

# When to refer and when to treat (and when to do both!)

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# Questions to ask yourself....

- What type of diabetes do I think this is?
- Why is their blood sugar high?
  - Insulin Deficient
    - OR
  - Insulin Resistant

# Types to think about...

- Type 1
- Type 2
- Hybrid forms
  - Slowly evolving immune mediated diabetes (aka LADA)
  - Ketosis Prone Type 2
- MODY (monogenic)

WHO Classification 2019

At  
diagnosis  
types to  
think  
about...

- Type 1
  - OR
- NOT Type 1
  
- Reporting the presence of ketones is important

# Case 1

Thank you for seeing this:

- 58 year old female. She had a diagnosis of
- Diagnosis Type 2 diabetes made 12 months ago with an initial A1c of 115.
- Weighed around 11st and agreed to trial cutting out refined carbohydrates and sugars with addition of Metformin.
- HbA1c down to 62 at 3 months and she did lose a lot of weight. In total she's lost over 4 stone in a matter of months and so relaxed her restriction on carbohydrates. [BMI 23.8]
- Unfortunately, her weight continues to drop and she now has a BMI of 19.

# Case 1

- She feels well but did complain of a cough and some food sticking in her throat. She has had a full CT chest/abdo/pelvis and OGD with biopsies - no malignancy has been identified.
- Her A1c is climbing and is now around 108 [month 10] with BM's in the low 20's.
- She is very thirsty, tired, and alarmed at how thin she is. I have added gliclazide 40mg BD just now and plan to increase this, if tolerated, after a few weeks.
- I'm wondering whether she has a more complex type 2 diabetic picture and welcome your specialist opinion.

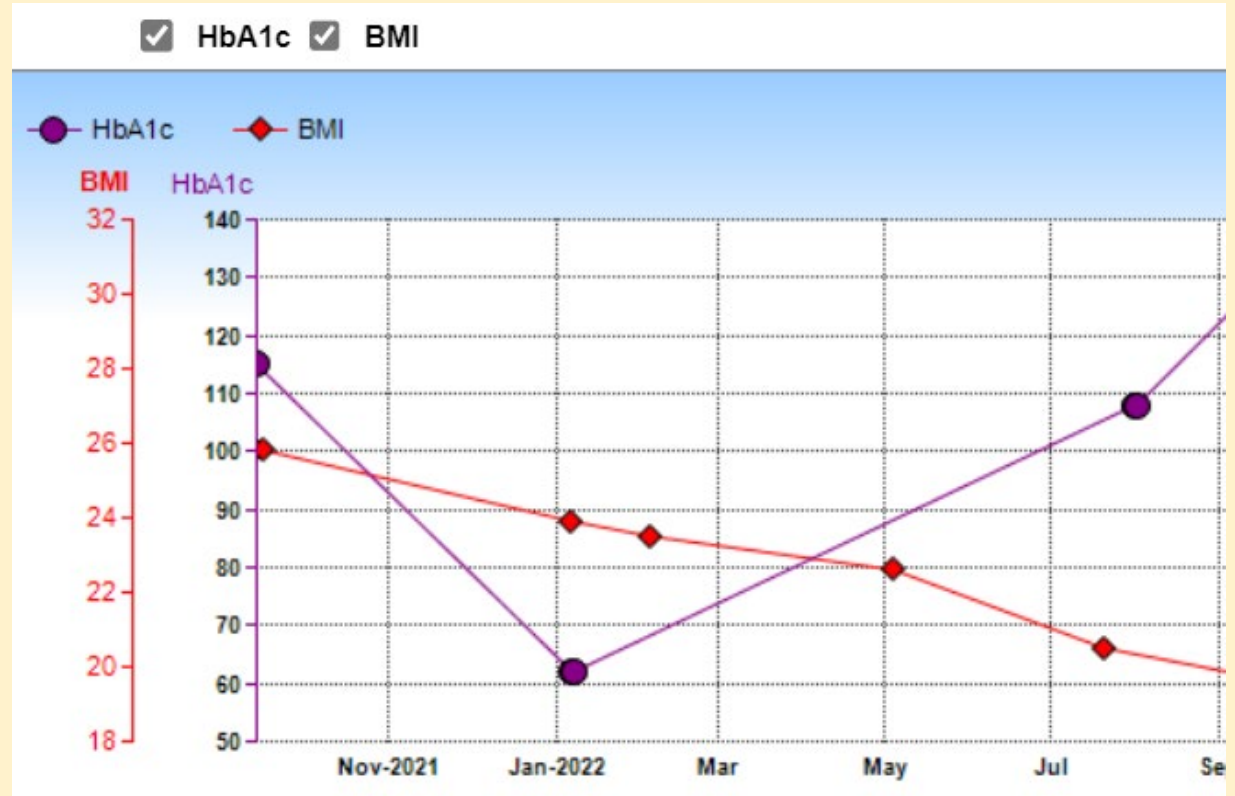
# Weight

## Referral info

### Body Measurements

<u>Date Recorded</u>	<u>Height</u>	<u>Weight</u>	<u>BMI</u>
15-Sep-2022	-	47	19.7
20-Jul-2022	-	49	-
04-May-2022	-	54	-
04-Feb-2022	-	56	-
07-Jan-2022	-	57	-

## SCI Diabetes – Prescribing Timeline feature



# What is LADA?

- Latent Autoimmune Diabetes in Adults
  - LADA
- Slowly evolving immune-mediated diabetes of adults
  - WHO Classification of Diabetes 2019
- Type 1.5
  - Unofficial term. Diabetes UK



# What is LADA?

- LADA is considered (clinically and metabolically) to be a hybrid of T1D and T2D
- Typically....
  - adult-onset diabetes (>30 years at diagnosis),
  - presence of diabetes-associated autoantibodies, and
  - absence of insulin requirement for at least 6 months after diagnosis
- Above not definitive.

# LADA clues

- Initial response to oral medications with relatively rapid worsening of glycaemic control
- Or sluggish response to initial medications with gradually worsening of glycaemic control despite escalation of therapy.
- Weight trajectory going down.
- Can take several years before need insulin

## Case 2

- I am concerned this 53 year old may have LADA.
- He is usually fit and well, but has been diagnosed with diabetes, following a random glucose due to fatigue.
- HbA1c 60 mmol/mol
- We have started metformin but his BMI is only 24.2 so he does not fit the usual type 2 pattern, and I am grateful for your review.

# Case 2

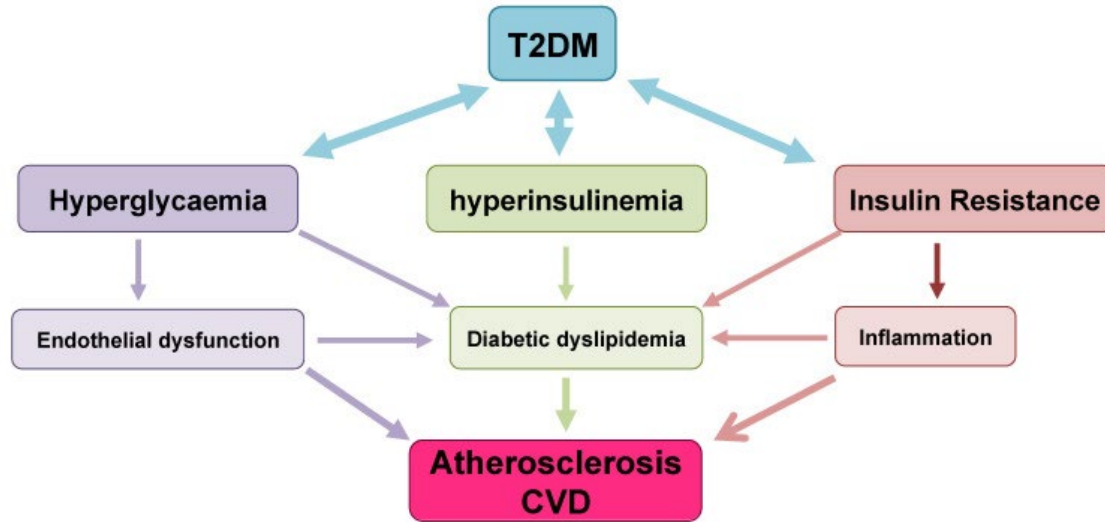
- SCI GW Referral
  - Information about weight trajectory
    - Over preceding 4-5 years weight had increased from BMI 20 to 24.
  - FH of type 2 diabetes
  - Clinical Portal
    - His blood sugars had not been completely normal
    - Dyslipidaemia

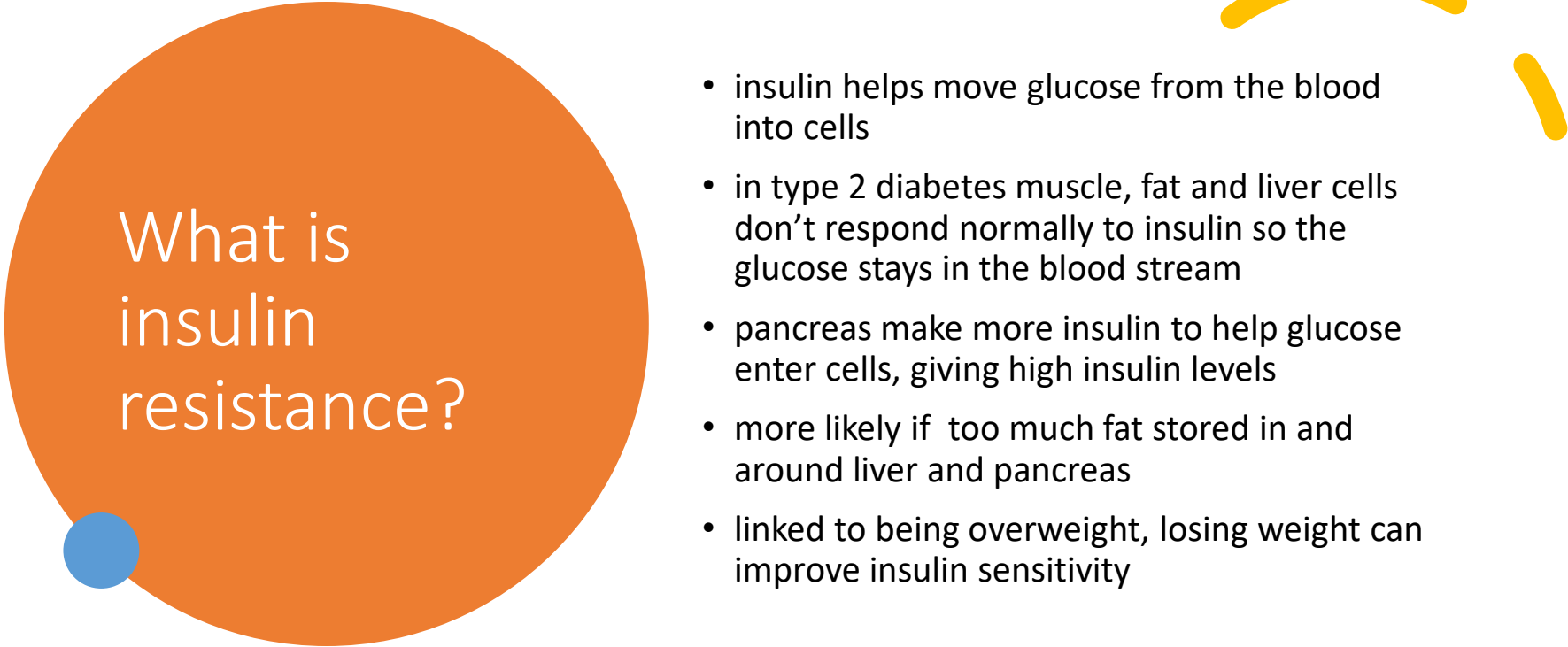


# ‘Typical’ Type 2 diabetes

- Overweight or history of weight gain previously
  - Central obesity
- Older age
- Ethnicity – South Asian, South East Asian, Black
- Family History of diabetes
- History of associated conditions
  - PCOS, Gestational Diabetes, Dyslipidaemia, Hypertension

# Interaction between T2D, dyslipidaemia, CVD





# What is insulin resistance?

- insulin helps move glucose from the blood into cells
- in type 2 diabetes muscle, fat and liver cells don't respond normally to insulin so the glucose stays in the blood stream
- pancreas make more insulin to help glucose enter cells, giving high insulin levels
- more likely if too much fat stored in and around liver and pancreas
- linked to being overweight, losing weight can improve insulin sensitivity

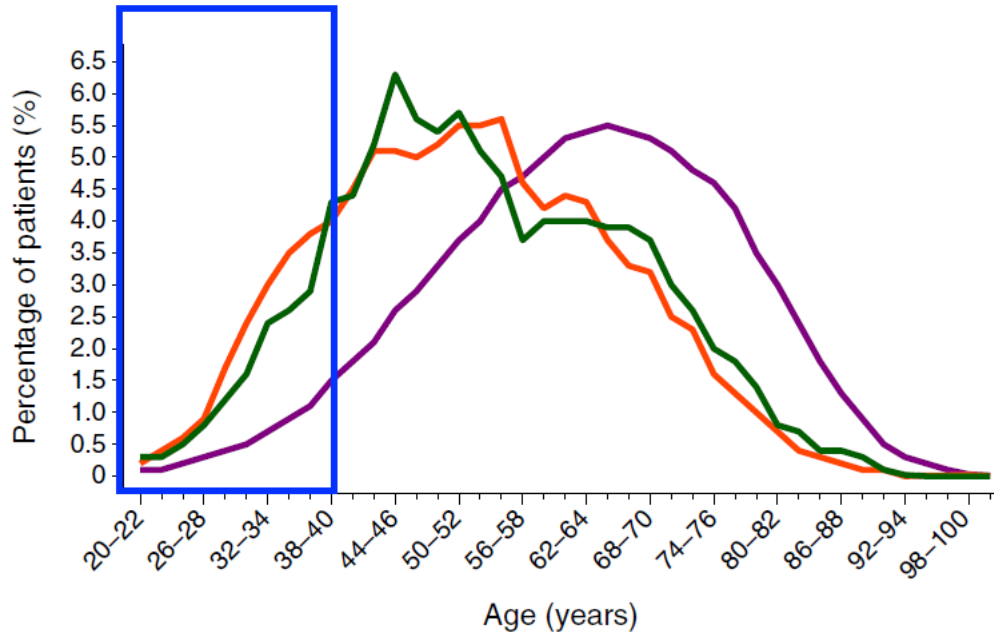
What about  
Type 2 in  
under 40  
years of age?

- Increasingly common
- More likely with certain ethnicity
- Family history common – occ both sides of family
- Obesity and diets high in unrefined carbohydrates/ alcohol.





# T2D in South Asian/Black develops early compared to European and commonly present under 40y of age



20-40y

White = 6%

South Asian = 18%

Black = 15%

Average age at T2D diagnosis ~10y early

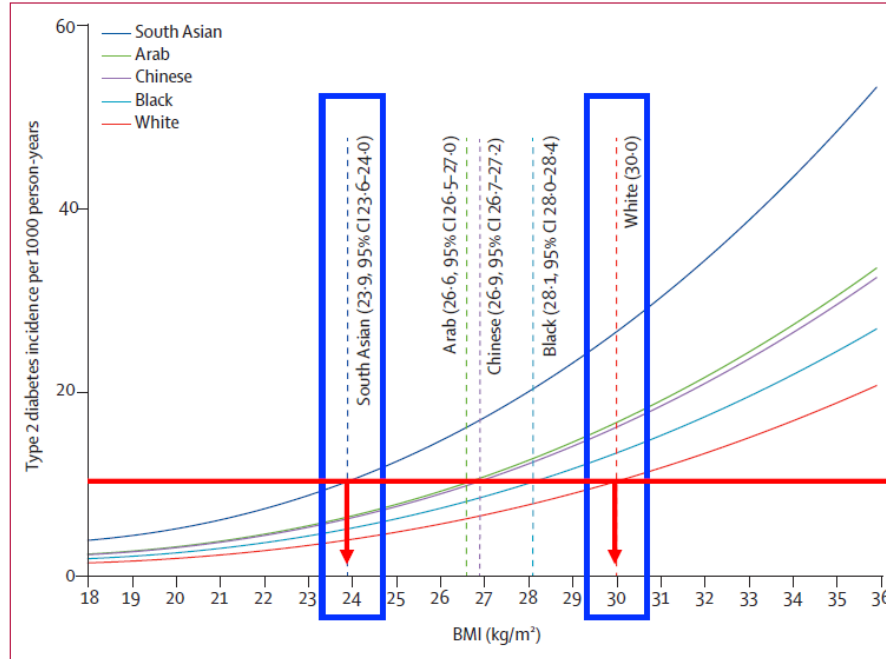
White N=143481 South Asian N=9486 Black N=4451

(Slide from Dr K Patel Exeter)

Wright Diabetologia 2020

# T2D risk in South Asian at lower BMI than European (BMI 24 is equivalent to BMI 30 in European)

T2D incidence



BMI in young onset T2D  
20-40y  
SA= 26.7

UK, CPRD , n=1.4 million

Age and sex adjusted

Siddiqui Diabetologia 2022 Caleyachetty LancetD&E 2021

(Slide from Dr K Patel, Exeter)

# Case 3

- 38 year old female
- New diagnosis of type 2 diabetes picked up at screening
- No symptoms
- BMI 34
- History of GDM (para 2)
- HbA1c 67mmol/mol
- Started on metformin
  
- *What else do we want to know?*

# Case 3

- 38 year old female, *Caucasian*
- New diagnosis of type 2 diabetes picked up at screening
- No symptoms
- BMI 34 (*weight steady, up if anything*)
- History of GDM (para 2)
- HbA1c 67mmol/mol
- Started on metformin
- *Family history of Type 2 diabetes in maternal grandmother*
- *Completed family – partner has vasectomy*

# Case 3

- 38 year old female, *Caucasian*
- New diagnosis of type 2 diabetes picked up at screening
- No symptoms
- BMI 34 (*steady*)
- History of GDM (para 2)
- HbA1c 67mmol/mol
- Started on metformin
- *Family history of Type 2 diabetes in mother and maternal grandmother*
- *Unsure if completed family*



## Who needs insulin?

- Rising HbA1c with reducing weight – **RED FLAG**
  - Suggests lack of insulin rather than resistance to insulin is the mechanism
  - Caveat is someone not taking their medications
    - Glycosuria from poorly controlled type 2 → weight loss
    - Hyperglycaemia → pancreatic ‘stunning’ → *temporary* insulopenic
- Worth trying gliclazide first
  - works by stimulating the beta cells to release insulin
  - taken with a meal to try and counteract the post prandial rise in blood sugar.

# Case 4

- 50 year old male
- Attends with polyuria, BMI 43 → random glucose 10mmol/l
- Practice nurse appt
  - 'Not right' for a year, worse the last 8 weeks, polyuria, polydipsia and really fatigued.
  - Uncle had type 2 diabetes, younger sister had GDM.
  - So thirsty – drinking a lot of water and juice.
- HbA1c 110mmol/mol
  
- *What else do we want to know?*

# Case 4

- Weight trajectory, recently and longer term
- Alcohol history
- Juice – diluting/squash or fresh (sugar laden) fruit juices
- Diet
- Exercise

## Options

- Diet/lifestyle
- Self Monitoring
- Metformin
- Gliclazide
- Pioglitazone
- 'gliptin
- GLP1RA
- NOT a SGLT2i



# Case 5

- 60 year old female
- T2 for 20 years
- Met/SGLT2i/GLP1RA
- HbA1c usually 60-65, now 80mmol/mol
- BMI 34, eGFR 45ml/min

## Options

- Do nothing, repeat in 3-6 months
- Diet/lifestyle
- Pioglitazone
- Gliclazide
- Refer for insulin

# Case 6

- 85 year old female
- T2 for 30 years
- Met/SGLT2i/gliptin
- HbA1c usually 60-65, now 80mmol/mol
- BMI 28, eGFR 45ml/min

## Options

- Nothing, repeat in 3-6 months
- Diet/lifestyle advice
- Pioglitazone
- Gliclazide
- GLP-1 RA
- Refer for insulin

# Case 7

- 65 year old female
- T2 for 12 years
- Frequent UTIs
- Met/gliclazide/Lantus 40 units daily
- HbA1c usually 60-80, recently 78mmol/mol
- BMI 30, eGFR 45ml/min

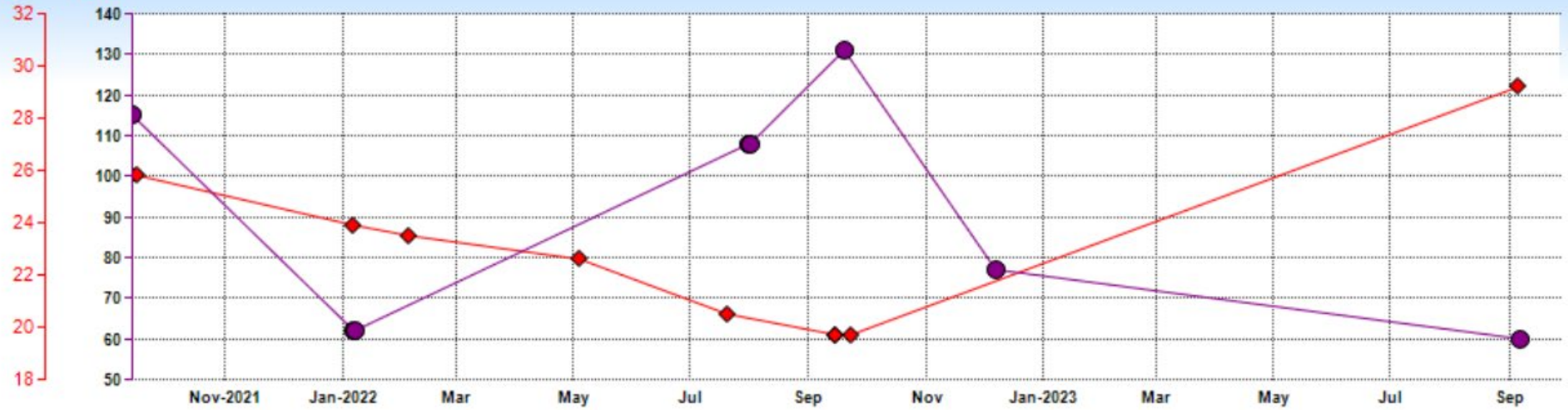
## Options

- Nothing, repeat in 3-6 months
- Diet/lifestyle advice
- SGLT2i
- Pioglitazone
- Gliclazide
- GLP-1 RA
- Refer for insulin titration

HbA1c  BMI

● HbA1c ◆ BMI

BMI HbA1c





Thanks for coming along



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