

# Lara™ Knows.

**Assess | Improve | Monitor | Report**

The Quality of Your Radiotracer Injection

Precision. Ensuring the highest quality images and most accurate quantitative data for your PET/CT patients demands precision. Your team precisely monitors many variables in the protocol, except the most important one: the delivery of the radiotracer. An infiltration, paravenous injection into the tissue, or a venous stasis may prevent bolus delivery of the radiotracer. As a result, the net dose and uptake time are incorrect.

*Infiltrations or stases cause PET calculations to be made with erroneous data and therefore can affect PET interpretation and patient management.*

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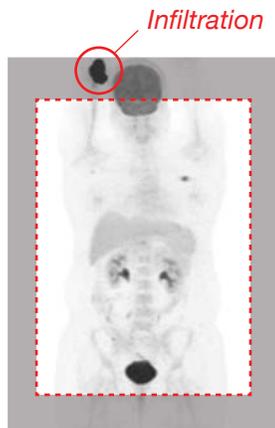
## Infiltration/stasis is surprisingly common...\*

We conclude **dose extravasations were commonly encountered (10.5%) in PET/CT**. However, it is underreported by at least 31% due to omitting injection site from the FOV. When present, extravasations may lead to underestimation of SUVmax.

Osman, et al  
*Frontiers in Oncology*

## ...and often undetected.

Infiltrations are only visible if the injection site is in the PET field of view. Most injections are administered in the arm, wrist or hand. In many PET studies, patients' arms are raised above their heads, putting the injection site outside the field of view. A recent study indicates that approximately one-third of all visible infiltrations may not be identified by scan-reading clinicians due to limits of the field of view.



Typical field of view can obstruct view of Infiltration

Venous stasis (pooling of blood flow in the veins caused by obstruction) can negatively impact the distribution of radiotracer throughout the circulatory system. Unlike infiltrations, venous stasis often resolves at some point during the uptake period, leaving no indication on the image that it previously occurred.

## Infiltration/stasis is hard to quantify.

A static PET image cannot provide true insight into the extent of the infiltration. In an investigational study, Lucerno technology captured several infiltrations that were significantly different in scale throughout the uptake process, but resulted in PET images that appeared relatively similar. It is not surprising that infiltrations or stasis can resolve at different rates. The Lucerno system provides information that has not existed before – **real visibility into the extent of infiltration/stasis during the uptake process.**

\*Published single center studies show infiltration rates between 9 and 21%.

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## Quality Control & Quality Assurance for Your Imaging Procedures.

*It is extremely important to control the quality of the PET/CT scan, particularly when it has implications for monitoring response to therapy and the management of the patient. The Lucerno sensor can assess the quality of the injection process, removing at least one potential source of variability from the scan protocol.*

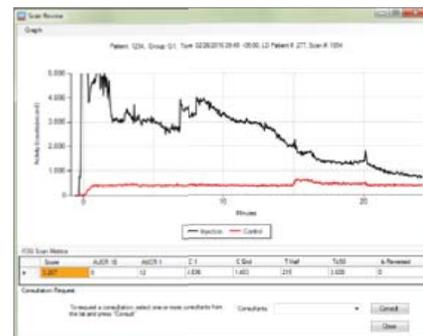
*David W. Townsend, PhD  
Director, A\*STAR-NUS Clinical Imaging Research Centre and  
Professor of Radiology, National University of Singapore*

## Quality Control

Prior to the injection, sensors are placed on each arm, so one captures the radioactivity from the radiotracer at the injection site and the other serves as a control.



At the end of the uptake period, the sensors are removed and recorded data is uploaded from Lara™. Within seconds, Ellexa™ software provides the report with the answers you need.



The Lucerno system is easy to use and adds very little time – 30 seconds to the patient experience and two minutes to the technologist's process.

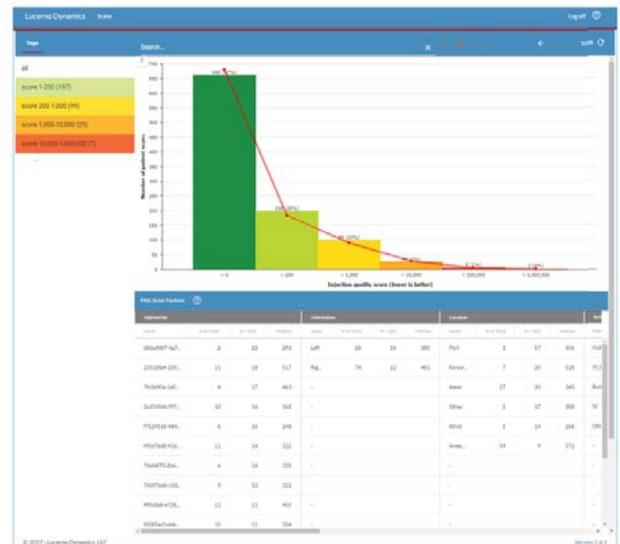
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## Quality Assurance

*While it is important to provide quality control for each individual radiotracer injection, the Lara™ System can provide quality assurance for a nuclear medicine center's overall injection process.*

With the Lara™ System and Ellexa™ software, centers can easily determine their overall infiltration/stasis rate, identify contributing factors, make appropriate adjustments and improve quality. Through periodic reviews of contributing factors and process improvements, centers can drive their overall infiltration rate down and drive their quality indices up.

In addition, centers can compare the quality of their injection process with similar centers worldwide. How does your center compare? Lara™ knows.



*Ellexa™ provides injection quality contributory factor analysis and a comparison to aggregated data from all centers.*

Lucerno Dynamics is the innovator in easy-to-use, effective, low-cost solutions to **Assess - Improve - Monitor - Report the Quality of Radiotracer Injections.** Let us bring you the tools and experience to implement a radiotracer injection quality control/quality assurance program today in your nuclear medicine facility.

For more information, please contact us at:

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