THE ROLE OF THE ATC IN A TYPE 1 DIABETIC–ATHLETE'S MANAGEMENT TEAM

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DISCLOSURE STATEMENT:

AS A DIABETIC FOR THE PAST 37 YEARS; THE PRESENTER DOES AND/OR HAS USED MANY OF THE PRODUCTS IN TODAY'S DISCUSSION. WITH THAT BEING SAID I DO NOT WORK FOR NOR ENDORSE ANY PRODUCT OVER ANOTHER IN THE TREATMENT OF T1D NEEDS. ALL TID ATHLETES SHOULD BE UNDER DIRECT SUPERVISION OF THEIR PERSONAL ENDOCRINOLOGIST AND ALL DECISIONS NEED TO BE MADE WITH THAT MD'S APPROVAL.

RECOGNITION

- WIFE JENNIFER AND 4 SONS (TOM, LIAM, RYAN, AND COLIN)
- PARENTS (TOM AND KATHY)
- LTHS ATHLETIC PROGRAM AND ADMINISTRATION
- ISU ATEP (DR. BILL KAUTH, DR. DAVE DRAPER, AND KATHY SCHNEIDWIND)
- TOM BENTLEY (ANDREW HS)
- DR. GRAZIE ALEPPO (NORTHWESTERN MEMORIAL HOSPITAL)
- IATA (NOELLE SELKOW AND TAYLOR ARMAN)
- TECH STAFF AT LTHS (KATE FAHEY, JEFF

What type are we discussing today?

- TYPE 1 DIABETES, IDDM, JUVENILE DIABETES → **YES**
- TYPE 2 DIABETES, NIDDM, ADULT-ONSET DIABETES → **NO**

Type 1 Diabetes

About 1.25 Million Americans (200k under 20 yrs.) have T1D. Type 1 diabetes (T1D) is an autoimmune disease in which a person's pancreas stops producing insulin, a hormone that enables people to get energy from food. It occurs when the body's immune system attacks and destroys the insulin-producing cells in the pancreas, called beta cells. While its causes are not yet entirely understood, scientists believe that both genetic factors and environmental triggers are involved. ***Its onset has nothing to do with diet or lifestyle.*** There is nothing you can do to prevent T1D, and—at present—nothing you can do to get rid of it. http://www.jdrf.org/about/fact-sheets/type-1-diabetes-facts/

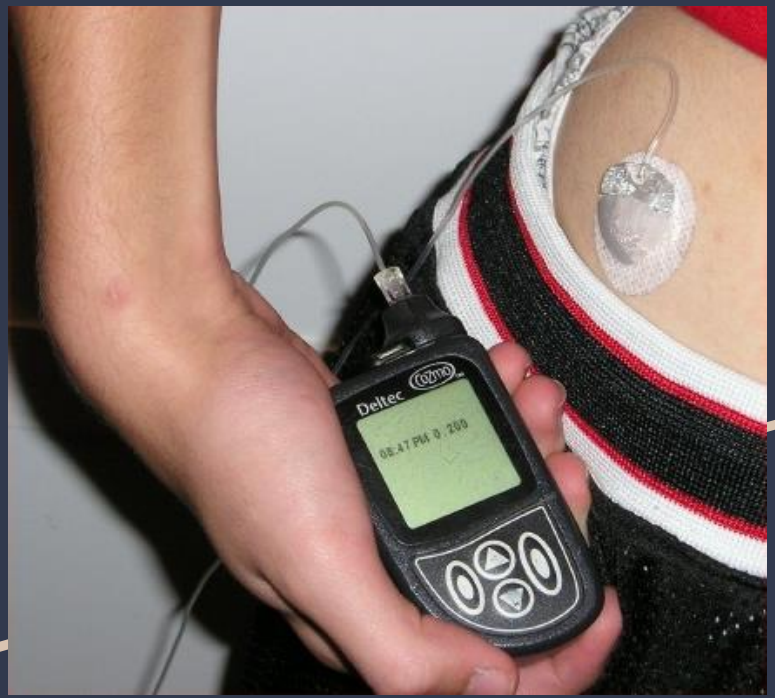
SIGNS AND SYMPTOMS OF HYPERGLYCEMIA

- Blood Sugar over 200 mg/dl (but remember the number **240 mg/dl**)
- Extreme thirst, drinking a lot and then urinating frequently as a result
- Unintentionally losing a lot of weight within a few weeks
- Red and Dry Skin
- Breath may have a citrus odor
- Confusion and drowsiness, or even coma
- Noticeable loss of energy with muscle weakness, tiredness and a strongly impaired general condition
- Nausea and stomach pain
- Trouble seeing
- Poor concentration

SIGNS AND SYMPTOMS OF HYPOGLYCEMIA

- Blood Sugar below 70 mg/dl
- Pale Skin
- Sweating
- Confusion, dizziness
- Abnormal Personality
- Headache
- Seizures
- May become unconscious

SO NOW WHAT?



THIS BEGINS WITH A LOT OF Q AND A. IF YOU DON'T UNDERSTAND THE Q'S THEN YOU ARE NOT L**IKELY TO KNOW HOW TO INTERPRET THE A'S.**

QUESTION #1: ARE YOU ON A PUMP?

YES, I am on a pump...

THIS ANSWER LEADS US TO MANY OTHER QUESTIONS AND A (HOPEFULLY) THOROUGH DISCUSSION OF THE ATHLETES MANAGEMENT PARAMETERS. WE WILL BE DISCUSSING THIS AT LENGTH.

Questions for those with a pump…

WHAT KIND/TYPE OF PUMP?

-TUBING OR NON-TUBING (“POD”)

WHAT IS YOUR BASAL RATE?

-DOES IT CHANGE AT ALL THROUGH THE DAY OR WITH EXERCISE?

WHAT ARE YOUR BOLUS RATIOS?

-CORRECTIVE BOLUS

DO YOU HAVE A CGM (CONTINUOUS GLUCOSE MONITOR)?

NO, I am not on a pump...

UGH!!!

-missing out on flexibility

-great risk of both hyper and hypo

-Be especially aware of these athletes

-Discussion of what might be preventing them from moving towards a pump:

NEXT BIG QUESTION: **HOW OFTEN DO YOU CHECK YOUR BLOOD SUGAR?**

ATHLETES SHOULD CHECK MORE OFTEN THAN THE "NORMAL" DIABETIC.

DEVELOP A PLAN OF WHEN TO CHECK AND WHAT TO DO WITH THE INFORMATION.

-i.e. PRE-GAME, QUARTER, HALF,

BE CAREFUL HOW TO REACT TO RESULTS THAT ARE NOT WITHIN THE NORMAL PARAMETERS!!!

IT IS ABOUT GETTING INFORMATION AND NOT FAILING OR PASSING.

CHECK BLOOD SUGAR DON'T TEST IT!

WHAT TO DO IF BLOOD SUGAR IS LOW:

(HYPOGLYCEMIA)

- Follow MD's parameters but simple CHO or glucagon is key (tabs, gels, cake icing, etc.)
- Remove from participation and recheck in about 15 minutes. If numbers have risen then return to play is appropriate. If not, then either wait or repeat depending on athletes cognitive signs/symptoms.
- If the number was really low (i.e. below 50) it is not uncommon for there to be a "rebound effect". This can cause a ***hyperglycemia*** situation a couple of hours later. By testing later this can be better managed.
- NOCTURNAL HYPOGLYCEMIA

WHAT TO DO IF BLOOD SUGAR IS ELEVATED:

(HYPERGLYCEMIA)

- FOLLOW MD'S PROTOCOL (BOLUS/INJECTION AMOUNTS)
- REMOVE FROM PARTICIPATION
- RECHECK ABOUT :30 POST BOLUS/INJECTION
    - IF STILL NO CHANGE (OR RISING) DISCUSS PUMP ISSUES
- BE CAREFUL NOT TO "RE-BOLUS" TOO SOON
- CHECK URINE FOR KETONES (DKA)
- HYDRATE WITH WATER

EFFECTS OF EXERCISE ON T1D

AEROBIC CONDITIONING

-GENERALLY BS WILL GO DOWN

-IF BS IS HIGH THEN SUGAR OFTEN GOES UP

ANAEROBIC CONDITIONING

-GENERALLY BS WILL GO UP

SPORTS

-LESS RESEARCHED DUE TO MULTIPLE CONTROL ISSUES

WHAT CAN CAUSE BLOOD SUGAR “ISSUES” IN THE DIABETIC ATHLETE?

- STRESS (PHYSICAL AND EMOTIONAL)
- BODY CHANGES (PUBERTY, MUSCLE GAIN, MUSCLE LOSS)
- HEAT
- FOOD (NOT JUST SWEETS)
- INSULIN REGIMEN CHANGES
- FOOD INTAKE CHANGES
- PUMP ISSUES
- ILLNESS
- ”TAKING A DAY OFF”
- ETC.

WHAT SHOULD AN ATC HAVE/DO TO BE PREPARED?

- KNOW WHO THEY ARE
- HAVE CONVERSATIONS WITH THE ATHLETE AND PARENT AHEAD OF ANY EPISODES (THEY WILL HAPPEN) TO BE PREPARED FOR THE PROTOCOL.
- COMMUNICATE WITH COACHES, PARENTS, STAFF, TEAMMATES, ETC.
- HAVE A “BACK-UP” GLUCOMETER
- HAVE A QUICK CHO SOURCE

REFERENCE PAGE

Please click the link below for a list of references:

https://goo.gl/Mpzf5T

QUESTIONS AND THANK YOU!!!