

Effecting Inclusive and Optimised care In Multiple Long Term Conditions prevention

Professor Naresh Kanumilli and Nicola Milne QN

July 2025



Disclosures



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I have received funding from the following companies for providing educational sessions, attendance at conferences and for attending advisory boards:

Boehringer Ingelheim, Astra Zeneca, Lilly, Novo Nordisk, Sanofi, Napp, Abbott, Roche, Ascensia, Menarini and Bayer.



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Society

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Congratulations to: Nicola Milne



Do Vot coby

THE INDISPENSABLE COMPANION FOR NURSES WORKING IN DIABETES CARE

OXFORD HANDBOOK OF DIABETES NURSING

Written by experienced nurse practitioners with a focus on practical and comprehensive diabetes care

Fully updated to provide inclusive guidance for all healthcare professionals

Explores new insights and advances in diabetes care, insulin management, and the importance of individualized care

EDITED BY
Nicola Milne and Teffy Thomas

Meet Aaron

- Aged 25 years
- Black African-Caribbean decent
- Father died aged 58 years: CVD
- Mother has type 2 diabetes
- BMI 35.4

What is Aaron's risk of future physical health

or uggles with lower back pain

- Lives in supported accommodation
- Currently unemployed



Meet Aaron

Aged 25 years

THE LANCET Diabetes & Endocrinology

- Black African-(his journal
- Father died age
- Mother has typ
- BMI 35.4
- Severe depress

Journals Publish Clinical Global health Multimedia **About Events**

ARTICLES · Volume 13, Issue 6, P494-504, June 2025



Association between maternal diabetes and neurodevelopmental outcomes in children: a systematic review and meta-analysis of 202 observational studies Neurodivergen comprising 56·1 million pregnancies

> Wenrui Ye, PhD a,b,† · Cong Luo, PhD c,† · Jun Zhou, MM d · Xisong Liang, MM a,b · Jie Wen, MM a,b · Prof Jing Huang, PhD e,f · et al. Show more

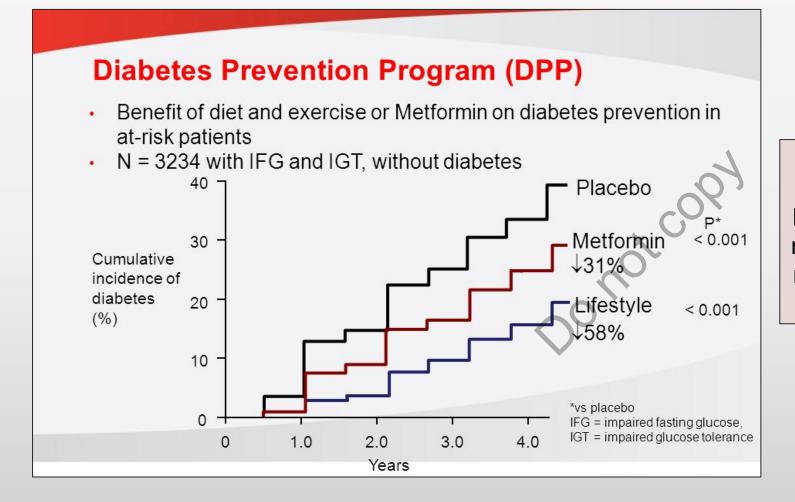
- Struggles with lower back pain
- Lives in supported accommodation
- Currently unemployed



Risk factors for developing type 2 diabetes include....



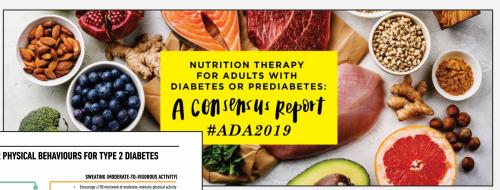
Type 2 diabetes prevention



The DPP demonstrated lifestyle intervention, aimed at achieving weight loss, and metformin treatment reduced the risk of T2D development by 58% and 31%, respectively, compared to placebo after an average of three years.

Knowler WC, et al. Diabetes Prevention Program Research Group. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. N Engl J Med. 2002 Feb 7;346(6):393-403. doi: 10.1056/NEJMoa012512. PMID: 11832527; PMCID: PMC1370926.

Lifestyle for T2D prevention....



Practice points

- **1.** Consider SPAN (Sleep duration, Physical Activity and Nutrition) as a useful term in lifestyle discussions.
- 2. Small increases in all three SPAN behaviours combined appear to have similar or greater benefits than larger increases in single behaviours.
- **3.** Moderate-to-vigorous physical activity includes active (intentional) walking (able to speak but not sing), while vigorous activity includes running (even talking is challenging).
- **4.** Examples of diet quality improvements:
- Extra 1/3 cup per day of cooked vegetables
- Reduce refined grains by 1 serving per week
- Reduce processed meat by 1 serving per week
- Avoid sugar-sweetened beverages

IMPORTANCE OF 24-HOUR PHYSICAL BEHAVIOURS FOR TYPE 2 DIABETES sistance exercise (i.e. any activity that uses

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7011201/

Davies, M.J., Aroda, V.R., Collins, B.S. *et al.* Management of hyperglycaemia in type 2 diabetes, 2022. A consensus report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD). *Diabetologia* **65**, 1925–1966 (2022). https://doi.org/10.1007/s00125-022-05787-2 https://diabetesonthenet.com/diabetes-primary-care/distilled-small-changes-lifespan/

Neurodiversity

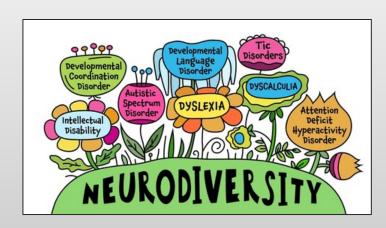
Encompasses a variety of neurodevelopmental conditions impacting cognitive functioning, including autism spectrum condition (ASC), attention-deficit hyperactivity disorder (ADHD), dyspraxia and dyslexia

- It is estimated that 15% of the population is neurodivergent in the UK¹
- Many neurodivergent individuals have co-occurring conditions, such as developing psychiatric health conditions¹

A systematic review of 42 studies with 48 161 individuals with ADHD and 679 975 comparison subjects found a **higher pooled prevalence of obesity** among adults and children with ADHD (70% and 40%) than their comparison.

The association is potentially due to poor lifestyle factors such as

- physical inactivity
- poor diet
- sedentary lifestyle
- medication



^{1.} Zheng, Z., Zhang, L., Li, S. *et al.* Association among obesity, overweight and autism spectrum disorder: a systematic review and meta-analysis. *Sci Rep* **7**, 11697 (2017). https://doi.org/10.1038/s41598-017-12003-4

Neurodiversity and depression

Depression is found in 38% of people with neurodiversity ¹

Neurodivergence may influence a person's style of communication, learning, attitudes, and behaviour, and they may experience social isolation, stigma, discrimination and inequity²

- 1. Accardo, A.L., et al. Heightened Anxiety and Depression Among Autistic Adolescents with ADHD: Findings From the National Survey of Children's Health 2016–2019. J Autism Dev Disord (2022). https://doi.org/10.1007/s10803-022-05803-9
- 2. Anna Stenning & Hanna Bertilsdotter Rosqvist (2021) Neurodiversity studies: mapping out possibilities of a new critical paradigm, Disability & Society, 36:9, 1532-1537, DOI: 10.1080/09687599.2021.1919503

Mental health survey results

Nearly all autistic adults have experienced anxiety and around two in three have had this diagnosed by a health professional.



94% of autistic adults reported experiencing anxiety.



Almost 6 in 10 said this affected their ability to get on with life.



83% reported experiencing depression.



Half said this had a high impact on their ability to get on with life.

Almost 3 in 10 fall into the severe depression category based on the



2 in 5 are currently diagnosed with anxiety and ¼ have had a diagnosis in the past.



Eight times as many autistic people report feeling often or always lonely when compared to the general population.¹⁴



As anxiety levels increase, life satisfaction decreases.



Almost half fall into the 'severe anxiety' category of the GAD-7, showing if an autistic person did report experiencing anxiety, it was more likely to be severe.



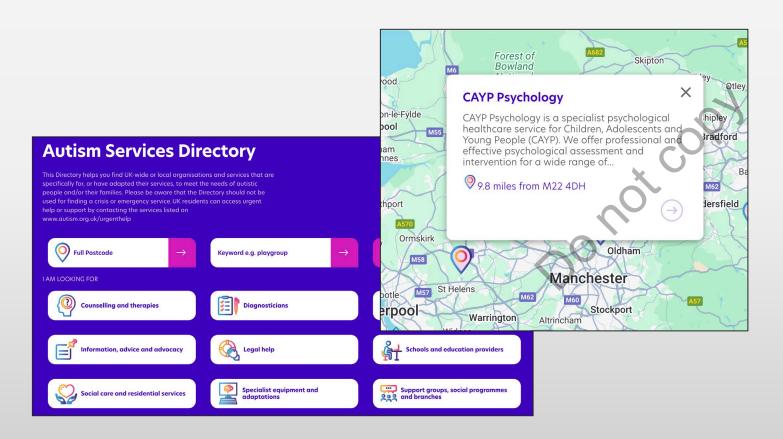
Autistic people reported much lower life satisfaction levels than the general population.¹⁵



The more lonely a person reported they were, the more likely they were to experience greater anxiety and more severe depression.

Neurodiversity and depression

Only 14% of people with ASC said there were mental health services to support their needs in their area



https://www.autism.org.uk/autism-services-directory



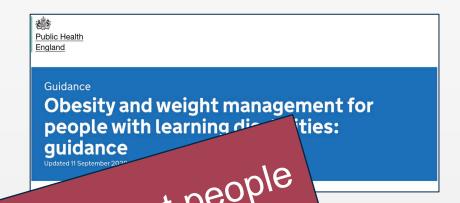
Challenges

Some autistic traits can be barriers to weight management such as

- social anxiety
- sensory sensitivity
- obsessiveness

Other Challenges include:

- The focus should be on problems that neurodivergent people experience, rather than the problem that they might be s a need for training and
 - pring for, and preparing, healthy meals can be
 - anhealthy choices themselves, so staff need to be healthy role models
 - raning can make it difficult to attend exercise classes or take part in health activities
 - ack of understanding of the principles of choice and control



Healy S, Nacario et al. The effect of physical activity interventions on youth with autism spectrum disorder: A meta-analysis. Autism Res. 2018 Jun;11(6):818-833. doi: 10.1002/aur.1955. Epub 2018 Apr 25. PMID: 29693781.

Capacity and choice around diet and physical activity

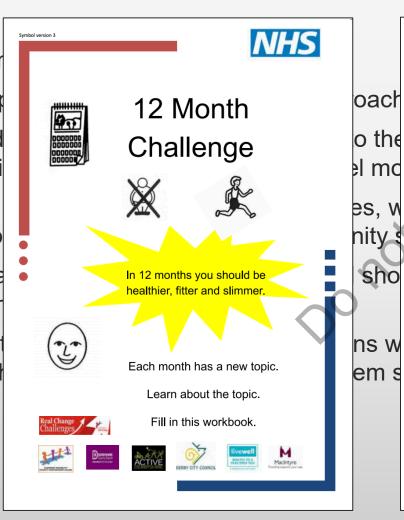
People who are neurodivergent or their families and care services often mention issues about capacity and choice around diet and physical activity as being difficult, this can include:

- •Supporters such as family or staff struggling to contribute to best interest decisions
- •Dilemmas about balancing choice and the duty of care and balancing different risks and benefits
- •Paid supporters can feel limited in their capacity to influence food choices
- •Supporters misusing the right to make unwise decisions as an excuse for not helping the person to understand risks and options properly



Solutions...

- Accessible in
- A multi-discir
- People need appropriate i
- Involvement encourage p
- Consider pra reduce reliar
- It's important possible both







oach

on so training and

s been shown to

nd opportunities to

s acceptable or sehold.

'It's designed for someone who is not me': A reflexive thematic analysis of the unmet healthcare support needs in UK autistic adults aged 65 years and over

It's a question of just getting to know that person, even right at nsidered. the start of the conversation just noise. call them by their name. Maybe a couple of comments about a past nd experience, just to signpost them be that you know this person, and maybe a couple of reassuring ication, visual or check e.g. use close-ended

Continuity Ign the same healthcare professional so there is continuity of this is not possible, read the notes and ask the autistic person have any needs or adjustments. Also, check in with different healthcare services or staff to ensure more seamless care.

"In some parts of the country, they Put you under mental health but in Our part, you're put under learning disability but if you need a counsellor or anything, you're not allowed to use their resources if you haven't got the learning disability as well" acros funding. Proactive d autistic older adults. These may include about waitlist positions, autism-specific support groups and tailored support to combat negative experiences with services and social isolation.

Reasonable adjustments

- Is there anything that will make the appointment easier?
- What reasonable adjustments are need?
- Appointment times and locations written down (text or emails)
- · An early or late appointment when clinics are quieter
- A longer appointment, extra time to think between questions, extra time to explain
- Natural light (bright lights turned off)
- Somewhere to wait other than the waiting room
- The opportunity to write things down



Work with all services.....

"Below are the community led programmes that might be relevant to this young man":

- Local cooking sessions
- Men's support sessions
 - MANDEM Meetups
 - •Talking circles Directions for Men
- Men's night at Bideford Community Centre
- Local walks loads of options locally
- Walking rugby, walking football
- Local food banks
- Debt advice
- Benefits support
- Specific groups/churches based on heritage
- 42nd Street

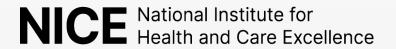
42nd Street's vision is for inclusive, accessible mental health and wellbeing support and opportunities for all young adults

Youth Clubs

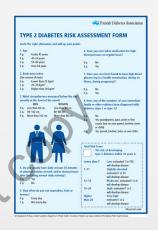




NICE Pathway for T2D prevention.....



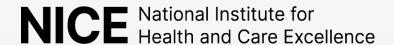
- Offer validated self-assessment questionnaires or validated web-based tools
 - pharmacists
 - managers of local health and community services
 - voluntary organisations
 - employers
 - leaders of faith groups
- Possible health venues include:
 - community pharmacies
 - dental surgeries
 - NHS walk-in centres
 - opticians
- Examples of community and social care venues include:
 - workplaces
 - job centres
 - local authority leisure services
 - shops
 - libraries
 - faith centres
 - residential and respite care homes and day centres (for older adults and for adults with learning disabilities)





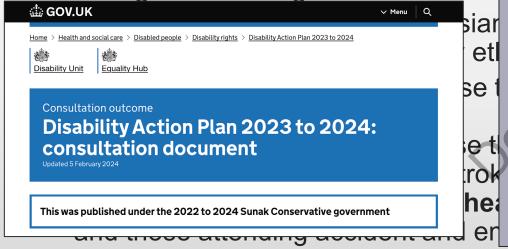


NHS Health Check....



Encourage the following persons to have a risk assessment:

all eligible adults aged 40 and above except pregnant women



Delivering annual health checks and health action plans for people with a learning disability, and piloting a new health check for autistic people

vascular and renal surgery units and ophthalmology departments may also be at high risk"

Meet Aaron

- Aged 25 years
- Black African-Caribbean decent
- Father died aged 58 years: CVD
- Mother has type 2 diabetes
- BMI 35.4
- Neurodivergent
- Severe depression
- Struggles with lower back pain
- Lives in supported accommodation
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Medication

Mirtazapine Co-codamol

"Health Check"

BP 128/70

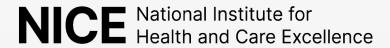
Total Cholesterol 6.3 LDL-C 2.8

> HbA1c 44mmol/mol

> > eGFR 90



High risk of developing T2D...



For people confirmed as being at high risk (a high-risk score and fasting plasma glucose of 5.5 to 6.9 mmol/l or HbA1c of 42 to 47 mmol/mol

- Tell the person they are currently at high risk but that this does not necessarily mean they will progress to T2D.
- Explain that the risk can be reduced.
- Briefly discuss their particular risk factors, identify which ones can be modified and discuss how they can achieve this by changing their lifestyle.
- Review annually
- Offer referral to a local, evidence-based, quality-assured intensive lifestyle-change programme
- In addition, give them details of where to obtain independent advice from health professionals.

National Diabetes Prevention Plan (NDPP)

Patients are eligible for the service if they meet the following criteria...

Healthier You programme goes from strength to strength

5 Jun 2025

A record number of adults in England began receiving support from the NHS's Healthier You programme to improve their health in 2024. The world-leading initiative aims to prevent or delay the development of type 2 diabetes in people at risk.

And is delivered in many languages uding Urdu, Punjabi, Gujarati and Polish

Healthier You Engageme Research by The University of Manchester found that completing the programme reduces an individual's chance of developing type 2 diabetes by 37%, and participants achieve an average weight loss of 3.3 kg

Engagement Officers
been recruited to protein Greater Manchester to increase sign up to the programme

To take up this offer please contact Rebecca.Murray@XylaHealth.com



https://vimeo.com/643449200

https://diabetesonthenet.com/journal-diabetes-nursing/healthier-you/

NDDP: local pilot to look at effective adjustments...



Improve the quality of referrals to the provider by including a preferred time of contact which would allow referral coordinators to conduct individual assessments



Utilise

Utilise funding for travel reimbursement s, as many declined referrals due to issues with travel



Use

Use a face-toface programme, as digital approaches for this population are more likely to be ineffective.



Advocate for the use of smaller group sizes, which have been shown to be effective for this cohort.



Retain

Retain breaks with a longer format, to increase engagement among participants.



Model

Model the financial system differently for the provider, e.g. a one-off payment first rather than on completion, to make the small groups and face-to-face programme economically viable



Signpost

Continue
participant
support
beyond
programme
completion

Continue

Signpost local offers on cooking classes and exercise classes, considering the barriers to behaviour change within this cohort

PCN Population Health Initiatives....

ARTICLE

"Prevention in Practice: Diabetes." A pilot scheme to deliver a structured education programme to individuals with impaired glucose regulation

Nicola Milne, Naresh Kanumilli

A pilot scheme to deliver a structur

Article points

- A 6-month programme of structured health education egulation with the overall alm of delaying or preventing
- progression to type 2 diabete . The programme was delivered 24 participants, of whom 1 completed the programme
- 3. Participants invited back the programme demonstrates reduced weight, waist measurement and fasting glucose levels and reporter

Key words

 ${\small \textit{Citation: Milne N, Kansumilli N (2012)}} \hspace{0.2cm} | \hspace{0.2cm} \textbf{It is well established that the prevention of type 2 diabetes should be an integral role} \\$ of the primary healthcare team (NICE, 2011). A pilot scheme was undertaken within a GP practice in Northenden, South Manchester under the heading of "Prevention in Practice: Diabetes". The practice has a current diabetes prevalence of 5.4% within a predominantly Caucasian population. This scheme brought together various members of the primary healthcare team to deliver a 6-month programme of structured health education and support to individuals with impaired glucose regulation. The aim was to establish if this increased focus on lifestyle advice and diabetes awareness would

have a positive impag ultimately delay or pre implementation and r

Ithough not al glucose regu

develop type 2 established that they a doing so (Unwin et al been suggested by Na without intervention. impaired glucose re type 2 diabetes within In addition, this group

Manchester Local WYTHENSHAWE (BROOKLANDS) & NORTHENDEN

Lets Talk: Diabetes

A workshop for anyone who wants to know more about Diabetes Aimed at people with or who work with folk who have diabetes We would like to hear about what matters to you, what do you need support

A chance to share information, understand the what is on offer via local GP practices, review resources you might want to use, learn about the foods it is best to serve someone with diabetes

SPEAKERS

NICOLA MILNE DIAST NURSE LEAD DIABETES UK CLINICAL CHAMPION

DR. NARESH KANUMILLI NORTHENDEN GROUP PRACTICE GP PARTNER COMMUNITY DIABETES CONSULTANT

Wednesday 19th October 2022

St Aidens Church, Wythenshawe

Road, M23 0PH 3-5pm



Please join us Book your place email/phone of use Eventbrite link rachel.harding9@nhs.net or call 07502 193 406

Let's Talk Type 2 Diabetes



Benchill Community Centre, Wythenshawe, M22 8EJ



Saturday 10th February, from 12pm to 2pm

This FREE event is for anyone with type 2 diabetes, aged 18 to 50 years. Friends and family welcome.

- Help and advice for managing type 2 diabetes
- · FREE healthy food tasters from Blossom
- · Ask an expert Consultant Diabetologist Dr Sarah Steven answers questions about type 2 diabetes
- Find out if the NHS Type 2 Path to Remission Programme is right for you
- · Information from local healthcare professionals and community services.

Please book via Ticket Tailor.







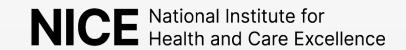




NHS



Metformin?



- Use clinical judgement on whether (and when) to offer metformin to support lifestyle change

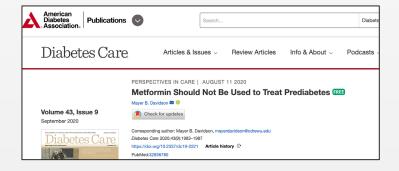
- "The updated recommendation on metformin reflects current practice, apuared recommendation on mountain that it shouldn't have an impact so the committee noted that it shouldn't have a new so that it sho

metformin for 6 to 12 months initially. Monitor the person's fasting plasma glucose or To levels at 3-month intervals and stop the drug if no effect is seen.

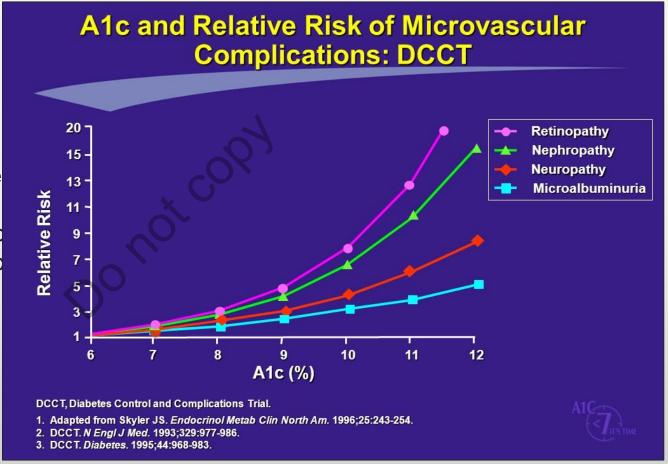
Diabetes Prevention Program Outcomes Study

- Prevention effects in the original lifestyle and metformin treatment groups remain at 22 years with a 25% and 18% reduced risk of diabetes development v placebo
- Participants who did not develop diabetes > 57% and 37% lower risk of developing early eye and kidney disease, respectively, and a 39% lower risk of major cardiovascular disease
- No significant benefit seen with the individual interventions—metformin or the lifestyle intervention—with regard to heart disease or development of kidney disease /diabetic retinopathy.
- Favorable trends with metformin in stroke reduction and cardiovascular events in the subgroup of people who started the study before age 45.
- Metformin was associated with a non-significant 12% lower risk of cancer compared with the placebo group.
- Intensive lifestyle intervention group had a long-term reduction in the development of frailty.
- The only long-term negative effect observed with any of the interventions was a modest increase in kidney disease with metformin, which appeared only in the oldest group of participants.

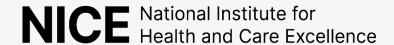
Metformin?



- Approximately two-thirds of pe years.
- Approximately one-third of ped
- People who meet the glycemic complications of diabetes and outcome.



Orlistat?



- Use clinical judgement on whether to offer orlistat to people with a BMI of 28.0 kg/m² or more, as part of an overall plan for managing obesity
- Take into account the person's risk and level of weight loss and lifestyle change required to reduce risk
- Discuss potential benefits and limitations
- Advise a low-fat diet that provides 30% of daily food energy as fat, distributed over three main meals a day
- Offer information and regular support from a dietitian/another appropriate healthcare professional
- Agree a weight-loss goal with the person and regularly review
- Review the use of orlistat after 12 weeks. If < 5% weight loss, use clinical judgement to decide whether to stop the orlistat. However, as with adults who have type 2 diabetes, those at high risk of the condition may lose weight more slowly than average, so less strict goals may be appropriate.
- Use orlistat for more than 12 months (usually for weight maintenance) only after discussing the potential benefits, limitations and side effects with the person concerned.

Incretin Memetic?



Further analysis of the SELECT trial (injectable semaglutide) showed:

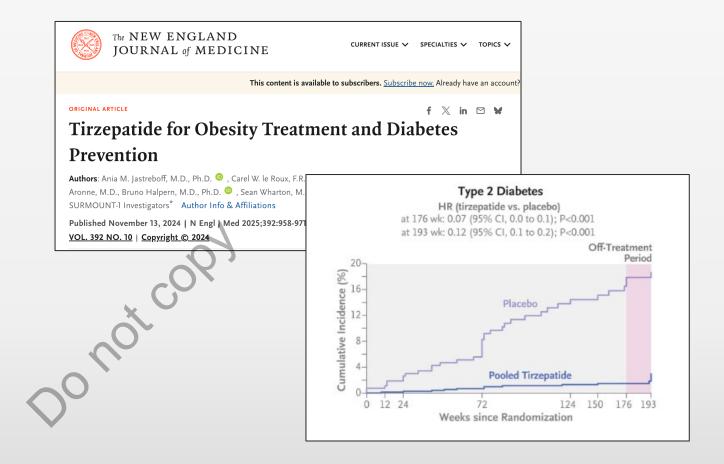
73% reduction in progression to diabetes over four years regardless of baseline glycaemia compared to placebo

- About two-thirds of the 17,604 participants in the global trial had prediabetes at baseline
- One-third had normoglycemia.
- All had established cardiovascular (CV) disease
- Mean body mass index (BMI) was 33

Incretin Memetic?



- At week 72, 95.3%of the participants with prediabetes at baseline in the tirzepatide groups had reverted to normoglycemia
- Compared with 61.9% of participants in the placebo group.



- Tirzepatide was evaluated in 1,032 adults who had pre-diabetes at randomization and obesity or overweight for a treatment period of 176 weeks
- Pooled doses of tirzepatide resulted in a significant 93% reduction in risk of progression to type 2 diabetes compared to placebo up to week 176



At a glance factsheet: Lifestyle discussions: Stres and type 2 diabetes

The causes and effects of strein people with type 2 diabetes and what healthcare... professionals can do to help.



At a glance factsheet: Mei health and diabetes

At-a-glance information on mental health problems in people with diabetes, includ recognising them and their



At a glance factsheet: Intermittent fasting for the management of weight and diabetes

The definitions, benefits and risks of intermittent fasting, plus tips for supporting people who... wish to adopt these methods.

8 Jul 2024



How to improve carbohydrate awareness

All the background information and practical tips needed to discuss carbohydrates with... patients.

8 Jul 2019



At a glance factsheet: Lifestyle discussions: Sleep and type 2 diabetes

Understanding common sleep problems and their consequences, and providing, advice in primary care.



a glance factsheet: estyle discussions: ysical activity and type 2 abetes

actical information on commending physical tivity safely in type 2... abetes.

Resources

Diabetes Distilled: SPAN – Small changes to improve lifespan

Small increases in three lifestyle behaviours is effective in reducing all-cause mortality.

27 May 2025



TYPE 2 DIABETES PREVENTION

() 60 min

This module will explain what type 2 diabetes prevention is, and the risk factors that contribute to the development of type 2 diabetes. It will help you understand the social determinants that influence a person's risk, and give you the knowledge and tools to better support people under your care.



Start Module

https://diabetesonthenet.com/journals/diabetes-primary-care/

Take home messages.....



1. Consider who are the people at highest risk

2. Outreach and Community Care: Work collaboratively

3. Make reasonable adjustments.....







Thank you.





pcdosociety.org

