

The Pancreas Study –

Question:

Is the decrease in triglyceride content of the pancreas specifically related to type 2 diabetes and its reversal?
Or is it merely a generalised effect of loss of fat from the body?

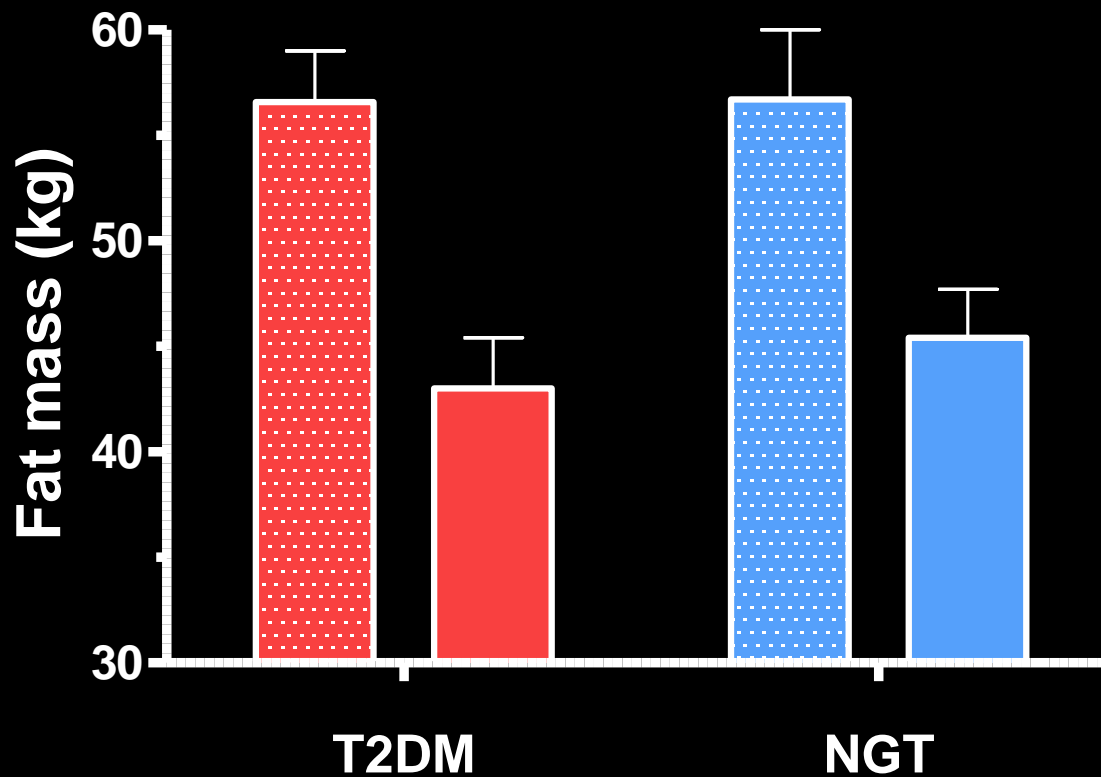
Design:

Compare pancreas triglyceride in matched groups of people with and without type 2 diabetes undergoing identical weight loss

Baseline subject characteristics

	Type 2 DM n=18	NGT N=9
Age (yr)	49.1 ± 1.6	46.3 ± 2.1
Weight (kg)	121.0 ± 3.0	114 ± 5.0
BMI (kg/m ²)	42.7 ± 0.7	41.3 ± 1.0
DM duration (yr)	6.9 ± 0.5	
HbA1c (%)	7.6 ± 0.4	
Insulin treated	3	
SU treated	9	

Fat mass in type 2 diabetic and normal glucose tolerance groups – before and after weight loss

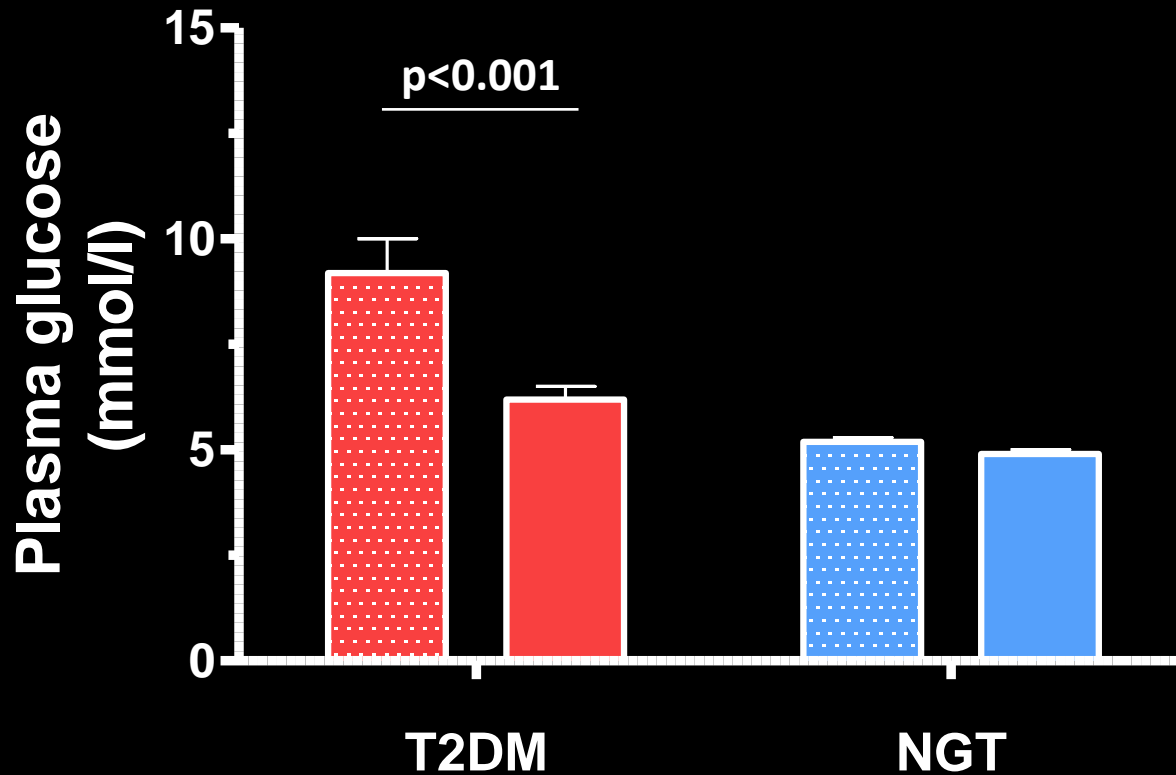


Decrease body weight

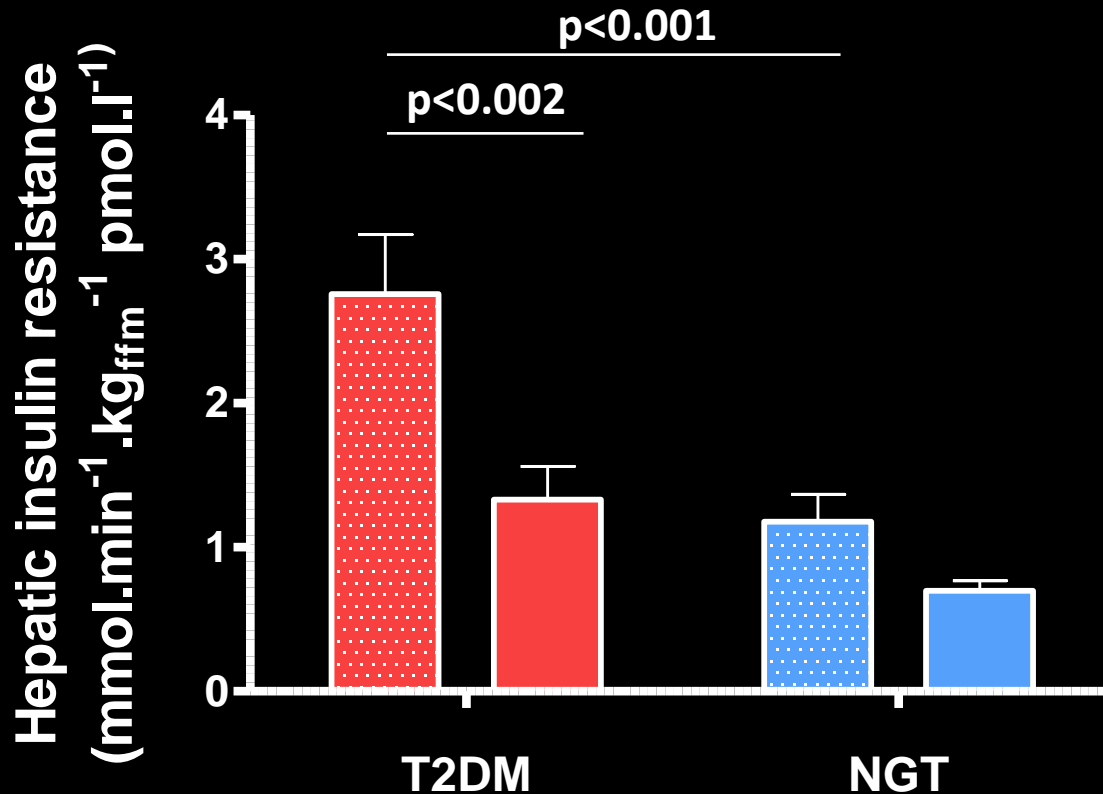
$13.6 \pm 0.7\%$

$12.8 \pm 0.8\%$

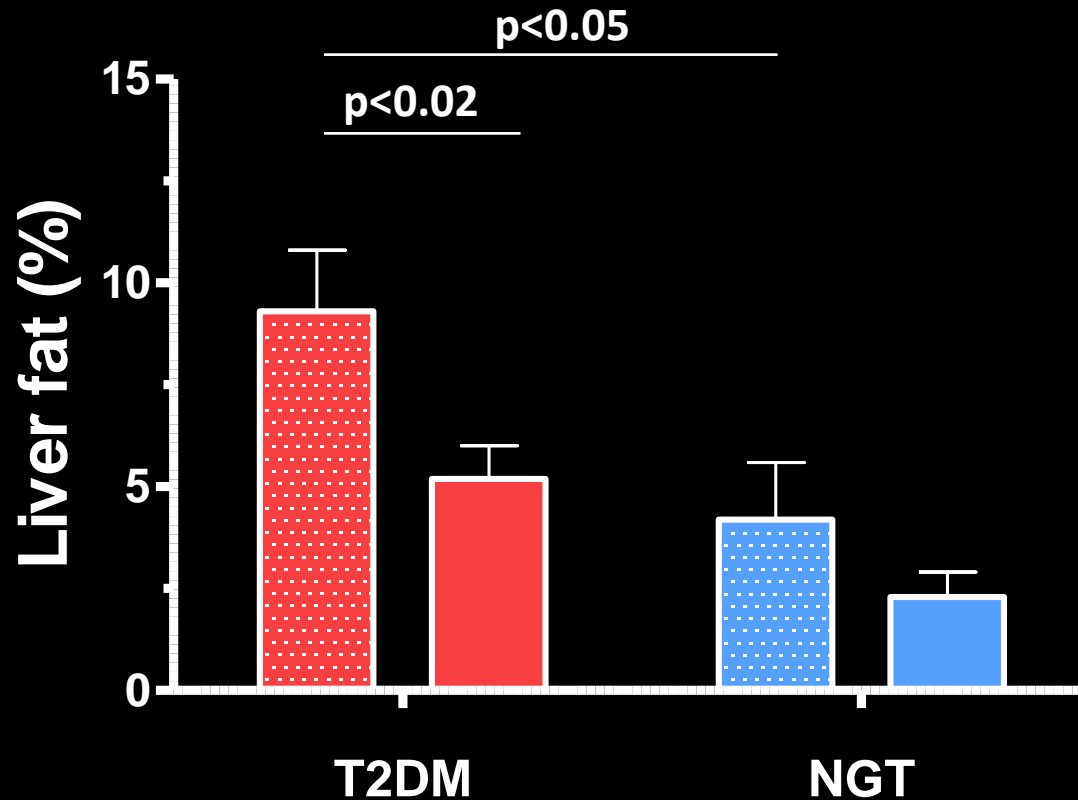
Fasting plasma glucose in T2DM and NGT – Before and after weight loss



Hepatic insulin resistance in T2DM and NGT – before and after weight loss

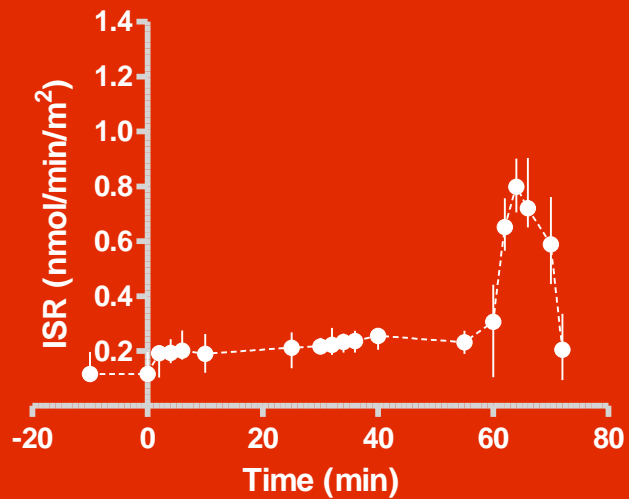


Liver fat in T2DM and NGT – before and after weight loss



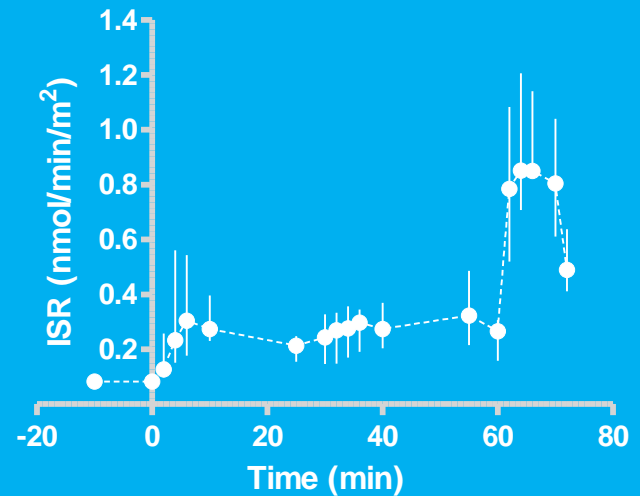
Insulin secretion before and after weight loss

T2DM

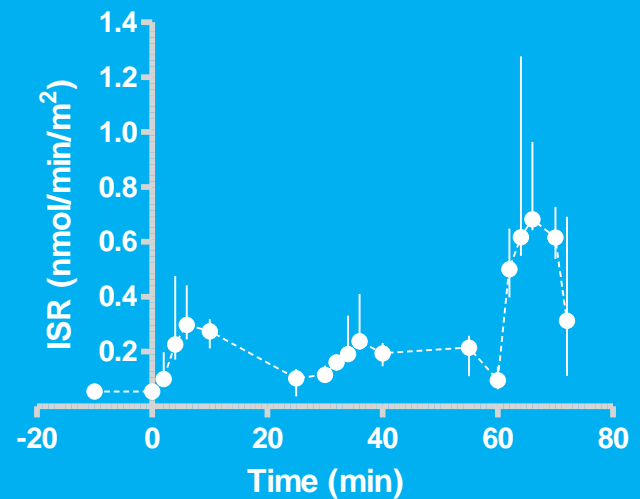
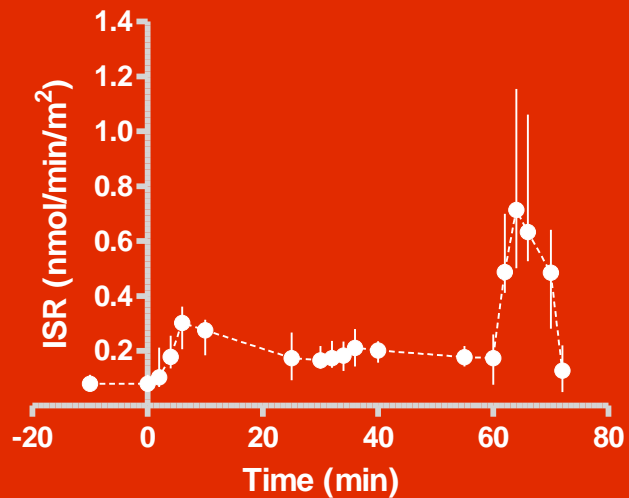


Baseline

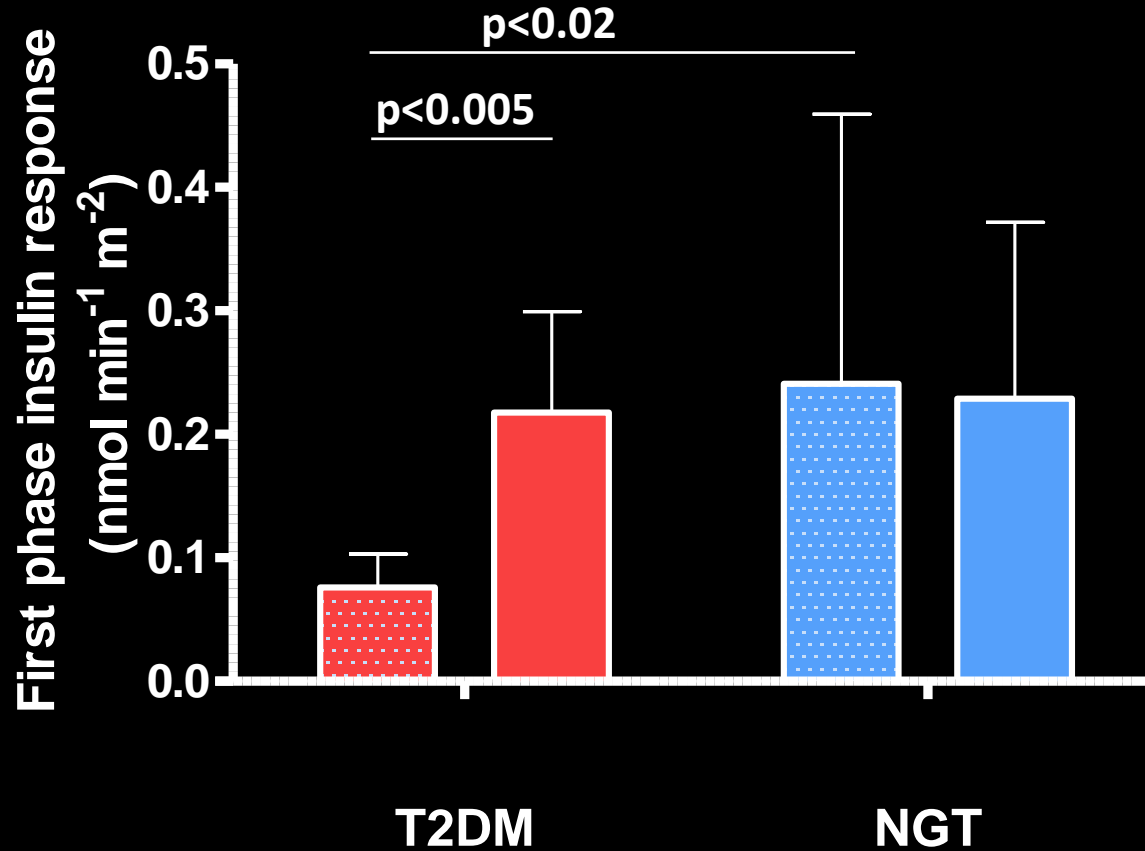
NGT



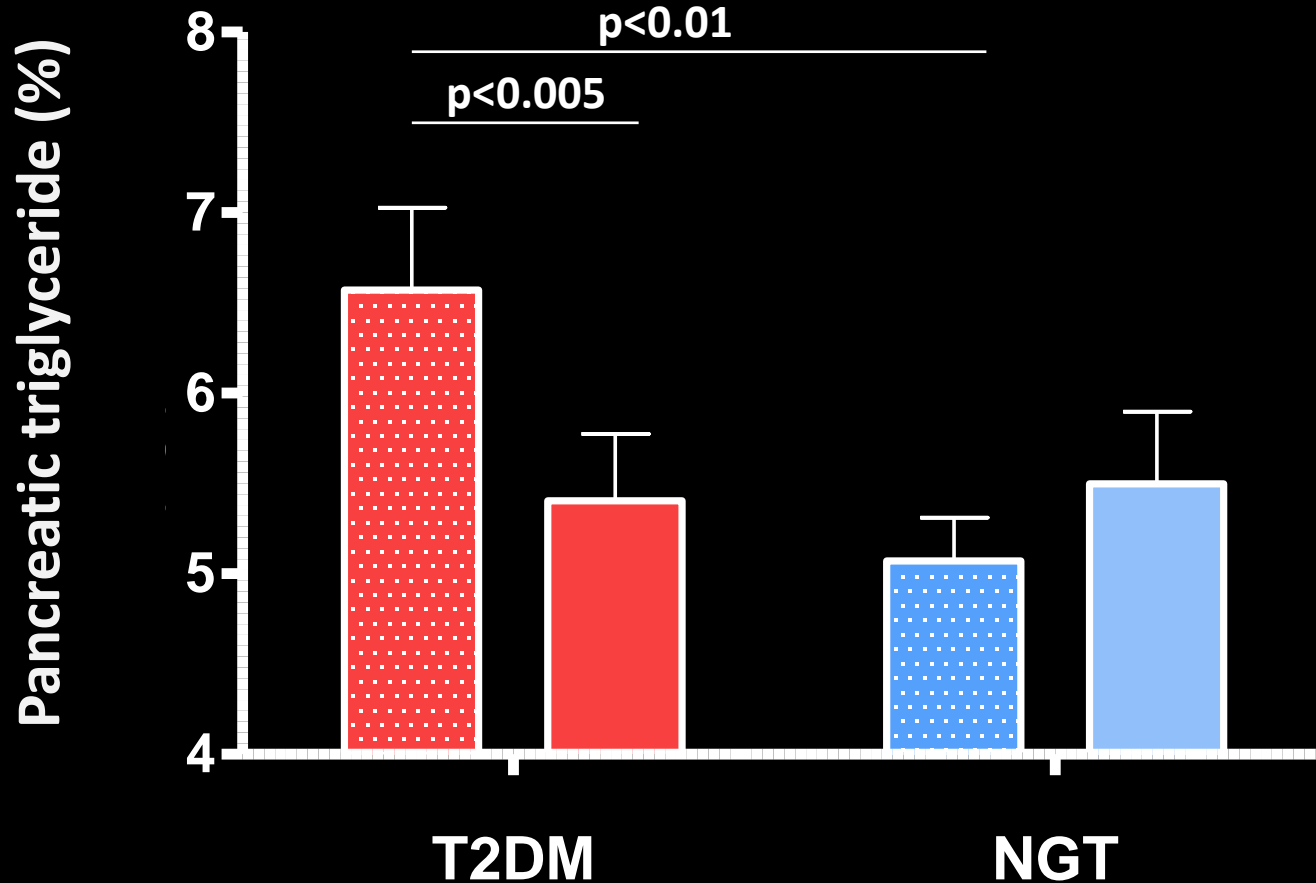
8 weeks



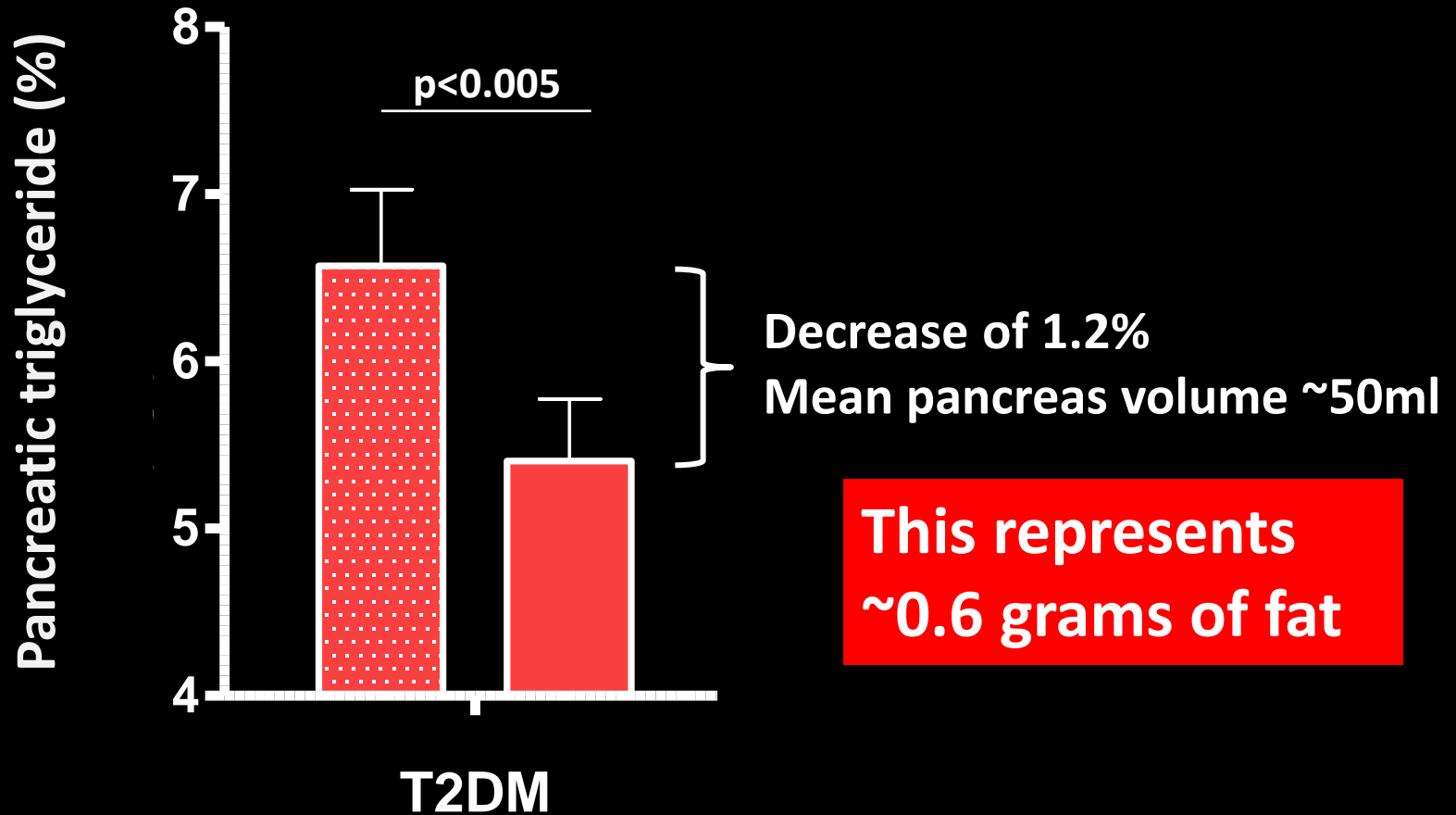
First phase insulin secretion in T2DM and NGT – before and after weight loss



Pancreatic triglyceride in T2DM and NGT – before and after weight loss



Pancreatic triglyceride in T2DM before and after weight loss



Conclusions

Weight loss over 8 weeks brings about loss of pancreatic triglyceride specifically in type 2 diabetes

It is likely that type 2 diabetes is caused by less than 1 gram of fat in the pancreas