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ASSIGNMENT: EFFECT OF ADRENALINE  
ON HUMAN BODY

SUBMITTED TO:

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Explain the effects of adrenaline/epinephrine on human body in detail.

ANSWER:-

### ADRENALINE / EPINEPHRINE:-

- Stimulus  $\alpha$  and  $\beta$  adrenoreceptors
- At low doses adrenaline has predominantly  $\beta$  adrenoreceptor actions
  - Improves myocardial contractility (positive inotropic effect) as a result of increased influx of calcium into cardiac fibres.
  - Increase cardiac rate (positive chronotropic effect).
  - Improve atrio-ventricular conduction (positive chronotropic effect)
  - In low doses adrenaline decreases total peripheral vascular resistance and lower blood pressure.
  - In large doses Adrenaline activates  $\alpha$  receptors in the peripheral and raises blood pressure.
- Net response is often vasodilation
- Broncho-dilation

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- Inhibits insulin secretion and decrease the uptake of glucose by peripheral tissues, thus raising blood glucose level.

## DRUG INTERACTIONS:-

- $\beta$ -blockers such as propranolol, atenolol, bisoprolol, metoprolol etc.
- Entacapone.
- Digitalis glycosides
- Halogenated anesthetics such as halothane, enflurane, isoflurane
- Tricyclic antidepressants
- Oxytocics.

## USES:-

- As a drug Epinephrine is used chiefly as a
- Stimulant in Cardiac Arrest
  - Vasoconstrictor in shock.
  - As a bronchodilator
  - Antispasmodic in Bronchial asthma
- Epinephrine is found in a small amount in the body and is essential for maintaining cardiovascular homeostasis because of its ability to direct blood

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to tissue under

## EFFECTS ON BODY:-

There are the following effects of adrenaline:-

- headache
- Dizziness
- ~~feel~~ feelings of anxiety or fear or restlessness
- Trembling
- Insomnia, Confusion, irritability
- A brosmal mood or behaviour
- A dry mouth or producing too much saliva.
- Weakness or sweating
- changes in the rhythm and speed of the heart.
- high blood pressure.
- coldness of the arms or legs
- breathlessness
- reduced appetite, feeling sick or being sick.
- repeated injections may damage tissues at the site of the injection
- difficulty of not being able to pass water
- metabolic acidosis (an imbalance of certain constituents in your blood)

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may occur.

- there may be some tissue damage at the site of injection after repeated injections of adrenaline.
- Increase in tremors and rigidity in patients suffering from a condition called parkinsonian syndrome.
- bleeding in the head
- paralysis of one half of the body.
- Increased sugar levels in the blood
- break down of fat in the body.
- allergic reactions although serious allergic reactions are rare.
- Any sudden wheeziness, difficulty in breathing, swelling of the eyelids, face or lips, rash or itching (especially affecting your whole body).
- For patients in cardiac arrest, administering ept epinephrine helps to restart the heart but may increase the overall likelihood of death or debilitating brain damage, according to a study published.

- nausea
  - Vomiting
  - pounding, fast, or irregular heartbeat
  - skin redness, swelling, warmth, or tenderness at the site of injection
  - Oxytocics.
- Key actions of adrenaline include increasing the heart rate, increasing blood pressure, expanding the air passages of the lungs, enlarging the pupil in the eye (see photo) redistributing blood to the muscles and altering the body's metabolism, so as to maximise blood glucose levels (primarily for the brain)

Epinephrine is widely used as an additive in local anesthetics (typically in concentrations of 1:100,000) to improve the depth and durations of the anesthesia, as well as to reduce bleeding in the operative field.

Too much epinephrine (Adrenalick, epinephrine injection, USP auto-injection) can cause dangerously high blood pressure, stroke, or death. If you take certain medicines, you may develop serious

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life-threatening side effects, from  
the epinephrine in adrenalin

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- CNS: anxiety, fear, tension, headache, and tremor.
- Hemorrhage: The drug may induce cerebral hemorrhage as a result of a marked elevation of blood pressure.
- Pulmonary edema
- ~~Less serious s.~~
- Epinephrine effects CNS alertness, it allows quick thinking, therefore, helps in emergency situations.
- CNS stimulant or sedative drugs - work by increasing or decreasing catecholamine in CNS.
- Both Epinephrine and Norepinephrine cause sweating.

### MECHANISM OF ACTION:-

Epinephrine acts on both alpha and beta adrenergic receptors.



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## INDICATIONS: -

### EMERGENCY

treatment in anaphylaxis.  
Bronchospasm, asthma, Cardiac failure.

### ADULT:-

O.R - 1mg (preferred) or IM  
(avoid buttocks) every 4 hrs as needed

### CHILDREN

0.01mg/kg (max 0.5mg) every  
4hrs as needed.

### STORAGE.

- Adrenaline is sensitive to light
- Do not store in cartons
- Store below 25 degree.
- Do not refrigerate or freeze.