



99η ΕΠΙΣΤΗΜΟΝΙΚΗ ΣΥΝΑΝΤΗΣΗ ΕΛΛΗΝΙΚΗΣ  
ΝΕΦΡΟΛΟΓΙΚΗΣ ΕΤΑΙΡΕΙΑΣ ΚΟΙΝΗ ΣΥΝΕΔΡΙΑ ΜΕ ΕΛΛΗΝΙΚΗ  
ΔΙΑΒΗΤΟΛΟΓΙΚΗ ΕΤΑΙΡΕΙΑ

## Σακχαρώδης Διαβήτης: Επιδημιολογικά δεδομένα

ΤΣΟΤΟΥΛΙΔΗΣ ΣΤΕΦΑΝΟΣ  
ΠΑΘΟΛΟΓΟΣ ΜΕ ΕΞΕΙΔΙΚΕΥΣΗ ΣΤΟ  
ΣΑΚΧΑΡΩΔΗ ΔΙΑΒΗΤΗ  
ΔΙΕΥΘΥΝΤΗΣ ΕΣΥ - Κ.Υ. ΚΑΣΣΑΝΔΡΕΙΑΣ  
ΔΙΑΒΗΤΟΛΟΓΙΚΟ ΙΑΤΡΕΙΟ Γ. Ν.ΧΑΛΚΙΔΙΚΗΣ

ΘΕΣΣΑΛΟΝΙΚΗ 19/10/2023

### The Top 10

Estimated number of people with diabetes (20-79 age group)

Estimation du nombre de personnes atteintes de diabète (groupe d'âge 20 –79 ans)

Estimación del número de personas con diabetes (grupo de edad 20 –79)

Country	Number of people with diabetes (million)
1. India	32.7
2. China	22.6
3. USA	15.3
4. Pakistan	8.8
5. Japan	7.1
6. Indonesia	5.7
7. Mexico	4.4
8. Egypt	3.4
9. Brazil	3.3
10. Italy	3.1

Estimated prevalence (20-79 age group)

Estimation de la prévalence (groupe d'âge 20 –79 ans)

Estimación de la prevalencia (grupo de edad 20 –79)

Country	Prevalence (%)
1. Papua New Guinea	15.5
2. Mauritius	15.0
3. Bahrain	14.8
4. Mexico	14.2
5. Trinidad and Tobago	14.1
6. Barbados	13.2
7. Aruba	12.1
Bermuda	
British Virgin Islands	
Cayman Islands	
Grenada	
Hong Kong	
St Kitts and Nevis	
8. Pakistan	11.8
9. Czech Republic	11.7
10. Tonga	11.5

Table 1. IDF Regional estimates for diabetes for the year 2000

Tableau 1. Estimations pour le diabète par Région de la FID pour l'année 2000

Tabla 1. Estimaciones regionales de la FID sobre la diabetes para el año 2000

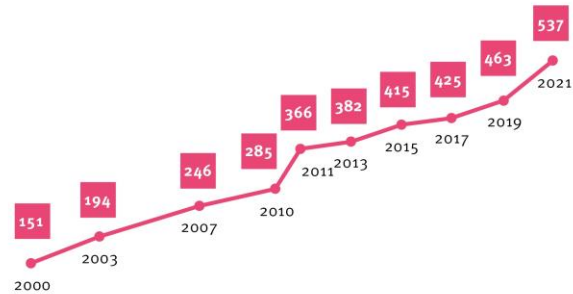
Region	Diabetes Mellitus (DM) for the 20-79 year age group			Type 1 DM for all age groups		
	Popn 20-79 (000's)	No. people with DM (000's)	Prevalence	Total Popn (000's)	No. people with type 1 DM (000's)	Prevalence
AFR	217,888	2,532.9	1.2%	525,537	101.57	0.02%
EMME	219,781	17,007.6	7.7%	458,505	486.82	0.11%
EUR	462,724	22,467.4	4.9%	654,879	1,265.68	0.19%
NA	273,794	21,375.1	7.8%	422,203	1,042.35	0.25%
SACA	233,013	8,553.3	3.7%	400,865	441.72	0.11%
SEA	664,021	34,882.2	5.3%	1,177,121	905.56	0.08%
WP	1,219,457	44,097.9	3.6%	1,890,226	623.34	0.03%
<b>Total</b>	<b>3,290,678</b>	<b>150,916.3</b>	<b>4.6%</b>	<b>5,529,336</b>	<b>4867.04</b>	<b>0.09%</b>



# Estimates and projections

Global number of adults (20–79 years) in millions

Estimates of the global prevalence of diabetes in the 20–79 year age group (millions)

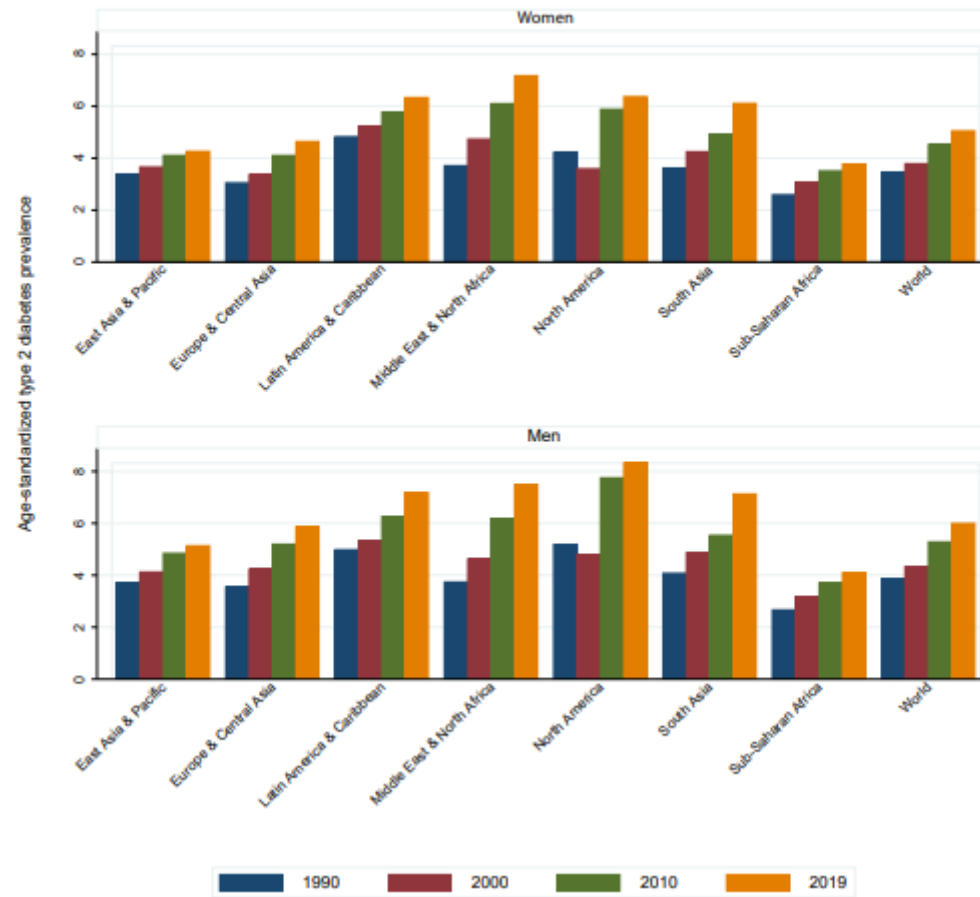


**Key**  
151 Number of people with diabetes in millions

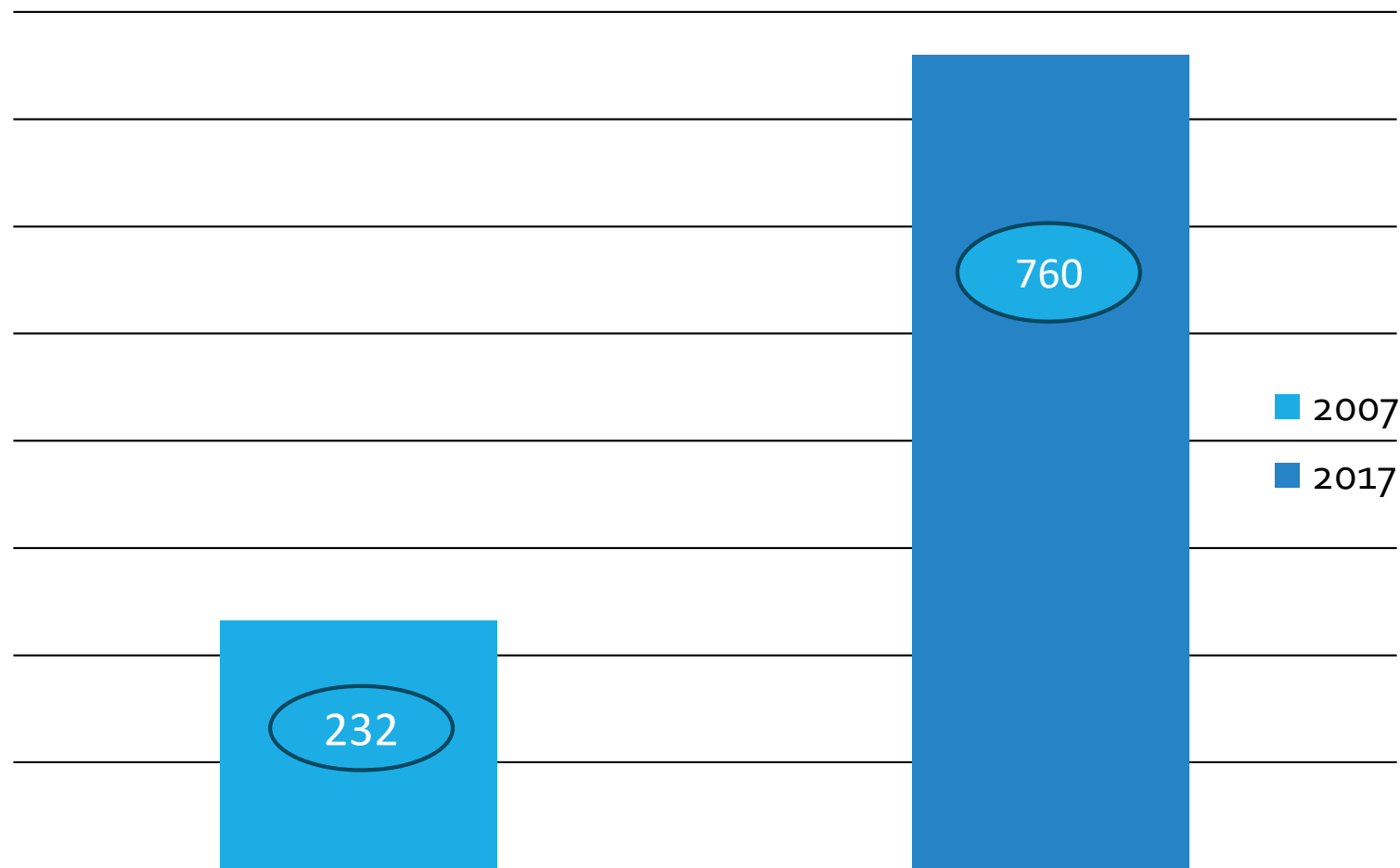
Projections of the global prevalence of diabetes in the 20–79 year age group (millions)



**Key**  
333 Projection in millions  
2003 Year projection made

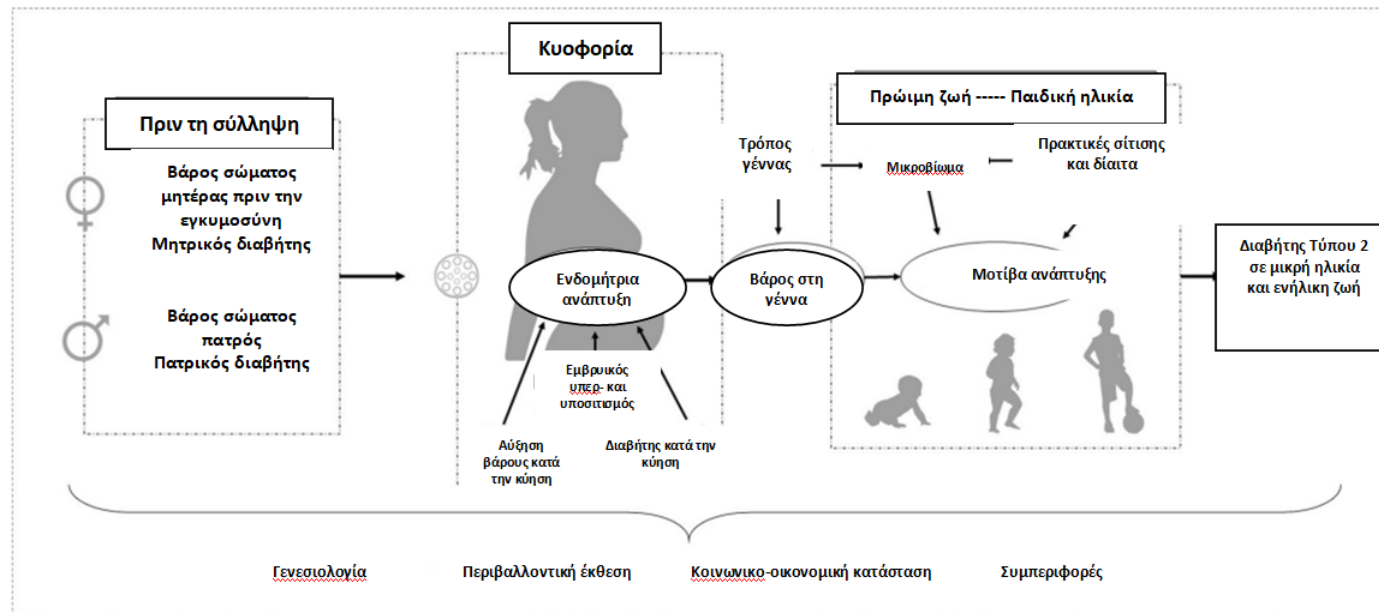


# ΚΟΣΤΟΣ



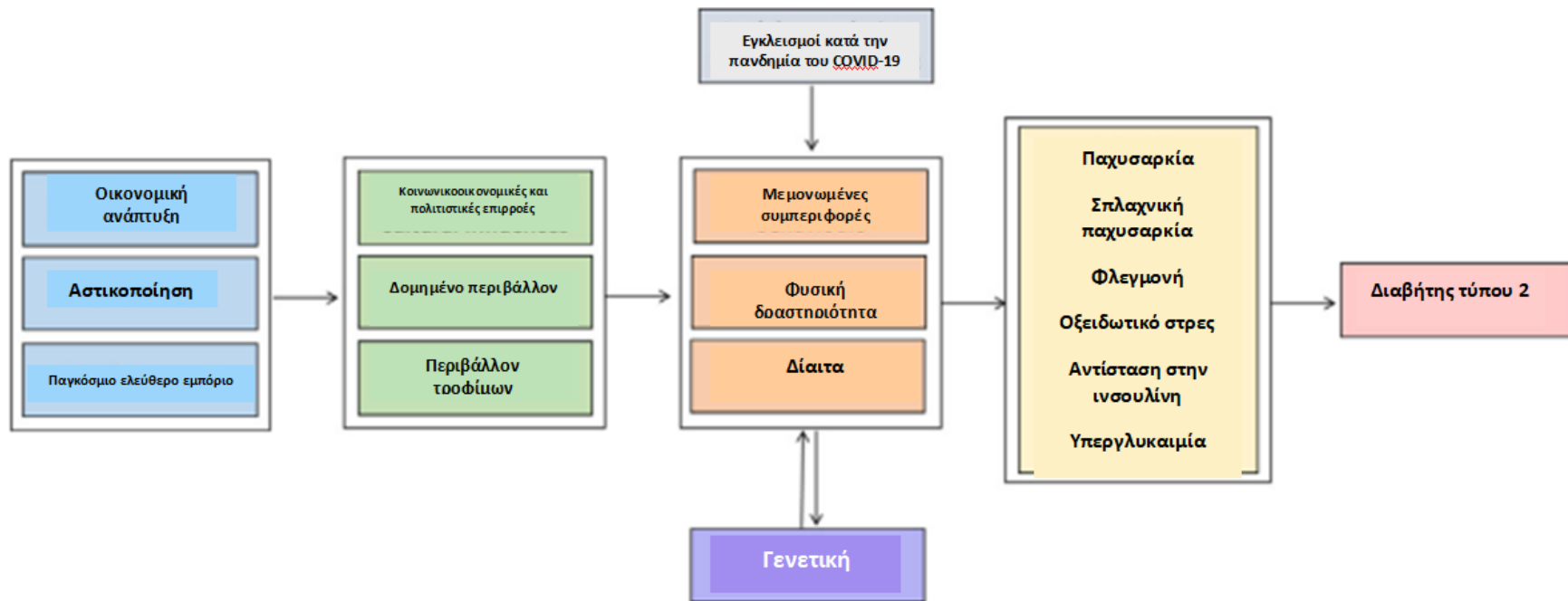
Williams R, Karuranga S, Malanda B, Saeedi P, Basit A, Besancon S, et al. IDF Diabetes Atlas estimates of 2019 global health expenditures on diabetes. Diabetes Res Clin Pract. 2019

# ΠΑΡΑΓΟΝΤΕΣ ΚΙΝΔΥΝΟΥ ΣΤΗΝ ΠΡΩΙΜΗ ΖΩΗ

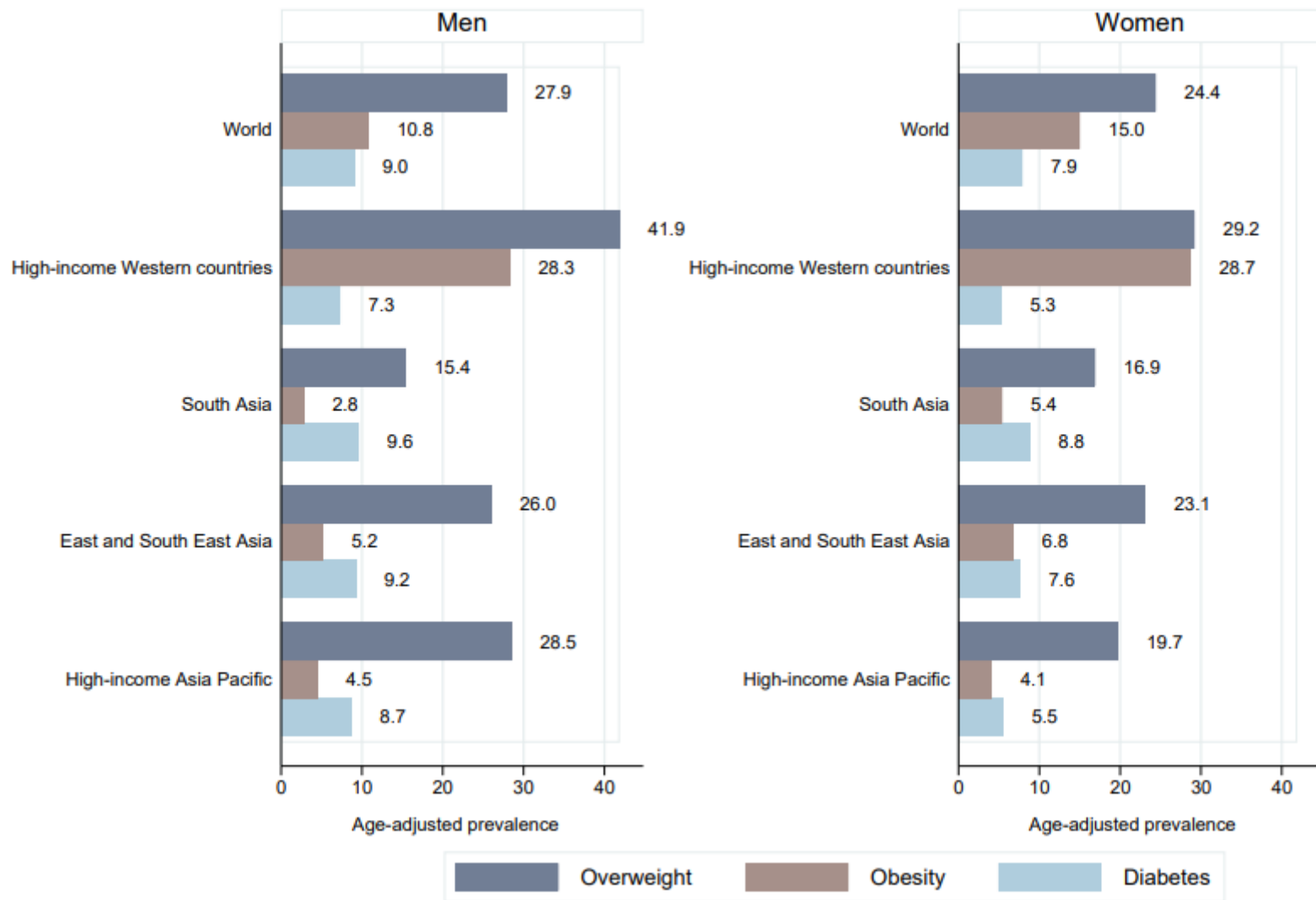


Σχ. 1 Εννοιολογικό μοντέλο: παράγοντες κινδύνου της πρώιμης ζωής διαβήτη τύπου 2

Véronique Gingras & Marie-France Hivert & Emily Oken. Early-Life Exposures and Risk of Diabetes Mellitus and Obesity. Current Diabetes Reports (2018) 18:89  
<https://doi.org/10.1007/s11892-018-1050-0>



An Update on the Epidemiology of Type 2 Diabetes: A Global Perspective Maria G. Tinajero, BS, Vasanti S. Malik. *Endocrinol Metab Clin N Am* 50 (2021) 337–355 <https://doi.org/10.1016/j.ecl.2021.05.013>





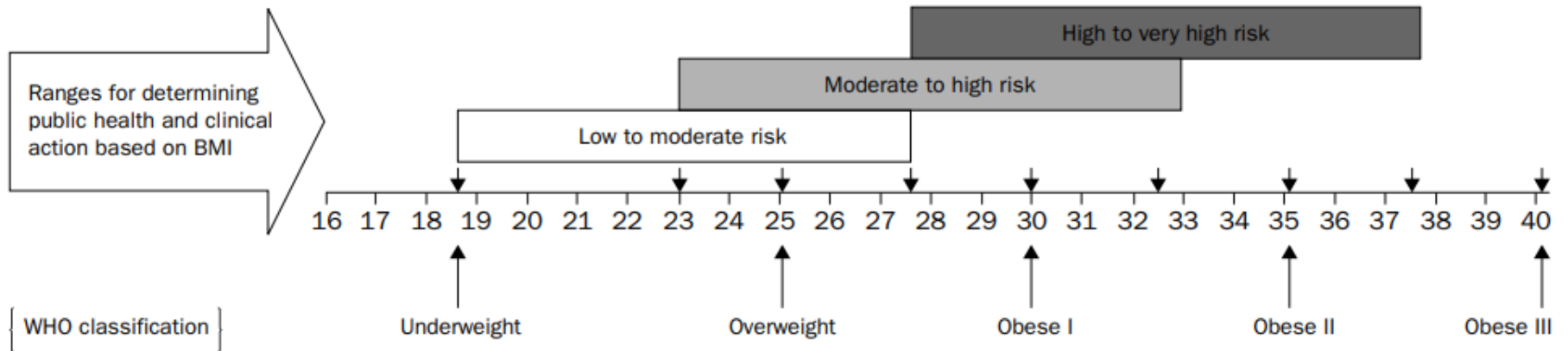
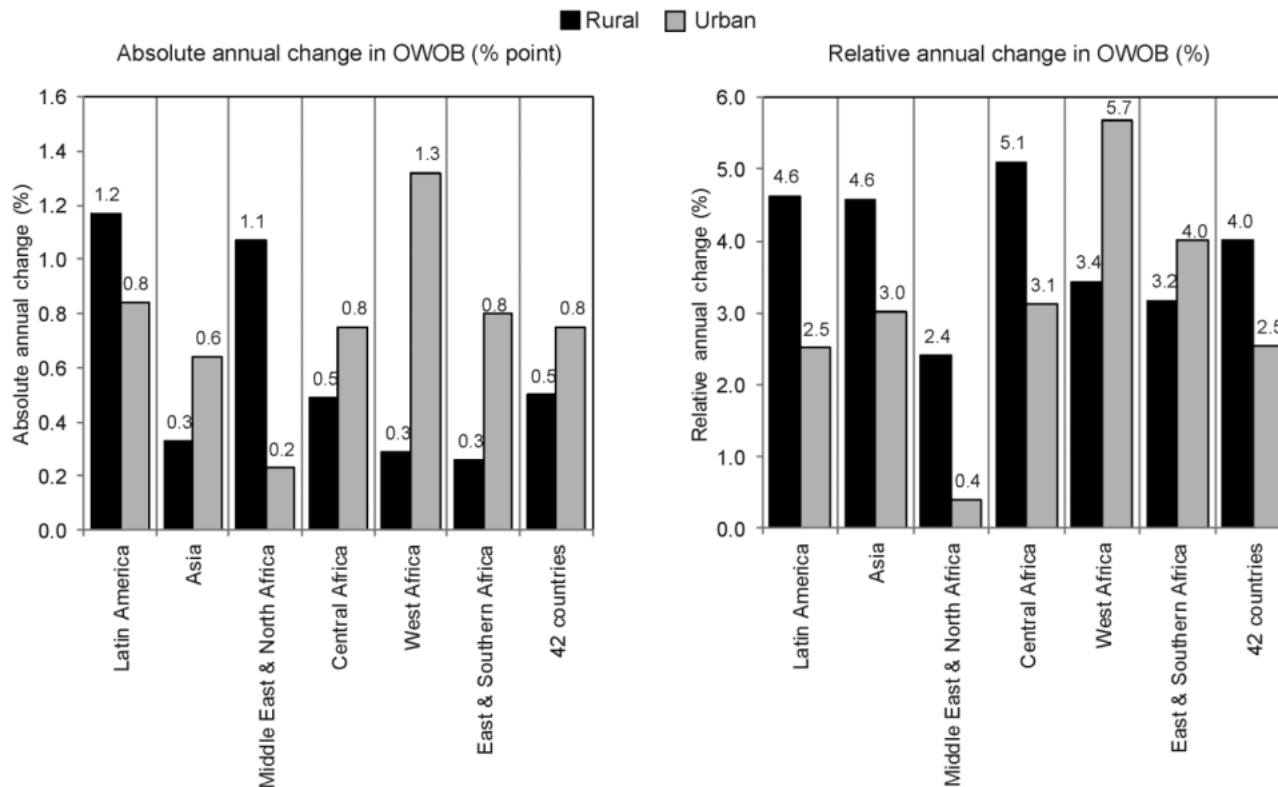


Figure 2: **Body-mass index (BMI) cut-off points for public health action**



Απόλυτη και σχετική ετήσια ποσοστιαία μεταβολή στη σταθμισμένη επικράτηση του υπέρβαρου και της παχυσαρκίας ( $\Delta M \geq 25$ ) μεταξύ των γυναικών σε αγροτικές και αστικές περιοχές 42 αναπτυσσόμενων χωρών

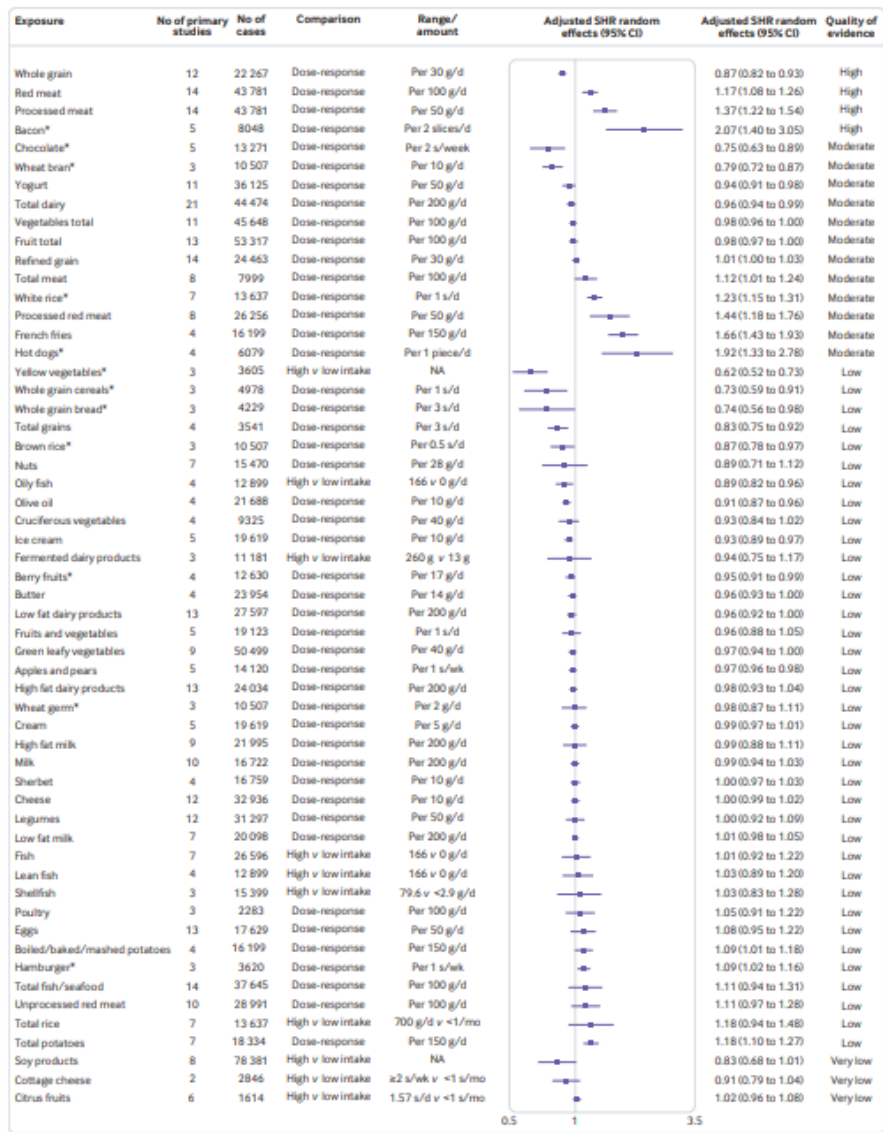
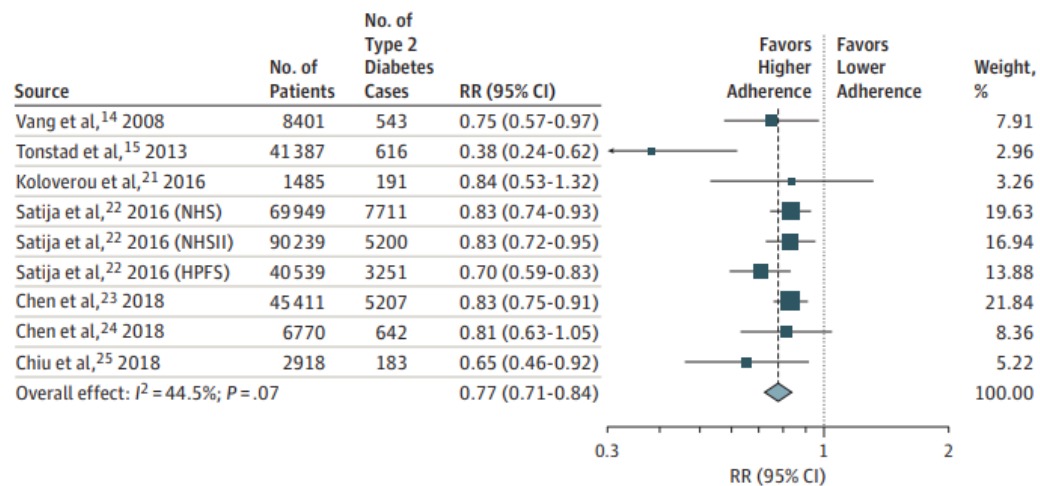


Fig 2 | Adjusted summary hazard ratios (SHR) with 95% confidence intervals and quality of evidence for association between food groups and foods and incidence of type 2 diabetes. Data are based on results from 53 published meta-analyses selected for umbrella review. S=-serving; NA=not available. \*Summary hazard ratio extracted from published meta-analysis, no reanalysis possible

Συσχέτιση μεταξύ ομάδων τροφίμων και τροφίμων και επίπτωση διαβήτη τύπου 2.

Neuenschwander M, Ballon A, Weber KS, et al. Role of diet in type 2 diabetes incidence: umbrella review of meta-analyses of prospective observational studies. *BMJ* 2019;366:l2368.

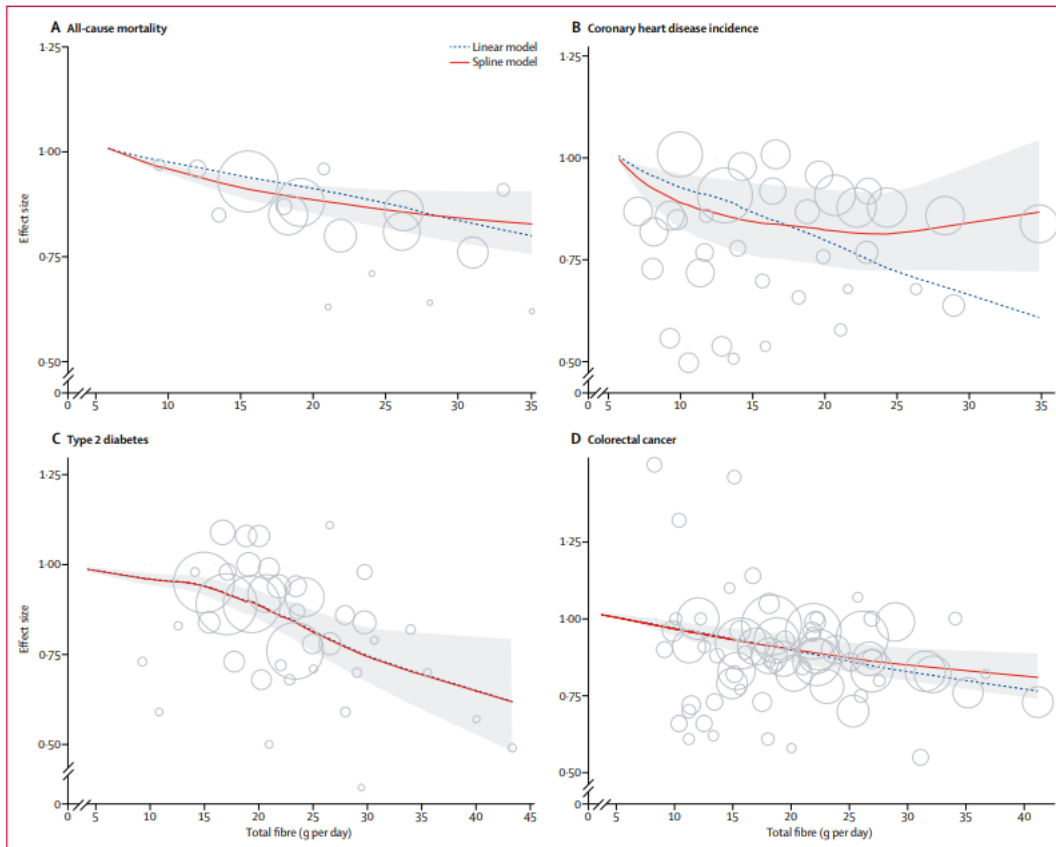
Figure 2. Forest Plot of Studies Examining the Association Between Plant-Based Dietary Patterns and Risk of Type 2 Diabetes



Pooled estimate calculated using random-effects meta-analysis. HPFS indicates Health Professionals Follow-up Study; NHS, Nurses' Health Study; NHSII, Nurses' Health Study II; and RR, relative risk.

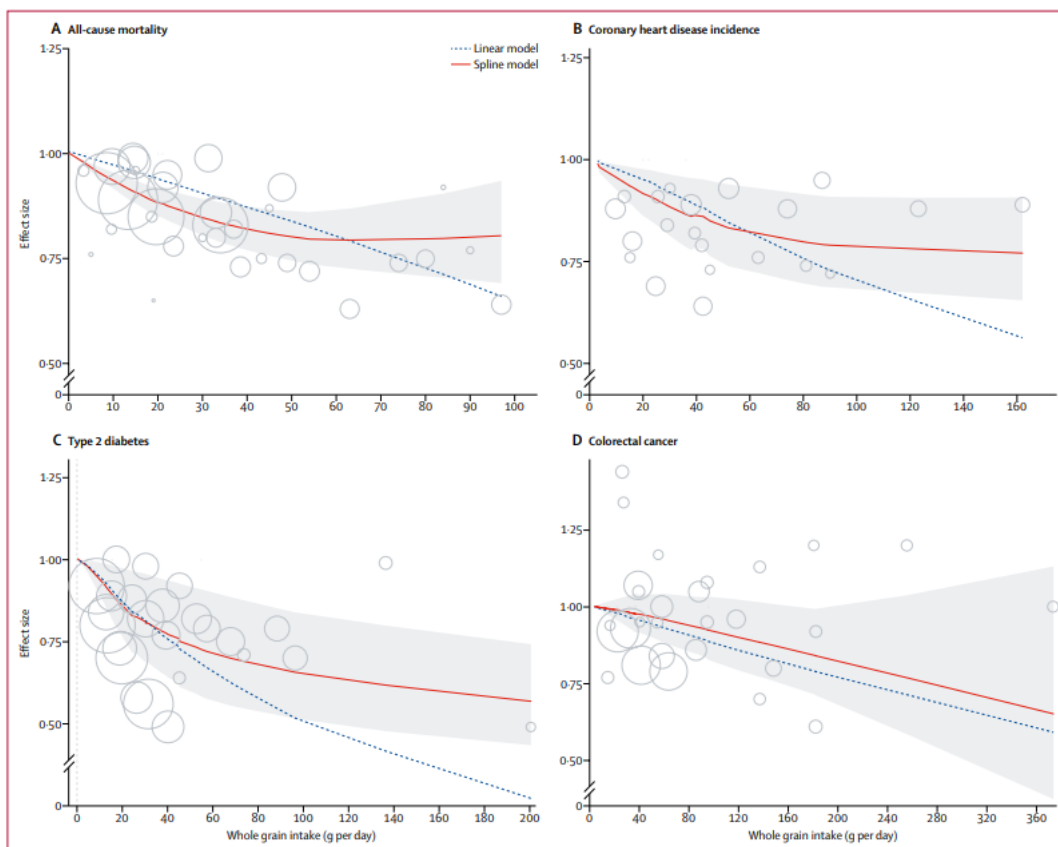
Η συμμόρφωση σε ένα φυτικό διατροφικό πρότυπο συσχετίστηκε σημαντικά με χαμηλότερο κίνδυνο T2D

Qian F, Liu G, Hu FB, et al. Association between plant-based dietary patterns and risk of type 2 diabetes. *JAMA Intern Med* 2019;179(10):1335.



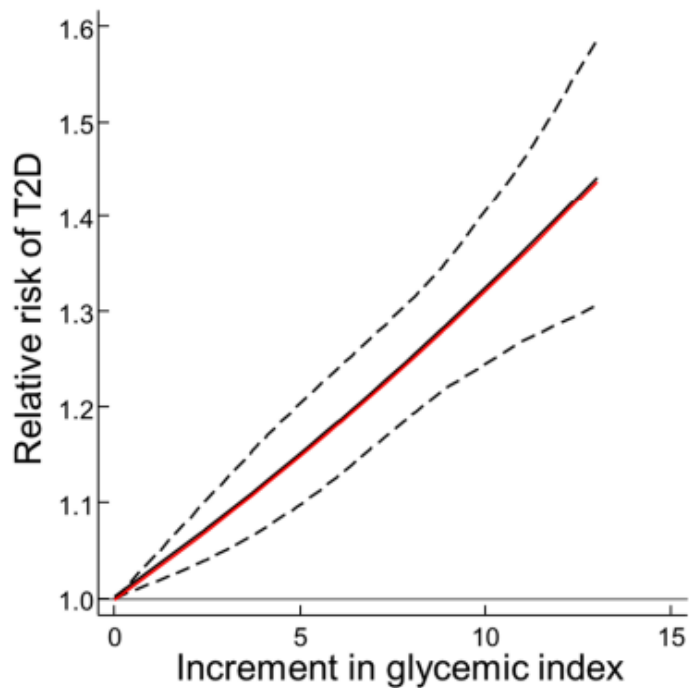
**Figure 1: Dose-response relationships between total dietary fibre and critical clinical outcomes based on data from prospective studies**  
 (A) Total fibre and all-cause mortality. 68 183 deaths over 11.3 million person-years. Assuming linearity a risk ratio of 0.93 (95% CI 0.90–0.95) was observed for every 8 g more fibre consumed per day.  
 (B) Total fibre and incidence of coronary heart disease. 6449 deaths over 2.5 million person-years. Assuming linearity a risk ratio of 0.81 (0.73–0.90) was observed for every 8 g more fibre consumed per day.  
 (C) Total fibre and incidence of type 2 diabetes. 22 450 cases over 3.2 million person-years. Assuming linearity a risk ratio of 0.85 (0.82–0.89) was observed for every 8 g more fibre consumed per day.  
 (D) Total fibre and incidence of colorectal cancer. 20009 cases over 20.9 million person-years. Assuming linearity a risk ratio of 0.92 (0.89–0.95) was observed for every 8 g more fibre consumed per day.

Αύξηση κατά 8 g/ημέρα στις συνολικές φυτικές ίνες συσχετίστηκε με 15% χαμηλότερο κίνδυνο εμφάνισης ΣΔτ2.

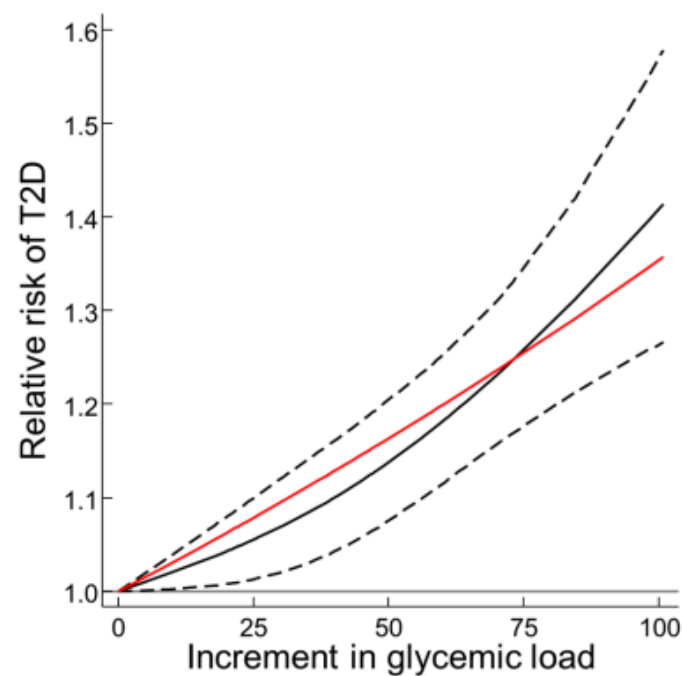


**Figure 2: Dose-response relationships between whole grain intake and critical clinical outcomes based on data from prospective studies**  
 (A) Whole grain intake and all-cause mortality. 88 347 deaths over 8.2 million person-years. Assuming linearity a risk ratio of 0.94 (95% CI 0.92-0.95) was observed for every 15 g more whole grains consumed per day. (B) Whole grain intake and incidence of coronary heart disease. 6587 cases over 2.4 million person-years. Assuming linearity a risk ratio of 0.93 (0.89-0.98) was observed for every 15 g more whole grains consumed per day. (C) Whole grain intake and incidence of type 2 diabetes. 13 147 cases over 3.5 million person-years. Assuming linearity a risk ratio of 0.88 (0.81-0.95) was observed for every 15 g more whole grains consumed per day. (D) Whole grain intake and incidence of colorectal cancer. 6056 cases over 5.7 million person-years. Assuming linearity a risk ratio of 0.97 (0.95-0.99) was observed for every 15 g more whole grains consumed per day.

Αύξηση κατά 15 g/ημέρα στα δημητριακά ολικής αλέσεως συσχετίστηκε με 12% χαμηλότερο κίνδυνο εμφάνισης ΣΔτ2.



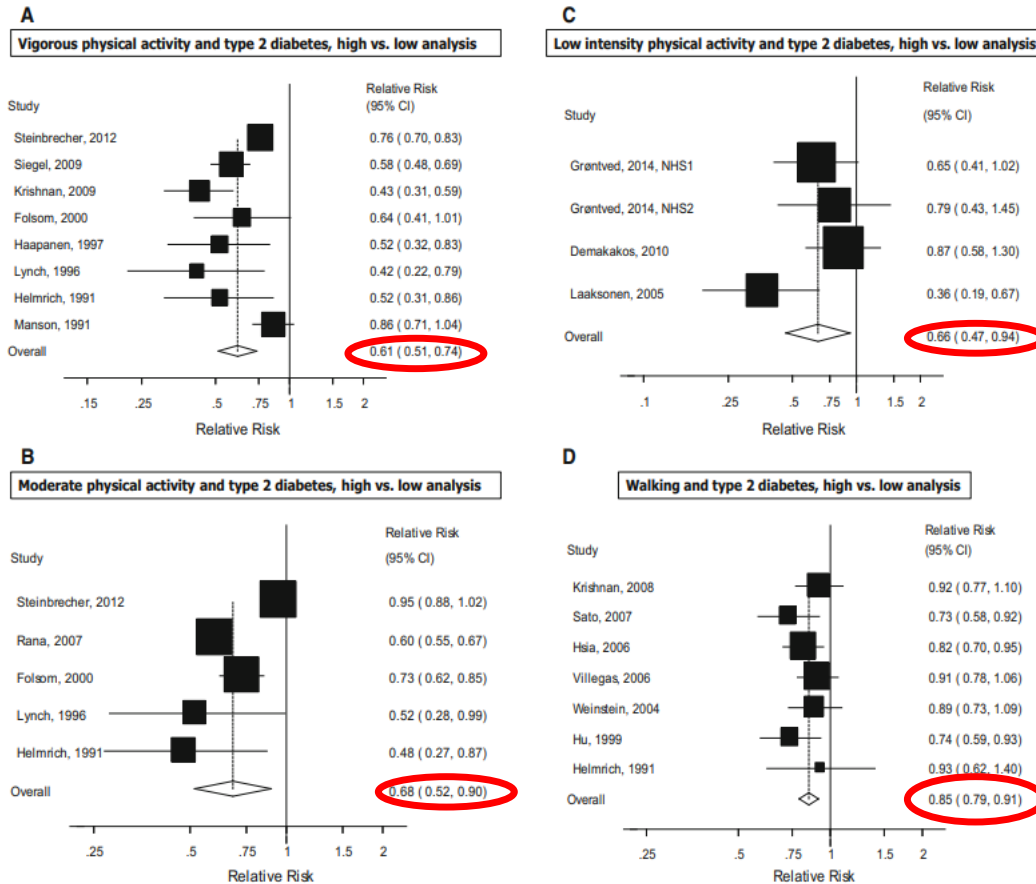
32% υψηλότερος κίνδυνος εμφάνισης ΣΔτ2 ανά 10 μονάδες αύξηση του γλυκαιμικού δείκτη



26% υψηλότερος κίνδυνος εμφάνισης ΣΔτ2 ανά 80 g αύξηση του ημερήσιου γλυκαιμικού φορτίου

Livesey G, Taylor R, Livesey HF, et al. Dietary glycemic index and load and the risk of type 2 diabetes: assessment of causal relations. *Nutrients* 2019;11(6):1436.

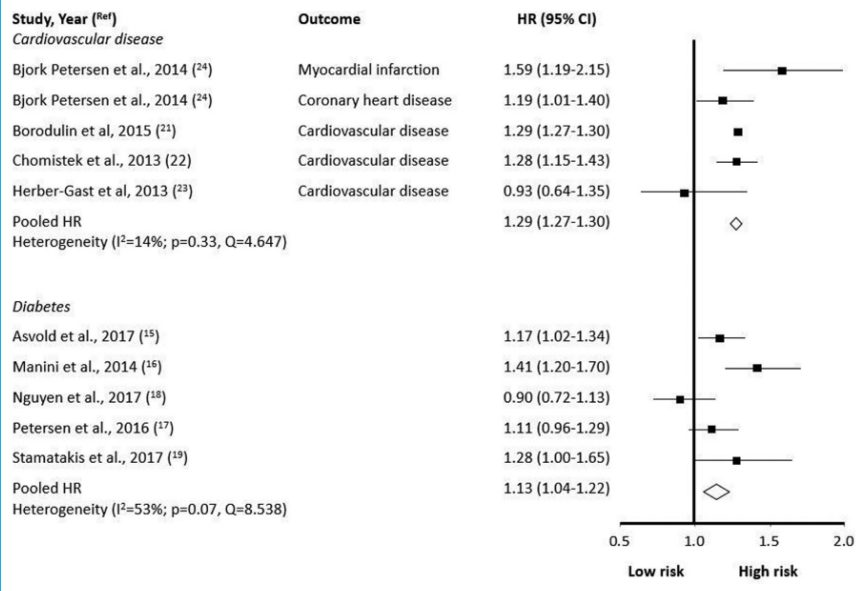
# ΕΝΤΑΣΗ ΣΩΜΑΤΙΚΗΣ ΑΣΚΗΣΗΣ ΚΑΙ ΣΧΕΤΙΚΟΣ ΚΙΝΔΥΝΟΣ ΕΜΦΑΝΙΣΗΣ ΔΙΑΒΗΤΗ



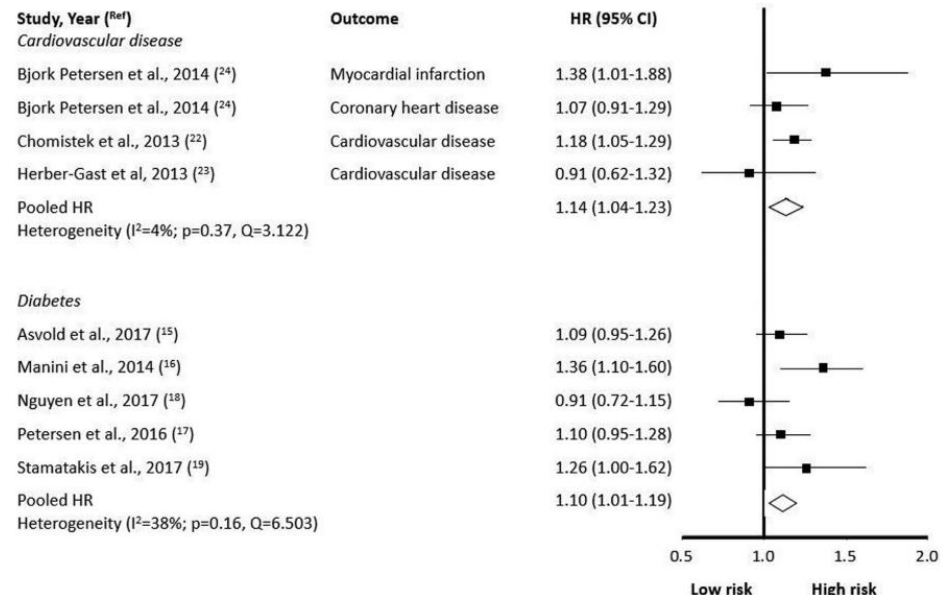
**Fig. 5** Vigorous physical activity, moderate physical activity, low intensity physical activity, and walking and type 2 diabetes, high versus low analyses



# ΜΕΙΩΜΕΝΗ ΣΩΜΑΤΙΚΗ ΔΡΑΣΤΗΡΙΟΤΗΤΑ ΚΑΙ ΚΙΝΔΥΝΟΣ ΕΜΦΑΝΙΣΗΣ ΔΙΑΒΗΤΗ



**Figure 2.** The association between higher total daily sitting time and health outcomes without adjustment for physical activity. HR, hazard ratio.



**Figure 3.** The association between higher total daily sitting time and health outcomes with adjustment for physical activity. HR, hazard ratio.

**13%**

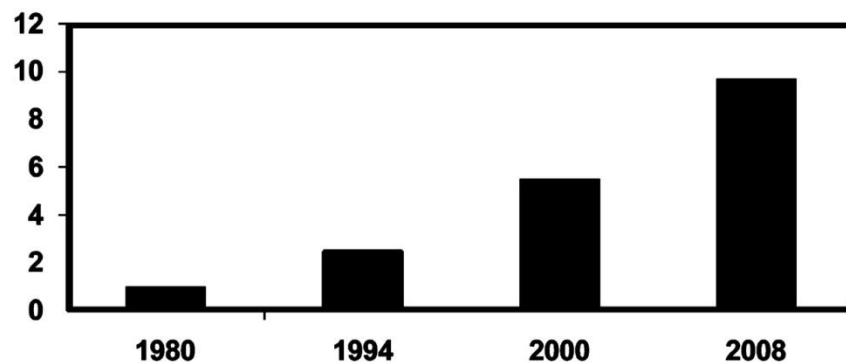
Υψηλότερος κίνδυνος για εμφάνιση ΣΔτ2

**11%**

Υψηλότερος κίνδυνος για εμφάνιση ΣΔτ2 μετά από προσαρμογή για τα επίπεδα φυσικής δραστηριότητας

Diabetes Care. 2011;34(6):1249-1257. doi:10.2337/dc11-0442

### Escalating Diabetes Epidemic in China



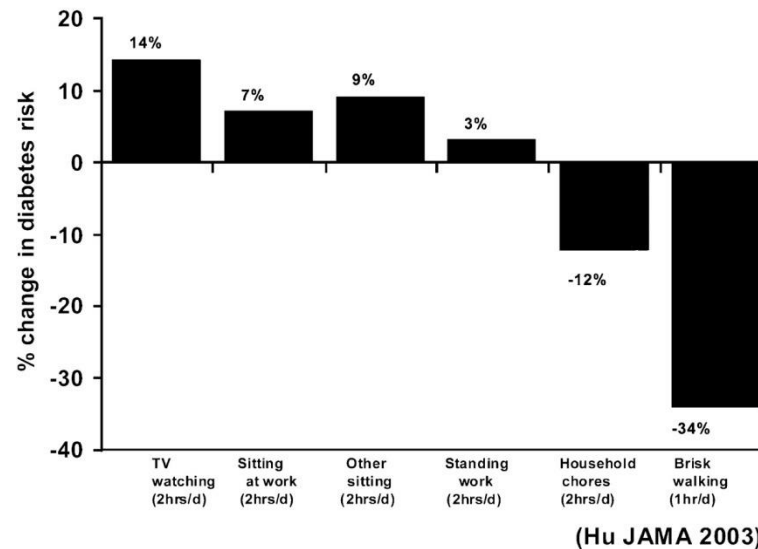
Pan et al. Diabetes Care 1994; Gu et al. Diabetologia 2003; Yang et al. NEJM 2010

#### Figure Legend:

Time trends of diabetes prevalence in Chinese adults. Data are based on population-based cross-sectional surveys conducted in China (Chan et al. [3] and Yang et al. [4]).

Diabetes Care. 2011;34(6):1249-1257. doi:10.2337/dc11-0442

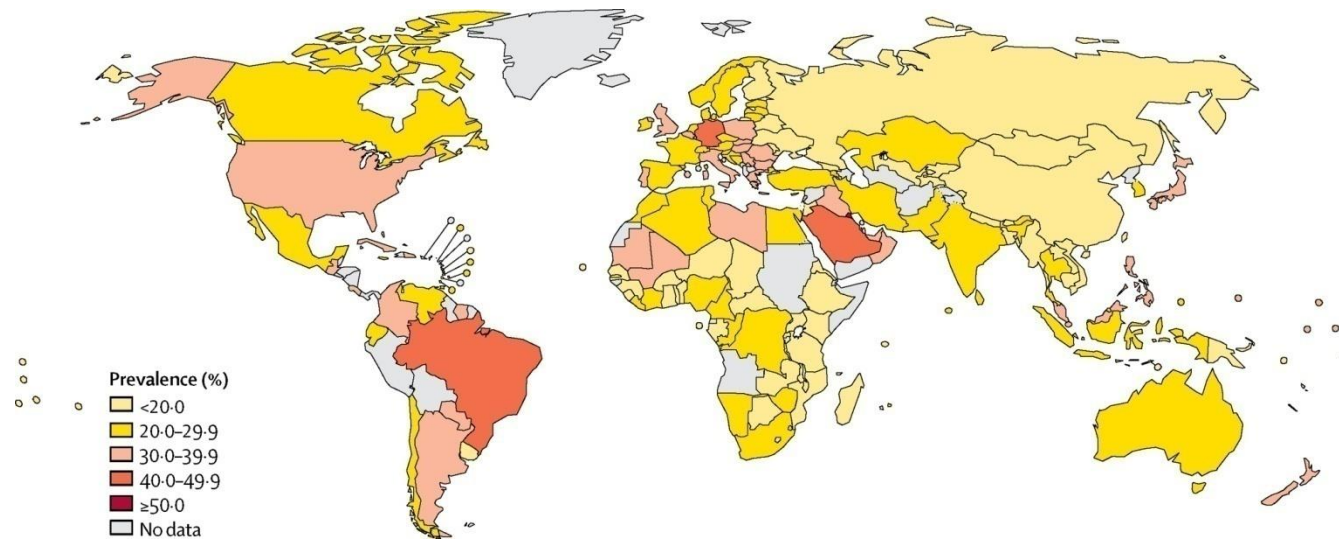
Physical activity and sedentary lifestyle and diabetes risk in the NHS



### Figure Legend:

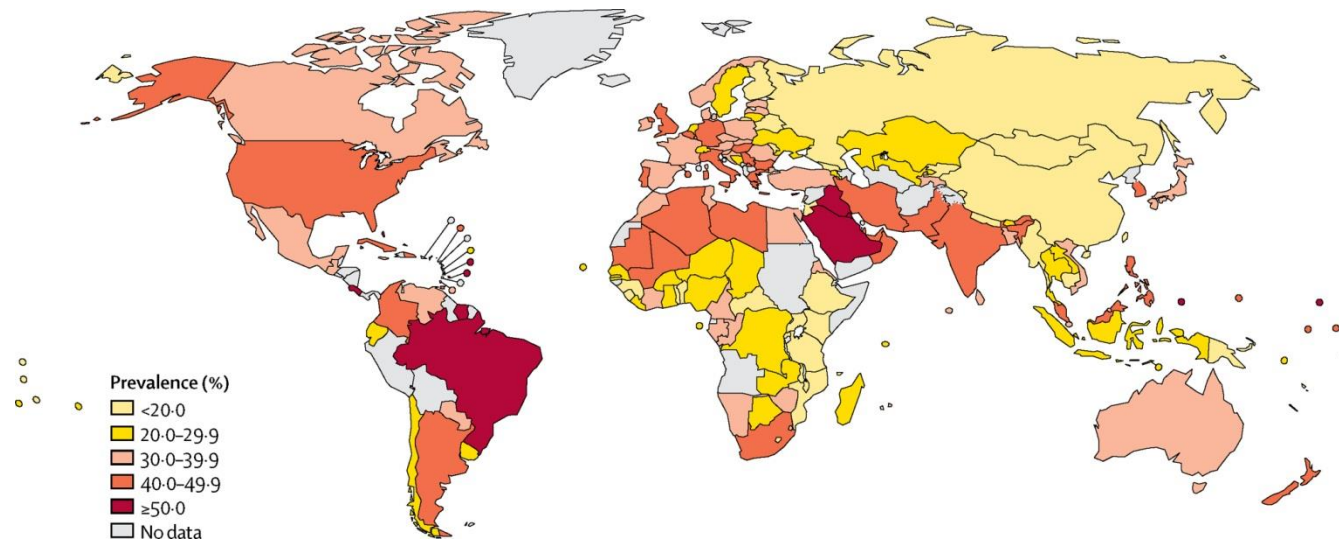
Percentage changes in risk of developing type 2 diabetes among nondiabetic women associated with TV watching, other sedentary behaviors, and walking. Adjusted for age, smoking, alcohol consumption, family history of diabetes, and dietary covariates. All sedentary behavior variables are included simultaneously in the model. Other sitting includes reading, eating meals, and time spent sitting at a desk. Error bars indicate 95% CIs. d, day. Adapted from Hu et al. (26).

# Επιπολασμός ανεπαρκούς σωματικής δραστηριότητας στους άνδρες το 2016



Worldwide trends in insufficient physical activity from 2001 to 2016: a pooled analysis of 358 population-based surveys with 1.9 million participants. *Regina Guthold, PhD, Gretchen A Stevens, DSc, Leanne M Riley, MSc, Prof Fiona C Bull, PhD* *The Lancet Global Health* 2018 6:e1077-e1086 DOI: (10.1016/S2214-109X(18)30357-7)

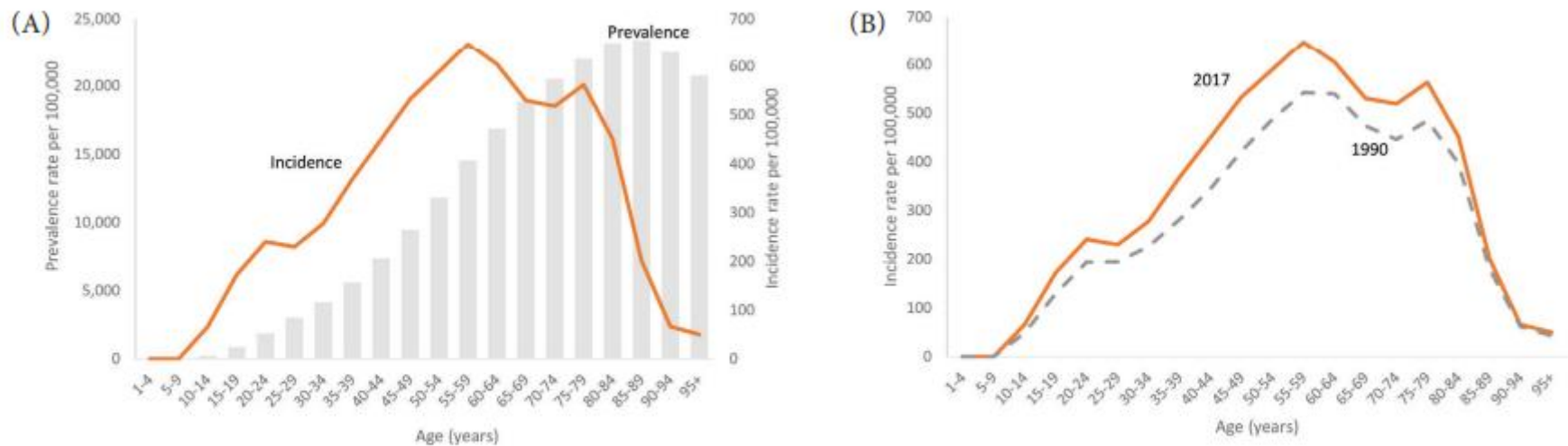
# Επιπολασμός ανεπαρκούς σωματικής δραστηριότητας στις γυναίκες το 2016



Worldwide trends in insufficient physical activity from 2001 to 2016: a pooled analysis of 358 population-based surveys with 1.9 million participants. *Regina Guthold, PhD, Gretchen A Stevens, DSc, Leanne M Riley, MSc, Prof Fiona C Bull, PhD* *The Lancet Global Health* 2018 6:e1077-e1086 DOI: (10.1016/S2214-109X(18)30357-7)



Συχνότερη ηλικία εμφάνισης: 55-59 έτη  
Εκδηλώνεται ελαφρώς νωρίτερα στους άνδρες.



**Figure 3** | Age distribution of diabetes mellitus type 2, worldwide. (A) Incidence vs. prevalence (both 2017). (B) Incidence in 1990 vs. 2017.  $p < 0.0001$ , chi-square test.



## Highlights

Το 2021, οι εκτιμήσεις του IDF δείχνουν ότι:



### 1 στους 10

Ενήλικες (20-79  
χρονών)  
έχει διαβήτη  
537 εκ. άνθρωποι



### 1 στους 18

Ενήλικες (20-79 χρονών) έχει  
μειωμένη γλυκόζη νηστείας  
319 εκ. άνθρωποι



### 3 στους 4

Ανθρώπους με διαβήτη ζουν  
σε χώρες με χαμηλό και  
μεσαίο εισόδημα



### 1 στους 2

Ενήλικες δεν έχει  
διαγνωστεί  
240 εκ. άνθρωποι



### 1 στις 6

Ζωντανές γεννήσεις (21 εκ.)  
επηρεάζονται από  
υπεργλυκαμία κατά την  
εγκυμοσύνη,  
το 80% είναι μητέρες με GDM



### 11.5%

Των παγκόσμιων δαπανών  
υγείας ξοδεύεται στον διαβήτη  
(USD 966 δις)



### 1 στους 9

ενήλικες (20-79 χρονών)  
έχει διαταραγμένη ανοχή  
γλυκόζης  
541 εκ. άνθρωποι



### 1.2

#### εκατομμύρια

Παιδιά και έφηβοι κάτω των  
20 χρόνων έχουν διαβήτη  
τύπου 1



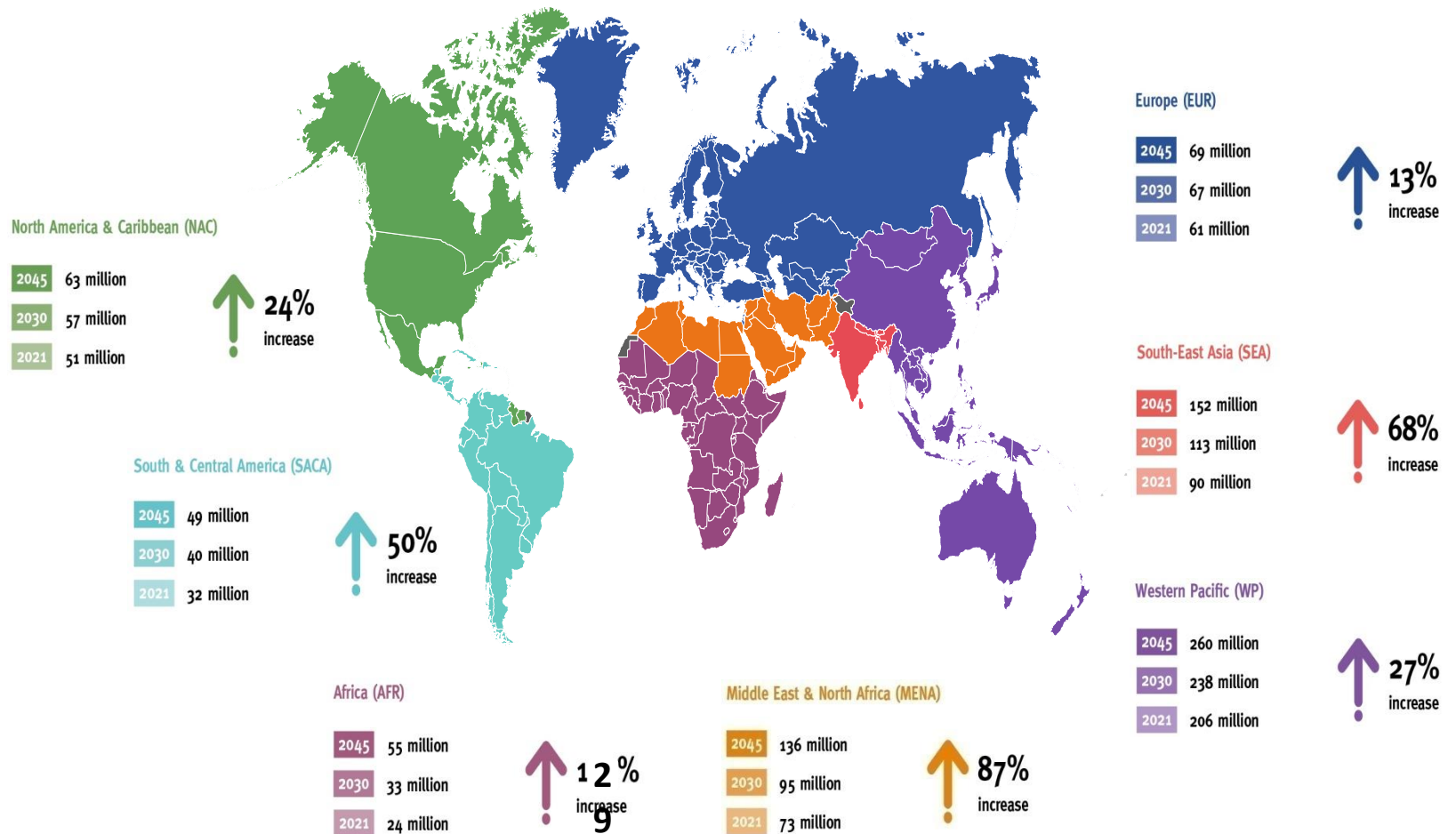
### 6.7 εκατομμύρια

Θάνατοι αποδίδονται στον  
διαβήτη



# Number of people with diabetes

Aged 20–79 years globally and by IDF region

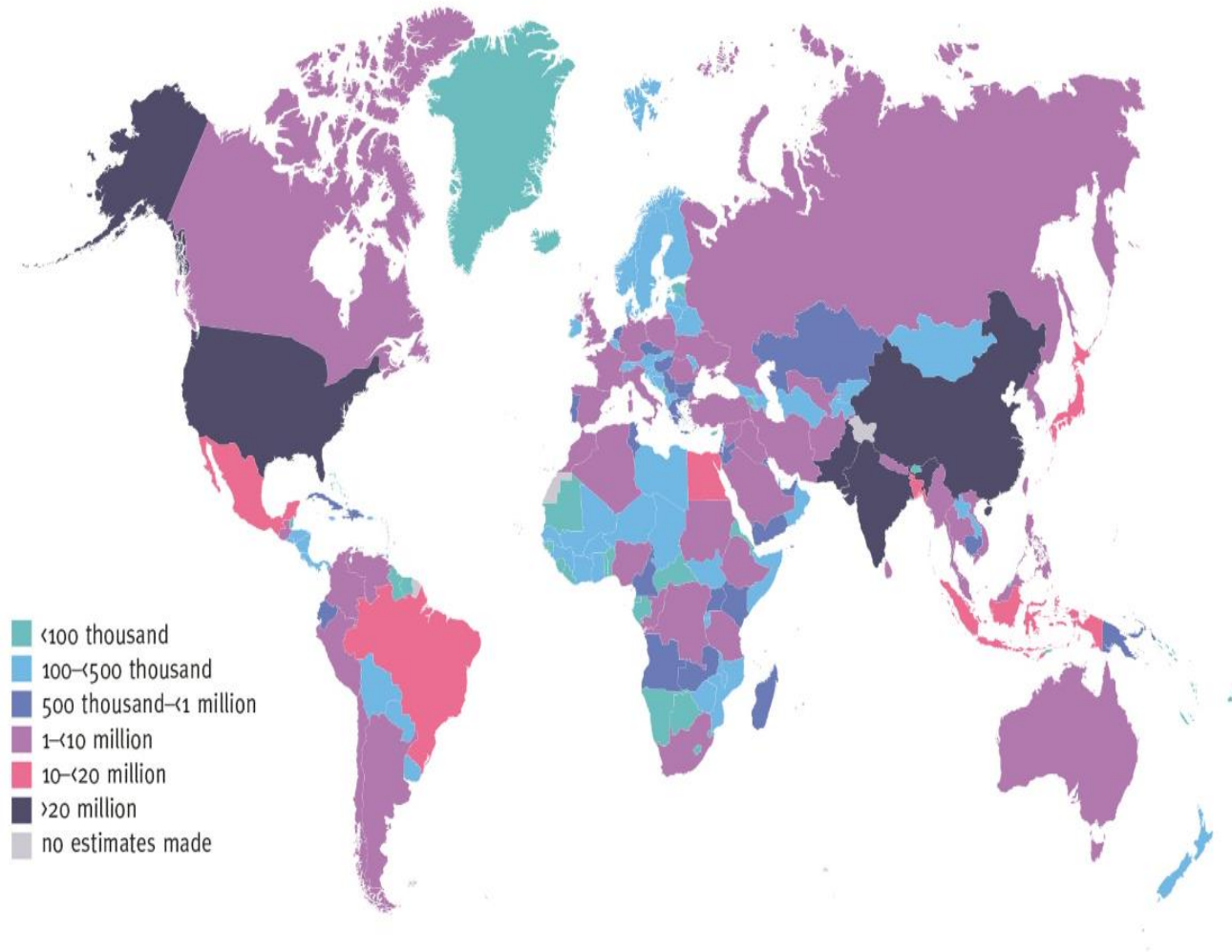






# Number of adults with diabetes

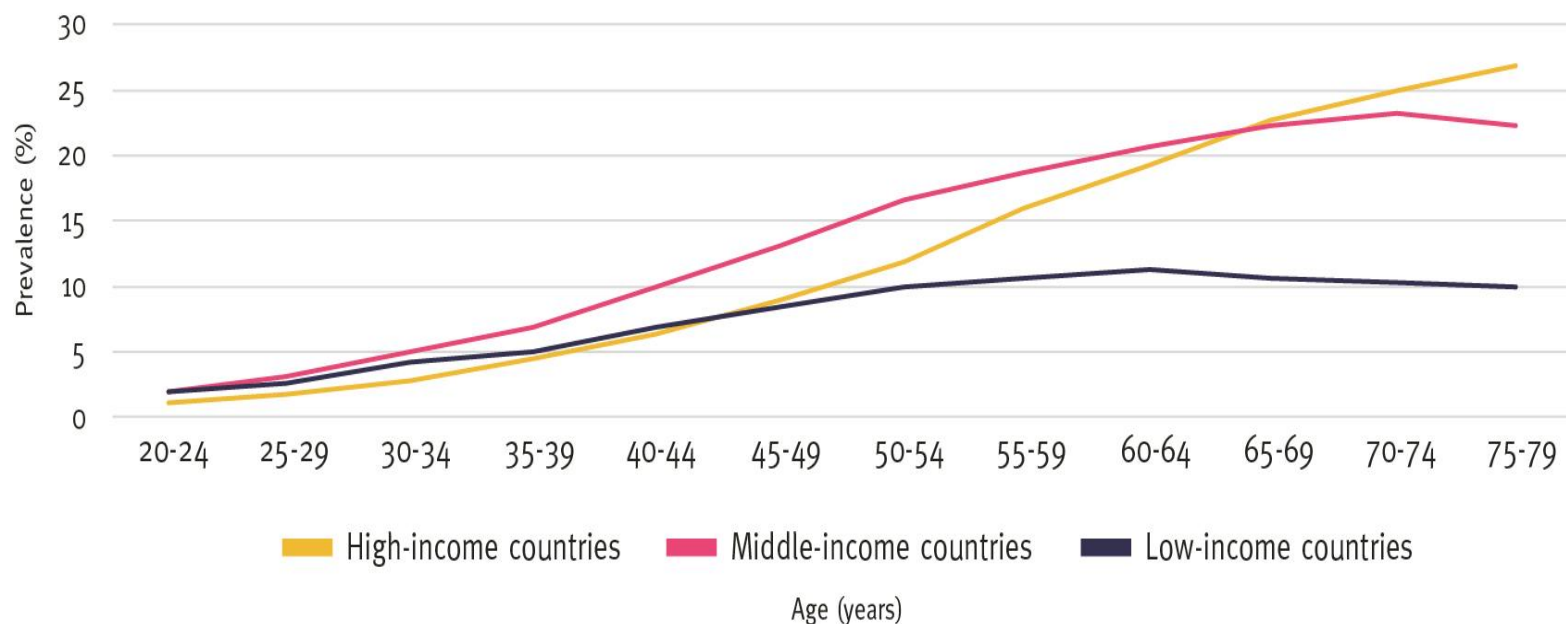
Aged 20–79 years, 2021





# Prevalence of diabetes

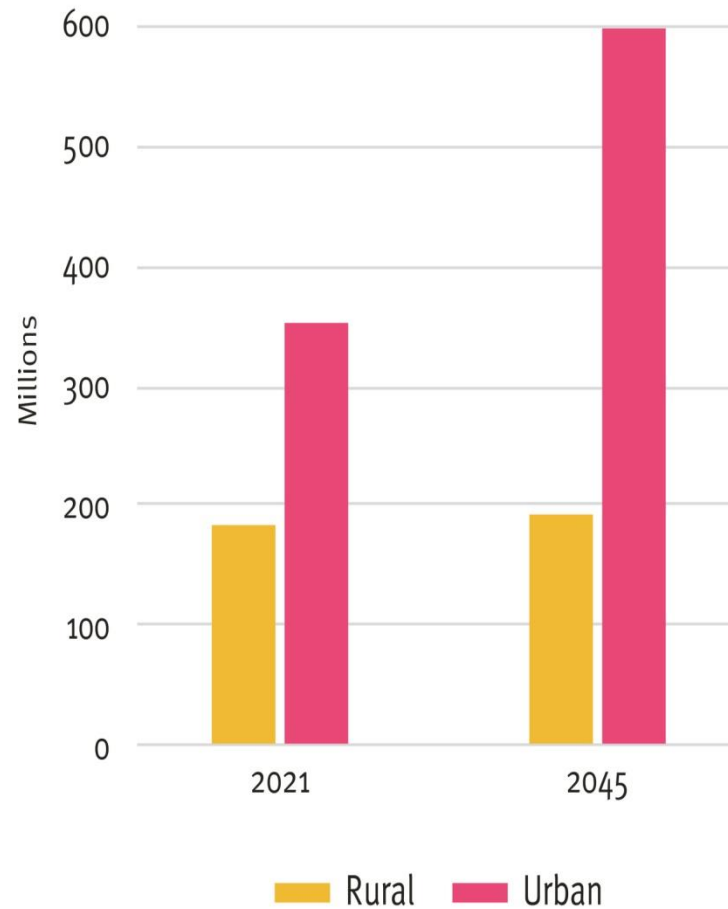
By age and income group (%), 2021





## Number of people with diabetes

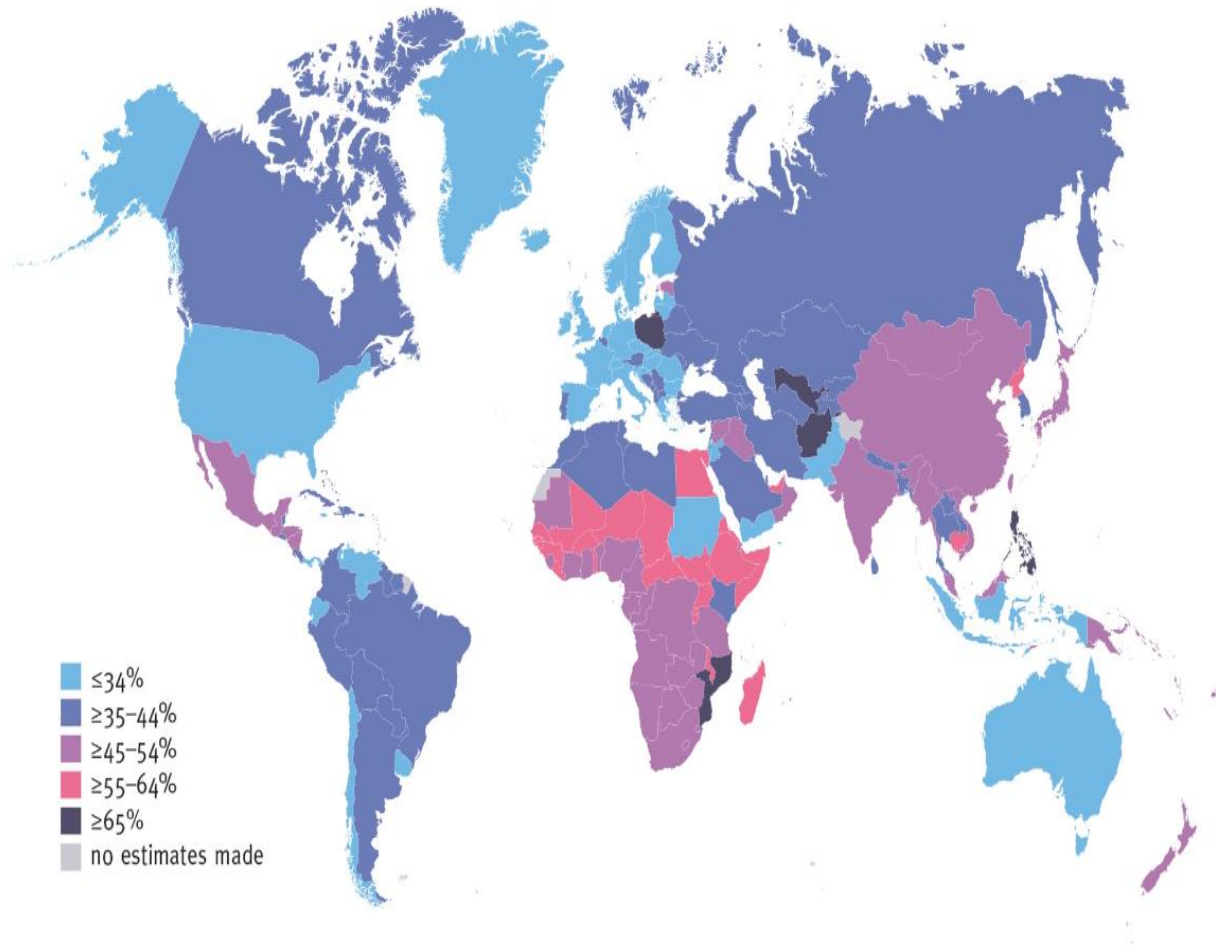
In adults aged 20–79 years living in urban and rural areas in 2021 and 2045





# Proportion of adults with undiagnosed diabetes

Aged 20–79 years by country in 2021



## Προσυμπτωματικός έλεγχος (screening) ΣΔ

- Ειδικό ερωτηματολόγιο ανίχνευσης του κινδύνου ανάπτυξης ΣΔτ2 (π.χ. ερωτηματολόγιο FINDRISC) είτε
- Μέτρηση της γλυκόζης νηστείας

σε άτομα που πληρούν ορισμένες προϋποθέσεις, οι οποίες θεωρείται ότι αυξάνουν τον κίνδυνο για την εμφάνιση ΣΔτ2

## Ενδείξεις για προσυμπτωματικό έλεγχο ΣΔ

1. Άτομα υπέρβαρα ή παχύσαρκα ( $\Delta\text{M}\Sigma \geq 25 \text{ kg/m}^2$ ) που έχουν έναν τουλάχιστον από τους παρακάτω παράγοντες:

α) Οικογενειακό ιστορικό ΣΔ σε συγγενείς 1ου βαθμού (γονείς, αδέρφια, παιδιά)

β) Ιστορικό υπέρτασης ή καρδιαγγειακής νόσου

γ) Ιστορικό δυσλιπιδαιμίας (υψηλά τριγλυκερίδια [ $>250 \text{ mg/dL}$ ], χαμηλή HDL [ $<35 \text{ mg/dL}$ ])

δ) Γυναίκες με σύνδρομο πολυκυστικών ωοθηκών

ε) Καταστάσεις που σχετίζονται με αντίσταση στην ινσουλίνη (π.χ. μελανίζουσα ακάνθωση)

2. Ιστορικό προδιαβήτη

3. Ιστορικό ΣΔ κύησης

4. Για όλο τον πληθυσμό μετά την ηλικία των 45 ετών

5. Λοίμωξη από HIV

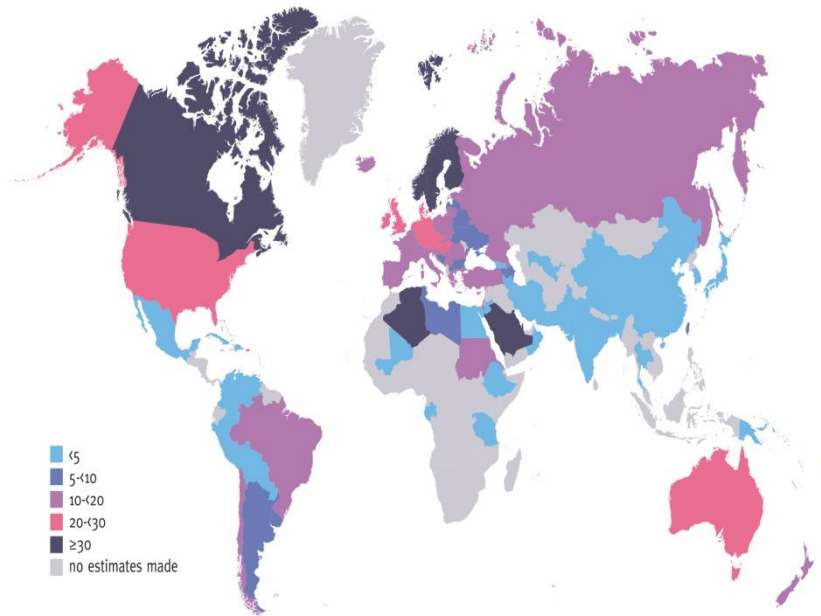
Εάν τα αποτελέσματα του προσυμπτωματικού ελέγχου είναι φυσιολογικά, θα πρέπει να επαναλαμβάνονται τουλάχιστον ανά 3ετία, με πιθανό πιο συχνό έλεγχο ανάλογα με τα αρχικά ευρήματα και τους παράγοντες κινδύνου.



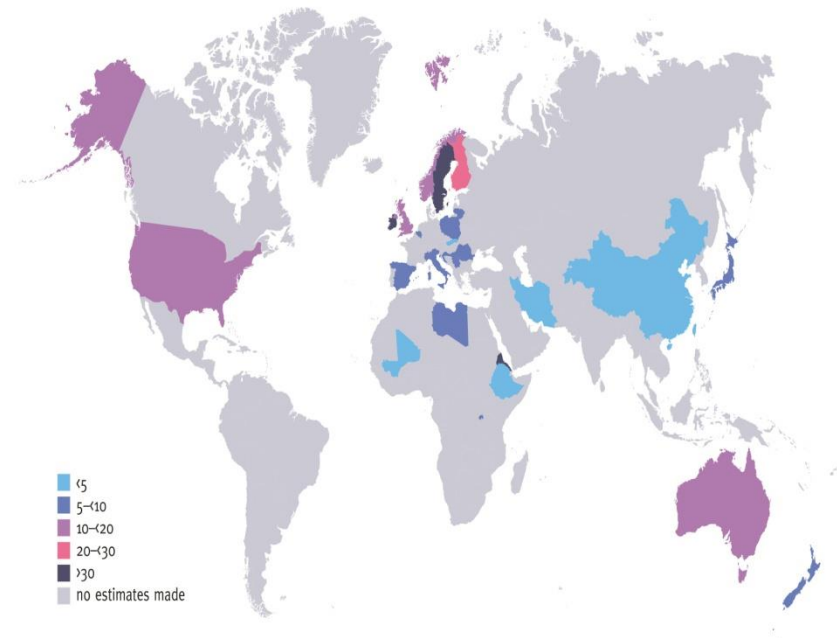
# Age-sex standardised incidence rates of type 1 diabetes

Per 100,000 population per annum in children and adolescents aged 0–14 years and incidence of adult-onset type 1 diabetes in adults aged 20–40 years

**Map 3.4** Age-sex standardised incidence rates (per 100,000 population per annum) of type 1 diabetes in children and adolescents aged 0–14 years



**Map 3.5** Incidence of adult-onset type 1 diabetes in adults 20–40 years



Annual incidence of type 1 diabetes (per 100,000 per year) among adults aged 20–40 years (men and women) per country/region (estimated from studies between 1973 and 2020)

# ΕΠΙΠΤΩΣΗ ΣΔτ1

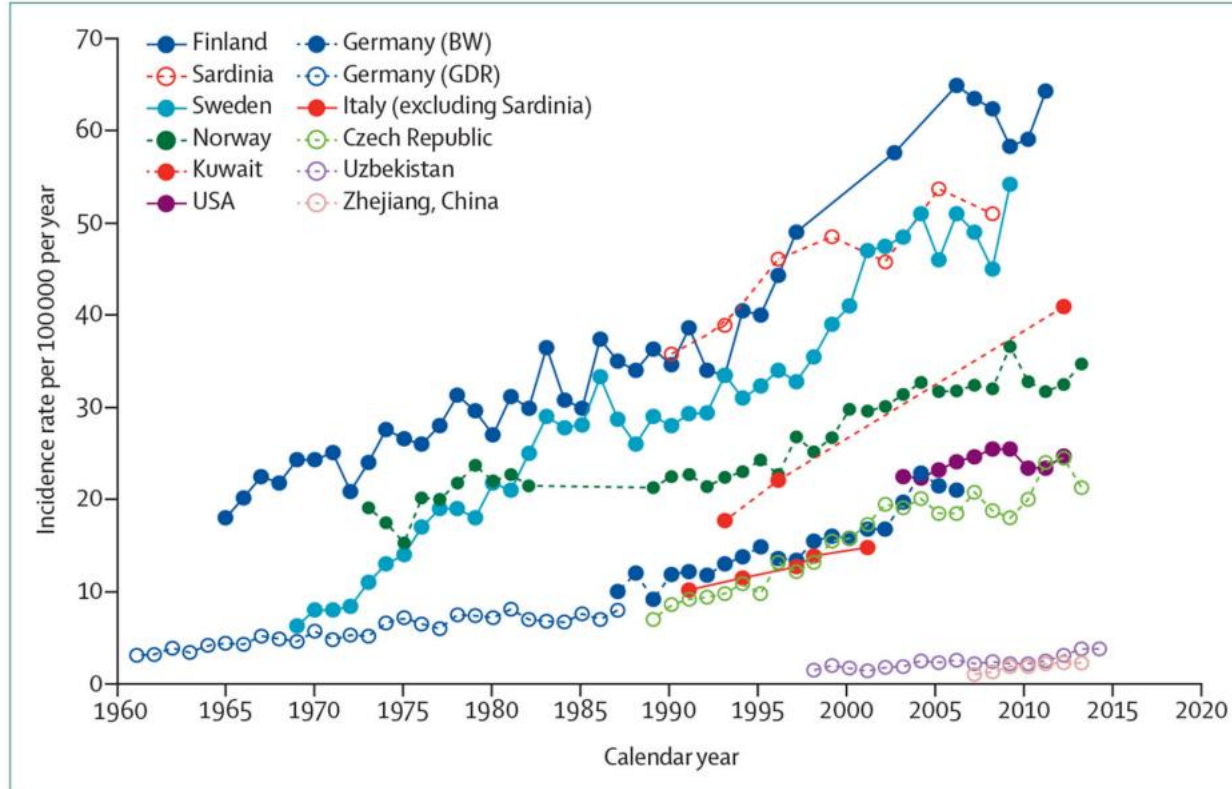
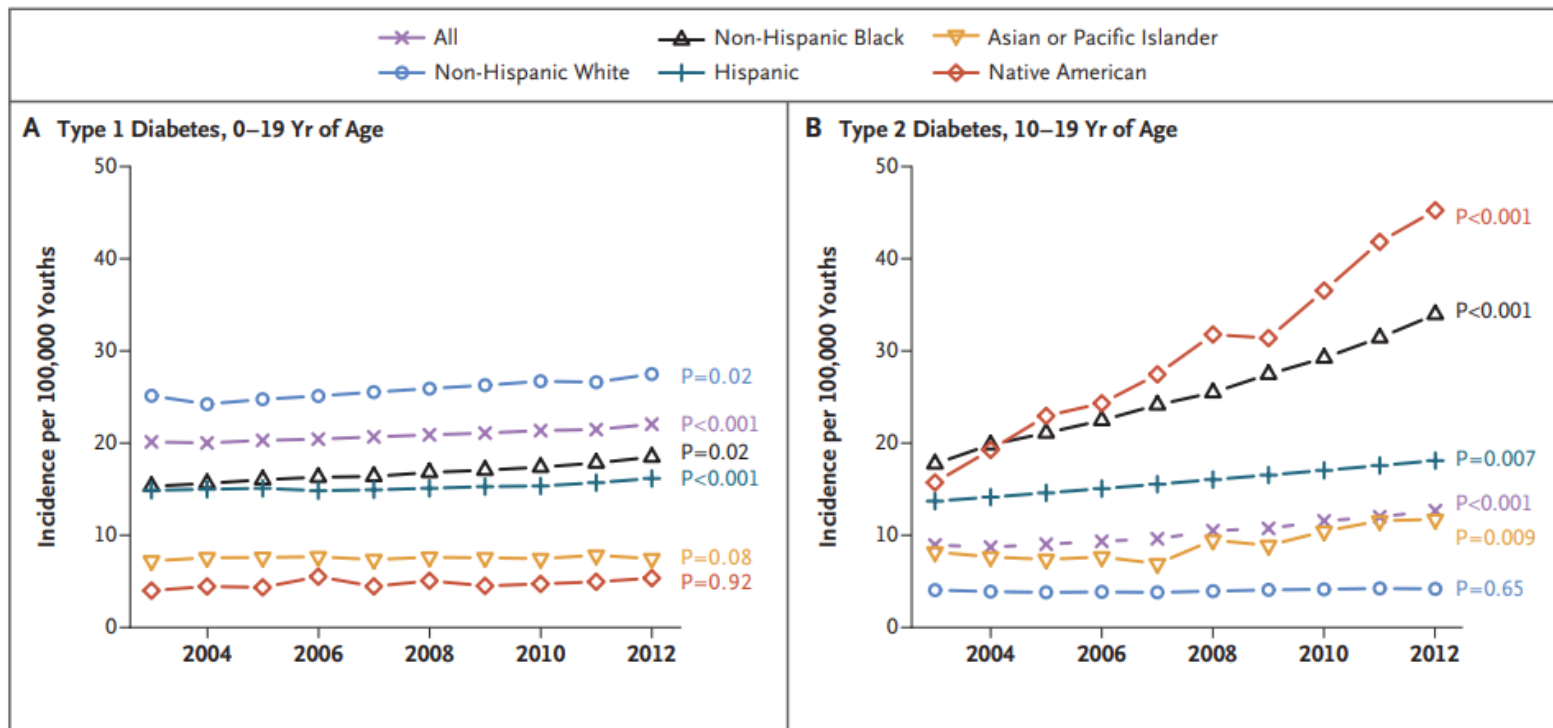


Figure 1: Time trends in incidence of type 1 diabetes

Jill M Norris, Randi K Johnson, Lars C Stene. Type 1 diabetes—early life origins and changing epidemiology. *Lancet Diabetes Endocrinol.* 2020 March ; 8(3): 226–238. doi:10.1016/S2213-8587(19)30412-7.





Ανοδική τάση στη συχνότητα εμφάνισης διαβήτη τύπου 1 συνολικά (από 19,5 περιπτώσεις ανά 100.000 νέους ετησίως το 2002-2003 σε 21,7 περιπτώσεις ανά 100.000 νέους ετησίως το 2011-2012, ετήσια αύξηση 1,4%.

Σημαντική αύξηση στη συχνότητα εμφάνισης διαβήτη τύπου 2 (από 9,0 περιπτώσεις ανά 100.000 νέους ετησίως το 2002-2003 σε 12,5 περιπτώσεις ανά 100.000 νέους ετησίως το 2011-2012, αύξηση 7,1%.

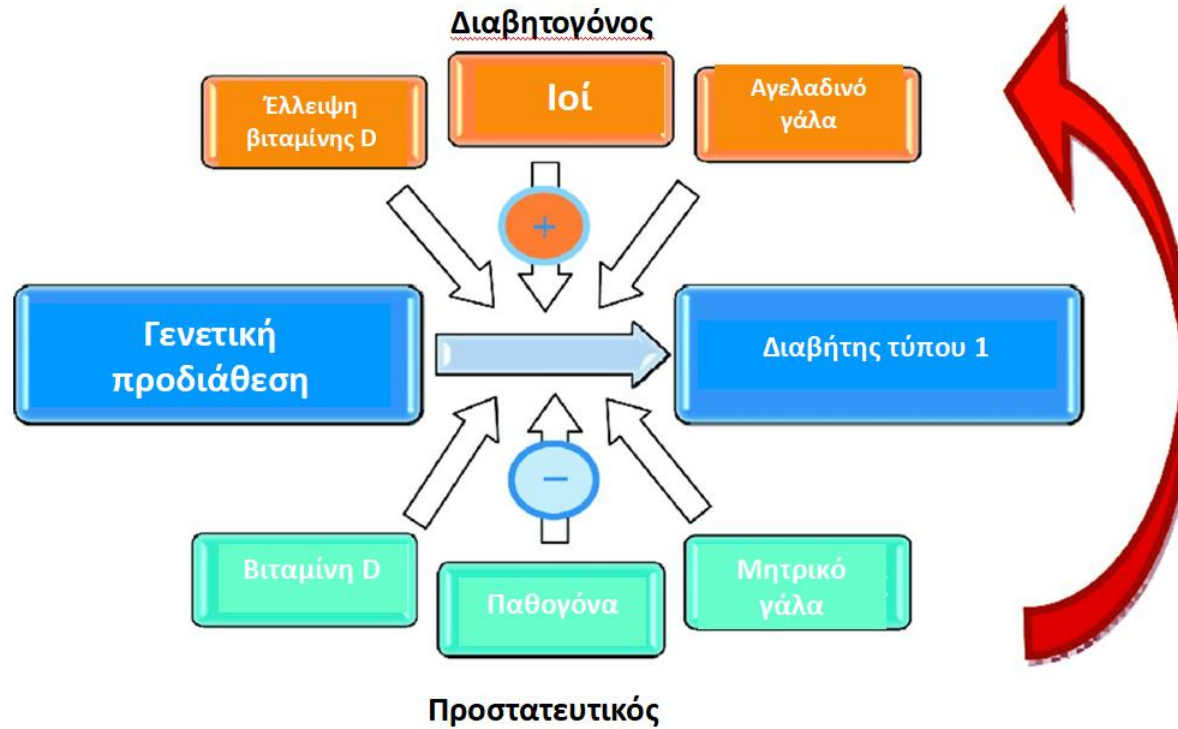
> Diabet Med. 2017 Sep;34(9):1252-1258. doi: 10.1111/dme.13345. Epub 2017 Mar 19.

## Updated 24-year trend of Type 1 diabetes incidence in children in Poland reveals a sinusoidal pattern and sustained increase

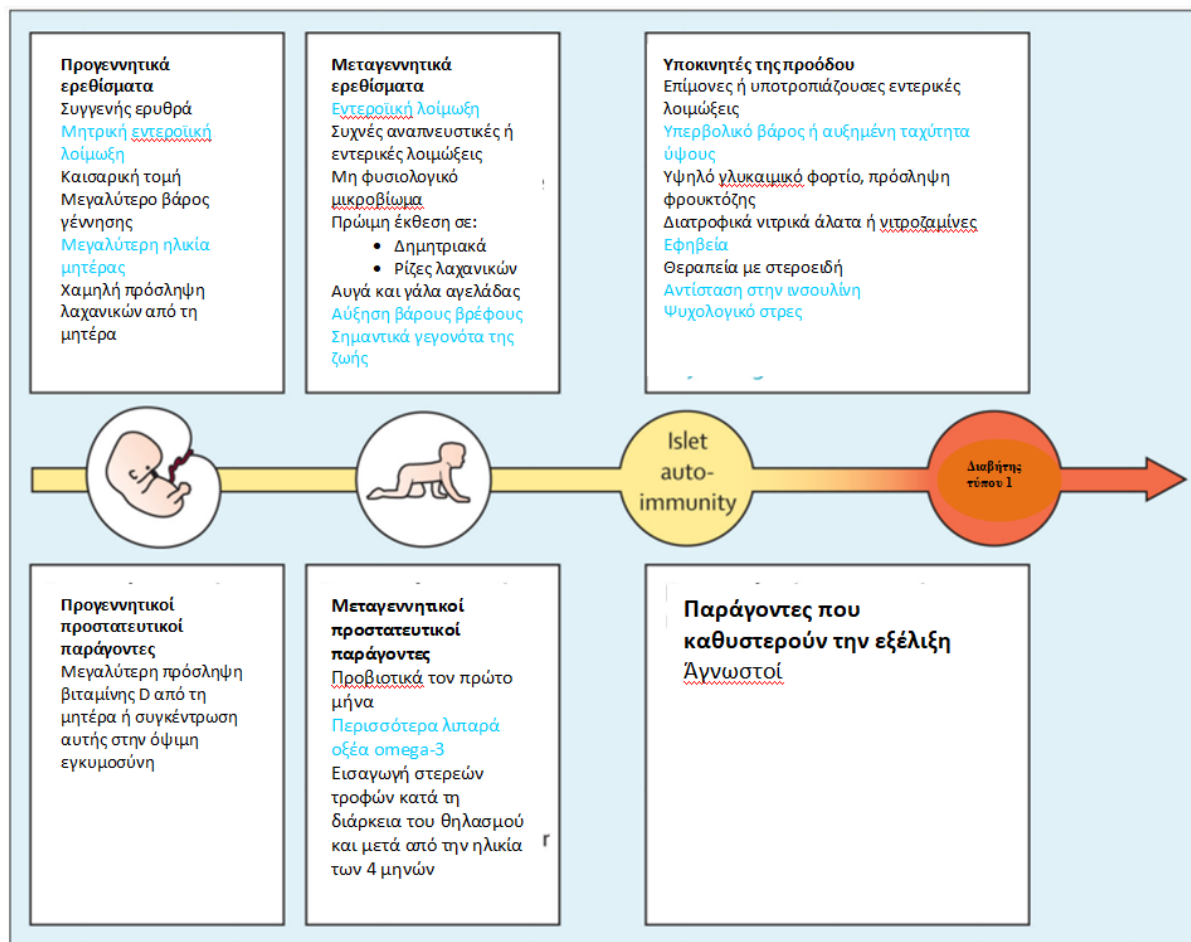
A Chobot <sup>1</sup>, J Polanska <sup>2</sup>, A Brandt <sup>3</sup>, G Deja <sup>4</sup>, B Glowinska-Olszewska <sup>5</sup>, O Pilecki <sup>6</sup>,  
A Szadkowska <sup>7</sup>, M Mysliwiec <sup>3</sup>, P Jarosz-Chobot <sup>4</sup>

Οι μεγαλύτερες παρατηρούμενες αυξήσεις στη συχνότητα εμφάνισης του διαβήτη τύπου 1 είναι μεταξύ παιδιών ηλικίας κάτω των 15 ετών, ιδιαίτερα σε παιδιά ηλικίας κάτω των 5 ετών

Σχήμα 4



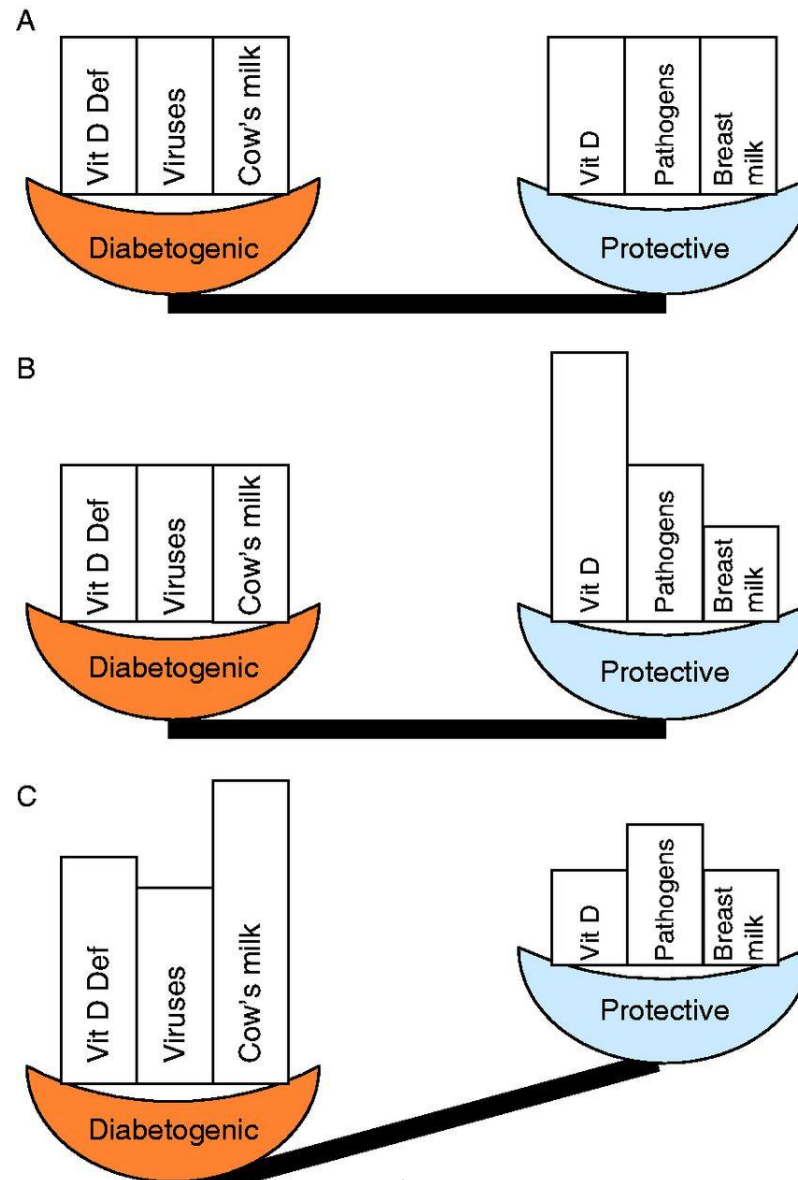
Summary of the 'balance shift' model. Protective factors (vitamin D, early exposure to pathogens and breast milk) are opposed by diabetogenic factors (vitamin D deficiency, viruses and cow's milk). In healthy individuals, a balance is maintained, but in patients suffering from type 1 diabetes, a shift towards diabetogenic factors occurs. Full colour version of this figure available via <http://dx.doi.org/10.1530/JME-13-0067>.



**Σχήμα 1.**  
 Περιβαλλοντικά ερεθίσματα και προστατευτικοί παράγοντες για αυτοανασία και ενισχυτές για εξέλιξη σε διαβήτη τύπου 1, για τον οποίο έχει αναφερθεί μία συσχέτιση. Ερεθίσματα και παράγοντες με τις ισχυρότερες ενδείξεις παρουσιάζονται με μπλε χρώμα.

Rewers M, Ludvigsson J. Environmental risk factors for type 1 diabetes. Lancet 2016; 387: 2340– 48. [PubMed: 27302273]

Figure 5



Analogy of the 'balance shift' model. (A) In healthy individuals, protective and diabetogenic factors are balanced at all times. (B) A change in this balance is normally compensated by other factors. For example, a decrease in breast-feeding might be compensated by an increase in vitamin D. (C) In diabetic patients, however, this compensatory mechanism does not occur, tilting the scale towards the diabetogenic side and therefore causing type 1 diabetes. Vit D, vitamin D; Def, deficiency. Full colour version of this figure available via <http://dx.doi.org/10.1530/JME-13-0067>.



# Hyperglycaemia in pregnancy

Per IDF region, 2021



## Παράγοντες κινδύνου για Διαβήτη κύησης

1. Προηγούμενος διαβήτης κύησης
2. Εθνικότητες με υψηλό επιπολασμό Διαβήτη
3. Ηλικία μητέρας > 35 έτη
4. Οικογενειακό ιστορικό διαβήτη (1<sup>ου</sup> βαθμού συγγενής)
5. Παχυσαρκία (BMI > 30)
6. Προηγούμενη μακρυσωμία (βάρος γέννησης > 4500 gr)
7. Σύνδρομο πολυκυστικών ωοθηκών
8. Ιατρογενώς: γλυκοκορτικοειδή και αντιψυχωτικά φάρμακα

**Table 2 – The pooled prevalence of gestational diabetes mellitus.**

Region	Non-standardized prevalence, %	Standardized prevalence1*, %	Standardized prevalence2**, %
Global	6.6 (6.6–6.7)	14.2 (14.2–14.3)	14.0 (13.97–14.04)
IDF regions			
MENA	30.2 (29.4–30.9)	30.2 (29.5–30.9)	27.6 (26.9–28.4)
SEA	12.7 (12.3–13.2)	23.7 (23.2–24.3)	20.8 (20.2–21.4)
WP	12.4 (12.3–12.5)	14.7 (14.7–14.8)	14.7 (14.7–14.8)
AFR	7.8 (7.2–8.5)	14.3 (14.2–14.4)	14.2 (14.0–14.4)
SACA	7.6 (7.5–7.8)	14.2 (14.0–14.5)	10.4 (10.1–10.7)
EUR	7.0 (7.0–7.1)	12.3 (11.5–13.1)	7.8 (7.2–8.4)
NAC	6.0 (6.0–6.0)	11.7 (11.7–11.8)	7.1 (7.0–7.2)
World Bank Income countries			
Low income countries	11.7 (10.0–13.5)	14.7 (12.9–16.7)	12.7 (11.0–14.6)
Middle income countries	7.7 (7.6–7.9)	9.9 (9.7–10.1)	9.2 (9.0–9.3)
High income countries	6.6 (6.6–6.7)	14.4 (14.3–14.4)	14.2 (14.1–14.2)

Abbreviations: IDF, International Diabetes Federation; MENA, Middle East and North Africa; SEA, South-East Asia; WP, Western Pacific; AFR, Africa; SACA, South and Central America, EUR, Europe; NAC, North America and Caribbean.

\* Standardized prevalence1: The prevalence of GDM standardized to IADPSG's criteria and universal OGTT strategy.

\*\* Standardized prevalence2: The prevalence of GDM standardized to IADPSG's criteria, universal OGTT strategy and 25–30 years of age.



**TABLE 5 |** Weighted national, sub-regional, and regional GDM prevalence in Europe.

Country	No. of studies	Tested sample	GDM	GDM prevalence				Heterogeneity measures			
				Range (%)	Median (%)	Weighted prev. %	95% CI	I <sup>2</sup> (%) <sup>2</sup>	95% PI (%) <sup>3</sup>	P-value <sup>4</sup> (fixed)	
<b>Eastern Europe</b>											p<0.001 (p<0.001)
Hungary	2	10,962	1,660	10.1–14.9	12.5	15.1	14.4–15.8	–	–	–	
Poland	5	1,042	298	8.0–78.0	13.4	34.1	8.8– 65.8	427.8 (p<0.001)	99.1	0.00–100	
Republic of Moldova	1	118	78	–	–	66.1	57.2–74.0	–	–	–	
Overall Eastern	8	12,122	2,036	8.0–78.0	14.2	31.5	19.8–44.6	665.8 (p<0.001)	98.9	0.8–79.0	
<b>Northern Europe</b>											p<0.001 (p<0.001)
Denmark	17	474,094	19,350	0.9– 40.1	12.0	6.3	3.7–9.3	22,782.0 (p<0.001)	99.9	0.00–24.1	
Finland	22	749,342	129,062	4.9–36.3	17.3	18.4	16.7–20.2	6,728.1 (p<0.001)	99.7	10.6–27.8	
Iceland	3	168	17	2.3–28.9	9.1	11.0	0.6–29.7	17.5 (p<0.001)	88.6	–	
Ireland	10	8,572	309	1.8–58.4	9.3	18.9	10.0–29.9	376.6 (p<0.001)	97.6	0.0–64.1	
Lithuania	3	3,377	196	2.3–23.6	5.1	8.5	1.4–20.2	45.1 (p<0.001)	95.6	–	
Norway	19	1,332,092	25,092	1.1–63.0	2.0	4.6	3.8–5.5	6,094.2 (p<0.001)	99.7	1.6–8.9	
Sweden	20	7,479,062	74,073	0.2–34.6	1.5	1.8	1.5–2.2	18,241.0 (p<0.001)	99.9	0.6–3.8	
United Kingdom	28	232,214	10,113	1.9–29.8	11.2	11.7	9.4–14.4	6,947.8 (p<0.001)	99.6	1.8–28.6	
Overall	122	10,278,921	258,212	0.2–63.0	7.5	8.9	7.9–10.0	365,513.4 (p<0.001)	100.0	1.0–23.4	
<b>Western Europe</b>											p<0.001 (p<0.001)
Austria	5	8,897	1,042	4.2–46.0	38.3	27.3	13.0–44.3	796.0 (p<0.001)	99.5	0.0–90.4	
Belgium	2	14,773	614	4.1–11.6	7.9	3.9	3.6–4.3	–	–	–	
France	16	3,109,492	189,173	1.2–43.8	7.5	8.0	5.9–10.4	22,936.1 (p<0.001)	100.0	2.7–17.0	
Germany	18	1,058,242	101,724	3.4–27.6	7.0	7.3	5.1–9.9	61,693.8 (p<0.001)	99.9	0.8–21.3	
Netherlands	4	17,442	3,717	4.5–31.6	14.0	13.9	1.9–34.1	2,340.4 (p<0.001)	99.9	0.0–100.0	
Switzerland	10	3,877	583	10.0–31.7	16.1	17.0	11.3–23.4	120.3 (p<0.001)	92.5	1.7–41.4	
Overall Western	55	4,212,723	296,853	1.2–46.0	8.6	10.7	9.5–12.0	73,483.9 (p<0.001)	99.9	3.4–21.4	
<b>Southern Europe</b>											p<0.001 (p<0.001)
Croatia	13	88,086	4,676	1.1–23.1	4.7	5.8	3.2–9.2	3,635.5 (p<0.001)	99.7	0.0–24.0	
Cyprus	1	250	49	–	–	19.6	15.0–25.2	–	–	–	
Greece	4	1,122	102	7.6–17.0	9.3	10.0	6.4–14.3	69.6 (p=0.02)	9.9	0.1–31.3	
Italy	32	222,809	13,497	1.3–47.0	11.3	14.3	11.1–18.1	13,063.2 (p<0.001)	99.8	0.9–39.0	

Marilia Silva Paulo , Noor Motea Abdo , Rita Bettencourt-Silva and Rami H. Al-Rifai. Gestational Diabetes Mellitus in Europe: A Systematic Review and Meta-Analysis of Prevalence Studies. Front. Endocrinol., 09 December 2021, Sec. Clinical Diabetes Volume 12 - 2021 | <https://doi.org/10.3389/fendo.2021.691033>

TABLE 5 | Continued

Country	No. of studies	Tested sample	GDM	GDM prevalence				Heterogeneity measures			
				Range (%)	Median (%)	Weighted prev. %	95% CI	Q ( $p$ -value) <sup>1</sup>	$I^2$ (%) <sup>2</sup>	95% PI (%) <sup>3</sup>	$P$ -value <sup>4</sup> (fixed)
<b>OVERALL Europe<sup>8</sup></b>	254	15,572,847	613,293	0.2–78.0	9.9	10.9	10.0–11.8	674,742.8 ( $p < 0.001$ )	100.0	1.4–27.3	

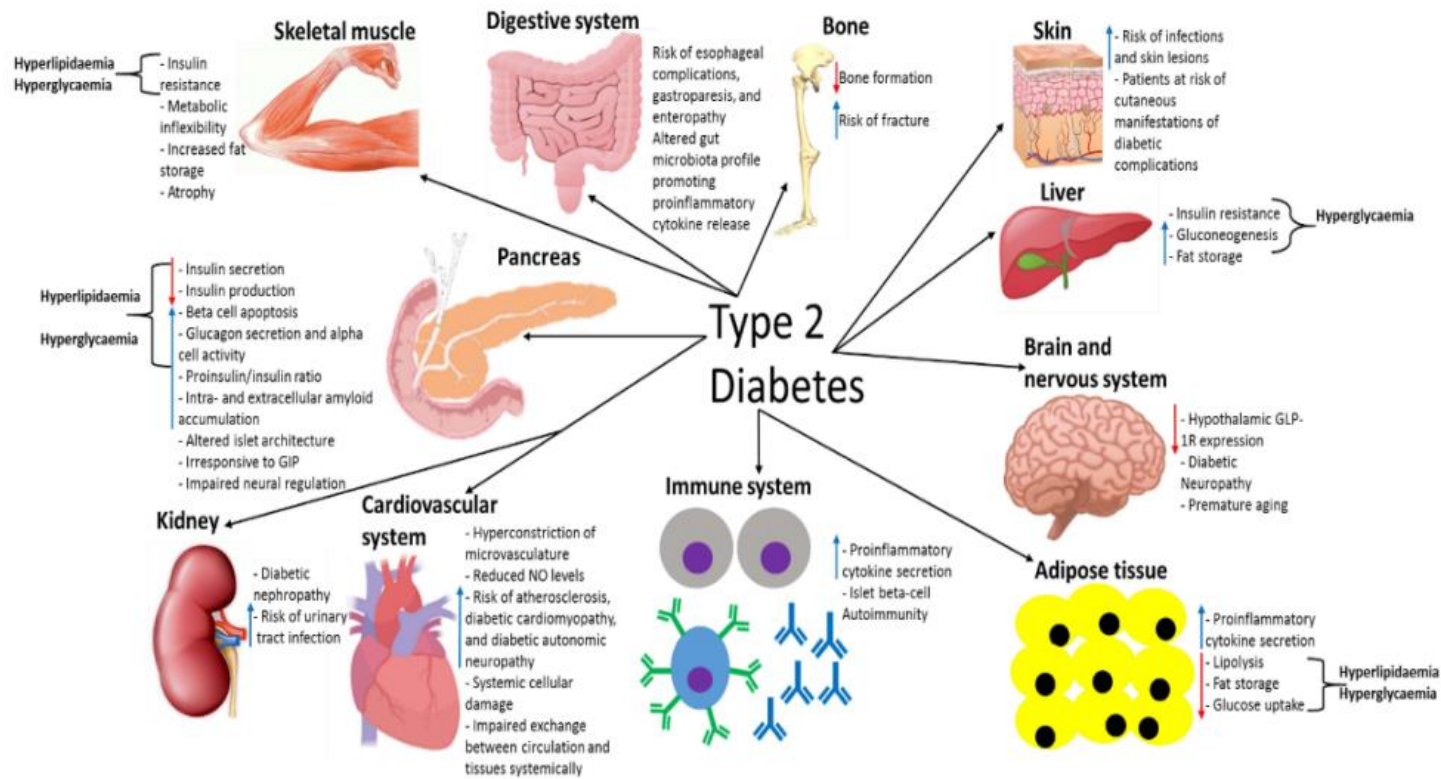
Marilia Silva Paulo , Noor Motea Abdo , Rita Bettencourt-Silva and Rami H. Al-Rifai. Gestational Diabetes Mellitus in Europe: A Systematic Review and Meta-Analysis of Prevalence Studies. Front. Endocrinol., 09 December 2021, Sec. Clinical Diabetes Volume 12 - 2021 | <https://doi.org/10.3389/fendo.2021.691033>

**Table 3.1 Global diabetes estimates and projections**

At a glance	2019	2030	2045
Total world population	7.7 billion	8.6 billion	9.5 billion
Adult population (20–79 years)	5.0 billion	5.7 billion	6.4 billion
<b>Diabetes (20–79 years)</b>			
Global Prevalence	9.3%	10.2%	10.9%
Number of people with diabetes	463.0 million	578.4 million	700.2 million
Number of deaths due to diabetes	4.2 million	-	-
Total health expenditures for diabetes <sup>i</sup>	USD 760.3 billion	USD 824.7 billion	USD 845.0 billion
<b>Hyperglycaemia in pregnancy (20–49 years)</b>			
Proportion of live births affected	15.8%	14.0% <sup>ii</sup>	13.3% <sup>ii</sup>
Number of live births affected	20.4 million	18.3 million	18.0 million
<b>Impaired glucose tolerance (20–79 years)</b>			
Global prevalence	7.5%	8.0%	8.6%
Number of people with impaired glucose tolerance	373.9 million	453.8 million	548.4 million
<b>Type 1 diabetes (0–19 years)</b>			
Number of children and adolescents with type 1 diabetes	1,110,100	-	-
Number of newly diagnosed cases each year	128,900	-	-

i Health expenditures for people with diabetes are assumed to be on average two-fold higher than people without diabetes.

ii Age-adjusted prevalence.



**Figure 7** A summary of the pathological effects that T2D has on different organs and systems throughout the body, some of which directly contribute to the disease-associated dyslipidaemia/hyperglycaemia and subsequent clinical symptoms. This figure and information in its legend are with data adapted from these studies.<sup>94,105,106,111,192-195,206,214,219-222,225,228,232,241,326-328,331</sup>

A Review of Current Trends with Type 2 Diabetes Epidemiology, Aetiology, Pathogenesis, Treatments and Future Perspectives Josh Reed, Stephen Bain & Venkateswarlu Kanamarlapudi. Diabetes, Metabolic Syndrome and Obesity. <https://doi.org/10.2147/DMSO.S319895>

ΣΑΣ ΕΥΧΑΡΙΣΤΩ