

1. Overview

- a. The Convergence software platform aggregates large amounts of patient data. Radiology data is displayed on a Rads Report (fig 1.) that includes a Rads Score. This document is intended to educate the reader on the derivation and proper use of the Rads Score in clinical care.

2. Definition

- a. A Rads Score is a 3 digit score that numerically represents the amount and significance of data available on a Rads Report.

3. Derivation

- a. A Rads Report is designed to rapidly convey radiology information. It is specifically designed to highlight the following factors:
 - i. Radiology studies that use ionizing radiation.
 - ii. High resolution studies such as MRI, CT Scan, and Fluoroscopy.
 - iii. Radiology studies that have been repeated.
- b. The Rads Score numerically represents these factors through a process whereby every study on the report is assigned:
 - i. An average radiation value in Millisieverts (mSv)
 - ii. A resolution value corresponding to the level of inherent detail and complexity (e.g. MRI > Ultrasound)
 - iii. A repeat status dependent on whether or not the study has been done before.
- c. The sum of the mSv, resolution units, and the number of repeats are each converted to a scaled score between 0-99, which is derived from the percentile ranking within a large population.

Fig 1. Rads Report and Score



- d. A weighted average of the scaled values is calculated and represents the first two digits of the Rads Score.
- e. Example calculation of weighted average:

		Scaled Value	Weighting	Product
Total Radiation	232 mSv	95	7	665
Total Resolution	350 res	82	2	164
Total # of Repeats	32 rpt	64	1	64
			Sum	893
			Weighted Avg	89

Fig 2. Rads Score

897
 weighted avg

- f. A third digit representing the number of studies in the last 90 days is appended to the weighted average to create the 3 digit score.
 - i. Example Rads Score

Weighted Average	Number of studies < 90 days	Rads Score
89	7	897

897
 studies in last 90 days

4. Notes

- a. An average radiation value is assigned to each study, based on published values, but the actual amount of radiation used in a study can only be determined by the facility that performed the study.
- b. The data on the report, which provides the foundation for the Rads Score, is provided to Convergence from third parties. The accuracy of the data on the report is dependent on the accuracy of the data provided and there is always the possibility that more data exists.

- c. The Rads Score distribution is such that approximately 80% of patients have a score less than 200, 95% have a score below 500, and 99% have a score below 650.

5. **Proper Use of the Rads Score**

- a. The Rads Score should be used only as an awareness tool. It only represents the amount and significance of data available on the accompanying Rads Report.
- b. A Rads Score should not be used in isolation to determine whether or not additional imaging is appropriate or inappropriate. The clinician must apply the data on the Rads Report, while recognizing its limitations, to the current clinical situation to determine the appropriateness of additional imaging.
- c. In general, a high Rads Score is associated with *relatively* high amounts of past radiation exposure based on *historical imaging protocol assumptions*. Consulting with local radiation experts will help clinicians better understand the relevance of historical averages to local patient populations.
- d. The Rads Score is designed for provider use only. The concepts, limitations, and application to clinical conditions are beyond scope for most patient discussions.