<table>
<thead>
<tr>
<th>Drug Class</th>
<th>Sulfonylureas</th>
<th>Glitazones</th>
<th>DPP4 Inhibitors</th>
<th>GLP1 Agonists</th>
<th>Inulin in T2DM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metformin (MF)</td>
<td>Glipizide</td>
<td>Glimepiride</td>
<td>Vildagliptin</td>
<td>Liraglutide</td>
<td>Less (NPH HS+ Dimebolin)</td>
</tr>
<tr>
<td>Metformin (MF)</td>
<td>Glipizide</td>
<td>Glimepiride</td>
<td>Vildagliptin</td>
<td>Liraglutide</td>
<td>Less (NPH HS+ Dimebolin)</td>
</tr>
</tbody>
</table>

### Risk of Death / Major CV

- **UKPDS-33,80,40 (ADOPT)**
- **ADVANCE**
- **ProACTIVE**
- **ACCORD, VADT, ORIGIN**
- **Meta-analysis:** RECORD interim, ADOPT, DREAM

#### Meta-analysis:
- **ACCE (Prevention trial: Stop-NIDDM)**
- **SAVOR-TIMI 53, TECOS, EXAMINE PROLUGE, CARAMELA, CAROLINA**
- **GLUCOPHAGE ADVANCE**

#### Major CV Events on tolerability:
- **Saxagliptin:** ONGLYZA
- **Sitagliptin:** JANUVIA
- **Albiglutide:** SUGLINTA
- **Liraglutide:** VICTOZA
- **Exenatide:** BYETTA, BYDUREON
- **Dapagliflozin:** TRULICYT, DUMAGLIDE, Semaglutide: OZEMPIC, KYBELYS, Forxiga, Farxiga, Stelcelle, ERILDA, HARMONY, EMPA-REG, Candesart, ALBIOSA, VERTIS-CV, DAPA-HF, DAPA-CKD, EMPEROR-Reduced & Preserve, EMPA-Kidney (2022)

#### Risk of HF:
- **GLUCOPHAGE ADVANCE**
- **ADVANCE**
- **ProACTIVE**
- **ADAPT**, **PROLOGUE**
- **SAXOTRACE**

#### A1c:
- **GLUCOPHAGE ADVANCE**
- **ADVANCE**
- **ProACTIVE**
- **SAXOTRACE**
- **Metformin**

#### Risk of Hypoglycemia:
- **GLUCOPHAGE ADVANCE**
- **ADVANCE**
- **ProACTIVE**
- **ADAPT**, **PROLOGUE**
- **SAXOTRACE**

#### Risk of HF / Edema:
- **GLUCOPHAGE ADVANCE**
- **ADVANCE**
- **ProACTIVE**
- **SAXOTRACE**

#### Cost:
- **GLUCOPHAGE ADVANCE**
- **ADVANCE**
- **ProACTIVE**
- **SAXOTRACE**

### Other

- **May have to hold or adjust dose in acute illness, NKF, renal dysf (lactic acidosis), may fail 812, 1st line for T2DM (UKPDS 33)**

### Overall

- **An Advantage**
- **Neutral**
- **X**
- **A Disadvantage**
- **Unknown/Ongoing**

---

*Individual approach considering balance of potential benefits & harms. Over-aggressive pursuit of targets can ↑ mortality.*
### GLP1 Agonists & SGLT2 Inhibitors - SUBSET of DIABETES AGENTS in T2DM: Outcomes Comparisons Summary Table

<table>
<thead>
<tr>
<th>Drug Class</th>
<th>GLP1 Agonists</th>
<th>SGLT2 Inhibitors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generic</td>
<td>Dulaglutide SC</td>
<td>GLP/VS neutral vs Weight</td>
</tr>
<tr>
<td>Brand</td>
<td>TRULICYT (SC once/wk)</td>
<td>vs placebo (but ↑ insulinuse)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>↓BP 1.7/0.5</td>
</tr>
<tr>
<td>Major trial(s) to support findings/Outcomes</td>
<td>REWIND</td>
<td>NNT=72/5.4yrs</td>
</tr>
<tr>
<td></td>
<td>LEADER</td>
<td>NNT=53/3.7yrs</td>
</tr>
<tr>
<td></td>
<td>SUSTAIN-6</td>
<td>NNT=44/2.1yrs</td>
</tr>
<tr>
<td></td>
<td>POISE-1</td>
<td>NNT=13.6/4.3yrs</td>
</tr>
<tr>
<td>↓ Risk of Major CV - MACE</td>
<td>Neutral for MACE: noninferior to placebo 3.3% vs 4.4% (HRR 0.79 [0.57-1.1]) Many trials limitations, e.g. short</td>
<td>Non-inferior to Placebo HR 0.93 (0.84-1.03) Superiority (NS) over 4.2yr</td>
</tr>
<tr>
<td>↓ Risk of All-Death</td>
<td>HR 0.9 (0.80-1.01) 10.8% vs 12.5% (NS)</td>
<td>HR 0.93 (0.82-1.04)</td>
</tr>
<tr>
<td>Less Renal Disease (composite/surrogates)</td>
<td>NNT=40/3.4yrs 17.1 vs 19.6%/5yrs 5.7% vs 7.2%/3.8yrs NNT=44/2.1yrs 3.8% vs 6.2%/3.8yrs</td>
<td>NNT=3/2.6yrs</td>
</tr>
<tr>
<td>Effect on A1C</td>
<td>2.4%/3.8%/p=0.02 (placebo group had more insulin)</td>
<td></td>
</tr>
<tr>
<td>Weight (less vs neutral gain)</td>
<td>↓2.3 kg/4.5yrs 2.3%/3.8yrs</td>
<td>↓2.4 kg/4.5yrs</td>
</tr>
<tr>
<td>Less Risk of Hypoglycemia</td>
<td></td>
<td>↓2 kg/12.5yrs</td>
</tr>
<tr>
<td>Less Risk of HF/Edema</td>
<td></td>
<td>~1.5-2 kg/3.1yrs</td>
</tr>
<tr>
<td>Effect on GI &amp; D/C due to Tolerability</td>
<td>X GI D/C due to AE 9% vs 6% NNT=36/5.4yrs</td>
<td>D/C due to AE 12% vs 13% NNT=110/2.6yrs</td>
</tr>
<tr>
<td>? AE Concerns Associated with Class</td>
<td>X GI D/C due to AE 9.5% vs 7.3% NNT=46/9.3yrs</td>
<td>D/C due to AE 11.6% vs 6.5% NNT=20/3.3yrs</td>
</tr>
<tr>
<td>Cost – 1 month</td>
<td>XX $225 × △</td>
<td>X $110 = △ NHIB</td>
</tr>
<tr>
<td>Some outgoings may be available</td>
<td>XX $90-$235 × △</td>
<td>X $110 = △ NHIB</td>
</tr>
<tr>
<td>Other</td>
<td>Well tolerated, except GI. ↓BP 1.7/0.5 mmHg. Environmental impact - single-use disposable pen</td>
<td>Galbladder AE: NNT=84</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NHB open benefit</td>
</tr>
<tr>
<td>Practical / Clinical Considerations</td>
<td>Upper GI effects often worse than lower GI effects; a low fat diet is better (small), frequent meals, gradual dose titration; patients may struggle with AEs in first ~2 weeks, but many will gain tolerability and do OK. Often insulin dose can be reduced 20% initially, and possibly more after that.</td>
<td>Uncertain multi-mechanism of action e.g. lower BP. Monitor BP and assess for postural hypotension, especially in older adults.</td>
</tr>
<tr>
<td>Time Tested</td>
<td>X new agent – outcome &amp; safety data still limited</td>
<td>X new agents – outcome &amp; safety data still limited</td>
</tr>
<tr>
<td>Convenience</td>
<td>Single Use Pen subcut once weekly</td>
<td>Oral once daily</td>
</tr>
<tr>
<td>Overall</td>
<td>?</td>
<td>?</td>
</tr>
</tbody>
</table>

Note: the "Neutral" designation indicates little or no disadvantage; however, there is also little or no advantage.

### GLP1 Agonists

<table>
<thead>
<tr>
<th>Brand</th>
<th>REWIND</th>
<th>LEADER</th>
<th>SUSTAIN-6</th>
<th>POISE-1</th>
<th>CANVAS</th>
<th>DECLARE-TIMI</th>
<th>DAPA-HF</th>
<th>EMPA-REG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower risk group; e.g. 21% had past CVD; others higher risk.</td>
<td>Lower risk group; e.g. 21% had past CVD; others higher risk.</td>
<td>High risk group</td>
<td>High risk group</td>
<td>High risk group; 40% had atherosclerotic CVD; 33% CAD, 6% PAD, 7.6% cerebrovascular dx, 10% HF</td>
<td>Both patients with and without diabetes studied; similar benefit in both groups.</td>
<td>Both patients with and without diabetes studied; similar benefit in both groups.</td>
<td>High risk group; 100% had established CVD. Patients had not received glucose-lowering agents for &gt;12 weeks</td>
<td></td>
</tr>
<tr>
<td>Renal: macroalbuminuria, eGFR decline 30%, chronic renal replacement tx</td>
<td>Renal: macroalbuminuria, eGFR decline 30%, chronic renal replacement tx</td>
<td>High risk group</td>
<td>High risk group</td>
<td>High risk group: &gt;40% had atherosclerotic CVD; 33% CAD, 6% PAD, 7.6% cerebrovascular dx, 10% HF</td>
<td>Both patients with and without diabetes studied; similar benefit in both groups.</td>
<td>Both patients with and without diabetes studied; similar benefit in both groups.</td>
<td>High risk group; 100% had established CVD. Patients had not received glucose-lowering agents for &gt;12 weeks</td>
<td></td>
</tr>
<tr>
<td>High risk group: 83% had established CVD, CKD or both</td>
<td>High risk group: 83% had established CVD, CKD or both</td>
<td>High risk group</td>
<td>High risk group</td>
<td>High risk group: &gt;40% had atherosclerotic CVD; 33% CAD, 6% PAD, 7.6% cerebrovascular dx, 10% HF</td>
<td>Both patients with and without diabetes studied; similar benefit in both groups.</td>
<td>Both patients with and without diabetes studied; similar benefit in both groups.</td>
<td>High risk group; 100% had established CVD. Patients had not received glucose-lowering agents for &gt;12 weeks</td>
<td></td>
</tr>
<tr>
<td>High risk group: 77%, insulin 60%; Smaller, shorter trial; SAE leading to lower discontinuation rate in tx group, 2.6% vs 3%. Higher risk group: CVD or CKD 84.7%</td>
<td>High risk group: 77%, insulin 60%; Smaller, shorter trial; SAE leading to lower discontinuation rate in tx group, 2.6% vs 3%. Higher risk group: CVD or CKD 84.7%</td>
<td>High risk group</td>
<td>High risk group</td>
<td>High risk group: &gt;40% had atherosclerotic CVD; 33% CAD, 6% PAD, 7.6% cerebrovascular dx, 10% HF</td>
<td>Both patients with and without diabetes studied; similar benefit in both groups.</td>
<td>Both patients with and without diabetes studied; similar benefit in both groups.</td>
<td>High risk group; 100% had established CVD. Patients had not received glucose-lowering agents for &gt;12 weeks</td>
<td></td>
</tr>
</tbody>
</table>

### SGLT2 Inhibitors

<table>
<thead>
<tr>
<th>Brand</th>
<th>CREDENCE</th>
<th>DECLARE-TIMI</th>
<th>DAPA-HF</th>
<th>EMPA-REG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients with albuminuric CKD, eGFR 30–&lt;90 mL/min, &amp; albuminuria; High risk group: 50% had CVD Renal: canagliflozin – composite primary endpoint: ↓eGFR, doubled SCR &amp; renal/CV death</td>
<td>Patients with albuminuric CKD, eGFR 30–&lt;90 mL/min, &amp; albuminuria; High risk group: 50% had CVD Renal: canagliflozin – composite primary endpoint: ↓eGFR, doubled SCR &amp; renal/CV death</td>
<td>High risk group: &gt;40% had atherosclerotic CVD; 33% CAD, 6% PAD, 7.6% cerebrovascular dx, 10% HF</td>
<td>Both patients with and without diabetes studied; similar benefit in both groups.</td>
<td>Both patients with and without diabetes studied; similar benefit in both groups.</td>
</tr>
</tbody>
</table>
References for GLP1 and SGLT2 Subset Colour Chart (www.RxFiles.ca)


Notes / References for Diabeties Agents Outcome Comparisons Chart (www.RxFiles.ca)

Death/MACE (MACE: Major adverse cardiovascular event)

1. Drug manufacturers must establish CV safety (one-sided upper boundary of 95% CI ≤ 1.3) vs comparator (typically placebo) in a RCT for all new agents in ↑ CV risk patients. FDA

2. Metformin vs conventional diet; obese >120% IBW & small sample n=753; ↓ all-cause mortality NNT=14/10.7 yr, and ↓ MI NNT=14/10.7 yr. 2 UPDS-34 10 yr observational follow-up ↓ all-cause mortality NNT=14/20 yr, and ↓ MI NNT=16/20 yr. 3 UPDS-80

3. Intensive Hba1c target (including glinide) vs standard Hba1c target; MACE 10% vs 10.6% p=NS, all-cause mortality 8.9% vs 9.6% p=ADVANCE

4. Intensive therapy (chlorpropamide, glipizide, glibamidine or insulin) vs conventional diet; all-cause mortality 17.9% vs 18.9% p=NS, MI 14.7% vs 17.4% p=NS, and stroke 5.6% vs 5.5% p=NS. 5 UPDS-33 10 yr observational follow-up ↓ all-cause mortality NNT=29/20 yr, and ↓ MI NNT=36/20 yr. 3 UPDS-80

5. SU (2nd or 3rd generation) vs control (diet, placebo, other antihyperglycemic); all-cause mortality OR 1.12 (0.96-1.3, I²=0%), CV mortality OR 1.12 (0.87-1.42, I²=12%), MI OR 0.92 (0.76-1.12, I²=NR), stroke OR 1.16 (0.81-1.66, I²=NR). 6

6. Metformin vs glipizide; Chinese, small sample n=304, & medically untreated 100% CAD, but ≤30% taking ACEs; METFORMIN ↓ MACE NNT=10/5 yr. 7 SPREAD-DMCAD

7. Pioglitazone vs placebo; TZD & high CV risk; ↓ MACE NNT=50/2.9 yr. 8 PROACTIVE insulin resistance & recent TIA/stroke; ↓ MACE NNT=36/4.8 yr. 9 IRS

8. Rosiglitazone vs placebo; ↑ MACE 2.9% vs 2.1% p=0.08 (NS), trial stopped 5 mos early. 10 DREAM ↑ MI NNH=167 & CV death 0.87% vs 0.39% p=0.06. 10 Rosiglitazone vs gliburide ↑ MACE NNT=34/3 yr. 12 ADOPT

9. Acarbose vs placebo; impaired glucose tolerance; ↓ MACE NNT=40/3.3 yr. 13 STOP-NIDDM Acarbose vs placebo; coronary heart disease (Chinese) HR 0.98 95% CI, 0.86-1.11, p=0.73. 13 ACE

10. Saxagliptin vs placebo; MACE 7.3% vs 7.2%, non-inferior (p<0.001), but not superior (p=0.99). 14 SAVOR-TIMI 53 Alogliptin vs placebo; MACE 11.3% vs 11.8%, non-inferior (p<0.001), but not superior (p=0.32). 15 EXAMINE TECAS Meta-analysis 15 SAVOR-TIMI 53, EXAMINE, TECSO) MACE RR 0.99 (95% CI, 0.93-1.06, I²=0%). 16

11. Linagliptin vs placebo; MACE 12.4% vs 12.1% non-inferior (p<0.001), but not superior (p=0.74). 17 CARMELENA Linagliptin vs glimepride; MACE 11.8% vs 12% non-inferior (p<0.001) but not superior. 19 CARMELENA

12. Liraglutide vs placebo; MACE 13% vs 14.9% p=0.01, NNT=53/3.8 yr, but results neutral in North America subgroup; ↓ CV death NNT=73/3.8 yr and ↓ all-cause mortality NNT=72/3.8 yr. 19

13. Intensive insulin vs standard insulin; TIDM population; ~11 yr observational follow up ↓ MACE NNT=23/ ~17 yr. 31 DCT, 32 BIDIC

14. Insulin basal/bolus vs conventional diet; all-cause mortality 18.6% vs 19.9% p=NS, MI 15.8% vs 17.9%

Death/MACE (MACE: Major adverse cardiovascular event) - cont’d

p=NS, and stroke 5.4% vs 5.0% p=NS. 5 UPDS-33 10 yr observational follow-up ↓ all-cause mortality NNT=29/20 yr, and ↓ MI NNT=36/20 yr. 3 UPDS-80

15. Greater insulin use (any & bolus) with intensive therapy vs standard therapy; ↑ MACE NNT=33/3.5 y and ↓ CV death NNT=125/3.5 yr. 34 ACCORD Insulin degludec vs insulin glargine (TZD: ~50/50 split bolus vs basal/basin line & no difference between basal/bolus insulin use between groups at the end of study): MACE 8.5% vs 9.3% (95% CI 0.78-1.06; p<0.001 non-inferiority). 34a DEVOE

Weight (weight gain/loss variable, diabetic agents used in conjunction with diet and lifestyle interventions as well as other concomitant medications)

A1. Metformin: ↓ 2.9 kg/yr 1 ADOPT

A2. Sulfonylureas: ↑ 1.6 kg/yr 2 ADOPT

A3. Pioglitazone: ↑ 3.6 kg/yr 3 PROACTIVE

A4. Rosiglitazone: ↑ 4.8 kg/yr 4 rosiglitazone statistically significant ↑ weight vs. both metformin & gliburide 5 ADOPT

A5. Acarbose: ↓ 1.15 kg/yr 3 STOP-NIDDM

A6. Repaglinide: ↑ ~1.7 kg/12-24 wks, 5 nateglinide: ↑ 0.7-1 kg/16-24 wks 46

A7. DPP-4 inhibitors (generally considered neutral) 7

• saxagliptin ↓ 0.4 kg/2.1 year (similar to placebo) 8 SAVOR-TIMI 53

• alogliptin ↑ 1 kg/18 months (similar to placebo) 9 EXAMINE

• sitagliptin ↑ ≤ 0.5 kg/12 weeks 10 ADOPT

A8. GLP1 agonists

• exenatide ↓ 2.8 kg/24-52 weeks 11

• dulaglutide ↓ 2.3 kg/3.8 yr 12 LEADER

• sitagliptin ↓ 1.3-3 kg/5-52 weeks 13

A9. SGLT2 inhibitors 14

• canagliflozin ↓ 2.8-4 kg/4-52 weeks 15,16 CANTATAM
13. Lixisenatide vs placebo (unpublished data): MACE 13.4% vs 13.2%, non-inferior (p=0.01), not superior (p=0.8). 
14. Exenatide extended release vs placebo (~70% CVD, ~30% primary prevention); MACE 11.4% vs 12.2% over median 3.2 yr, non-inferior (p=0.001), but not superior (p=0.06). 
16. Rosiglitazone & Pioglitazone 
17. Saxagliptin vs Placebo; however, subgroup without a history of HF at baseline 
18. Hospitalization for HF NNH=143/2.1 yr; however, subgroup without a history of HF at baseline 
19. Saxagliptin vs placebo; Hospitalization for HF NNH=68/2.1yr & no difference from 12 months on (HR 1.05, 95% CI 0.81-1.35).
20. Sitagliptin vs placebo: Hospitalization for HF 3.1% vs 3.1p=0.98; and neutral results when adjusted for baseline HF (AHR 1.00, 95% CI 0.83-1.20 [unpublished data]).
21. Alogliptin vs placebo: Hospitalization for HF 3.9% vs 3.3% p=0.22; subgroup without a history of HF at baseline; Hospitalization for HF NNH=111/1.5yr. 
22. Exenatide vs placebo: Hospitalization for HF 6.0% vs 6.5% for an absolute incidence rate difference of −0.27 (95% CI, −0.82 to 0.28), with significant difference between the 2 treatment groups (HR, 0.90; 95% CI, 0.74-1.08; P = .26).
23. Liraglutide vs placebo; Hospitalization for HF: 4.7% vs 5.3% p=0.14. 
24. Empagliflozin vs placebo; Hospitalization for HF: 4.0% vs 4.2% p=0.75. 
25. Empagliflozin in HF patients (regardless of diabetes status) ongoing trial estimated to be complete 2020. 
26. EMPA-REG: Empagliflozin in HF patients (regardless of diabetes status) ongoing trial estimated to be complete 2020 EMPA-REG (ReD) & Preserved Canagliflozin vs placebo; Hospitalization for HF: 5.5/1000pys (0.55%/yr) vs 8.7/1000pys (0.87%/yr) (HR 0.67, 95% CI 0.52-0.87) follow up 3.6yr but exploratory. 
27. Dapagliflozin vs placebo; Hospitalization for HF: 2.5%/1000 patient year vs 3.3%/1000 patient year (HR 0.73 (95% CI 0.61-0.88) but exploratory. 
28. Dapagliflozin 10mg po once daily vs placebo; secondary primary outcome: worsening HF (hospitalization or urgent visit resulting in IV therapy for heart failure) or death: 16.3% vs 21.2% p<0.001. 
29. Basal insulin (glargine) vs standard care; hospitalization for HF 4.9% vs 5.5% p=NS. 
30. Basal insulin vs basal/bolus insulin; small sample n=152; HF 1.3% vs 5.3% p=NS. 
31. Lixisenatide vs placebo; Hospitalization for HF: 0.2%; p=0.75. 
32. Basal insulin vs basal/bolus insulin; small sample n=152; CV mortality 3.8% vs 6.7% p=NS, MACE 20% vs 32% p=0.5. 
33. Saxagliptin vs placebo; Hospitalization for HF NNH=143/2.1 yr; however, subgroup without a history of HF at baseline; Hospitalization for HF NNH=147/2.1 yr, subgroup eGFR <60 ml/min. 
34. Hospitalization for HF NNH=68/2.1 yr & no difference from 12 months on (HR 1.05, 95% CI 0.81-1.35). 
35. Sitagliptin vs Placebo; Hospitalization for HF 3.1% vs 3.1% p=0.98; and neutral results when adjusted for baseline HF (AHR 1.00, 95% CI 0.83-1.20 [unpublished data]). 
36. Alogliptin vs Placebo; Hospitalization for HF 3.9% vs 3.3% p=0.22; subgroup without a history of HF at baseline; Hospitalization for HF NNH=111/1.5yr. 
37. Saxagliptin vs Placebo; Hospitalization for HF 6.0% vs 6.5% for an absolute incidence rate difference of −0.27 (95% CI, −0.82 to 0.28), with significant difference between the 2 treatment groups (HR, 0.90; 95% CI, 0.74-1.08; P = .26). 
38. Liraglutide vs Placebo; Hospitalization for HF: 4.7% vs 5.3% p=0.14. 
39. Empagliflozin vs Placebo; Hospitalization for HF: 4.0% vs 4.2% p=0.75. 
40. Empagliflozin in HF patients (regardless of diabetes status) ongoing trial estimated to be complete 2020 EMPA-REG (ReD) & Preserved Canagliflozin vs Placebo; Hospitalization for HF: 5.5/1000pys (0.55%/yr) vs 8.7/1000pys (0.87%/yr) (HR 0.67, 95% CI 0.52-0.87) follow up 3.6yr but exploratory. 
41. Saxagliptin vs Placebo; Hospitalization for HF: 2.5%/1000 patient year vs 3.3%/1000 patient year (HR 0.73 (95% CI 0.61-0.88) but exploratory. 
42. Dapagliflozin 10mg po once daily vs placebo; secondary primary outcome: worsening HF (hospitalization or urgent visit resulting in IV therapy for heart failure) or death: 16.3% vs 21.2% p<0.001. 
43. Basal insulin (glargine) vs standard care; hospitalization for HF 4.9% vs 5.5% p=NS. 
44. Basal insulin vs basal/bolus insulin; small sample n=152; HF 1.3% vs 5.3% p=NS.

References: Death/MACE


44. UTL; SGLT2 inhibitor vs placebo: OR 1.34 (1.03-1.74, P=0.02), vs active agent: OR 1.42 (1.06-1.9, P=0.05); however, recent real-world surveillance data suggest this may not be an issue. 47, 48


RxFiles Academic Detailing
Bringing evidence to practice! www.RxFiles.ca
48. Drug safety update
47. FDA Drug Safety Communication: FDA strengthens kidney warnings for diabetes medicines canagliflozin (Invokana, Invokamet)
46. Trujillo JM, Nuffer W, Ellis SL. GLP
43. Madsbad S. Review of head clinical studies. Ther Adv Endocrinol Metab. 2015 Feb;6(1):19
33. Summary Safety Review - SGLT2 Inhibitors (canagliflozin, dapagliflozin, empagliflozin)-Assessing the risk of the patient who has been involved in the preparation or publication of this work warrants or represents that the information contained herein is accurate and current for health professionals. Available: http://www.healthcanadians.gc.ca/recall-alert-rappel-avis/hc-sc/2010/14591-e.htm (accessed July 21 2016).
24. FDA Drug Safety Communication: FDA investigates r
8. FDA Drug Safety Communication: FDA investigates r

DISCLAIMER: The content of this newsletter represents the research, expertise and opinions of the authors and not those of the Board or Administration of the University of Saskatchewan. Neither the authors nor U of S nor any other party who has been involved in the preparation or publication of this work warrants or represents that the information contained herein is accurate and current for health professionals. Available: http://www.healthcanadians.gc.ca/recall-alert-rappel-avis/hc-sc/2010/15308a-en.htm (accessed July 21 2016).

Copyright 2019 – RxFiles, University of Saskatchewan, Saskatoon, SK
www.RxFiles.ca