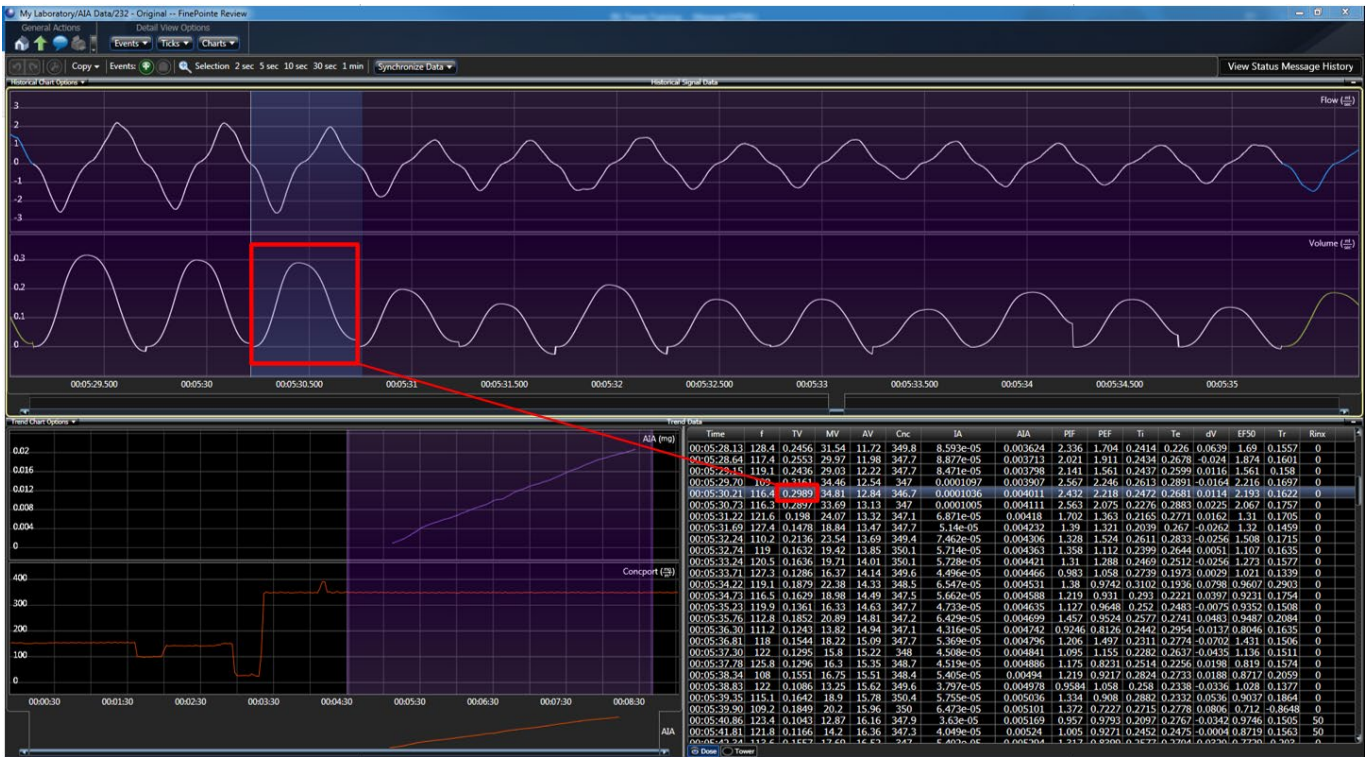


AIA – Accumulated Inhaled Aerosol – Explained

DSI continues to push the envelope in innovation, and is excited to announce an important new feature in FinePointe® Dosimetry (Inhalation Tower) called AIA, which calculates the accumulated inhaled aerosol, in real-time, for each monitored subject.



Many studies have shown significant error between the assumed respiratory minute volume (RMV) based on body weight (BW), and the measured minute volume using plethysmography during exposure. However, taking a step further, measuring respiratory endpoints also allows us to know the animal's inhalation on a breath-by-breath basis:



Furthermore, each measured breath can be associated with live digital concentration (Cnc) such that the amount of inhaled aerosol (IA) is calculated for each breath:

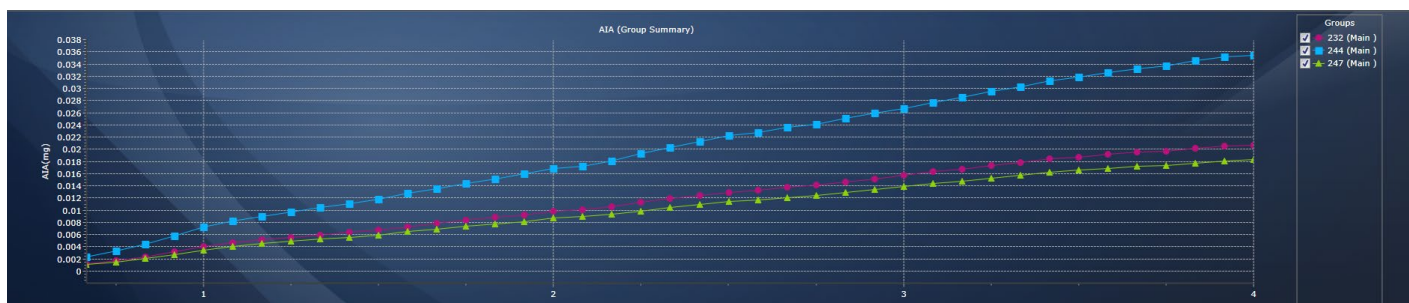
Time	f	TV	MV	AV	Cnc	IA	AIA	PIF	PEF
00:05:28.13	128.4	0.2456	31.54	11.72	349.8	8.593e-05	0.003624	2.336	1.704
00:05:28.64	117.4	0.2553	29.97	11.98	347.7	8.877e-05	0.003713	2.021	1.911
00:05:29.15	119.1	0.2436	29.03	12.22	347.7	8.471e-05	0.003798	2.141	1.561
00:05:29.70	109	0.3161	34.46	12.54	347.7	0.0001097	0.003907	2.567	2.246
00:05:30.21	116.4	0.2989	34.81	12.84	346.7	0.0001036	0.004011	2.432	2.218
00:05:30.73	116.3	0.2897	33.69	13.13	347	0.0001005	0.004111	2.563	2.075
00:05:31.22	121.6	0.198	24.07	13.32	347.1	6.871e-05	0.00418	1.702	1.363
00:05:31.69	127.4	0.1478	18.84	13.47	347.7	5.14e-05	0.004232	1.39	1.321

The software continuously accumulates IA to report an accumulated inhaled aerosol (AIA) in table, and graph forms, for each monitored subject:

Time	f	TV	MV	AV	Cnc	IA	AIA	PIF	PEF
00:05:28.13	128.4	0.2456	31.54	11.72	349.8	8.593e-05	0.003624	2.336	1.704
00:05:28.64	117.4	0.2553	29.97	11.98	347.7	8.877e-05	0.003713	2.021	1.911
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00:05:31.22	121.6	0.198	24.07	13.32	347.1	6.871e-05	0.00418	1.702	1.363



These powerful parameters allow the user to target a specific deposition, and cease exposure to the individual subject when it has reached that target. Alternatively, the user may choose to keep all animals exposed for a fixed duration, and report on their unique accumulated inhaled aerosol at the end of the exposure/study:



Controlling the inhaled dose in conscious animals, and assessing dose/response has never been easier and more precise than with DSI Inhalation Tower System, featuring the new Accumulated Inhaled Aerosol (AIA) feature.