, Smith J. SNAPTIMED study: does the Scottish and Newcastle Antiemetic Protocol achieve timely intervention and management from the emergency department to discharge for paracetamol poisoning? Emerg Med J. 2022 Aug 18:emermed-2021-212180.
4. <https://www.rcpsych.ac.uk/docs/default-source/members/faculties/liaison-psychiatry/liaison-sidebyside.pdf>. Accessed 28 March 2023
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