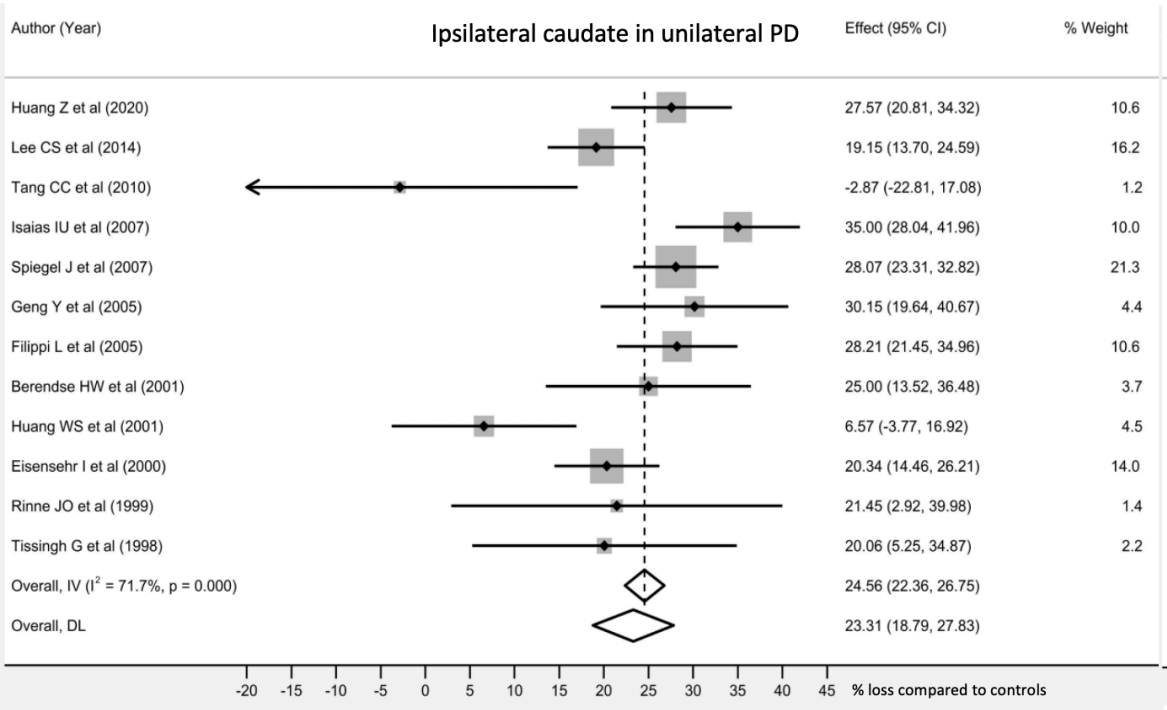
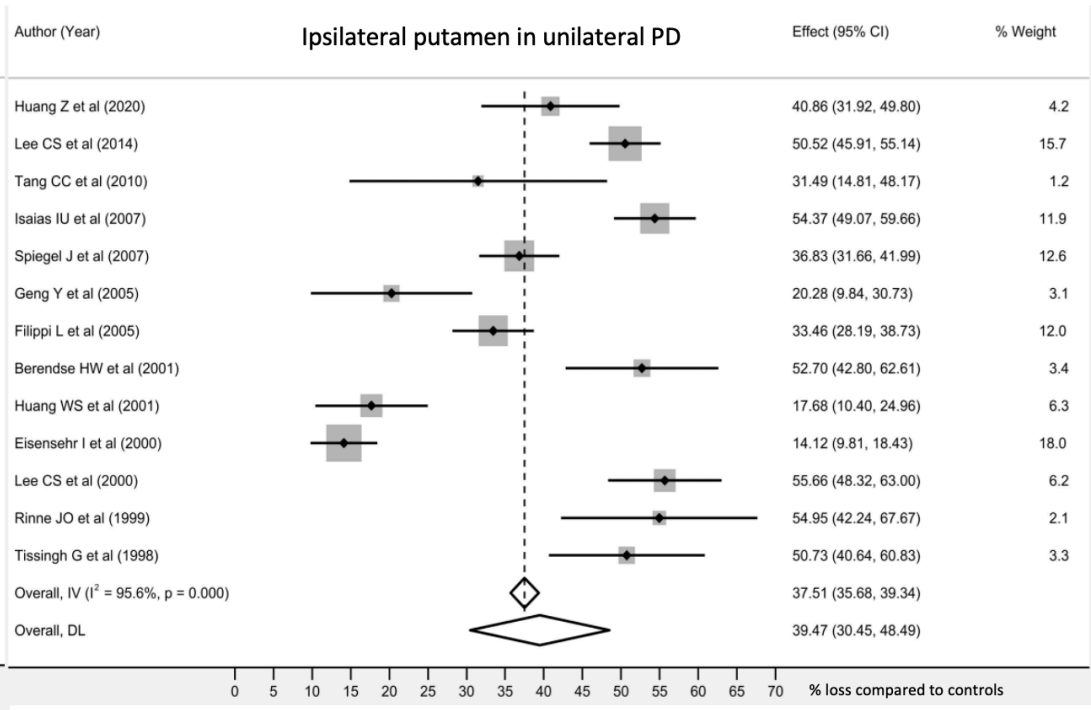
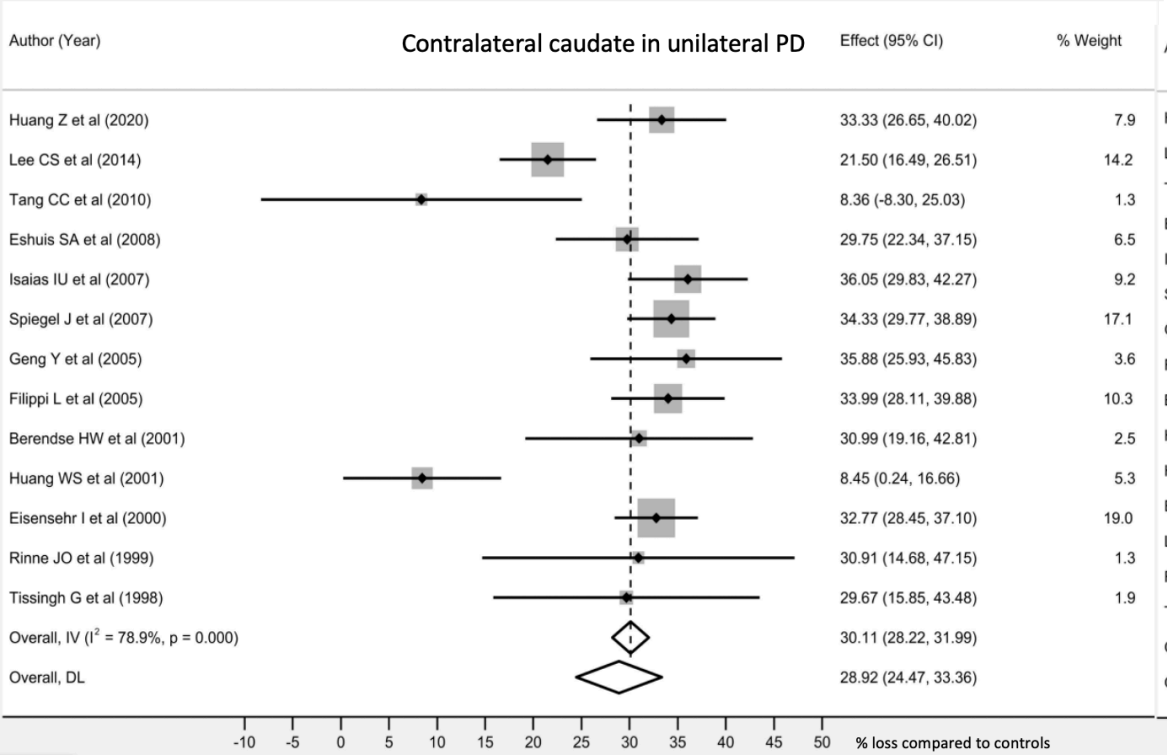
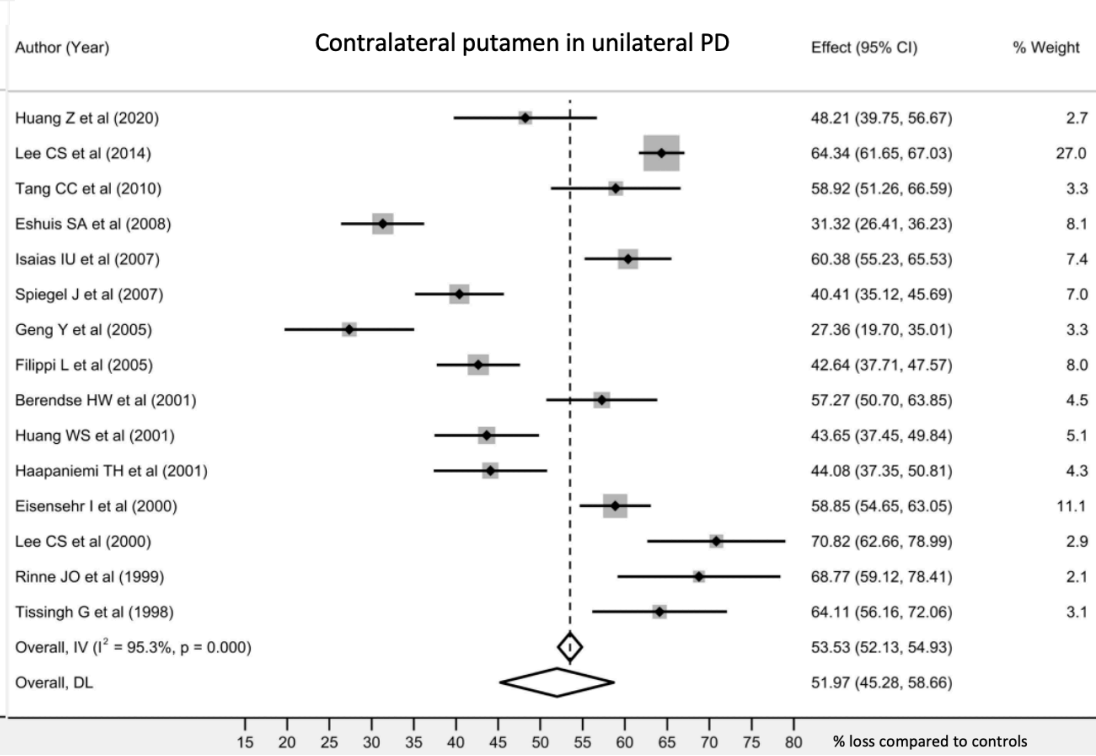

Ipsilateral caudate in unilateral PD
Author (Year)
Effect (95% CI)
% Weight
Huang Z et al (2020) 27.57 (20.81, 34.32) 10.6
Lee CS et al (2014) 19.15 (13.70, 24.59) 16.2
Tang CC et al (2010) -2.87 (-22.81, 17.08) 1.2
Isaias IU et al (2007) 35.00 (28.04, 41.96) 10.0
Spiegel J et al (2007) 28.07 (23.31, 32.82) 21.3
Geng Y et al (2005) 30.15 (19.64, 40.67) 4.4
Filippi L et al (2005) 28.21 (21.45, 34.96) 10.6
Berendse HW et al (2001) 25.00 (13.52, 36.48) 3.7
Huang WS et al (2001) 6.57 (-3.77, 16.92) 4.5
Eisensehr I et al (2000) 20.34 (14.46, 26.21) 14.0
Rinne JO et al (1999) 21.45 (2.92, 39.98) 1.4
Tissingh G et al (1998) 20.06 (5.25, 34.87) 2.2
Overall, IV (I² = 71.7%, p = 0.000) 24.56 (22.36, 26.75)
Overall, DL 23.31 (18.79, 27.83)
-20 -15 -10 -5 0 5 10 15 20 25 30 35 40 45
% loss compared to controls


Ipsilateral putamen in unilateral PD
Author (Year)
Effect (95% CI)
% Weight
Huang Z et al (2020) 40.86 (31.92, 49.80) 4.2
Lee CS et al (2014) 50.52 (45.91, 55.14) 15.7
Tang CC et al (2010) 31.49 (14.81, 48.17) 1.2
Isaias IU et al (2007) 54.37 (49.07, 59.66) 11.9
Spiegel J et al (2007) 36.83 (31.66, 41.99) 12.6
Geng Y et al (2005) 20.28 (9.84, 30.73) 3.1
Filippi L et al (2005) 33.46 (28.19, 38.73) 12.0
Berendse HW et al (2001) 52.70 (42.80, 62.61) 3.4
Huang WS et al (2001) 17.68 (10.40, 24.96) 6.3
Eisensehr I et al (2000) 14.12 (9.81, 18.43) 18.0
Lee CS et al (2000) 55.66 (48.32, 63.00) 6.2
Rinne JO et al (1999) 54.95 (42.24, 67.67) 2.1
Tissingh G et al (1998) 50.73 (40.64, 60.83) 3.3
Overall, IV (I² = 95.6%, p = 0.000) 37.51 (35.68, 39.34)
Overall, DL 39.47 (30.45, 48.49)
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70
% loss compared to controls


Contralateral caudate in unilateral PD
Author (Year)
Effect (95% CI)
% Weight
Huang Z et al (2020) 33.33 (26.65, 40.02) 7.9
Lee CS et al (2014) 21.50 (16.49, 26.51) 14.2
Tang CC et al (2010) 8.36 (-8.30, 25.03) 1.3
Eshuis SA et al (2008) 29.75 (22.34, 37.15) 6.5
Isaias IU et al (2007) 36.05 (29.83, 42.27) 9.2
Spiegel J et al (2007) 34.33 (29.77, 38.89) 17.1
Geng Y et al (2005) 35.88 (25.93, 45.83) 3.6
Filippi L et al (2005) 33.99 (28.11, 39.88) 10.3
Berendse HW et al (2001) 30.99 (19.16, 42.81) 2.5
Huang WS et al (2001) 8.45 (0.24, 16.66) 5.3
Eisensehr I et al (2000) 32.77 (28.45, 37.10) 19.0
Rinne JO et al (1999) 30.91 (14.68, 47.15) 1.3
Tissingh G et al (1998) 29.67 (15.85, 43.48) 1.9
Overall, IV (I² = 78.9%, p = 0.000) 30.11 (28.22, 31.99)
Overall, DL 28.92 (24.47, 33.36)
-10 -5 0 5 10 15 20 25 30 35 40 45 50
% loss compared to controls


Contralateral putamen in unilateral PD
Author (Year)
Effect (95% CI)
% Weight
Huang Z et al (2020) 48.21 (39.75, 56.67) 2.7
Lee CS et al (2014) 64.34 (61.65, 67.03) 27.0
Tang CC et al (2010) 58.92 (51.26, 66.59) 3.3
Eshuis SA et al (2008) 31.32 (26.41, 36.23) 8.1
Isaias IU et al (2007) 60.38 (55.23, 65.53) 7.4
Spiegel J et al (2007) 40.41 (35.12, 45.69) 7.0
Geng Y et al (2005) 27.36 (19.70, 35.01) 3.3
Filippi L et al (2005) 42.64 (37.71, 47.57) 8.0
Berendse HW et al (2001) 57.27 (50.70, 63.85) 4.5
Huang WS et al (2001) 43.65 (37.45, 49.84) 5.1
Haapaniemi TH et al (2001) 44.08 (37.35, 50.81) 4.3
Eisensehr I et al (2000) 58.85 (54.65, 63.05) 11.1
Lee CS et al (2000) 70.82 (62.66, 78.99) 2.9
Rinne JO et al (1999) 68.77 (59.12, 78.41) 2.1
Tissingh G et al (1998) 64.11 (56.16, 72.06) 3.1
Overall, IV (I² = 95.3%, p = 0.000) 53.53 (52.13, 54.93)
Overall, DL 51.97 (45.28, 58.66)
15 20 25 30 35 40 45 50 55 60 65 70 75 80
% loss compared to controls