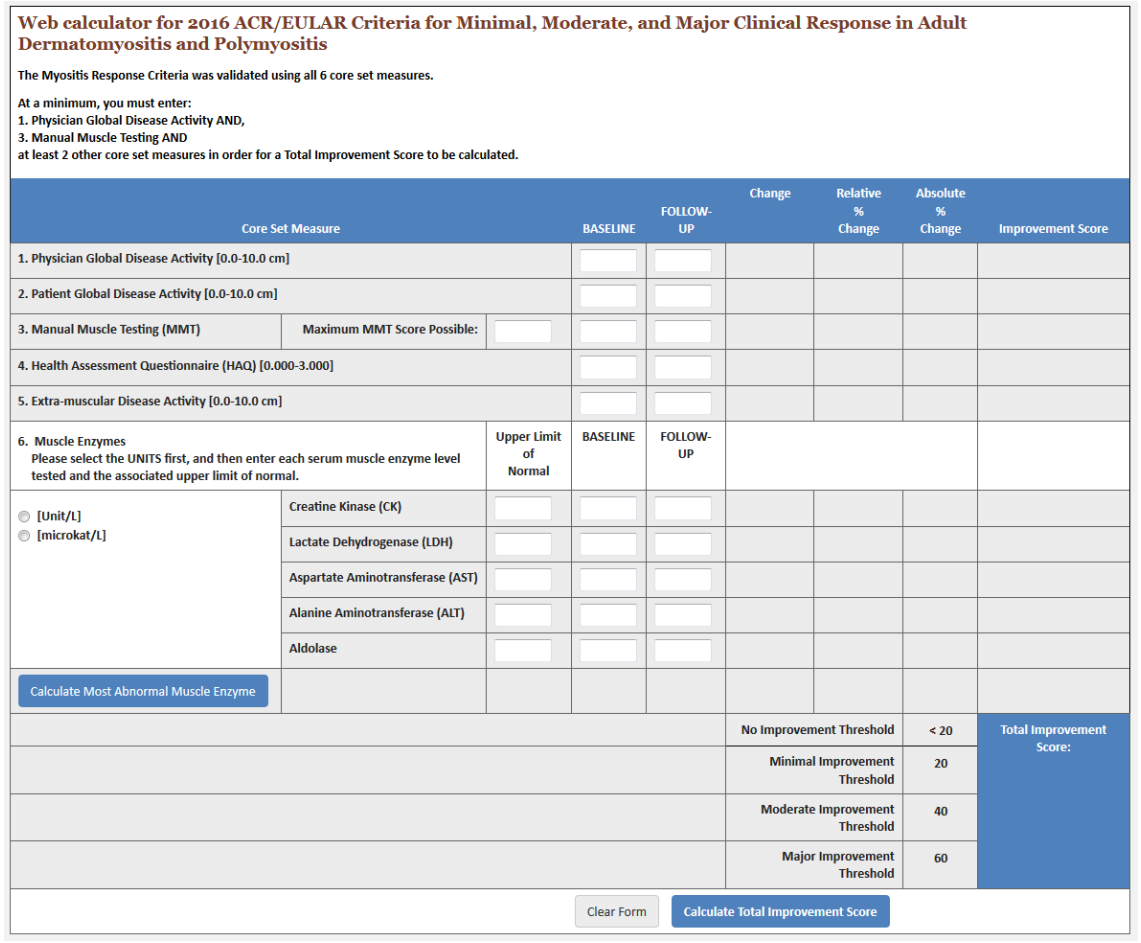
User's Guide: Online calculator for 2016 ACR/EULAR Criteria for Minimal, Moderate, and Major Clinical Response in Adult Dermatomyositis and Polymyositis

This is a screenshot of the myositis response criteria web-calculator. Before starting, you'll need to collect Baseline and Follow-up values for the required Core Set Measures.



Web calculator for 2016 ACR/EULAR Criteria for Minimal, Moderate, and Major Clinical Response in Adult Dermatomyositis and Polymyositis

The Myositis Response Criteria was validated using all 6 core set measures.

At a minimum, you must enter:
1. Physician Global Disease Activity AND,
3. Manual Muscle Testing AND
at least 2 other core set measures in order for a Total Improvement Score to be calculated.

Core Set Measure			BASELINE	FOLLOW-UP	Change	Relative % Change	Absolute % Change	Improvement Score
1. Physician Global Disease Activity [0.0-10.0 cm]								
2. Patient Global Disease Activity [0.0-10.0 cm]								
3. Manual Muscle Testing (MMT)	Maximum MMT Score Possible:							
4. Health Assessment Questionnaire (HAQ) [0.000-3.000]								
5. Extra-muscular Disease Activity [0.0-10.0 cm]								
6. Muscle Enzymes Please select the UNITS first, and then enter each serum muscle enzyme level tested and the associated upper limit of normal.		Upper Limit of Normal	BASELINE	FOLLOW-UP				
○ [Unit/L] ○ [microkat/L]	Creatine Kinase (CK)							
	Lactate Dehydrogenase (LDH)							
	Aspartate Aminotransferase (AST)							
	Alanine Aminotransferase (ALT)							
	Aldolase							
Calculate Most Abnormal Muscle Enzyme								
					No Improvement Threshold		< 20	Total Improvement Score:
					Minimal Improvement Threshold		20	
					Moderate Improvement Threshold		40	
					Major Improvement Threshold		60	

Clear Form | Calculate Total Improvement Score

Enter Baseline and Follow-up values as prompted for all Core Set Measures. The calculator will immediately display the Core Set Measure calculations when valid values are entered. The directionality of change calculations (Change/ Relative % Change/ Absolute % Change) are such that a positive change is improvement and a negative change is worsening. Although Relative % Change is calculated, the 2016 ACR/EULAR Criteria for Minimal, Moderate, and Major Clinical Response in Adult Dermatomyositis and Polymyositis uses Absolute % Change.

1. Physician Global Disease Activity [0.0-10.0 cm] must be between 0 and 10.

Core Set Measure	BASELINE	FOLLOW-UP
1. Physician Global Disease Activity [0.0-10.0 cm]	5.0	4.0

2. Patient Global Disease Activity [0.0-10.0 cm] must be between 0 and 10.

Core Set Measure	BASELINE	FOLLOW-UP
1. Physician Global Disease Activity [0.0-10.0 cm]	5.0	4.0
2. Patient Global Disease Activity [0.0-10.0 cm]	5.0	4.0

3. Manual Muscle Testing (MMT) will first require the “Maximum MMT Score Possible”. The Maximum MMT Score Possible is the top score achievable on the MMT scale in your patient, for example MMT8 the maximum score possible is 80 (unilateral) or 150 (bilateral). However, if any of the muscle groups cannot be evaluated in your patient for any reason, like amputation, injury, joint issues, severe calcinosis etc, then you enter the maximum score achievable by that patient on the scale. Values must be between 0 and whatever is used as Maximum MMT Score Possible.

Core Set Measure			BASELINE	FOLLOW-UP
1. Physician Global Disease Activity [0.0-10.0 cm]			5.0	4.0
2. Patient Global Disease Activity [0.0-10.0 cm]			5.0	4.0
3. Manual Muscle Testing (MMT)	Maximum MMT Score Possible:	80	20	40

4. Health Assessment Questionnaire (HAQ) [0.000-3.000] must be between 0 and 3.

Core Set Measure			BASELINE	FOLLOW-UP
1. Physician Global Disease Activity [0.0-10.0 cm]			5.0	4.0
2. Patient Global Disease Activity [0.0-10.0 cm]			5.0	4.0
3. Manual Muscle Testing (MMT)	Maximum MMT Score Possible:	80	20	40
4. Health Assessment Questionnaire (HAQ) [0.000-3.000]			2.000	1.000

5. Extra-muscular Disease Activity [0.0-10.0 cm]

Core Set Measure			BASELINE	FOLLOW-UP
1. Physician Global Disease Activity [0.0-10.0 cm]			5.0	4.0
2. Patient Global Disease Activity [0.0-10.0 cm]			5.0	4.0
3. Manual Muscle Testing (MMT)	Maximum MMT Score Possible:	80	20	40
4. Health Assessment Questionnaire (HAQ) [0.000-3.000]			2.000	1.000
5. Extra-muscular Disease Activity [0.0-10.0 cm]			6.0	7.0

6. Muscle Enzymes

First, select Units/L or microkat/L.

Core Set Measure			BASELINE	FOLLOW-UP
1. Physician Global Disease Activity [0.0-10.0 cm]			5.0	4.0
2. Patient Global Disease Activity [0.0-10.0 cm]			5.0	4.0
3. Manual Muscle Testing (MMT)	Maximum MMT Score Possible:	80	20	40
4. Health Assessment Questionnaire (HAQ) [0.000-3.000]			2.000	1.000
5. Extra-muscular Disease Activity [0.0-10.0 cm]			6.0	7.0
6. Muscle Enzymes Please select the UNITS first, and then enter each serum muscle enzyme level tested and the associated upper limit of normal.		Upper Limit of Normal	BASELINE	FOLLOW-UP
(•) [Unit/L] ( ) [microkat/L]	Creatine Kinase (CK)	200	400.00	200.00
	Lactate Dehydrogenase (LDH)			
	Aspartate Aminotransferase (AST)	40	400.00	200.00
	Alanine Aminotransferase (ALT)			
	Aldolase			
Calculate Most Abnormal Muscle Enzyme	Aspartate Aminotransferase (AS	40	400	200

Second, enter all available Muscle Enzymes values including the Upper Limit of Normal (ULN) for each one.

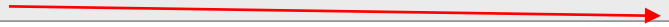
Core Set Measure			BASELINE	FOLLOW-UP
1. Physician Global Disease Activity [0.0-10.0 cm]			5.0	4.0
2. Patient Global Disease Activity [0.0-10.0 cm]			5.0	4.0
3. Manual Muscle Testing (MMT)	Maximum MMT Score Possible:	80	20	40
4. Health Assessment Questionnaire (HAQ) [0.000-3.000]			2.000	1.000
5. Extra-muscular Disease Activity [0.0-10.0 cm]			6.0	7.0
6. Muscle Enzymes Please select the UNITS first, and then enter each serum muscle enzyme level tested and the associated upper limit of normal.		Upper Limit of Normal	BASELINE	FOLLOW-UP
(•) [Unit/L] ( ) [microkat/L]	Creatine Kinase (CK)	200	400.00	200.00
	Lactate Dehydrogenase (LDH)			
	Aspartate Aminotransferase (AST)	40	400.00	200.00
	Alanine Aminotransferase (ALT)			
	Aldolase			
Calculate Most Abnormal Muscle Enzyme	Aspartate Aminotransferase (AS	40	400	200

Finally, click “Calculate Most Abnormal Muscle Enzyme”. The most abnormal enzyme is determined by having the greatest Baseline value divided by its Upper Limit of Normal. In the example below, AST is selected by the calculator because it’s baseline value is 10 times the Upper Limit of Normal (vs CK is 2 times the Upper Limit of Normal).

Core Set Measure			BASELINE	FOLLOW-UP
1. Physician Global Disease Activity [0.0-10.0 cm]			5.0	4.0
2. Patient Global Disease Activity [0.0-10.0 cm]			5.0	4.0
3. Manual Muscle Testing (MMT)	Maximum MMT Score Possible:	80	20	40
4. Health Assessment Questionnaire (HAQ) [0.000-3.000]			2.000	1.000
5. Extra-muscular Disease Activity [0.0-10.0 cm]			6.0	7.0
6. Muscle Enzymes Please select the UNITS first, and then enter each serum muscle enzyme level tested and the associated upper limit of normal.		Upper Limit of Normal	BASELINE	FOLLOW-UP
(•) [Unit/L] ( ) [microkat/L]	Creatine Kinase (CK)	200	400.00	200.00
	Lactate Dehydrogenase (LDH)			
	Aspartate Aminotransferase (AST)	40	400.00	200.00
	Alanine Aminotransferase (ALT)			
	Aldolase			
Calculate Most Abnormal Muscle Enzyme	Aspartate Aminotransferase (AS	40	400	200

Finally, click the “Calculate Total Improvement Score” button to calculate the Total Improvement Score. This will produce a Total Improvement Score for this patient and a degree of improvement (Minimal, Moderate or Major Improvement) based on the thresholds of improvement established by the 2016 ACR/EULAR Criteria for Minimal, Moderate, and Major Clinical Response in Adult Dermatomyositis and Polymyositis. Note that the displayed degree of improvement represents the highest degree of improvement achieved and implies that lower degrees of improvement were also achieved. In the example displayed below, the patient achieved “Moderate Improvement” thus implying that the patient also met “Minimal Improvement”. To use the calculator again for another patient, press Clear Form at the bottom of the calculator.

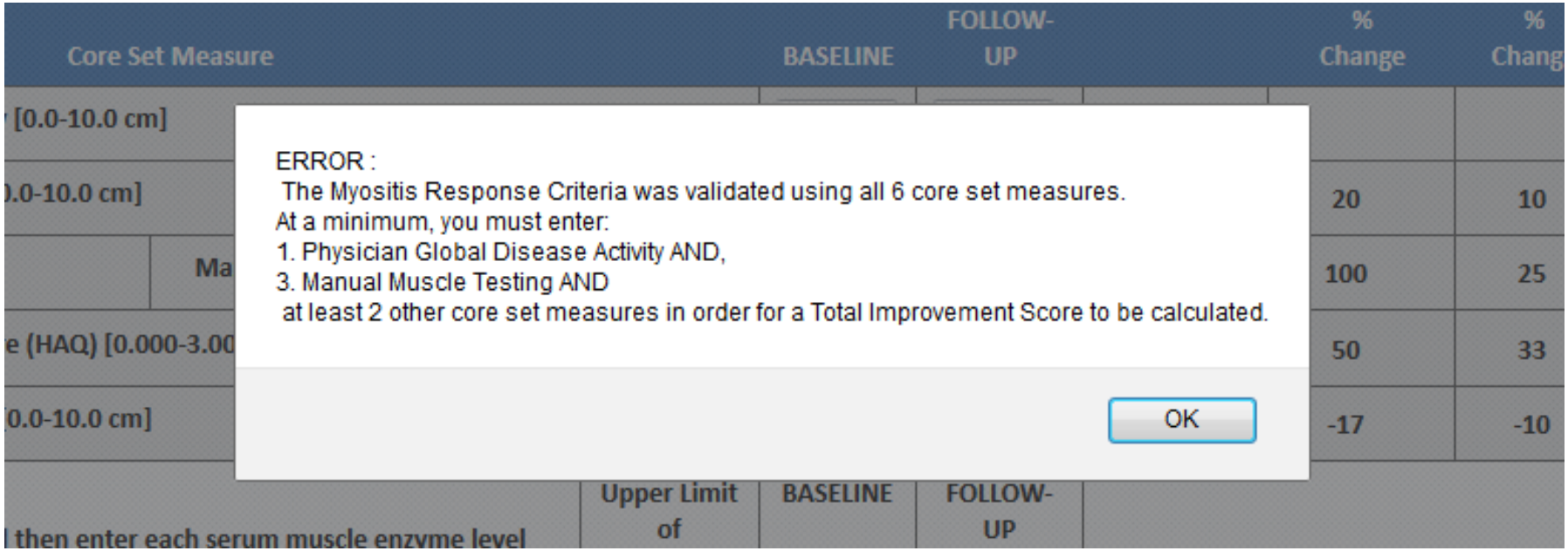
Core Set Measure			BASELINE	FOLLOW-UP	Change	Relative % Change	Absolute % Change	Improvement Score
1. Physician Global Disease Activity [0.0-10.0 cm]			5.0	4.0	1.0	20	10	7.5
2. Patient Global Disease Activity [0.0-10.0 cm]			5.0	4.0	1.0	20	10	2.5
3. Manual Muscle Testing (MMT)	Maximum MMT Score Possible:	80	20	40	20	100	25	27.5
4. Health Assessment Questionnaire (HAQ) [0.000-3.000]			2.000	1.000	1.00	50	33	7.5
5. Extra-muscular Disease Activity [0.0-10.0 cm]			6.0	7.0	-1.0	-17	-10	0
6. Muscle Enzymes Please select the UNITS first, and then enter each serum muscle enzyme level tested and the associated upper limit of normal.		Upper Limit of Normal	BASELINE	FOLLOW-UP				
(•) [Unit/L] ( ) [microkat/L]	Creatine Kinase (CK)	200	400.00	200.00				
	Lactate Dehydrogenase (LDH)							
	Aspartate Aminotransferase (AST)	40	400.00	200.00				
	Alanine Aminotransferase (ALT)							
	Aldolase							
Calculate Most Abnormal Muscle Enzyme	Aspartate Aminotransferase (AS	40	400	200	200	50	167	7.5
					No Improvement Threshold		< 20	Total Improvement Score: 52.5 [Moderate Improvement]
					Minimal Improvement Threshold		20	
					Moderate Improvement Threshold		40	
					Major Improvement Threshold		60	
			Clear Form	Calculate Total Improvement Score				



The 2016 ACR/EULAR Criteria for Minimal, Moderate, and Major Clinical Response in Adult Dermatomyositis and Polymyositis was validated using all 6 IMACS Core Set Measures.

At a minimum, you must enter:
1. Physician Global Disease Activity AND,
3. Manual Muscle Testing AND
at least 2 other core set measures in order for a Total Improvement Score to be calculated.

You will receive a warning when not meeting the minimum requirements. Following this warning, the Total Improvement Score and a degree of improvement (Minimal, Moderate or Major Improvement) are not displayed.



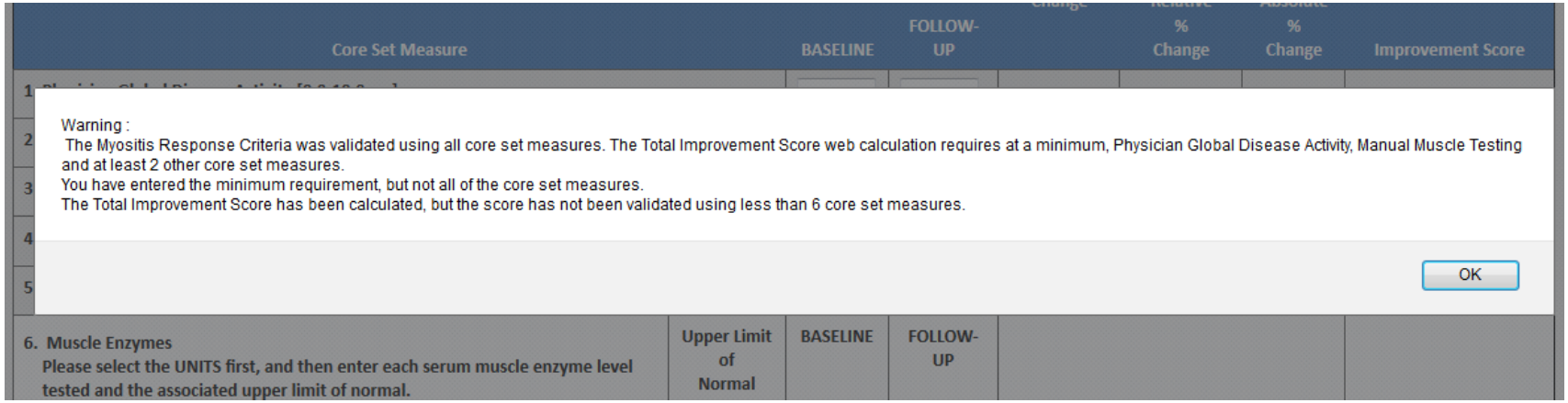
Physician Global Disease Activity, a required Core Set Measure, is not calculated due to not having a Baseline value.

Core Set Measure			BASELINE	FOLLOW-UP	Change	Relative % Change	Absolute % Change	Improvement Score
1. Physician Global Disease Activity [0.0-10.0 cm]				4.0				
2. Patient Global Disease Activity [0.0-10.0 cm]			5.0	4.0	1.0	20	10	2.5
3. Manual Muscle Testing (MMT)	Maximum MMT Score Possible:	80	20	40	20	100	25	27.5
4. Health Assessment Questionnaire (HAQ) [0.000-3.000]			2.000	1.000	1.00	50	33	7.5
5. Extra-muscular Disease Activity [0.0-10.0 cm]			6.0	7.0	-1.0	-17	-10	0
6. Muscle Enzymes Please select the UNITS first, and then enter each serum muscle enzyme level tested and the associated upper limit of normal.		Upper Limit of Normal	BASELINE	FOLLOW-UP				
(•) [Unit/L] ( ) [microkat/L]	Creatine Kinase (CK)	200	400.00	200.00				
	Lactate Dehydrogenase (LDH)							
	Aspartate Aminotransferase (AST)	40	400.00	200.00				
	Alanine Aminotransferase (ALT)							
	Aldolase							
Calculate Most Abnormal Muscle Enzyme	Aspartate Aminotransferase (AS	40	400	200	200	50	167	7.5
					No Improvement Threshold		< 20	Total Improvement Score:
					Minimal Improvement Threshold		20	
					Moderate Improvement Threshold		40	
					Major Improvement Threshold		60	

Clear Form | Calculate Total Improvement Score

As a result, Total Improvement Score and degree of improvement are not calculated.

You will receive a warning when the minimum guideline is met, yet 1 or 2 Core Set Measures are missing. Following this warning, the Total Improvement Score and a degree of improvement (Minimal, Moderate or Major Improvement) are displayed. However, this score may underestimate the improvement due to the missing Core Set Measures.



Only one non-required Core Set Measure is missing due to not having a Baseline value.

Core Set Measure			BASELINE	FOLLOW-UP	Change	Relative % Change	Absolute % Change	Improvement Score
1. Physician Global Disease Activity [0.0-10.0 cm]			5.0	4.0	1.0	20	10	7.5
2. Patient Global Disease Activity [0.0-10.0 cm]			5.0	4.0	1.0	20	10	2.5
3. Manual Muscle Testing (MMT)	Maximum MMT Score Possible:	80	20	40	20	100	25	27.5
4. Health Assessment Questionnaire (HAQ) [0.000-3.000]				1.000				
5. Extra-muscular Disease Activity [0.0-10.0 cm]			6.0	7.0	-1.0	-17	-10	0
6. Muscle Enzymes Please select the UNITS first, and then enter each serum muscle enzyme level tested and the associated upper limit of normal.		Upper Limit of Normal	BASELINE	FOLLOW-UP				
(•) [Unit/L] ( ) [microkat/L]	Creatine Kinase (CK)	200	400.00	200.00				
	Lactate Dehydrogenase (LDH)							
	Aspartate Aminotransferase (AST)	40	400.00	200.00				
	Alanine Aminotransferase (ALT)							
	Aldolase							
Calculate Most Abnormal Muscle Enzyme	Aspartate Aminotransferase (AS	40	400	200	200	50	167	7.5
					No Improvement Threshold		< 20	Total Improvement Score: 45 [Moderate Improvement]
					Minimal Improvement Threshold		20	
					Moderate Improvement Threshold		40	
					Major Improvement Threshold		60	

Clear Form | Calculate Total Improvement Score

As a result, Total Improvement Score and degree of improvement are calculated, but based only on the non-missing Core Set Measures, which may underestimate the true improvement.

Web calculator for 2016 ACR/EULAR Criteria for Minimal, Moderate, and Major Clinical Response in Adult Dermatomyositis and Polymyositis

The Myositis Response Criteria was validated using all 6 core set measures.

At a minimum, you must enter:
1. Physician Global Disease Activity AND,
3. Manual Muscle Testing AND
at least 2 other core set measures in order for a Total Improvement Score to be calculated.

Core Set Measure			BASELINE	FOLLOW-UP	Change	Relative % Change	Absolute % Change	Improvement Score
1. Physician Global Disease Activity [0.0-10.0 cm]			5.0	3.0	2.0	40	20	15
2. Patient Global Disease Activity [0.0-10.0 cm]			6.0	2.0	4.0	67	40	7.5
3. Manual Muscle Testing (MMT)	Maximum MMT Score Possible:	80	20	40	20	100	25	27.5
4. Health Assessment Questionnaire (HAQ) [0.000-3.000]			1.000	2.000	-1.00	-99	-33	0
5. Extra-muscular Disease Activity [0.0-10.0 cm]			7.0	6.0	1.0	14	10	7.5
6. Muscle Enzymes Please select the UNITS first, and then enter each serum muscle enzyme level tested and the associated upper limit of normal.		Upper Limit of Normal	BASELINE	FOLLOW-UP				
(•) [Unit/L] ( ) [microkat/L]	Creatine Kinase (CK)	200	400.00	200.00				
	Lactate Dehydrogenase (LDH)							
	Aspartate Aminotransferase (AST)							
	Alanine Aminotransferase (ALT)							
	Aldolase							
Calculate Most Abnormal Muscle Enzyme	Creatine Kinase (CK)	200	400	200	200	50	7	2.5
					No Improvement Threshold		< 20	Total Improvement Score: 60 [Major Improvement]
					Minimal Improvement Threshold		20	
					Moderate Improvement Threshold		40	
					Major Improvement Threshold		60	

Clear Form | Calculate Total Improvement Score

Web Calculator: Adult Dermatomyositis/Polymyositis Example