Diabetes Education SERVICES

15 years

Diabetes Boot Camp – Class 2

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www.DiabetesEd.net

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Important Stuff

- Welcome to our First Boot Camp
- We will meet for 7 sessions - From 11:30am to 1pm PST
- I will stay after the program to answer any questions "off – line"
- The course will be recorded and available for viewing within 4 hours of completion of the session
- Login to the Online University to hear the recorded version, take the quiz and get your CEs
- Please email us with any questions or concerns at susan@diabetesed.net

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Boot Camp 2 – Standards of Care, Treatment of HTN, Lipids, Hypo, Monitoring and Sick Days

2. Standards of Care, Treatment of Hypertension and Hyperlipidemia, Pt Assessment – Oct 9

Review goals of care for prevention, management and treatment of complications.

- Prevention and lifestyle interventions
- National goals and getting to target – Including AACE and ADA Guidelines
- Screenings and vaccinations
- Targeting interventions based on patient assessments

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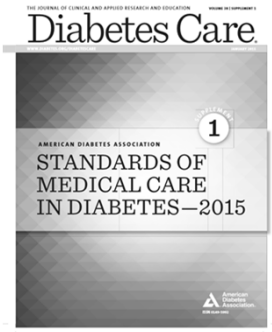
ADA Standards of Care 2015



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1. Strategies for Improving Care

- **Based on a recent report by the CDC**, <7% of privately insured adults with newly diagnosed diabetes from 2009 to 2012 joined a self-management education and training program.
- Consider Chronic Care Model
  1. Optimize Provider and Team Behavior
  2. Support Patient Behavior Change
  3. Change the Care System

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Poll Question 1

- What is the preferred approach when providing diabetes education with patients?
  a. Provide patient centered self-management support
  b. Instruct all patients to meet national standards
  c. Highlight risk of complications when goals aren't met
  d. Remind them that insulin treatment can be beneficial.

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Chronic Care Model - CCM

- 6 core elements for optimal diabetes care
  - Proactive (vs reactive) care delivery system.
    - Planned visits coordinated through a team based approach
  - Self Management support
  - Decision support (basing care on evidence based guidelines)
  - Clinical information systems (registries that provide patient specific and population based support to team)
  - Community policies and resources to support healthy lifestyles
  - Health systems that create a culture of quality

1. Keep it Patient Centered

- "it is clear that optimal diabetes management requires an organized, systematic approach and the involvement of a coordinated team of dedicated health professionals, working in an environment where patient centered care is a high priority".

3. Initial Eval and Diabetes Management Planning

- Medical Evaluation
  1. Classify diabetes
  2. Detect diabetes complications
  3. Review previous treatment and risk factor control
  4. Assist in formulating a management plan
  5. Provide a basis for continuing care

3. Initial Eval – Conditions to look for

- Type 1 - Autoimmune diseases
- Other conditions that may appear Type 1 /2
  - Depression and anxiety
  - Obstructive sleep apnea
  - Fatty liver disease
  - Cancer
  - Fractures
  - Cognitive impairment
  - Low Testosterone in Men
  - Periodontal disease
  - Hearing Impairment

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4. Foundations of Care

- Education –
  - Setting Up Successful Diabetes Ed Program – Level 2
- Nutrition
- Physical Activity
- Smoking Cessation
- Psychosocial Care
- Immunization

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4. Education

- People with diabetes and pre diabetes should receive DSME
  - Monitor for effective self-management and quality of life
  - Address psychosocial issues and emotional well being
  - Results in cost savings and improved outcomes, should be reimbursed by third party payers.

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4. Exercise Recommendations

- **Activity update –Don't sit more than 90 minutes**
- Evidence supports that everyone, including people with diabetes should be encouraged to reduce sedentary time
- DO NOT sit for more than 90 minutes at a time.
- It is recommended that people with pre diabetes and diabetes engage in 150 minutes of activity a week and at **least 2 weekly sessions of resistance exercise.**

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4. Vaccinations- Immunizations

- Influenza vaccine
  - every year starting at age 6 months
- Hepatitis B Vaccine
  - For diabetes pts age 19 – 59 (not previously vaccinated)
  - Double risk of Hep B due to lancing devices/ glucose meter exposure

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4. Pneumonia Vaccinations

- Pneumonia polysaccharide PPSV23 vaccine to all patients starting at age 2
- **Adults ≥ 65 years of age**, if not previously vaccinated, should receive pneumococcal conjugate vaccine 13 (PCV13), followed by PPSV23 6-12 months after initial vaccination.
- **Adults ≥ 65 years of age**, if previously vaccinated with PPSV23 should receive a follow-up ≥ 12 months with PCV13.

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4. E- Cigarettes

- Not supported as an alternative to smoking or to facilitate smoking cessation.

The uptake of e-cigarettes, which use battery-powered cartridges to produce a nicotine-laced vapor (and often contain other bad stuff)

4. Smoking and Diabetes

Smoking increases risk of diabetes 30%

- **Ask at every visit**
- **Assess**
- **Advise**
- **Assist with stop smoking**
- **Arrange for referrals**
- **Organize your clinic**

5. Prevention or Delay of Type 2

- Patients with prediabetes
  - Refer to behavioral counseling /DSME program to:
    - Focus on intensive diet and physical activity
    - Weight loss target of 7%
    - Increase physical activity to 150 minutes a week
  - Follow-up counseling critical for success
  - Consider Metformin for type 2 prevention
    - if A1c 5.7-6.4
    - Especially for those with BMI >35 and hx of GDM
  - Monitor annually and screen and mitigate modifiable CV risk factors

Can we stop pre diabetes from progressing?

3, 234 people w/ Pre-Diabetes randomized:

- Placebo
- Diet/Exercise or
- Metformin

over a three year period

Diabetes Prevention Program (DPP) 2001

NATIONAL Diabetes PREVENTION PROGRAM

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Diabetes Prevention Program

- Standard Group - 29% developed DM
- Lifestyle Results - 14% developed DM
  - 58% (71% for 60yrs +) Risk reduction
    - 30 mins daily activity
    - 5-7% of body wt loss
- Metformin 850 BID - 22% developed DM
  - 31% risk reduction (less effective with elderly and thinner pt's)

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Weight loss and Prevention

- For every 2.2 pounds of weight loss, risk of type 2 diabetes was reduced by 13%.

NATIONAL Diabetes PREVENTION PROGRAM

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ABC's of Diabetes

A1C

Blood Pressure

Cardiovascular risk reduction

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6. Glycemic Targets

- **Adult non pregnant A1c goals**
  - **A1c < 7%** - a reasonable goal for adults.
  - **A1c < 6.5%** - may be appropriate for those without significant risk of hypoglycemia or other adverse effects of treatment.
  - **A1c < 8%** - may be appropriate for patients with history of hypoglycemia, limited life expectancy, or those with longstanding diabetes and vascular complications.
  - Frequency:
    - If pt meeting goal - At least 2 times a year
    - If pts *not* meeting goal – Quarterly

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6. Pediatric Glycemic Targets-2015

- **A1c goal <7.5 % for all ages;**
  - however individualization is still encouraged.
  - A lower goal, <7% if can be achieved w/out excessive hypoglycemia
- **Blood glucose goals**
  - Before meals: 90-130
  - Bedtime/overnight: 90- 150

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10. Older Adults

- If functional and cognitively intact with significant life expectancy, use same goals as younger adults
- Glycemic goals may need to be relaxed with focus on quality of life
- Address Cardiovascular Risk factors
- Focus screening for complications on those that would lead for functional impairment
- Over age 65, high risk for depression

Poll Question 2

- According to the American Association of Clinical Endo (AACE), what is the A1c goal?

a. Less than 6.5 for all patients
b. Pre meal blood glucose less than 110
c. A1c less than 7
d. A1c less than 6.5 for healthy patients

Goals for Glycemic Control

A1c ≤ 6.5%	A1c > 6.5%
For healthy patients without concurrent illness and at low hypoglycemic risk	Individualize goals for patients with concurrent illness and at risk for hypoglycemia

6. A1c Test

- Measures glycation of RBC's over 2-3 months
- Weighted mean (50% preceding month)
- Each 1% ~ 29mg/dl
- Accuracy: affected by some anemias, hemoglobinopathies
- A measurement of glucose in fasting and postprandial states
- African Americans may have false lows

Red Blood Cell

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6. A1c and Estimated Avg Glucose (eAG)

A1c (%)	eAG
5	97
6	126
7	154
8	183
9	212
10	240
11	269
12	298

Order teaching tool kit free at diabetes.org

eAG = 28.7 x A1c-46.7 ~ 29 pts per 1%

Translating the A1c Assay Into Estimated Average Glucose Values – ADAG Study
Diabetes Care: 31, #8, August 2008

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6. Glucose Goals 2015
Individualize Targets – ADA

- Pre-Prandial BG 80- 130
  - No longer 70–130 mg/dL
    to better reflect new data comparing actual average glucose levels with A1C targets.
- 1-2 hr post prandial < than 180

*for nonpregnant adults

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Poll Question 3

- Which study demonstrated that keeping A1c less than 7% reduces complications for Type 1?

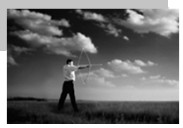
a. Diabetes Prevention Trial
b. Diabetes Control and Complications Trial
c. United Kingdom Prospective Diabetes Study
d. YOUTH Trial

Diabetes Control and Complications Trial (DCCT)

In June, 1993 the New England Journal of Medicine published the results of the landmark DCCT.

The largest, most comprehensive diabetes study ever conducted. The 10 year study involved more than 1400 subjects with Type 1 DM. It compared the effects of two treatment regimens-standard therapy and intensive control-on the complications of diabetes.

DCCT Conclusions



By maintaining A1C < 7%:

- Eye disease - 76% reduced risk
- Kidney disease - 50% reduced risk
- Nerve disease - 60% reduced risk

Management elements included:

- SMBG 4 or more times a day
- 4 daily insulin injections or insulin pump
- Greater risk of hypoglycemia

UKPDS Results

United kingdom Prospective Diabetes Study

- Conducted over 20 years involving over 5,100 patients with Type 2 diabetes
- 1% decrease in A_1c reduces microvascular complications by 35%
- 1% decrease in A_1c reduces diabetes related deaths by 25%
- B/P control (144/82) reduced risk of:
  - Heart failure (56%)
  - Stroke (44%)
  - Death from diabetes (32%)

Lancet 352: 837-865, 1998

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"Legacy Effect"

- For participants of DCCT and UKPDS
  - long lasting benefit of early intensive BG control prevents
    - microvascular complications
    - Macrovascular complications (15-55% decrease)
  - Even though their BG levels increased over time
  - Message – Catch early and Treat aggressively

8. Cardiovascular Disease and Risk Management

- Cardiovascular disease is the leading cause of mortality and morbidity in diabetes
- Largest contributor to direct and indirect costs
- Controlling cardiovascular risk improves outcomes
- Large benefits are seen when multiple risk factors are addressed globally

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8. BP Goal 2015

BP < 140 / 90

- Some pts may benefit from B/P 130/80 (younger and achieved with undue tx burden)
- Studies indicate that the previous B/P target of 140/80 didn't improve outcomes enough to balance the risk of side effects such as orthostatic hypotension and polypharmacy.

8. Hypertension Guidelines 2015

Screening – Check BP at each visit.

If either

- systolic 140 or > diastolic 90 or > repeat on separate day.

Hypertension = Repeat systolic or diastolic above or equal to these levels

When taking B/P

- Pt sit still for 5 min's
- Feet on floor,
- Arm supported at heart level
- Right size cuff

8. BP Treatment

ADA 2015 Standards

- Pts with B/P > 120/80
  - encourage lifestyle changes to reduce B/P
- B/P > 140/90
  - Lifestyle plus prompt initiation of B/P meds
- Lifestyle =
  - Weight loss
  - DASH Style diet (fresh fruit, veggies, whole grains, reducing sodium and increasing potassium intake)
  - Moderation of alcohol intake
  - Increased physical activity

8. Blood Pressure Treatment

- First Line B/P Drugs
  - ACE Inhibitors or
  - Angiotensin receptor blocker (ARBs) (type 2)
  - If one class is not tolerated, the other should be tried
- Multiple Drug Therapy often required
  - Including an ACE Inhibitor / ARB at max dose, plus a thiazide diuretic

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8. Hyperlipidemia Update 2015

- **Statin treatment and lipid monitoring** were revised to reflect the 2013 findings of American College of Cardiology/ American Heart Association.
- **Statin therapy initiation** is no longer based on the LDL level.
  - Starting and dosing stratification is driven by risk status.

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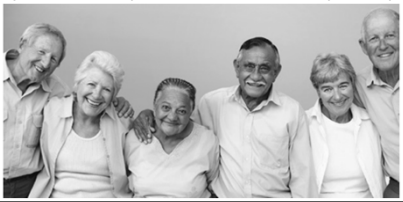
8. Dyslipidemia Screening - Adults

- Screening lipid profile is recommended at time of diagnosis
- And/or at 40 years
- And periodically thereafter (every 1-2 years)



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8. Dyslipidemia Management

- Start with lifestyle
  - Reduce trans, saturated fat, cholesterol
  - Increase intake of omega-3 fatty acids, viscous fiber, and plant stanols/sterols
    - Contained in grains, vegetables, fruits, legumes, nuts, and seeds. Also added to margarine, OJ and other food products
  - Lose weight (if indicated)
  - Get Active

8. Dyslipidemia Management

- Intensify lifestyle therapy and optimize glucose control for patients with:
  - Triglycerides ≥ 150 and/or
  - HDL ≤ 40 (men) ≤50 (women)

8. ADA Guidelines 2015

Table 8.1—Recommendations for statin treatment in people with diabetes

Age	Risk factors	Recommended statin dose*	Monitoring with lipid panel
<40 years	None	None	Annually or as needed to monitor for adherence
	CVD risk factor(s)**	Moderate or high	
	Overt CVD***	High	
40–75 years	None	Moderate	As needed to monitor adherence
	CVD risk factors	High	
	Overt CVD	High	
>75 years	None	Moderate	As needed to monitor adherence
	CVD risk factors	Moderate or high	
	Overt CVD	High	

*In addition to lifestyle therapy.
**CVD risk factors include LDL cholesterol ≥100 mg/dL (2.6 mmol/L), high blood pressure, smoking, and overweight and obesity.
***Overt CVD includes those with previous cardiovascular events or acute coronary syndromes.

8. Statin Therapy

- High intensity statins (lowers LDL 50%):
  - Lipitor (atorvastatin) 40-80mg
  - Crestor (rosuvastatin) 20-40mg
- Moderate intensity (lowers LDL 30-50%)
  - Lipitor (atorvastatin) 10-20mg
  - Crestor (rosuvastatin) 5-10mg
- Low Instensity
  - Pravachol (pravastatin) 10 – 20mg
  - Mevacor (Lovastatin) 20mg

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Aspirin Therapy (75-162/day)

- Aspirin not recommended for diabetes if low CVD risk and under age of 50 women, 60 men
- Use for men >50 yrs, or women >60 yrs who smoke or have CV risk factor – primary prev)
- Use aspirin therapy for diabetes pts with history of CV disease (secondary prev)
- Combo therapy of aspirin + clopidogrel is reasonable for a year after MI
- Do not use in pts w/ allergy use Plavix, (clopidogrel)

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8. Coronary Heart Disease

- In pts with known CVD, use:
  - Aspirin
  - Statin
  - B/P Med
    - Consider ACE Inhibitor to reduce risk of CV event
    - In pts with prior MI, Beta Blockers should be continued at least 2 years after the event
  - Don't use Actos or Avandia in pts with CHF
  - In pts with stable CHF, Metformin can be used in renal function normal and stable

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A 78 yr old man, smokes ppd

- A1c was 8.1% (down from 10.4%)
- B/P 136/76 AM BG 100, 2 hr pp 190
- Chol – TG 54, HDL 46, LDL 98
- Meds:
  - Insulin – 16 units Lantus at HS
  - Benazepril 20 mg
  - Metropolol 50mg
  - Warfarin 5mg
  - Actos 15 mg

What class of meds is this patient on?
Any special instructions?
Any med missing?

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Poll Question 4

- 78 year old, A1c 8.1, LDL 98, smokes ppd. Based on ADA guidelines, what med is missing?

a. Sulfonylurea
b. Vitamin D
c. SGLT2 Inhibitor
d. Statin

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ABCs of Diabetes

- A1c less than 7% (avg 3 month BG)
  - Pre-meal BG 80-130
  - Post meal BG <180
- Blood Pressure < 140/90
- Cardiovascular risk reduction
  - Eval if statin therapy indicated

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Diabetes Care Guidelines- ADA

Test / Exam	Frequency
A1c	At least twice a year
B/P	Each diabetes visit
Cholesterol (HDL, Tri)	Yearly (less if normal)
Weight	each diabetes visit
Microalbumin/GFR/Creat	Yearly
Eye exam	Yearly
Dental Care	At least twice a year
Comprehensive Foot Exam	Yearly (more if high risk)
Physical Activity Plan	As needed to meet goals
Preconception counseling	As needed

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Mr. Jones - What are Your Recommendations?

Patient Profile

64 yr old with type 2 for 11 yrs. Hx of CVD. On glyburide 10mg BID.

Labs:

- A1c 6.3%
- HDL 37 mg/dl
- Triglyceride 260mg/dl
- Proteinuria - neg
- B/P 152/94

Self-Care Skills

- Walks dog around block 3 x's a week
- Bowls every Friday
- 3 beers daily
- *What concerns?*
- *Tells you I get shaky a lot?*

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Hypoglycemia

Objectives:

- Describe identification and treatment of hypoglycemia.
- Discuss it's impact on the person living with diabetes

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Hypoglycemia – "Limiting Factor"

- Defined as glucose of 70mg/dl or below
- 50% of episodes occur during night
- Mortality with severe hypoglycemia secondary to sulfonylureas
  - Especially (glyburide) Micronase®, Diabeta®
- Blood glucose levels don't describe severity, response is individual

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Hypoglycemia Symptoms

- Autonomic
  - Anxiety
  - Palpitations
  - Sweating
  - Tingling
  - Trembling
  - Hypoglycemic Unawareness
- Neuroglycopenia
  - Irritability
  - Drowsiness
  - Dizziness
  - Blurred Vision
  - Difficulty with speech
  - Confusion
  - Feeling faint

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Glycemic Threshold Values

John White, PharmD, Diabetes Spectrum, 2007

Classification	BG	Physical Response
Lower euglycemia	80-90's	Endogenous insulin
Hypoglycemia	70's	Glucagon, adrenaline
Symptoms	60s	Growth hormone, cortisol
	50's	Cognitive deterioration
Neuroglycopenia	40's	
	30's	
Severe	20's	Coma, seizures
neuroglycopenia	10	

(shortage of glucose in the brain affects function of the neurons)

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Poll question 5

- Which of the following put Mr. Jones at risk for hypoglycemia?
  a. 3 beers a day
  b. Elevated triglyceride levels
  c. Limited income to purchase food
  d. Hypoglycemia unawareness

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Hypoglycemia: Clinical Risk Factors

- Diabetes medications
- Intensive insulin therapies
- Impaired kidney or liver function
- Advanced age, poor nutrition
- Near normal A1c
- History of frequent hypoglycemic episodes
- Neuropathy
- Alcohol intake

Nocturnal Hypoglycemia

- Signs include:
  - Vivid dreams
  - Waking up with headache
  - Night sweats
  - Waking up hungry
  - Elevated (rebound) or low morning blood glucose

Hypoglycemia Awareness

- autonomic symptoms adrenergically based
- after 2-5 yrs of type 1 dm,
  - glucagon secretion impaired
  - epinephrine secretion becomes primary mechanism to restore BG levels
- over time, epi response diminished or delayed
- decreases awareness of hypo and hormonal response

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Learn Their Own, Most Reliable Symptoms - BGAT

- symptom diary to identify their unique response
- type and magnitude can differ for given individuals
- alcohol can increase risk
- beta blockers may mask early signs (Lopressor, Atenolol, Coreg)
- BGAT - blood glucose awareness training

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Treatment of Hypoglycemia

- If blood glucose **70**mg/dl or below:
  - 10-15 gms of carb to raise BG 30 - 45mg/dl
- Retest in 15 minutes, if still low, treat again, even without symptoms
- Follow with usual meal or snack
- If BG less than 40, allow recovery time

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Tx of Severe Hypoglycemia

- If can swallow w/out risk of aspiration, try gel, honey, etc. inside cheek
- If unable to swallow, D50 IV or Glucagon
- Glucagon injection – teach support person
  - Dosing:
    - Adults 1mg
    - Children <20kg 0.5mg
  - Glycemic effect 20 - 30mg, short lived
  - Must intake carb as soon as able
  - Need prescription, check exp. date

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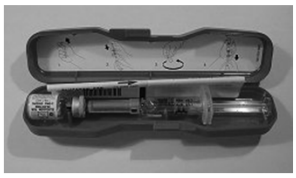
Glucagon Emergency Kit



Store 68-77 degrees prior to reconstitution
single use only

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Preventing Hypoglycemia

Nocturnal Lows

- Don't skip presleep snacks
- If bedtime glucose <110, increase cals
- If increased activity, increase cals
- Eval hs insulin/meds

Other

- Monitor kidney function / wt changes
- Monitor BG trends
- Don't over medicate
- Balance food / activity
- Plan ahead
- Alcohol

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Monitoring, sick day management and Hospital goals

Objectives:

1. Identify barriers to monitoring and strategies to overcome them.
2. Discuss sick day management
3. State glucose goals during hospitalization.

Poll Question 6

What is the most effective way to teach blood glucose monitoring?

a. ask pt to carefully read instructions in the box

b. send patient home with video instruction

c. demonstrate how to use meter

d. review steps and ask patient for return demonstration

Self-Monitoring Why Should I do it?

- Feel better everyday – sense of control
- Avoid hospital admissions
- Fewer missed work /school days
- Avoid hypoglycemia or embarrassing situations related to hypo
- Avoid unwanted weight gain
- Enhanced athletic performance

How will it help me?

- See if your treatment plan is working
- Make decisions regarding food and/or med adjustment when exercising
- Find out how that pizza affected your BG
- Find patterns
- Manage illness

How Often Should I Check?

- Be realistic!!
- Type 2 on orals – Medicare covers 100 strips for 3 months
- Based on individual - Consider:
  - Types and timing of meds
  - Goals
  - Ability (physical and emotional)
  - Finances / Insurance

ADA Guidelines

- Self monitoring before: meals, snacks, bedtime
- Occasional postprandial and before exercise
- When patient suspects low blood glucose; after treating low blood glucose until patients are normoglycemic
- Before critical tasks such as driving
- Some patients will need to test more depending on activity level, frequency of eating.
- Be practical, no two patients or two days are alike

Glucose Monitoring Baseline Learning

- Care for meter and test strips
- Perform quality control
- Proper disposal of lancets
- Identify BG target and when to test
- Recording and interpreting data
- 800 number
- Adequate sample
- **User Error most common reason for inaccurate results**

Alternate Site Testing?

- Yes
  - Finger fatigue
  - No risk of hypo
  - Stable BG Levels
  - If BG< 90, recheck on finger

- No
  - Pregnant
  - On intensive insulin therapy
  - During hypoglycemia
  - During illness
  - *Not as accurate during glucose fluctuations*

Monitoring Issues

- "Monitor Talk"
  - avoid judging glucose levels as good and bad
- Say stuff like..
  - I am impressed that you are checking your blood sugar at least once a day and writing it down.
  - I am curious to learn what is helping you succeed with blood sugar testing.
  - I am interested to see that you are skipping some days, can you share more about that?

Poll Question 7

- What is the best sick day recommendation for someone with type 2 diabetes?

a. Stop all diabetes medications
b. Test BG every 1-2 hours
c. Continue to take diabetes meds
d. Only drink sugar free beverages

Sick Day Patient Guidelines

- Continue to take diabetes medication, may need adjust dose down or **up**
- Test glucose at least every 4 hrs
- Drink plenty of liquids
- Rest
- Contact physician
- Plan ahead
- Check urine ketones, if BG >240 & ill

Sick Day Guidelines Reasons to Call MD

- Vomiting more than once
- Diarrhea > than 5x's or for > 24 hrs
- Difficulty breathing
- Blood glucose > than 300mg/dl on 2 consecutive readings
- Temperature > 101 F.
- Positive ketones in urine.

Hospitals and Hyperglycemia What's the Big Deal?

- Hyperglycemia is associated with increased morbidity and mortality in hospital settings.
  - Acute Myocardial Infarction
  - Stroke
  - Cardiac Surgery
  - Infection
  - Longer lengths of stay

BG Above Normal = Trouble

- Pre Diabetes
  - Fasting Glucose = 100-125mg/dl
  - A1c 5.7 – 6.4%
- Diabetes
  - Fasting Glucose = 126 mg/dl +
  - Random Glucose = 200 mg/dl +
  - A1c 6.5% +
  - **Any blood glucose above 140 requires treatment**

Umpierrez et al

Poll Question - 8

- Mrs. S is 78 years old and admitted to the hospital with a urinary tract infection. She has type 2 diabetes and her admission A1c is 8.7. Creat 1.5. Her usual medication at home is metformin plus glyburide. Which of the following statements are true during her hospital stay?
  - A. Keep her on metformin/glyburide and monitor BG.
  - B. Hold the glyburide and add sliding scale insulin.
  - C. Continue oral meds and start an insulin drip.
  - D. Hold oral meds and start on insulin therapy.

WHAT SHOULD WE AIM FOR?

Critically Ill pts
- BG > 180- Start insulin
- BG goal 140-180

Non Critically Ill patients BG Goals
- Premeal <140
- Post meal <180

•Insulin therapy preferred treatment
•Consensus: Inpt Hyperglycemia, Endocr Pract. 2009;15 (No.4)

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Management of Hyperglycemia and Diabetes

Stop oral agents (ie) metformin & sulfonylurea on admission

"The sole use of Sliding Scale insulin is discouraged" For discharge, oral meds can be resumed

Start Basal/bolus therapy
- NPH and Regular insulin
- Long-acting and rapid-acting insulin
- Premixed insulin

– ADA 2014

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Preparation for Surgery

- Try to schedule surgery in am, resume meds/insulin when eating and stable.
- Oral medications: In am, hold all diabetes oral medications
- Basal Insulin: for type 2s, give 50%-100% of usual am basal dose and for type 1s give 100% of basal dose.
- Bolus insulin: Use mild insulin bolus coverage for type 1 and type 2's

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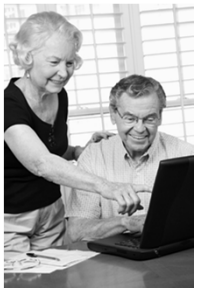
Online Courses to Review

- Hyperglycemic Crises
- Setting up a Successful Diabetes Program - Diabetes Self Management Education and Support
- Chronic Complications



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Thank You

- Standards of Care
- Glucose goals for kids and during pregnancy

Diabetes Education SERVICES