eMethods

PubMed

(("Statin" [MeSH Terms] OR "HMG-CoA Reductase Inhibitor" [All Fields] OR "HMG-CoA Reductase Inhibitors" [All Fields] OR "Hydroxymethylglutaryl-CoA Reductase Inhibitor" [All Fields] OR "Statins" [All Fields])) AND (("Diabetic Kidney Disease" [MeSH Terms] OR "Diabetic Glomerulosclerosis" [All Fields] OR "Diabetic Nephropathy" [All Fields] OR "Intracapillary Glomerulosclerosis" [All Fields] OR "Kimmelstiel-Wilson Disease" [All Fields] OR "Nodular Glomerulosclerosis" [All Fields]))

Web of Sciences

(("Statin" OR "HMG-CoA Reductase Inhibitor" OR "HMG-CoA Reductase Inhibitors" OR "Hydroxymethylglutaryl-CoA Reductase Inhibitor" OR "Statins")) AND (("Diabetic Kidney Disease" OR "Diabetic Glomerulosclerosis" OR "Diabetic Nephropathy" OR "Intracapillary Glomerulosclerosis" OR "Kimmelstiel-Wilson Disease" OR "Nodular Glomerulosclerosis"))

CENTRAL

#1 MeSH descriptor: [Statin] explode all trees

#2 (("HMG-CoA Reductase Inhibitor" OR "HMG-CoA Reductase Inhibitors" OR "Hydroxymethylglutaryl-CoA Reductase Inhibitor" OR "Statins"))

#3 MeSH descriptor: [Diabetic Kidney Disease] explode all trees

#4 (("Diabetic Kidney Disease" OR "Diabetic Glomerulosclerosis" OR "Diabetic Nephropathy" OR "Intracapillary Glomerulosclerosis" OR "Kimmelstiel-Wilson Disease" OR "Nodular Glomerulosclerosis"))

Final: (#1 OR #2) AND (#3 OR #4)
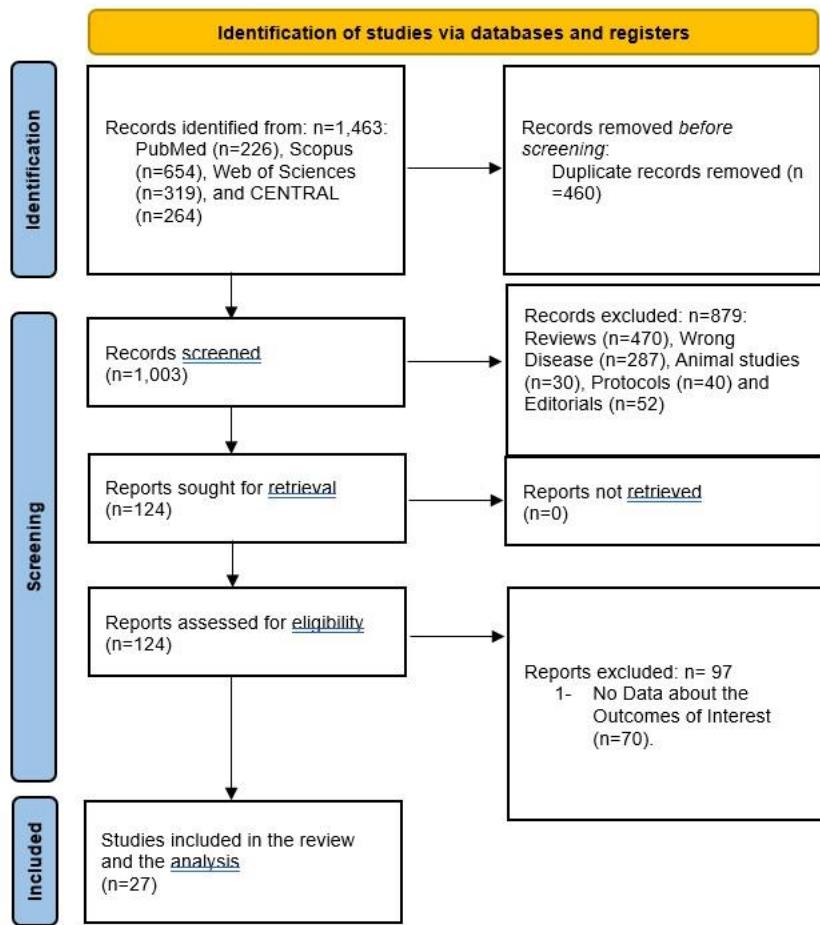
Scopus

#1 (("Statin" OR "HMG-CoA Reductase Inhibitor" OR "HMG-CoA Reductase Inhibitors" OR "Hydroxymethylglutaryl-CoA Reductase Inhibitor" OR "Statins"))
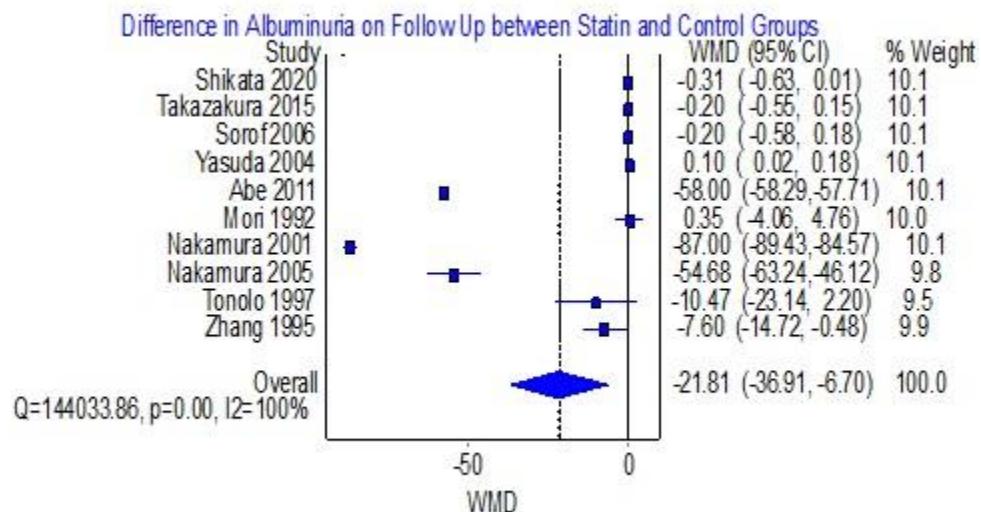
#2 (("Diabetic Kidney Disease" OR "Diabetic Glomerulosclerosis" OR "Diabetic Nephropathy" OR "Intracapillary Glomerulosclerosis" OR "Kimmelstiel-Wilson Disease" OR "Nodular Glomerulosclerosis"))

Final: (#1) AND (#2)
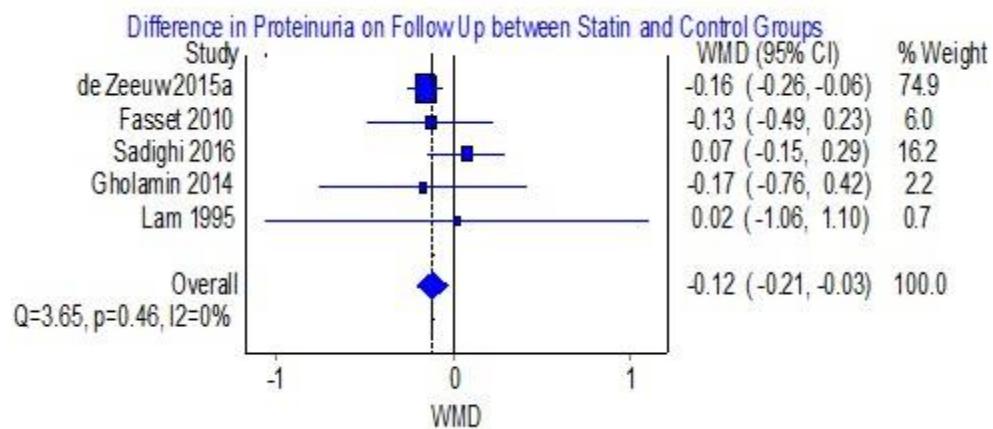
Supplementary Figure 1. PRISMA Flow Chart
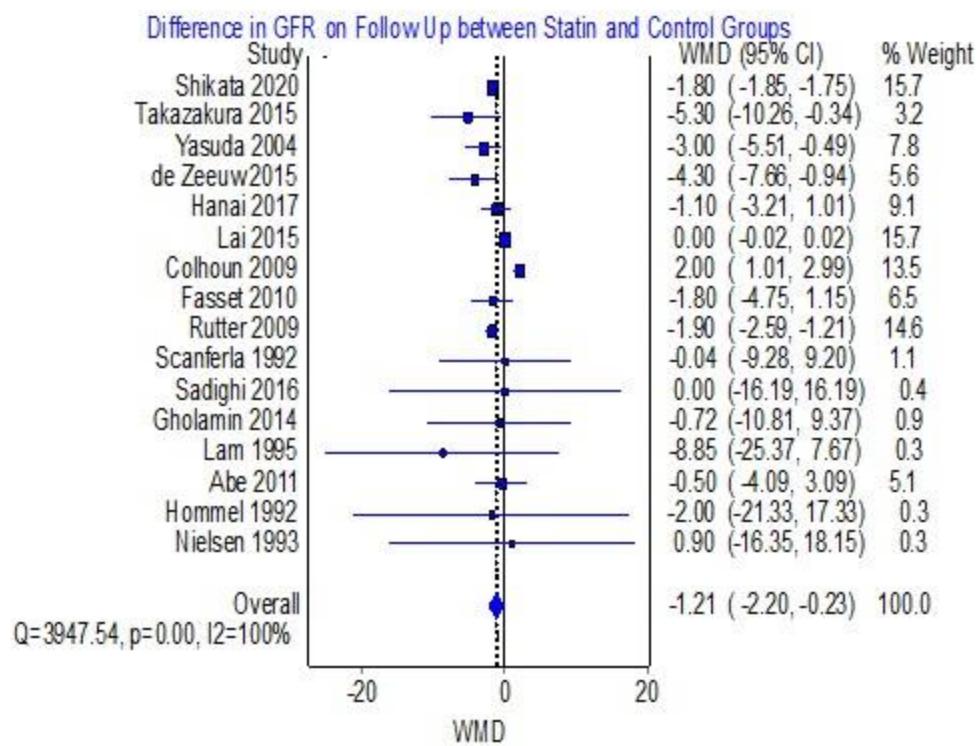
Supplementary Figure 2. The Difference in Albuminuria on Follow Up Between Statin and Control Groups.
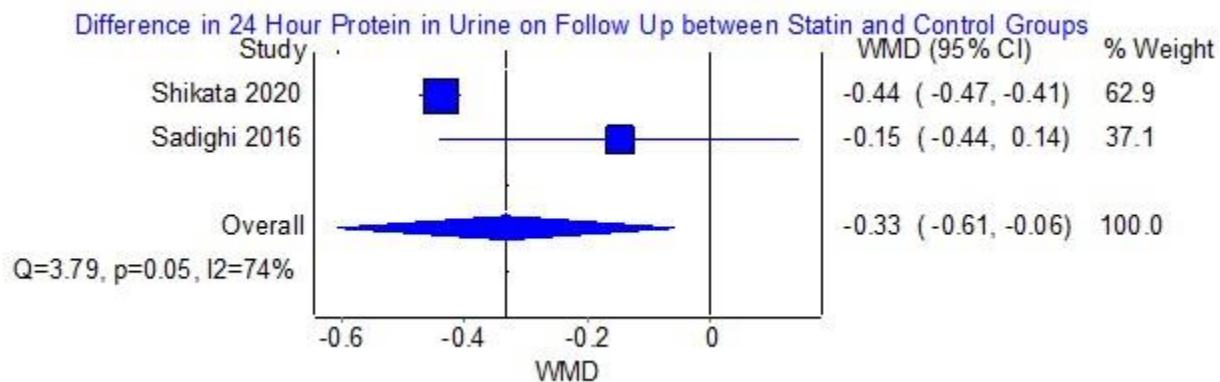
Supplementary Figure 3. The Difference in Proteinuria on Follow Up Between Statin and Control Groups.

Supplementary Figure 4. The Difference in GFR on Follow Up Between Statin and Control Groups.

Supplementary Figure 5. The Difference in 24-hour Protein in Urine on Follow Up Between Statin and Control Groups.

Difference in 24 Hour Protein in Urine on Follow Up between Statin and Control Groups

Study	WMD (95% CI)	% Weight
Shikata 2020	-0.44 (-0.47, -0.41)	62.9
Sadighi 2016	-0.15 (-0.44, 0.14)	37.1
Overall	-0.33 (-0.61, -0.06)	100.0

Q=3.79, p=0.05, I2=74%

Supplementary Table 1. Characteristics of the Included Studies

Study	Year	Country	Design	Sample Size	Mean Age	M:F ratio	Treatment Duration (Months)	Baseline Albuminuria	Statin Intensity
Cha	2023	China	Clinical Trial	75	-	-	12	<300	Low
Shikata	2020	Japan	Clinical Trial	153	57.2	1	-	<300	Low
Takazakura	2015	Japan	Clinical Trial	106	62	6	7.5	<300	Low
Dummer	2008	Brazil	Clinical Trial	-	-	-	-	<300	Low
Sorof	2006	USA	Clinical Trial	344	65	1	4	<300	Low
Yasuda	2004	Japan	Clinical Trial	88	57.5	1	12	>300	Low
de Zeeuw	2015	Multinationality	Clinical Trial	325	57.7	4	13	>300	Moderate
de Zeeuw	2015	Multinationality	Clinical Trial	220	57.7	4	13	>300	Moderate
Hanai	2017	Japan	Retrospective Cohort	1358	60	2	60	<300	Low

Study	Year	Country	Type	N	Age	Ratio	Duration	Proteinuria	Risk
Lai	2015	Taiwan	Retrospective Cohort	5569	-	-	6	<300	Low
Colhoun	2009	UK	Clinical Trial	2838	61.6	3	48	<300	Low
Luk	2010	China	Retrospective Cohort	5264	60	1	60	<300	Low
Fasset	2010	Australia	Clinical Trial	132	60.2	1.5	32	<300	Low
Rutter	2009	UK	Clinical Trial	119	64	5	24	<300	Low
Scanferla	1992	Italy	Retrospective Cohort	9	56.7	1	12	<300	Low
Zhou	2023	China	Retrospective Cohort	19858	62	1	3	<300	Low
Sadighi	2016	Iran	Clinical Trial	30	54.5	All males	3	<300	Low
Gholamin	2014	Iran	Clinical Trial	65	52.5	All males	6	<300	Low
Lam	1995	Hong Kong	Clinical Trial	24	56.4	1.1	24	<300	Low
Abe	2011	Japan	Clinical Trial	104	64.7	1.3	6	<300	Low
Hommel	1992	Denmark	Clinical Trial	21	38	1.1	12	<300	Low
Mori	1992	Japan	Clinical Trial	33	63.1	2	12	<300	Low
Nakamura	2001	Japan	Clinical Trial	60	56.5	1.8	6	<300	Low
Nakamura	2005	Japan	Clinical Trial	20	50	1.5	6	<300	Low
Nielsen	1993	Denmark	Clinical Trial	18	65	1.5	12	>300	Moderate
Tonolo	1997	Italy	Clinical Trial	19	61	3	12	<300	Low
Zhang	1995	Belgium	Clinical Trial	20	43	4	3	<300	Moderate

**USA: United States of America, UK: United Kingdom**
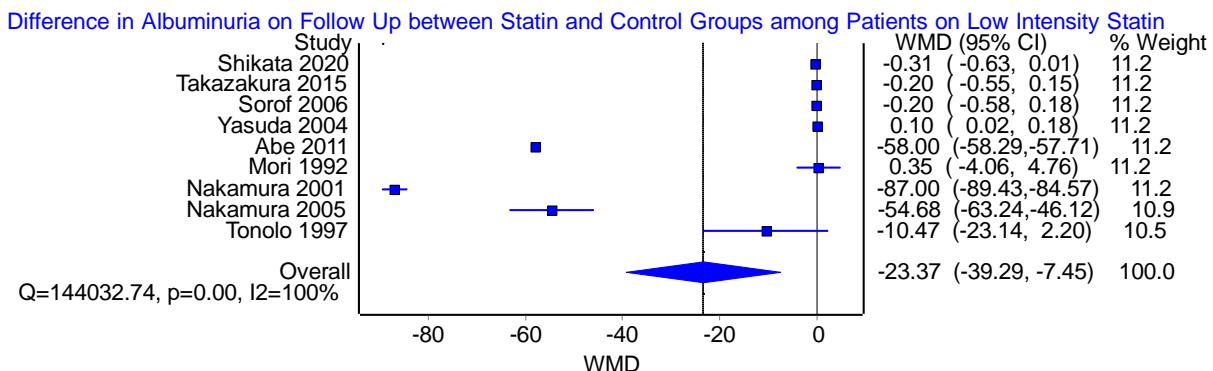
Supplementary Table 2. Summary of the RoB2 and New-Castle Ottawa Scale Results

Study	Year	Random Sequence	Allocation	Blinding of	Blinding of Outcome	Incomplete Outco	Selective Reporting	Other	Overall
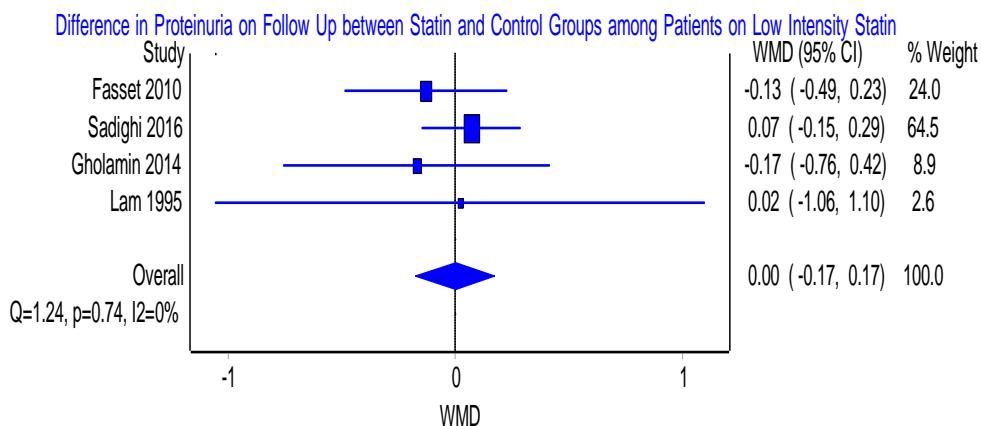
		Genera tion	Concea lment	Partici pants	Assess ment	me Data			
Cha	2023	Low	High	High	High	High	Low	Low	High
Shikata	2020	Low	High	High	High	Low	Low	Low	High
Dummer	2008	Low	Low	Low	Low	Low	Low	Low	Low
Takazakura	2015	Low	High	High	High	Low	Low	Low	High
Sorof	2006	Low	Low	Low	Low	Low	Low	Low	Low
Yasuda	2004	Low	High	High	High	Low	Low	Low	High
de Zeeuw	2015	Low	Low	Low	Low	Low	Low	Low	Low
de Zeeuw	2015	Low	Low	Low	Low	Low	Low	Low	Low
Colhoun	2009	Low	High	High	High	High	Low	Low	High
Fasset	2010	Low	Low	Low	Low	Low	Low	Low	Low
Rutter	2009	Low	Low	Low	Low	Low	Low	Low	Low
Gholamin	2014	Mod	Mod	High	High	Low	Low	High	High
Lam	1995	Low	Mod	High	High	High	Low	Mod	High
Abe	2011	Low	Mod	High	High	High	Low	Low	High
Hommel	1992	Low	Mod	Low	Mod	High	Low	Mod	High
Mori	1992	Low	Mod	Mod	Mod	Low	Low	Mod	Low
Nakamura	2001	Low	Mod	Low	Mod	Low	Low	Mod	Low
Nakamura	2005	Low	Mod	Low	Mod	Low	Low	Mod	Low
Nielsen	1993	Low	Mod	Low	Mod	High	Low	Mod	High
Tonolo	1997	Low	Mod	Low	Mod	High	Low	Mod	High
Zhang	1995	Low	Mod	Mod	Mod	Low	Low	High	High

Study	Year	Selection	Comparabilit y	Outcome	Total
Hanai	2017	3	2	3	8
Lai	2015	3		4	7
Colhoun	2009	3		4	7

Luk	2010	3	2	4	9
Scanferla	1992	3		3	6
Zhou	2023	3	2	4	9
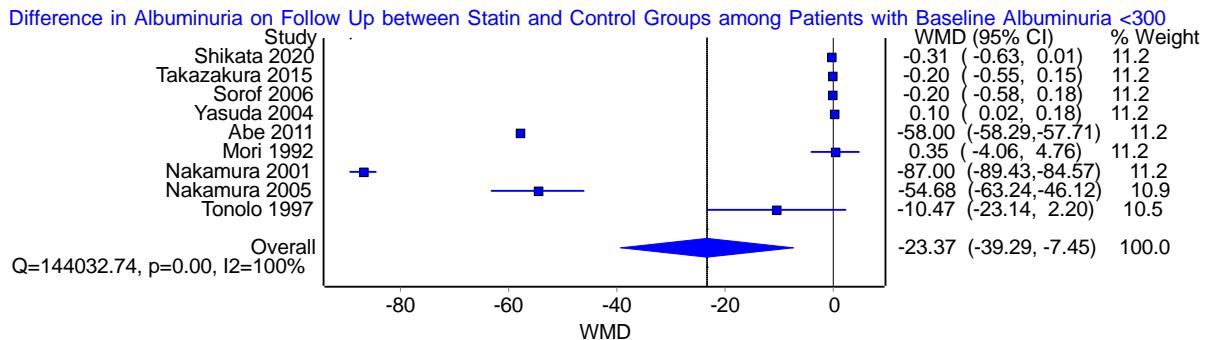
Supplementary Figure 6. The Difference in Albuminuria on Follow Up between Statin and Control Groups among Patients on Low Intensity Statin.

Difference in Albuminuria on Follow Up between Statin and Control Groups among Patients on Low Intensity Statin

Study	WMD (95% CI)	% Weight
Shikata 2020	-0.31 (-0.63, 0.01)	11.2
Takazakura 2015	-0.20 (-0.55, 0.15)	11.2
Sorof 2006	-0.20 (-0.58, 0.18)	11.2
Yasuda 2004	0.10 (0.02, 0.18)	11.2
Abe 2011	-58.00 (-58.29,-57.71)	11.2
Mori 1992	0.35 (-4.06, 4.76)	11.2
Nakamura 2001	-87.00 (-89.43,-84.57)	11.2
Nakamura 2005	-54.68 (-63.24,-46.12)	10.9
Tonolo 1997	-10.47 (-23.14, 2.20)	10.5
Overall	-23.37 (-39.29, -7.45)	100.0

Q=144032.74, p=0.00, I2=100%
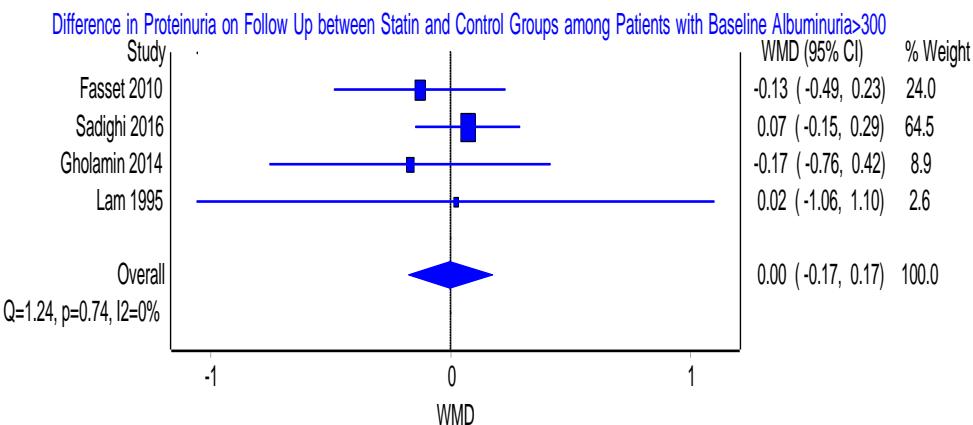
Supplementary Figure 7. The Difference in Proteinuria on Follow Up between Statin and Control Groups among Patients on Low Intensity Statin.

Difference in Proteinuria on Follow Up between Statin and Control Groups among Patients on Low Intensity Statin

Study	WMD (95% CI)	% Weight
Fasset 2010	-0.13 (-0.49, 0.23)	24.0
Sadighi 2016	0.07 (-0.15, 0.29)	64.5
Gholamin 2014	-0.17 (-0.76, 0.42)	8.9
Lam 1995	0.02 (-1.06, 1.10)	2.6
Overall	0.00 (-0.17, 0.17)	100.0

Q=1.24, p=0.74, I2=0%
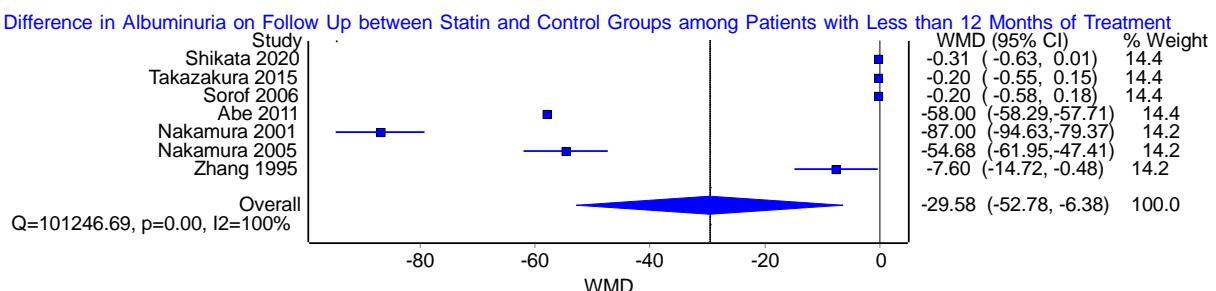
Supplementary Figure 8. The Difference in Albuminuria on Follow Up between Statin and Control Groups among Patients with Baseline Albuminuria<300.
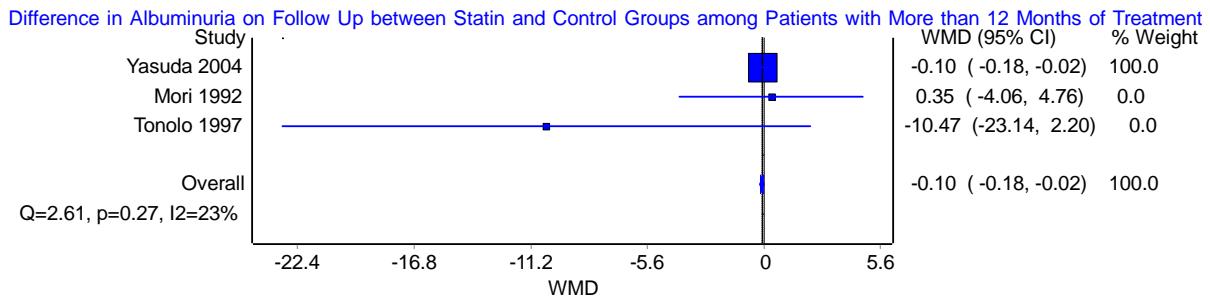
Supplementary Figure 9. The Difference in Proteinuria on Follow Up between Statin and Control Groups among Patients with Baseline Albuminuria>300.
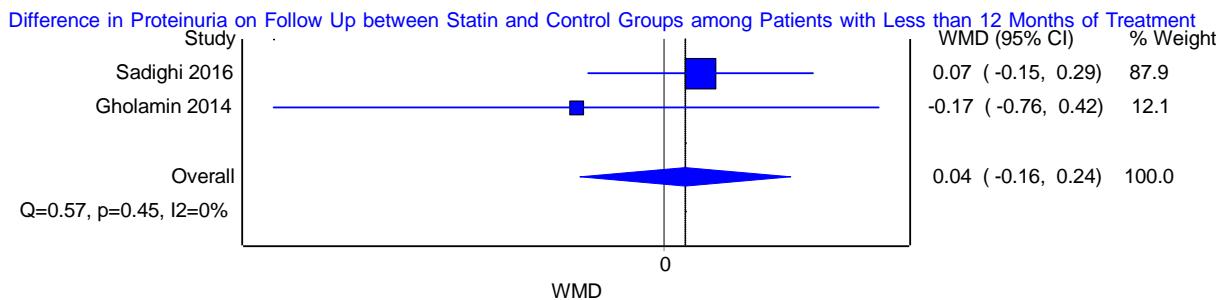
Supplementary Figure 10. The Difference in Albuminuria on Follow Up between Statin and Control Groups among Patients with Less than 12 Months of Treatment.
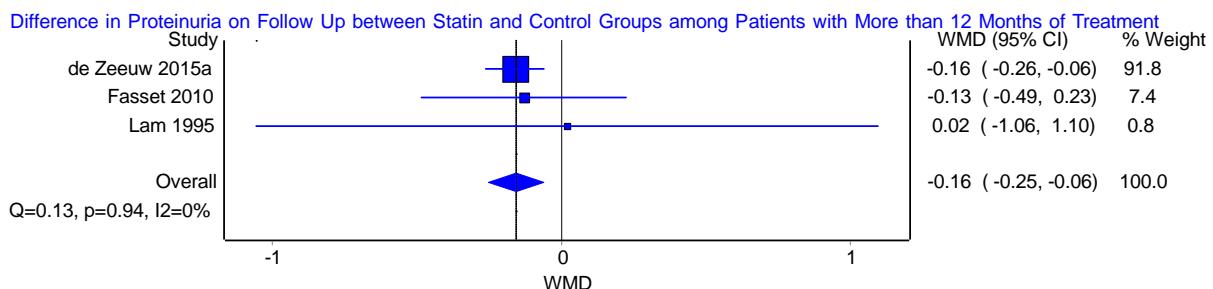

Supplementary Figure 11. The Difference in Albuminuria on Follow Up between Statin and Control Groups among Patients with More than 12 Months of Treatment.

Difference in Albuminuria on Follow Up between Statin and Control Groups among Patients with More than 12 Months of Treatment

| Study	WMD (95% CI)	% Weight
Yasuda 2004	-0.10 (-0.18, -0.02)	100.0
Mori 1992	0.35 (-4.06, 4.76)	0.0
Tonolo 1997	-10.47 (-23.14, 2.20)	0.0
Overall	-0.10 (-0.18, -0.02)	100.0

Q=2.61, p=0.27, I2=23%

-22.4   -16.8   -11.2   -5.6   0   5.6
WMD
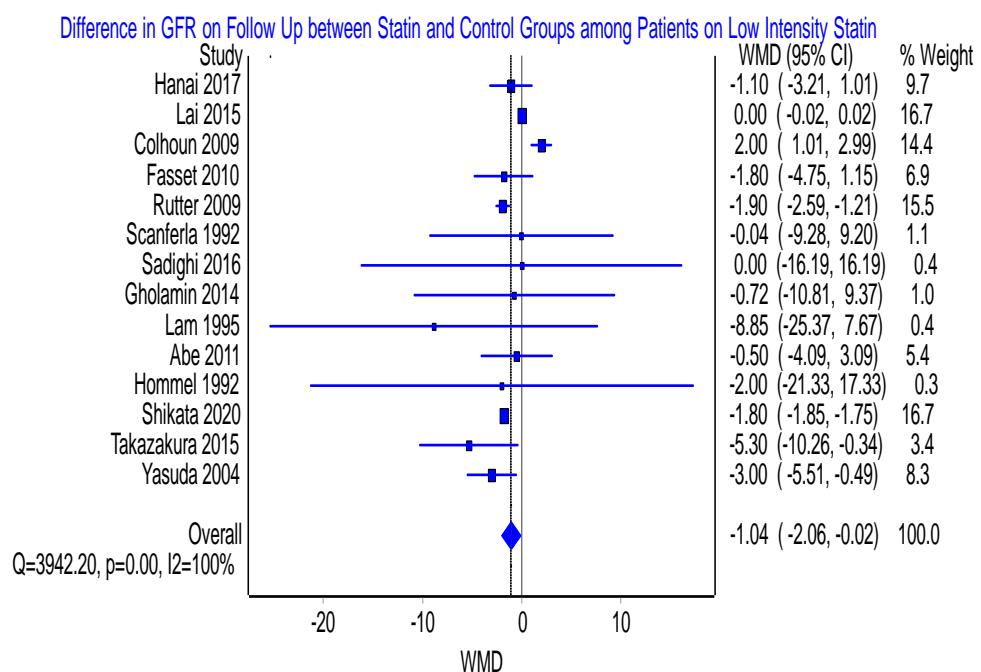
Supplementary Figure 12. The Difference in Proteinuria on Follow Up between Statin and Control Groups among Patients with Less than 12 Months of Treatment.

Difference in Proteinuria on Follow Up between Statin and Control Groups among Patients with Less than 12 Months of Treatment

Study	WMD (95% CI)	% Weight
Sadighi 2016	0.07 (-0.15, 0.29)	87.9
Gholamin 2014	-0.17 (-0.76, 0.42)	12.1
Overall	0.04 (-0.16, 0.24)	100.0

Q=0.57, p=0.45, I2=0%

0
WMD
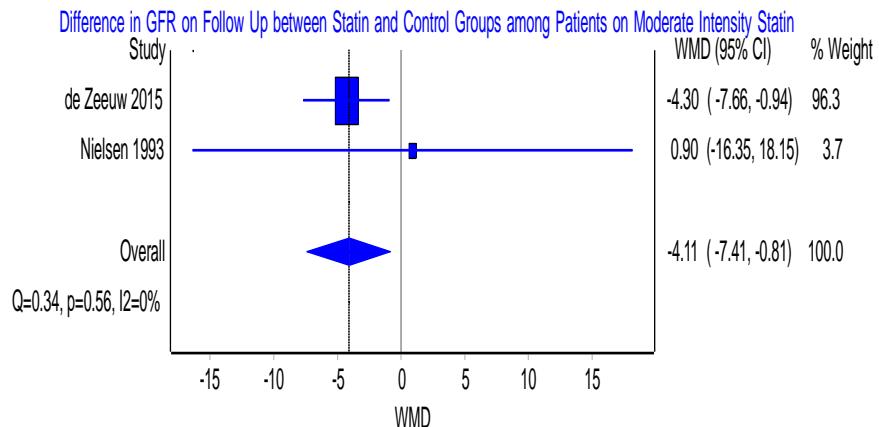
Supplementary Figure 13. The Difference in Proteinuria on Follow Up between Statin and Control Groups among Patients with More than 12 Months of Treatment.

Difference in Proteinuria on Follow Up between Statin and Control Groups among Patients with More than 12 Months of Treatment

Study	WMD (95% CI)	% Weight
de Zeeuw 2015a	-0.16 (-0.26, -0.06)	91.8
Fasset 2010	-0.13 (-0.49, 0.23)	7.4
Lam 1995	0.02 (-1.06, 1.10)	0.8
Overall	-0.16 (-0.25, -0.06)	100.0

Q=0.13, p=0.94, I2=0%

-1   0   1
WMD
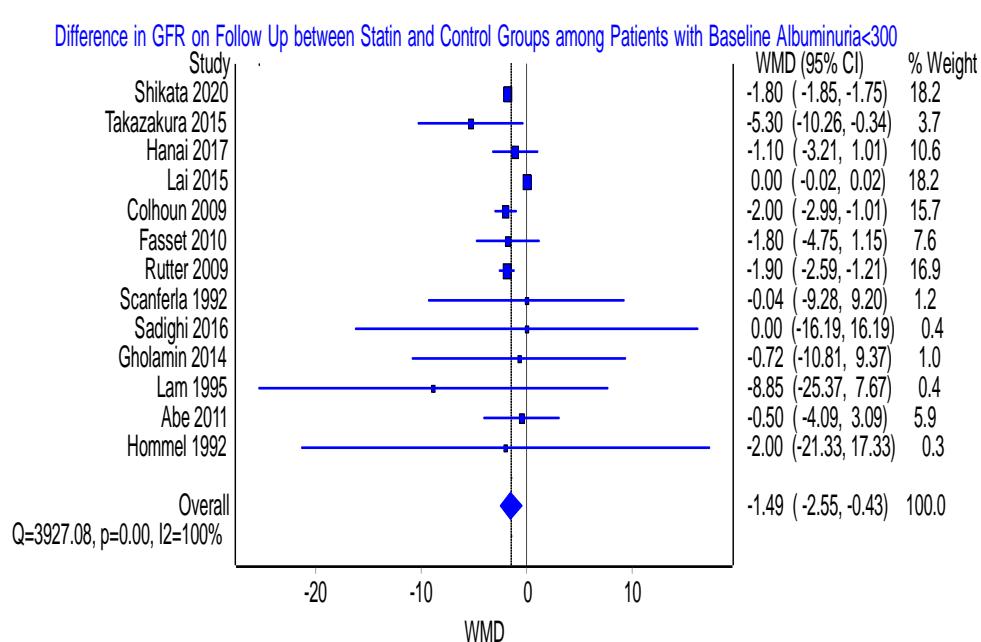
Supplementary Figure 14. The Difference in GFR on Follow Up between Statin and Control Groups among Patients on Low Intensity Statin.

Difference in GFR on Follow Up between Statin and Control Groups among Patients on Low Intensity Statin

Study	WMD (95% CI)	% Weight
Hanai 2017	-1.10 (-3.21, 1.01)	9.7
Lai 2015	0.00 (-0.02, 0.02)	16.7
Colhoun 2009	2.00 (1.01, 2.99)	14.4
Fasset 2010	-1.80 (-4.75, 1.15)	6.9
Rutter 2009	-1.90 (-2.59, -1.21)	15.5
Scanferla 1992	-0.04 (-9.28, 9.20)	1.1
Sadighi 2016	0.00 (-16.19, 16.19)	0.4
Gholamin 2014	-0.72 (-10.81, 9.37)	1.0
Lam 1995	-8.85 (-25.37, 7.67)	0.4
Abe 2011	-0.50 (-4.09, 3.09)	5.4
Hommel 1992	-2.00 (-21.33, 17.33)	0.3
Shikata 2020	-1.80 (-1.85, -1.75)	16.7
Takazakura 2015	-5.30 (-10.26, -0.34)	3.4
Yasuda 2004	-3.00 (-5.51, -0.49)	8.3
Overall	-1.04 (-2.06, -0.02)	100.0

Q=3942.20, p=0.00, I2=100%

WMD

Supplementary Figure 15. The Difference in GFR on Follow Up between Statin and Control Groups among Patients on Moderate Intensity Statin.

Difference in GFR on Follow Up between Statin and Control Groups among Patients on Moderate Intensity Statin

Study	WMD (95% CI)	% Weight
de Zeeuw 2015	-4.30 (-7.66, -0.94)	96.3
Nielsen 1993	0.90 (-16.35, 18.15)	3.7
Overall	-4.11 (-7.41, -0.81)	100.0

Q=0.34, p=0.56, I2=0%

WMD
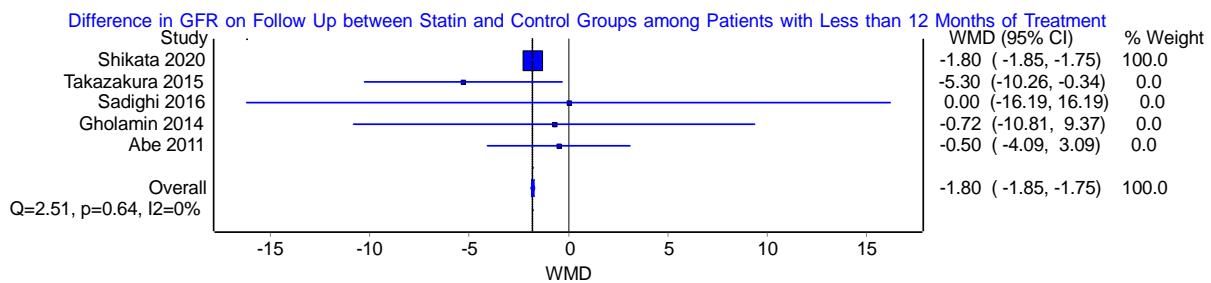
eFigure 16. The Difference in GFR on Follow Up between Statin and Control Groups among Patients with Baseline Albuminuria<300.

Difference in GFR on Follow Up between Statin and Control Groups among Patients with Baseline Albuminuria<300

Study	WMD (95% CI)	% Weight
Shikata 2020	-1.80 (-1.85, -1.75)	18.2
Takazakura 2015	-5.30 (-10.26, -0.34)	3.7
Hanai 2017	-1.10 (-3.21, 1.01)	10.6
Lai 2015	0.00 (-0.02, 0.02)	18.2
Colhoun 2009	-2.00 (-2.99, -1.01)	15.7
Fasset 2010	-1.80 (-4.75, 1.15)	7.6
Rutter 2009	-1.90 (-2.59, -1.21)	16.9
Scanferla 1992	-0.04 (-9.28, 9.20)	1.2
Sadighi 2016	0.00 (-16.19, 16.19)	0.4
Gholamin 2014	-0.72 (-10.81, 9.37)	1.0
Lam 1995	-8.85 (-25.37, 7.67)	0.4
Abe 2011	-0.50 (-4.09, 3.09)	5.9
Hommel 1992	-2.00 (-21.33, 17.33)	0.3
Overall	-1.49 (-2.55, -0.43)	100.0

Q=3927.08, p=0.00, I2=100%

WMD

eFigure 17. The Difference in GFR on Follow Up between Statin and Control Groups among Patients with Baseline Albuminuria>300.

Difference in GFR on Follow Up between Statin and Control Groups among Patients with Baseline Albuminuria>300

Study	WMD (95% CI)	% Weight
Yasuda 2004	-3.00 (-5.51, -0.49)	63.4
de Zeeuw 2015	-4.30 (-7.66, -0.94)	35.3
Nielsen 1993	0.90 (-16.35, 18.15)	1.3
Overall	-3.41 (-5.40, -1.41)	100.0

Q=0.61, p=0.74, I2=0%
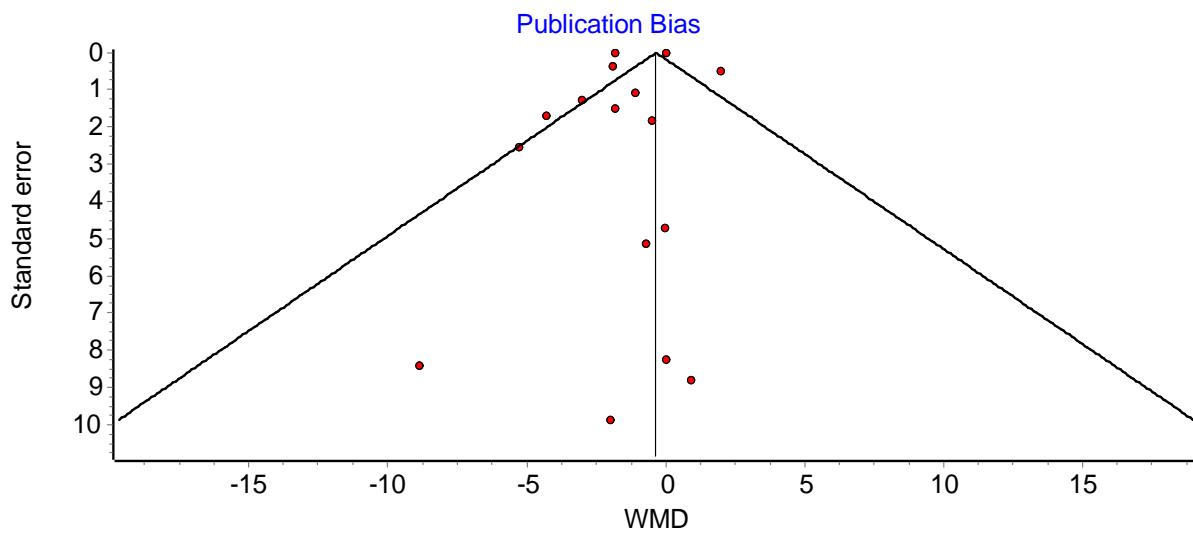
eFigure 18. The Difference in GFR on Follow Up between Statin and Control Groups among Patients with Less than 12 months of Treatment.

Difference in GFR on Follow Up between Statin and Control Groups among Patients with Less than 12 Months of Treatment

Study	WMD (95% CI)	% Weight
Shikata 2020	-1.80 (-1.85, -1.75)	100.0
Takazakura 2015	-5.30 (-10.26, -0.34)	0.0
Sadighi 2016	0.00 (-16.19, 16.19)	0.0
Gholamin 2014	-0.72 (-10.81, 9.37)	0.0
Abe 2011	-0.50 (-4.09, 3.09)	0.0
Overall	-1.80 (-1.85, -1.75)	100.0

Q=2.51, p=0.64, I2=0%

eFigure 19. The Difference in GFR on Follow Up between Statin and Control Groups among Patients with More than 12 months of Treatment.

Difference in Proteinuria on Follow Up between Statin and Control Groups among Patients with More than 12 Months of Treatment

Study	WMD (95% CI)	% Weight
de Zeeuw 2015a	-0.16 (-0.26, -0.06)	91.8
Fasset 2010	-0.13 (-0.49, 0.23)	7.4
Lam 1995	0.02 (-1.06, 1.10)	0.8
Overall	-0.16 (-0.25, -0.06)	100.0

Q=0.13, p=0.94, I2=0%

WMD

eFigure 20. Publication Bias Funnel Plot.

eFigure 21. Publication Bias Doi Plot.