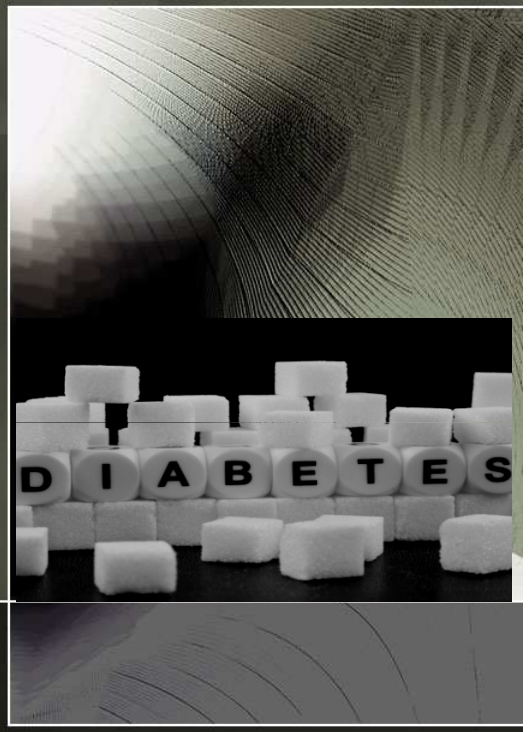
The association of diabetic retinopathy and diabetic nephropathy among type 2 diabetic patients in Thailand



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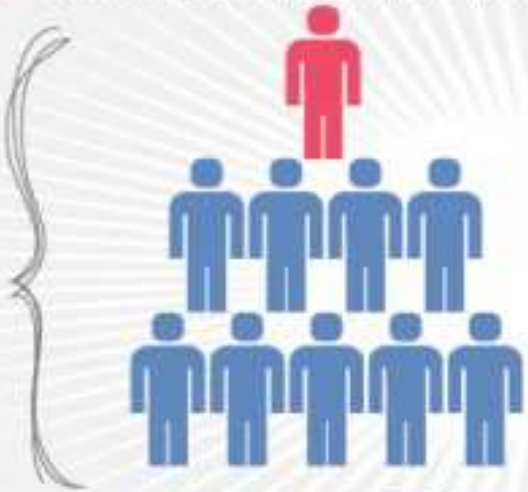
It's World Diabetes Day on November 14th. How much do you know about this chronic disease?

347 million people in the world have diabetes.

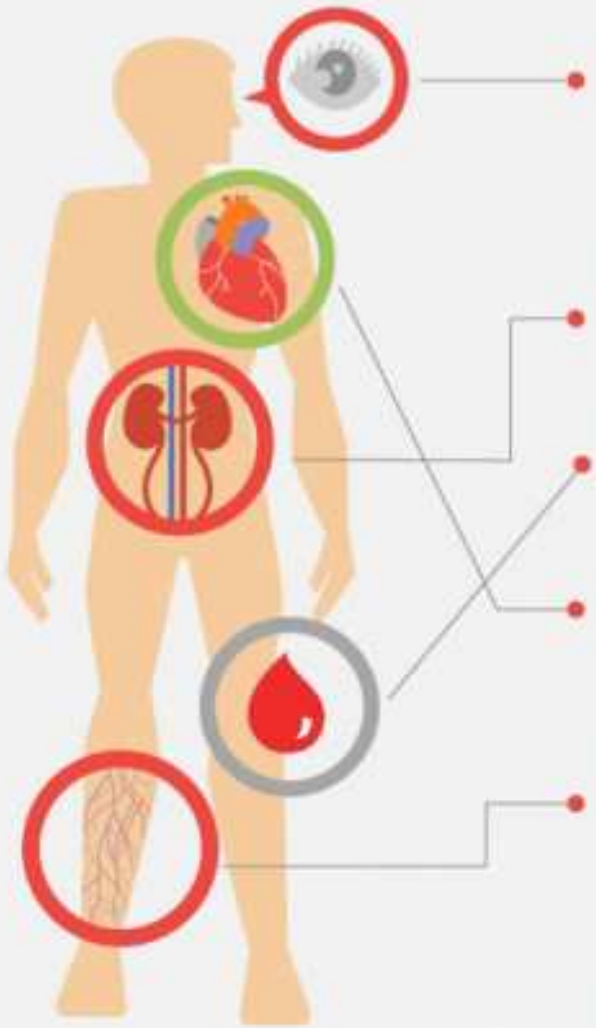


90% of them have type 2 diabetes which is usually preventable

Diabetes is currently responsible for **3%** of all deaths in the world

The World Health Organisation predicts deaths from Diabetes will increase by two thirds by **2030**

Diabetes contributes to many health complications, some of which can be very severe. Common complications include:



Damage to vision (Retinopathy)

After 15 years with diabetes, 2% of sufferers will be blind and around 10% will suffer severe visual impairment

Kidney damage

10 to 20% of diabetics die of kidney failure

Reduced blood flow and neuropathy

Can lead to foot ulcers and eventual amputations

Heart disease and stroke

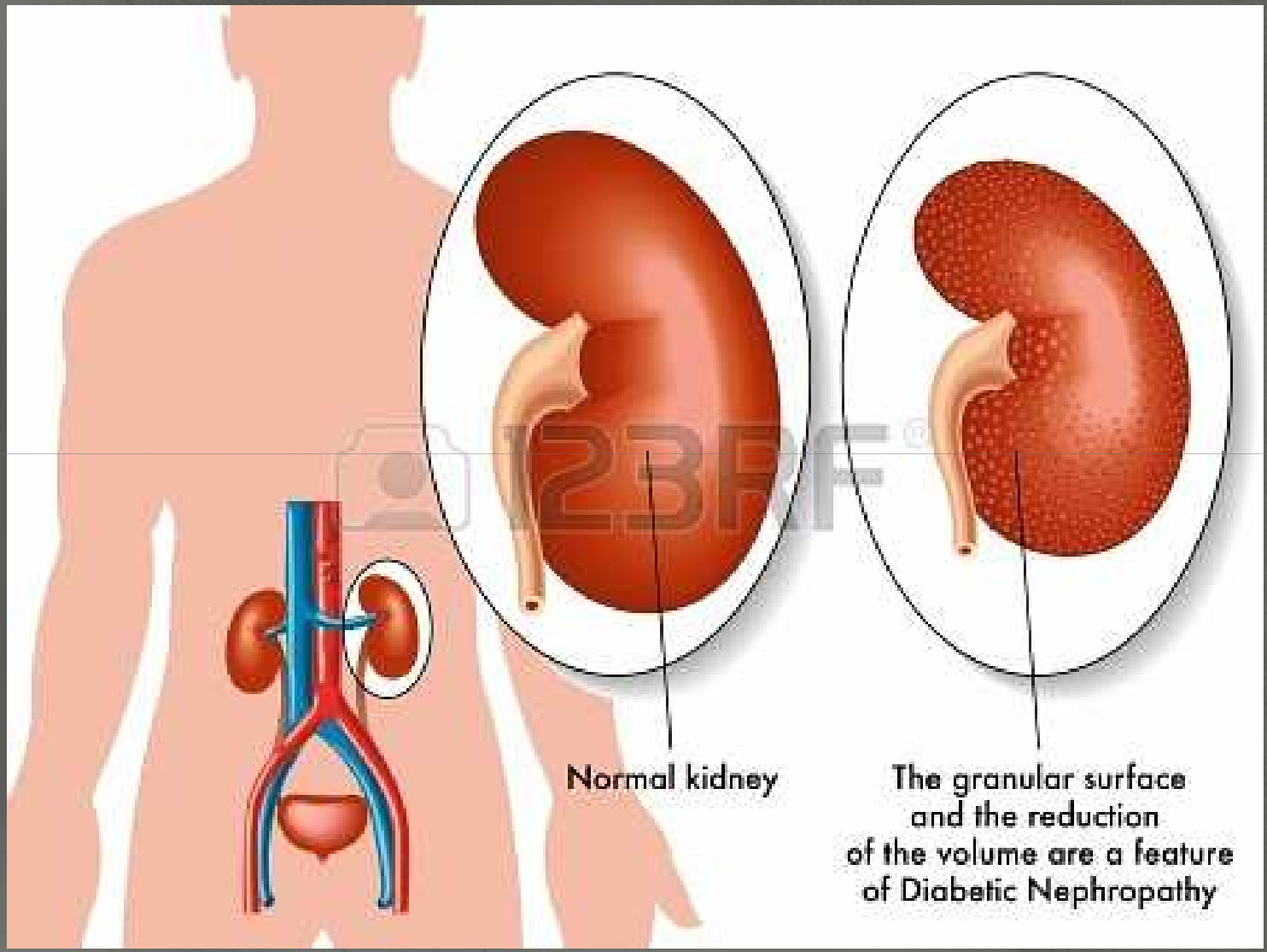
50% of diabetes sufferers eventually die of cardiovascular disease

Neuropathy (nerve damage)

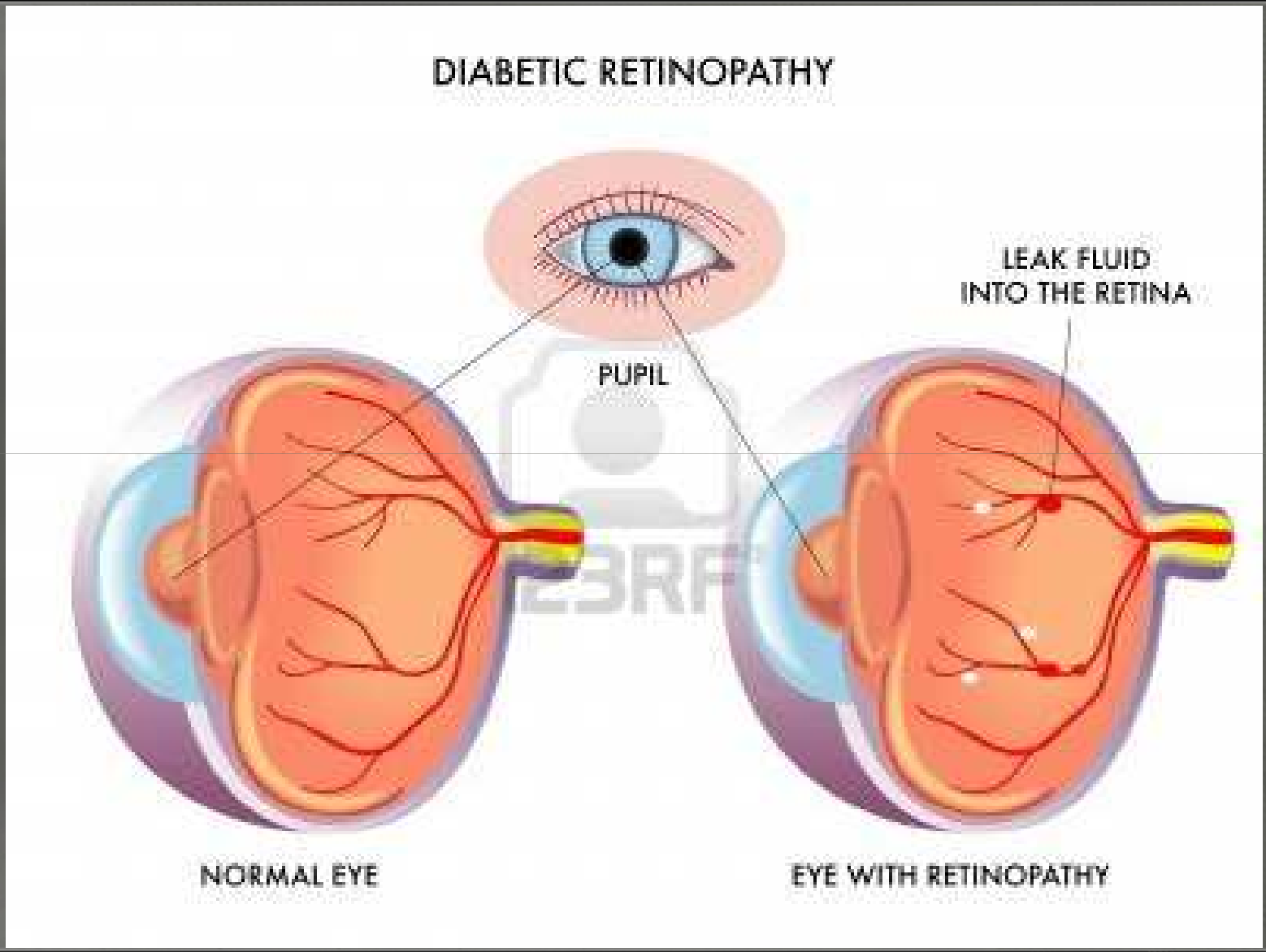
50% of people with diabetes will suffer from tingling, pain, numbness or weakness in their hands and feet

A person with diabetes is at least **twice as likely to die** at any given time than their peers without diabetes

Diabetic nephropathy



Diabetic retinopathy



Objective

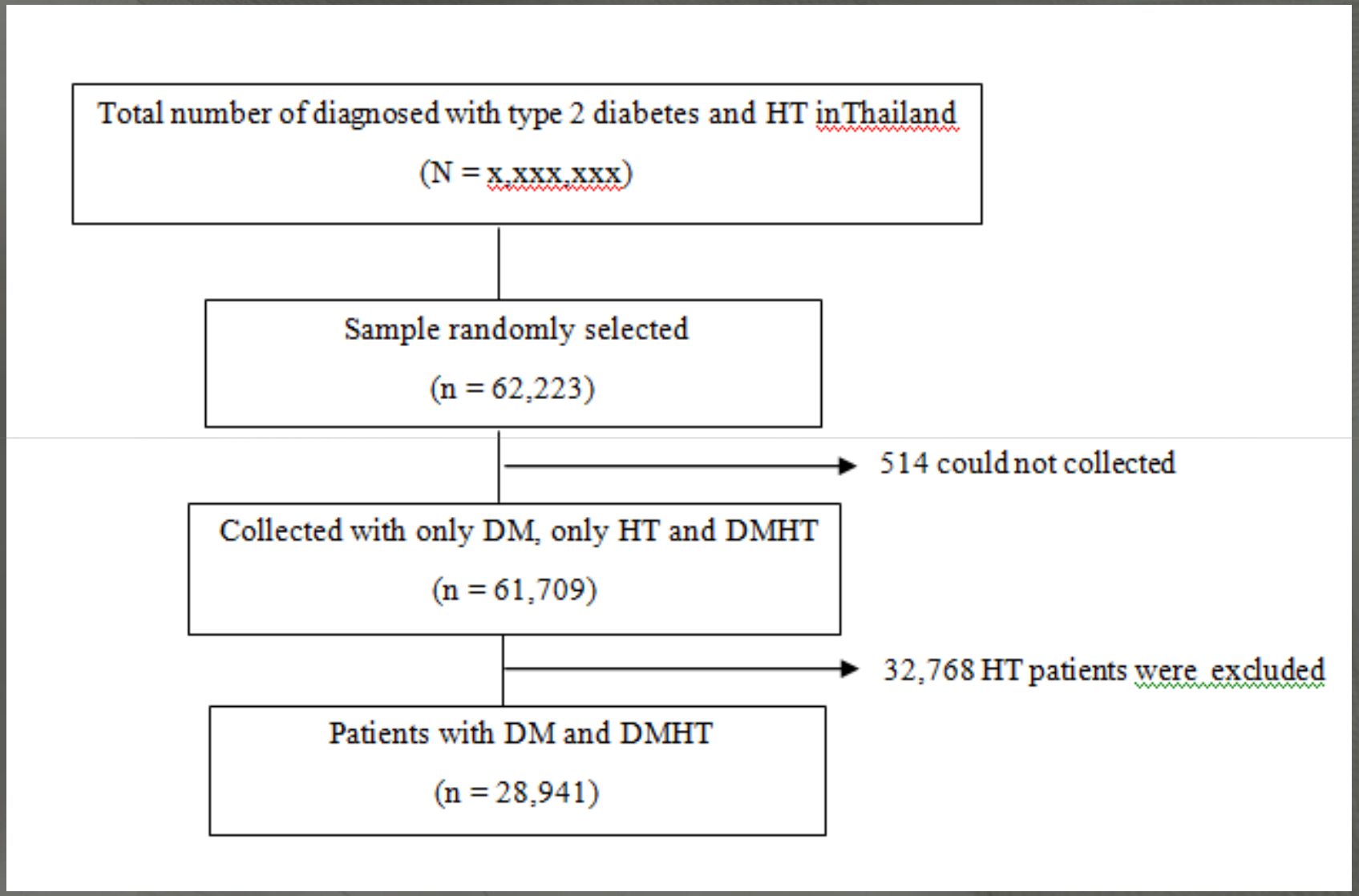
Objective

To examine the association of diabetic retinopathy and diabetic nephropathy among type 2 diabetic patients in Thailand to determine the prevalence of diabetic retinopathy and diabetic nephropathy.

Method

This paper is part of an assessment on quality of care among patients diagnosed with type 2 diabetes and hypertension (HT) visiting hospitals of ministry of public health and Bangkok metropolitan administration in Thailand in 2012. The sampling method was proportional to size, stratified cluster sampling. Collected data by case record form (CRF) follow by Toward Clinical Excellence' Network (TCEN). From 62,223 patients who randomly selected. Sample size were excluded by only HT patients and diagnosed DN. This study involved a total of 13,008 patients .

Method



The inclusion flow chart

Results

Table 1. Demographic characteristics presented as percentage unless specified otherwise

Characteristics	Total DM +DMHT		Screening for DN		Data not available in the medical record and Missing	
	Number	Percent	Number	Percent	Number	Percent
Sex						
Male	8,777	30.3	3,934	30.2	4,843	30.4
Female	20,164	69.7	9,074	69.8	11,090	69.6
Total	28,941	100.0	13,008	100.0	15,933	100.0
Age (years)						
Mean (SD)	60.0 (10.7)		60.0 (10.7)		59.8 (10.8)	
Median (Min: Max)	60 (20: 97)		60 (20: 97)		60 (20: 97)	
HbA1c (%)						
< 7.00	7,377	33.3	3,654	32.7	3,723	33.9
≥ 7.00	14,760	66.7	7,507	67.3	7,253	66.1
Total	22,137	100.0	11,161	100.0	10,976	100.0
Serum creatinine (mg/dl)						
≤ 1.5	22,029	86.1	10,407	83.6	11,622	88.6
>1.5	3,544	13.9	2,041	16.4	1,503	11.4
Total	25,573	100.0	12,448	100.0	13,125	100.0
UAE						
Normal	6,119	45.5	3,811	48.2	2,308	41.7
Microalbuminuria	6,894	51.3	3,799	48.0	3,095	55.8
Macroalbuminuria	439	3.3	302	3.8	137	2.5
Total	13,452	100.0	7,912	100.0	5,540	100.0

Results

Table 1. Demographic characteristics presented as percentage unless specified otherwise

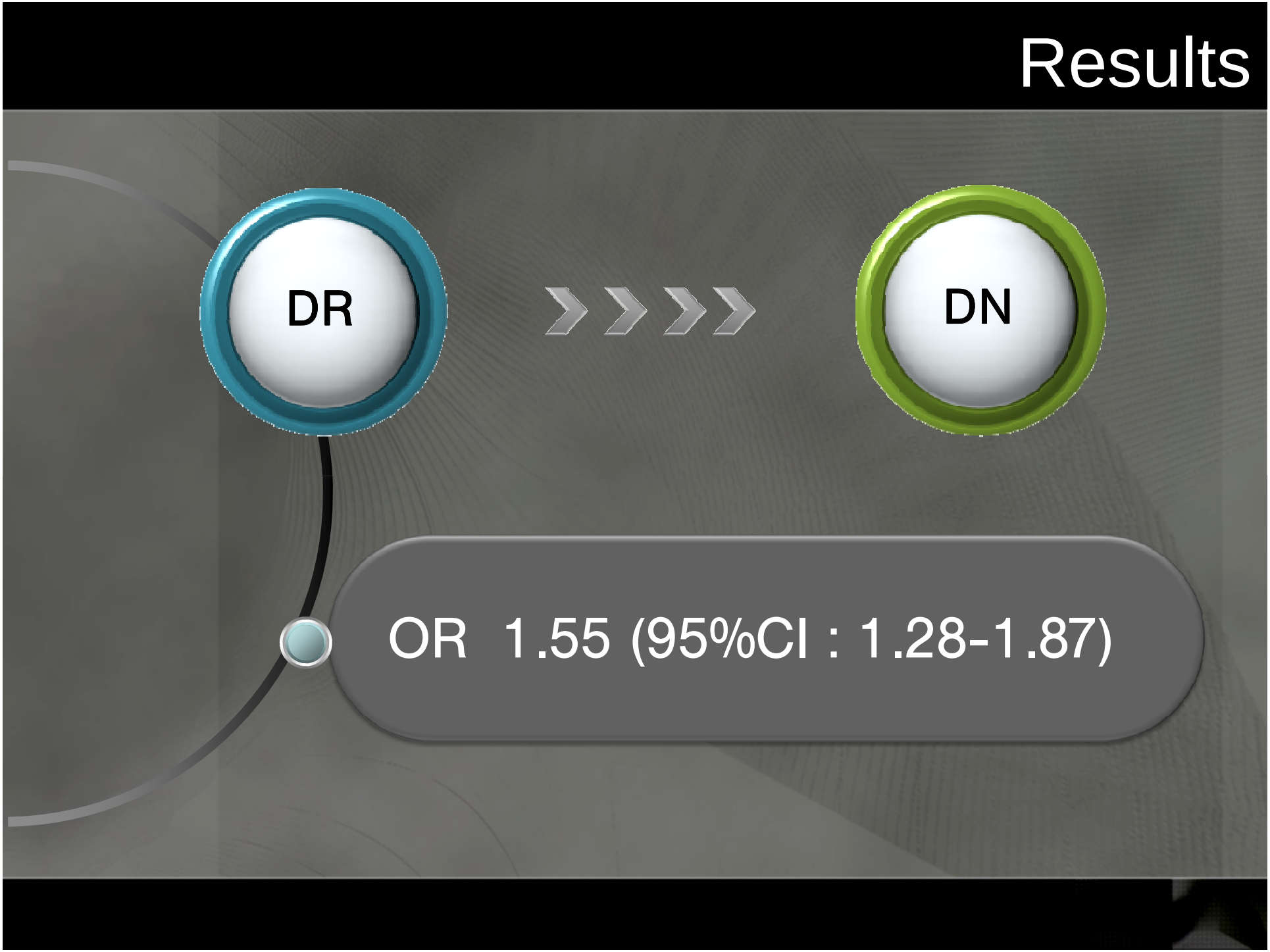
Characteristics	Total DM +DMHT		Screening for DN		Data not available in the medical record and Missing	
	Number	Percent	Number	Percent	Number	Percent
Triglyceride (mg/dL)						
<150	12,199	50.2	5,827	49.4	6,372	50.9
≥150	12,116	49.8	5,965	50.6	6,151	49.1
Total	24,315	100.0	11,792	100.0	12,523	100.0
Cholesterol (mg/dL)						
<200	15,200	65.4	7,507	66.2	7,693	64.7
≥200	8,036	34.6	3,840	33.8	4,196	35.3
Total	23,236	100.0	11,347	100.0	11,889	100.0
LDL (mg/dL)						
<100	10,455	43.5	5,265	44.2	5,190	42.7
≥100	13,599	56.5	6,641	55.8	6,958	57.3
Total	24,054	100.0	11,906	100.0	12,148	100.0
HDL (mg/dL)						
<40	7,299	33.2	3,778	34.4	3,521	32.0
≥40	14,672	66.8	7,203	65.6	7,469	68.0
Total	21,971	100.0	10,981	100.0	10,990	100.0
BP (mmHg)						
≤130/80	14,335	50.8	6,675	51.6	7,660	50.1
>130/80	13,905	49.2	6,259	48.4	7,646	49.9
Total	28,240	100.0	12,934	100.0	15,306	100.0

Results

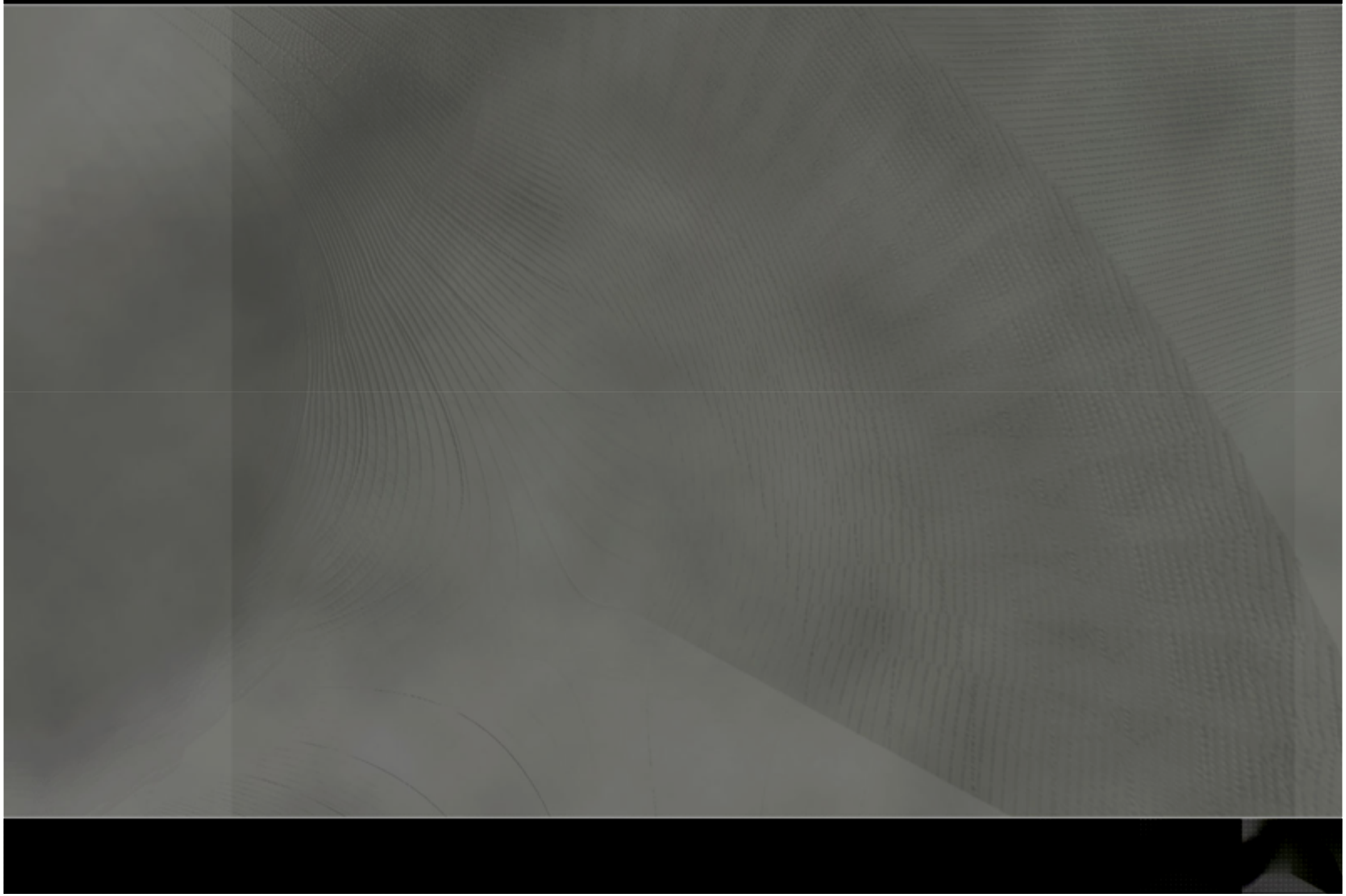
Table 1. Demographic characteristics presented as percentage unless specified otherwise (Con't)

Characteristics	Total DM +DMHT		Screen for DN		Data not available in the medical record and Missing	
	Number	Percent	Number	Percent	Number	Percent
Duration of diabetes (Year)						
<5	7,007	28.3	4,225	37.7	5,500	41.9
6-10	11,592	46.8	4,593	41.0	5,266	40.1
11-15	4,357	17.6	1,728	15.4	1,738	13.2
>15	1,811	7.3	655	5.9	635	4.8
Total	24,767	100.0	11,201	100.0	13,139	100.0
Smoker						
No	17,663	90.5	7,796	89.5	9,867	91.3
Yes	1,855	9.5	912	10.5	943	8.7
Total	19,518	100.0	8,708	100.0	10,810	100.0
Diabetic Retinophaty						
No	12,456	84.0	6,959	84.1	5,497	83.8
Yes	2,378	16.0	1,313	15.9	1,065	16.2
Total	14,834	100.0	8,272	100.0	6,562	100.0

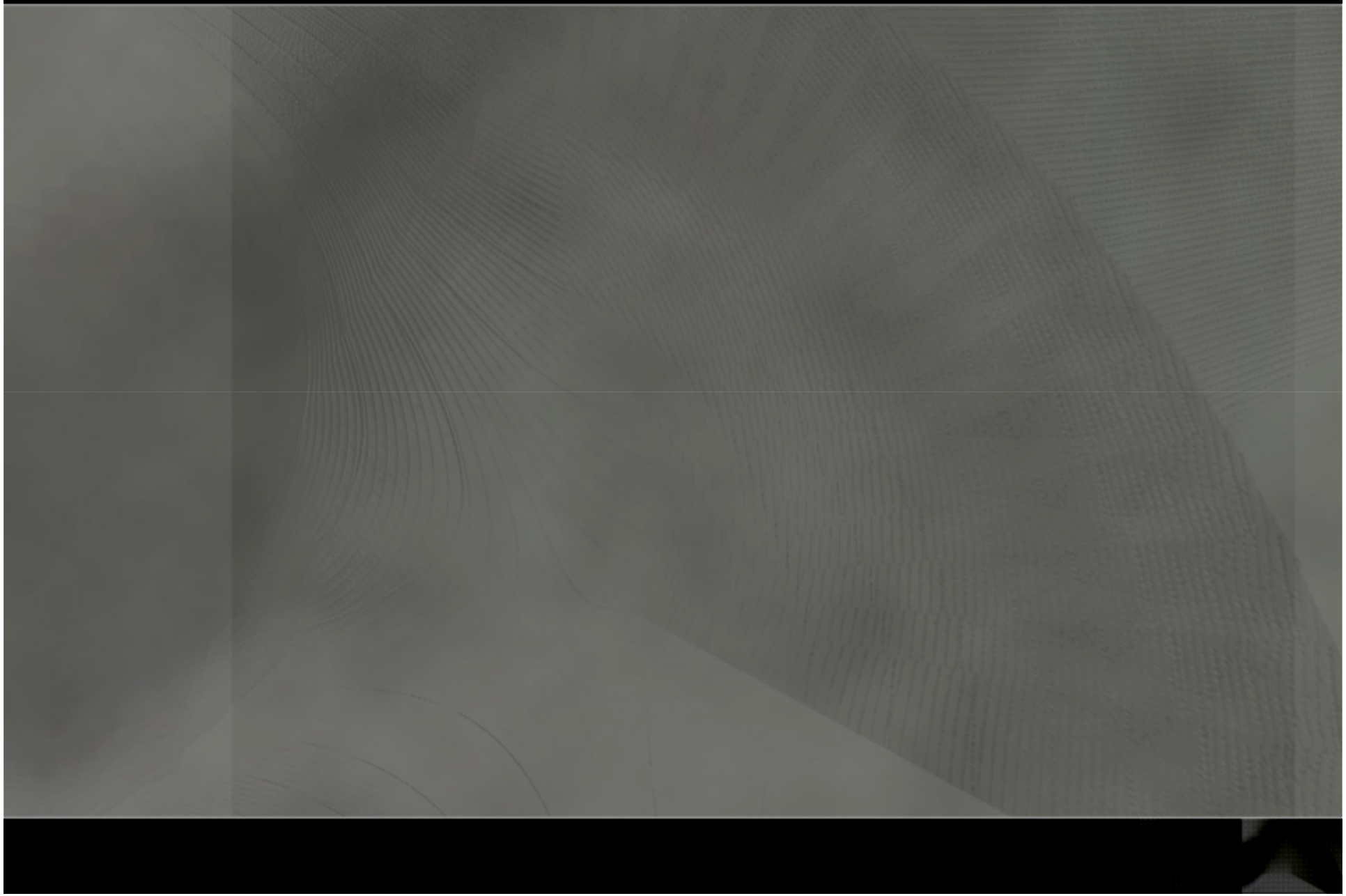
Results



Discussion



Conclusion



Diabetes
THE TRUTH
285 MILLION PEOPLE IN THE WORLD HAVE DIABETES
80% OF TYPE 2 DIABETES IS PREVENTABLE WITH LIFESTYLE CHANGES
16% OF US ADULTS MANAGE THEIR DIABETES WITHOUT USING MEDICATION
DIABETES IS THE LEADING CAUSE OF KIDNEY FAILURE AMONG ADULTS IN THE US
DIABETES KILLS MORE PEOPLE THAN BREAST CANCER AND AIDS COMBINED IN THE US
IN 2007 DIABETES WAS A CONTRIBUTING FACTOR TO 231,404 DEATHS IN THE US
70% OF PEOPLE WITH DIABETES LIVE IN LOW AND MIDDLE INCOME COUNTRIES
INDIA HAS THE LARGEST # OF PEOPLE LIVING WITH DIABETES
ABOUT 215,000 PEOPLE 20 AND YOUNGER HAD DIABETES IN THE US IN 2010
SOURCES
WORLD DIABETES FOUNDATION
AMERICAN DIABETES ASSOCIATION
CDC & NIH
Thanks you
diabetes
glucose
sugar
insul
type
cells
body
level
healthy
deficiency
sensitivity
pancreas
medical
mellitus
properly
produced
include
results
classified
immune-mediated
known
person
resistance
occurs
stage
loss
beta
produce
mplications