

Additional effects of exercise to hypocaloric diet on body weight, body composition, glycaemic control, and cardio-respiratory fitness in adults with overweight or obesity and type 2 diabetes: a systematic review and meta-analysis

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NTD

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Nederlands Tijdschrift voor Diabetologie

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NVDO - NASO - NDESG - PSAD - NVCD

8 **ABSTRACTS**

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Multidisciplinaire aandacht voor mondzorg heeft direct impact op de
kwaliteit van zorg en leven voor mensen met diabetes

Annual Dutch Diabetes Research
Meeting 2022
3 & 4 november

diabetes /,daɪə'bi:tɪ:z/

n a serious disease in which there is too
much sugar in your blood, either because
your body does not produce enough
insulin, or because your cells do not
respond to the produced insulin



Nederlands Tijdschrift voor Diabetologie

JAARGANG 20
NOVEMBER 2022

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Beste lezer,

Traditiegetrouw is het vierde nummer van het Nederlands Tijdschrift voor Diabetologie volledig gewijd aan het programma van de *Annual Dutch Diabetes Research Meeting* (ADDRM).

Op donderdag 3 november en vrijdag 4 november 2022 vindt de 48e ADDRMR plaats in Wageningen. Deze jaarlijkse bijeenkomst wordt georganiseerd door de Nederlandse Vereniging voor Diabetes Onderzoek (NVDO), in samenwerking met de Nederlandse Associatie voor de Studie van Obesitas (NASO), de Netherlands Diabetes Epidemiology Study Group (NESDG), de Nederlands/Vlaamse Werkgroep PsychoSociale Aspecten van Diabetes (PSAD) en de Vereniging voor Neurovasculaire Complicaties van Diabetes (NVCD).

Na twee covid-jaren is de editie van 2022 weer een 'normale' ADDRMR, waarbij iedereen van harte welkom is om deel te nemen aan het programma in het WICC in Wageningen.

Het wetenschappelijke programma heeft een herkenbare ADDRMR-identiteit, met de traditionele highlights, zoals een sterk klinisch programma, de beste wetenschappelijke abstracts, internationale keynote lectures en natuurlijk de Terpstra en Gerritzen Awards.

Verderop in het blad vindt u het plenaire programma, met een keur aan nationale en internationale topsprekers. Ook alle abstracts zijn opgenomen in deze uitgave van het NTD.

Graag tot ziens in Wageningen!



Dr. Marten Engelse
Voorzitter Nederlandse Vereniging
voor Diabetes Onderzoek



Zusterverenigingen

PSAD
NDESG
NVCD
NASO

3 en 4 november 2022

**ANNUAL
DUTCH
DIABETES
RESEARCH
MEETING**

www.addrm.nl

PLENAIR PROGRAMMA

Donderdag 3 november

- 09:30 - 09:45 Plenary opening 48^e ADDRDM
Dr. Marten Engelse, chair NVDO
- 09:45 - 10:45 **Niet-alcoholische leververvetting en diabetes mellitus type 2 – raakvlak tussen endocrinologie en hepatologie**
Dr. Onno Holleboom
Dr. Maarten Tushuizen
- 10:45 - 11:15 **ADA/EASD Position statement 2022: Management of Type 2 Diabetes**
Prof. dr. Chantal Mathieu
- 11:15 - 11:45 Coffee break
- 11:45 - 12:45 **Nieuwe incretines: hoe werken ze en wat kunnen we verwachten?**
Prof. dr. Patrick Rensen en dr. André van Beek
- 12:45 - 13:15 **Pompen en sensoren: zien we door de bomen bos nog?**
Dr. Titia Vriesendorp
- 13:15 - 14:15 Lunch
- 14:15 - 15:00 **Complexe obesitas voor de internist**
Prof. dr. Mireille Serlie
- 15:00 - 15:45 Diabeteskamer ALV
- 15:45 - 16:30 Break
- 16:30 - 17:15 **Adipose tissue in obesity: size, sites and cytes**
Dr. Gijs Goossens
- 17:15 - 18:00 **Gerritzen Award for best thesis on diabetes research 2022**
- 18:00 - 18:15 Mini break
- 18:15 - 19:15 **Prof. dr. J. Terpstra Young Investigator Award 2022**
- 19:15 - 19:30 **Gerritzen Award Ceremony (with drinks)**
- 19:30 Walking dinner

Vrijdag 4 november

- 08:30 - 09:15 ALV NVDO
- 09:15 - 10:00 **Case report session**
- 10:00 - 10:45 **Mendelian randomisation and other emerging methodologies**
Prof. dr. Harold Snieder
- 10:45 - 11:15 Break
- 11:15 - 12:00 **Nudging and prevention in the social domain**
Prof. dr. Joline Beulens
- 12:00 - 13:00 **Best meeting abstracts session ADDRDM 2022**
- 13:00 Closure

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Additional effects of exercise to hypocaloric diet on body weight, body composition, glycaemic control, and cardio-respiratory fitness in adults with overweight or obesity and type 2 diabetes: a systematic review and meta-analysis

Robert Memelink^{1,2}, Mitchell Hummel³, Aveline Hijlkema¹, Martinet Streppel¹, Ivan Bautmans^{2,4}, Peter Weijs^{1,5}, Kirsten Berk³, Michael Tieland¹

¹Faculty of Sports and Nutrition, Amsterdam University of Applied Sciences, Amsterdam, The Netherlands; ²Gerontology Department, Faculty of Medicine and Pharmacy, VU Brussel, Brussels, Belgium; ³Department of Internal Medicine, Division of Dietetics, Erasmus MC, Rotterdam, The Netherlands; ⁴Frailty in Aging Research Group, Faculty of Medicine and Pharmacy, VU Brussel, Brussels, Belgium; ⁵Department of Nutrition and Dietetics, AUMC, Amsterdam, The Netherlands

BACKGROUND

This systematic review and meta-analysis evaluates the additional effects of exercise to hypocaloric diet on body weight, body composition, glycaemic control, and cardio-respiratory fitness in adults with overweight or obesity and type 2 diabetes.

METHODS

Embase, Medline, Web of Science, and Cochrane Central databases were evaluated and 11 studies were included. Random-effects meta-analysis was performed on body weight and measures of body composition and glycaemic control, to compare the effect of hypocaloric diet plus exercise with hypocaloric diet alone.

RESULTS

Exercise interventions consisted of walking or jogging, cycle ergometer training, football training, or resistance

training, and duration varied from 2 to 52 weeks. Body weight and measures of body composition and glycaemic control decreased during both the combined intervention and hypocaloric diet alone. Mean difference in change of body weight (0.77 kg [95% CI: 2.03; 0.50]), BMI (0.34 kg/m² [95% CI 0.73; 0.05]), waist circumference (1.42 cm [95% CI: 3.84; 1.00]), fat-free mass (0.18 kg [95% CI 0.52; 0.17]), fat mass (1.61 kg [95% CI 4.42; 1.19]), fasting glucose (+0.14 mmol/l [95% CI 0.02; 0.30]), HbA1c (0.06 % [95% CI 0.25; 0.13]), and HOMA-IR (+0.01 [95% CI: 0.40; 0.42]) was not statistically different between the combined intervention and hypocaloric diet alone. Two studies reported VO₂max and showed significant increases upon addition of exercise to hypocaloric diet.

CONCLUSION

Additional effects of exercise to hypocaloric diet in adults with overweight or obesity and type 2 diabetes were not shown for body weight, body composition, or glycaemic control, while cardio-respiratory fitness improves.

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Significant difference in glucometric outcome between automated insulin delivery (AID, 780G+RTCGM) versus traditional <playing pancreas> (780G+FGM) in adults with type 1 diabetes

Dick Mul, Henk-Jan Aanstoot, Henk Veeze, Diabeter Nederland, Rotterdam, the Netherlands

BACKGROUND

Outcomes of type 1 diabetes (T1D) still show only 20-50% of patients reaching target-A1c levels (< 7.0%; 53 mmol/mol). Until recently, therapy was based on self-management i.e. constant <manual> adjustments by the person with T1D, preferably as often as possible (<playing pancreas>). This has also a substantial impact on their lives with psychosocial consequences. Automated insulin delivery (AID) overcomes this burden by reducing human input. Currently available technologies offer semi-automated insulin administration (i.e. hybrid closed loop) resulting in more patients reaching HbA1c targets without hypoglycemia.

METHODS

We analyzed (adult) patients who switched to a new

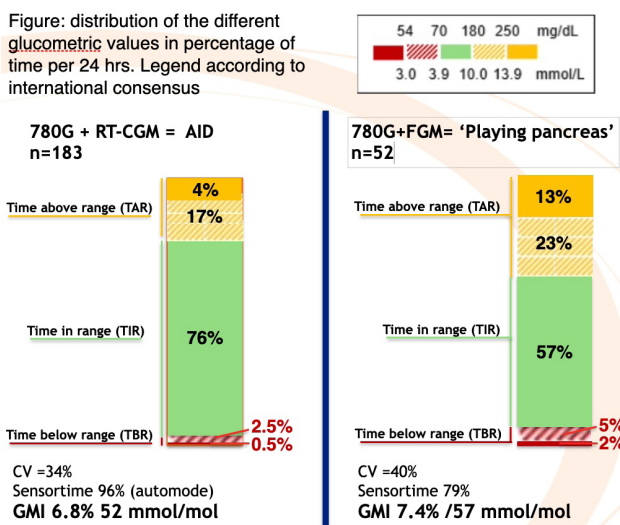


Figure 8. distribution of the different glucometric values in percentages of time per 24 hrs. Legend accoring to international consensus