



**Title: Routes of Administration of Epinephrine for Anaphylaxis: Clinical Efficacy**

**Date:** 21 January 2008

**Research question:**

What is the clinical efficacy of different routes of epinephrine for resolving anaphylaxis?

**Methods:**

A limited literature search was conducted on key health technology assessment resources, including PubMed, the Cochrane Library (Issue 4, 2007), University of York Centre for Reviews and Dissemination (CRD) databases, ECRI, EuroScan, international HTA agencies, and a focused Internet search. Results include articles published between 1998 and the present, and are limited to English language publications only. Filters were applied to limit the retrieval to systematic reviews/HTAs, guidelines and RCT studies. Internet links are provided, where available.

**Results:**

**Health technology assessments**

No literature identified

**Systematic reviews and meta-analyses**

1. Safdar B, Cone DC, Pham KT. Subcutaneous epinephrine in the prehospital setting. *Prehosp Emerg Care* 2001;5(2):200-7. [PubMed: PM11339733](#)

**Randomized controlled trials**

1. Simons FE, Gu X, Simons KJ. Epinephrine absorption in adults: intramuscular versus subcutaneous injection. *J Allergy Clin Immunol* 2001;108(5):871-3. [PubMed: PM11692118](#)

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2. Simons FE, Gu X, Johnston LM, Simons KJ. Can epinephrine inhalations be substituted for epinephrine injection in children at risk for systemic anaphylaxis? *Pediatrics* 2000;106(5):1040-4. [PubMed: PM11061773](#)
3. Simons FE, Roberts JR, Gu X, Simons KJ. Epinephrine absorption in children with a history of anaphylaxis. *J Allergy Clin Immunol* 1998;101(1 Pt 1):33-7. [PubMed: PM9449498](#)

### Guidelines and recommendations

1. Project Team of the Resuscitation Council (UK). The emergency medical treatment of anaphylactic reactions for first medical responders and for community nurses. In: *Resuscitation Council (UK) [website]*. Revised May 2005. London (UK): Resuscitation Council (UK); 2005. Available: <http://www.resus.org.uk/pages/reaction.htm> (accessed 2008 Jan 17).
2. The diagnosis and management of anaphylaxis: an updated practice parameter. *J Allergy Clin Immunol* 2005;115(3 Suppl 2):S483-S523. [PubMed: PM15753926](#)

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## Appendix – Further information:

### Observational studies

1. Thain S, Rubython J. Treatment of anaphylaxis in adults: results of a survey of doctors at Dunedin Hospital, New Zealand. *N Z Med J* 2007;120(1252):U2492. [PubMed: PM17460742](#)
2. Haymore BR, Carr WW, Frank WT. Anaphylaxis and epinephrine prescribing patterns in a military hospital: underutilization of the intramuscular route. *Allergy Asthma Proc* 2005;26(5):361-5. [PubMed: PM16450570](#)

### Review articles

1. Pongracic JA, Kim JS. Update on epinephrine for the treatment of anaphylaxis. *Curr Opin Pediatr* 2007;19(1):94-8. [PubMed: PM17224669](#)
2. Lean-Tooke AP, Bethune CA, Fay AC, Spickett GP. Adrenaline in the treatment of anaphylaxis: what is the evidence? *BMJ* 2003;327(7427):1332-5. Available: <http://www.bmj.com/cgi/content/extract/327/7427/1332>. [PubMed: PM14656845](#)

### Additional references

1. Brown SG. Anaphylaxis: clinical concepts and research priorities. *Emerg Med Australas* 2006;18(2):155-69. [PubMed: PM16669942](#)
2. Pijak MR, Gazdik F. Dilemmas regarding the proper route of adrenaline administration in anaphylaxis. *Bratisl Lek Listy* 2006;107(1-2):26-30. [PubMed: PM16771134](#)
3. Simons FE. Epinephrine (adrenaline) in the first-aid, out-of-hospital treatment of anaphylaxis. *Novartis Found Symp* 2004;257:228-43. [PubMed: PM15025402](#)
4. Cone DC. Subcutaneous epinephrine for out-of-hospital treatment of anaphylaxis. National Association of EMS Physicians Standards and Clinical Practice Committee. *Prehosp Emerg Care* 2002;6(1):67-8. [PubMed: PM11789655](#)
5. Severe anaphylaxis outside the hospital setting: intramuscular adrenaline. *Prescrire Int* 2001;10(54):124-5. [PubMed: PM11718187](#)
6. Brown AF. Intramuscular or intravenous adrenaline in acute, severe anaphylaxis? *J Accid Emerg Med* 2000;17(2):152-3. [PubMed: PM10718249](#)
7. Hughes G, Fitzharris P. Managing acute anaphylaxis. New guidelines emphasise importance of intramuscular adrenaline. *BMJ* 1999;319(7201):1-2. [PubMed: PM10390429](#)