Use of London/Deauville Criteria for Interim Response Assessment in Hodgkin and Aggressive Non-Hodgkin Lymphoma

- Based on visual interpretation of interim-PET [PET2] (this does not require comparison to a baseline PET, but analysis is clearly easier if baseline PET [PET1] is available).

Score	Result
1	No uptake above background
2	Uptake ≤ mediastinal blood pool (MBP)
3	Uptake > MBP but ≤ liver
4	**Uptake increased above liver**
5	**Uptake markedly increased above liver**

- Scores of 4 or 5 are considered visually positive for metabolically active disease and scores of 1, 2 or 3 are considered visually negative for metabolically active disease. With a score of 3, it is advisable to get concurrence of a second observer.

- If baseline PET was done, also calculate percentage decrease in SUV_{max} (see below). Decrease of more than 66% is considered a favorable response. Be sure to consider the potential effects of large differences in uptake time and blood glucose. Also remember that marked brown fat uptake and bone marrow uptake (post-G-CSF) can lead to apparent decrease in tumor SUVs.

  - Identify the tumor with the most intense FDG uptake on PET1 and PET2, and measure SUV_{max}.

  - These do not need to be the same lesion on PET1 and PET2.

  - If PET2 is visually negative (score 1), measure the site identified on PET1.

$$\text{Calculate } \%\Delta SUV_{max} = [1-(SUV_{max2}/SUV_{max1})] \times 100\%$$

  - Make screen captures of 3D volumetric displays showing the ROIs and SUVs for PET1 and PET2.

Interpretation tips for PET2:

- New lesions = score 5 if there is progressive disease at other sites of lymphoma, but a new lesion at a new site is probably not lymphoma if other sites have improved. Need CT and clinical correlation.
- Diffuse uptake in liver or spleen probably not disease.
- Focal uptake in marrow probably not disease if other sites of disease have improved.
- Symmetrical tonsillar uptake not disease unless this was a known site of disease at baseline.
- Patients with low baseline SUV may have visually negative PET2, but ΔSUV_{max} less than 66% (still considered favorable).
- Patients with ΔSUV_{max} more than 66%, but PET2 is still visually positive—considered favorable).

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Suggested Text for Inclusion in Body and Impression of PET/CT Report

The text of the Findings should clearly indicate whether or not there are any lesions with residual uptake, using the language of the qualitative scoring criteria to describe that uptake. Thus, it is essential to indicate whether or not there are residual foci of disease with uptake greater than that of liver. In addition, insert the following as a separate paragraph in the Findings section of report.

[< > Include the section below in the Findings]

On the baseline study, the most FDG-avid lesion was [describe type/location of lesion] at slice position [___], with maximum standardized uptake value (SUV) of [x.x]. On the current study, the most FDG-avid lesion is [describe type/location of lesion] at slice position [___], with maximum SUV of [x.x]. The percentage decrease in maximum SUV from baseline is [xx%]. The uptake in this lesion is [CHOOSE ONE OF FOLLOWING: <less than background (score = 1); equal to background (score = 1); less than blood pool (score = 2); equal to blood pool (score = 2); greater than blood pool but less than liver (score = 3); equal to liver (score = 3); greater than liver (score = 4); markedly greater than liver (score = 5)>].

[< > Move the items below to the Impression]

X. [< > Include statement describing response as: complete metabolic response, partial metabolic response, stable disease, or progressive disease]

Y. Qualitative London/Deauville criteria score = [1, 2, 3, 4, or 5]; see above.

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[Note: These ***Interim Response Assessment*** criteria have been developed in studies of first-line chemotherapy in patients with HL and, to a lesser extent, in patients with DLBCL. By agreement with Medical Oncology and Pediatric Oncology, we will apply these criteria consistently across all aggressive lymphomas and irrespective of the line of therapy being evaluated. For end of therapy response assessment, the Cheson criteria should be used.]

Aggressive Hon-Hodgkin Lymphoma includes:

- Diffuse large B-cell lymphoma
- Mantle cell lymphoma
- Burkitt lymphoma
- T-cell lymphoma

For a detailed listing of aggressive non-Hodgkin lymphoma subtypes, see http://www.cancer.gov/cancertopics/pdq/treatment/adult-non-hodgkins/HealthProfessional/page2#Section_66.