

PET Criteria for Response Assessment After Completion of Therapy for Aggressive NHL and HL

- *Definition of a positive PET scan (Visual assessment is adequate, SUV is not necessary)*
- *General definition of a positive (abnormal) PET finding using visual assessment: focal or diffuse FDG uptake above background in a location incompatible with normal anatomy/physiology*

- **Exceptions:**

- ***Negative PET***: mild and diffusely increased uptake \leq mediastinal blood pool (BP) within residual masses ≥ 2 cm in diameter regardless of location
- ***Positive PET***: diffuse or focal uptake $>$ mediastinal BP for lesion ≥ 2 cm in diameter
- ***Positive PET***: any increased uptake above surrounding background in lymph nodes or nodal masses < 2 cm (including normal sized LNs) by CT

- *Positive PET*: **new lung nodules** ≥ 1.5 cm by CT with no evidence of pulmonary lymphoma before therapy if their uptake $>$ mediastinal BP
- *Negative PET*: **new lung nodules** regardless of their size or uptake in patients without established pulmonary lymphoma at baseline who responded completely at all known disease sites – infectious/inflammatory
- **New lesions < 1.5 cm: PET is unreliable for assessment of these lesions and residual lymphoma cannot be excluded with no FDG uptake**

- **Residual hepatic or splenic lesions > 1.5 cm on CT**
 - Positive, if the uptake is \geq liver or spleen
 - Negative, if the uptake is < liver or spleen
- **Residual hepatic/splenic lesions < 1.5 cm**
 - Positive, if their uptake is > liver or spleen
 - Negative PET, if their uptake is \leq liver or spleen
- **Positive PET: diffusely increased splenic uptake > normal liver (unless there was recent cytokine therapy)**

- ***Positive PET***: increased (multi)focal bone (marrow) uptake
- ***Negative PET***: diffusely increased BM uptake, even if > liver uptake is usually due to post-therapy marrow hyperplasia
- **BM biopsy remains the standard procedure for assessment of BM (negative PET does not exclude mild or moderate BM involvement)**

Response Definition for Clinical Trials

Table 2. Response Definitions for Clinical Trials

Response	Definition	Nodal Masses	Spleen, Liver	Bone Marrow
CR	Disappearance of all evidence of disease	(a) FDG-avid or PET positive prior to therapy; mass of any size permitted if PET negative (b) Variably FDG-avid or PET negative; regression to normal size on CT	Not palpable, nodules disappeared	Infiltrate cleared on repeat biopsy; if indeterminate by morphology, immunohistochemistry should be negative
PR	Regression of measurable disease and no new sites	$\geq 50\%$ decrease in SPD of up to 6 largest dominant masses; no increase in size of other nodes (a) FDG-avid or PET positive prior to therapy; one or more PET positive at previously involved site (b) Variably FDG-avid or PET negative; regression on CT	$\geq 50\%$ decrease in SPD of nodules (for single nodule in greatest transverse diameter); no increase in size of liver or spleen	Irrelevant if positive prior to therapy; cell type should be specified
SD	Failure to attain CR/PR or PD	(a) FDG-avid or PET positive prior to therapy; PET positive at prior sites of disease and no new sites on CT or PET (b) Variably FDG-avid or PET negative; no change in size of previous lesions on CT		
Relapsed disease or PD	Any new lesion or increase by $\geq 50\%$ of previously involved sites from nadir	Appearance of a new lesion(s) > 1.5 cm in any axis, $\geq 50\%$ increase in SPD of more than one node, or $\geq 50\%$ increase in longest diameter of a previously identified node > 1 cm in short axis Lesions PET positive if FDG-avid lymphoma or PET positive prior to therapy	$> 50\%$ increase from nadir in the SPD of any previous lesions	New or recurrent involvement

Abbreviations: CR, complete remission; FDG, [^{18}F]fluorodeoxyglucose; PET, positron emission tomography; CT, computed tomography; PR, partial remission; SPD, sum of the product of the diameters; SD, stable disease; PD, progressive disease.