

## Online-Only Supplementary Material

Table S1. Main characteristics of patients starting FreeStyle Libre system from August 1<sup>st</sup> 2017

	Type 1 diabetes	Type 2 diabetes	Total
<b>Number of patients</b>	<b>33 165 (44.8%)</b>	<b>40 846 (55.2%)</b>	<b>74 011 (100%)</b>
Age			
Mean (SD)	36.6 (19.4)	59.3 (15.4)	49.1 (20.7)
Median / Min / Max	35.0 / 1.0 / 97.0	62.0 / 18.0 / 99.0	52.0 / 1.0 / 99.0
Quartile 25 / Quartile 75	19.0 / 51.0	51.0 / 70.0	33.0 / 66.0
Age (by class)			
< 8 yrs	1 049 (3.2%)	--	1 049 (1.4%)
[8-15] yrs	3 709 (11.2%)	--	3 709 (5.0%)
[16-25] yrs	6 109 (18.4%)	1 316 (3.2%)	7 425 (10.0%)
[26-45] yrs	10 610 (32.0%)	5 485 (13.4%)	16 095 (21.7%)
[46-65] yrs	8 442 (25.5%)	16 897 (41.4%)	25 339 (34.2%)
[66-75] yrs	2 405 (7.3%)	11 141 (27.3%)	13 546 (18.3%)
>75 yrs	841 (2.5%)	6 007 (14.7%)	6 848 (9.3%)
Gender			
Male	17 365 (52.4%)	23 097 (56.5%)	40 462 (54.7%)
Female	15 800 (47.6%)	17 749 (43.5%)	33 549 (45.3%)
At least one reimbursement covered by the special assurance for deprived people			
No	29 021 (87.5%)	36 567 (89.5%)	65 588 (88.6%)
Yes	4 144 (12.5%)	4 279 (10.5%)	8 423 (11.4%)
Diabetes treatment in the 6 months before starting the <b>FreeStyle Libre</b> system			
Non-insulin diabetes treatment	66 (0.2%)	1 873 (4.6%)	1 939 (2.6%)
Insulin only	28 530 (86.0%)	19 323 (47.3%)	47 853 (64.7%)
Insulin + Non-insulin diabetes treatment	2 439 (7.4%)	18 429 (45.1%)	20 868 (28.2%)
ND	2 130 (6.4%)	1 221 (3.0%)	3 351 (4.5%)
Treatment Scheme in the 6 months before starting the <b>FreeStyle Libre</b> system			
Pump	10 967 (33.1%)	7 626 (18.7%)	18 593 (25.1%)
MDI	19 675 (59.3%)	27 153 (66.5%)	46 828 (63.3%)
Basal insulin scheme	--	3 077 (7.5%)	3 077 (4.2%)
Non-insulin diabetes treatment	--	1 839 (4.5%)	1 839 (2.5%)
ND	2 523 (7.6%)	1 151 (2.8%)	3 674 (5.0%)

Abbreviations: MDI: ND: Oral Anti-diabetic Drugs

**Table S2. Number of acute diabetes complications per 1,000 patient years 12 months before and after starting FreeStyle Libre system**

	<b>Nature of acute diabetes complication</b>	<b>12 months before FreeStyle Libre initiation*</b>	<b>12 months after FreeStyle Libre initiation*</b>	<b>Change in number of events*</b>
<b>Type 1 diabetes (n=33,165)</b>	Hospitalization for hypoglycemia	7.1	6.8	-0.3
	Hospitalization for coma	2.8	1.7	-1.1
	Hospitalization for DKA	63.9	29.3	-34.6
	Hospitalization for hyperglycemia	1.5	1.7	+0.2
	Hospitalization for at least one acute event	65.4	33.6	-31.8
<b>Type 2 diabetes (n=40,846)</b>	Hospitalization for hypoglycemia	7.6	6.8	-0.8
	Hospitalization for coma	2.5	1.7	-0.8
	Hospitalization for DKA	19.8	11.2	-8.6
	Hospitalization for hyperglycemia	1.2	0.9	-0.3
	Hospitalization for at least one acute event	27.5	16.8	-10.7
<b>Total (n=74,011)</b>	Hospitalization for hypoglycemia	7.3	6.8	-0.5
	Hospitalization for coma	2.6	1.7	-0.9
	Hospitalization for DKA	39.5	19.3	-20.2
	Hospitalization for hyperglycemia	1.4	1.3	-0.1
	Hospitalization for at least one acute event	44.5	24.3	-20.2

\* Data are number of events per 1,000 patient years in the 12 months before and after first prescription of FreeStyle Libre sensors.

Abbreviations : DKA, diabetic ketoacidosis

**Table S3. Number of patients with acute diabetes complications 12 months before and after starting FreeStyle Libre system according to age and gender**

Age (years)	At least one hospitalization for:	Number of male patients (%)		Number of female patients (%)	
		12 months before FreeStyle Libre initiation	12 months after FreeStyle Libre initiation	12 months before FreeStyle Libre initiation	12 months after FreeStyle Libre initiation
<25	Hypoglycemia	48 (0.78%)	54 (0.87%)	54 (0.90%)	52 (0.87%)
	Coma	22 (0.36%)	11 (0.18%)	17 (0.28%)	16 (0.27%)
	DKA	657 (10.64%)	264 (4.27%)	703 (11.70%)	313 (5.21%)
	Hyperglycemia	17 (0.28%)	17 (0.28%)	19 (0.32%)	27 (0.45%)
	At least one acute event	724 (11.72%)	333 (5.39%)	776 (12.92%)	393 (6.54%)
25-45	Hypoglycemia	60 (0.75%)	61 (0.76%)	36 (0.45%)	52 (0.64%)
	Coma	23 (0.29%)	18 (0.22%)	17 (0.21%)	8 (0.10%)
	DKA	333 (4.15%)	134 (1.67%)	289 (3.58%)	179 (2.22%)
	Hyperglycemia	12 (0.15%)	11 (0.14%)	18 (0.22%)	9 (0.11%)
	At least one acute event	416 (5.19%)	215 (2.68%)	345 (4.27%)	241 (2.99%)
46-65	Hypoglycemia	93 (0.64%)	82 (0.57%)	70 (0.64%)	57 (0.52%)
	Coma	40 (0.28%)	23 (0.16%)	20 (0.18%)	14 (0.13%)
	DKA	230 (1.59%)	94 (0.65%)	172 (1.58%)	87 (0.80%)
	Hyperglycemia	10 (0.07%)	8 (0.26%)	8 (0.07%)	5 (0.05%)
	At least one acute event	363 (2.51%)	201 (1.39%)	262 (2.40%)	157 (1.44%)
66-75	Hypoglycemia	48 (0.59%)	33 (0.41%)	28 (0.52%)	27 (0.50%)
	Coma	15 (0.18%)	13 (0.16%)	12 (0.22%)	3 (0.06%)
	DKA	52 (0.64%)	19 (0.23%)	32 (0.59%)	14 (0.26%)
	Hyperglycemia	3 (0.04%)	2 (0.02%)	5 (0.09%)	3 (0.06%)
	At least one acute event	116 (1.43%)	67 (0.82%)	74 (1.37%)	47 (0.87%)
≥75	Hypoglycemia	40 (1.08%)	27 (0.73%)	23 (0.73%)	23 (0.73%)
	Coma	9 (0.24%)	7 (0.19%)	10 (0.32%)	6 (0.19%)
	DKA	17 (0.46%)	12 (0.33%)	53 (0.73%)	12 (0.38%)
	Hyperglycemia	5 (0.14%)	2 (0.05%)	3 (0.10%)	3 (0.10%)
	At least one acute event	69 (1.87%)	45 (1.22%)	59 (1.87%)	41 (1.30%)

\* Data are number (%) of patients with at least one hospitalization in the 12 months before and after first prescription of FreeStyle Libre sensors.

Abbreviations: DKA, diabetic ketoacidosis

**Table S4. Frequency of acute diabetes complications according to the period of time after starting the FreeStyle Libre system**

**(a) 3 months**

	<b>Cumulative number of days</b>	<b>Hypoglycemia</b>	<b>Coma</b>	<b>DKA</b>	<b>Hyperglycemia</b>	<b>At least one acute event</b>
<b>Type 1 diabetes</b>	2 983 364	8.56	1.96	29.00	1.96	39.40
<b>Type 2 diabetes</b>	3 665 666	7.97	2.39	12.15	0.80	20.51
<b>Total</b>	6 649 030	8.23	2.20	19.71	1.32	28.98

**(b) 6 months**

	<b>Cumulative number of days</b>	<b>Hypoglycemia</b>	<b>Coma</b>	<b>DKA</b>	<b>Hyperglycemia</b>	<b>At least one acute event</b>
<b>Type 1 diabetes</b>	5 964 346	7.16	1.77	28.76	1.71	35.92
<b>Type 2 diabetes</b>	7 305 430	7.54	2.10	11.24	0.70	18.49
<b>Total</b>	13 269 776	7.37	1.95	19.12	1.16	26.32

**(c) 12 months**

	<b>Cumulative number of days</b>	<b>Hypoglycemia</b>	<b>Coma</b>	<b>DKA</b>	<b>Hyperglycemia</b>	<b>At least one acute event</b>
<b>Type 1 diabetes</b>	12 086 332	6.86	1.75	29.38	1.69	33.67
<b>Type 2 diabetes</b>	14 708 250	6.87	1.71	11.39	0.92	17.05
<b>Total</b>	26 794 582	6.87	1.73	19.51	1.27	24.55

Data are frequency of hospitalization for diabetes acute events per 1,000 patients years over 3, 6 and 12 months after starting the FreeStyle Libre system.

**Table S5. Number of patients with acute diabetes complications 12 months before and after starting FreeStyle Libre for users on MDI and CSII therapy**

Insulin therapy	At least one hospitalization for:	Number of patients (%)	
		12 months before FreeStyle Libre initiation	12 months after FreeStyle Libre initiation
<b>CSII (n=18,282)</b>	Hypoglycemia	108 (0.59%)	105 (0.57%)
	Coma	33 (0.18%)	27 (0.15%)
	DKA	471 (2.58%)	329 (1.8%)
	Hyperglycemia	28 (0.15%)	20 (0.11%)
	At least one acute event	624 (3.41%)	474 (2.59%)
<b>MDI (n=43,041)</b>	Hypoglycemia	317 (0.74%)	282 (0.66%)
	Coma	105 (0.24%)	65 (0.15%)
	DKA	1243 (2.89%)	568 (1.32%)
	Hyperglycemia	41 (0.10%)	49 (0.11%)
	At least one acute event	1657 (3.85%)	919 (2.14%)

\* Data are number of events and % of patients with at least one hospitalization in the 12 months before and after first prescription of FreeStyle Libre sensors.

Abbreviations: DKA, diabetic ketoacidosis; Multiple daily insulin injections ; CSII, Continuous subcutaneous insulin infusion

**Table S6. Persistence with the FreeStyle Libre at 12 months after first use segregated by SMBG test strip acquisition and treatment with MDI or CSII**

SMBG strip use	Persistence with FreeStyle Libre (% of users)*			Number of patients
	All users	On MDI	On CSII	
0 strips	97.3% (95% CI 97.1, 97.6)	97.4% (95% CI 97.1, 97.7)	96.9% (95% CI 96.2, 97.5)	19,396
1-3 strips	98.0% (95% CI 97.8, 98.2)	97.9% (95% CI 97.6, 98.1)	97.9% (95% CI 97.4, 98.3)	17,682
4-5 strips	98.7% (95% CI 98.5, 98.8)	98.8% (95% CI 98.6, 99.0)	98.6% (95% CI 98.2, 98.8)	21,374
>5 strips	98.5% (95% CI 98.3, 98.7)	98.4% (95% CI 98.1, 98.6)	98.8% (95% CI 98.5, 99.1)	15,559
<b>Total</b>	<b>98.1% (95% CI 98.0-98.2)</b>	<b>98.2% (95% CI 98.0-98.3)</b>	<b>98.3% (95% CI 98.1-98.4)</b>	<b>74,011</b>

\* Data are % of patients (95% Confidence Interval) still receiving delivery of FreeStyle Libre sensors 12 months after their first prescription and delivery .

Abbreviations: MDI, Multiple daily insulin injections ; CSII, Continuous subcutaneous insulin infusion ; SMBG, Self monitored blood glucose