



Praktische adviezen rond de ramadan

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‘Hypertensie en Ramadan’

Gezondheidseffecten, (potentiële) risico's en praktische adviezen

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Diabetes en ramadan

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- Diabetes mellitus heeft een hoge prevalentie onder de niet-westerse medelanders van Surinaams-Hindoestaanse, Turkse en Marokkaanse afkomst. De meerderheid van deze patiëntengroep heeft een islamitische achtergrond en neemt actief deel aan het vasten tijdens de ramadan.
- In principe moet aan patiënten met diabetes mellitus een actieve deelname aan de vastenmaand worden ontraden. Dit geldt in het bijzonder voor hoogrisicopatiënten, onder wie patiënten met diabetes mellitus type 1 en type 2-patiënten met vasculaire complicaties, om verergering van het ziekteproces te voorkomen.
- Islamitische patiënten met diabetes mellitus kunnen dispensatie voor de ramadan krijgen.
- Als een diabetespatiënt toch actief deel wil nemen aan het vasten, moet de glucoseverlagende medicatie worden aangepast om de kans op hypoglykemieën zo laag mogelijk te houden. Controle van de patiënt is noodzakelijk 4 of 5 dagen na het begin van het vasten.
- Patiënten die insuline gebruiken dienen tijdens de ramadan wekelijks een dagcurve van de glucose-spiegels bij te houden.

Ned Tijdschr Geneeskd. 2008;152:1871-4



<https://diabetesfederatie.nl/ndf-toolkit-persoonsgerichte-diabeteszorg/diabetes-en-ramadan>

Ramadan

- Religieus
 - 4e zuil van de islam (vasten)
 - Openbaring van de Koran
 - Doel: o.a aanbidding en dankbaarheid
- Sociaal-maatschappelijk
 - Saamhorigheid gevoel
 - Feestelijke sfeer (maaltijden)
 - 'Ied-ul-fitr' (suikerfeest)



Ramadan

- Vasten ('saum' of 'siyam')
 - Uit vroomheid onthouden van alles wat de vast verbreekt
 - Tussen dageraad en zonsondergang (29 of 30 dagen)
 - Verplichting vanaf puberteit

Tijdelijke dispensatie (Gemiste dagen inhalen)	Permanente dispensatie (‘Fidyah’ betalen)
Menstruatie, zwangerschap, lactatie	Kwetsbare ouderen
Reizigers	Psychiatrische aandoeningen
Tijdelijke ziekte	Chronische aandoeningen

Vasten - niet alleen tijdens de Ramadan...

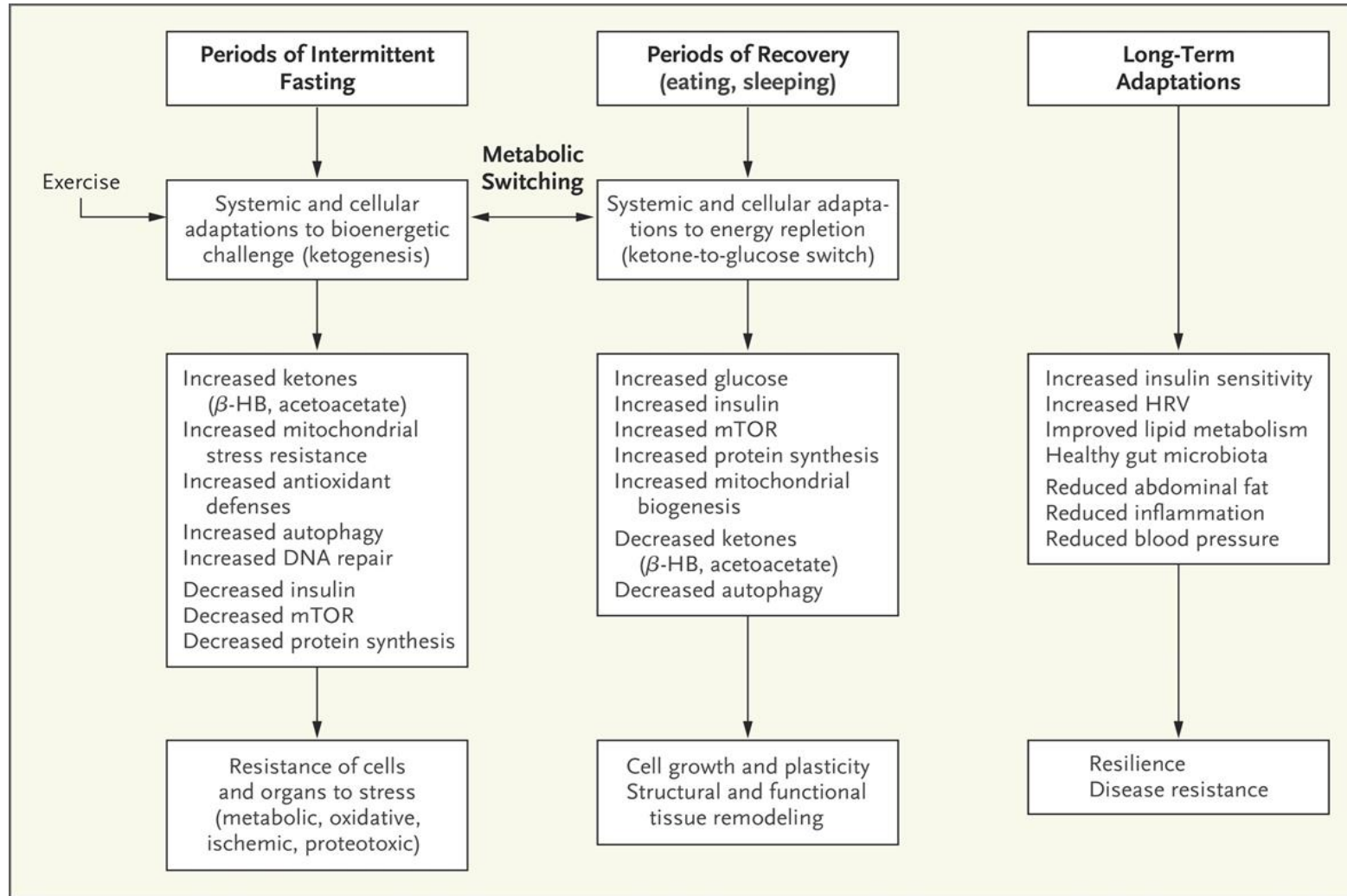


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Fasting practice	Pattern of fasting	Dietary restriction during fasting
Religious practices		
Ramadan (Islam)	29 or 30 consecutive days of fasting during daylight hours	No food or liquids consumed
Yom-Kippur (Judaism)	1 day of fasting for 24 hours	No food or liquids
Proṣadhopavāsa (Jainism)	Fasting on day 8 and 14 of the lunar cycle	Abstinence from the four categories of consumables: <ol style="list-style-type: none"> 1. Food that satisfies entire hunger such as rice, wheat, vegetables. 2. Water. 3. Sweets. 4. Oral fresheners after meals.
Lent (Christianity)	Fasting for 40 days, fast during the day and breaking fast at sunset	Abstinence from meat, eggs, dairy products, olive oil and alcohol
Baguan zhai (Buddhism: eightfold fast)	Do not eat after noon (midday), break-fast the next morning	Abstinence from meat and fish
Non-religious practices		
Time-restricted eating, for example, 16/8	Fasting for 16 hours and eating within an 8-hour period	No particular dietary restriction during feeding window, however, typically results in unintentional total caloric reduction
Alternate day fasting, for example, 5:2 protocol	Calorie restriction on 2 days of the week	No particular dietary restriction but significant calorie restriction
Modified alternate day fasting for example, modified 5:2 protocol	Intake of up to 40% of energy requirements on 2 days of the week	Up to 40% of recommended energy requirements but no particular dietary restriction

Effect van vasten (Ramadan) op de bloeddruk

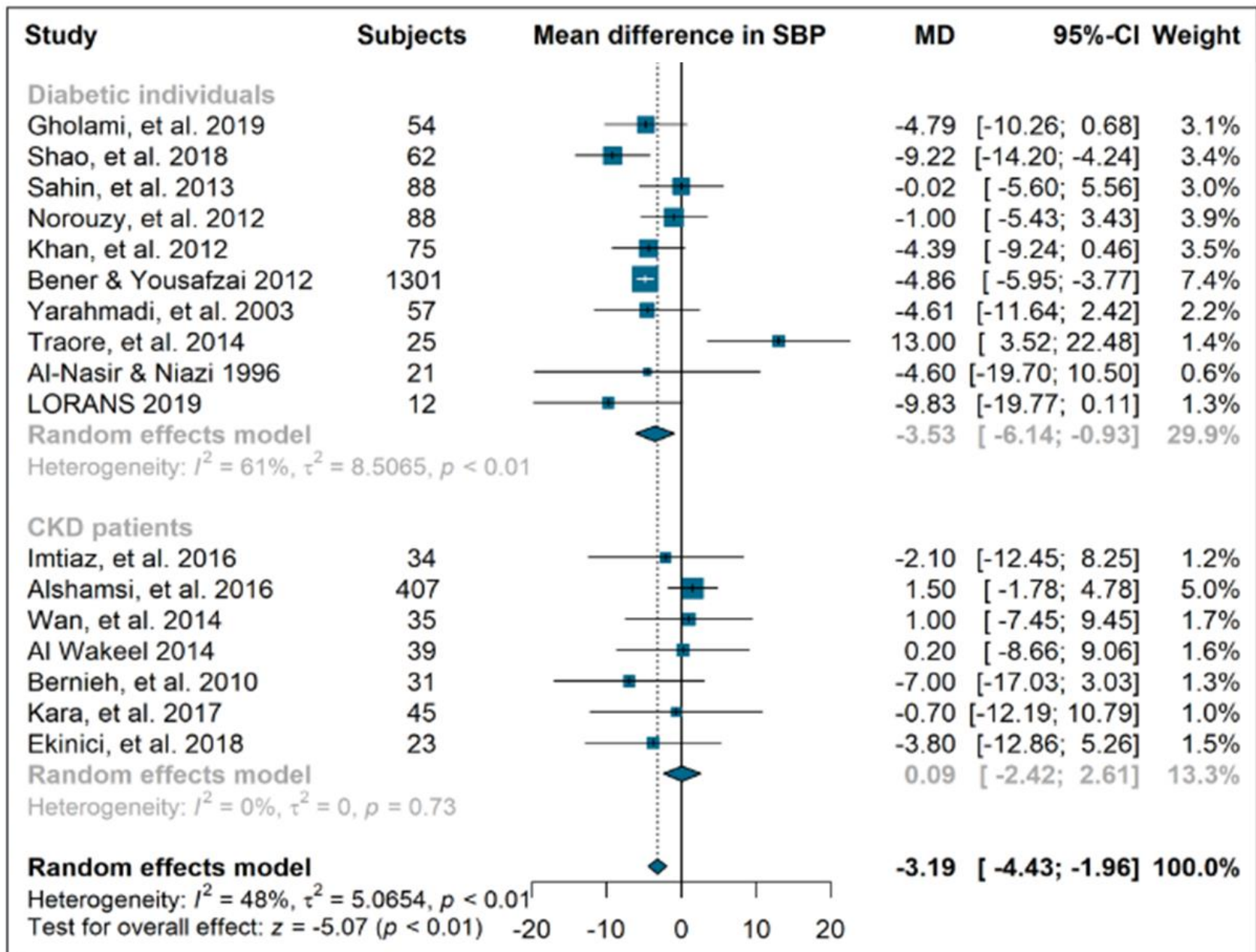
Effects of Intermittent Fasting on Health, Aging, and Disease

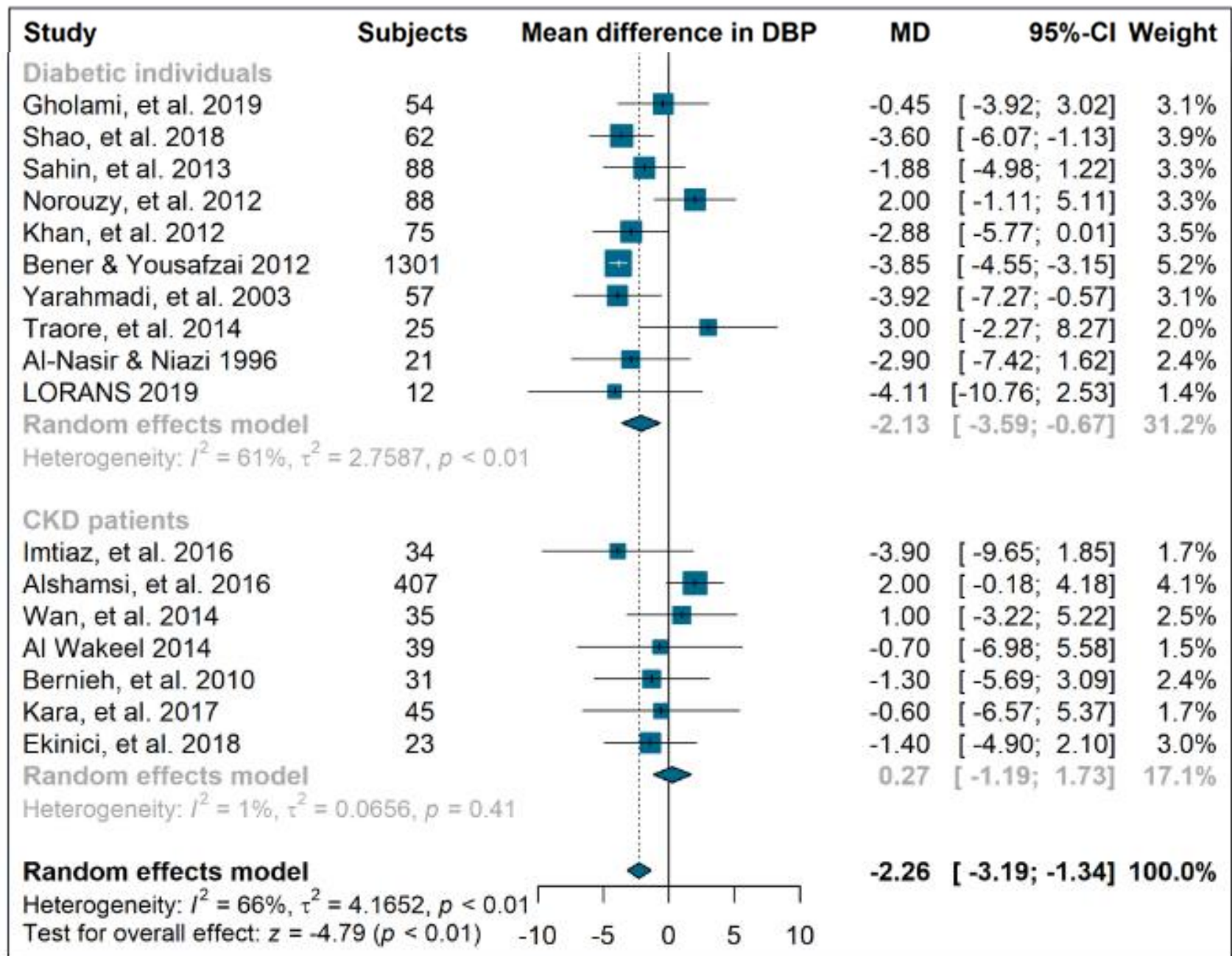


Effect of Religious Fasting in Ramadan on Blood Pressure: Results From LORANS (London Ramadan Study) and a Meta-Analysis

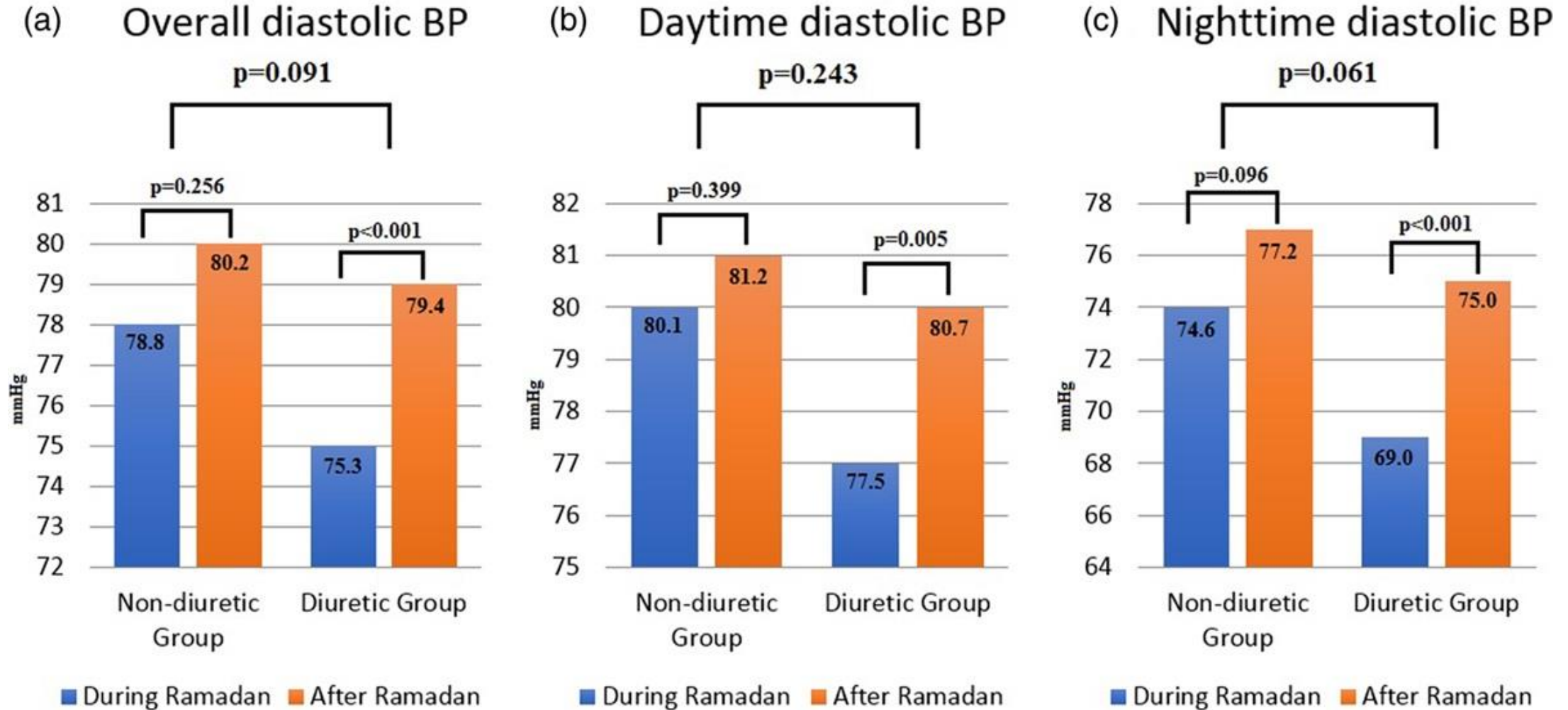
N=85	Before Ramadan (mean±SD)	After Ramadan (mean±SD)	Mean difference (95% CI)			
			Base model	Second model	Third model	Fourth model
Systolic blood pressure	132.2±20.1	124.9±17.5	-7.29 (-4.74 to -9.84)*	-7.29 (-4.74 to -9.84)*	-7.22 (-4.67 to -9.85)*	-7.34 (-4.63 to -10.10)*
Diastolic blood pressure	77.4±9.7	74±9.2	-3.42 (-1.73 to -5.09)*	-3.42 (-1.73 to -5.09)*	-3.17 (-1.48 to -4.87)*	-3.00 (-1.19 to -4.83)*

Base model adjusts for age, sex, site, and second measurement day. Second model adjusts for base model variables and smoking status. Third model adjusts for second model variables and weight. Fourth model adjusts for second model variables, total body water, and fat mass. LORANS indicates London Ramadan Study.





The effect of Ramadan fasting on ambulatory blood pressure in treated hypertensive patients using diuretics N=129



	Total (N = 129)	Diuretic (-) (n = 56)	Diuretic (+) (n = 73)	P value
ACE inhibitor	51 (39.5)	24 (42.9)	27 (37)	0.499
ARB	59 (45.7)	18 (32.1)	41 (56.2)	0.007
CCB	51 (39.5)	29 (51.8)	22 (30.1)	0.013
BB	63 (48.8)	34 (60.7)	29 (39.7)	0.018
Monotherapy	21 (16.3)	20 (35.7)	1 (1.4)	<0.001
Combination with two drugs	58 (45)	24 (42.9)	34 (46.6)	0.674
Combination with three drugs	37 (28.7)	12 (21.4)	25 (34.2)	0.111
Combination with four drugs	13 (10.1)	0 (0)	13 (17.8)	0.001

	Period of time	Thiazide group (n = 49)	Thiazide-like group ^a (n = 18)	P value
24 h SBP	Ramadan	119.9 ± 8.9	118.9 ± 10.7	0.577
	Following month	127.3 ± 17.9	128.3 ± 17.5	
24 h DBP	Ramadan	75.7 ± 7.1	75.7 ± 9.2	0.267
	Following month	78.6 ± 10.6	81.3 ± 12.1	
Daytime SBP	Ramadan	121.7 ± 9.3	120.3 ± 11.2	0.468
	Following month	128.7 ± 18.0	129.9 ± 18.2	
Daytime DBP	Ramadan	78.1 ± 7.5	77.6 ± 10.0	0.238
	Following month	80.0 ± 11.1	82.6 ± 12.9	
Nighttime SBP	Ramadan	114.0 ± 11.6	114.6 ± 12.0	0.927
	Following month	122.6 ± 19.3	123.6 ± 16.9	
Nighttime DBP	Ramadan	69.0 ± 8.2	69.9 ± 9.4	0.396
	Following month	73.8 ± 10.1	77.0 ± 11.6	

Data are expressed as mean ± SD (mmHg). Bold indicates that P-value is statistically significant between the study groups.

^aIncluding indapamide, chlorthalidone, spironolactone.

Potentiële risico's van vasten (Ramadan)

Risico bij (behandeling) DM en HVZ

- Hypoglycemie, Hyperglycemie, HHS/DKA (non-compliance)
- (Orthostatische) hypotensie, duizeligheid, syncope
- Dehydratie, AKI, elektrolytproblemen (hyperkaliëmie)
- Ongecontroleerde HT, decompensatio cordis (**non-compliance**)
- In-stent trombose, (fataal) myocard infarct of CVA (**non-compliance**)

Problemen bij behandeling diabetes

Studie	EPIDIAR ¹ (2001)	CREED ² (2010)	DAR-MENA ³ (2019)	DAR Global Survey ⁴ (2020)
N	12.243	3250	1749	5865
Hypoglycemie	4.7 (DM1) 7.5 (DM2)	8.8% (≥ 1)	4.9 vs. 10.4% - SU: 2.6 vs. 9.2% - I: 10.2 vs. 18.2%	15.7%
Hyperglycemie	3.2 (DM1) 5.0 (DM2)		14.9 vs. 11.6%	16.3%
SEH/opname		ZH opname 0.5%		6.5% (hypo) 7.4% (hyper)
Aant. dagen gevast				
>15 dgn	78.7%	94,2%	86.3%	94.8%
Gem (sd) dgn	27	27.2 (6)	27.7 (5)	27.3 (6)
Buiten Ramadan		29.9%		26.1%

1. Salti I et al. Diabetes Care 2004

2. Babineaux SM et al. Diabet Med. 2015

3. Hassanein M et al Diabetes Res Clin Pract 2019

4. Hassanein M et al Diabetes Res Clin Pract 2021

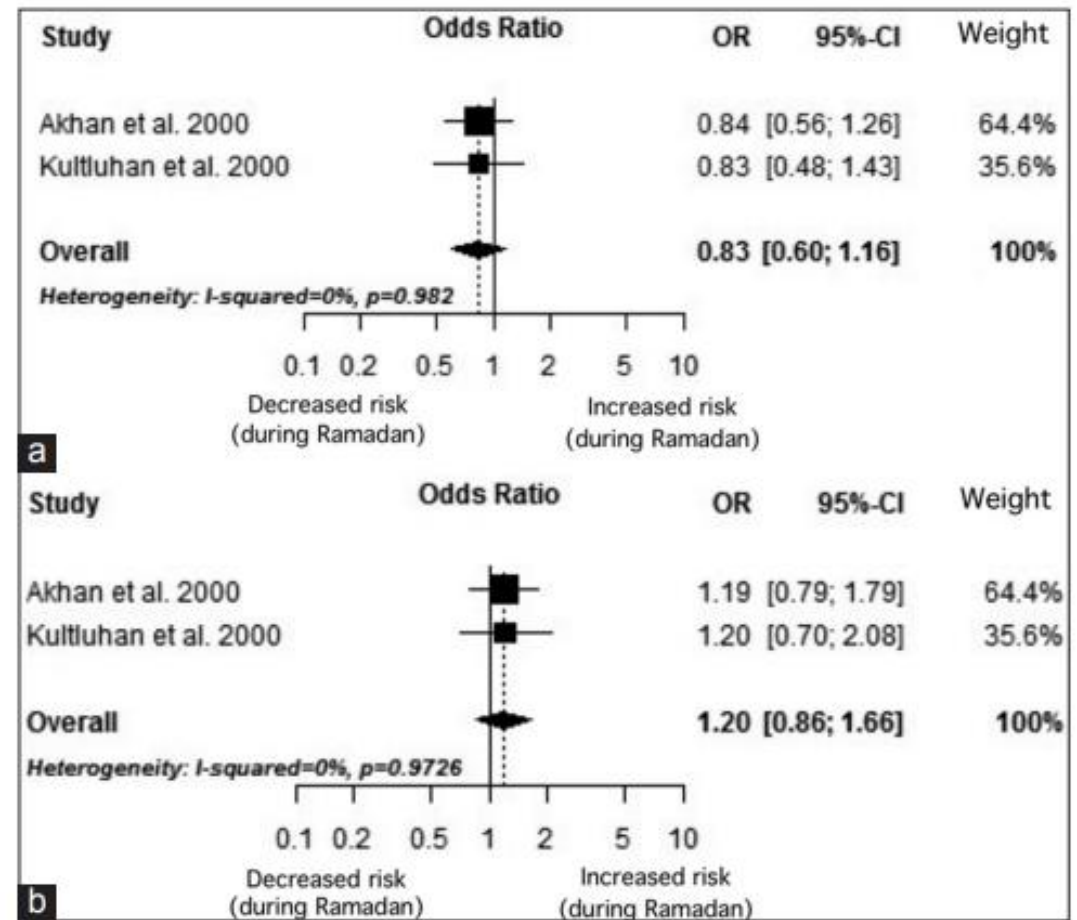
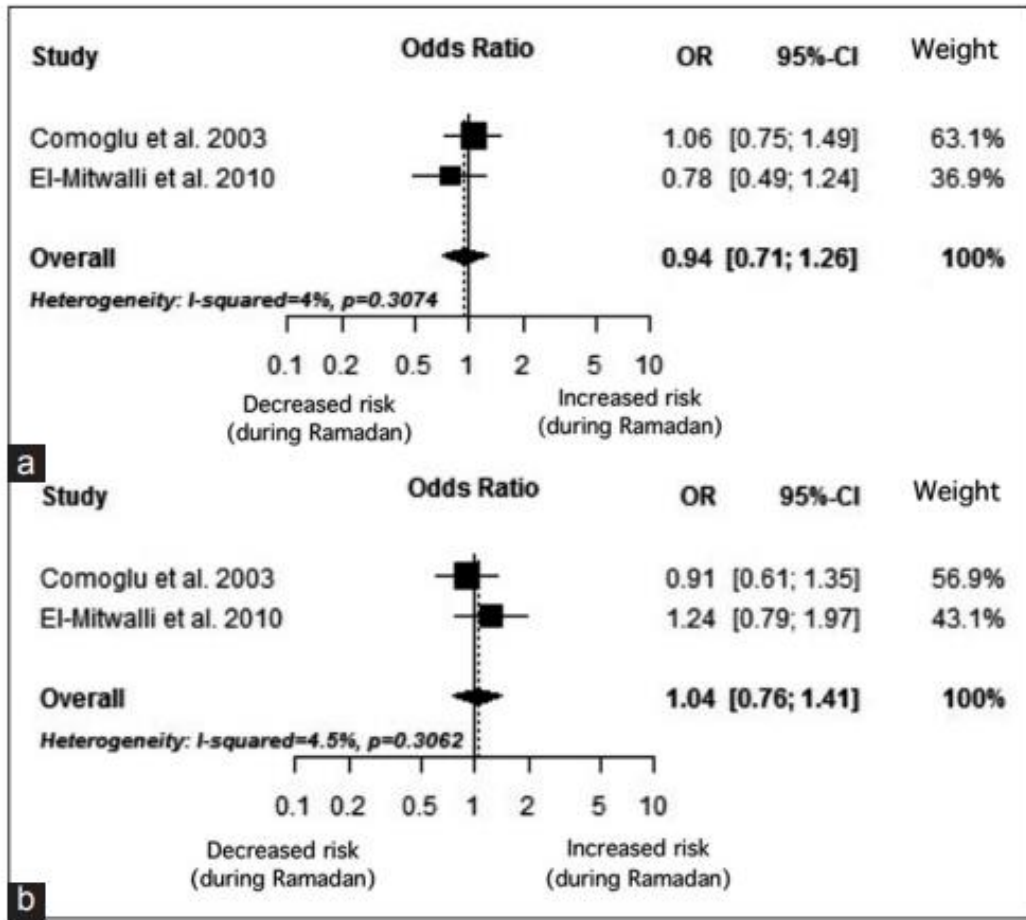
Risico op cardiovasculaire events?

Table 1 – Characteristics and findings of studies reporting on CVD events in patients with type 2 diabetes.

Study	Location	Study period	Sample size	Male %	Age	Timing of assessment	Findings
Al Suwaidi, Bener [21]	Qatar	1991 to 2001	1231 hospital admissions for CHF	59.7%	64 ± 11.5	One month before, during and after Ramadan and average of remaining nine months	Insignificant increase in CHF during Ramadan (before 55.5%, during 59.6%, after 59.1%, 9 months after 56.6%)
Al Suwaidi, Bener [22]	Qatar	1991 to 2001	Not reported for diabetic patients	NR	NR	One month before, during and after Ramadan	Insignificant reduction in AMI during Ramadan (before 58%, during 51%, after 53%) Insignificant increase in UA during Ramadan (before 51%, during 56%, after 59%)
Bener, Hamad [23]	Qatar	1991 to 2003	160 admissions for stroke	71%	56.99 ± 13.9	One month before, during and after Ramadan and average of remaining nine months	Insignificant increase in stroke during Ramadan (before 36.7%, during 55.2%, after 51.7%, 9 months after 48.2%)
Comoglu, Temizhan [24]	Turkey	NR	175 admission for ischemic stroke and intracerebral haemorrhage	NR	NR	One month before, during and after Ramadan	Significant increase in ischemic stroke during Ramadan (before 23.2%, during 31.9%, after 21.5%) Insignificant reduction in intracerebral haemorrhage during Ramadan (before 12.2%, during 10.9%, after 12.7%)
Assy, Awd [25]	Egypt	2015	90	48.9%	63 ± 0.4	One month before, during and after Ramadan	Insignificant difference in the frequency of stroke between the three period (before 28, during 32, after 30)

CHF = congestive heart failure, AMI = acute myocardial infarction, UA = unstable angina, NR = not reported.

Risico op (ischemisch) CVA?

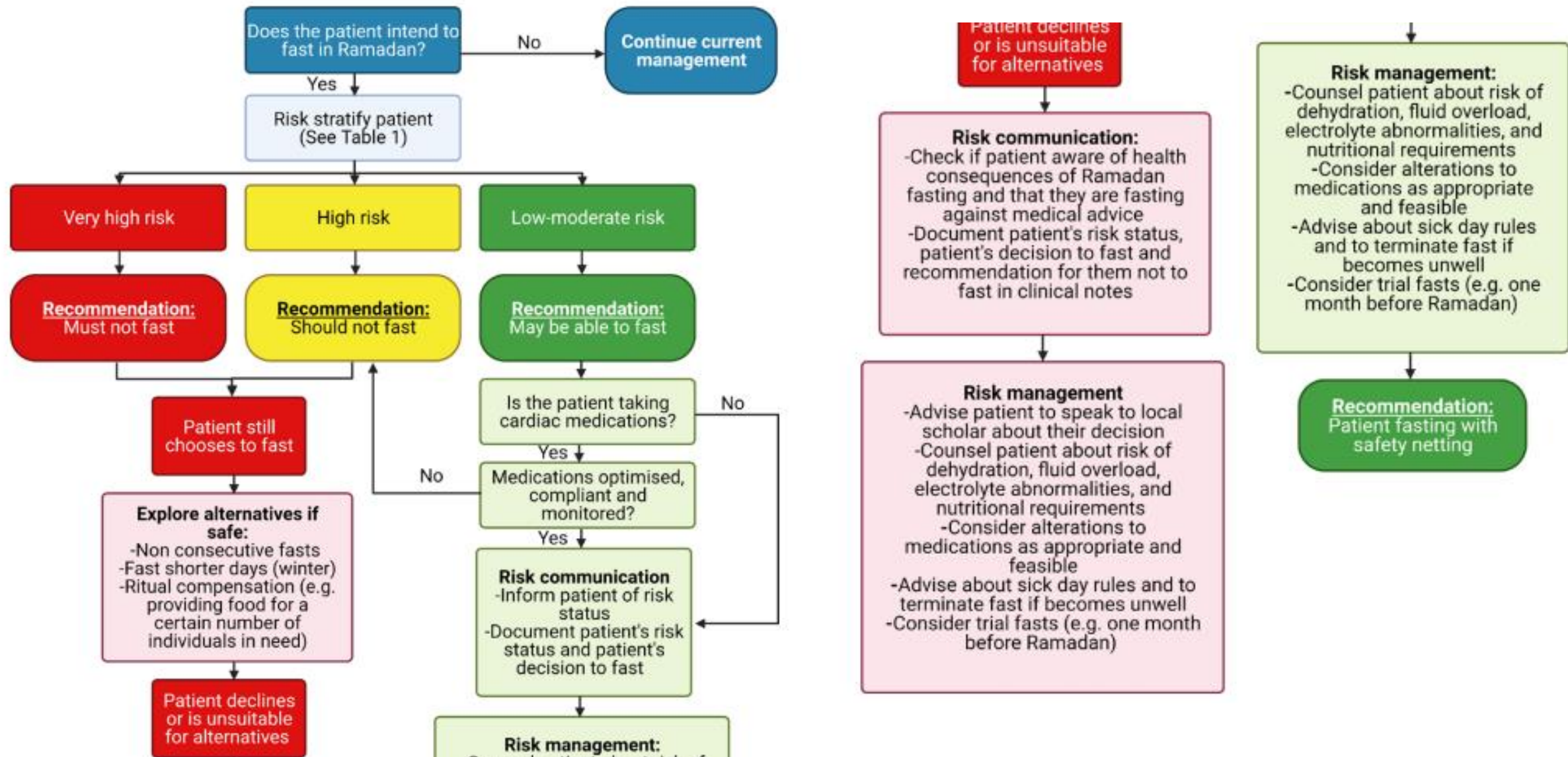


Praktische adviezen

Ramadan fasting: recommendations for patients with cardiovascular disease

Risk level	Moderate/low risk	High risk	Very high risk
Advice	<p>May be able to fast - listen to medical advice</p> <ul style="list-style-type: none"> ▶ Stable hypertension ▶ Stable angina* ▶ Stable†, non-severe heart failure: LVEF >35%, HFpEF‡ ▶ Implantable loop recorder ▶ Permanent pacemaker (single or dual chamber) ▶ Mild/mild-moderate valvular disease ▶ Supraventricular tachycardias/atrial fibrillation/non-sustained ventricular tachycardia ▶ Mild/moderate pulmonary hypertension§ 	<p>Should not fast</p> <ul style="list-style-type: none"> ▶ Poorly controlled hypertension (as defined by your specialist) ▶ Recent acute coronary syndrome/myocardial infarction (<6 weeks) ▶ Hypertrophic cardiomyopathy with obstruction¶ ▶ Severe valvular disease ▶ Severe heart failure without advanced features ▶ Poorly controlled arrhythmias (as defined by your specialist) ▶ High risk of fatal arrhythmias (eg, inherited arrhythmic syndromes, arrhythmogenic cardiomyopathy) ▶ Implantable cardioverter defibrillator±cardiac resynchronisation therapy 	<p>Must not fast</p> <ul style="list-style-type: none"> ▶ Advanced heart failure** ▶ Severe pulmonary hypertension††
<p><i>Patients with inherited cardiomyopathy, adult congenital heart disease, left ventricular assist device or heart transplantation should discuss fasting in Ramadan in their next routine appointment</i></p>			

Praktische adviezen voor de praktijk



To fast or not to fast?

The decision-making process

Fasting:

I can fast.

Enduring struggles while fasting:

I have not yet reached my limits.

Refraining from fasting:

I cannot fast anymore.

1. Values and beliefs concerning Ramadan:

- I feel obligated to fast and do not feel sick enough to accept the exemption.
- I want to receive the reward of fasting.
- I trust Allah and ask Him for the ability and strength to fast.

2. Experiences and emotions concerning Ramadan:

- During fasting, I feel fit, I have good blood glucose levels, my eating rhythm is structured, and I do not experience physical symptoms; I wish it could always be Ramadan.
- During Ramadan, I feel happy, proud, thankful and peaceful.
- I enjoy breaking the fast together with my family and friends.

3. The perception of illness:

- My condition is not severe enough to refrain from fasting, but people with an illness who cannot fast should refrain from fasting.

4. Advice from HCPs, imams and family:

I am my own doctor:

- Personal assessment: I can fast.
- Decision: I will try to fast but stop if I feel ill.

Advice from HCPs, imams and family to refrain from fasting is often disregarded.

1. Values and beliefs concerning Ramadan:

- I am afraid that I will unjustly refrain from fasting; I am uncertain whether my condition is severe enough to accept the exemption.
- I want to receive the reward of fasting.
- I trust Allah and ask Him for the ability and strength to fast.

2. Experiences and emotions concerning Ramadan:

- Although I endure physical struggles during fasting, I am determined to continue the fast.
- I find it difficult to decide to refrain from fasting.
- At times I ask myself whether I am harming my health by continuing the fast.
- My family pressure me to refrain from fasting.

3. The perception of illness:

- Is my condition severe enough to refrain from fasting?

4. Advice from HCPs, imams and family:

I am my own doctor:

- Personal assessment: I can still fast because I have not yet reached my limits.
- Decision: I will monitor myself and break my fast if I feel too sick.

Advice from HCPs, imams and family to refrain from fasting is usually not yet followed.

1. Values and beliefs concerning Ramadan:

- I must accept the exemption from fasting.
- I did my best to fast, and now it is Allah's will that I cannot fast anymore, for which I should be thankful and will be rewarded.

2. Experiences and emotions concerning Ramadan:

- Although I am not fasting anymore, my blood sugar levels become dysregulated during Ramadan due to changes in my diet and physical activity.
- I feel sad that I cannot fast anymore and find it difficult to eat in front of my fasting family.
- I am not ashamed of not fasting; it is between me and Allah, and I can still experience the "Ramadan feeling".
- I feel inferior when individuals outside my family ask me whether I am fasting.
- My family support my decision to refrain from fasting.

3. The perception of illness:

- My condition is severe enough to refrain from fasting. I fasted when I was still "healthy" and strong.

4. Advice from HCPs, imams and family:

I am my own doctor:

- Personal assessment: I cannot fast anymore; I tried.
- Decision: I must refrain from fasting.

Advice from HCPs, imams and family to refrain from fasting is followed.

Take home messages

- De Ramadan begint dit jaar rond 22 maart 2023
- Begin daarom vanaf maandag a.s. het gesprek met uw patiënt
- Gebruik gunstige effecten van Ramadan (vasten) voor leefstijladviezen
- Probeer schade te beperken bij de patiënt die tegen medisch advies vast



<https://diabetesfederatie.nl/ndf-toolkit-persoonsgerichte-diabeteszorg/diabetes-en-ramadan>