Carestream

Smart Noise Cancellation

Clarity. Adjustability. AI-based.

AI Technology Cancels Noise for Superb Image Quality.

To support maximum safety for your patients, you know how important it is to keep the dose they receive "as low as reasonably achievable." But reduced dose can result in noisy images and reduced clarity – compromising diagnostic confidence. And even traditional noise suppression can't always prevent a loss of fine detail.

Look to Carestream. Our advanced Eclipse Imaging Engine offers exclusive AI-based Smart Noise Cancellation. It uses deep-learning technology to isolate noise from the signal, then subtracts the noise – producing images at a lower dose that are dramatically clearer than what our standard noise suppression provides.

Advantages at a Glance

- Enables customers to lower dose without loss in image quality.
- Applies advanced algorithms to cancel image noise while retaining fine spatial detail.
- Provides clear, easier-to-read images for improved diagnostic confidence.
- Allows your facility full control over the amount of noise cancellation and exposure applied to meet your desired image clarity and to better optimize radiation dose.

Achieve a New Level of Clarity in Digital Radiography.

Carestream's Eclipse Engine leverages deep, convolutional, neural network technology to provide superb CNN-based noise reduction – yielding improved image quality, preservation of fine detail, better contrast-to-noise ratio and easier-to-read radiographs. Smart Noise Cancellation is designed to provide major benefits for:

- General radiography, to improve the clarity of anatomical features in the processed images.
- Gridless imaging, when used in conjunction with software-based scatter suppression (e.g. SmartGrid), where the removal of scatter usually leads to an increase in noise.
- Neonatal imaging, as imaging at the lowest possible dose is critical.

Smart Noise Cancellation Added Benefits:

Easy to Integrate: No change is required to the radiographer's existing workflow.

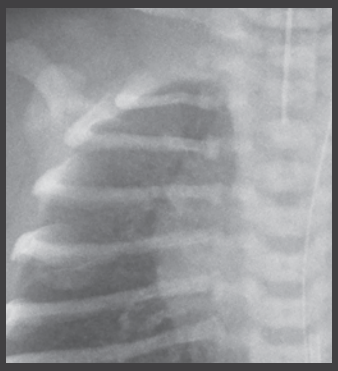
Fast: The full-resolution image with SNC applied is displayed within seconds of the non-enhanced preview image.

A visual indicator shows when Noise Cancellation is in progress and when it's been applied.

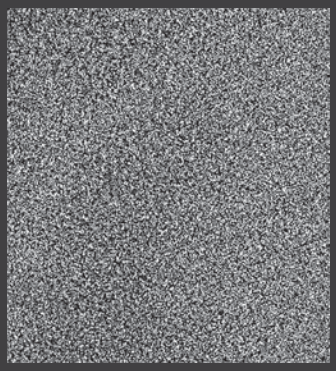
Versatile: SNC supports all patient sizes, body parts and projections on CARESTREAM DRX-1, DRX Plus and Lux 35 Detectors.

Improved Signal-to-Noise Ratio.

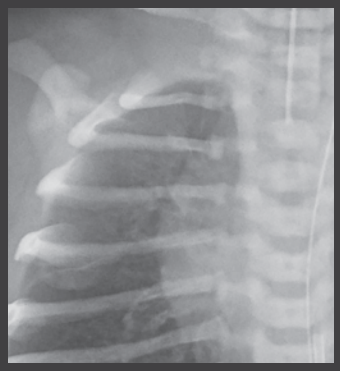
Clear Presentation of Fine Detail.



Original image of spine and ribcage with significant obscuring noise



The noise field isolated from the image

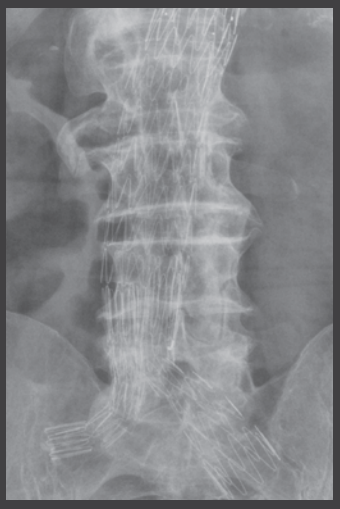


The image with the noise removed, for better clarity and easier reading

In Carestream's Clinical Reader Studies with board-certified radiologists, results of SNC have shown a significant improvement in image clarity and ease of reading, with 56% of the diagnostic quality ratings improved from "limited" or "diagnostic" to "exemplary," based upon the RadLex rating scale.

A reader study using Carestream detectors was performed by board-certified radiologists comparing pairwise images taken at nominal dose (CsI ISO 400 speed / GOS ISO 320 speed) and reduced dose (CsI ISO 800 speed / GOS ISO 500 speed) with SNC. The study verified that SNC enables customers to lower radiation dose without loss in image quality and provides improved diagnostic quality, preservation of fine detail and better contrast-to-noise ratio for images acquired at clinically nominal exposures.

Contact your local Carestream representative for the systems that support Smart Noise Cancellation.



Nominal dose at 400 speed with default EVP Plus processing. Image acquired at 75 kVp, 28 mAs, 80 ln/cm 12:1 grid, IEC EI 272

Reduced dose at 800 speed with SNC and EVP Plus processing. Image acquired at 75 kVp, 14 mAs, 80 ln/cm 12:1 grid, IEC EI 134

Imaging Software Powered by Eclipse

Eclipse: Harness the Power of Decades of Innovation.

Carestream's Eclipse is the engine behind our innovative imaging software. It uses AI technology and proprietary algorithms to significantly increase the value of the entire imaging chain, from capture to diagnosis.

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"Rx only"

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