

### Changes in Remote-Monitored External Sensors Before HF Decompensation

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For the DECODE Investigators

**Background:** To be useful for alerting to impending HF decompensation events, monitored weight, BP, or symptoms must be different prior to HF events than at other times. Data from the DECOmpensation DEtection study (DECODE) was analyzed to compare pre-event data versus other times.

**Methods and Results:** Patients (699) with CRT-D devices programmed to non-rate-responsive pacing modes were enrolled for a total of 759.5 pt-yrs. Weights, BP and symptoms were collected by remote-monitoring during normal LATITUDE usage. There were 178 events from 103 patients (121.9 pt-yrs). Data from day of event and 14-days afterwards (or after hospital discharge) were excluded from analysis. Daily change from a 28-day moving baseline was determined (Weight, BP). Symptoms were expressed as % symptomatic responses. These were compared between 14-day pre-event windows and other times.

Data		Pre-Event	Other times	Difference	p versus 0
Weight	(lbs)	1.5 ± 4.4 *	0.0 ± 1.8	1.6	<b>0.0007</b>
Systolic BP	(mmHg)	-1.4 ± 8.1	-0.4 ± 4.2	-0.8	0.48
Diastolic BP	(mmHg)	-0.9 ± 5.8	-0.3 ± 2.9	-0.3	0.53
Pulse Pressure	(mmHg)	1.4 ± 6.2	-0.7 ± 3.4	1.6	<b>0.045</b>
Fatigue	(%)	43.6	28.6	13.6	<b>0.0048</b>
Faint/Dizzy	(%)	35.6	30.7	3.2	0.53
Swelling	(%)	11.7	7.6	5.0	0.27
Walk/Climb	(%)	22.6	18.6	4.5	0.68
Pillows	(%)	18.4	16.9	0.4	0.52
Wake breathless	(%)	35.7	23.7	10.8	<b>0.0227</b>

\* different from 0, p<0.005

While many values trended towards a difference, only patient weight and the fatigue and waking breathless symptoms were significantly increased prior to HF event versus other times.

**Conclusions:** In this study, patient weight and the fatigue and waking breathless symptoms are significantly increased in the 14-days prior to HF events. These values may be useful for alerting to worsening HF events.