

# MEDICAL EMERGENCIES IN THE DENTAL PRACTICE

MEDICAL EMERGENCY	SIGNS & SYMPTOMS	MANAGEMENT
<b>Adrenal crisis</b>	<ul style="list-style-type: none"> <li>• Collapse; pallor, cold &amp; clammy skin</li> <li>• Hypotension &amp; dizziness</li> <li>• Vomiting &amp; diarrhoea</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Airway Breathing Circulation Disability Exposure</b></li> <li>• Call 999, state "<b>Addisonian crisis</b>", SBAR</li> <li>• Lie flat; administer oxygen 15 litres/min</li> <li>• Patient's hydrocortisone emergency IM kit at hand: hydrocortisone 100mg IM.</li> </ul>
<b>Anaphylaxis</b>	<p>Signs &amp; symptoms can include:</p> <ul style="list-style-type: none"> <li>• Sudden onset</li> <li>• Urticaria &amp;/or angioedema; flushing &amp; pallor</li> <li>• Respiratory distress; stridor, wheeze &amp;/or hoarseness</li> <li>• Hypotension &amp; tachycardia</li> </ul> <p>Anaphylaxis likely:</p> <ul style="list-style-type: none"> <li>• Sudden onset &amp; rapid progression of symptoms</li> <li>• Life-threatening <b>A</b> &amp;/or <b>B</b> &amp;/or <b>C</b></li> <li>• Skin &amp;/or mucosal changes</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Airway Breathing Circulation Disability Exposure</b></li> <li>• Call 999, state "<b>Anaphylaxis</b>", SBAR</li> <li>• Lie flat, elevate legs (if breathing not impaired); administer oxygen 15 litres/min</li> <li>• Administer adrenaline 500 micrograms IM (0.5ml of 1:1000)</li> <li>• Repeat adrenaline at 5 minute intervals until an adequate response</li> <li>• <u>Paediatric doses of adrenaline:</u></li> <li>• &lt; 6 yrs - 150 micrograms (0.15ml of 1:1000); 6-12 yrs - 300 micrograms (0.3ml of 1:1000); &gt; 12 yrs - 500 micrograms (0.5ml of 1:1000)</li> </ul>
<b>Asthma</b>	<ul style="list-style-type: none"> <li>• Breathlessness &amp; expiratory wheeze</li> <li>• Severe: inability to complete sentences in one breath, RR&gt;25/min, pulse&gt;110/min</li> <li>• <u>Life threatening:</u> cyanosis or RR&lt;8/min, pulse &lt; 50/min, exhaustion, confusion, decreased level of consciousness</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Airway Breathing Circulation Disability Exposure</b></li> <li>• Sit upright; if available, follow patient's personalised asthma action plan (PAAP)</li> <li>• 2 puffs (100 micrograms/puff) <math>\beta_2</math> bronchodilator inhaler e.g. salbutamol; repeat doses may be necessary (early use of spacer device)</li> <li>• Unsatisfactory/no response or if severe/ life threatening; Call 999, SBAR</li> <li>• While awaiting ambulance: oxygen 15 litres/min; <math>\beta_2</math> bronchodilator via spacer given one puff at a time, inhaled separately using tidal breathing; according to response, give another puff every 60 seconds up to a maximum of 10 puffs</li> </ul>
<b>Cardiac Emergencies</b>	<p>Symptoms can vary but commonly:</p> <ul style="list-style-type: none"> <li>• Chest pain or discomfort that suddenly occurs and doesn't go away. It may feel like pressure, squeezing or heaviness in your chest</li> <li>• Pain that may spread to your left or right arm or may spread to your neck, jaw, back or stomach</li> <li>• Feeling sick, sweaty, light-headed or short of breath</li> </ul> <p><b>NB: Heart attacks in women commonly missed</b></p>	<ul style="list-style-type: none"> <li>• <b>Airway Breathing Circulation Disability Exposure</b></li> <li>• Call 999, state "<b>heart attack</b>"; SBAR</li> <li>• Comfortable position (usually sitting up)</li> <li>• GTN spray 400-800mcg (typically 1-2 activations) sub lingual</li> <li>• Dispersible aspirin 300 mg to chew (unless there is clear evidence of allergy to it)</li> </ul> <p><b>NB</b> Known angina: sit down, rest, GTN; no relief after a few minutes repeat GTN. Still no relief after a few minutes → heart attack protocol: call 999, SBAR &amp; aspirin (see above)</p>
<b>Epileptic seizures</b>	<ul style="list-style-type: none"> <li>• Sudden collapse &amp; loss of consciousness</li> <li>• Rigidity &amp; cyanosis</li> <li>• Jerking movements of limbs</li> <li>• Noisy breathing</li> <li>• Tongue may be bitten</li> <li>• Frothing at mouth</li> <li>• Incontinence may occur</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Airway Breathing Circulation Disability Exposure</b></li> <li>• Safe environment: prevent injury, do not put anything into mouth, do not restrain</li> <li>• Administer oxygen 15 litres/min; note timings of seizure</li> <li>• Once jerking movements cease: recovery position</li> <li>• If available, follow Patient's Treatment Plan; Call 999 if necessary, SBAR</li> </ul> <p><b>Prolonged convulsive seizures (5 minutes or more) or repeated rapidly:</b> Midazolam oromucosal solution can be given via the buccal route in adults as a single dose of 10mg (unlicensed in adults) (BNF, 2020) <u>Paediatric doses of midazolam oromucosal solution:</u> 1-4 years- 5mg; 5-9 years-7.5mg; 10-18 years -10mg</p>
<b>Hypoglycaemia</b>	<ul style="list-style-type: none"> <li>• Shaking/trembling</li> <li>• Slurred speech &amp; vagueness</li> <li>• Sweating &amp; pallor; blurred vision</li> <li>• Tiredness/Lethargy</li> <li>• Confusion/aggression</li> <li>• Stroppy/moody</li> <li>• Unconsciousness</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Airway Breathing Circulation Disability Exposure</b></li> <li>• Offer 15-20g quick acting carbohydrate e.g. 4-5 Glucotabs® or 1.5 - 2 tubes of Glucogel</li> </ul> <p>Impaired consciousness/unable to swallow safely or unconscious:</p> <ul style="list-style-type: none"> <li>• Call 999, SBAR, recovery position, glucagon 1mg IM</li> <li>• Once consciousness returns, offer oral carbohydrate</li> <li>• If able, measure blood sugar to help confirm correct diagnosis</li> </ul> <p><u>Paediatric dose of glucagon:</u> &lt; 8 years of age or &lt; 25kg: 0.5mg IM</p>
<b>Red Flag Sepsis</b>	<p>In the context of presumed infection, if patient looks very unwell, family or carer is very concerned, there is ongoing deterioration or if physiology abnormal for this patient (check HR, SpO2 &amp; BP): is <b>ONE</b> red flag present:</p> <ul style="list-style-type: none"> <li>• <b>New deterioration in GCS/ AVPU</b></li> <li>• <b>Systolic B.P <math>\leq 90</math> mmHg (or <math>\geq 40</math> mmHg &lt; normal)</b></li> <li>• <b>Heart rate <math>\geq 130</math> per minute</b></li> <li>• <b>Respiratory rate <math>\geq 25</math> per minute</b></li> <li>• <b>Needs oxygen to keep SpO2 92% (88% in COPD)</b></li> <li>• <b>Non-blanching rash or mottled/ ashen/ cyanotic</b></li> <li>• <b>Not passed urine in last 18 hours</b></li> <li>• <b>Recent chemotherapy (within last 6 weeks)</b></li> </ul> <p><b>NB</b> Refer to age-appropriate GDP Sepsis Decision Tool for guidance in children <math>\leq 12</math> years of age</p>	<ul style="list-style-type: none"> <li>• <b>Airway Breathing Circulation Disability Exposure</b></li> <li>• Refer to GDP Sepsis Decision Support Tool For Primary Dental Care (<math>\geq 12</math> years of age)</li> <li>• Call 999, state '<b>Red Flag Sepsis!</b>', SBAR</li> <li>• Oxygen 15 litres/min</li> <li>• Ensure paramedics pre-alert as '<b>Red Flag Sepsis</b>'</li> </ul> <p><b>NB</b> Refer to age-appropriate GDP Sepsis Decision Tool for guidance in children <math>\leq 12</math> years of age</p>
<b>Stroke</b>	<p>Facial weakness Arm weakness Speech problems Time to call 999</p>	<ul style="list-style-type: none"> <li>• <b>Airway Breathing Circulation Disability Exposure</b></li> <li>• Act <b>FAST</b> &amp; call 999; SBAR</li> <li>• Administer oxygen 15 litres/min</li> <li>• Nil by mouth; appropriate position</li> </ul>
<b>Syncope</b>	<ul style="list-style-type: none"> <li>• Feels faint/dizzy/light headed</li> <li>• Collapse &amp; loss of consciousness</li> <li>• Pallor, sweating, slow pulse, low BP</li> <li>• Nausea/vomiting</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Airway Breathing Circulation Disability Exposure</b></li> <li>• Lie flat, elevate legs &amp; loosen tight clothing; oxygen? (not usually necessary)</li> <li>• Once consciousness returns, offer glucose in water or sweet tea</li> <li>• Slow recovery: consider alternative diagnosis; unresponsive: check signs of life</li> </ul>

## References

Addison's Self Help Group (2020) **Adrenal Crisis Can Kill** [www.addisonsdisease.org.uk](http://www.addisonsdisease.org.uk) accessed 20/04/20  
 BNF (2020) **Prescribing in dental practice** [www.bnf.nice.org.uk](http://www.bnf.nice.org.uk) accessed 20/04/20  
 British Heart Foundation (2020) **Heart Attack** [www.bhf.org.uk](http://www.bhf.org.uk) accessed 20/04/20  
 BTS/SIGN (2019) **158 British guideline on the management of asthma** [www.brit-thoracic.org.uk](http://www.brit-thoracic.org.uk) accessed 20/04/20  
 CQC (2019) **Dental mythbuster 4: Drugs & equipment for a medical emergency** [www.cqc.org.uk](http://www.cqc.org.uk) accessed 20/04/20  
 Diabetes UK (2020) **Hypoglycaemia** [www.diabetes.org.uk](http://www.diabetes.org.uk) accessed 20/04/20  
 Jevon P (2021) **Medical Emergencies in the Dental Practice 3<sup>rd</sup> Ed**, Wiley Blackwell, Oxford  
 NICE (2020) **Epilepsies: diagnosis and management** [www.nice.org.uk](http://www.nice.org.uk) (accessed 20/04/20)  
 RC (UK) (2018) **Primary Dental Care-Quality standards for CPR & training** [www.resus.org.uk](http://www.resus.org.uk) accessed 20/04/20  
 Stroke Association (2020) **Act FAST** [www.stroke.org.uk](http://www.stroke.org.uk) accessed 20/04/20  
 UK Sepsis Trust (2020) **Clinical Tools** [www.sepsistrust.org](http://www.sepsistrust.org) accessed 20/04/20

Poster designed as an aide mémoire by Phil Jevon  
 Medical Education, Manor Hospital, Walsall, UK

## Acknowledgements

Dr R Daniels BEM UK Sepsis Trust (sepsis section); Mr N Rashid/Miss R Joshi, ED Consultants & Mrs S Church Consultant Orthodontist, Walsall (expert consulting advice); R Khakh / L Jevon (IT support)