OBJECTIVES OF PRESENTATION

At end of Presentation participant will know:

1. Basic Pathophysiology, Assessment, Current Treatments for Patients with Type of Diabetes and Hypertension as defined by the Current Standards of the American Diabetes Association and the American Heart Association.

2. Epidemiological Patterns of Diabetes in General Populations and among Patients with Bipolar Illness and Schizophrenia

3. Interaction of Diabetes and Psychiatric Illness with Focus on Medications

4. Dietary and Life Style Interventions for Diabetes and those with Hypertension and how these may impact psychiatric inpatient units food availability with patients

5. Psychological Aspects of Diabetes including how it Impact Psychiatric Patients

6. Theory and Principles of Motivational Interviewing and Strategies for Using it to Help Patients Improve their own Health Status.

Diabetes Classification

Type 1 diabetes (cell destruction, usually leading to absolute insulin deficiency)

Type 2 diabetes (insulin resistance)

Other
diabetes (may range from prodominantly insulin-resistant with relative insulin deficiency to a predominantly secretory defect with insulin resistance)

Genetic forms:

A. Genetic defects of insulin function
   1. Chromosome 11, HM‐1 (OMIM608451)
   2. Chromosome 7, GAD (OMIM149332)
   3. Chromosome 13, insulin promoter factor 1 (IPF1, OMIM135420)
   4. Chromosome 14, insulin promoter factor 1 (IPF1, OMIM135420)
   5. Chromosome 11, HM‐1 (OMIM608451)
   6. Chromosome 7, GAD (OMIM149332)
   7. Chromosome 14, insulin promoter factor 1 (IPF1, OMIM135420)
   8. Other

B. Other

Genetic defects in insulin action

Type A insulin resistance

Intermediary

Riken‐Nendohita syndrome

Lipodystrophic diabetes

C. Insulinoma of the exocrine pancreas

D. Pancreatitis

E. Transplant complications

F. Neoplasia

G. Endocrine bypass

H. Miscellaneous endocrinopathies

Diabetes Trends 2050!

Estimate in 2050: ~33% of adults

— Endocrine

- Enzymes for digestion of CHO/fat/protein (amylase/lipase/trypsin)

- Endocrine

- Glucose metabolism (insulin, glucagon, somatostatin)

- Structure: Groups of cells arranged in clusters called islets of Langerhans

- 80% beta cells (insulin)

- 15% alpha cells (glucagon)

- 5% delta cells (somatostatin)

Pancreas Structure and Function

- Exocrine

- Enzymes for digestion of CHO/fat/protein (amylase/lipase/trypsin)

- Endocrine

- Glucose metabolism (insulin, glucagon, somatostatin)

- Structure: Groups of cells arranged in clusters called islets of Langerhans

- 80% beta cells (insulin)

- 15% alpha cells (glucagon)

- 5% delta cells (somatostatin)
GOOD NEWS FOR DIABETES IN USA

- CDC REPORTS THAT INCIDENCE AND PREVALENCE TYPE 1 AND TYPE 2 FLATTENED THROUGH 2012 AFTER AN INCREASE FROM 1990-2008
- EXCEPTION TO ABOVE WITH PATIENTS WHO ARE AFRICAN AMERICAN, HISPANIC OR AMERICAN INDIAN (WHO HAVE HIGHEST RATES IN THE USA)
- WHY?
  a) obesity rates in USA have declined a bit
  b) criteria for diagnosing diabetes changed

Diabetes among Bipolar and Schizophrenic Pts
- Incidence Varies in Different Populations (Types and Countries) from 19.4% to 68%
- Metabolic Syndrome (central obesity, hypertension, glucose intolerance-resistance, dyslipidemia) North and South American countries with highest incidence –Highest Incidence In USA in American Indians
- Incidence of Diabetic Ketoacidosis is 10 times greater in those with Schizophrenia
- Prevalence of Diabetes among these patients 2-3x greater than general population – Higher incidence with Bipolar than with Schizophrenic Patients

Classification and Etiology of Diabetes Type 1 (a)
- Characterized by the selective autoimmune destruction of insulin producing beta-cells within the pancreatic islets of Langerhans
- Recessive genetics so family history is often negative
- Autoantibodies to islets are generally present, anti-GAD being most common

Classification and Etiology of Diabetes Type 1 (a)
- Generally starts in Childhood, Adolescence, Young Adults (5-10% older adults)
- Non obese
- Those with certain Genes are predisposed to develop illness when they have viral infections – (etiology still somewhat theoretical)
- More frequent in Caucasians – More frequent Developing in cold weather/cold climates

Diabetes Statistics
- 8.3% (25.8 million of population of USA diabetic and diagnosed (another 7 million undiagnosed, 79 million pre diabetes)
- Diabetes listed as cause of many deaths
- 68% diabetic deaths are heart disease
- 16% diabetic deaths due to stroke
- Risk for stroke is 2-4 time higher in diabetics
- Risk for heart disease is 2-4 times higher in diabetics
- Type 2 Diabetics Have Twice Risk for Alzheimers’Disease
- Type 2 Diabetics on Insulin have Four Times Risk for Alzheimers’ Disease


DIABETES TYPE 1b MODY
- ALSO CALLED MATURITY ONSET DIABETES OF YOUNG OR ATYPICAL TYPE 1 AT AGES CHILDHOOD THROUGH TO 50’S
- OFTEN MISSED DIAGNOSIS WITH MORE UNUSUAL DIABETIC PRESENTATIONS
- ABSENCE OF BETA CELL AUTOIMMUNE MARKERS WHICH ARE PRESENT WITH TYPE 1a DIABETES
- OBESE OR MAYBE A BIT OVERWEIGHT WITH FAMILY HISTORY OF TYPE 2
- MAY RUN IN FAMILIES WITH CERTAIN AUTOSOMAL DOMINANT GENES WHICH ARE MUTATIONS. WHICH TYPE GENE MUTATION CAUSES DIFFERENT PRESENTATION OF THE DIABETES
Diagnostic autoimmune markers used to diagnose type 1 diabetes

- Rarely done on Psychiatric Units but may be done by Endocrinologists
- Fancy names: Glutamic acid decarboxylase, Insulin autoantibody, Tyrosine phosphatase IA2, Zinc transporter 8

What is C- Peptide?

- Used to monitor insulin production of those on insulin
- Helps to distinguish Type I and Type II
- Not ordered to diagnose diabetes

Classification of Type II Diabetes

- Insulin resistance (the body does not use insulin properly)
- Initially the pancreas makes extra insulin to make up for lack. Over time the pancreas can’t keep up and make enough to keep blood glucose normal
- Obese but not always
- Runs in families and has some genetic etiology
- Onset can start early even in school age children who are obese, AA, Native Americans and Hispanics
- Increases in Prevalence With Age -18% to 1/3 over 65 will develop

Pathophysiology of Type II Diabetes

- Low DOPAMINERGIC TONE FROM BRAIN***
- Inflammation due to cytokines
- Inadequate Insulin secretion by pancreas
- Resistance to action of insulin
- Reduced Glucose uptake
- Increased glucose reabsorption by kidney
- Decreased incretin response in GI tract

Latent autoimmune diabetes of adulthood (LADA)

- 10% of patients who are type 2 diabetics
- Thin
- Sensitive to insulin
- Hyperglycemias with ketosis if insulin is held

Gestational Diabetes

- Increased risk for developing if:
  A) Are older than 25 when become pregnant
  B) Have a family history of diabetes
  C) If 20% or more above ideal body weight prior to becoming pregnant
- Stress of pregnancy leads to insulin resistance
- May continue to be insulin resistance later in life
Mortality Psychiatric Patients with Severe Mental Illness

2-3 times greater than with general population with 13-30 year shortened life span due to physical illness

Classification of Hypertension

- Primary (Essential) Hypertension Develops gradually over many years
- Secondary Hypertension (some underlying cause that tends to cause higher BP than with primary hypertension) Seen with:
  a) Kidney problems
  b) Adrenal gland tumors
  c) Congenital defects in blood vessels
  d) Medications (BCP, cold remedies, decongestants, pain relievers and Rx drugs)

Pathophysiology of Hypertension - Determinants

- 1. Genetic Determinants
- 2. Sodium – Response to Sodium partially genetically based
- 3. Catecholamines –vasoconstrictor centers brain
- 4. Sympathetic nervous system as with white coat hypertension
- 5. Renin angiotension system
- 6. Insulin increases as with Type II can lead to increased catecholamines; increased sodium absorption; insulin is a growth factor that can increase peripheral resistance of vessels
- 7. Calcium in cells increases tone of vessels

2013 Hypertensive Treatment Guidelines

- Most Patients 60 or older, pharmacological Treatment for hypertension start for Systolic BP 150mm Hg or higher or diastolic BP 90mm Hg or higher
- Younger hypertensive patients; those with Chronic kidney disease; or diabetes-regardless of age treat at 140/90
- New guidelines somewhat controversial especially among cardiologists who have concerns they will lead to decreased awareness of hypertension; increase in strokes; and that guidelines are not appropriate for those with heart disease.

Hypertension in Psychiatric Pts

- Three times incidence hypertension among depressed patients and increased incidence stroke among bipolar patients

Suspected physiological causes:
- variations in heart rate frequencies
- sympathetic nervous system
- impact of neurotransmitters

Key Findings

- Since many antipsychotic medications can impact cardiovascular function and metabolic function, most publications stress importance of monitoring metabolic status and cardiovascular risk factors in psychiatric patients receiving antipsychotic drugs.
- Provision of health care to this population is problematic with many gaps. Evidence of disparities in health care access, health care provision, and quality of health care.
**Components of Comprehensive Diabetic Evaluation - Labs**

- **FBS (fasting plasma glucose)**: Done x2 on separate days
  - Normal: Prediabetes: Diabetes:
  - Doesn’t Require Fasting (advantage)
  - Less than 5.7 = normal
  - 5.7-6.4 = prediabetes
  - 6.5 or over = diabetic
- **A1C – Used more as screening test**: Those on antipsychotic meds should have FBS checked prior to starting.
  - Those with 1 A1C >6.5
  - Those with A1C >7.0
  - A1C >8.0 months x2
  - If blood sugar is over 200 no further testing necessary
- **OGTT (less frequently done, ~75GM carbohydrate then take plasma glucose in 2 hours)**
- **Lipids**

**Other Lab Tests Usually Done to Check General Health Status**

- Electrolytes and General Chemistry Panels
- Liver Function Tests
- Kidney Function Tests
- BUN, Cr, GFR, urine albuminuria
- Thyroid Panels
- Vitamin D3 Levels
- Lipid Panel
- Hematology Panel
- Urine albuminuria
- C Reactive Protein

**Other Important Assessment**

**TEST FOR DIABETES**

IF BMI greater or equal to 25 (differences among different cultures)

**Drugs Specifics for Diabetes**

Type 1 – Always insulin either in multiple daily injections or insulin pump (never hold insulin when hypoglycemia as patient can develop ketosis in a matter of hours)

Type 2 – Algorithm for Prescription available from recent article in Diabetic Care January 2014

Any diabetic with BS greater than 200 or repetitive episodes hypoglycemia needs

Endocrine consult to Review Medications-MOST Type 1 followed by endocrine and some type 2

**Cardiac Screens To Do in Patients Starting Psychotropic Drugs**

- BP Lying and Standing
- Ask patient if any history of chest pain, leg swelling, SOB
- If any past/present history of cardiac symptoms during or after exercising more extensive cardiac evaluation is needed by Internist, cardiologist, or primary care MD/NP

**Antihyperglycemic Agents in Type 2 Diabetes**

<table>
<thead>
<tr>
<th>Class</th>
<th>Genus or Brand</th>
<th>A1C Reduction</th>
<th>Usual Dosing (mg/d)</th>
<th>Ignored or Oral</th>
<th>Known Hypoglycemia</th>
<th>Weight Change</th>
<th>Other Safety Concerns (beyond hypoglycemia and weight gain)</th>
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<td>Glargine, Detemir</td>
<td>1.5-2.5</td>
<td>1.0</td>
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<td>1.5-2.5</td>
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<td>Bydureon PI</td>
<td>1.5-2.5</td>
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<td>Pioglitazone</td>
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<td>No</td>
<td>None</td>
</tr>
</tbody>
</table>

**PRINCIPLES OF MANAGEMENT OF TYPE II**

1. Individualize goals for BS control
2. Diet, exercise, and information about diabetes
3. Usually metformin used as first drug
4. Insulin, a second drug, or other injectable drugs may be needed
5. Patient’s preferences, culture, values, finances, are emphasized in choices made for care
6. Statin drugs to reduce cardiovascular risk is an essential aspect of all treatment –some MD disagree with this
7. Most patients eventually require insulin in late stage type II

**CASE STUDY**

**Helen** is a 90 year old WF in a nursing home. NP saw her for the first time when daughter asked NP to follow pt. while she was on vacation. At first visit NP found patient agitated, with severe abdominal pain, and no bowel sounds and sent pt. to the hospital. Review of nursing home records revealed no Sertraline given for 4 months. Patient had long history of psychotic depression and was prescribed Sertraline and Olanzapine. On return to nursing home, hospital record showed 3+ sugar and 2+ acetone in urine on 2 specimens. NP advised primary care MD to check A1C which she did not want to do but finally did 3 months later. None had ever been done in any medical records. When done it was 6.0 and lipids were very high. NP suggested starting a statin drug which primary care MD, cardiologist nor geriatrician wanted to do since “too risky”. Other labs were essentially normal except for mild anemia. Three months later the patient had a right sided stroke, could not walk, and was agitated. Daughter expressed wish for her mother to die as soon as possible and said her mother also wanted to die and “was ready to die”.

**INSULIN PUMPS**

- NOW COMMONLY USED FOR TYPE 1 DIABETICS AND SOME TYPE 2 PATIENTS WITH POOR CONTROL WITH THEIR INSULIN INJECTIONS
- VARIABILITY IN WHICH TYPE VARIOUS INSURANCE COMPANIES WILL PAY FOR
- IMPORTANT FOR THE PATIENT TO DECIDE WHICH TYPE WILL WORK BEST FOR THEM AND THEY CAN USE AS EACH TYPE HAS DIFFERENT FEATURES

**FEATURES OF INSULIN PUMPS**

- Insulin is delivered two ways:
  a) as steady stream – the basal insulin
  b) the bolus – extra dose around mealtime or to adjust BS for higher levels of BS
- Mechanism for programming insulin dose
- Some have a continuous blood sugar measuring device as part of it
- Kind of needle insertion device

**CHARACTERISTICS OF INSULIN PUMPS**

- Waterproof or not?
- Kind of tubing and whether metal or plastic?
- Kind of insertion needle used?
- Size variations?
- How complicated to learn to use and set?

**NINE TYPES INSULIN PUMPS IN USA**

- Animas Corp – One Touch Ping
- Asanta – Snap
- Insulet Corp. - OmniPod
- Medtronic Diabetes – MiniMed Paradigm
- Real – Time Revel
- MiniMed 530G With Enlite
- Roche Insulin Delivery Systems
- Accu-Chek Combo
- Sooll Development – Dana Diabercare IIS
- Tandem Diabetes Care – TSlim
- Valeritas – V-Go (for people with type 2 diabetes)
Animas Corp – One Touch Ping

Asanta – Snap

Insulet Corp. - OmniPod

Medtronic Diabetes – MiniMed Paradigm

MiniMed 530G With Enlite

Roche Insulin Delivery Systems Accu-Chek Combo
Virtually every body system is impacted either directly or indirectly.

Well controlled diabetes decreases GREATLY likelihood of complications.

HEALTH CARE COSTS OF THESE DISEASES LARGELY DUE TO END STAGE COMPLICATIONS.

HYPOGLYCEMIA WITH ATYPICAL ANTIPSYCHOTICS

- MULTIPLE CASE REPORTS
- OCCURS MOST FREQUENTLY IN YOUNGER, LEANER PATIENTS
- POSSIBLE IN ALL ATYPICAL ANTIPSYCHOTIC DRUGS
CASE STUDY
Sarah-50 year old woman with long history of depression with psychotic features, ADHD, and anorexia with weight 104 lbs and height 5 ft 8inches. Restored on Abilify to augment her antidepressant by MD. That night she awoke in the middle of the night with severe dizziness, diaphoresis, weakness and passed out on bed. As she was a nursing aide she checked BS and it was 35 on awakening. Abilify stopped and this did not reoccur.

Dietary Approaches
Used with Diabetes and Hypertension
- Mediterranean and Dash Diet (similar)
- Commercial Weight Loss Diets (WW – Research Supports Use)
- Key to all is Reduced Carbohydrate and Reduced Sodium
- High Potassium in Diet reduces blood pressure
- High Magnesium, beet juice reduce blood sugar
- Heart Healthy Diet and Foods for Prevention Cardiovascular Disease

Other Treatments for Diabetes
Exercise
Weight Loss when Obese
Dietary Changes (as just discussed)
Social Support
Education to Pt and Family
Psychotherapy if Problems
Acupuncture
Bariatric surgery

SUGGESTED CHANGES FOR FOOD AND SNACKS FOR PSYCHIATRIC PATIENTS TO REDUCE SUGAR AND SODIUM
- Eliminate All Soda and Juice
- Eliminate all sweets and carbo served with exceptions specified below
- Do not provide sugar to patients unless summer or heavy perfusing patients
- Suggested foods – fresh fruit, vegetables, nuts, walnuts, arancini, coconut, low calorie and low fat dips or hummus, protein sources such as hard boiled eggs, low fat or skim milk cheeses, greek yogurt without fruit, air popped popcorn
- Give patients a daily serving portion controlled of ½ a square
- However you can not tell patients what to eat!!
- They must decide for themselves

Treatments for Hypertension
Many medications and classes – Which used depends on type of HTN, severity, financial issues, previous use of meds for HTN, overall medical history, patient culture and race/demographics and patient preferences

Research suggests that best evidence based med for those needing hypertensive med when diabetic to prevent later kidney problems is Ace inhibitor (ends in ril)-However, many diabetics may not require.

Exercise and Diet also contribute greatly to BP
Relaxation training as stress leads to increased BP

HYPERTENSION AMONG AFRICAN-AMERICAN
- Approximately 40% of African-American patients have hypertension
- Recent small study on hypertension by nurse practitioners showed importance of assessing possible cause of the hypertension; occurrence of hypertension related symptoms like headache, dizziness, and vision changes; and patients’ beliefs about how to control and manage their symptoms.
- Drugs used for hypertension with African-American patients will probably be different. Diuretics and calcium channel blockers may be preferred over ace inhibitors though ace inhibitors may be also used. Some diuretics however can contribute to diabetes.
**Diet for Diabetics and Those with Hypertension**

1)** Reduced amount carbohydrates and sodium  
2) Portion control and moderation  
3) Carbohydrate counting very necessary for type 1 diabetics  
4) High Potassium reduces BP  
5) Lower diabetic risk with high Magnesium and high coffee.  
6) Canola oil has been shown to lower blood sugar in Type 1 patients.  
7) Whey lowers post prandial bs in type 2 patients  
8) Avoid sugar free sweeteners as they may contribute to developing diabetes says several studies though controversial-When Sucralose consumed half stays in body and what is excreted has been shown to hurt wildlife and water supplies.

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**SUGGESTED CHANGES FOR FOOD AND SNACKS FOR PSYCHIATRIC PATIENTS TO REDUCE SUGAR AND SODIUM**

- **ELIMINATE SODA AND JUICE**  
- **ELIMINATE ALL SWEETS AND CARBS SERVED with exceptions specified below**  
- **DO NOT PROVIDE SALT TO PATIENTS UNLESS SUMMER OR HEAVY PERSPIRING PATIENTS**  
- **SUGGESTED FOODS** – fresh fruit, vegetables, low calorie and low fat dips or hummus, no salt nuts like almonds and walnuts (though peanuts ok too) in portion controlled supplies of about ½ to 1 ounce, protein sources such as hard boiled eggs, low fat or skim milk cheeses, greek yogurt without fruit in it, air-popped popcorn without fat, crackers served only whole wheat. Use portion controlled servings as commercially available of celery, carrots, or apples with 1 TBS peanut butter or hummus  
- **Give patients a daily serving (portion controlled of one small square)** Dark chocolate that is at least 70% Cacao.

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**Psychological Aspects of Diabetes and Hypertension.**

- Increased risk for depression, fear, and denial  
- Stress associated with demands for self care; financial costs of care; necessary life style changes; impact on family and friends; multiple concerns re illnesses  
- Stress leads to increased cortisol levels which impacts disease management  
- Diabetic burnout – emotional versus problem solving  
- Patients with Major Psychotic Illnesses have reduced coping capacities for dealing with medical problems and often less resources for help – Polansky (see bib)

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**Diabetes and Your Health**

*“To live a long and healthy life, develop a chronic disease and take care of it.”*

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**STRETCH FOR ONE MINUTE**

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**MOTIVATIONAL INTERVIEWING TO HELP PATIENTS IMPROVE THEIR HEALTH**

LAUREEN S. FROIMSON RN MSN  
PMHCS GCNS GNP
Non-Compliance in Health Care

- PERCENTAGES VARY BY SETTING
- USE OF WORDS NON-COMPLIANCE INCREASINGLY AVOIDED
- NOT GOING ALONG WITH HEALTH PROVIDERS SUGGESTED TREATMENT CAN RESULT FROM NOT DOING WHAT ASKED TO AGGRESSION
- ONE RECENT STUDY WITH 5044 AUSTRALIAN NURSES FOUND 80% NURSES REPORTING “RESISTANCE” to CARE IN PAST MONTHS

WHAT IS MOTIVATIONAL INTERVIEWING?

Motivate the client to change by helping them do it after finding out what is important to client.

History of MI

- Developed by psychologists William Miller PhD and Stephen Rollnick PhD and further elaborated by Prochaska who was a psychologist working with substance abusers.
- Based on a Theory called Transtheoretical model of change that people go through 5 steps in the Change Process:
a) Precontemplation
b) Contemplation
c) Preparation
d) Action
e) Maintenance


PRINCIPLES BEHIND MOTIVATIONAL INTERVIEWING

- HOW AND WHEN PEOPLE CHANGE IS INDIVIDUAL.
- PEOPLE CHANGE BEST WITHIN A RELATIONSHIP WITH COMPASSION.
- PATIENTS DETERMINE WHAT THEY WANT TO CHANGE AND THEIR REASONS TO CHANGE.

APPROACH OF MI

MI AS AN APPROACH ATTEMPTS TO:
HELP PATIENT’S BECOME AWARE OF THEIR PROBLEM, ITS CONSEQUENCES, AND RISKS ASSOCIATED WITH PROBLEM BEHAVIORS

HOW TO DO MI

- FOCUS ON THE PRESENT
  1) “What would you like to be different in your life in terms of your health”
  2) “What would your life look like with you in this changed health state”
HOW TO DO MI (2)

• 3) “What is one thing you could do different to make it happen”?
• 4) “Are you willing to do that”
• 5) “When will you start doing it?”
• 6) Summarize your discussion with the patient- ex. “You said you wanted to lose 10lbs by Christmas. You indicated this weight made it hard for you to climb stairs. You said you would stop drinking regular Coke and switch to Diet Coke to save calories and would start doing so immediately” Is that correct?
• 7) Praise and reinforce the positives rather than negatives.

EXERCISE PRACTICE #1

- Pair with a partner you do not know and find out what they would like to change about their health
- Now tell them what they should do to change
- Reverse and do the same thing
- What did it feel like to be told?

STRATEGIES OF MI

- Client is in the driver’s seat
- Promote motivation by asking probing questions that allow clients to discover for themselves the reasons for their habits
- Give suggestions only when asked and infrequently
- Share personal experiences if your experience has some similarity to patient’s experience and if doing this will help to establish rapport and trust

GENERAL POINTS

• Do not use why questions as they result in defensiveness
• Confirm the patient’s strengths, abilities, and efforts
• Be sincere, adult, and believable
• Build confidence and enthusiastic
• Always summarize when finished with discussion

SMART GOAL SETTING

• SPECIFIC
• MEASURABLE
• ACTION ORIENTED
• REALISTIC
• TIME FOCUSED

CAUTIONS WITH MI

• Avoid confrontation or serial questions to patient
• Patients may resist and back slide
• The patient has not failed if doesn’t do it first time around
• Focus on successes
• Don’t be the expert to patients
• Follow-up in later sessions
MI EXERCISE # 2
• GET BACK WITH YOUR PARTNER
• DECIDE WHO IS THE HELPER AND THE PATIENT
• SITUATION 1 – Help your patient who wants to lose 20 lbs lose it
• Reverse Roles and Do SITUATION 2
• Help your patient who wants to exercise get more exercise

KEY POINTS OF MI
• CHANGE OCCURS FROM WITHIN AND CAN NOT BE IMPOSED FROM OUTSIDE
• HELP PATIENT DEFINE AND RESOLVE THEIR AMBIVALENCE ABOUT CHANGE
• THE COUNSELOR REMAINS QUIET AND ELICITS CHANGE FROM THE CLIENT
• HELP THE CLIENT RESOLVE AMBIVALENCE
• READINESS TO CHANGE WILL FLUCTUATE
• FOCUS ON A PARTNERSHIP WHILE WORKING WITH THE PATIENT

RESEARCH – THE FUTURE ANSWERS
1. Bionic insulin/glucagon pump for type 1 diabetes
2. APNA research winner research on motivational interviewing
3. UNC Chapel Hill doing 400 current studies on diabetes with goal to eliminate the disease
4. American Diabetes Association research to prevent diabetes in American Indians

THANKS TO:
• MANY AMERICAN PSYCHIATRIC NURSING ASSOCIATION STAFF WHO HELPED TO SUBMIT MY ABSTRACT AND TO GET HANDOUT READY
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CHIEF, DEPARTMENT OF ENDOCRINOLOGY
EXECUTIVE ASSOCIATE DEAN, CLINICAL RESEARCH
DEPUTY DIRECTOR NC TRANSLATIONAL SCIENCE INSTITUTE
UNIVERSITY OF NORTH CAROLINA SCHOOL OF MEDICINE-CHAPEL HILL
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