

**Supplementary Table 1: Summary of Characteristics for Included Studies in the Meta-Analysis**

Authors, Years	Country		Sample size		Age, (Mean SD),		Adverse Event		Fracture		BMI (kg/m <sup>2</sup> ; SD)		Skeletal site of BMD	Intervention		Follow-up (month)	BMD assessment
			PTH	Con	PTH	Con	PTH	Con	PTH	Con	PTH	Con	PTH	Con	PTH		
Anastasilakis, 2008 (1)	Greece		22	22	65.1 ± 1.6	64.7 ± 1.5	11	7	NR	NR	28.2 ± 1.	28.1 ± 1.		20	risedronate 35mg/week	3,6 ,12	DXA
Kendler, 2018 (2)	Europe, America, North America	South North	516	533	72.6±8.77	71.6 ±8.58	495	500	68	121	26.9 ±4.61	27.1 ±4.64	NR	20	risedronate 20 µg/day	24	DXA
Felicia, Cosman, 2011 (3)	USA		137	137	65.0±8.8	66.1±9.0	11	6	4	13	25.3±4.15	25.3 ±4.42	CT <sub>x</sub> , P1NP,LS, TH	20	zoledronic acid 5 mg	13	DXA
Yingchun, 2017 (4)	China		50	50	54.2 ± 8.2	54.2 ± 8.2	5	2	2	4	NR	NR	NR,LS ,FN	20	zoledronic acid 5 mg/day	6,12	DXA
Body, 2002 (5)	United States, Austria, Canada, Mexico	States, Belgium, Israel,	73	73	66±8	65±9	14	7	3	10	23.9±4.5	24.4±3.5	LS, TH,FN	40	alendronate 10g /day	3,6,12,14	DXA
Deng, 2017 (6)	China		43	22	62.88±5.8	62.77±6.42	4	0	0	1	24.25±2.60	23.5±3.24	CT <sub>x</sub> , P1NP,LS, TH,FN	20	alendronate 70mg/ week	6,12	DXA
Finkelstein, 2010 (7)	USA		20	29	65±7	64±6	NR	NR	NR	NR	25.6±4.5	23.4 ± 3.4	P1NP, Os,LS, FN,R	40	alendronate	3,6,18,24, 30	DXA

Michael. McClung, (8)	USA	102	101	65.3 ± 8.4	66.6 ± 8.5	18	13	9	8	25.7 ± 4.0	25.3 ± 4.5	P1NP,LS, FN	20	10 mg/day Alendronate 35 mg/day	3,6,18	DXA
Keaveny, (9)	USA	28	25	64.5 ± 1.4	62.5 ± 1.6	NR	NR	NR	NR	26.3 ± 0.8	26.6 ± 0.9	CT <sub>x</sub> , P1NP,LS ,FN	20	Alendronate 10 mg/day	6,18	DXA
Tang, 2019 (10)	China	28	26	61.7±6.6	62.8±7.3	NR	NR	NR	NR	24.8±1.3	26±4	CTX, P1NP,Os,LS, TH,FN,R	20	Alendronate 70mg/week	1,3,6,12	DXA
Chiba, 2022 (11)	Japan	91	40	71.7 ± 6.9	71.9 ± 7.0	7	0	40	21	23.4 ± 3.4	22.6 ± 2.9	P1NP,LS, TH,FN,R	20	Alendronate 35mg/week	6,18,	DXA
Mei, 2022 (12)	China	121	32	66.48±8.17	65.13±6.97	92	15	39	18	NR	NR	CT <sub>x</sub> , P1NP,LS, FN	20	S. Calcitonin NR	12, 24	RCT
Li ying,2013 (13)	China	341	112	65.1±7.1	65.0±7.3	251	79	11	6	23.1 ± 3.1	23.4 ± 3.3	CT <sub>x</sub> ,LS, FN	20	Elcatonin 20U/week	6,12,18	DXA
Zhang, 2009 (14)	China	100	105	64.70±7.67	65.78±7.62	67	62	NR	NR	23.38±3.17	23.60±3.29	NR,LS ,FN	20	Elcatonin 20U/wks	3,6	DXA
Yan, 2014 (15)	China	40	13	65.1±7.6	65.5±8.7	12	2	5	2	NR	NR	CT <sub>x</sub> ,LS ,FN	20	Elcatonin 20U/week	6,12,18	DXA
Gonnelli, (16)	Italy	27	28	71.3±7.0	71.0±6.8	NR	NR	NR	NR	24.7±3.3	24.8±3.1	LS, TH,FN	20	antiresorptive agent NR	6,12	DXA
Neer, (17)	USA	1093	544	69±7	69±7	33	11	79	136	26.6±4.3	26.7±4.7	LS, TH,FN,R	20	Placebo NR	24	DXA
Tsai, 2013(18)	USA	27	23	65.7±7.9	66.3±8.3	1	1	NR	NR	25.5±3.8	24.9±3.9	LS, TH	20	Denosumab 60 mg /6 months	24	DXA

Leder, 2015(19)	USA	27	27	66.1±7.9	65.0±6.2	6	4	14	10	25.5±3.7	23.8±4.1	TH	20	Denosumab 60 mg /6 months	24	DXA
Z. Leder 2015 (20)	USA	45	43	64.5±7.5	66.3±7.0	12	9	NR	NR	26.0±3.4	26.4 ±2.9	TH, FN	20	Abaloparati de 20/d	6,12	DXA
Genant 2017(21)	USA	31	24	65.8±5.7	64.3±4.7	NR	NR	NR	NR	NR	NR	LS, TH, FN	20	Romosozu mab 210 mg / month	12	DXA
Keaveny 2017(22)	USA	31	24	65.8±5.7	64.3±4.7	NR	NR	NR	NR	NR	NR	LS	20	Romosozu mab 210 mg / month	12	DXA
Langdahl 2017 (23)	USA	214	218	71.2±7.7	71.8±7.4	148	164	NR	NR	NR	NR	TH	20	Romosozu mab 210 mg / month	6,12	DXA

PTH – parathyroid hormone ; Con – Control ; NR– Not reported; BMD – bone mineral density; SI – subcutaneous injection; LS – lumbar spine; TH – total hip; FN –Femoral Neck; R – radius; DXA – dual-energy ; x-ray– absorptiometry; CTx – xbeta-C-terminal telopeptide ; P1NP – type 1 procollagen amino-terminal peptides ;Os – osteocalcin.

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