

Subject	Reference	Nutritional state	n	BMI (kg/m <sup>2</sup> )	HOMA-IR	FPG (mg/L)	HbA1c (%)	Results
Obesity - BAs	Glicksman 2010 [11]	Fasting. Meal test (30, 60, 90, 120, 150, 180 min)	Control: 12 Obese: 7	Control: 23.2[2.8] Obese: 47.2[7.2]*	ND	ND	ND	<b>Fasting:</b> No $\neq$ in BAs <b>Postprandial:</b> $\downarrow$ Glyco-BAs
Obesity - BAs	Ahmad 2013 [14]	Fasting Meal test (-15, 0, 15, 30, 60, 90, 120, 150, 180 min)	Control: 8 Obese: 5	Control: 21.7 $\pm$ 1.6 Obese: 47.7 $\pm$ 7.4	ND	ND	ND	<b>Fasting:</b> $\downarrow$ Tauro-BAs in obese vs controls. <b>Meal test:</b> $\downarrow$ Meal-induced conjugated BA increase in obese vs controls.
Obesity - BAs	Prinz 2015 [8]	Fasting	Anorexia: 15 Control: 15 Obesity I: 15 Obesity II: 14 Obesity III: 15	Anorexia nervosa: 13.1(8.9-15.6)* Control: 22.1(20.3-25) Obesity I: 37.6(30.1-39.8)* Obesity II 45.6(41.1-49.7)* Obesity III: 67.1(59-84.6)*	ND	ND	ND	<b>Fasting:</b> Total BAs positively correlated with BMI.
Obesity - BAs	Haeusler 2016 [12]	Fasting. Meal test (60, 120, 180 min) Euglycemic hyperinsulinemic clamp	Control: 11 Obese: 32	Control: 23.9 $\pm$ 0.7 Obese: 44 $\pm$ 1.6*	M/I Control: 103[63] Obese: 33[26]*	Control: 90 $\pm$ 1.8 Obese: 91.8 $\pm$ 1.8	ND	<b>Fasting:</b> $\uparrow$ C4 and $\uparrow$ 7,12-diHCO in obese vs controls. C4 and 7,12-diHCO positively correlated with BMI and negatively correlated with insulin sensitivity. <b>Meal test:</b> $\downarrow$ Meal-induced BA increase despite of $\uparrow$ Total BA concentrations in obese vs controls. <b>Insulin infusion:</b> $\downarrow$ Total BAs in controls whereas $\downarrow$ Free but not conjugated BAs in obese patients. <b>Other results:</b> BMI negatively correlated with NTCP and BSEP hepatic gene expression.
IR - BAs	Ginos 2018 [19]	Fasting	Control: 40 Overweight and obese: 40	Control: 22.3 $\pm$ 1.6 Overweight and obese: 32.6 $\pm$ 3.7	Control: 1.8 $\pm$ 1.2 Overweight and obese: 3.5 $\pm$ 2.2	ND	ND	<b>Fasting: No BA <math>\neq</math> between groups.</b> Total BAs positively associated with HOMA IR in pooled patients, stronger association in overweight and obese patients.
IR - BAs	Kimberly 2017 [21]	Fasting	Heterogeneous patients: 997	26.6 $\pm$ 5.3	1.04 $\pm$ 0.83	96 $\pm$ 19	ND	<b>Fasting:</b> GCDCA associated with HOMA-IR.
T2D - BAs	Jørgensen 2015 [23]	Fasting Meal test (0, 30, 60, 90, 120, 150, 180, 210, 240 min)	Control: 12 T2D: 13	Controls: 41[38.4-43.4] T2D: 44[40.8-45.5]	Control: 2.6 [2.2-2.8] T2D: 6.2[4.4-8]*	Control: 95.4[90-104.4] T2D: 144[138.6-158.4]*	ND	<b>Fasting and postprandial:</b> No $\neq$ in total BAs in obese non-diabetic patients vs obese T2D patients.
T2D - BAs	Brufau 2010 [9]	Postprandial (120 min)	Control: 12 T2D: 16	Control: 28.9[25.2-32] T2D: 30.6[25.2-35.5]	Control: 1.6[1.1-4.8] T2D: 6.2[2.1-16.6]*	Control: 91.8[75.6-102.6] T2D: 156.6[113.4-279]*	Control: 5.5 [5.1-6.1] T2D: 8.6[6.3-10.6]*	<b>Fasting and postprandial:</b> No $\neq$ in Total BAs in fasting and postprandial BAs in T2D vs controls. $\uparrow$ DCA pool size in T2D vs controls. Postprandial BAs negatively correlated with BMI.
T2D - BAs	Vincent 2013 [22]	Fasting. Postprandial (30, 60, 90, 120 min)	Control: 12 T2D: 12	Control: 38[35-38] T2D: 36[32-37]	ND	Control: 88.2[86.4-99] T2D: 131.4[122.4-147.6]*	ND	<b>Fasting:</b> No $\neq$ in T2D vs controls. <b>Postprandial:</b> $\uparrow$ Total BAs in T2D vs controls due to G-BAs.
T2D - BAs	Suhre 2010 [25]	Fasting	Control: 60 T2D: 40	Control: 28.31 $\pm$ 3.4 T2D: 30.01 $\pm$ 3.6*	ND	ND	Controls: 5.29 $\pm$ 0.37 T2D: 5.95 $\pm$ 0.72*	<b>Fasting:</b> $\downarrow$ CA, $\uparrow$ DCA, $\downarrow$ HCA in T2D vs controls.

IR, T2D - BAs	Haeusler 2013 [16]	Fasting Euglycemic hyperinsulinemic clamp	Control: 200 (classified into quartiles based on IR) T2D: 35	Control: 25±3.5 T2D: 38.3±12.3*	M/I Control: 134±88 T2D: 36±19*	Control: 90±9 T2D: 174.6±57.6*	ND	↑12α-hydroxy:non-12α-hydroxy-BA ratio in non-diabetic IR patients associated with ↓insulin sensitivity and ↑ plasma TGs. ↑Total BAs in T2D without ≠ in 12α-hydroxy:non-12α-hydroxy-BA ratio.
IR, T2D - BAs	Sun 2016 [18]	Fasting	Control: 967 IR: 704 T2D:254 T2D-IR: 224	Control: 24.4±2.96 IR: 27.48±3.23* T2D: 24.79±3.07 T2D-IR: 27.85±3.24 <sup>§</sup>	ND	Control: 90.72±9.54 IR: 97.2±10.26* T2D: 117.36±32.76* T2D-IR: 140.94±46.44* <sup>§</sup>	ND	<b>Fasting:</b> IR (HOMA-IR>2.7) positively associated with hyperbiliracemia (Total BAs> 10nM) independently of diabetes status.
Obesity, IR, T2D - BAs	Cariou 2011 [13]	Fasting	Control: 14 Obese: 22 T2D: 20	Control: 23.85(21.2-32.4) Obese: 33.6(27.9-38.5)* <sup>§</sup> T2D: 31.85(22.8-39.1)*	Control: 1.33(0.6-3.03) Obese 3.15(0.85-10.79) T2D: 3.85(0.66-16.38)*	Control: 90.54(81-105.3) Obese: 99(77.4-122.4)* <sup>§</sup> T2D: 132.66(91.98-225)*	Control: 5.40(5-5.9) Obese: 5.45(4.8-6.5) <sup>§</sup> T2D: 7.4(5.8-11.7)*	<b>Fasting:</b> ↑Total BAs, ↑CA in obese vs controls. ↑DCA in T2D vs controls. CDCA and CA negatively correlated glucose infusion rate. CDCA, DCA and CA positively correlated with HOMA-IR.
MetS, T2D – BAs	Steiner 2011 [15]	Fasting	Control: 49 MetS: 50 T2D:50	Control: 27.4(19.1-42.1) MetS: 29.6(21.8-37.7)* <sup>§</sup> T2D: 31.2(20-51.8)*	Control: 2.11(0.21-8.96) MetS: 2.95(0.87-26.31) T2D: 6.35(1.11-47.14)	Control: 96.84(75.96-112.86) MetS: 100.44(82.98-120.96) <sup>§</sup> T2D: 144.9(92.88-345.6)*	Control: 5.6(4.9-6.1) MetS 5.8(5.3-6.4)* <sup>§</sup> T2D: 7.4(5.9-13.6)*	<b>Fasting:</b> No independent association of BAs with MetS and T2D. ↑C4 in T2D and MetS patients confounded by positive correlation of C4 with BMI and TG.
Obesity - BAs - FGF19	Friedrich 2018 [10]	Fasting. OFTT (2, 4, 6h)	Control: 16 Overweight: 14 Obese:12	Control: 24.2[21.8-26.6] Overweight 28.3[26.3-29.2]* Obese: 35.3[32.7-39]*	ND	ND	ND	<b>Fasting:</b> No ≠ in BAs or C4 between groups. ↓FGF19 in obese vs controls. FGF19 positively correlated with BAs only in controls and negatively correlated with BMI in all patients. <b>OFTT:</b> No ≠ in BAs or C4. ↓FGF19 in overweight vs controls. FGF19 negatively correlated to C4.
IR, T2D – BAs – FGF19	Wewalka 2014 [20]	Fasting Post-glucose load (120 min)	Control: 62 IGT: 25 T2D: 12	Control: 28.6±5.8 IGT: 31±8.6 T2D: 32.3±8.7	Control: 2.2±1.4 IGT: 3.3±2.1 <sup>§</sup> T2D: 6.7±6.7*	Control: 93±7 IGT: 96±8 T2D: 115±17	Control: 5.3±0.3 IGT: 5.5±0.3 T2D: 6.2±0.8* <sup>§</sup>	<b>Fasting:</b> ↑Tauro-BAs in T2D vs controls but not in IGT. <b>Post-glucose load:</b> ↑Tauro-MCA in IGT vs controls. Tauro-BAs positively correlated with FPG, fasting insulin, HOMA-IR, HbA1c and post-glucose load glycaemia, but negatively correlated with oral disposition index. BAs not correlated with gender, age, BMI, TG or cholesterol. FGF19 not correlated with BAs, BMI, age, lipids, HbA1c neither on fasting nor post-glucose load. No ≠ in BAs upon insulin intensification.
T2D – BAs – FGF19	Sonne 2016 [24]	Fasting OGTT Low-fat, medium-fat and high-fat meal tests (-20, -10, 0, 15, 30, 45, 60, 90, 120, 180, 240 min)	Control: 15 T2D: 15	Control: 27.9±2 T2D: 28±2.2	ND	ND	Control: 5.2±0.2 T2D: 7.5±1.4	<b>Fasting:</b> ↑Total BAs in T2D vs controls <b>Post-prandial:</b> ↑Total BAs in OGTT, low-fat and medium fat meals but not in high fat meal in T2D vs controls. Total BAs positively correlated with meal fat content No ≠ in FGF19 between groups. FGF19 correlated positively with total BAs but negatively with C peptide in T2D and controls. FGF19 negatively correlated with plasma glucose in controls but not in T2D.
T2D - FGF19	Barutcoglu 2011 [27]	Fasting	Control: 12 T2D: 26	Control: 22.6[21.4-23.9] T2D: 28.9[26.2-31.3]*	ND	Control: 86.58[84.24-89.82] T2D: 124.74[106.74-156.78]*	Control: 5[4.5-5] T2D: 6[6-8]*	<b>Fasting:</b> FGF19 negatively correlated with BMI and HbA1c.

IR, T2D - FGF19	Fang 2013 [6]	Fasting	Control: 81 IGT: 93 IFG: 91 T2D:104	Control: 22.2±2.2 IGT: 25.2±3.7* IFG: 24.5±2.6* T2D:25.4±3.6*	Control: 1.24[0.89-1.61] IGT: 1.65[1.19-2.7]* IFG:2.04[1.24-3.27]* T2D: 2.81[1.77-4.04]*	Control: 92[84.96-97.56] IGT: 97[88.56-102.06] IFG: 114[111.06-117]* T2D: 137[118.8-165.06]*	Control: 5.5[5.3-5.7] IGT: 5.8[5.5-5.9]* IFG:5.7[5.5-6]* T2D: 6.7[6-7.8]*	<b>Fasting:</b> ↓FGF19 in IFG and T2D vs controls. FGF19 negatively associated with FPG.
IR, T2D - BAs, FGF19	Gerhard 2013 [7]	Fasting	Control: 125 T2D: 181	ND	ND	ND	ND	<b>Fasting:</b> ↑Total BAs, ↓FGF19 in T2D vs controls