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Dose and Author, year (group)	Description	Weeks	N	Treatment Mean (SD)	N	Control Mean (SD)	Effect (95% CI)	% Weight
Supplementation 1 to 2.9 mg/d Zn								
Gülşan et al. (2013) ⁷²	1 mg/d Zn	12	39	14.56 (2.53)	40	13.46 (2.31)	1.11 (0.04, 2.17)	46.75
Kaseb et al. (2013) ⁸²	1 mg/d Zn	16	48	11.86 (2.45)	47	11.73 (2.27)	0.13 (-0.82, 1.08)	53.25
Subgroup, DL			87		87		0.58 (-0.37, 1.54)	100.00
<i>(I² = 44.4%, p = 0.180)</i>								
Supplementation 3 to 15 mg/d Zn								
Ba Lu et al. (2011) ⁴⁵	6 mg/d Zn	2.1	33	10.72 (1.58)	32	9.68 (1.64)	1.04 (0.26, 1.82)	6.57
Wessells et al. (2010) ²³	10 mg/d Zn	3	17	12.98 (1.36)	10	11.67 (1.94)	1.31 (-0.06, 2.68)	5.41
Wessells et al. (2012) (tablet) ²⁴	5 mg/d Zn	3	149	12.31 (0.67)	150	9.66 (0.67)	2.65 (2.49, 2.80)	7.31
Berger et al. (2015) ⁴⁸	9 mg/d Zn	4	75	13.80 (2.94)	72	12.30 (3.09)	1.50 (0.52, 2.48)	6.21
Gomes Dantas Lopes et al. (2015) ⁷¹	10 mg/d Zn	12	31	16.44 (1.70)	31	16.22 (1.91)	0.21 (-0.69, 1.12)	6.35
Yosae et al. (2020) ²⁷	4 mg/d Zn	12	24	11.78 (7.23)	22	8.69 (2.20)	3.09 (0.06, 6.13)	2.65
Yosae et al. (2019) (Zinc + Vitamin D VS Vitamin D only) ²⁷	4 mg/d Zn	12	25	19.56 (5.91)	27	8.96 (2.03)	10.60 (8.16, 13.04)	3.42
Bodgen et al. (1988) ⁵⁰	15 mg/d Zn	12	36	16.80 (3.50)	18	12.50 (2.00)	4.30 (2.83, 5.77)	5.19
Surono et al. (2014) ¹¹⁴	8 mg/d Zn	12.9	12	11.46 (2.63)	12	10.39 (1.45)	1.23 (-0.46, 2.92)	4.74
Surono et al. (2014) (Zn + Probiotic VS Probiotic only) ¹¹⁴	8 mg/d Zn	12.9	12	11.32 (2.50)	12	11.39 (1.97)	-0.07 (-1.87, 1.73)	4.53
Islam et al. (2022) ⁷⁹	10 mg/d Zn	24	52	14.14 (0.44)	55	11.27 (0.34)	2.87 (2.72, 3.02)	7.31
Long et al. (2022) ⁸⁸	10 mg/d Zn	24	53	14.60 (3.38)	52	11.34 (2.48)	3.26 (2.13, 4.39)	5.89
Brown et al. (2007) ⁵²	3 mg/d Zn	26	80	12.51 (2.39)	91	11.58 (2.16)	0.93 (0.25, 1.62)	6.74
Abdollahi et al. (2019) ³⁵	5 mg/d Zn	26	272	12.23 (2.02)	268	12.63 (2.72)	-0.40 (-0.78, -0.01)	7.14
Hiniger-Favier et al. (2007) ³¹	15 mg/d Zn	26	126	14.00 (2.60)	65	13.00 (1.70)	1.00 (0.39, 1.61)	6.85
Fahmidia et al. (2007) ³⁴	10 mg/d Zn	26	25	19.15 (1.55)	34	15.30 (0.75)	3.85 (3.19, 4.51)	6.78
Wessells et al. (2021) ¹³	7 mg/d Zn	36	134	10.05 (2.83)	130	8.30 (1.68)	1.75 (1.19, 2.31)	6.93
Subgroup, DL			1156		1121		2.05 (1.43, 2.67)	100.00
<i>(I² = 96.1%, p = 0.000)</i>								
Supplementation 16 to 25 mg/d Zn								
Wessells et al. (2010) ²³	20 mg/d Zn	3	16	13.49 (0.88)	9	11.67 (1.94)	1.82 (0.48, 3.16)	9.48
Boaglio et al. (2011) ²⁵	23 mg/d Zn	3	24	11.25 (2.22)	23	10.97 (1.53)	0.28 (-0.52, 1.07)	11.08
Mazaheri Nia et al. (2021) ⁹³	25 mg/d Zn	6	57	14.02 (2.70)	55	9.38 (0.43)	4.64 (3.93, 5.35)	11.29
Palin et al. (1979) ⁹⁹	23 mg/d Zn	8	7	13.98 (5.93)	10	13.76 (1.96)	0.22 (-4.34, 4.78)	2.82
Fernandes de Oliveira et al. (2009) ⁶⁶	22 mg/d Zn	12	21	18.70 (3.50)	26	16.90 (2.10)	1.80 (0.10, 3.50)	8.33
Rohmawati et al. (2021) ¹⁰⁵	20 mg/d Zn	12	35	9.04 (1.32)	36	7.65 (1.32)	1.39 (0.78, 2.00)	11.51
Heckmann et al. (2005) ⁷⁵	20 mg/d Zn	12	24	12.47 (3.00)	26	11.01 (1.56)	1.46 (0.12, 2.80)	9.47
Tamura et al. (1996) ¹¹⁷	25 mg/d Zn	17	70	9.10 (0.17)	65	8.73 (0.16)	0.37 (0.31, 0.43)	12.20
Hunt et al. (1985) ¹⁷	20 mg/d Zn	19	56	9.68 (1.41)	47	9.14 (1.25)	0.54 (0.03, 1.05)	11.71
Yalda and Ibrahim (2010) ¹²⁶	22 mg/d Zn	24	50	11.56 (0.37)	50	9.40 (0.60)	2.16 (1.96, 2.35)	12.13
Subgroup, DL			360		347		1.55 (0.68, 2.42)	100.00
<i>(I² = 98.0%, p = 0.000)</i>								
Supplementation 26 to 50 mg/d Zn								
Sullivan et al. (1998) ¹¹³	50 mg/d Zn	2	11	14.50 (0.60)	11	13.00 (0.30)	1.50 (1.10, 1.90)	7.41
Sullivan and Cousins (1997) ¹¹²	50 mg/d Zn	2	10	15.00 (2.43)	10	12.30 (2.43)	2.70 (0.57, 4.83)	3.39
Payatoo et al. (2013) ⁹⁴	30 mg/d Zn	4	11	13.33 (3.52)	30	7.00 (2.60)	6.33 (2.73, 9.89)	4.57
Swanson et al. (1988) ¹¹⁵	30 mg/D Zn	4	17	16.50 (2.47)	17	12.90 (1.65)	3.60 (2.19, 5.01)	4.95
Barrie et al. (1987) ⁴⁶	50 mg/d Zn	4	15	8.35 (0.58)	15	8.39 (1.17)	-0.04 (-0.70, 0.62)	6.89
Fischer et al. (1984) ⁸⁸	50 mg/d Zn	6	13	18.35 (5.50)	13	15.14 (0.83)	3.21 (0.19, 6.23)	2.16
Kim et al. (2014) ⁹⁴	30 mg/d Zn	8	20	14.90 (1.80)	20	14.10 (1.60)	0.80 (-0.26, 1.86)	5.88
Ahmadi et al. (2020) ⁹⁹	50 mg/d Zn	8	40	13.69 (1.87)	40	13.31 (1.87)	0.37 (-0.45, 1.19)	6.50
Crouse et al. (1984) (Endurance-trained) ⁵⁵	50 mg/d Zn	8	11	23.85 (6.60)	10	21.56 (5.20)	2.29 (-2.77, 7.35)	0.94
Crouse et al. (1984) (Sedentary) ⁵⁵	50 mg/d Zn	8	12	26.45 (7.65)	11	23.39 (5.20)	3.06 (-2.25, 8.37)	0.86
Mesdaghinia et al. (2019) ⁸⁴	30 mg/d Zn	10	26	12.22 (1.30)	26	10.84 (1.09)	1.38 (0.73, 2.03)	6.91
Mujica-Coopman et al. (2015) ⁹⁶	30 mg/d Zn	12	26	17.03 (3.23)	28	14.16 (3.33)	2.87 (1.12, 4.62)	4.15
Solati et al. (2015) ¹⁰⁹	30 mg/d Zn	12	22	15.45 (4.36)	24	13.29 (0.87)	2.16 (0.30, 4.02)	3.92
Jafari et al. (2020) ⁸⁰	30 mg/d Zn	12	27	16.88 (2.62)	30	13.56 (2.21)	3.32 (2.06, 4.59)	5.32
Black et al. (1988) ³²	50 mg/d Zn	12	13	15.50 (1.62)	5	13.50 (1.05)	2.00 (0.73, 3.27)	5.30
Ayatollahi et al. (2022) ⁴²	50 mg/d Zn	13	40	13.64 (1.22)	40	13.26 (1.30)	0.38 (-0.17, 0.94)	7.12
Khorsandi et al. (2019) ⁸³	30 mg/d Zn	15	18	11.53 (1.25)	22	10.42 (1.53)	1.11 (0.25, 1.97)	6.40
Hiniger-Favier et al. (2007) ³¹	30 mg/d Zn	26	131	15.10 (3.60)	65	13.00 (1.70)	2.10 (1.36, 2.84)	6.69
Prasad et al. (2007) ¹⁰⁴	45 mg/d Zn	52	24	15.90 (2.55)	25	13.53 (1.48)	2.37 (1.20, 3.54)	5.57
Stur et al. (1996) ¹¹¹	45 mg/d	104	38	16.62 (4.02)	42	13.04 (1.56)	3.58 (2.22, 4.94)	5.07
Subgroup, DL			544		484		1.90 (1.38, 2.42)	100.00
<i>(I² = 79.8%, p = 0.000)</i>								
Supplementation 51 to 100 mg/d Zn								
Demetree et al. (1980) ⁶⁸	100 mg/d Zn	3	5	14.07 (6.27)	5	8.10 (2.75)	5.97 (-0.03, 11.97)	4.31
DiSilvestro et al. (2015) ⁶⁹	60 mg/d Zn	6	10	13.76 (4.59)	10	12.23 (4.59)	1.53 (-2.49, 5.55)	9.61
Black et al. (1988) ³²	75 mg/d Zn	12	9	18.10 (4.05)	4	13.50 (1.05)	4.60 (1.76, 7.44)	19.27
Bodgen et al. (1988) ⁵⁰	100 mg/d Zn	12	32	16.80 (3.50)	18	12.50 (2.00)	4.30 (2.78, 5.82)	66.82
Subgroup, DL			56		37		4.16 (2.92, 5.41)	100.00
<i>(I² = 0.0%, p = 0.548)</i>								
Supplementation 101 to 151 mg/d Zn								
Abdulla and Svensson, (1979) (Study 1) ³⁷	135 mg/d Zn	12	7	27.40 (1.50)	5	15.20 (1.00)	12.20 (10.78, 13.62)	0.79
Weismann et al. (1977) ²²	135 mg/d Zn	12	13	18.15 (4.49)	12	15.39 (2.12)	2.76 (0.04, 5.48)	49.21
Subgroup, DL			20		17		7.55 (-1.70, 16.80)	100.00
<i>(I² = 97.3%, p = 0.000)</i>								
Heterogeneity between groups: p = 0.000								
Overall, DL			2223		2093		2.18 (1.74, 2.61)	
<i>(I² = 97.8%, p = 0.000)</i>								

-10

-5

0

5

10

15

Intervention lower

Intervention higher