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Appendix Table 1: Abstracted data for each manuscript.

| Study Characteristics | Patient Characteristics | Clinical Outcomes |
|-----------------------|-------------------------|------------------|
| Multicentre trial (y/n) | Mean age (years) | Baseline A1C by placebo and treatment group(s) |
| Sample size (total and each study arm) | % Male | End of study A1C by placebo and treatment group(s) |
| Duration (weeks) | Ethnicity (as listed by authors) | Absolute change in A1C by placebo and treatment group(s) |
| Run in period (using a placebo – in weeks) | Duration of Diabetes (years) |  |
| Follow up % (≥ 70%) | Weight (kg) |  |
| Drug | BMI |  |
| Dose (fixed or titrated) | Baseline A1C (%) |  |
| Background OAD use | Type of analysis (all patients treated, efficacy/per protocol or intention to treat analysis) |  |
| Funding source (Government, private non-profit, private for profit, not funded or not reported) |  |  |
## Appendix Table 2: Study characteristics

| Study/Year          | Duration (weeks) | Intervention Follow up | Drug and Dose          | Control Follow up | Background Drug     |
|---------------------|------------------|------------------------|------------------------|-------------------|---------------------|
| Ahren, 2004 ‡ (10)  | 12               | 56 89                  | Vildagliptin 50 mg OD  | 51 92             | Metformin           |
| Aschner, 2006 * (40) | 24               | 238 87.8               | Sitagliptin 100 mg OD  | 253 85.3          | OAD Discontinued    |
| Barnett, 2003 * (11) | 26               | 84 94                  | Rosiglitazone 8 mg OD  | 87 79             | Sulphonylurea       |
| Berhanu, 2007 * (11) | 20               | 110 87.3               | Pioglitazone 45 mg OD  | 112 87.3          | Insulin +/- OAD     |
| Bosi, 2007 * (12)   | 24               | 177 86.4               | Vildagliptin 50 mg OD  | 182 83.5          | Metformin           |
| Charbonnel, 2006 * (42) | 24         | 464 89.7               | Sitagliptin 100 mg OD  | 237 81            | Metformin           |
| Chiasson, 2006 * (61)| 36               | 82 86.6                | Miglitol 100 mg TID   | 83 97.6           | OAD Discontinued    |
| Chan, 2005 * (62)   | 24               | 63 82.5                | Acarbose 100 mg TID   | 63 90.5           | Drug Naive          |
| Coniff, 1994 * (43) | 24               | 105 86.7               | Acarbose 300 mg TID   | 107 91.6          | OAD Discontinued    |
| Coniff, 1995 * (44) | 24               | 76 96                  | Acarbose 200 mg TID   | 72 83             | OAD Discontinued    |
| Coniff, 1995 § (13) | 16               | 73 79.5                | Acarbose 100 mg TID   | 73 87.7           | Drug Naive          |
| Dargie, 2005 § (14) | 16               | 196 87.2               | Metformin 2550 mg/day | 194 93.8          | Insulin, Metformin  |
| De Jager, 2003 * (15) | 29             | 144 84                 | Metformin 2550 mg/day | 284 75            | Any OAD             |
| Dormandy, 2005 § (15) | 138           | 2633 93.2              | Pioglitazone 45 mg OD | 2605 92.9        | Any OAD             |
| Einhorn, 2005 § (17) | 16              | 168 83                 | Pioglitazone 30 mg OD | 160 70            | Metformin           |
| Feingros, 2005 * (64) | 16             | 61 91.8                | Glipizide 2.5 mg OD   | 61 91.8           | Metformin           |
| Fischer, 1999 § (16) | 24              | 102 84.3               | Acarbose 25 mg TID    | 97 83.5           | Drug Naive          |
| Fonseca, 2000 * (48) | 26              | 119 84.9               | Rosiglitazone 4 mg OD | 116 81.03         | Metformin           |
| Fonseca, 2003 * (17) | 24              | 200 85                 | Nateglinide 120 mg TID | 202 80            | Rosiglitazone      |
| Fujio, 2000 § (18)  | 16               | 128 78.9               | Metformin XR 500 mg OD| 117 76.1          | Drug Naive          |
| Garber, 2006 * (19) | 24               | 147 84.4               | Vildagliptin 50 mg OD | 158 81            | TZD                 |
| Goldstein, 2007 * (49) | 24             | 179 97.8               | Sitagliptin 100 mg OD | 176 93.8          | OAD Discontinued    |
| Gonzalez-Clemente, 2008 * (50) | 12      | 55 96.4                | Nateglinide 120 mg TID | 54 94.4           | Drug Naive          |
| Halimi, 2000 * (20) | 24               | 78 89.7                | Acarbose 100 mg TID   | 74 79.7           | Metformin           |
| Hanefeld, 2000 * (21) | 12              | 51 86.3                | Nateglinide 30 mg TID | 60 90             | OAD Discontinued    |
| Hanefeld, 2000 * (22) | 12              | 58 93.1                | Nateglinide 60 mg TID | 57 93             | Metformin           |

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| Study/Year     | Duration (weeks) | Intervention Follow up | Control Follow up | Drug and Dose | Background Drug |
|---------------|------------------|------------------------|-------------------|---------------|-----------------|
| Hanefeld, 2007 * (51) | 12               | N=111                  | 111             | Sitagliptin 25 mg OD | OAD Discontinued |
|                |                  | N=112                  | 95.5             | Sitagliptin 50 mg OD |                 |
|                |                  | N=110                  | 96.4             | Sitagliptin 100 mg OD |                 |
|                |                  | N=111                  | 97.3             | Sitagliptin 50 mg BID |                 |
| Hedblad, 2007 * (52) | 52              | N=99                   | 78.8             | Rosiglitazone 4 mg BID | Any OAD Except TZD |
| Hermansen, 2007 * (53) | 24              | N=222                  | 83.3             | Sitagliptin 100 mg OD | Glimepiride +/- Metformin |
| Herz, 2003 * (54)    | 16              | N=99                   | 92.9             | Pioglitazone 30 mg OD | Drug Naive      |
|                |                  | N=99                   | 92.9             | Pioglitazone 45 mg OD |                 |
| Hollander, 2007 * (55) | 24             | N=209                  | 75.6             | Rosiglitazone 2 mg OD |                 |
|                |                  | N=209                  | 70.3             | Rosiglitazone 4 mg OD |                 |
| Holman, 1999 * (56)  | 156             | N=973                  | 83.3             | Acarbose 100 mg TID | OAD +/- Insulin |
| Horton, 2004 * (57)  | 24              | N=104                  | 97.1             | Nateglinide 120 mg TID | Drug Naive      |
|                |                  | N=104                  | 97.1             | Metformin 500 mg TID |                 |
| Hwu, 2003 * (58)    | 18              | N=56                   | 96.4             | Acarbose 100 mg TID | Insulin         |
| Johnston, 1994 * (59) | 14            | N=61                   | 93.4             | Miglitol 50 mg TID | Sulphonylurea   |
|                |                  | N=68                   | 85.3             | Miglitol 100 mg TID |                 |
| Johnston, 1998 § (60) | 56             | N=104                  | 91              | Miglitol 25 mg TID | Drug Naive      |
|                |                  | N=102                  | 83              | Miglitol 50 mg TID |                 |
|                |                  | N=104                  | 88.4             | Glyburide 20 mg/day |                 |
| Kelley, 1998 * (61)  | 24              | N=98                   | 73.5             | Acarbose 100 mg TID | Insulin         |
| Kipnes, 2001 § (62)  | 16              | N=184                  | 95.7             | Pioglitazone 15 mg OD | Sulphonylurea   |
|                |                  | N=189                  | 96.3             | Pioglitazone 30 mg OD |                 |
| Manzella, 2004 † (63) | 16            | N=60                   | 100              | Metformin 850 mg BID | Drug Naive      |
| Marre, 2002 * (64)  | 24              | N=155                  | 88.4             | Nateglinide 60 mg TID | Metformin       |
|                |                  | N=160                  | 90.1             | Nateglinide 120 mg TID |                 |
| Mattoo, 2005 * (65)  | 24              | N=142                  | 90.1             | Pioglitazone 30 mg OD | Any OAD +/- Insulin |
| Mitrakou, 1998 † (66) | 24          | N=60                   | 96.7             | Miglitol 100 mg TID | Insulin         |
| Moses, 2001 * (67)  | 16              | N=138                  | 81.1             | Repaglinide 1 mg TID | Drug Naive      |
| Nonaka, 2008 * (68) | 12             | N=76                   | 98.7             | Sitagliptin 100 mg OD | OAD Discontinued |
| Patel, 1999 § (69)  | 12              | N=74                   | 78              | Rosiglitazone 0.05 mg BID | Drug Naive      |
|                |                  | N=72                   | 76              | Rosiglitazone 0.25 mg BID |                 |
|                |                  | N=79                   | 82              | Rosiglitazone 1 mg BID |                 |
|                |                  | N=80                   | 86              | Rosiglitazone 2 mg BID |                 |
| Raskin, 2001 § (70) | 26              | N=106                  | 81              | Rosiglitazone 2 mg BID | Insulin         |
|                |                  | N=103                  | 77              | Rosiglitazone 4 mg BID |                 |
| Raz, 2006 * (71)   | 18              | N=205                  | 91.2             | Sitagliptin 100 mg OD | OAD Discontinued |
| Raz, 2008 * (72)   | 30              | N=96                   | 82.3             | Sitagliptin 100 mg OD | Metformin       |
| Riddle, 1998 * (73) | 24              | N=72                   | 97.2             | Glimepiride 8 mg BID | Insulin         |
| Roberts, 2005 * (74) | 26             | N=85                   | 83.3             | Glimepiride 8 mg OD | Metformin, TZD |
| Rosenstock, 2006 * (75) | 24         | N=175                  | 85.1             | Sitagliptin 100 mg OD | Pioglitazone    |
| Rosenstock, 2008 * (76) | 26        | N=56                   | 96.4             | Rosiglitazone 4 mg OD | Glimepiride     |
| Scherbaum, 2002 * (77) | 26        | N=83                   | 73.5             | Pioglitazone 15 mg OD | Drug Naive      |
|                |                  | N=72                   | 88.9             | Pioglitazone 30 mg OD |                 |
| Scherbaum, 2008 * (78) | 108           | N=68                   | 76.1             | Vildagliptin 50 mg OD | Drug Naive      |
| Scherbaum, 2008 * (79) | 52          | N=156                  | 88.5             | Vildagliptin 50 mg OD | Drug Naive      |
| Study/Year               | Duration (weeks) | Intervention Follow up | Drug and Dose          | Control Follow up | Background Drug |
|-------------------------|------------------|------------------------|------------------------|-------------------|-----------------|
| Scott, 1999 § (36)      | 16               | 53 77.4                | Acarbose 100 mg TID   | 52 80.8           | Drug Naïve      |
| Scott, 2007 * (37)      | 12               | 125 81.3               | Glipizide 20 mg/day   | 125 86.4          | OAD Discontinued|
|                         |                  | 123 94.3               | Sitagliptin 5mg BID    |                   |                 |
|                         |                  | 123 87.8               | Sitagliptin 12.5 mg BID|                   |                 |
|                         |                  | 124 90.3               | Sitagliptin 25 mg BID  |                   |                 |
| Scott, 2008 * (38)      | 18               | 94 90                  | Sitagliptin 100 mg OD  | 92 91             | Metformin       |
|                         |                  | 87 98                  | Rosiglitazone 8 mg OD  |                   |                 |
| Testa, 1998 *†‡ (60)    | 12               | 377 90.2               | Glipizide 20 mg/day   | 192 84.4          | Drug Naïve      |
| Van Gaal, 2001 * (39)   | 32               | 77 72.7                | Miglitol 100 mg TID   | 75 84             | Metformin       |

Study funding is indicated as the following: * - private for profit; † - private non-profit; ‡ - governmental; and § - not reported.
### Appendix Table 3: Patient characteristics

| Study                  | Intervention |   | Control |   |
|------------------------|--------------|---|--------|---|
|                        | Age (y)      | % Male | % White | Duration of DM (y) | BMI | Initial A1C (%) | Age (y)      | % Male | % White | Duration of DM (y) | BMI | Initial A1C (%) |
| Ahren, 2004 (10)       | 57.9         | 69.6  | N/R     | 5.6           | 29.4 | 7.2              | 55.7         | 66.7  | N/R     | 5.5           | 30.2 | 7.8              |
| Aschner, 2006 (40)     | 53.4         | 57.1  | 51.3    | 4.3           | 30.3 | 8                | 54.3         | 51.4  | 50.2    | 4.6           | 30.8 | 8                |
| Barnett, 2003 (11)     | 54.9         | 46.8  | 52.8    | 4.3           | 30.3 | 8.1              | 54.1         | 75    | N/R     | 6.5           | 26.4 | 9.1              |
| Berhanu, 2007 (41)     | 52.9         | 43.6  | 34.9    | 7.7           | 30.7 | 8.4              | 52.5         | 41.1  | 25.9    | 8.5           | 31.8 | 8.6              |
| Bosi, 2007 (12)        | 54.3         | 57.3  | 74.1    | 6.8           | 32.1 | 8.4              | 54.5         | 53.1  | 73.1    | 6.2           | 33.2 | 8.3              |
| Charbonnel, 2006 (42)  | 53.9         | 61.5  | 74.1    | 5.8           | 32.9 | 8.4              | 53.9         | 61.5  | 74.1    | 5.8           | 32.9 | 8.4              |
| Chiasson, 2001 (61)    | 57.3         | 78.1  | 89      | 5.2           | 31.1 | 8.2              | 57.7         | 67.5  | 91.6    | 5.1           | 31.1 | 8.1              |
| Chan, 1998 (62)        | 57.9         | 73.5  | 88      | 7.5           | 30.7 | 8.2              | 57.9         | 73.5  | 88      | 7.5           | 30.7 | 8.2              |
| Coniff, 1994 (43)      | 52.8         | 50.8  | N/R     | 2.7           | 25.4 | 8.2              | 54           | 50.8  | N/R     | 2.1           | 25.6 | 8.6              |
| Coniff, 1995 (44)      | 56           | 45    | 59      | N/R           | N/R  | 6.8              | 55.6         | 54    | 60      | N/R           | N/R  | 6.7              |
| Coniff, 1995 (43)      | 56.2         | 39    | 51      | 5.1           | 29.7 | 6.9              | 56.3         | 52    | 45      | 5.5           | 29.9 | 7.1              |
| Dargie, 2007 (45)      | 55           | 52    | 74      | 6             | 31   | 8.7              | 54           | 58    | 81      | 5             | 32   | 8.7              |
| Dargie, 2007 (45)      | 56           | 59    | 74      | 5             | 31   | 9.0              | 56           | 59    | 74      | 5             | 31   | 9.0              |
| Davidson, 2007 (46)    | 64.3         | 84.3  | 99.1    | 4.5           | 28.8 | 7.8              | 63.9         | 79.1  | 99.1    | 4             | 28.6 | 7.8              |
| De Jager, 2005 (14)    | 52           | 45.3  | 0       | 6             | 31.3 | 9.2              | 53           | 48.3  | 0       | 6             | 31.9 | 9.4              |
| Del Prato, 2003 (15)   | 56           | 59    | N/R     | N/R           | 29.7 | 7.8              | 56           | 63    | N/R     | N/R           | 29.9 | 7.4              |
| Dermady, 2005 (63)     | 61.9         | 67    | 98      | 8*            | 30.7 | 7.8*             | 61.6         | 66    | 99      | 8*            | 31   | 7.9*             |
| Einhorn, 2000 (47)     | 55.5         | 54.8  | 81      | N/R           | 32.1 | 9.9              | 55.7         | 60    | 86.9    | N/R           | 32.1 | 9.8              |
| Feinglos, 2005 (64)    | 57.7         | 45.9  | 78.7    | 6.5           | 31.7 | 7.5              | 58.8         | 41.0  | 68.9    | 4.6           | 32.1 | 7.6              |
| Fischer, 1998 (16)     | 58.5         | 53    | N/R     | 2.2           | 27.3 | 7.4              | 52.7         | 53    | N/R     | 2             | 26.9 | 7.3              |
| Fonseca, 2000 (48)     | 55.5         | 49    | N/R     | 1.7           | 27.6 | 7.5              | 56.8         | 59    | N/R     | 1.4           | 27.6 | 7.4              |
| Fonseca, 2003 (17)     | 59.4         | 51    | N/R     | 1.8           | 27.2 | 7.5              | 59.4         | 51    | N/R     | 1.8           | 27.2 | 7.5              |
| Fujioka, 2005 (18)     | 57.5         | 62.1  | 80.2    | 7.5           | 30.2 | 8.9              | 58.8         | 74.3  | 81.4    | 7.3           | 30.3 | 8.6              |
| Garber, 2006 (19)      | 56.5         | 68.2  | 77.3    | 8.3           | 29.8 | 8.9              | 56.6         | 58.2  | 77.3    | 8.3           | 29.8 | 8.9              |
Table 3 cont’d:

| Study                        | Intervention | Control |
|------------------------------|--------------|---------|
|                              | Age (y) | % Male  | % White  | Duration of DM (y) | BMI   | Initial A1C (%) | Age (y) | % Male  | % White  | Duration of DM (y) | BMI   | Initial A1C (%) |
| Goldstein, 2007 (43) | 53.3 | 52 | 52 | 4.4 | 31.2 | 8.9 | 53.6 | 52.8 | 46 | 4.6 | 32.5 | 8.7 |
|                              | 53.4 | 48.9 | 47.8 | 4.5 | 32.1 | 8.9 | 53.2 | 45.1 | 58.2 | 4.4 | 32.2 | 8.7 |
| Gonzalez-Clemente, 2008 (50) | 59.9 | 56.4 |  | 28.9 | 7.2 | 57.2 | 63 |  | 28.7 | 7.1 |
| Halimi, 2000 (20) | 56 | 47.5 | N/R | 9.5 | 30.1 | 8.6 | 55 | 62.9 | N/R | 9 | 29.7 | 8.5 |
| Hanefeld, 2000 (21) | 58 | 70.6 | N/R | 4.5 | 29 | 8.4 | 57.4 | 60 | N/R | 5.4 | 28.3 | 8.5 |
|                              | 56.1 | 70.7 | N/R | 6.2 | 28.1 | 8.3 | 54.4 | 69.8 | N/R | 4.4 | 28.6 | 8.3 |
| Hanefeld, 2007 (51) | 55 | 51.4 | 88.3 | 3.6 | 31.9 | 7.7 | 55.9 | 63.1 | 78.4 | 3.3 | 31.4 | 7.6 |
|                              | 55.3 | 45.5 | 85.7 | 3.3 | 31.6 | 7.6 | 56 | 55.5 | 88.2 | 3.6 | 31.3 | 7.8 |
|                              | 55.2 | 44.1 | 81.1 | 4.5 | 32.7 | 7.8 | 56.5 | 63.2 | N/R | 3.7 | 28.8 | 8.5 |
| Hedblad, 2007 (22) | 67 | 51 | N/R | 3.7 | 30 | 6.9 | 66 | 59 | N/R | 4.5 | 29 | 6.9 |
| Hermansen, 2007 (52) | 55.6 | 52.7 | 61.3 | 8.3 | 31.2 | 8.3 | 56.5 | 53.4 | 63.9 | 9.3 | 30.7 | 8.3 |
| Herz, 2003 (23) | 59 | 59.6 | 98 | 1.9 | 31.7 | 7.5 | 58 | 49.5 | 97 | 1.5 | 31.7 | 7.5 |
| Hollander, 2007 (53) | 58.1 | 52.5 | 94 | 1.8 | 30.8 | 7.6 | 56 | 55.5 | 88.2 | 3.6 | 31.3 | 7.8 |
| Holman, 1999 (65) | 60 | N/R | N/R | 7.9 | 29.8 | 8.7 * | 60 | 8 | 29.6 | 8.7 * |  |
| Horton, 2004 (24) | 57.9 | 56.7 | N/R | 4.7 | 29.9 | 8.1 | 59 | 64.4 | N/R | 4.2 | 29.5 | 8.2 |
| Hwu, 2003 (25) | 58.1 | 50 | N/R | 13.4 | 24.1 | 9.1 | 54.7 | 49.1 | N/R | 10.2 | 23.9 | 9.5 |
| Johnston, 1994 (26) | 58 | 67 | 63 | 10 | 31 | 8.8 | 59 | 48 | 66 | 8 | 30 | 8.9 |
| Johnston, 1998 (27) | 67.2 | 60 | 86 | 7.5 | 29.7 | 8.3 | 68.5 | 66 | 89 | 7 | 30.4 | 8.4 |
|                              | 67.8 | 61 | 78 | 6.8 | 29.4 | 8.4 | 67.7 | 59 | 90 | 7.2 | 29.3 | 8.4 |
| Kelley, 1998 (28) | 61.5 | 59 | 88 | 12.4 | 31.5 | 8.8 | 61.2 | 49 | 86 | 12.5 | 31.1 | 8.7 |
| Kipnes, 2001 (66) | 56.5 | 59 | 79 | N/R | 31.4 | 10 | 56.9 | 58 | 75 | N/R | 32 | 9.9 |
| Manzella, 2004 (29) | N/R | 51.7 | N/R | N/R | 29.5 | 8 | N/R | 55 | N/R | N/R | 29.2 | 8.1 |
| Marre, 2002 (30) | 57.9 | 61.3 | 90.3 | 6.5 | 29.6 | 8.3 | 56.4 | 55.3 | 90.8 | 6.5 | 29.6 | 8.3 |
|                              | 57.3 | 61.3 | 91.3 | 6.8 | 29.3 | 8.2 |  |  |  |  |  |  |
Table 3 cont’d:

| Study                | Intervention | Control |
|----------------------|--------------|---------|
|                      | Age (y) | % Male | % White | Duration of DM (y) | BMI | Initial A1C (%) | Age (y) | % Male | % White | Duration of DM (y) | BMI | Initial A1C (%) |
| Mattoo, 2005 (67)    | 58.8    | 43.7   | 96.5    | 13.6            | 32.5 | 8.9           | 58.9    | 42.9   | 96.6     | 13.4            | 31.8 | 8.8          |
| Mitrakou, 1998 (54)  | 57.4    | 48.3   | N/R     | 8.5             | 24.4 | 9.9           | 57.4    | 61     | N/R      | 7.9              | 24.5 | 9.9          |
| Moses, 2001 (31)     | 57.5    | 53.5   | 98.8    | 3.0             | 30   | 7.8           | 57.4    | 57.5   | 98.5     | 3.07             | 30.9 | 7.6          |
| Nonaka, 2008 (55)    | 55.6    | 60     | 4       | 25.2            | 7.5  |               | 55      | 66     | 4.1      | 25.1            | 7.7  |              |
| Patel, 1999 (56)     | 56.7    | 66.2   | 74.3    | 4.9             | 29.4 | 9.1           | 56.8    | 69.3   | 73.3     | 4.2              | 28.9 | 9.1          |
| Raskin, 2001 (58)    | 57.1    | 56.6   | 66.0    | 12.7            | 32.1 | 9.1           | 55.6    | 55.8   | 68.3     | 11.7             | 32.7 | 8.9          |
| Raz, 2006 (60)       | 54.5    | 53.7   | 69.3    | 4.5             | 31.8 | 8             | 55.5    | 62.7   | 61.8     | 4.7              | 32.5 | 8            |
| Raz, 2008 (57)       | 53.6    | 51     | 42      | 8.4             | 30.1 | 9.3           | 56.1    | 41.5   | 47       | 7.3              | 30.4 | 9.1          |
| Riddle, 1998 (50)    | 58      | 62.5   | 79.2    | 7               | 32.2 | 9.7           | 58      | 54.8   | 79.5     | 7                | 33.7 | 9.9          |
| Roberts, 2005 (58)   | 56.5    | 61     | 67.1    | 7.9             | 34.0 | 8.2           | 56.4    | 62.3   | 72.7     | 8.7              | 32.8 | 8.2          |
| Rosenstock, 2006 (59)| 55.6    | 53.1   | 72.6    | 6.1             | 32   | 8.1           | 56.9    | 57.9   | 72.5     | 6.1              | 31   | 8            |
| Rosenstock, 2008 (32)| 61      | 57     | 100     | 7.1             | 28.8 | 8.2           | 65      | 60     | 100      | 6.6              | 29.1 | 7.9          |
| Scherbaum, 2002 (33) | 58      | 62.9   | N/R     | 5.4             | 29.9 | 9.3           | 59.1    | 56     | N/R      | 5.6              | 29.2 | 8.8          |
| Scherbaum, 2008 (34) | 63.1    | 60.3   | 100     | 2.1             | 30.4 | 6.6           | 63.2    | 58.7   | 100      | 2.5              | 30.1 | 6.7          |
| Scherbaum, 2008 (33) | 63.3    | 59.6   | 99.4    | 2.5             | 30.4 | 6.7           | 62.8    | 59.3   | 99.3     | 2.7              | 30   | 6.8          |
| Scott, 1999 (36)     | 56      | 62     | N/R     | 1.8             | 31   | 7             | 57      | 65     | N/R      | 2.2              | 29   | 6.9          |
| Scott, 2007 (35)     | 54.7    | 56.9   | 61      | 4.7             | 30.6 | 7.8           | 55.3    | 62.4   | 66.4     | 4.8              | 31.6 | 7.9          |
|                     | 55.1    | 49.6   | 68.8    | 4.3             | 30.8 | 7.9           | 56.2    | 48     | 63.4     | 4.9              | 30.5 | 7.9          |
|                     | 55.6    | 57.7   | 61      | 5               | 31.4 | 7.9           | 55.1    | 52.4   | 69.4     | 4.2              | 30.4 | 7.8          |
|                     | 55.2    | 55     | 61      | 4.9             | 30.3 | 7.8           | 55.3    | 59     | 61       | 5.4              | 30   | 7.7          |
|                     | 54.8    | 63     | 59      | 4.6             | 30.4 | 7.7           | 58.7    | 54.9   | 71.9     | 5.6              | 30.1 | 8.5          |
| Testa, 1998 (60)     | 58.7    | 54.9   | 71.9    | 5.6             | 30.1 | 8.5           | 58.4    | 58.9   | 72.9     | 4.7              | 30   | 8.7          |
| Van Gaal, 2001 (39)  | 57.9    | 41.6   | N/R     | 6*              | 30   | 8.5           | 57.9    | 49.3   | N/R      | 6*               | 29.7 | 8.4          |

Mean values presented. *Median values.
Appendix Figure 1: Study flow diagram. Studies may have been excluded base on more than one criterion (*). DM-diabetes mellitus; OAD-oral antidiabetic agent; RCT-randomized controlled trial.

**Searched:**
1) Electronic Databases (Medline, EMBASE and Cochrane Database of Randomized Controlled Trials);
2) Reference lists of key citations and meta analyses; and
3) References from clinical practice guidelines and standards of care documents.

**4319 citations reviewed by title**

**1294 citations excluded:**
- Duplicates – 1257 (97.1%)
- Non-English – 96 (7.4%)

**3025 abstracts reviewed**

**2819 citations excluded:**
- Not Type 2 DM – 706 (24.1%)
- Not an OAD – 1300 (49.3%)
- No placebo arm – 1164 (41.4%)
- A1C not reported – 1148 (40.8%)
- Not a double-blind RCT – 1180 (41.9%)
- < 12 weeks duration – 420 (14.9%)
- < 50 subjects in each arm – 802 (28.5%)
- < 70% follow-up observed – 1 (0.0%)

**211 full manuscripts reviewed**

**128 manuscripts excluded:**
- Not English – 4 (0.8%)
- Not Type 2 DM – 2 (1.6%)
- Not an OAD – 10 (7.8%)
- Missing placebo arm – 40 (31.3%)
- A1C not reported – 16 (12.5%)
- Not a double-blind RCT – 64 (50%)
- < 12 weeks duration – 6 (4.7%)
- < 50 subjects in each arm – 34 (26.6%)
- < 70% follow-up observed – 13 (10.2%)

**17 manuscripts excluded:**
- Unable to provide follow up observed % at 12 weeks - 3 (18%)
- Incomplete follow up observed % data (authors contacted) - 14 (82%)

**61 manuscripts included, with 103 comparisons**
* studies may have been excluded for more than one criteria
Appendix Figures 2-7: Treatment effect by OAD class at 12 (Figure 2), 19-24 (Figure 3), 25-39 (Figure 4), 40-47 (Figure 5), 48-55 (Figure 6) and 56-104 weeks (Figure 7). Each line represents a treatment effect (circle) and 95% confidence intervals (ends of the line). The diamond shape represents a meta-analyzed mean difference for a particular OAD class and dose. * illustrates the generally accepted maximum daily dose. Abbreviations include: A-Acarbose; DPP-4-Dipeptidyl Peptidase-4; Gm-Glimepiride; Gp-Glipizide; Gy-Glyburide; M-Miglitol; Me-Metformin; Mi-Metformin (long-acting); N-Nateglinide; P-Pioglitazone; R-Rosiglitazone; Re-Repaglinide; S-Sitagliptin; TZDs-Thiazolidinediones; and V-Vildagliptin

Appendix Figure 2
Appendix Figure 2, cont’d.

| TZDs    | WMD (95% CI) | % Weight |
|---------|--------------|----------|
| 0.1 mg  | 0.30 (-0.80, 0.60) | 100.00   |
|         | 0.30 (-0.80, 0.60) | 100.00   |
| 0.5 mg  | 0.30 (-0.97, 0.67) | 100.00   |
|         | 0.30 (-0.97, 0.67) | 100.00   |
| 2 mg    | -0.30 (-0.56, 0.00) | 100.00   |
|         | -0.30 (-0.56, 0.00) | 100.00   |
| 4 mg    | -0.30 (-0.75, 0.04) | 100.00   |
|         | -0.30 (-0.75, 0.04) | 100.00   |
| 8 mg    | -0.30 (-0.71, 0.13) | 100.00   |
|         | -0.30 (-0.71, 0.13) | 100.00   |
| 15 mg   | -0.30 (-1.38, 0.81) | 100.00   |
|         | -0.30 (-1.38, 0.81) | 100.00   |
| 90 mg   | -0.30 (-2.10, 0.80) | 100.00   |
|         | -0.30 (-2.10, 0.80) | 100.00   |

Note: Weights are from random effects analysis.

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Appendix Figure 3.

### Alpha Glucosidase Inhibitors

| Dose (mg) | Study | Authors | I-squared (%) | WMD (95% CI) | Weight % |
|-----------|-------|---------|---------------|--------------|----------|
| 75 mg     | Johnston (09) | Fischer (08) | -0.62 (-1.01, -0.23) | 41.13 |
|           | Fischer (08) | -0.44 (-0.74, -0.12) | 100.00 |
| 150 mg    | Johnston (09) | Fischer (08) | -0.66 (-1.32, 0.01) | 100.00 |
|           | Fischer (08) | -0.03 (-0.62, -0.04) | 51.80 |
|           | Chin (06) | Mittrakou (06) | -1.01 (-1.40, -0.62) | 19.19 |
|           | Halim (00) | I-squared = 86.6% | -0.63 (-1.00, -0.26) | 19.94 |
|           | Fischer (08) | -0.43 (-0.84, -0.02) | 18.93 |
|           | Chin (06) | Mittrakou (06) | -1.30 (-1.54, -1.00) | 23.28 |
|           | Halim (00) | I-squared = 86.6% | -0.90 (-1.32, -0.48) | 18.74 |
|           | Fischer (08) | -0.87 (-1.21, -0.54) | 100.00 |
| 300 mg    | Johnston (09) | Fischer (08) | -1.29 (-1.68, -0.90) | 49.57 |
|           | Fischer (08) | -0.58 (-0.97, -0.19) | 50.03 |
|           | Chin (06) | Mittrakou (06) | -0.93 (-1.63, -0.24) | 100.00 |
|           | Halim (00) | I-squared = 86.6% | -0.76 (-1.08, -0.44) | 100.00 |
|           | Fischer (08) | -0.76 (-1.08, -0.44) | 100.00 |

Note: Weights are from random effects analysis

### Biguanides

| Dose (mg) | Study | Authors | I-squared (%) | WMD (95% CI) | Weight % |
|-----------|-------|---------|---------------|--------------|----------|
| 1000 mg   | Goldstein (07) | -0.98 (-1.30, -0.68) | 100.00 |
|           | Horton (06) | -1.30 (-1.60, -1.00) | 100.00 |
| 1500 mg   | Goldstein (07) | -1.10 (-1.38, -0.82) | 100.00 |
|           | Horton (06) | -1.10 (-1.38, -0.82) | 100.00 |
| 2000 mg   | Goldstein (07) | -1.30 (-1.60, -1.00) | 100.00 |

Note: Weights are from random effects analysis

### DPP-4 Inhibitors

| Dose (mg) | Study | Authors | I-squared (%) | WMD (95% CI) | Weight % |
|-----------|-------|---------|---------------|--------------|----------|
| 50 mg     | Scherbaum (08) | Bosi (07) | -0.28 (-0.53, -0.03) | 25.25 |
|           | Scherbaum (08) | -1.10 (-1.36, -0.82) | 24.76 |
|           | Garber (07) | I-squared = 89.4% | -0.56 (-0.97, -0.16) | 100.00 |
| 100 mg    | Bosi (07) | Asher (06) | -1.10 (-1.38, -0.82) | 11.63 |
|           | Goldstene (07) | -0.79 (-1.06, -0.54) | 12.42 |
|           | Charbent (09) | -0.83 (-1.15, -0.51) | 10.55 |
|           | Garber (07) | -0.65 (-0.82, -0.48) | 14.44 |
|           | Reau (08) | Hermanen (07) | -1.20 (-1.58, -1.02) | 11.55 |
|           | Rosenstock (06) | -1.23 (-1.51, -0.95) | 11.43 |
|           | I-squared = 76.3% | -0.73 (-0.86, -0.58) | 14.86 |
|           | I-squared = 76.3% | -0.70 (-0.92, -0.48) | 13.05 |
| 200 mg    | Asher (06) | -0.90 (-1.07, -0.73) | 100.00 |

Note: Weights are from random effects analysis

### Meglitinides

| Dose (mg) | Study | Authors | I-squared (%) | WMD (95% CI) | Weight % |
|-----------|-------|---------|---------------|--------------|----------|
| 120 mg    | Marre (02) | -0.29 (-0.56, -0.02) | 100.00 |
|           | Horton (04) | -0.44 (-0.71, -0.17) | 33.72 |
|           | Fonseca (03) | -0.80 (-1.06, -0.52) | 33.29 |
| 360 mg    | Marre (02) | -0.29 (-0.56, -0.02) | 100.00 |
|           | Horton (04) | -1.10 (-1.38, -0.82) | 32.98 |
|           | Fonseca (03) | -0.78 (-1.15, -0.40) | 100.00 |

Note: Weights are from random effects analysis

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Appendix Figure 3, cont’d.

**Sulfonylureas**

| 16 mg |
|-------|
| Riddle (08) |
| -0.10 (-0.44, 0.24) |
| -0.10 (-0.44, 0.24) |

| 20 mg (*Gy) |
|------------|
| Johnston (08) |
| -1.08 (-1.39, -0.77) |
| -1.08 (-1.39, -0.77) |

**TZDs**

| 2 mg |
|------|
| Hellander (07) |
| 1.07 (0.79, 1.35) |
| 1.07 (0.79, 1.35) |

| 4 mg |
|------|
| Hellander (07) |
| -0.33 (-0.63, -0.03) |
| -0.33 (-0.63, -0.03) |

| 8 mg (*R) |
|-----------|
| Davi (09) |
| -1.34 (1.71, -0.57) |
| -1.34 (1.71, -0.57) |

| 16 mg |
|-------|
| Barrett (03) |
| -1.47 (1.73, -1.26) |
| -1.47 (1.73, -1.26) |

| 30 mg |
|-------|
| Mattio (03) |
| -0.66 (0.05, -0.43) |
| -0.66 (0.05, -0.43) |

| 42 mg (*F) |
|------------|
| Bonham (07) |
| -0.20 (0.52, 0.12) |
| -0.20 (0.52, 0.12) |

Note: Weights are from random effects analysis.

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Appendix Figure 4.

**Alpha Glucosidase Inhibitors**

| Dose | Study | Weight % | WMD (95% CI) |
|------|-------|----------|--------------|
| 75 mg | Johnston (98) | 100.00 | -0.19 (-0.48, 0.10) |
| 150 mg | Johnston (98) | 100.00 | -0.19 (-0.48, 0.10) |
| 300 mg | Van Gaal (01), Chiasson (01) | 100.00 | -0.32 (-0.61, -0.03) |

I-squared = 0.0%, p = 0.785

Note: Weights are from random effects analysis.

**Biguanides**

| Dose | Study | Weight % | WMD (95% CI) |
|------|-------|----------|--------------|
| 1500 mg | Chiasson (01) | 100.00 | -1.23 (-1.56, -0.90) |
| 2550 mg | Del Prato (08) | 100.00 | -1.23 (-1.56, -0.90) |

Note: Weights are from random effects analysis.

**DPP-4 Inhibitors**

| Dose | Study | Weight % | WMD (95% CI) |
|------|-------|----------|--------------|
| 50 mg | Scherbaum (08) | 51.29 | -0.29 (-0.52, -0.06) |
| 100 mg | Raz (08) | 100.00 | -1.15 (-1.41, -0.89) |

I-squared = 0.0%, p = 0.769

Note: Weights are from random effects analysis.

**Sulfonylureas**

| Dose | Study | Weight % | WMD (95% CI) |
|------|-------|----------|--------------|
| 8 mg | Roberts (05) | 100.00 | -0.98 (-1.20, -0.76) |
| 10 mg | Johnston (98) | 100.00 | -0.52 (-1.21, -0.63) |

Note: Weights are from random effects analysis.

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TZDs

4 mg
Fonseca (09)
Rosin (01)
Rozendal (08)
I-squared = 19.4%, p = 0.289

WMD (95% CI) % Weight
-1.01 (-1.58, -0.44) 39.16
-0.70 (-1.02, -0.38) 44.66
-0.55 (-1.06, -0.03) 35.72
-0.78 (-1.03, -0.54) 100.00

8 mg (*s)
Fonseca (09)
Rozendal (08)
Bertion (03)
Rosin (01)
I-squared = 0.0%, p = 0.777

WMD (95% CI) % Weight
-1.23 (-1.63, -0.83) 23.58
-1.00 (-1.42, -0.56) 13.25
-1.42 (-2.19, -0.65) 37.45
-1.29 (-1.63, -0.95) 160.00

15 mg
Schebaun (02)

WMD (95% CI) % Weight
-0.58 (-1.03, -0.13) 100.00
-0.58 (-1.03, -0.13) 100.00

30 mg
Schebaun (02)

WMD (95% CI) % Weight
-0.71 (-1.11, -0.31) 100.00
-0.71 (-1.11, -0.31) 100.00

Note: Weights are from random effects analysis.
Appendix Figure 5.

**Alpha Glucosidase Inhibitors**

- **75 mg**
  - Johnston (98)
  - WMD (95% CI): -0.31 (-0.60, -0.02) Weight %: 100.00

- **150 mg**
  - Johnston (98)
  - WMD (95% CI): -0.48 (-0.77, -0.19) Weight %: 100.00

**DPP-4 Inhibitors**

- **50 mg**
  - Scherbaum (08)
  - WMD (95% CI): -0.32 (-0.55, -0.09) Weight %: 73.13

- **Scherbaum (08)**
  - WMD (95% CI): -0.25 (-0.62, 0.12) Weight %: 26.87

- **f squared = 0.0%, p = 0.754**
  - WMD (95% CI): -0.30 (-0.50, -0.11) Weight %: 100.00

**Sulfonylureas**

- **20 mg**
  - Johnston (98)
  - WMD (95% CI): -1.04 (-1.33, -0.75) Weight %: 100.00

Note: Weights are from random effects analysis.
Appendix Figure 6.

**Alpha Glucosidase Inhibitors**

| Dose   | Authors     | WMD (95% CI)       | Weight % |
|--------|-------------|--------------------|----------|
| 75 mg  | Johnston    | -0.36 (-0.65, -0.07) | 100.00   |
| 150 mg | Johnston    | -0.36 (-0.65, -0.07) | 100.00   |
| 300 mg | Holman      | -0.30 (-0.35, -0.21) | 100.00   |

**DPP-4 Inhibitors**

| Dose   | Authors     | WMD (95% CI)       | Weight % |
|--------|-------------|--------------------|----------|
| 50 mg  | Scherbaum   | -0.20 (-0.48, 0.08) | 50.00    |
| 50 mg  | Scherbaum   | -0.30 (-0.58, -0.02) | 50.00    |

**TZDs**

| Dose   | Authors     | WMD (95% CI)       | % Weight |
|--------|-------------|--------------------|----------|
| 8 mg   | Hedblad     | -0.63 (-0.87, -0.39) | 59.51    |
| 8 mg   | Dargie      | -0.70 (-0.93, -0.48) | 40.49    |

**Sulfonylureas**

| Dose   | Authors     | WMD (95% CI)       | Weight % |
|--------|-------------|--------------------|----------|
| 20 mg  | Johnston    | -0.84 (-1.23, -0.65) | 100.00   |

Note: Weights are from random effects analysis.

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Appendix Figure 7.

Alpha Glucosidase Inhibitors

| Dosage | Weight % | JMD (95% CI) |
|--------|----------|--------------|
| 75 mg  | 100.00   | -0.49 (-0.69, -0.29) |
| 150 mg | 100.00   | -0.49 (-0.69, -0.29) |
| 300 mg | 100.00   | -0.23 (-0.30, -0.16) |

Note: Weights are from random effects analysis

Sulfonylureas

| Dosage | Weight % | WMD (95% CI) |
|--------|----------|--------------|
| 20 mg  | 100.00   | -0.92 (-1.12, -0.72) |

Note: Weights are from random effects analysis