

Type 2 Diabetes in HIV

Alastair Duncan

Lead Dietitian, Guy's & St. Thomas' Hospital

NIHR Research Fellow, King's College London



Topics covered today

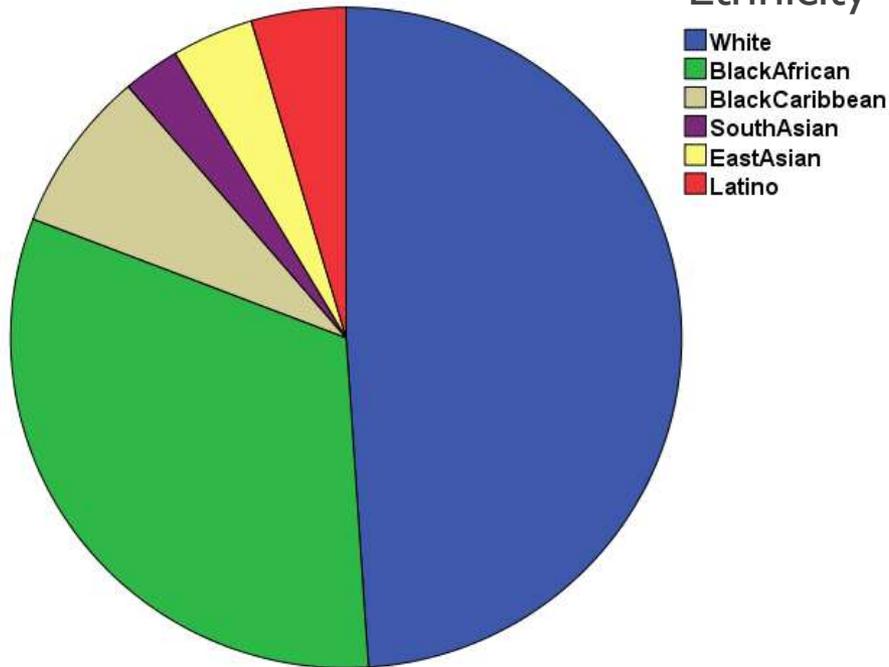
- Can type 2 diabetes be prevented in people taking antiretrovirals?
- What should people with HIV and diabetes eat, and what exercise should they do?
- Sometimes it's easy, sometimes it's hard: what people living with HIV and with diabetes or prediabetes think about making changes to eating and exercise

HIV and Diabetes

- Type 2 Diabetes in HIV up to **x4 more common**, depending on the country. In the UK type 2 diabetes in HIV probably 2x more common.
- **Why?** Increased insulin resistance due to:
 - 1. Traditional Factors**
 - Overweight, higher waist size, older age, non-White ethnicity, family history of diabetes, use of corticosteroid medicines
 - 2. The effect of HIV and it's treatments from years ago**
 - Inflammation, medicines used frequently in the past (MegAce, pentamidine etc), ARVs used in the past (IND, SQV, NFV, ddI, ddC, d4T, AZT), lipodystrophy, weight gain following initiation of HAART, lowest CD4 counts
 - 3. HIV current factors**
 - Central obesity, over-exposure to corticosteroid medicines
- Those with diabetes and HIV have poorer HbA1Cs compared to matched HIV negative diabetes patients (Han, 2012) despite HbA1C being underestimated by 0.5% in HIV (Slama, 2014)

The STOP Diabetes in HIV study: Demographics of participants from St. Thomas'

Ethnicity

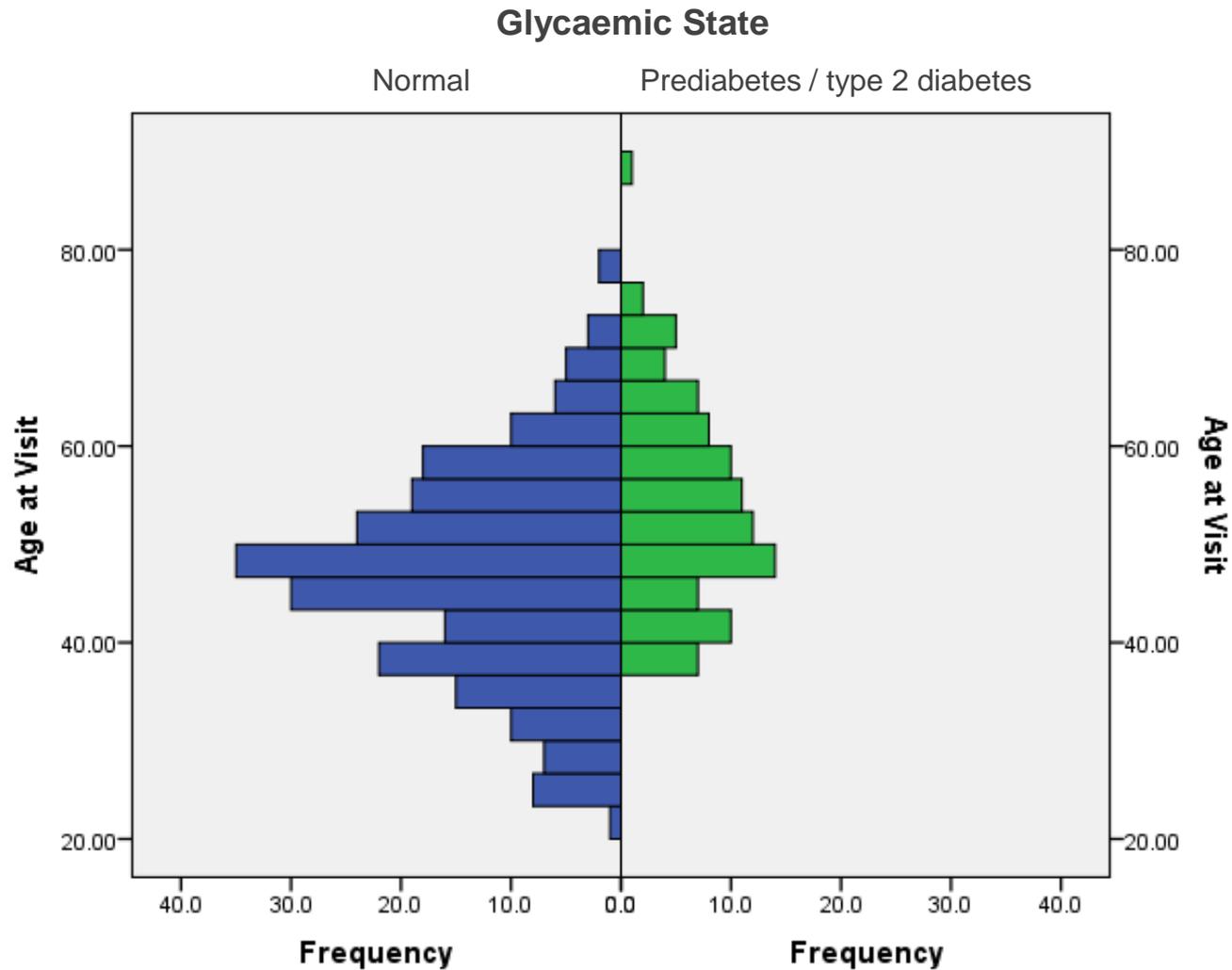


Birth Country

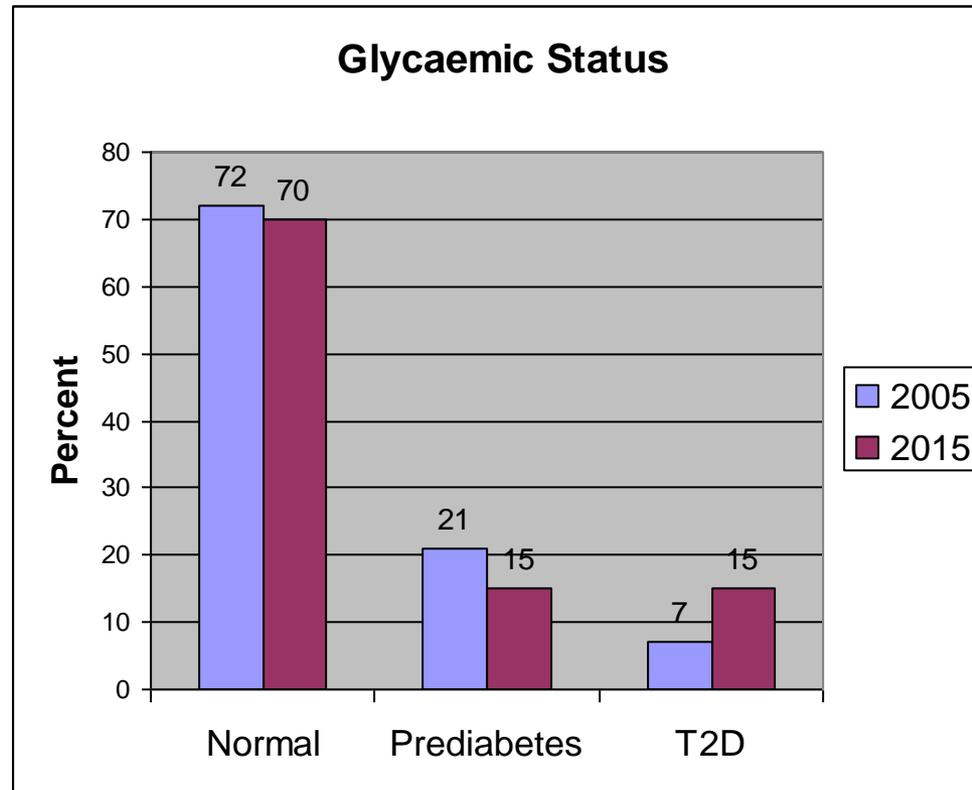


The 338 participants were born in 59 different countries

Prediabetes and type 2 diabetes occur in older patients



What's happened in the UK over the last 10 years?



- Prevalence of dysglycaemia in HIV has remained static at around 30% but now fewer people have prediabetes and more have type 2 diabetes itself
- Are we seeing the unfortunate legacy of earlier treatment / illness?

Can type 2 diabetes be prevented in HIV?

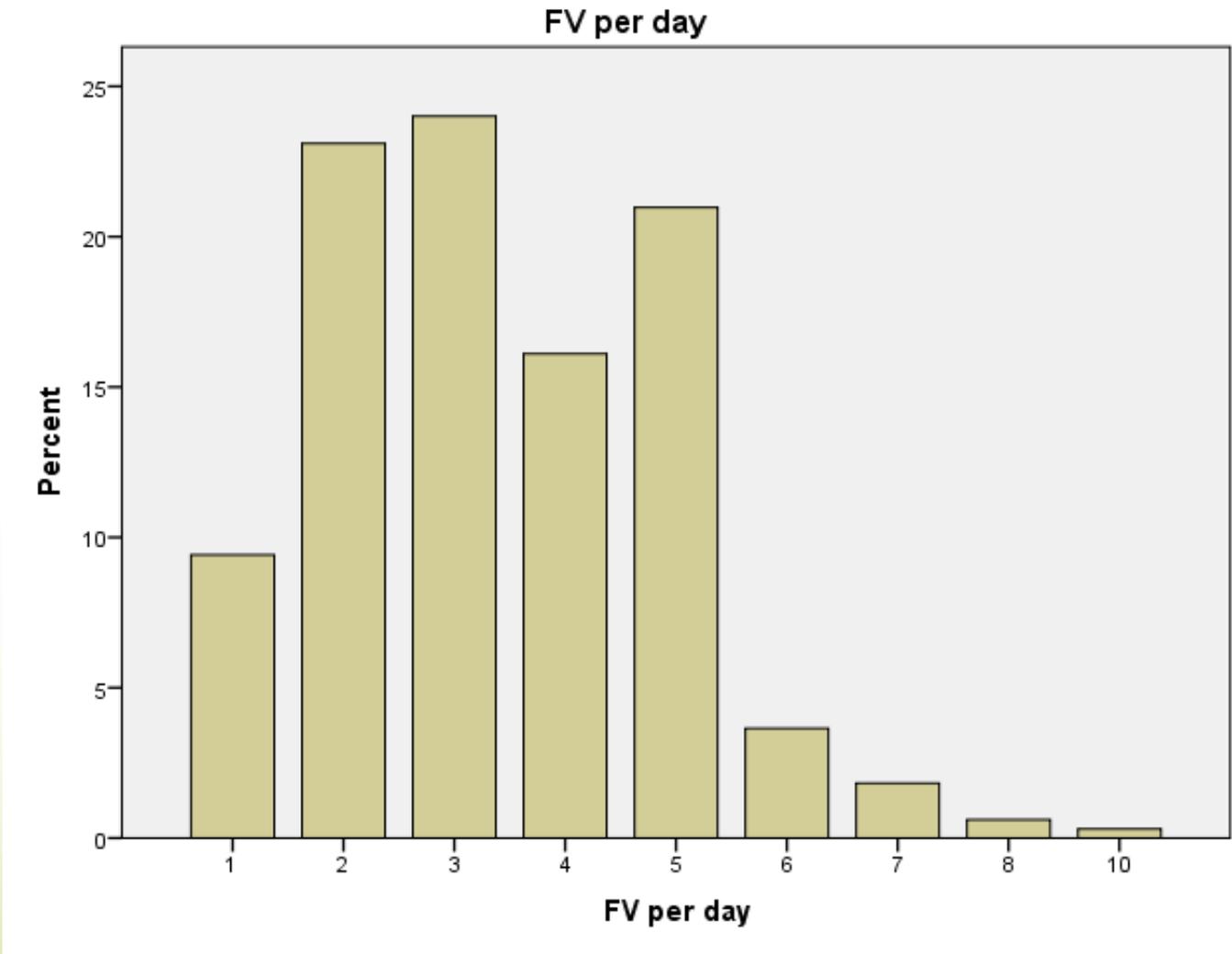
- Initial findings from the STOP Diabetes in HIV pilot intervention
- People living with HIV, prediabetes, stable on HAART
- 33 people took part, aged 40-71
- 6 months of diet and exercise, individualised according to dietary habits, socioeconomic status
- Goals based on the Mediterranean diet used in the DASH study and Diabetes Prevention studies: 7% weight loss in 6 months, 50% of carbs from wholegrains, reduce saturated fat and salt, oily fish twice per week, walk 10,000 steps daily
- Most participants achieved 75% of the goals
- Half reversed insulin resistance, half did not
- Analysis as to why is ongoing

What should people living with HIV and diabetes eat?

- Mediterranean diet
- Can be adapted to suit all, including traditional African diets
- Need not be more expensive
- Does not necessarily exacerbate gastrointestinal problems

- There is no evidence for low carb diets or intermittent fasting (e.g. 5:2 diet) in people living with HIV
- Care needs to be taken to ensure adequate food for absorption of antiretrovirals

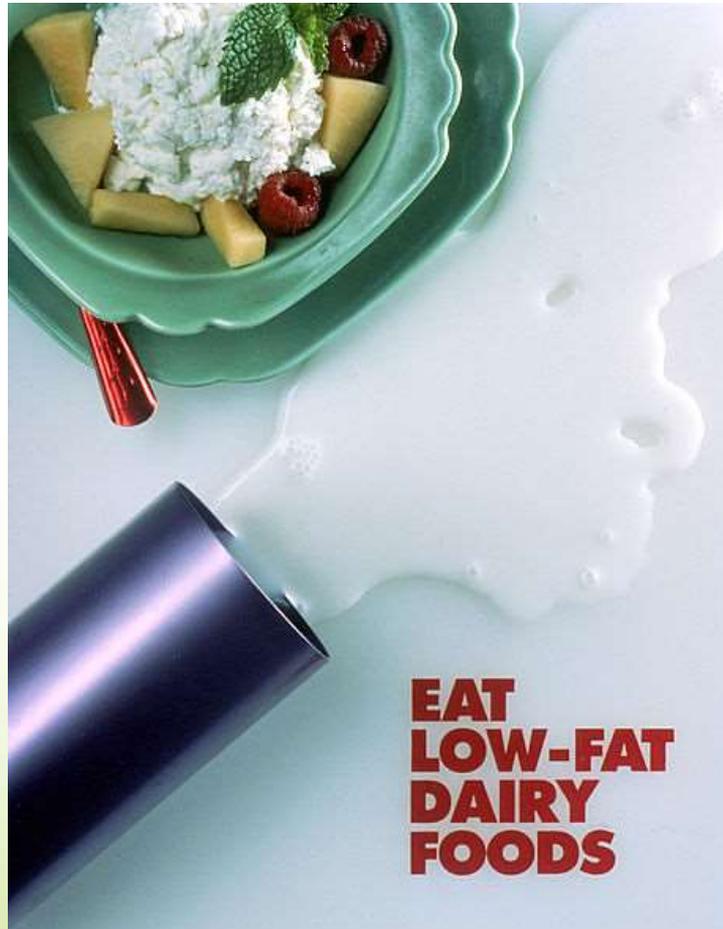
Portions fruit & veg reported in the STOP Diabetes study



Monounsaturates



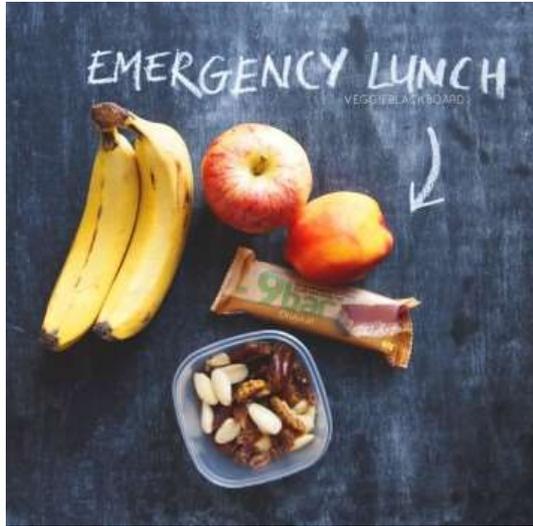
Reduce saturated fats



Wholegrains



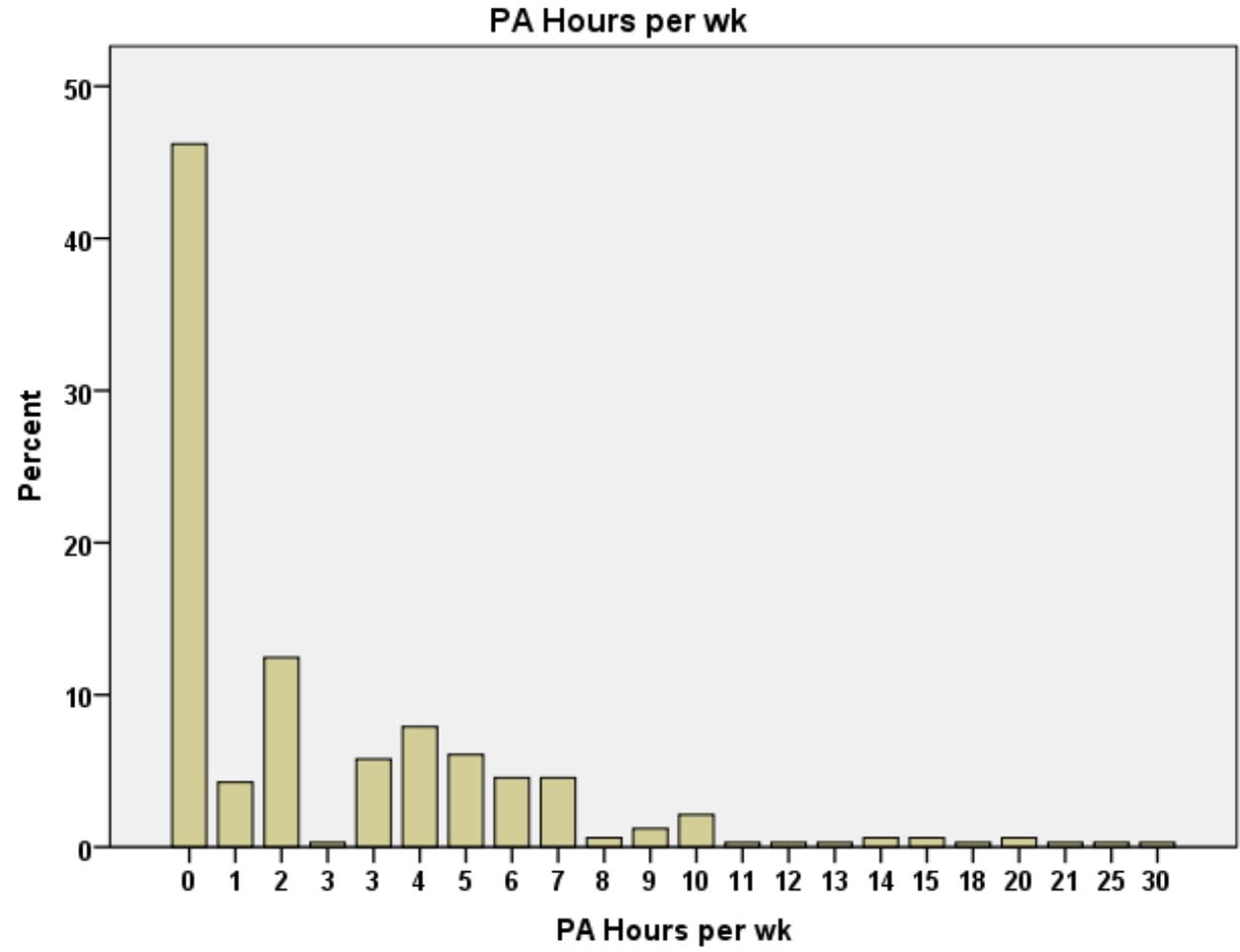
Healthy meals on the go



Omega 3s



Activity levels reported in the STOP diabetes study Page 14



What exercise should people living with HIV and diabetes do?

- **Walking**

- 10,000 steps per day
- pedometer or phone app

- **Progressive resistance exercise**

- weights – can be at home or at the gym

- **Anything that raises your pulse rate and causes you to sweat**

- 150 minutes per week
(30 minutes five times per week)

What's easy and what's hard: what people told me

- **Changing diet / taking up exercise is easy for some and hard for others**
- Enablers appear to include:
 - good adjustment to HIV
 - presence of a support network
 - fear of developing T2D or fear that diabetes will interact with HIV
- Barriers include:
 - fear of disclosure of HIV through losing weight
 - perception that T2D is a significantly lesser concern compared to HIV
 - sense of futility of having to deal with yet another health issue
 - fear of deliberate weight loss, with thinness being associated with negative memories from the AIDS era
 - limited ability to take up exercise due to general ill-health
- Pre-existing mental health challenges do not seem to present as a significant barrier