

- This product was developed by the Robert Wood Johnson Foundation Diabetes Initiative. Support for this product was provided by a grant from the Robert Wood Johnson Foundation® in Princeton, New Jersey.

The Changing Face of Diabetes Care in America: Seeing the Future in the Present

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Diabetes in Maine: Strengthening Collaboration Between

Providers and Community Resources

Augusta, September 16, 2005

The Diabetes Epidemic

- Genetics
- Lifestyle
- Profitability of unhealthy food
- Socioeconomic factors
- Geographic distribution of resources for healthy diet and activity
- Obesigenic environment

Obesity

Type 2
Diabetes

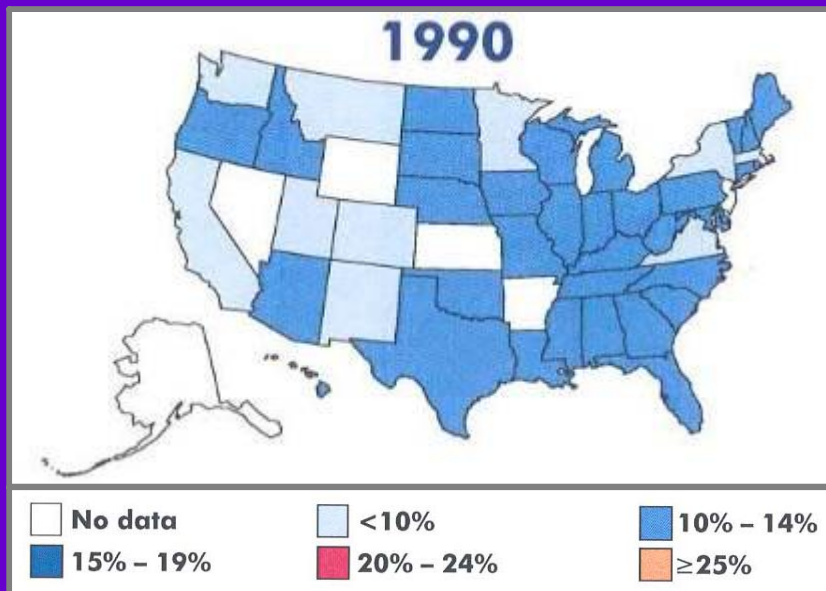


Increasing Prevalence of Obesity and Diabetes: 1990

Prevalence of Obesity

Among Adults in the U.S.

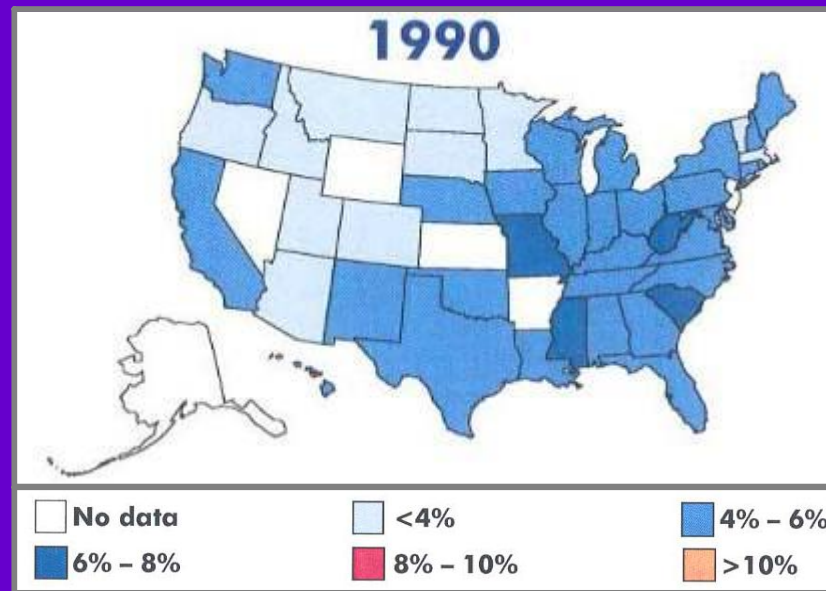
(BMI \geq 30, or approximately 30 lbs overweight)



Prevalence of Diabetes

Among Adults in the U.S.

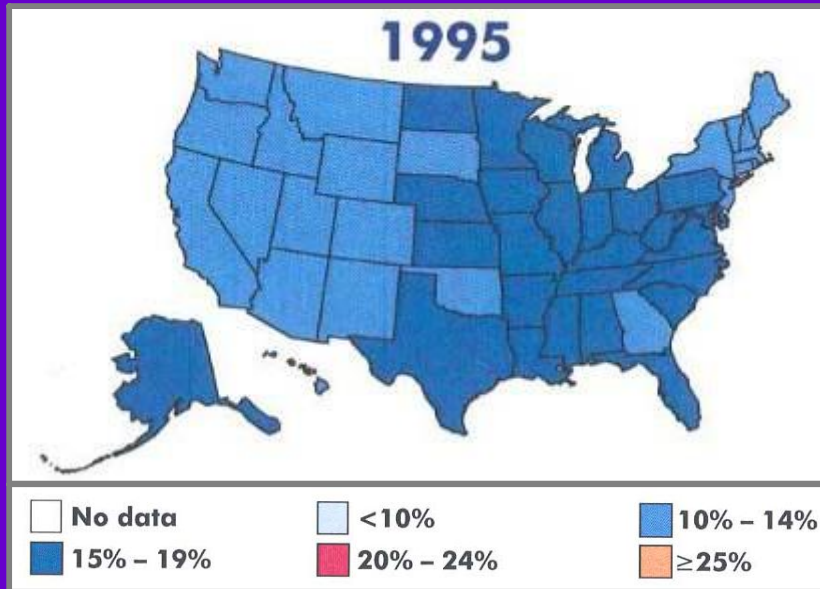
(Includes Gestational Diabetes)



Increasing Prevalence of Obesity and Diabetes: 1995

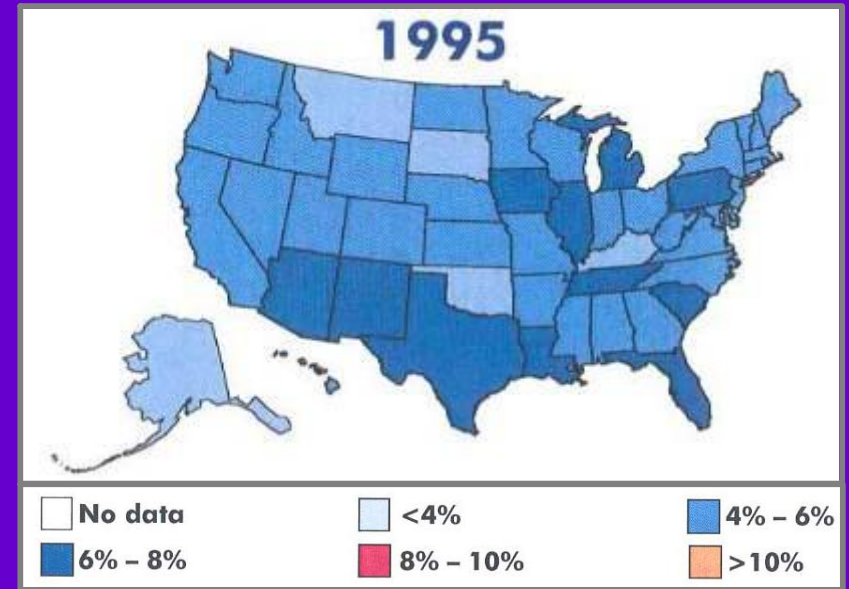
Prevalence of Obesity Among Adults in the U.S.

(BMI \geq 30, or approximately 30 lbs overweight)



Prevalence of Diabetes Among Adults in the U.S.

(Includes Gestational Diabetes)

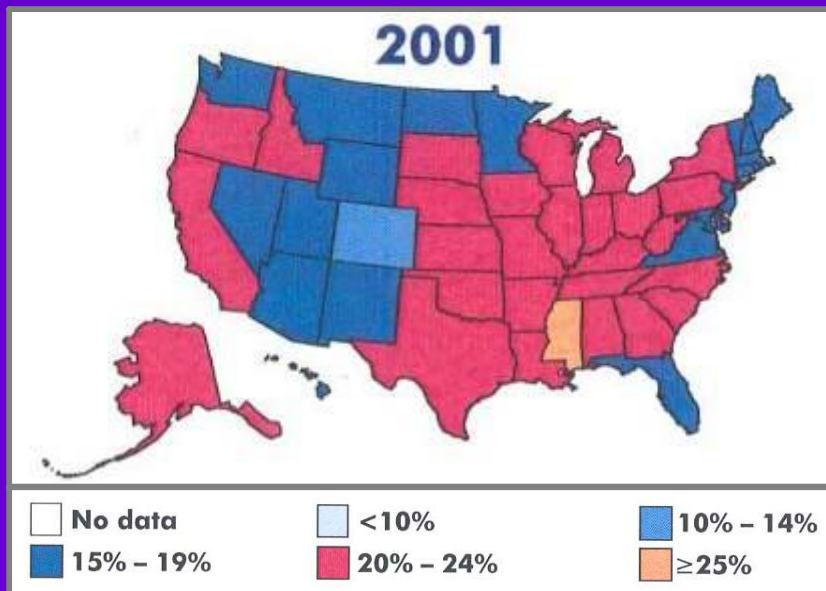


Increasing Prevalence of Obesity and Diabetes: 2001

Prevalence of Obesity

Among Adults in the U.S.

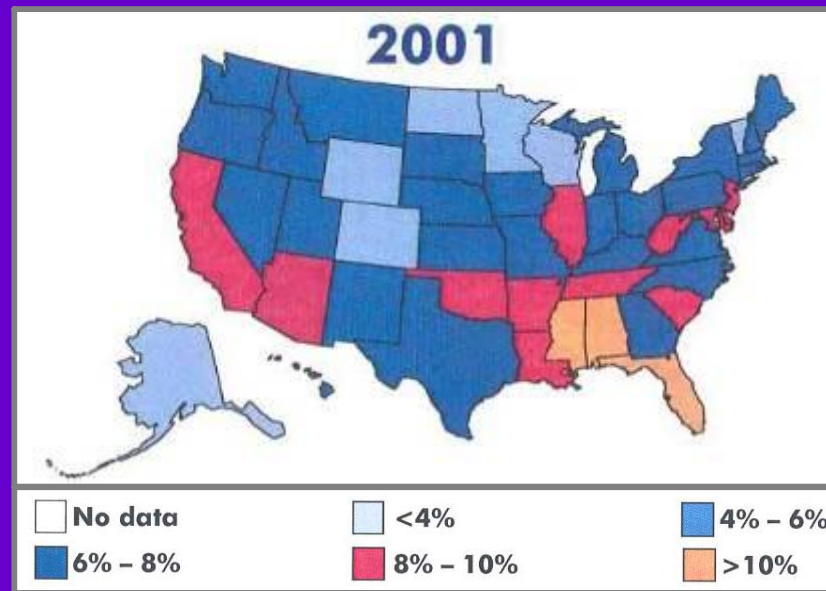
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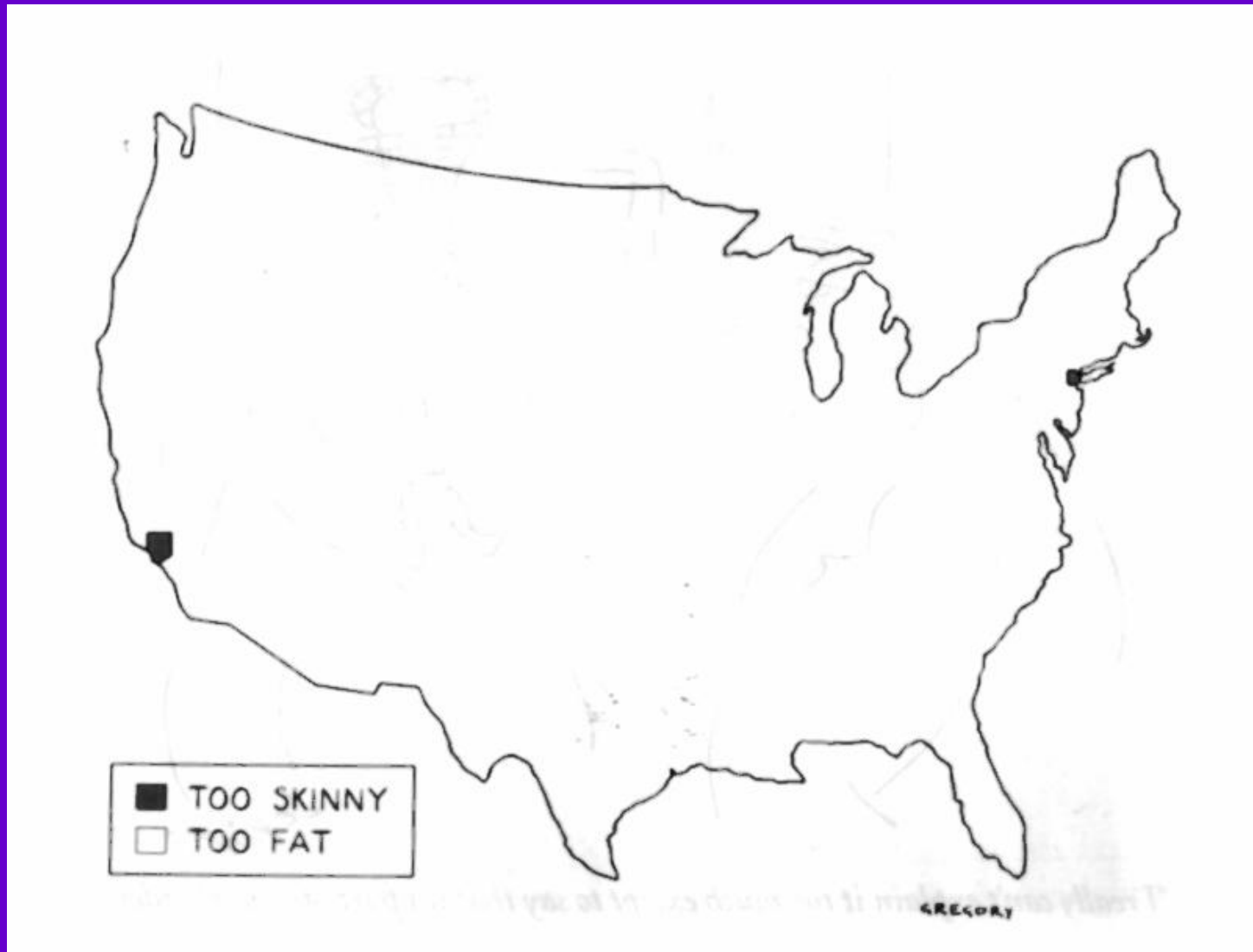
Prevalence of Diabetes

Among Adults in the U.S.

(Includes Gestational Diabetes)



Obesity in U.S.



The Diabetes Prevention Program



DPP Primary Goal

- To prevent or delay the development of type 2 diabetes in persons with impaired glucose tolerance (IGT)



Study Interventions

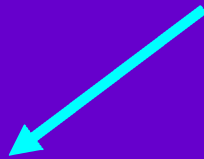
Eligible participants



Randomized



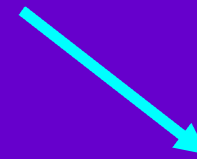
Standard lifestyle recommendations



**Intensive
Lifestyle**
(n = 1079)



Metformin
(n = 1073)



Placebo
(n = 1082)

Eligibility Criteria

- Age ≥ 25 years
- Plasma glucose
 - 2 hour glucose 140-199 mg/dl (7.8- <11.1 mmol/L)
- and
- Fasting glucose 95-125 mg/dl (5.3- <7.0 mmol/L)
- Body mass index ≥ 24 kg/m²
- All ethnic groups
 - goal of up to 50% from high risk populations



Lifestyle Intervention

An intensive program with the following specific goals:

- **$\geq 7\%$ loss of body weight and maintenance of weight loss**
 - **Dietary fat goal -- $<25\%$ of calories from fat**
 - **Calorie intake goal -- 1200-1800 kcal/day**
- **≥ 150 minutes per week of physical activity**



Lifestyle Intervention Structure

- 16 session core curriculum (over 24 weeks)
- Long-term maintenance program
- Supervised by a case manager
- Access to lifestyle support staff
 - Dietitian
 - Behavior Scientist/Counselor
 - Exercise specialist



Post Core Program

- Self-monitoring and other behavioral strategies
- Monthly visits
 - Must be seen in person at least every two months
- Supervised exercise sessions offered
- Periodic group classes and motivational campaigns
- Tool box strategies to individualize adherence, e.g.,
 - Exercise videotapes, pedometers
 - Memberships in health clubs or cooking classes



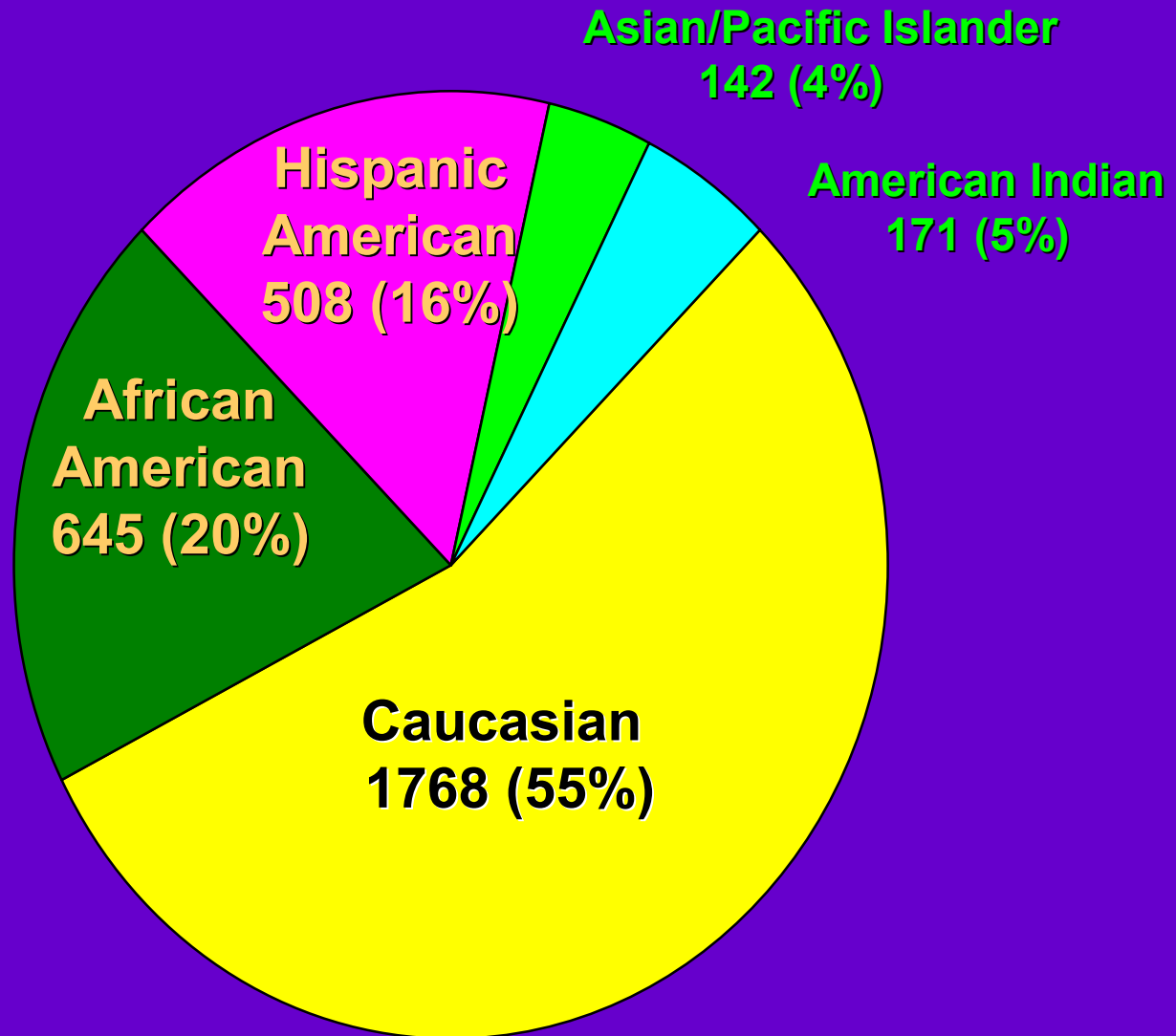
Interventions: Medications

Metformin- 850 mg per day
escalating after 4 weeks
to 850 mg twice per day

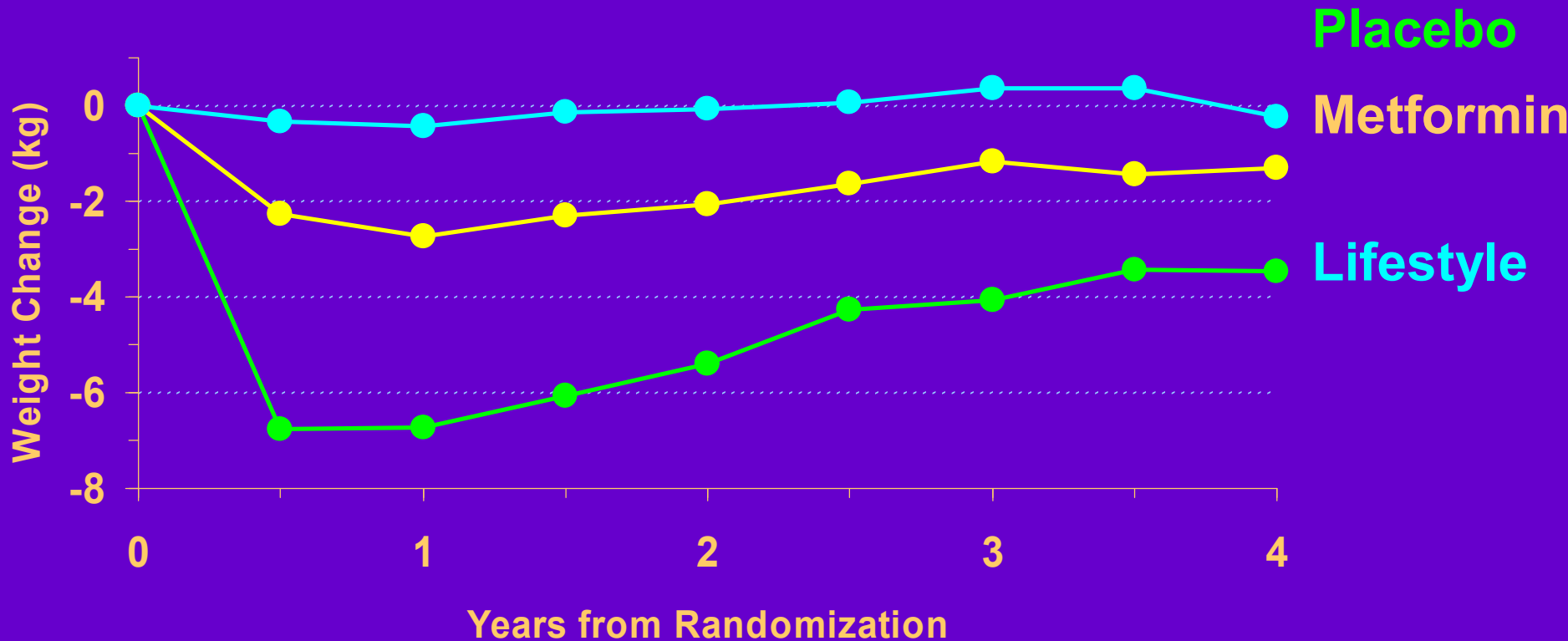
Placebo- Metformin placebo
adjusted in parallel with
active drugs



DPP Population



Mean Weight Change



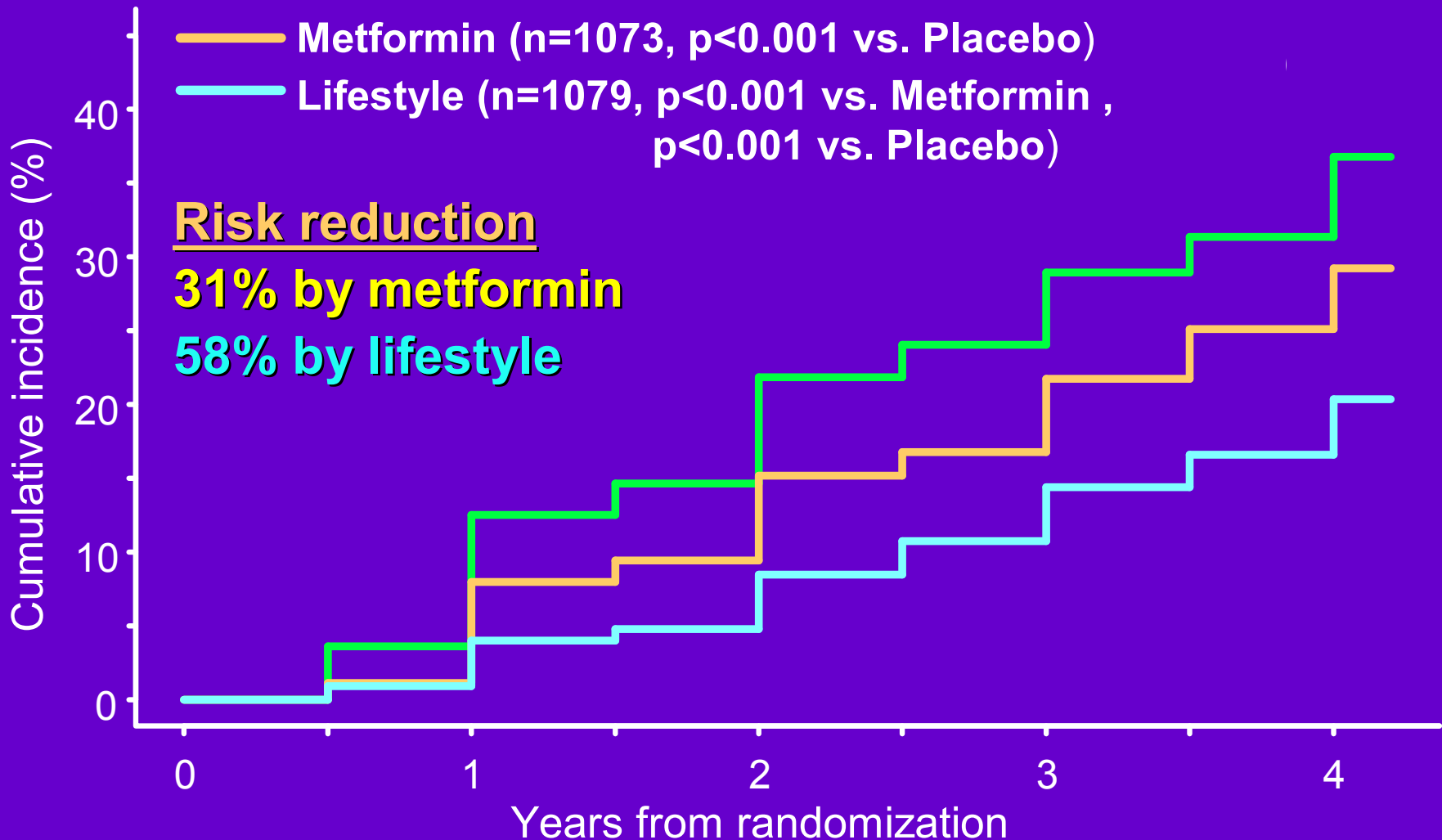
Incidence of Diabetes

- Placebo (n=1082)
- Metformin (n=1073, p<0.001 vs. Placebo)
- Lifestyle (n=1079, p<0.001 vs. Metformin , p<0.001 vs. Placebo)

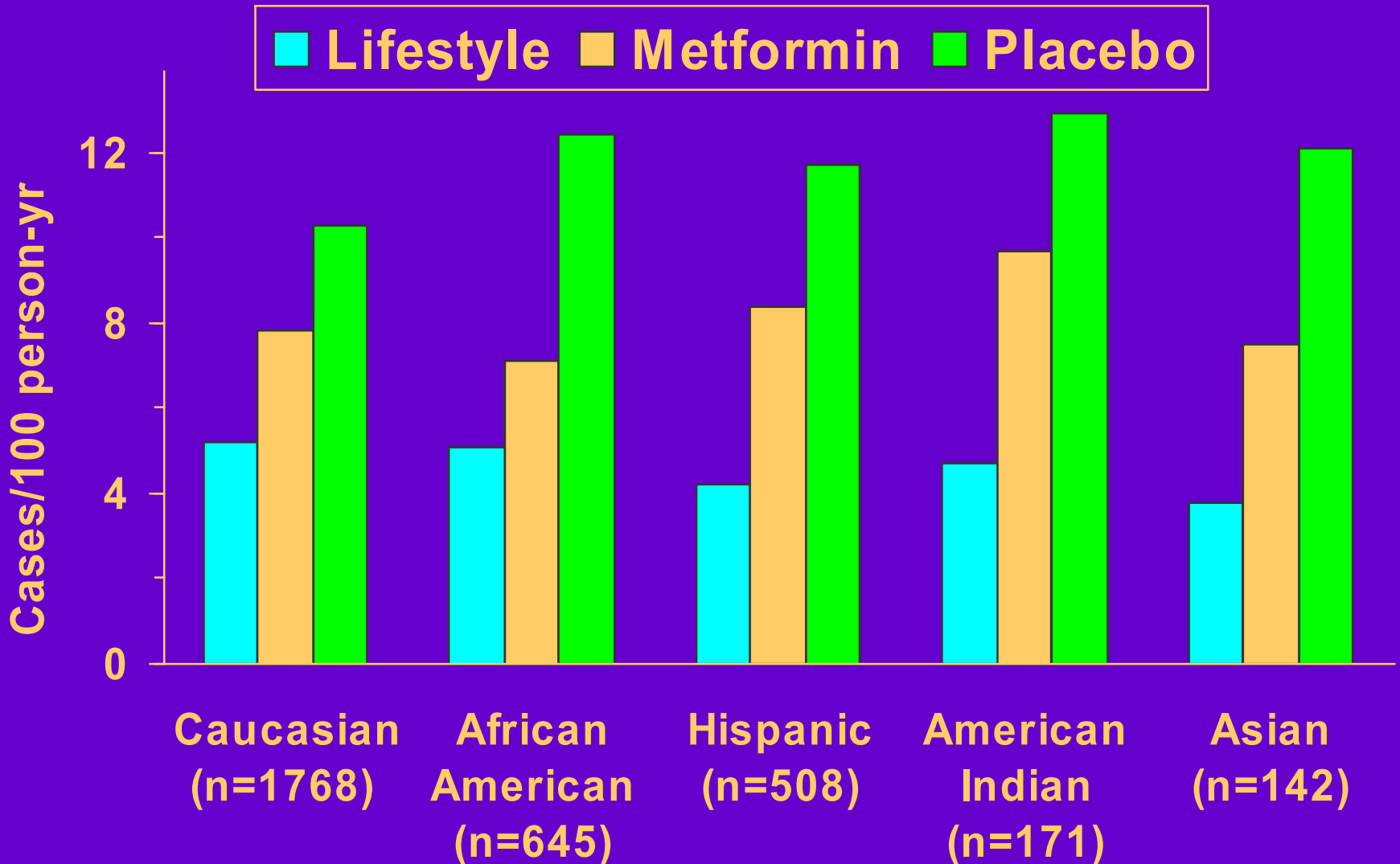
Risk reduction

31% by metformin

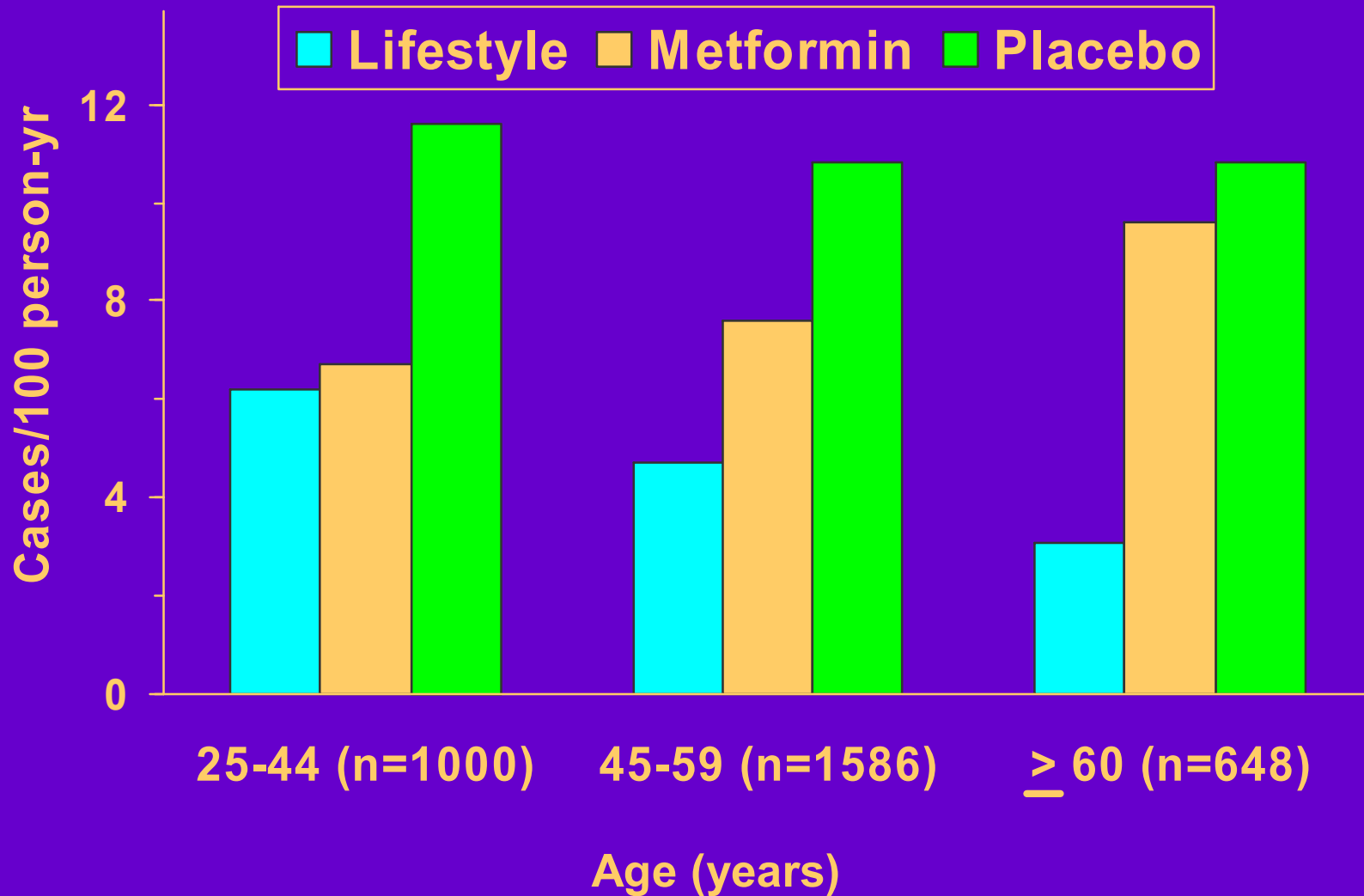
58% by lifestyle



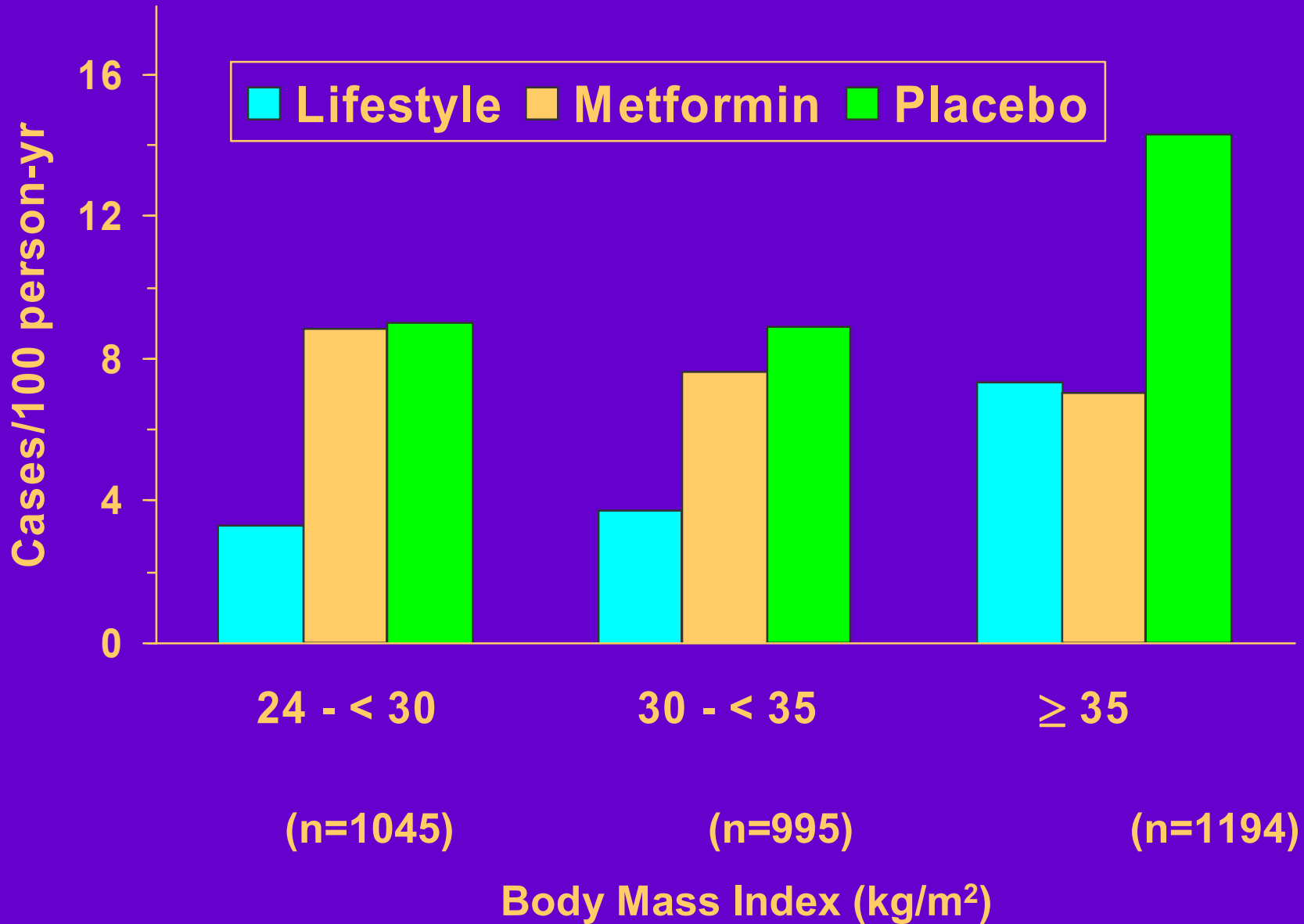
Diabetes Incidence Rates by Ethnicity



Diabetes Incidence Rates by Age



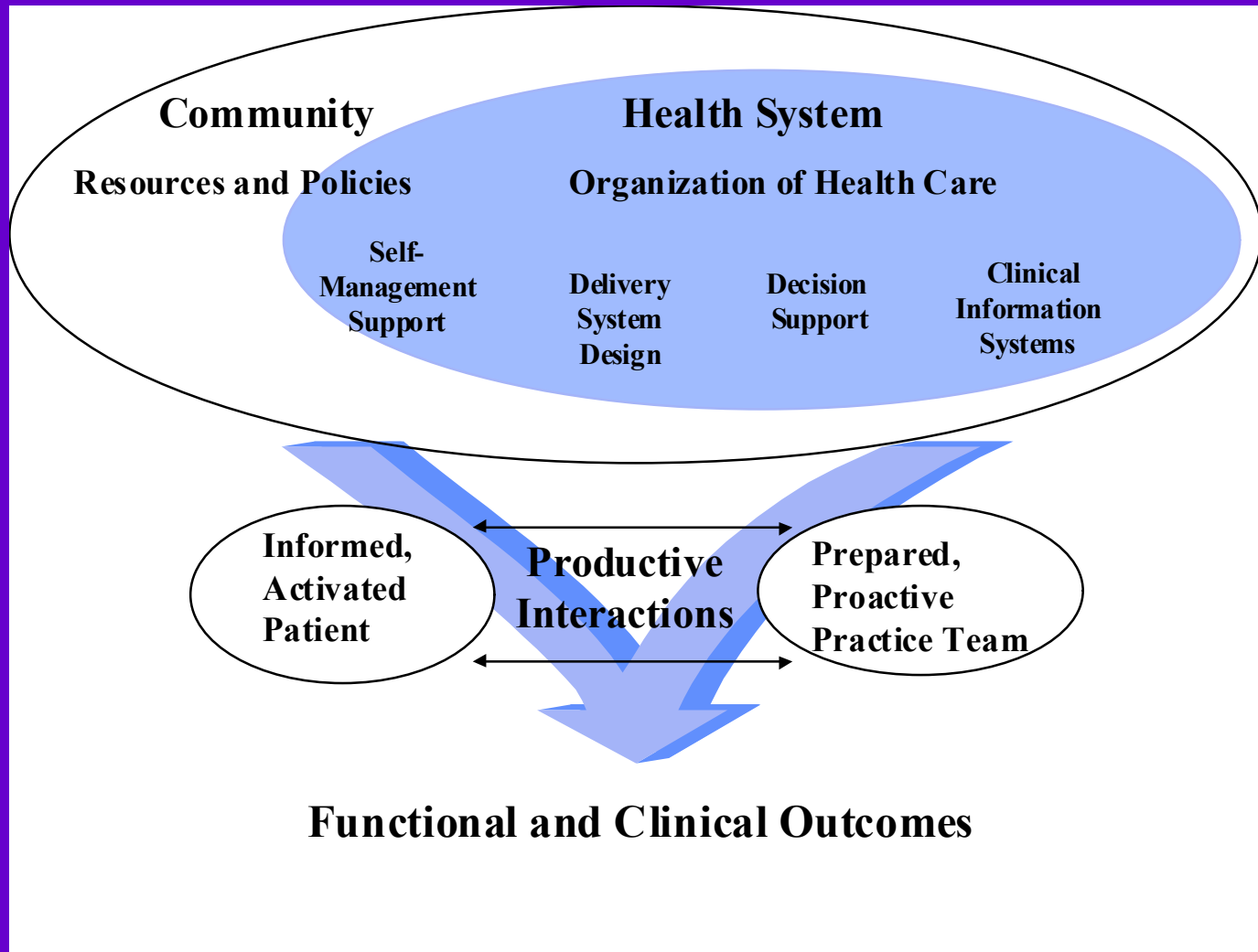
Diabetes Incidence Rates by BMI



Implications of DPP

- Behavioral interventions
- Focusing on healthy eating and physical activity can impact
- Processes central to diabetes
- In broad segments of the population

Chronic Care Model



Diabetes Initiative of the Robert Wood Johnson Foundation



**Advancing
Diabetes
Self Management**



**Building
Community Supports
for Diabetes Care**

Diabetes Initiative of the
Robert Wood Johnson Foundation

*Enhancing access to and
promoting self management as
part of high quality diabetes
care through primary care and
community settings*



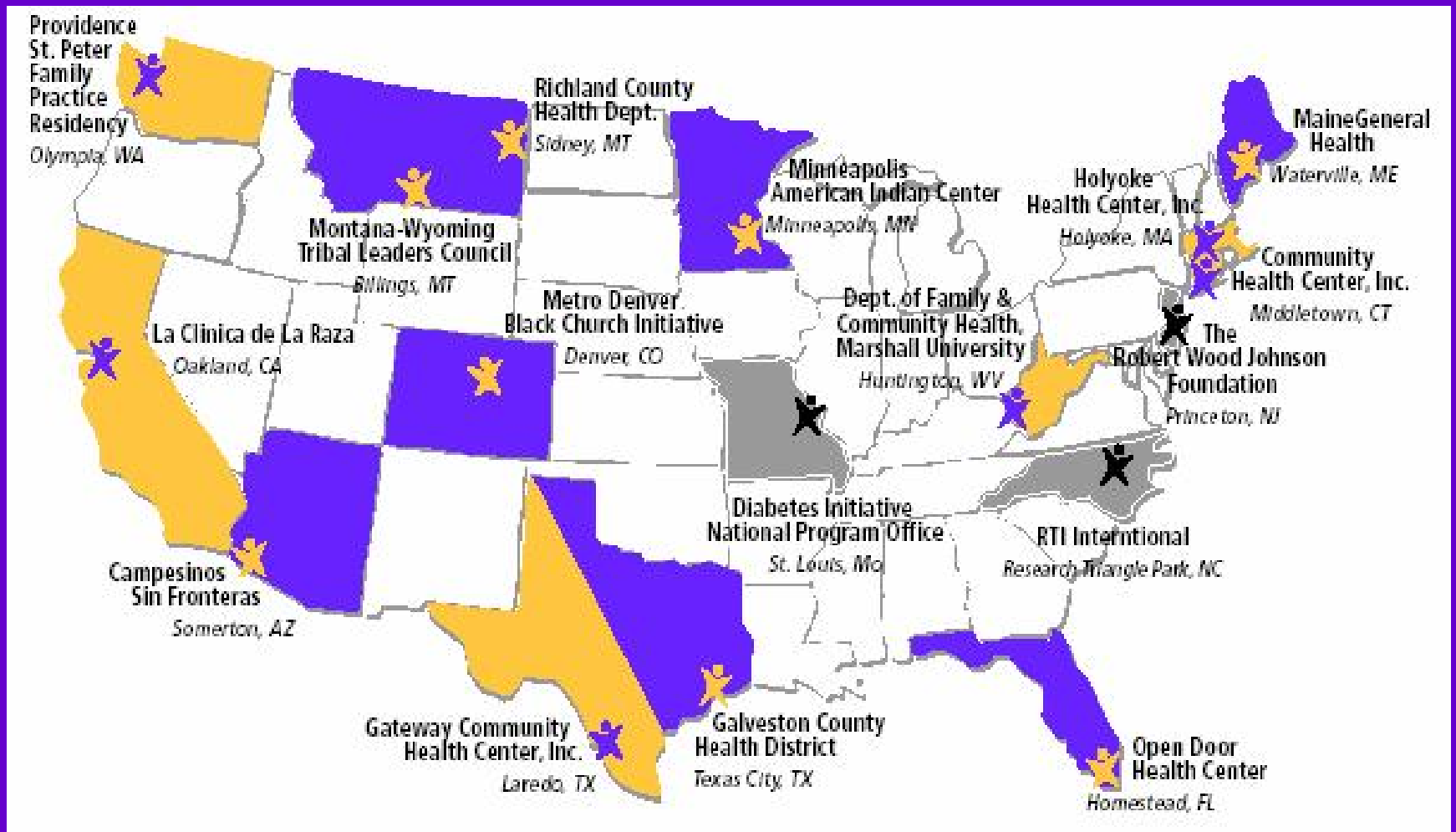
Advancing Diabetes Self Management

Promoting *self management* of diabetes through primary care settings



Building Community Supports for Diabetes Care

Community collaborations to support *self management* of diabetes and diabetes care



Implications for Self Management of 3 Fundamental Aspects of Diabetes

1. Centrality of behavior

- Diet
- Exercise
- Monitoring
- Medication management
- Psychological/emotional status

2. In every part of daily life – 24/7

3. For “the rest of your life”

Core Concept:

Resources & Support for Self Management

- **Individualized assessment, including consideration of individual's perspectives, cultural factors**
- **Collaborative goal setting**
- **Enhancing skills**
 - Diabetes specific skills**
 - Self-management skills**
 - Includes skills for “Healthy Coping” and dealing with negative emotions**
- **Follow-up and support**
- **Access to resources**
- **Continuity of quality clinical care**

Individualized Assessment Collaborative Goal Setting

Individualized Assessment includes

- Personal and family history
- Perspectives on disease of individual, family, culture
- Past management activities

Collaborative Goal Setting

- Motivational Interviewing, Transtheoretical Model, Developing Action Plans

Individualized Goal Setting

- Successful teams changed “worldview,” care philosophy:
 - from optional, nonessential component of good care
 - to patient-centered, collaborative goal setting and self management as foundations of good care

Self-management aspects of the Improving Chronic Illness Care Breakthrough Series: Implementation with diabetes and heart failure teams. Glasgow et al., *Annals of Behavioral Medicine* 2002 24: 80-87.

Enhancing Skills

Cochrane Collaborative Review of Interventions to Improve Management of Diabetes

- Four types of interventions:
 - Patient-oriented/Self Management
 - Professional-oriented
 - Organizational
 - Information systems
- Impacts = function of # types of interventions
- Patient outcomes (e.g., HbA1c) impacted only if include Pt-oriented/Self management

Enhancing Skills

Knowledge of Disease

- Understanding nature and impacts of disease
- Understanding role of behavior in disease management

Disease Specific Skills

- Usually $\leq 20\%$ of program content)
 - Monitoring blood glucose
 - Utilizing medications
- Preventing, detecting and treating acute and chronic complications
- As applicable, preconception care, management during pregnancy, and management of gestational diabetes

Enhancing Skills, cont. #2

Exercise and Physical Activity

Healthy Eating

- Selection of foods, e.g., complex carbohydrates versus refined sugars; portion sizes; etc.
- Shopping, including label reading
- Preparing

Enhancing Skills, cont. #3

Problem Solving Training in Self Management

- Collaborative goal setting
- Identify problems
- Identify barriers and supports
- Generate solutions
- Form individually tailored, specific action plan
- Monitor and assess progress toward goals, including feedback
- Adjust the action plan as needed, reinforcing positive actions

Enhancing Skills, cont. #4

“Healthy Coping” and psychological adjustment

- Role management – social support, connections to work and family, normal functions of daily life
- Emotion management – managing depression or stress, adaptation to change, interpersonal relationships

Negative Emotion, Including Depression

Three-Stage Development

1. Have to treat depression before can make progress with self management
2. Addressing depression is *part of* self management
3. Not just depression, but full range of negative emotionality, from normal to clinical

Normalize attention to negative emotionality

Follow Up and Support

Importance of Follow Up in Self Management

- Review of programs to enhance diabetes self management (Norris et al., *Diabetes Care* 2001 24: 561-587.):
 - “Interventions with regular reinforcement are more effective than one-time or short-term education”
- Review of effects of self management on metabolic control (Glycosolated hemoglobin) (Norris et al., *Diabetes Care* 2002 25: 1159-1171.)
 - Only predictor of success: *Length of time over which contact was maintained*

Not Just Diabetes – Duration and Variety of Smoking Cessation Treatment

- Meta-analysis of Kottke et al. (*JAMA* 1988 259: 2882-2889)
“Success was **not associated with novel or unusual interventions**. It was the product of **personalized smoking cessation advice and assistance, repeated in different forms by several sources over the longest feasible period.**”
- Those who receive 2 or more interventions 1.48 times more likely to quit than those who receive 1 (Baillie et al. 1994)
- AHRQ meta-analysis
 - > 8 weeks vs. < 2 weeks: OR = 2.7
 - 2 - 8 weeks vs. < 2 weeks: OR = 1.6

Follow Up & Support

- Monitoring and identifying changes in status, circumstances, e.g., retirement, widowhood, etc.
- Adjustment of management plans
- Trouble-shooting implementation of management plans in daily life
- Encouragement and reinforcement
- Linkage to clinical providers, including timely answers to questions

Nurse Case Management in DM

- Adults with Type 2 DM and HbA1c > 7.0%
- Nurse Case Manager
 - Algorithms set by multidisciplinary group (from diet & exercise progressed to insulin 4x daily)
 - Initial, 45 min assessment
 - FU at 2 weeks
 - 5-week, 12-hour education program with group & individual sessions; quarterly follow-up
 - Biweekly phone follow-up; weekly for those on insulin
- Mean changes in HbA1c:
 - Nurse Case Manager: -1.7 points
 - Usual Care -0.6 points

**Follow Up and Support
Community Health Workers**

Uses of Community Health Workers

- Program implementation & planning
- Promoting access to and use of screening and other types of care
- Education for self management
- Counseling for adherence, adjustment, quality of life
 - Implementation of Transtheoretical Model (Stages of Change Model)
- Advocacy
- Reach to disadvantaged, minorities

Examples of Impacts of Community Health Workers

- “Mother Coordinators” trained other mothers to:
 - Recognize Sx of malaria and give chloroquine
 - Reduced mortality by 40%
- TB Control in Bangladesh
 - Programs with LHWs -- \$64 per patient cured
 - Programs without LHWs -- \$96 per patient cured
- Patient Education +/- LHW for diabetes
 - 80% with LHW completed education vs 40%
 - Completion of education → reduced GHb

Examples of Impacts of Community Health Workers

- “Navigators” for women with positive screening mammograms
- 87.5% completed recommended biopsies
- 56.6% in controls

Freeman et al. *Cancer Practice* 1995 3:19-30.

Diabetes Initiative

Survey of CHW Programs

- Lay health worker interventions are integral to ten of the 14 sites
- A written survey was administered to the sites in May 2004
- The objectives of the survey were to determine:
 - area and population served by the CHWs
 - roles, responsibilities and activities of CHWs
 - mechanisms for delivery of program services
 - recruitment and retention
 - training and certification
 - client recruitment methods
 - program evaluation strategies

Roles and Activities of CHWs

- Bridging/cultural mediation between communities and the health and social services systems – all sites
- Providing culturally appropriate health education and information – 6 sites
- Assuring that people get the services they need- all sites
- Providing informal counseling and social support – all sites
- Advocating for individuals and for community needs – 6 sites
- Building individual and community capacity – all sites
- Leading exercise groups – 2 sites
- Social marketing strategy to encourage behavior change – 2 sites

Locations of Services

- Client's home – 5 sites
- Community activity or health center – 5 sites
- Faith-based organization -4 sites
- Migrant camp – 1 site
- On the street/not defined- 2 sites
- Public Health Clinic – 4 sites
- Work site – 3 sites

Promotoras at Gateway Community Health Center in Laredo TX

- Facilitate self-management classes
- Screen patients for depression using PHQ9
- Provide individual counseling
- Lead support groups
- Conference with providers

La Clinica de La Raza: Oakland, CA

Promotora Activities:

- Enroll patients in program (10-15 patients /promotora)
- Stage patients in 4 main behavior areas at baseline and every 3 months
- Weekly 1:1 contact with patients; stage appropriate counseling
- Identify patients with depression
- Lead classes, support group, walking club
- Communicate as needed with clinic providers, nutritionists, and mental health staff via case conferences

Holyoke Health Center: MA

Promotora activities:

- Facilitate breakfast clubs and snack clubs
- Facilitate self-management classes (Spanish and English)
- Coordinate walking groups and culturally appropriate exercise classes
- Outreach to patients who have missed appointments

New River Health Association: WV

Community Health Outreach Workers:

- **“Help Yourself” Self-management Classes**
- **Yoga Classes**
- **Link Between the Participant and Mental Health Providers**
- **Home Visits/ Phone Calls**
- **Exam Room Visits While Patient Is Waiting for the Provider**
- **Walking Group**
- **Diabetes Support Group**
- **Weight Loss Support Group**

Community Workers Lead Isolated Individuals into Groups

- Visit individually
- Offer group menu and help patients choose which is most appropriate
- Encourage them as valued participant
- Celebrate and honor success
- Develop leadership from within group
- Cultivate helping roles

Open Door Health Center, Homestead, FL

Promotoras assist with:

Diabetes Support Groups & Classes

Cooking Classes & Grocery Tours

Diabetes Screening & Education

Patient Recruitment

Patient Referral for Services/Resources

Distribute Project Brochures/Flyers

Lead Walking Groups

**Serve as a Liaison Between Project/Clinic Staff and Patient/
Family**

Provide Peer Support via Phone Calls & Home Visits

Community Outreach

Campesinos Sin Fronteras: Somerton, AZ

Target audience: farmworkers

Promotoras are former farmworkers who provide...

- Education to families in their homes
- Individual counseling and problem solving
- Support groups
- Self management classes
- Outreach activities with farmworkers
- *Aminadoras*

"Move More"

- *MaineGeneral Health's Move More Project*
 - Lay Health Educators provided peer support
 - Maps of outdoor walking trails and indoor walking spaces
 - Pedometers
 - Physical activity logs
 - Walking groups and walking partners
 - Incentives and awards
 - Motivational and informational weekly emails
 - Information about diabetes and physical activity

MaineGeneral Health: Waterville ME

What to Lay Health Educators Do?

- Give “natural” peer support to enrollees by walking with them, telling about places to exercise, and providing free tools such as pedometers, weekly emails and information that helps motivate them.
- Give information to enrollees about other diabetes self-management resources available in the Kennebec Valley Region.
- Some trained to lead self management classes

"Move More"

Where are Lay Health Educators located?

- Key clinical settings
- Worksites
- Faith Communities
- Other Community settings

Types of Social Support in Self Management

Nondirective vs Directive Support

Two 50-year-old, males with Type 2 diabetes, responding to question:

“How does your wife help you deal with your diabetes?”

- “My wife is great. I just eat what she gives me and I’m OK. And when I eat the wrong thing, she gives me hell, so that helps me stay on track.”
- “My wife is great. She understands that this diabetes is for life, so even when I screw up, she knows I’m trying my best.”

Nondirective vs Directive

- Nondirective
 - Cooperating without taking over
 - Accepting feelings and choices
 - “Wow, I can’t believe he said that.”
- Directive
 - Taking responsibility for tasks
 - Directing choices and feelings
 - “You’ve just got to look on the bright side”

Summary of Research Findings

Based on interviews and surveys regarding how family and friends “HELP”

Nondirective support associated with:

- better metabolic control (glycosolated hemoglobin) and lower scores on Beck Depression Inventory among those with diabetes
- lower anxiety among those awaiting diagnostic mammography
- higher scores on measures of quality of life
- Nondirective support from professionals associated with QOL in those with HIV+

Directive Sometimes Advantageous

Nondirective & Directive interact with severity

In those with surgical menopause,

Directive protective against depression

In SLE, among those with:

– more active disease -- Directive protective

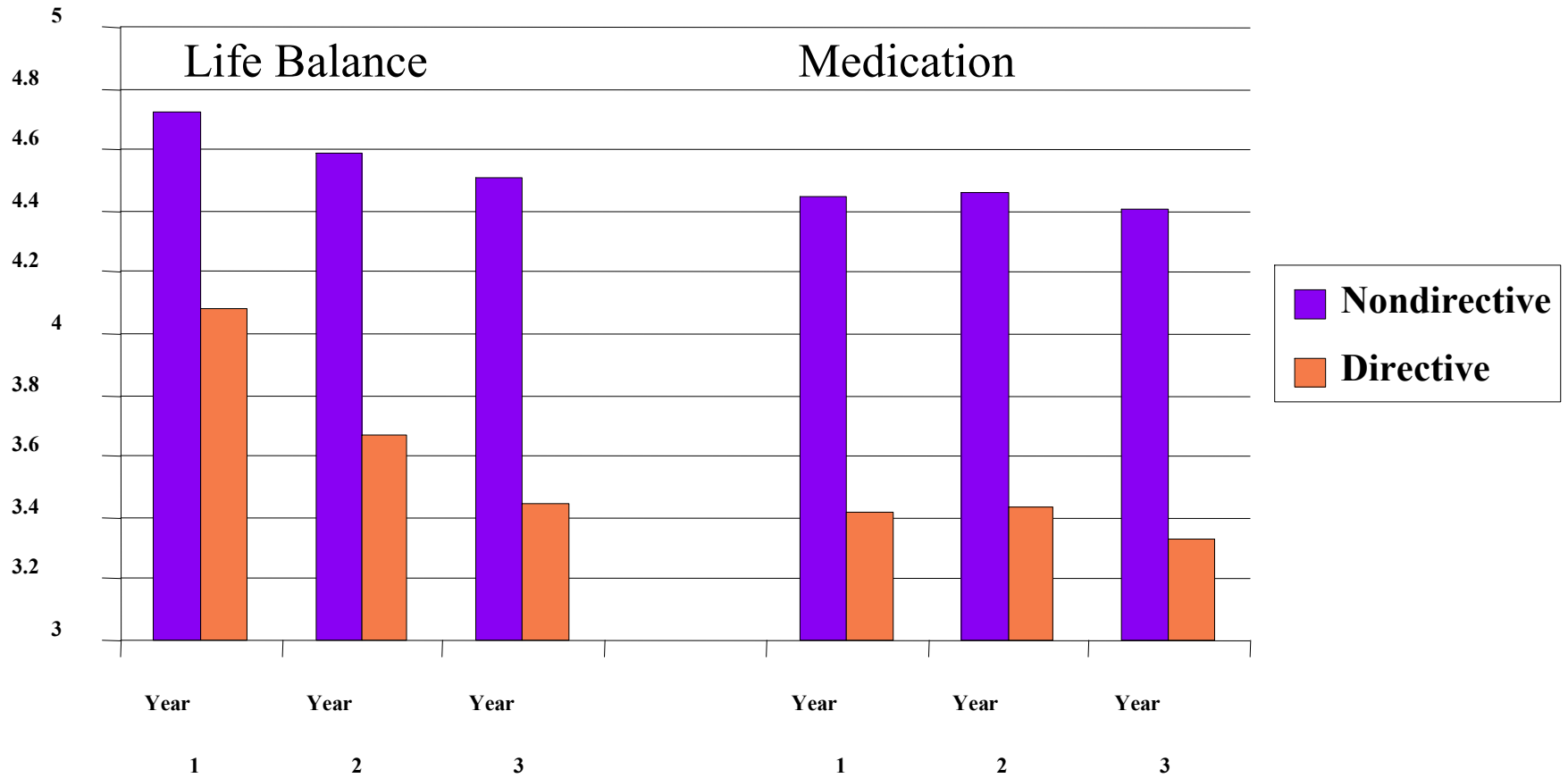
– less active disease -- Directive counterproductive

Consider diagnosis and treatment of cancer:

Night waiting for biopsy: Nondirective

Night home from surgery: Directive

Nondirective & Directive Support in DPP



Access to Resources

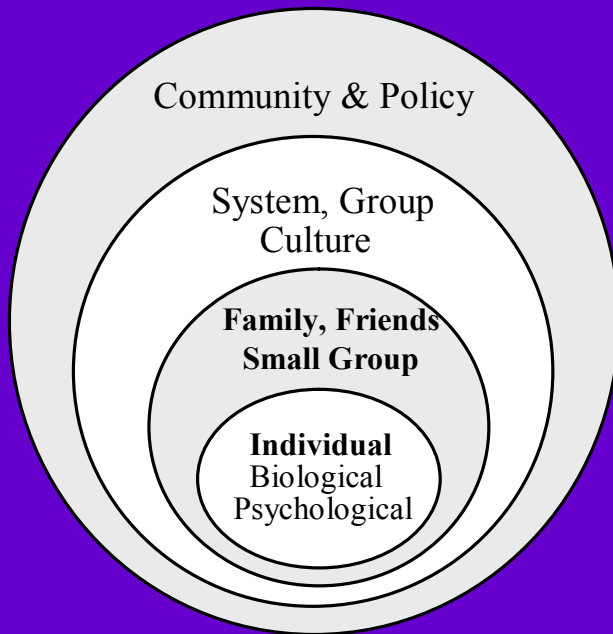
- Cannot follow healthy diet and 150 min moderate exercise if live without
 - Access to healthy, affordable foods
 - Safe, attractive places for physical activity
- Widely documented effects of built environment and access to markets selling healthy food
- Few intervention studies in this area
- This and importance of follow-up/support lead to interface between self management and community programs

Community-Based Programs and Support

Ecological Model of Self Management



Diabetes Initiative and Ecological Perspectives on Self Management



Access to Resources

**Continuity of Quality
Care**

**Ongoing Support,
Encouragement,**

Enhancing Skills

**Individualized
Assessment &
Goal-Setting**

Community Organization in RWJF Diabetes Initiative

Building Community Supports for Diabetes Care

“...how to **strengthen the community environment** in which individuals self-manage their diabetes”

“...extend self management beyond the clinical setting and **into the communities** where people with diabetes live.”

“...multiple **communication channels**, facilitating access by bringing **programs into neighborhoods**, and using peers in key roles”

Examples of interventions:

“community education, such as **innovative outreach and education through pharmacies or nail salons**; and

“community support for patients ... such as working with **supermarkets, neighborhood gardens and restaurants**, working with **employers** ..., and **enabling services such as transportation and child care**”

147 Applications for Building Community Supports for Diabetes Care

Number of Intervention Levels	% of Apps	Types of levels
1	39%	95% individual
2	32%	94% individual, 57% group
3	18%	100% individual, 63% group, 44% physical environment
4	4%	100% individual, group, and physical environment, 67% social environment

Community Based Approaches

Good Variety of Approaches, e.g.,

Church-based programs

Diverse clubs: walking, breakfast

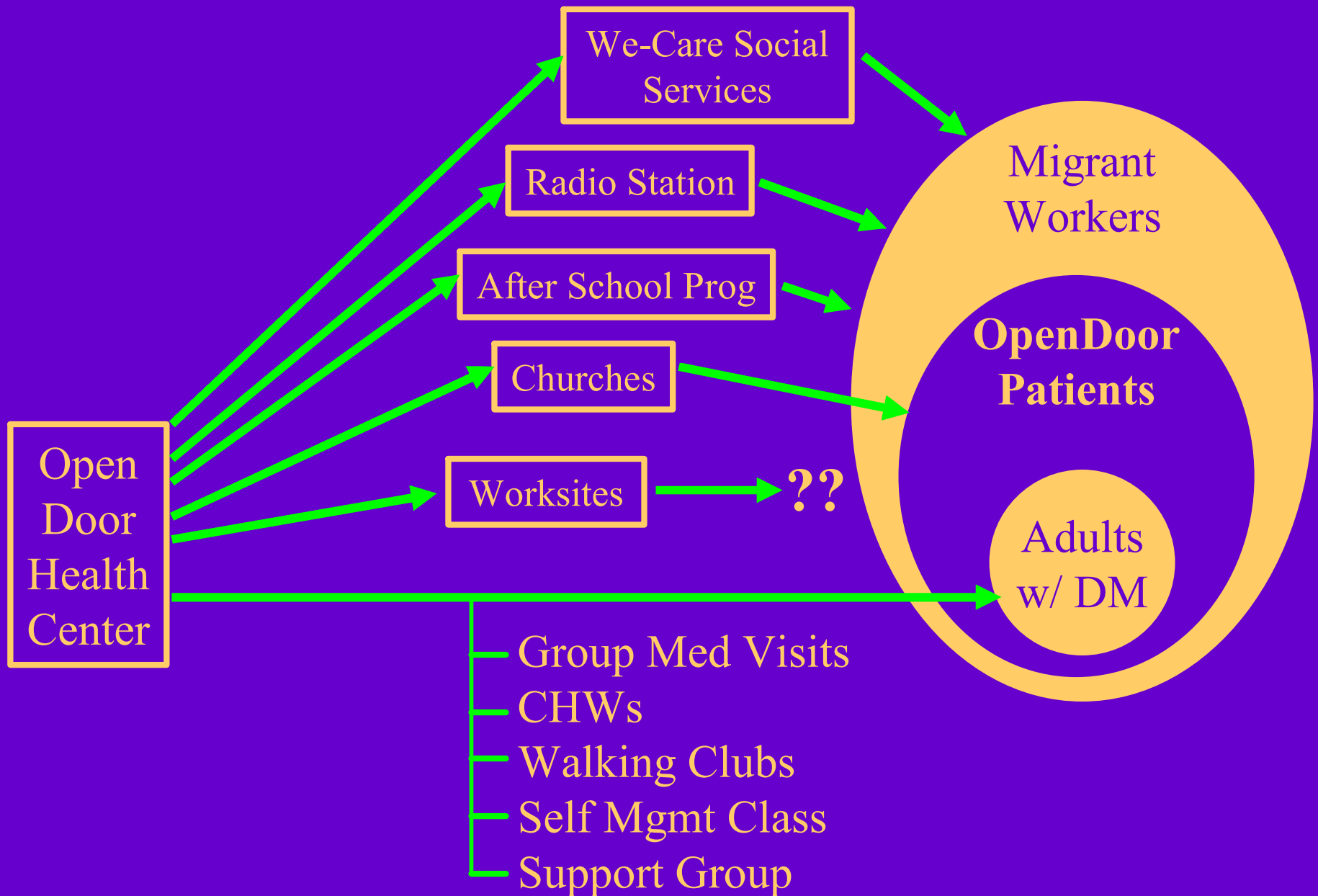
Activities in grocery stores

Support groups

Increasingly considered by primary care sites
in *Advancing Diabetes Self Management in
Primary Care*, e.g.

Geocoding patient addresses and resources for
healthy diet, physical activity

Example of Community Programs vis a vis Audience Analysis



Continuity of Quality Clinical Care

- Diabetes changes over 10 - 50+ year disease course
- Diabetes treatments change, e.g., from emphases on protein to complex carbohydrates to low fat diet to low carb diets
- Patients need ongoing opportunities for fundamental patient education, appraisal of clinical status, renewed goal-setting, etc.
- Regular monitoring and adjustment of treatment

**How to make sense of dizzying array
of self management strategies?**

Embrace Equifinality

- *Equifinality*: Accomplishment of similar objectives by diverse methods following diverse paths
 - characterizes health promotion
 - differentiates it from the ideal of rational care in clinical medicine
 - poses challenges for institutionalizing prevention in health care financing

Implications for Self Management

- Standard self management curriculum implemented across diverse sites

Versus

- Key elements of self management implemented in diverse ways for diverse populations across diverse sites

<i>Resources & Support for Self Management</i>	<i>Specific Intervention Channels or Tactics</i>
Individualized Assessment	PCP, Nurse, Group Class, Comm Hlth Wrkr,
Collaborative Goal Setting	PCP, Nurse, Group Class, Comm Hlth Wrkr
Enhancing Skills	Self-management group, Nurse, Comm Hlth Wrkr
Follow-up & Support	Web-Based Support Nurse, Comm Hlth Wrkr,
Access to Resources	Comm Hlth Wrkr, Community Coalition
Continuity of Quality Care	PCP, Nurse

Needed Shift in Public Understanding

High Quality Diabetes Care:

- Elite internist or endocrinologist
- 15 minutes, quarterly
- Rx adjustments
- Exhortation to lose weight; diet plan
- Pat on back and good luck

High Quality Diabetes Care:

- 15 minutes, quarterly w/ pt-centered PCP
- Self management classes, support groups
- Activities, classes for healthy eating, physical activity
- Bimonthly calls from/prn access to Comm Hlth Wrkr (linked to nurse, pcp)
- Healthy community

Elevator Conversation

If you have diabetes, you need:

- Regular, individualized medical care
- Someone to help you figure out what you want to do
- Help in learning the skills to do it
- Follow up and encouragement to keep you on track, help you adjust things to the real world, and help you change when circumstances change

Adult Health Management

Lifestyle Risk Factors

- Physical Activity
- Healthy Diet
- Nonsmoking
- Moderate Alcohol Consumption

Emotional Management -- Stress, Depression, Anger, etc.

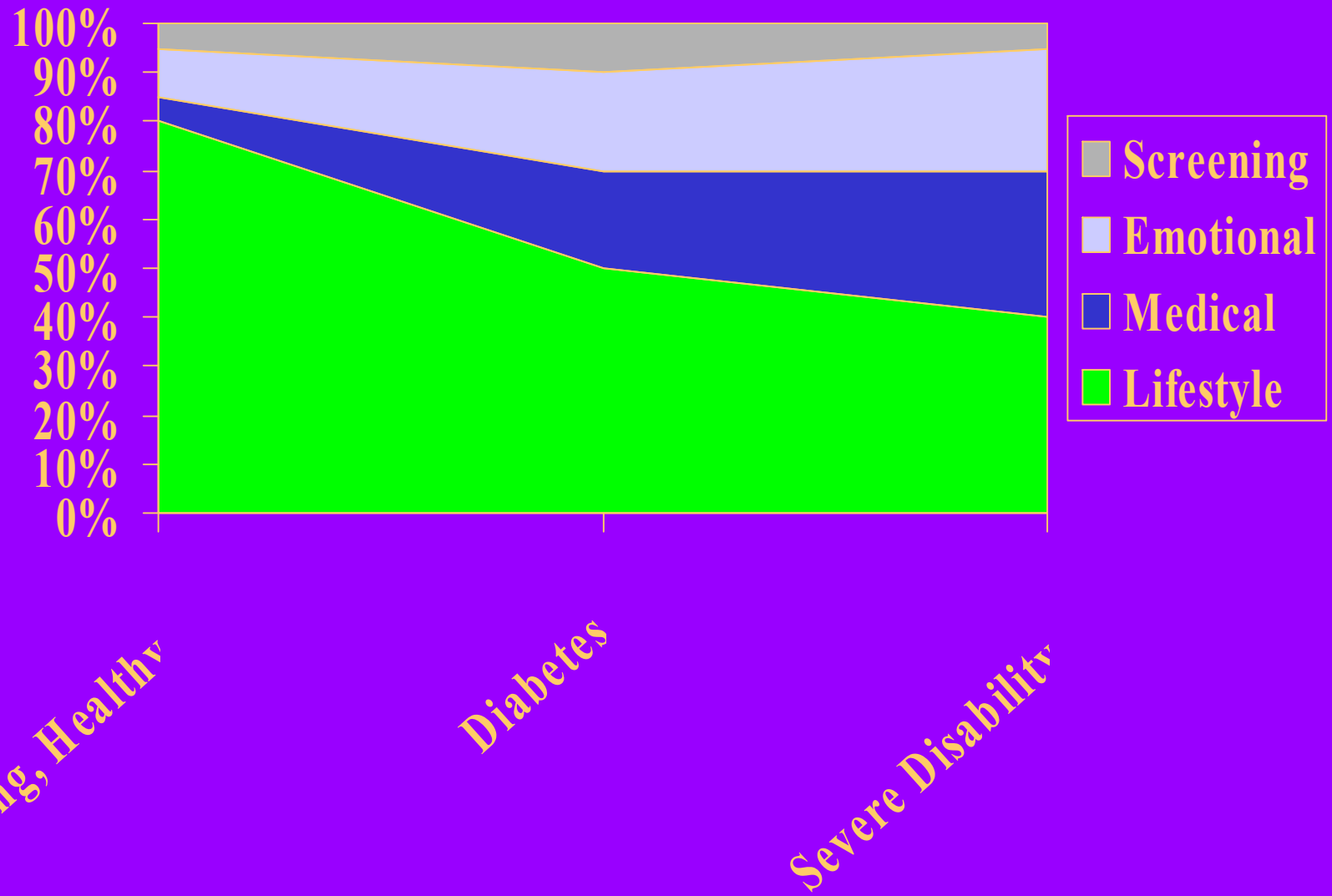
Relationship Management

Screening and Early Detection -- Mammography, Colon Cancer, etc.

Medical Management -- Hypertension, Diabetes, etc.

(?? Genetic Moderation of Each of Above ??)

Health Management of Adulthood



Thank You

fishere@email.unc.edu

<http://diabetesinitiative.org>