## **Emergency Medical Training Services**

Emergency Medical Technician – Basic Program Outlines Outline Topic: DIABETES

**DEFINITIONS** 

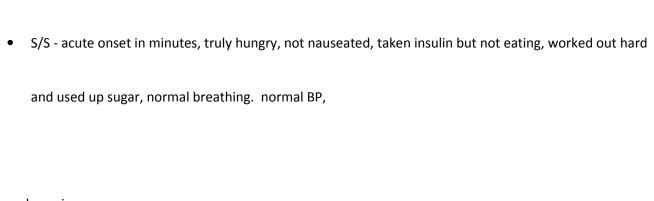
• Target cells - Hormones are released in the blood stream until they arrive at the targeted cell to work.

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**Diabetes Mellitus** 

- Results most common from pancreatic dysfunction
- Islets of Langerhans are islands in the pancreas that produce insulin.
- Insulin opens the cell membrane to let sugar in.
- You cannot produce pure energy in a cell unless both oxygen and sugar are present.
- DO NOT THINK OF THE INSULIN LEVEL BUT RATHER WHAT IS THE SUGAR LEVEL.
- You can have plenty of insulin and still be a diabetic. As you get older less "doors" are on the cell to let sugar in, as you get older the pancreases starts to produce less insulin, if you get pregnant you are eating for 2 and the pancreas cannot keep up, trauma to the pancreas, infection to the pancreas.
- 2 types of diabetes. 1) Type 1 and 2) Type 2.
- Type 1 also known as adolescent, or insulin dependent. Need from childhood cannot produce insulin.
- Type 2 is also known as adult, or non-insulin dependent. Most common from obesity. Fix lifestyle, then
  give medication to stimulate more natural production of insulin, then final placed on insulin daily.

Problems of Diabetes
Causes nerves to fail.
Causes increased pressure in retina - blindness.
Causes weak, thin blood vessels that burst.
Cause poor wound care - a pebble in a shoe can lead to the leg being cut off.
Sugar Testing
D-Stick & glucometer.
Prick skin and collect capillary blood onto test strip.
80 to 120mg/dL is normal range.
Hypoglycemia
Low sugar levels less than 80mg/dL.
Also called Insulin Shock.
THIS IS THE TRUE DIABETIC EMERGENCY. WHEN THE BRAIN IS OUT OF GAS (SUGAR) IS DOESN'T RUN
ANYMORE.



## Hyperglycemia

- High sugar levels more than 200mg/dL.
- Also know as Diabetic Coma.
- S/S onset 12 to 24 hours, they think they are hungry so they eat and then vomit, are nauseated, eat
  without taking insulin, fast deep breathing (Kussmals), candy breath, urinating sugar, lower BP due to
  sweating and urination and rapid breathing.

## **DKA** (Diabetic Ketoacidosis)

- Blood sugar of 300mg/dL or higher. Body uses back up way to make energy and has more waist (acids).
- This is untreated hyperglycemia. This has all the S/S of diabetic coma but worse.
- the 3 "p's" 1) polyuria, 2) polydipsia (thirst), 3) ployphagia (hunger) (eat a lot).
- This person has too much sugar and needs dialysis.
- Provide O2 and ABC support.

## **Treatment**

• If any question as to hyper or hypo give sugar. It will help the most serious one which is too little sugar.

If it was already high a little more will not kill them.

- If low sugar give .5 to 1g/kg (25 to 50g) of oral glucose.
- Differential Considerations in Diabetic Emergencies (chart);

FINDINGS	HYPOGLYCEMIA	HYPERGLYCEMIA
Other name	Insulin shock	Diabetic coma
Food intake	Insufficient	Excessive
Insulin Dosage	Excessive	Insufficient
Onset	Rapid	Gradual 12-24hours
Hunger	Intense	Absent
Vomiting	Uncommon	Common
Breathing	Normal	Deep/rapid Kussmals
Breath odor	Normal	Acetone (fruit) smell
Blood pressure	Normal	Low
Pulse	Normal	Rapid/weak
Skin	Pale/moist	Warm/dry
Headache	Present	Absent
Consciousness	Irritability, Seizure	Restless
Urine	Absent for sugar	Present for sugar
Treatment Response	Immediate after glucose	Gradual after medication and fluid repla
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