

# Leveraging Cultural Capital in Diabetes Prevention for Youth: The Medical Wellness Model

IHS Division of Diabetes Webinar

January 20, 2016

# Epidemic/Endemic: Diabetes

Likelihood of American Indian/Alaska Native youth aged 10-19 to be diagnosed with type 2 diabetes is 1.74 per 1000 vs 0.19 per 1000 for non-Hispanic whites.\*

% increase in diagnosed diabetes from 1990-2009 in AI/AN youth aged 15-19 rose from 3.24 per 1000 to 6.81 per 1000.\*\*

\*Source: SEARCH for Diabetes in Youth Study. <http://www.ncbi.nlm.nih.gov/pubmed/17015542>

\*\*Source: IHS Division of Diabetes Statistics (unpublished analysis)

# Risk Factors: Overview

High % of native ancestry

Strong family history

- DM in first degree relatives
- Gestational birth
- Low birth weight

Childhood Obesity

Hyperinsulinemia

Impaired glucose tolerance

Acanthosis Nigrificans

# Health Impact/Complications: Overview

- Ongoing socio-cultural difficulties/stress
- Poor quality of life
- Overall poor self-management can lead to other complications:
- Hypertension/heart disease/hyperlipidemia
- Retinopathy (vision difficulties)
- Amputations
- Polycystic ovarian syndrome
- Fatty liver disease/Renal failure (ESRD)
- Premature mortality, etc.

# Treatment/Interventions: Overview

- Medical
  - Metformin & oral agents
  - Insulin/insulin pump
  - Treatment for co-morbidity
  - Surgery
- Lifestyle changes
  - Health assessments
  - Teaching on improving nutrition/eating habits
  - Increasing physical activity
- Ongoing follow-up and Diabetes education

# Leveraging Cultural Capital in Diabetes Intervention for Youth

A form of intervention strategies that builds on cultural practices, products, philosophies, or shared environment to facilitate health awareness and to encourage behavioral change.

--spoken language, shared norms, beliefs, expectations, and local tribal or community customs regarding health promotion.

Source: Joe, J.R. (2014) Promoting Cultural Capital in a Medical Camp for American Indian Youth with Diabetes, AICRJ 38(1)123-144.

# 1991: First Wellness Camp

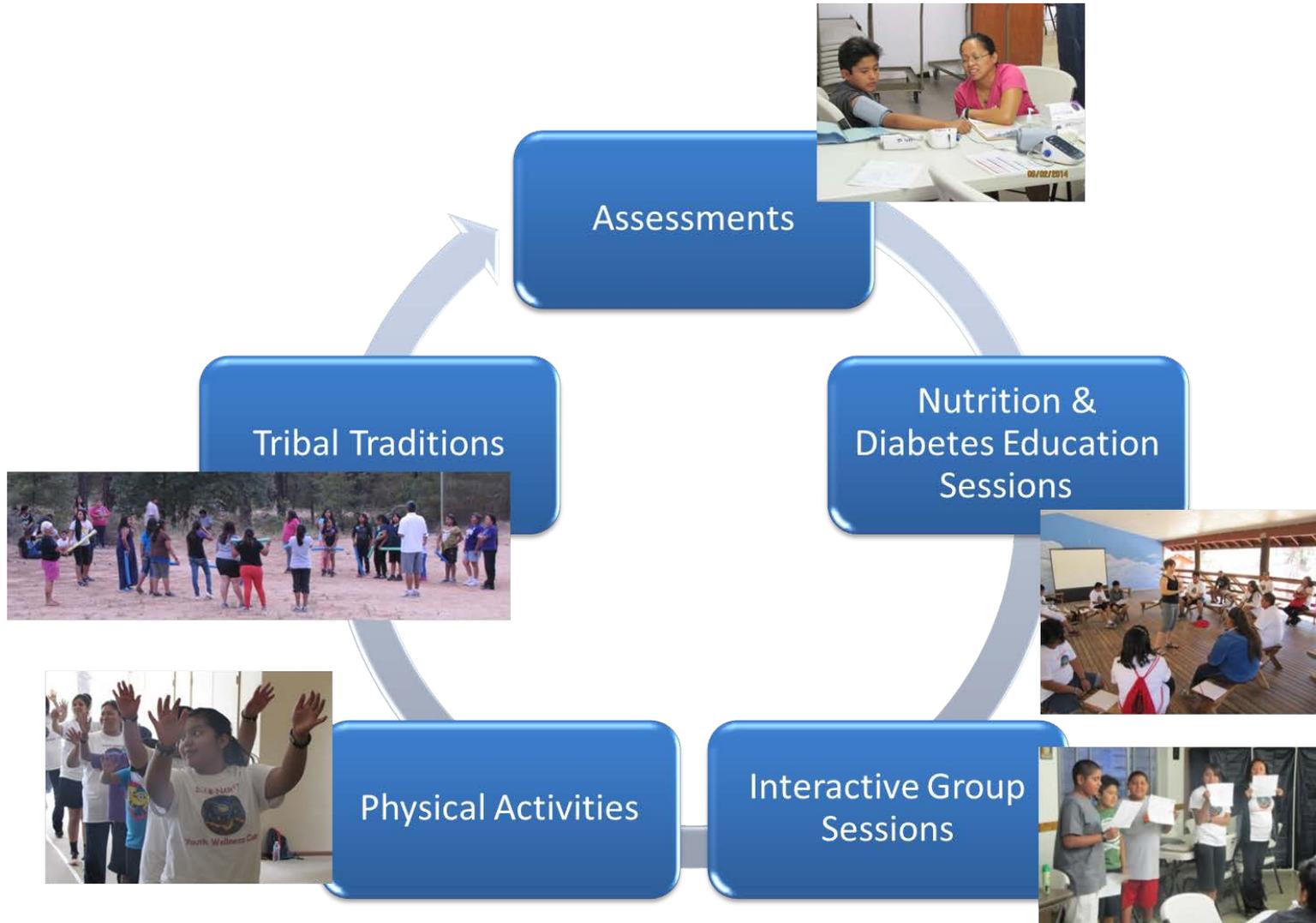


# Lessons Learned

- Camp site requirements: a friendly environment
  - all but kitchen staff from tribal communities (volunteers/counselors)
  - a medical team
- Criteria for campers
  - age
  - risk factors
  - medical & family application
- Curriculum
  - dietary/physical activities
  - diabetes education
  - pre/post-test on diabetes knowledge
  - cultural storytelling, games, guest presentation (artists)
- Medical overview
  - medication/side effects
  - one-on-one counseling
  - assessments/glucose/BMI/BP
  - follow-up referrals

**DEVELOPING A MORE CULTURALLY AND  
MEDICALLY APPROPRIATE CAMP FOR  
INDIAN YOUTH**

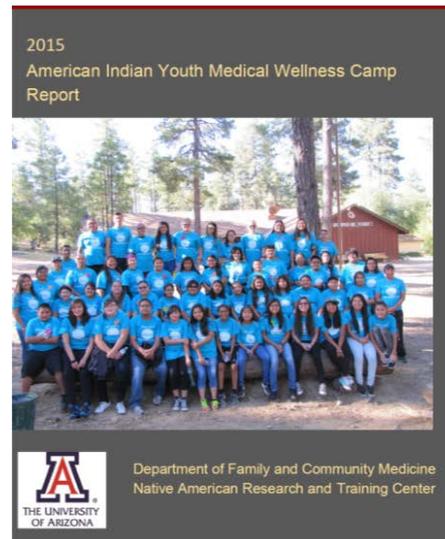
# A Typical Week at Camp



# Partnership with Communities

Southwest Tribes  
Tribal Health Departments  
Indian Health Service  
Diabetes Programs  
Wellness Programs

Camp planning committees  
Camp Volunteers  
Shared costs  
Assessment results  
Annual Report  
Community follow-up



# Documentation and Training

## Tools available upon request



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Questions:  
 -Is the camp making a difference in the well-being of children?  
 -Are we having an impact on physical activity and diet?  
 -What are children and youth learning?  
 -How can we make camp even better?

2014 NARTC Summer Medical Wellness Camp, June 2-6, 2014, Whispering Pines Campground, Prescott, Arizona

### Measuring the Effectiveness of Camp

In an effort to begin assessing the effectiveness of camp on impacting youth behaviors regarding diet and physical activity, we will begin including several measures at intake (at the beginning of camp) and outcome (at the end of camp). The collected information will be used to assess the effectiveness of camp and whether or not we are making a difference in behaviors of American Indian youth. Results will be shared with you, the parents or guardians, and your local health care provider for reference purposes. The results will also be explained to your son or daughter and we will notify you of any out-of-range values that require follow-up with your local health care provider. Following we provide brief descriptions of each of these focus areas.

If there are any questions, please do not hesitate to contact Francine C. Gachupin, PhD, MPH (Jemez Pueblo), Assistant Director, Native American Research and Training Center, (520) 621-5072, e-mail [fgachupin@email.arizona.edu](mailto:fgachupin@email.arizona.edu)

**Screening** - At past camp sessions, screening included only height, weight, blood pressure and random blood glucose measures. In addition to these measures, we plan to add:

- A waist circumference measure - using a tape measure, we will take a reading from around the waist
- A Tanita® scale - a scale that reads from foot to foot and assesses percent body fat and body mass
- An Accutrend® reading - a machine that measures blood sugar levels over the last 3 months and cholesterol levels

**Physical Activity** - At past camp sessions, physical activities included exercises for 50 minute periods without assessing the fitness of youth, amount of time spent in moderate or vigorous intensity physical activity, or daily steps. This summer we plan to measure physical activity by:

- The Progressive Aerobic Cardiovascular Endurance Run (PACER) 20-meter test. Two practice sessions will be completed prior to conducting the test for recording purposes.
- An accelerometer will be assigned to each youth to be worn during the duration of camp and will be collected on the last day. The accelerometers can be worn during sleep and bathing and will monitor the intensity levels and duration of physical activity of each youth over the week at camp.
- Daily stretching in the morning - before youth participate in the morning walk or run, stretches will be done to warm up the body and loosen muscles to avoid the potential for injury.

### NARTC Wellness Camp In-take Health Assessment Data Collection Form

Date: ___/___/___		Tribe: _____		Start Time: _____		
DOB: ___/___/___		STUDY ID #: _____		Grade: _____		
NAME: _____		School Name: _____		Sex: M / F		
E-mail Account? Y / N		Age: _____ years		Folder? Y / N		
Photo taken? Y / N		Photo transferred? Y / N		Printed? Y / N		
Seated at rest for 5-10 minutes? Y / N		Reading 1		Reading 2		
2 Blood pressure and pulse rate	systolic _____ mm Hg		systolic _____ mm Hg		mm Hg	
	diastolic _____ mm Hg		diastolic _____ mm Hg		mm Hg	
pulse rate _____ pulses/minute		pulse rate _____ pulses/minute		pulse rate _____ pulses/minute		
A1CNow? _____		A1c _____		% _____		
3 Height: _____ cm		Weight: _____ kg		Waist Circumference: _____ cm		
4 Tanita NO CELL PHONES AROUND SCALE!!		Exercises 12+ hrs/wk? Y/N		Sports team? Y/N		
Bodybuilder? Y/N → Athletic Mode		Weight _____ kg		Lean Body Mass (FFM) _____ kg		
Body Fat Mass _____ kg		Print-out taped to back of form? Y / N		PACER 20 meter (see Group Score Sheet)		
5 Accutrend® (fasting values)		Date: _____		Cholesterol _____ mg/dl		
Date: _____		Glucose _____ mg/dl		Practice laps taken? Y / N		
6 PACER 20 meter (see Group Score Sheet)		Form Break: _____		1 - Lap Number _____		
Laps Completed _____		laps _____		2 - Lap Number _____		
7 YRBS Survey checked for completeness? Y / N		Survey checked for accuracy? Y / N		Accelerometer assigned? Y / N		
e-mail address: _____		Wrist? Right / Left		Polar Password: WCamp2014		
Set-up synchronization time: _____		e-mail password: _____		8 Bag? <input type="checkbox"/>		
Grey t-shirt? <input type="checkbox"/>		Camp t-shirt? <input type="checkbox"/>		Usual t-shirt Size? _____		
9 Cabin _____		Map/roster? Y / N		WP info? Y / N		
Schedule? Y / N		End Time: _____				



# Critical Measures



- Age
- Sex
- Height
- Weight
- Age
- Glucose
- Cholesterol
- Physical Fitness
- Nutrition
- Risk Factors

# Findings – Summer 2014 (n=35)

## Blood Pressure

Systolic 103.3 (79-138)

Diastolic 67.5 (46-84)

Heart Rate 91.5 (74-114)

Waist Circumference 42.4 in (26.2-57.1)

A1c 5.7 (4.9-10.8)

Fasting Cholesterol 168 (150-240)

Fasting Glucose 92.3 (72-146)



# Findings – Summer 2014 (n=35) Cont.

## **Progressive Aerobic Cardiovascular Endurance Run**

**(PACER) 20 METER** 10.6 final laps (2 – 24)

**HEIGHT** 62.3 in (5.2 ft)

**WEIGHT** 180 lbs (74 – 313)

## **Tanita Body Composition Analyzer SC-331S - Intake**

FAT % 40.4% (8.3 – 61.7)

BODY FAT MASS 77.2 lbs (7 – 153)

LEAN BODY MASS 99.7 lbs (57 – 158)

BODY MASS INDEX 31.4 (16.4 – 44.7)

Cancer Health Disparities Institute and Diabetes Action Research and Education Grants

# Technology

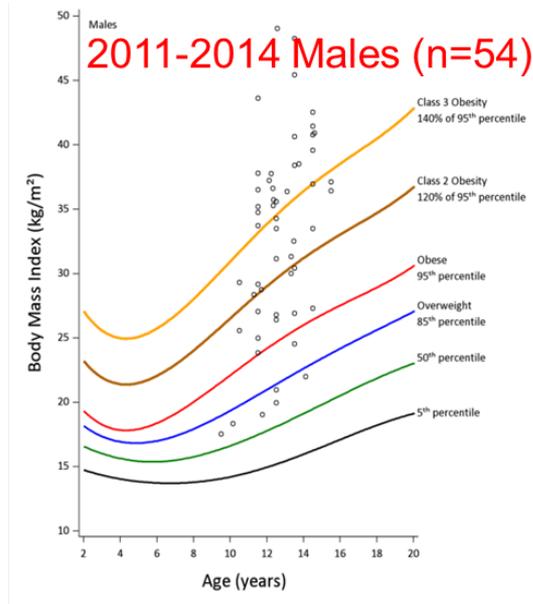
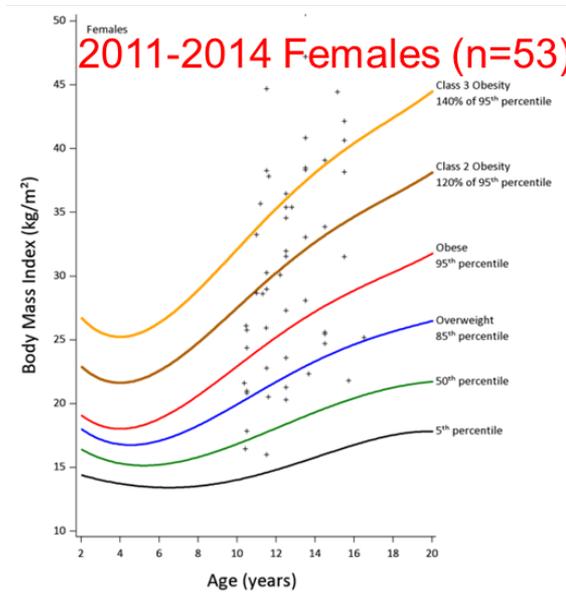
## DAY 2

<b>ACTIVE TIME</b>	9:06	(4:51 – 12:26)
<b>STEPS TAKEN</b>	27,781.4	(13,880 – 41,037)
<b>KILOCALORIES BURNED</b>	3,563.2	(1,864 – 6,353)
<b>SLEEP LAST NIGHT</b>	7:37	(2:27 – 9:07)
<b>RESTFUL SLEEP</b>	6:12	(1:51 – 7:28)
<b>RESTLESS SLEEP</b>	1:24	(0:36 – 2:12)
<b>% RESTFUL SLEEP</b>	81.3%	(75% - 92%)

# Data Utilized by the Community Health Care Providers

- A copy of results are given to:
  - Parents
  - Community partners
- A copy of results placed in medical charts
- Referrals made for follow-up, as necessary (measures out of range)
  - Resources not always readily available
  - Multidisciplinary approaches usually necessary

# Next Steps



- Assessing longitudinal data
- Follow-up with youth for 6 months post-camp
- Including 24-hours dietary recalls
- Parent-focused education and health coach
- Seeking continuing support and grant writing

# The Need to Follow Biomarker Trails

A Sample of 4753 Pima Children between 1965 & 1998

100 children diagnosed with type 2 diabetes

548 with IGT

4105 with normal glucose level

10 years later

169 (11%) with normal glucose developed T2DM

241 (45%) with IGT developed T2DM

Source: Fagot-Campagna, et al., (1998). Type 2 diabetes in Pima Indian Children: cardiovascular risk factors at diagnosis and 10 years later. *Diabetes* 47 (Supp). A155.

# Are We Doing Enough?

Increasing number of initiatives underway—"Just Move It"

Community-based health promotion programs

Focus on obesity prevention

Special efforts

Oklahoma's Native Youth Preventing Diabetes  
started 2002—children & youth over age 12

(biomarkers: FBG; Cholesterol; BMI; BP; waist circumference).

Others: day camp, family camp, and residential camp

\* A need for standardizing and tying data to on-going  
treatment/follow-up for youth

# A Need for a Model of Care for Children and Youth with T2DM

A model that takes into account a more patient-centered care that includes attention to:

- Knowledge and self-care management skills
- Influence of youth culture & tribal culture on health
- Knowledge about diabetes (health literacy)
- Co-morbidity concerns (depression)
- Family environment

Promotes a friendly learning environment

Builds network and confidence

# Thank You

## Any Questions?

## Suggestions?

Contact:

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Jennie R. Joe: [jrjoe@email.arizona.edu](mailto:jrjoe@email.arizona.edu)