Marlene Geren, RN, BS Nursing, BS Business
Certified Wellness Specialist
Licensed Wellness & Health Coach

Bwell4ever LLC.

Health & Wellness
Coaching & Assessments
Bwell4ever.org

Southern Adventist University Employee Wellness Lunch & Learn

Blood Sugar Management and why it's so valuable to your health!

SOUTHERN ADVENTIST UNIVERSITY
Employee Wellness

NOVEMBER 3RD
HULSEY WELLNESS CENTER
ROOM: 3145
12:00 PM-12:50 PM

I praise you because I am *fearfully* and *wonderfully* made; your works are *wonderful,* I know that *full well.* - Psalm 139:14

August 9, 2022
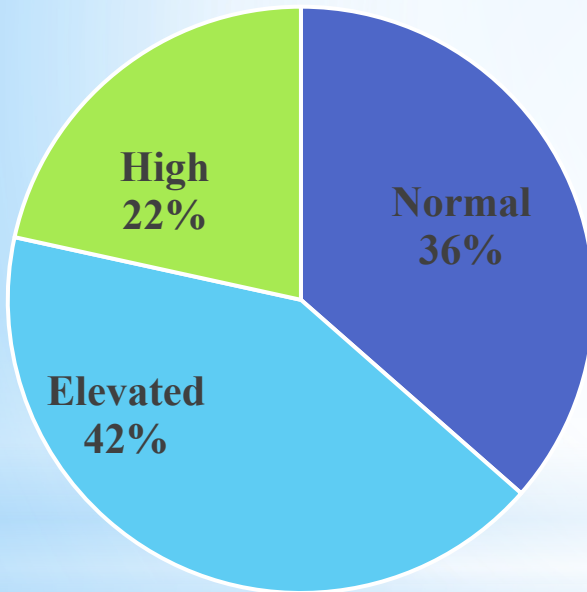
Make-up Date August 30, 2022

Wellness Assessment Date

	2020	**2021**	**2022**
Number of Employees:	196	234	260
Number of Spouses:	65	73	88
Total:	261	307	348

*Blood Pressure Results

2020 Results
255 Total Participants

Normal 36%
High 22%
Elevated 42%

2021 Results
307 Total Participants

High 40%
Normal 35%
Elevated 25%
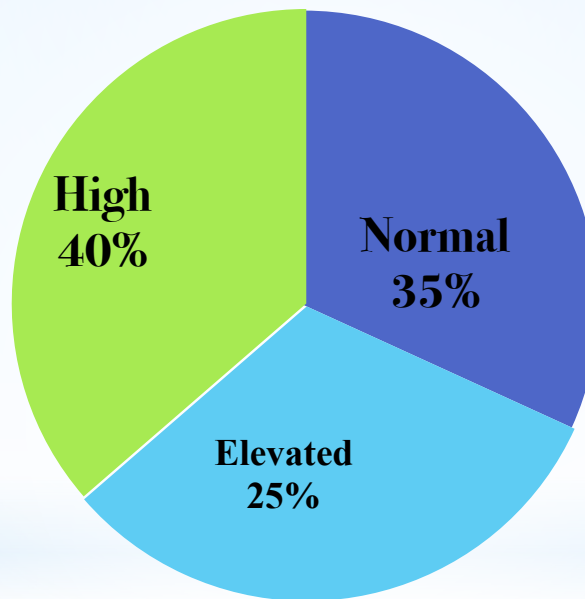
2022 Results
348 total Participants

High 34%
Normal 45%
Elevated 21%
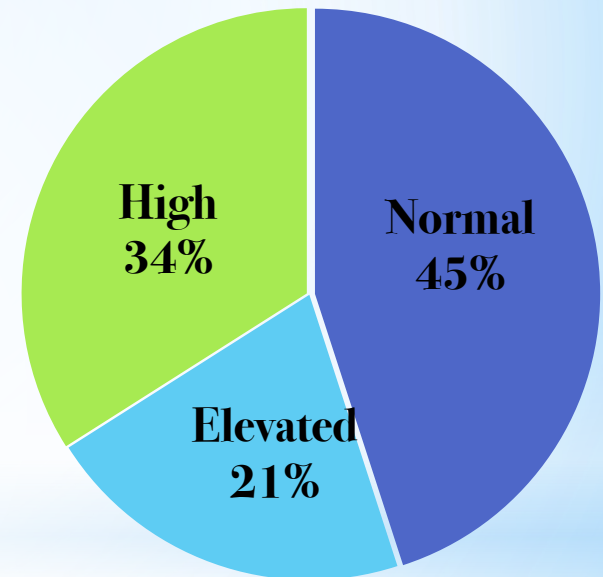
Normal: 120/80
Elevated: 120-129/80
High: Stage 1: 130-139/80-89
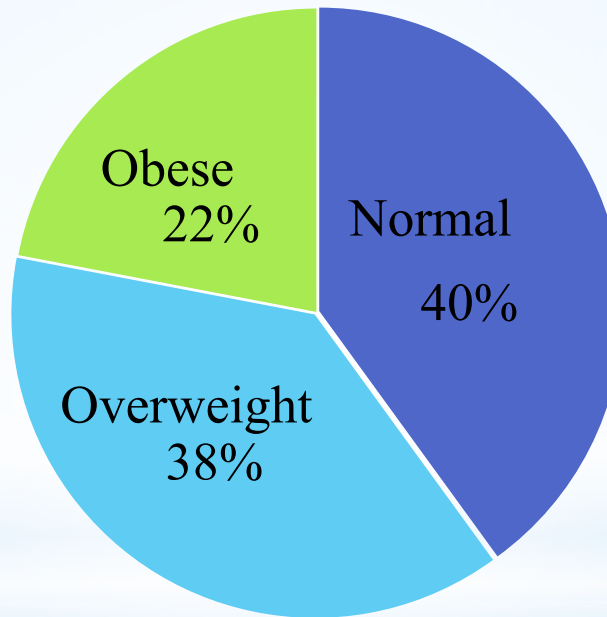High Stage 2: 140/90

12% on Medication

*BMI Results

2020 Results
256 Total Participants

Obese 21%
Normal 45%
Overweight 34%

2021 Results
307 Total Participants

Obese 22%
Normal 40%
Overweight 38%
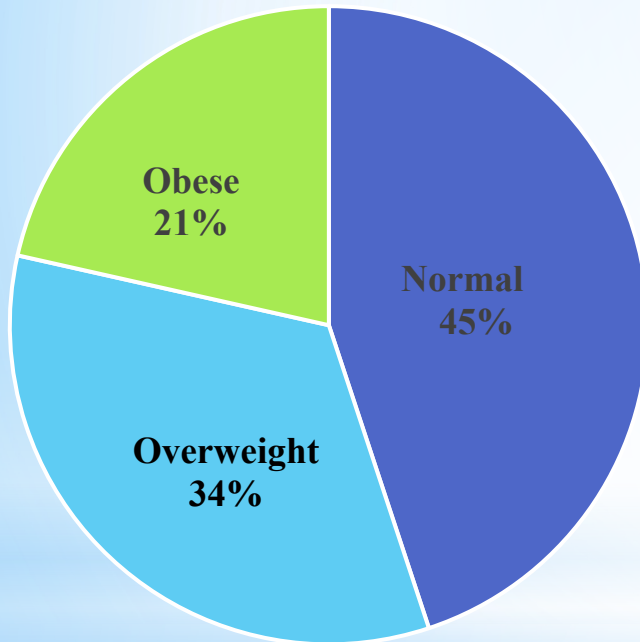
2022 Results
345 total Participants

Obese 21%
Normal 43%
Overweight 36%
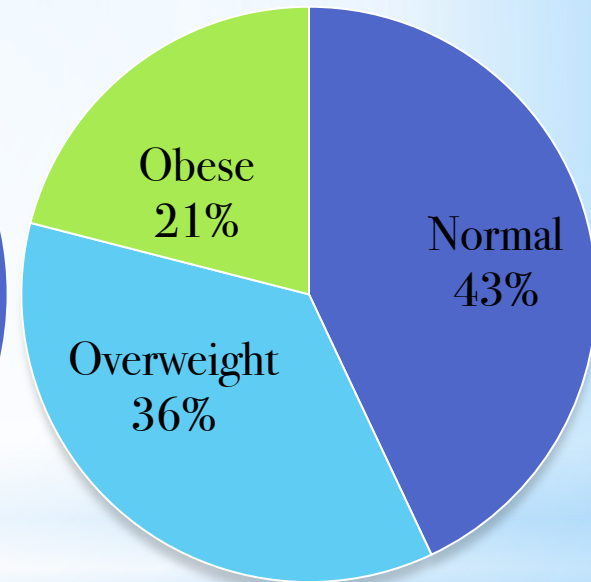
Normal: <25
Overweight: 25-30
Obese: >30

2017 National Average 42.4% Obesity

9.2% Severe Obesity > 35%

*SAU Health Goals

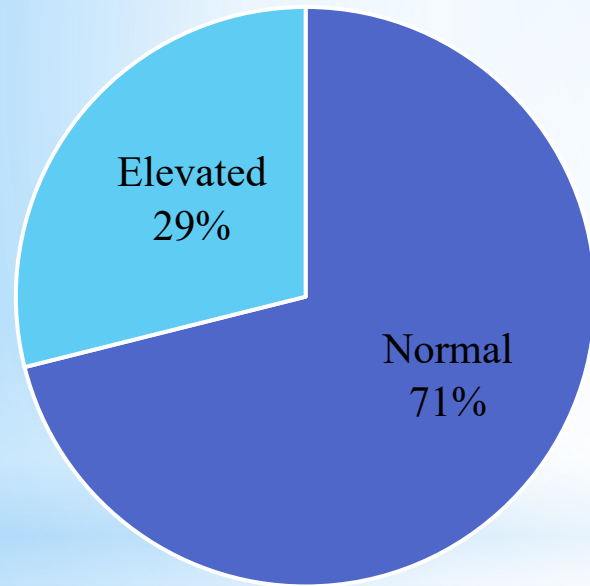## Health Goals:
Southern Adventist University

These results are based upon Healthy People 2020 guidelines by reducing unhealthy percentages by 10% over a 10 year period. Also increasing healthy percentages by 10% over a 10 year period.

- ▶ Reduce the incidence of obesity (>30 BMI) to 18% to :
  - ▶ 17.82% by 2014
  - ▶ **16.74% by 2020 Currently at 21%**
  - ▶ 15.84% by 2025

- ▶ Reduce the incidence of overweight (>25 but <30 BMI) from 39% to:
  - ▶ 38.61% by 2014
  - ▶ **36.27% by 2020 Currently at 34%**
  - ▶ 34.32% by 2025

- ▶ Increase the proportion of adults who are healthy (<25 BMI) from 43% to:
  - ▶ 43.43% by 2014
  - ▶ **46.01% by 2020 Currently at 45%**
  - ▶ 48.16% by 2025

well4ever LLC.

*The Diabetes Belt of the USA

*Recognized by the CDC in 1962
  *Double the risk of having diabetes than in other states.

*Risk factors for Diabetes
  * Diseases of the pancreas
  * Being overweight (obese)
  * Diet high in carbohydrates and cholesterol
  * Sedentary lifestyle
  * Genetics & Family history

WORLD HEART FEDERATION®

WebMD®

*Healthy People 2030 Diabetes Statistics

Among US adults aged 20 years or older, age-adjusted, country-level data indicated:

❖ In 2016, estimates of diagnosed diabetes prevalence varied across US counties, ranging from 1.5% to 33.0%.

❖ Median country-level prevalence of diagnosed diabetes increased from 7.8% in 2004 to 13.1% in 2016.

| 2004 | 2008 | 2016 |

| % | 1.5–6.9 | 7.0–8.4 | 8.5–9.8 | 9.9–12.1 | 12.2–33.0 |
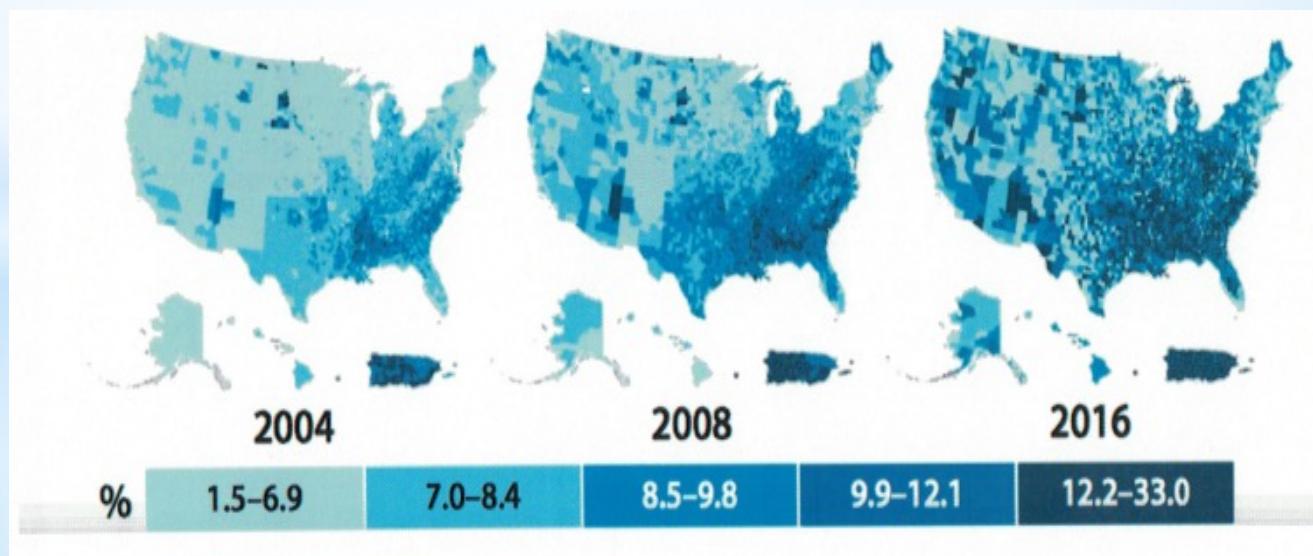
THE STAGGERING **COSTS** OF **DIABETES IN AMERICA**

Nearly
30 million
Americans have diabetes.

$1 in $3
Medicare dollars is spent caring for people with diabetes.

Diabetes and prediabetes cost America
$322 billion
per year.

86 million
Americans have prediabetes.

$1 in $5
health care dollars is spent caring for people with diabetes.

Today, **3,835** Americans will be diagnosed with diabetes. Today, diabetes will cause **200** Americans to undergo an amputation, **136** to enter end-stage kidney disease treatment and **1,795** to develop severe retinopathy that can lead to vision loss and blindness.

Learn how to fight this costly disease at **diabetes.org/congress**

American Diabetes Association.

Glucose Results

2020 Results
257 Total Participants

Very High 19%

High 6%

Normal 75%

2021 Results
307 Total Participants
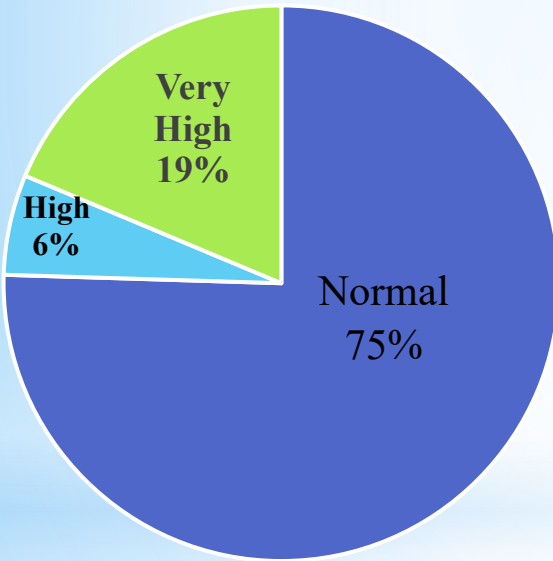
Very High 4%
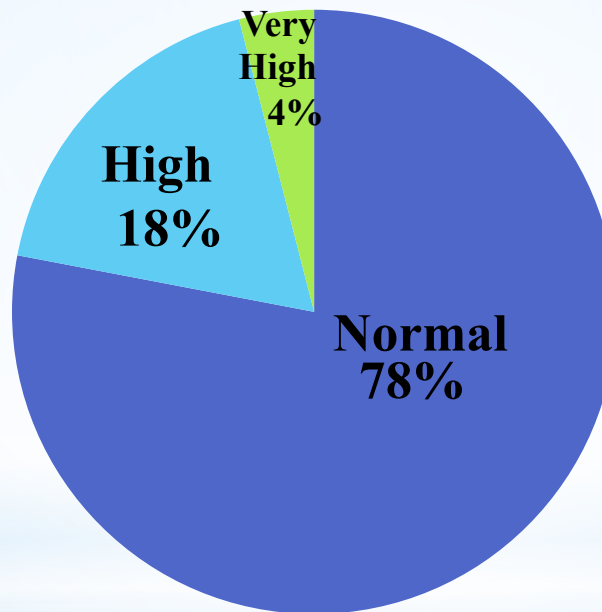
High 18%

Normal 78%

2022 Results
346 Total Participants

Very High 11%
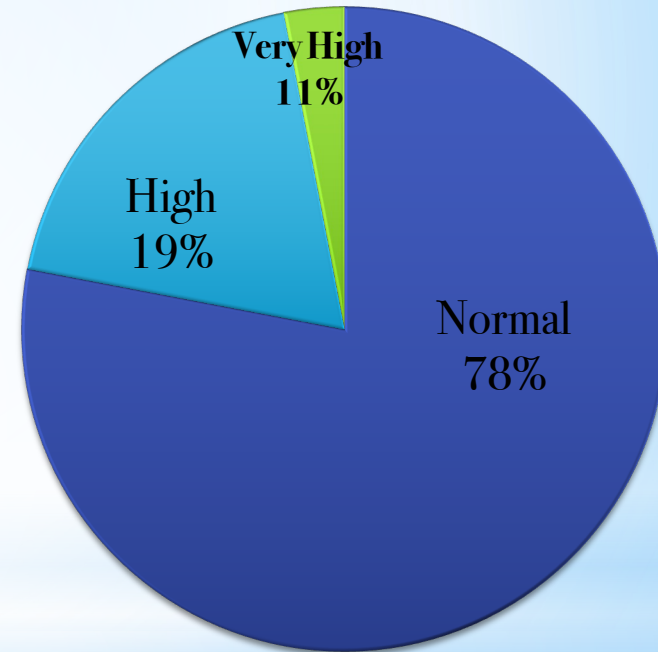
High 19%

Normal 78%

Normal: <100
High: 100-125
Very high: >125

*Hemoglobin A1C Results

2020 Results
256 Total Participants

- Diabetic 3%
- Pre-diabetic 20%
- Normal 77%

2021 Results
307 Total Participants
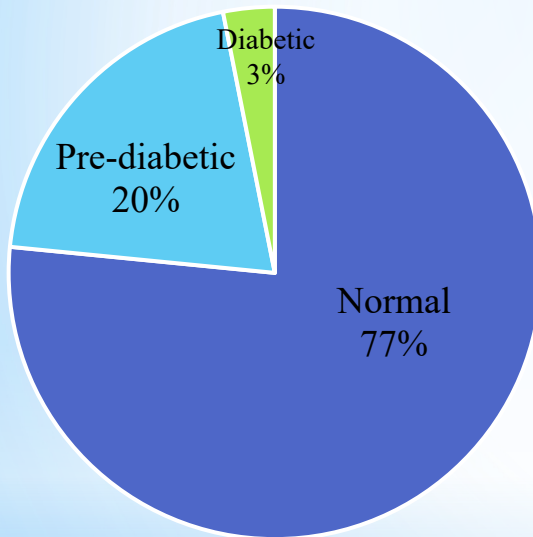
- Diabetic 7%
- Pre-diabetic 48%
- Normal 45%
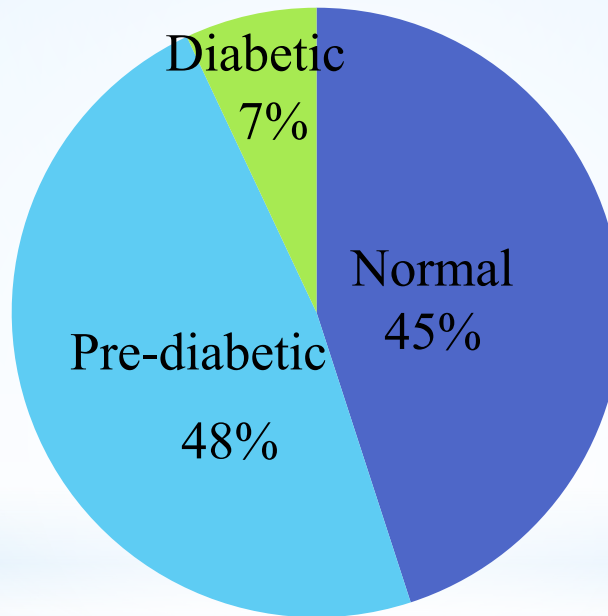
2022 Reports
346 Total Participants

- Diabetic 3%
- Pre-diabetic 22%
- Normal 75%
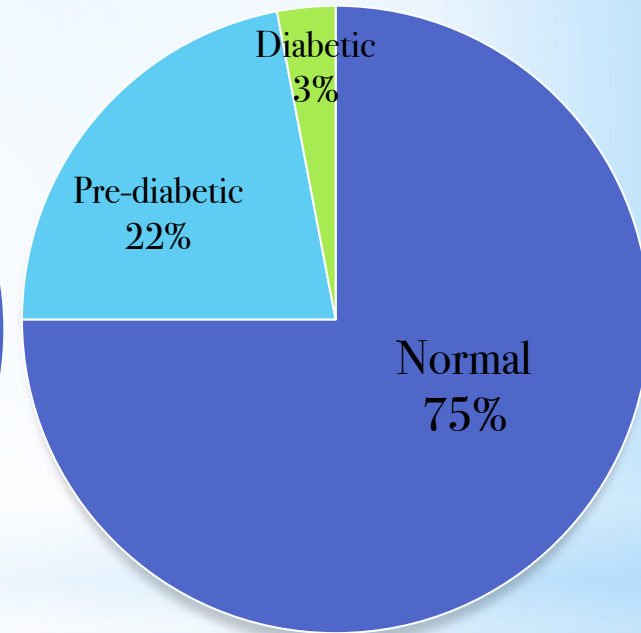
Normal: 4.7-5.7
Pre-diabetic: 5.8-6.4
Diabetic: >6.4

4 % on Medications
3 % diet controlled

Trends of A1C Values at Southern

Year	Normal (4.7-5.6%)	Borderline (5.7-6.4%)	High (>6.4%)
2013	73%	24%	3%
2014	88%	10%	2%
2015	85%	12%	3%
2016	69%	27%	4%
2017	75%	22%	3%
2020	77%	20%	3%
2021	45%	48%	7%
2022	75%	22%	3%

* What does Hemoglobin A1c actually measure?

Normal Hemoglobin (Hb)   Glycated Hemoglobin (HbA1C)

HEME Groups transport Oxygen   Glucose permanently binds proteins
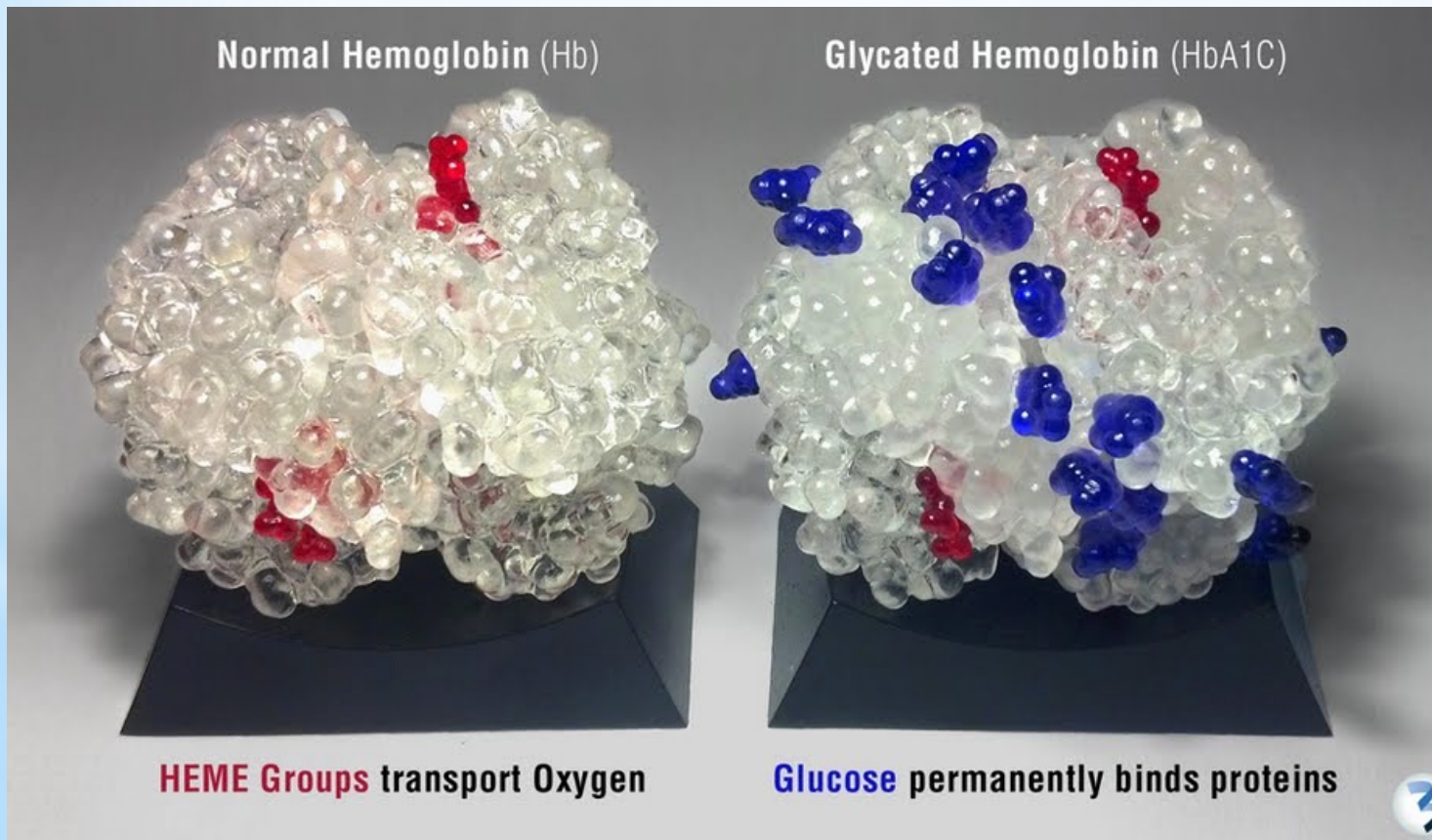
A1c Testing to Diagnose Diabetes and Pre-diabetes

The American Diabetes Association (ADA) recently included the A1c test among the tests for detecting diabetes and pre-diabetes. Pre-diabetes is a condition in which blood glucose levels are high, but not high enough to be diagnosed as diabetes. The A1c test, which shows the average glucose level in the blood over the last two to three months, can be an important indication of how well your body metabolizes sugar.
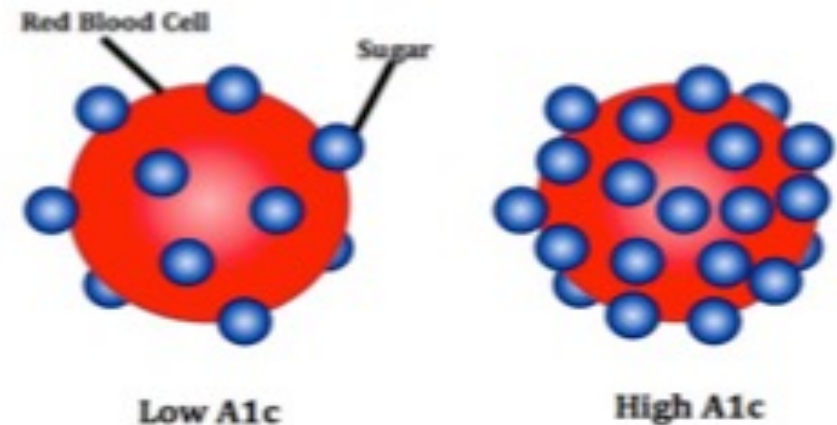
Research shows the window of opportunity to prevent or slow the progression of pre-diabetes to type-2 diabetes is about 3 to 6 years. Significant lifestyle changes make a huge difference during this time.

How can I delay pre-diabetes, type-2 diabetes, and heart disease?

A study of people at high risk for type-2 diabetes found that people can successfully lower their risk for diabetes by making simple lifestyle changes. They did this by:

- Eating healthier and less than usual
- Exercising 30 minutes a day, 5 days a week, usually by brisk walking

You can prevent or delay diabetes simply by:

- Losing weight – Only 5-7% of your current total weight can help significantly!
- Reducing total calories, and reducing sugar, processed foods, and trans & saturated fats
- Adding more vegetables and high fiber foods to your diet

*What Hemoglobin levels are normal?

Normal glycated hemoglobin is 5%

* If 6%, average blood sugars = 126 mg/dL
* If 7%, average blood sugars = 154 mg/dL
* If 8%, average blood sugars = 183 mg/dL
* If 9%, average blood sugars = 212 mg/dL

Diagnostic Tools for Diabetes

* Glucose (Sugar) Levels
  * Fasting levels of 100-125 = prediabetes
  * Fasting levels of 125+ = diabetic

* Hemoglobin A1C
  * Shows the average glucose level over past 2 to 3 months.
  * 5.7% to 6.4% = prediabetes
  * 6.5% or higher = diabetic
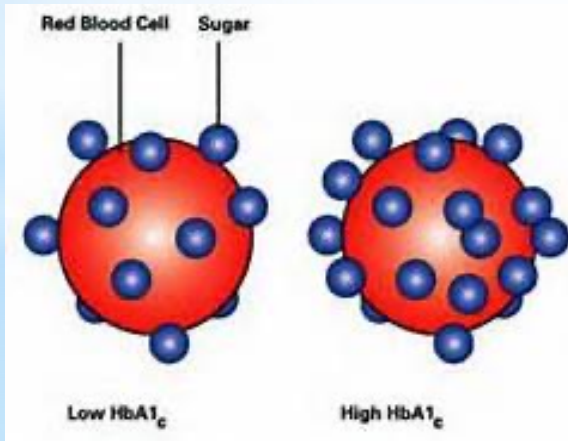
✓ Eat food.
✓ Not too much.
✓ Mostly plants.

*Your Body and Carbs

- *When you eat a carb your body turns it into a simple sugar called **glucose**
- *A hormone called **insulin** is released to tell your cells to **use the glucose** or **store it as fat**
- *Glucose that isn't used or stored stays in the bloodstream causing **elevated blood sugar**
- *Prolonged elevated blood sugar *(or hyperglycemia)* can lead to **diabetes**

*How Much?

*The Academy of Nutrition and Dietetics recommends that **45-65%** of your daily calorie intake should come from carbohydrates – (beverages included)

*Depends on:
  *Lifestyle
  * Activity level
  *Weight goals
  *Health conditions
  *Gender

Protein

Fats

Carbohydrates
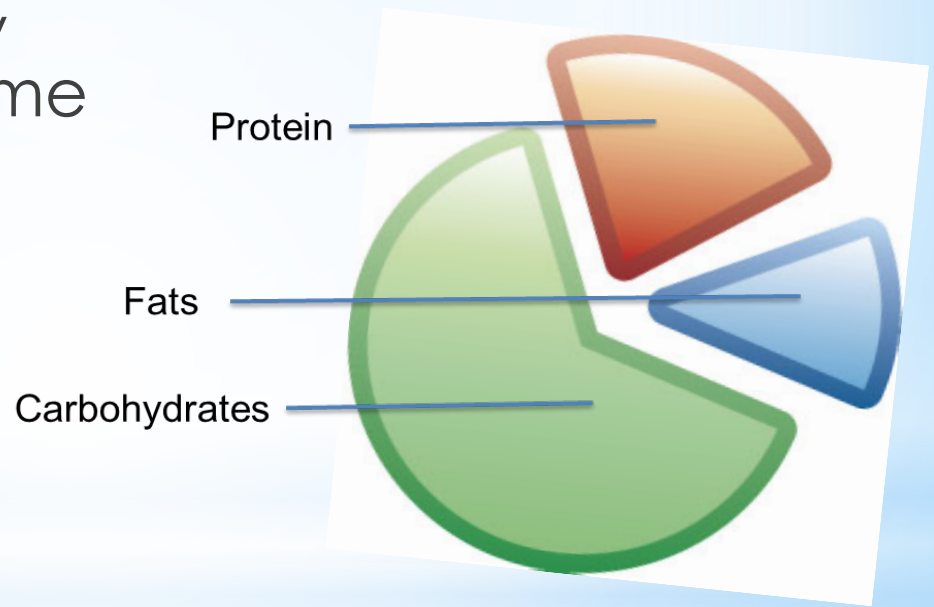
*Fad Diet Spotlight: Low Carb

*Diet primarily used to lose weight
* Defined as eating between **~30-100g** of carbs/day
* Average carb intake ranges **~225-325g** per day
* Side effects: **constipation, cravings, headaches, confusion/brain fog, irritability, nausea, lethargy and even kidney damage**

*Most people don't need to eat low carb to lose weight but should consider modifying their carb choices
* **Eat quality carbohydrates:** fruits vs. chips
* **Practice balanced eating:** eat protein and fat with carbs
* **Stay away from drinking carbs:** pop, energy drinks, lattes
* **Portion control:** don't go overboard with the carbs you do eat

*Focus on Fiber

*Benefits of eating fiber:
- *Slows down digestion
- *Prevents blood sugar from getting too high
- *Helps us absorb nutrients
- *Clean our system of waste
- *Lowers cholesterol levels
- *Keeps you fuller longer

*Most adults only get ~15g of fiber per day. The recommendation is **25-30g/day!**

*Sources of Fiber

*FRUITS and VEGETABLES

*BEANS and LENTILS

*WHOLE GRAINS

*NUTS

Aim for 3 or more grams of fiber per serving!

	Nutrition Facts
	8 servings per container
Serving size	2/3 cup (55g)

Amount per 2/3 cup

Calories 230

% DV*		
12%	**Total Fat** 8g	
5%	Saturated Fat 1g	
	Trans Fat 0g	
0%	**Cholesterol** 0mg	
7%	**Sodium** 160mg	
12%	**Total Carbs** 37g	
14%	Dietary Fiber 4g	
	Sugars 1g	
	Added Sugars 0g	
	Protein 3g	
10%	Vitamin D 2mcg	
20%	Calcium 260mg	
45%	Iron 8mg	
5%	Potassium 235mg	

Ditch the drinks and enjoy water.

Balanced +Living © Lifestyle Matters 2014

*What if you plateau?

* Get back to the basics and evaluate what you are eating
  * Examples- too many: hidden oils, nuts, PB&J, hidden sugars, cheese

* Increase intensity of exercise
  * Burn the fat in those little cupboards in the large muscles.

"Exercise is beneficial...but a lack of exercise is not the primary reason for weight problems...exercise can never take the place of a healthful diet."

    Dr. Neal Barnard pg 122.

"A comprehensive, credible, and remarkably empowering book. I highly recommend it!"
—*David Katz, MD, MPH, Yale University Prevention Research Center*

Goodbye
DIABETES

preventing and reversing diabetes the natural way

DR. WES YOUNGBERG
with ELISE HARBOLDT, RN

*Four Tips for Success in Lowering A1C levels

1. Build a Strong Foundation

* Start each day with a good breakfast
  * Make it substantial with generous fiber grams
  * Sets you up for a success all day long

2. Use Diversion

▶ Take a walk outside

▶ Take a deep breath

▶ Drink a glass of water (Hunger feeling can actually be thirst)

▶ Say a prayer

▶ Contact a supportive friend

3. Plan Ahead

* Write out your menu (daily, weekly, weekends)
* Shop from your menu, and only when full to avoid temptations
* Find new healthier, quick fixes to avoid frozen foods or drive through
* Keep fresh, cleaned veggies in the drawer
* If eating out, plan ahead what to order

4. Set Goals

▶ Specific goals, not generals like "going to eat better"

▶ Realistic goals, ex. 1 lb a week for 4 weeks

▶ Sustainable goals, ex. I am going to walk to the mailbox each day this week.

well4ever LLC.

*A1C Normal Ranges

*Early stages of the disease: small changes in lifestyle make a big difference

*Losing a few pounds: even a 5% loss

*Exercise: especially a walk after a meal

*Increasing fiber in your diet

*Keep your doctor informed of any lifestyle changes you are attempting: they affect glucose levels and need more monitoring.
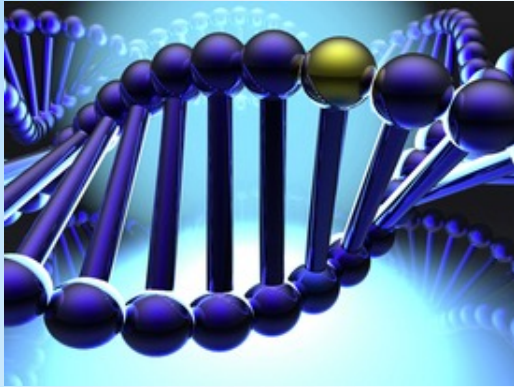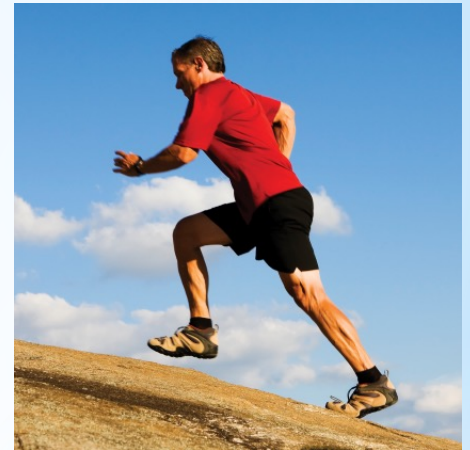
*Family History

* "Bad genes" don't have to determine your health:
  * 75% health – lifestyle habits
  * 25% health – genetics

We know specific ways to 'turn off'
our bad genes

*Lifestyle Interventions

*Improve on where you are:

* Exercise
* Nutrition
* Sleep
* Recreation/Enjoyment

* Stress Management

*Nutrition

"Let food be your medicine" -Hippocrates

Instead of this...

* Eat as you can or whenever you can.
* White flour.
* Processed sugar.
* Snack of fries or chips.
* Eating dinner in front of TV.

Do this!

* Plan 3 meals a day at specific times.
* Whole wheat flour.
* Low sugar, whole fruits.
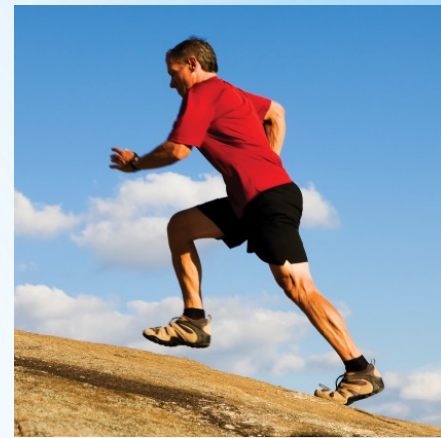* Snack of fruits & veggies.
* Eat dinner around the table with family.

*Exercise

Instead of this...

* Take elevator or escalator.
* Drive short distances.
* Sit while watching TV.
* Sit and relax on the coach after dinner.

Do this!

* Take stairs.
* Walk.
* Stand or exercise while watching TV.
* Take the dog (or yourself) for a relaxing walk after dinner.

* Blood sugar managements effects your entire body and increases your risk factors for health

Increased blood sugars:

* Blood Pressure complications and hypertension
* Poor kidney function (GFR), increased enzymes, and kidney disease & possibly dialysis.
* Increased liver enzymes, cholesterol impairment and disease

Circulatory affects leading to

* * Vision impairment and eye disease.
* * Poor skin integrity leading to infections and delayed wound healing.
* * Poor circulation can lead to decreased sensation, function and limb amputation.

*Good News:

* Managing these levels have lead to

* Better overall functioning in several areas including

* * Weight management

* * Risk reduction

* * Less medications

* * Delayed progression of the disease.

*Harvard Risk Analysis Study

Adapted their risk values without tobacco risk

*Care for each employee.

*Allow them to work in an environment to help them thrive with best health and wellness decisions.

*Identify those with high risk factors and allow them the opportunity for health coaching.

*Educate them to make healthy options while generating a good support system.

Group Risk Categories

Lowest

Low

Risk

–

No levels elevated

→

- **BMI:** less than 25 kg/m^2
- **Cholesterol:** Less than 200
- **Blood pressure:** ≤120/80
- **Blood glucose:** ≤100, with **A1C** less than 5.6%

well4ever LLC.

Low Risk

–

1 level elevated

→

- **BMI:** greater than 25 kg/m^2
- **Cholesterol:** Any abnormal level, including lower HDL levels
- **Blood pressure:** any pressure above 120/80 up to 139/89
- **Blood glucose:** any level above 100, with **A1C** greater than 5.7% up to 6.4% (pre-diabetic)

well4ever LLC.

Moderate Risk

—

2 levels elevated

- **BMI:** greater than 25 kg/m^2
- **Cholesterol:** Any abnormal level, including lower HDL levels
- **Blood pressure:** any pressure above 120/80
- **Blood glucose:** any level above 100, with **A1C** greater than 5.7% up to 6.4% (pre-diabetic)

well4ever LLC.

High Risk
—
[3] or [4]
levels elevated

→

- **BMI**: 30 – 35 kg/m^2, Class 1
- **Cholesterol:** 200 – 239, or ratio greater than 5.0 – 5.4
- **Blood Pressure:** above 120/80 up to 139/89 (prehypertension)
- **Blood glucose**: between 100 – 124, with **A1C** greater than 5.7% up to 6.4% (pre-diabetic)

well4ever LLC.

Higher
High Risk

—

All 4 levels elevated

- **BMI:** 35 kg/m^2 or higher, Class II and III
- **Cholesterol:** 240 total or higher, or ratio greater than 5.5
- **Blood pressure:** 140/90 and greater (hypertensive)
- **Blood glucose:** greater than 125, with **A1C** >6.4% (diabetic)

well4ever LLC.

Risk Category	2016 461 total	2017 470 total	2021 307 total	2022 348 total
Highest (All 4 levels)	0%	0.50%	2%	2%
High (with 4 levels):	13%	9%	4%	6%
High (with 3 levels):	23%	22%	18%	18%
Moderate:	21%	23.50%	22%	25%
Low:	23%	22%	27%	23%
None:	20%	23%	27%	26%
Lowest & Low Totals (goal of >70%)	43%	45%	54%	49%
Highest & High (goal of <20%)	36%	31.50%	24%	26%

*Discussion and Questions

* 2021Southern Adventist University was awarded AHA Silver Workplace Health Achievement

* Workplace Health Achievement
* Award for 2022:

* Gold Status!

* Congratulations!

* American Heart Association