

Table S1 Cross-sectional comparison (healthy controls vs T1DM patients) of serum parameters at each time point via Mann-Whitney rank sum tests or t-tests in case of normal distribution (marked with an asterisk). A p-value of 0.05 or lower was considered statistically significant. The table contains the p-values. Statistically significant changes are marked in bold.

Time / min	glucose	insulin	glucagon	Tri-glycerides	cholesterol	leptin	sLepR
Baseline (60)	<0.001	0.013	0.835	0.222	0.059	0.275	<0.001
90	<0.001	0.065	0.099	0.100	0.038	0.445	<0.001
105	<0.001	0.307	0.021	0.076	0.049	0.217	<0.001
120	<0.001	<0.001	0.085	0.121	0.091	0.230	<0.001
135	<0.001	<0.001	0.089	0.051	0.021	0.204	<0.001
150	<0.001	<0.001	0.154	0.071	0.096	0.289	<0.001
180	<0.001	<0.001	0.292	0.050	0.028	0.390	<0.001
210	<0.001	<0.001	0.118	0.038	0.076	0.351	<0.001
240	<0.001	<0.001	0.049	0.084	0.054	0.472	<0.001
270	<0.001	<0.001	0.146	0.113	0.009	0.43	<0.001
300	<0.001	<0.001	0.030	0.098	0.045	0.316	<0.001
330	<0.001	<0.001	0.040	0.130	0.009	0.352	<0.001
360	<0.001	0.379	0.183	0.020	0.003	0.390	<0.001
375	<0.001	0.002	0.098	0.014	0.022	0.532	<0.001
390	<0.001	<0.001	0.020	0.004	0.067	0.429	<0.001
405	<0.001	<0.001	0.087	0.005	0.016	0.472	<0.001
420	<0.001	<0.001	0.034	0.037	0.082*	0.564	<0.001
450	0.004	<0.001	0.090	0.038	0.013*	0.541	<0.001
480	0.040	<0.001	0.009*	0.091	0.037*	0.661	<0.001
510	0.018	<0.001	0.015*	0.032	0.017*	0.445	<0.001
540	<0.001	<0.001	0.112	0.058	0.174	0.337	<0.001
570	<0.001	<0.001	0.003*	0.009	0.159	0.192	<0.001

Table S2 Cross-sectional comparison (healthy controls vs T1DM patients) of VOC concentrations at each time point of blood drawing via Mann-Whitney rank sum tests or t-tests in case of normal distribution (marked with an asterisk). A p-value of 0.05 or lower was considered statistically significant. The table contains the p-values. Statistically significant changes are marked in bold.

Time / min	acetone	2-propanol	pentanal	ethanol	Dimethyl sulfide	isoprene	limonene
Baseline (60)	<0.001	<0.001	0.001	0.778	0.693*	0.953	0.334*
90	<0.001	<0.001	0.009	0.418	0.916	0.549	0.699
105	<0.001	<0.001	<0.001	0.549	0.824	0.227	0.460
120	<0.001	<0.001	<0.001	0.647	0.812*	0.805	0.953
135	<0.001	<0.001	<0.001	0.734	0.953	0.879	0.769
150	<0.001	<0.001	<0.001	0.630	0.991	0.581	0.842
180	<0.001	<0.001	<0.001	0.460	0.879*	0.489	0.342
210	<0.001	<0.001	<0.001	0.098	0.972	0.991	0.972
240	<0.001	<0.001	<0.001	0.227	0.836*	0.935	0.769
270	<0.001	<0.001	0.001	0.526	0.751	0.787	0.661*
300	<0.001	<0.001	<0.001	0.265	1.000	0.644*	0.581
330	<0.001	<0.001	0.007	0.851	0.860	0.370*	0.734
360	<0.001	<0.001	0.042	0.213	0.824	0.405	0.769
375	<0.001	0.002	0.053	0.275	0.935	0.432	0.699
390	<0.001	0.003	0.018	0.716	0.991	0.392	0.916
405	<0.001	0.002	0.007	0.699	0.860	0.265	0.751
420	<0.001	<0.001	0.013	0.699	0.787	0.664	0.879
450	<0.001	0.006	0.011	0.432	0.935	0.769	0.716
480	<0.001	0.003	0.017	0.432	0.734	0.751	0.489
510	<0.001	0.003	0.002	0.045	0.842	0.565	0.354
540	<0.001	0.002	<0.001	0.021*	0.972	0.534	0.330
570	<0.001	0.002*	0.009	0.040	0.824	0.534	0.330

Table S3 Pearson product moment correlation analysis between VOCs and serum parameters. Correlations that were significant on the 0.05 level (of p-values) are marked with an asterisk (*). Correlations that were significant on the 0.01 level (of p-values) are marked with two asterisks (**).

Both groups n = 968		blood glucose	cholesterol	triglyceride	leptin	sLepR	insulin	glucagon
acetone	Pearson	0.697**	0.269**	0.191**	0.028	0.561**	0.164**	0.022
	Correlation p	<0.001	<0.001	<0.001	0.389	<0.001	<0.001	0.498
2-propanol	Pearson	0.624**	0.209**	0.159**	0.099**	0.487**	0.152**	0.047
	Correlation p	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	0.141
pentanal	Pearson	0.566**	0.247**	0.216**	0.001	0.542**	0.132**	0.008
	Correlation p	<0.001	<0.001	<0.001	0.980	<0.001	<0.001	0.807
ethanol	Pearson	0.119**	0.074*	0.035	0.198**	0.049	0.025	0.063
	Correlation p	<0.001	0.021	0.277	<0.001	0.125	0.432	0.051
Dimethyl sulfide	Pearson	0.016	0.244**	0.304**	0.195**	0.018	0.033	0.114**
	Correlation p	0.628	<0.001	<0.001	<0.001	0.571	0.311	<0.001
isoprene	Pearson	0.018	0.085**	0.037	0.294**	0.0027	0.031	0.009
	Correlation p	0.573	0.008	0.249	<0.001	0.394	0.337	0.772
limonene	Pearson	0.091**	0.169**	0.107**	0.083**	0.087**	0.071*	0.065*
	Correlation p	0.005	<0.001	0.001	0.010	.007	0.028	0.043
T1DM Group n = 484		blood glucose	cholesterol	triglyceride	leptin	sLepR	insulin	glucagon
acetone	Pearson	0.610**	0.199**	0.162**	0.076	0.364**	0.026	0.191**
	Correlation p	<0.001	<0.001	<0.001	0.093	<0.001	0.570	<0.001
2-propanol	Pearson	0.553**	0.118**	0.102*	0.148**	0.321**	0.008	0.143**
	Correlation p	<0.001	0.010	0.025	0.001	<0.001	0.855	0.002
pentanal	Pearson	0.468**	0.190**	0.190**	0.038	0.424**	0.032	0.153**
	Correlation p	<0.001	<0.001	<0.001	0.403	<0.001	0.476	0.001
ethanol	Pearson	0.067	0.220**	0.109*	0.245**	0.052	0.021	0.055
	Correlation p	0.142	<0.001	0.016	<0.001	0.251	0.650	0.228
Dimethyl sulfide	Pearson	0.079	0.355**	0.315**	0.097*	0.124**	0.004	0.135**
	Correlation p	0.081	<0.001	<0.001	0.033	0.006	0.931	0.003
isoprene	Pearson	0.174**	0.175**	0.023	0.396**	0.083	0.091*	0.113*
	Correlation p	<0.001	<0.001	0.621	<0.001	0.067	0.045	0.013
limonene	Pearson	0.175**	0.160**	0.077	0.208**	0.076	0.100*	0.082
	Correlation p	<0.001	<0.001	0.090	<0.001	0.095	0.028	0.073

Control Group n = 484		blood glucose	cholesterol	triglyceride	leptin	sLepR	insulin	glucagon
acetone	Pearson	0.281**	0.065	0.291**	0.451**	0.500**	0.023	0.067
	Correlation p	<0.001	0.156	<0.001	<0.001	<0.001	0.611	0.140
2-propanol	Pearson	0.246**	0.074	0.134**	0.423**	0.321**	0.029	0.145**
	Correlation p	<0.001	0.103	0.003	<0.001	<0.001	0.532	0.001
pentanal	Pearson	0.321**	0.085	0.135**	0.301**	0.374**	0.132**	0.031
	Correlation p	<0.001	0.062	0.003	<0.001	<0.001	0.004	0.502
ethanol	Pearson	0.244**	0.023	190*0*	0.197**	0.100*	0.011	0.227**
	Correlation p	<0.001	0.607	<0.001	<0.001	0.029	0.818	<0.001
Dimethyl sulfide	Pearson	0.001	0.168**	0.365**	0.491**	0.360**	0.261**	0.054
	Correlation p	0.987	<0.001	<0.001	<0.001	<0.001	<0.001	0.237
isoprene	Pearson	0.102*	0.156**	0.059	0.079	0.094*	0.114*	0.103*
	Correlation p	0.026	0.001	0.196	0.084	0.038	0.012	0.023
limonene	Pearson	0.121**	0.202**	0.158**	0.139**	0.329**	0.066	0.065
	Correlation p	0.008	<0.001	0.001	0.002	<0.001	0.148	0.157

Table S4 Pearson product moment correlation analysis between VOCs and interstitial glucose concentrations. Correlations that were significant on the 0.05 level (of p-values) are marked with an asterisk (*). Correlations that were significant on the 0.01 level (of p-values) are marked with two asterisks (**).

		Both groups n = 4107	T1DM Group n = 2010	Control Group n = 2097
ethanol	Pearson Correlation	0.112**	0.061**	0.296**
	p	<0.001	0.007	<0.001
acetone	Pearson Correlation	0.686**	0.591**	0.331**
	p	<0.001	<0.001	<0.001
2-propanol	Pearson Correlation	0.622**	0.557**	0.327**
	p	<0.001	<0.001	<0.001
Dimethyl sulfide	Pearson Correlation	0.064**	0.140**	0.056*
	p	<0.001	<0.001	0.010
isoprene	Pearson Correlation	0.036*	0.191**	0.094**
	p	0.020	<0.001	<0.001
pentanal	Pearson Correlation	0.565**	0.467**	0.304**
	p	<0.001	<0.001	<0.001
limonene	Pearson Correlation	0.052**	0.083**	0.093**
	p	0.001	<0.001	<0.001