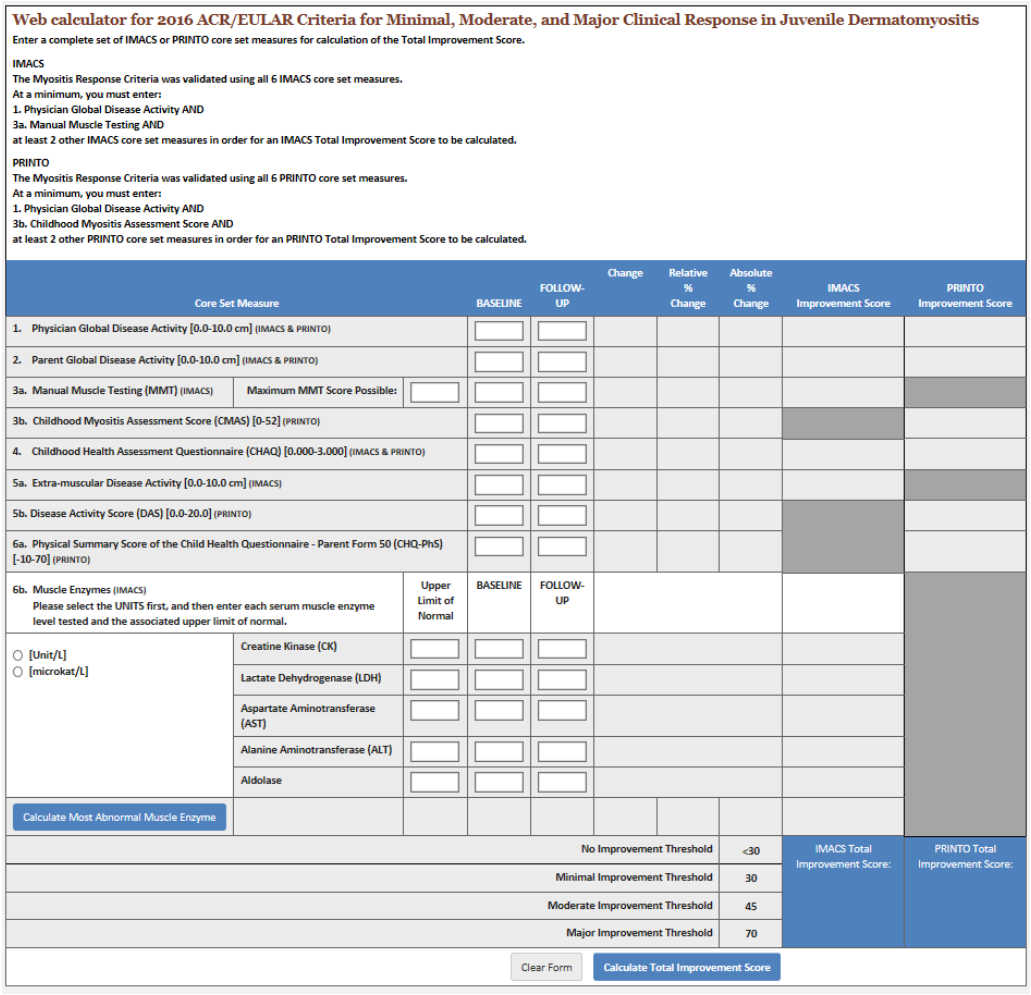
User's Guide: Online calculator for 2016 ACR/EULAR Criteria for Minimal, Moderate, and Major Clinical Response in Juvenile Dermatomyositis

This is a screenshot of the calculator. Before starting, you'll need to collect Baseline and Follow-up values for the complete set of IMACS or PRINTO Core Set Measures.



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

Enter a complete set of IMACS or PRINTO core set measures for calculation of the Total Improvement Score.

IMACS
The Myositis Response Criteria was validated using all 6 IMACS core set measures.
At a minimum, you must enter:
1. Physician Global Disease Activity AND
3a. Manual Muscle Testing AND
at least 2 other IMACS core set measures in order for an IMACS Total Improvement Score to be calculated.

PRINTO
The Myositis Response Criteria was validated using all 6 PRINTO core set measures.
At a minimum, you must enter:
1. Physician Global Disease Activity AND
3b. Childhood Myositis Assessment Score AND
at least 2 other PRINTO core set measures in order for an PRINTO Total Improvement Score to be calculated.

Core Set Measure			BASELINE	FOLLOW-UP	Change	Relative % Change	Absolute % Change	IMACS Improvement Score	PRINTO Improvement Score
1. Physician Global Disease Activity [0.0-10.0 cm] (IMACS & PRINTO)									
2. Parent Global Disease Activity [0.0-10.0 cm] (IMACS & PRINTO)									
3a. Manual Muscle Testing (MMT) (IMACS)	Maximum MMT Score Possible:								
3b. Childhood Myositis Assessment Score (CMAS) [0-52] (PRINTO)									
4. Childhood Health Assessment Questionnaire (CHAQ) [0.000-3.000] (IMACS & PRINTO)									
5a. Extra-muscular Disease Activity [0.0-10.0 cm] (IMACS)									
5b. Disease Activity Score (DAS) [0.0-20.0] (PRINTO)									
6a. Physical Summary Score of the Child Health Questionnaire - Parent Form 50 (CHQ-PhS) [-10-70] (PRINTO)									
6b. Muscle Enzymes (IMACS) 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									

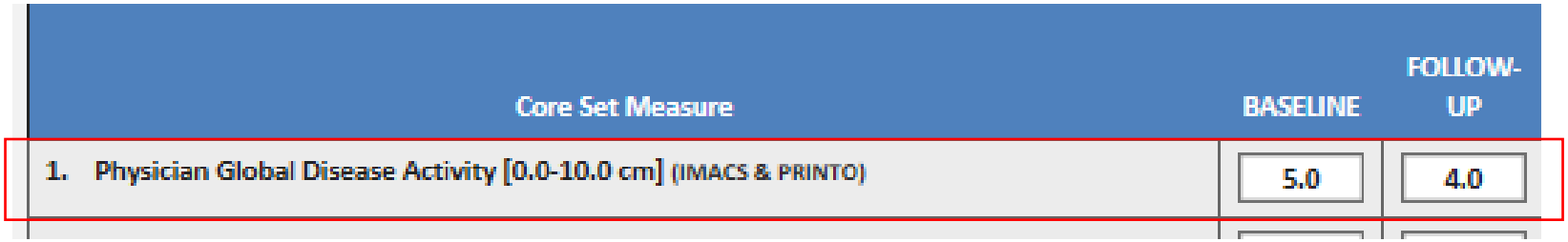
		IMACS Total Improvement Score:	PRINTO Total Improvement Score:
No Improvement Threshold	<30		
Minimal Improvement Threshold	30		
Moderate Improvement Threshold	45		
Major Improvement Threshold	70		

Clear Form | Calculate Total Improvement Score

Enter Baseline and Follow-up values as prompted for all IMACS or all PRINTO 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 Juvenile Dermatomyositis uses Absolute % Change.

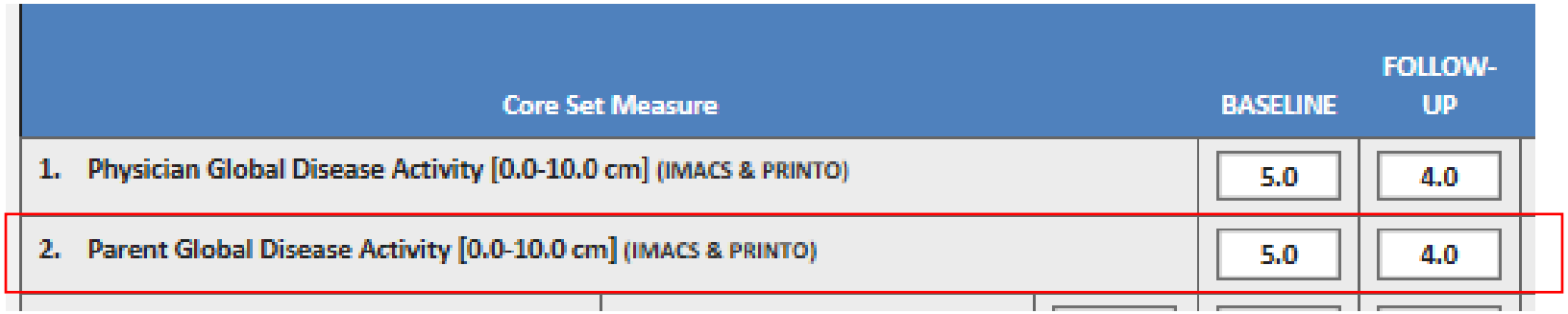
IMACS Core Set Measures (1, 2, 3a, 4, 5a, 6b):

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] (IMACS & PRINTO)	5.0	4.0

2. Parent 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] (IMACS & PRINTO)	5.0	4.0
2. Parent Global Disease Activity [0.0-10.0 cm] (IMACS & PRINTO)	5.0	4.0

3a. 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] (IMACS & PRINTO)			5.0	4.0
2. Parent Global Disease Activity [0.0-10.0 cm] (IMACS & PRINTO)			5.0	4.0
3a. Manual Muscle Testing (MMT) (IMACS)	Maximum MMT Score Possible:	80	20	40

4. Childhood Health Assessment Questionnaire (CHAQ) [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] (IMACS & PRINTO)			5.0	4.0
2. Parent Global Disease Activity [0.0-10.0 cm] (IMACS & PRINTO)			5.0	4.0
3a. Manual Muscle Testing (MMT) (IMACS)	Maximum MMT Score Possible:	80	20	40
3b. Childhood Myositis Assessment Score (CMAS) [0-52] (PRINTO)			20	30
4. Childhood Health Assessment Questionnaire (CHAQ) [0.000-3.000] (IMACS & PRINTO)			2.000	1.000

5a. 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] (IMACS & PRINTO)			5.0	4.0
2. Parent Global Disease Activity [0.0-10.0 cm] (IMACS & PRINTO)			5.0	4.0
3a. Manual Muscle Testing (MMT) (IMACS)	Maximum MMT Score Possible:	80	20	40
3b. Childhood Myositis Assessment Score (CMAS) [0-52] (PRINTO)			20	30
4. Childhood Health Assessment Questionnaire (CHAQ) [0.000-3.000] (IMACS & PRINTO)			2.000	1.000
5a. Extra-muscular Disease Activity [0.0-10.0 cm] (IMACS)			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] (IMACS & PRINTO)			5.0	4.0
2. Parent Global Disease Activity [0.0-10.0 cm] (IMACS & PRINTO)			5.0	4.0
3a. Manual Muscle Testing (MMT) (IMACS)	Maximum MMT Score Possible:	80	20	40
3b. Childhood Myositis Assessment Score (CMAS) [0-52] (PRINTO)			20	30
4. Childhood Health Assessment Questionnaire (CHAQ) [0.000-3.000] (IMACS & PRINTO)			2.000	1.000
5a. Extra-muscular Disease Activity [0.0-10.0 cm] (IMACS)			6.0	7.0
5b. Disease Activity Score (DAS) [0.0-20.0] (PRINTO)			15.0	10.0
6a. Physical Summary Score of the Child Health Questionnaire - Parent Form 50 (CHQ-PhS) [-10-70] (PRINTO)			20	30
6b. Muscle Enzymes (IMACS) 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	200
	Lactate Dehydrogenase (LDH)	40	400	200
	Aspartate Aminotransferase (AST)			
	Alanine Aminotransferase (ALT)			
	Aldolase			
Calculate Most Abnormal Muscle Enzyme	Lactate Dehydrogenase (LDH)	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] (IMACS & PRINTO)			5.0	4.0
2. Parent Global Disease Activity [0.0-10.0 cm] (IMACS & PRINTO)			5.0	4.0
3a. Manual Muscle Testing (MMT) (IMACS)	Maximum MMT Score Possible:	80	20	40
3b. Childhood Myositis Assessment Score (CMAS) [0-52] (PRINTO)			20	30
4. Childhood Health Assessment Questionnaire (CHAQ) [0.000-3.000] (IMACS & PRINTO)			2.000	1.000
5a. Extra-muscular Disease Activity [0.0-10.0 cm] (IMACS)			6.0	7.0
5b. Disease Activity Score (DAS) [0.0-20.0] (PRINTO)			15.0	10.0
6a. Physical Summary Score of the Child Health Questionnaire - Parent Form 50 (CHQ-PhS) [-10-70] (PRINTO)			20	30
6b. Muscle Enzymes (IMACS) 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	200
	Lactate Dehydrogenase (LDH)	40	400	200
	Aspartate Aminotransferase (AST)			
	Alanine Aminotransferase (ALT)			
	Aldolase			
Calculate Most Abnormal Muscle Enzyme	Lactate Dehydrogenase (LDH)	40	400	200

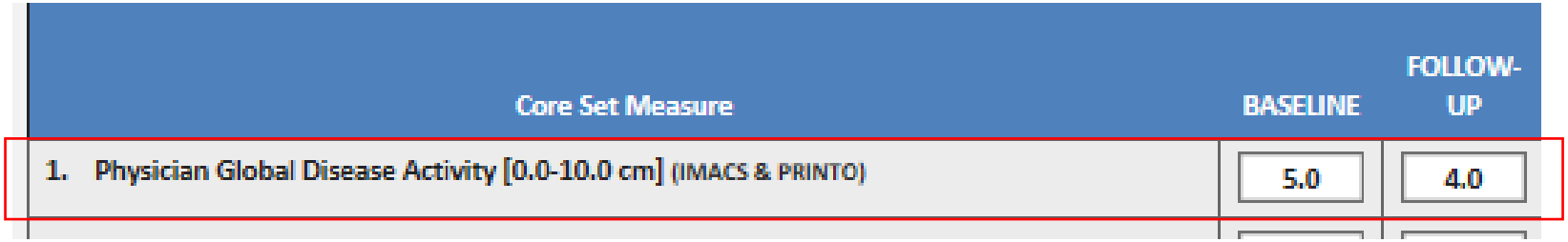
Finally, click “Calculate Most Abnormal Muscle Enzyme”. The most abnormal enzyme is determined by having the greatest Baseline value divided by its Upper Limit of Normal. In the example below, LDH is selected by the calculator because it’s baseline value is 10 times the Upper Limit of Normal (vs CK is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

Core Set Measure			BASELINE	FOLLOW-UP
1. Physician Global Disease Activity [0.0-10.0 cm] (IMACS & PRINTO)			5.0	4.0
2. Parent Global Disease Activity [0.0-10.0 cm] (IMACS & PRINTO)			5.0	4.0
3a. Manual Muscle Testing (MMT) (IMACS)	Maximum MMT Score Possible:	80	20	40
3b. Childhood Myositis Assessment Score (CMAS) [0-52] (PRINTO)			20	30
4. Childhood Health Assessment Questionnaire (CHAQ) [0.000-3.000] (IMACS & PRINTO)			2.000	1.000
5a. Extra-muscular Disease Activity [0.0-10.0 cm] (IMACS)			6.0	7.0
5b. Disease Activity Score (DAS) [0.0-20.0] (PRINTO)			15.0	10.0
6a. Physical Summary Score of the Child Health Questionnaire - Parent Form 50 (CHQ-PhS) [-10-70] (PRINTO)			20	30
6b. Muscle Enzymes (IMACS) 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	200
	Lactate Dehydrogenase (LDH)	40	400	200
	Aspartate Aminotransferase (AST)			
	Alanine Aminotransferase (ALT)			
	Aldolase			
Calculate Most Abnormal Muscle Enzyme	Lactate Dehydrogenase (LDH)	40	400	200

The calculator may also be used with the PRINTO Core Set Measures instead of the IMACS measures:

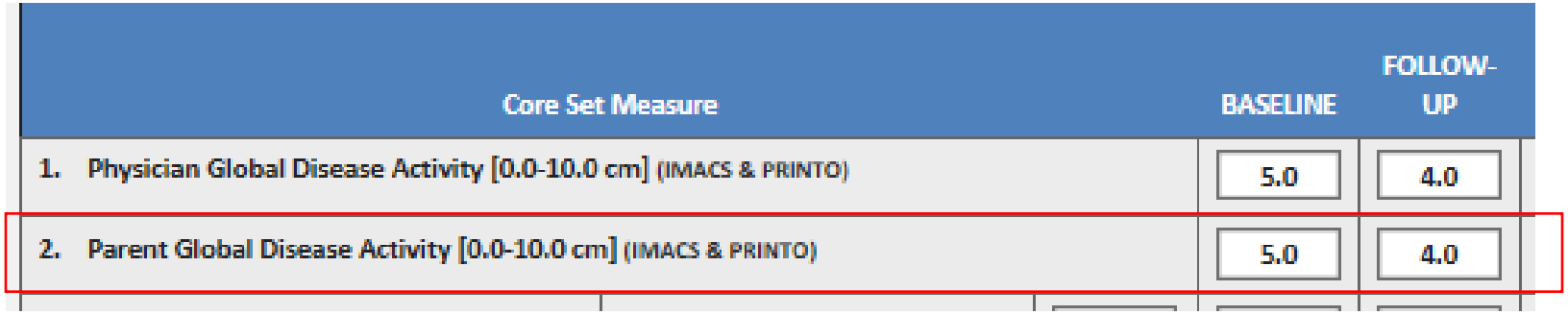
PRINTO Core Set Measures (1, 2, 3b, 4, 5b, 6a):

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] (IMACS & PRINTO)	5.0	4.0

2. Parent 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] (IMACS & PRINTO)	5.0	4.0
2. Parent Global Disease Activity [0.0-10.0 cm] (IMACS & PRINTO)	5.0	4.0

3b. Childhood Myositis Assessment Score (CMAS) [0-52] must be between 0 and 52.

Core Set Measure			BASELINE	FOLLOW-UP
1. Physician Global Disease Activity [0.0-10.0 cm] (IMACS & PRINTO)			5.0	4.0
2. Parent Global Disease Activity [0.0-10.0 cm] (IMACS & PRINTO)			5.0	4.0
3a. Manual Muscle Testing (MMT) (IMACS)	Maximum MMT Score Possible:	80	20	40
3b. Childhood Myositis Assessment Score (CMAS) [0-52] (PRINTO)			20	30

4. Childhood Health Assessment Questionnaire (CHAQ) [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] (IMACS & PRINTO)			5.0	4.0
2. Parent Global Disease Activity [0.0-10.0 cm] (IMACS & PRINTO)			5.0	4.0
3a. Manual Muscle Testing (MMT) (IMACS)	Maximum MMT Score Possible:	80	20	40
3b. Childhood Myositis Assessment Score (CMAS) [0-52] (PRINTO)			20	30
4. Childhood Health Assessment Questionnaire (CHAQ) [0.000-3.000] (IMACS & PRINTO)			2.000	1.000

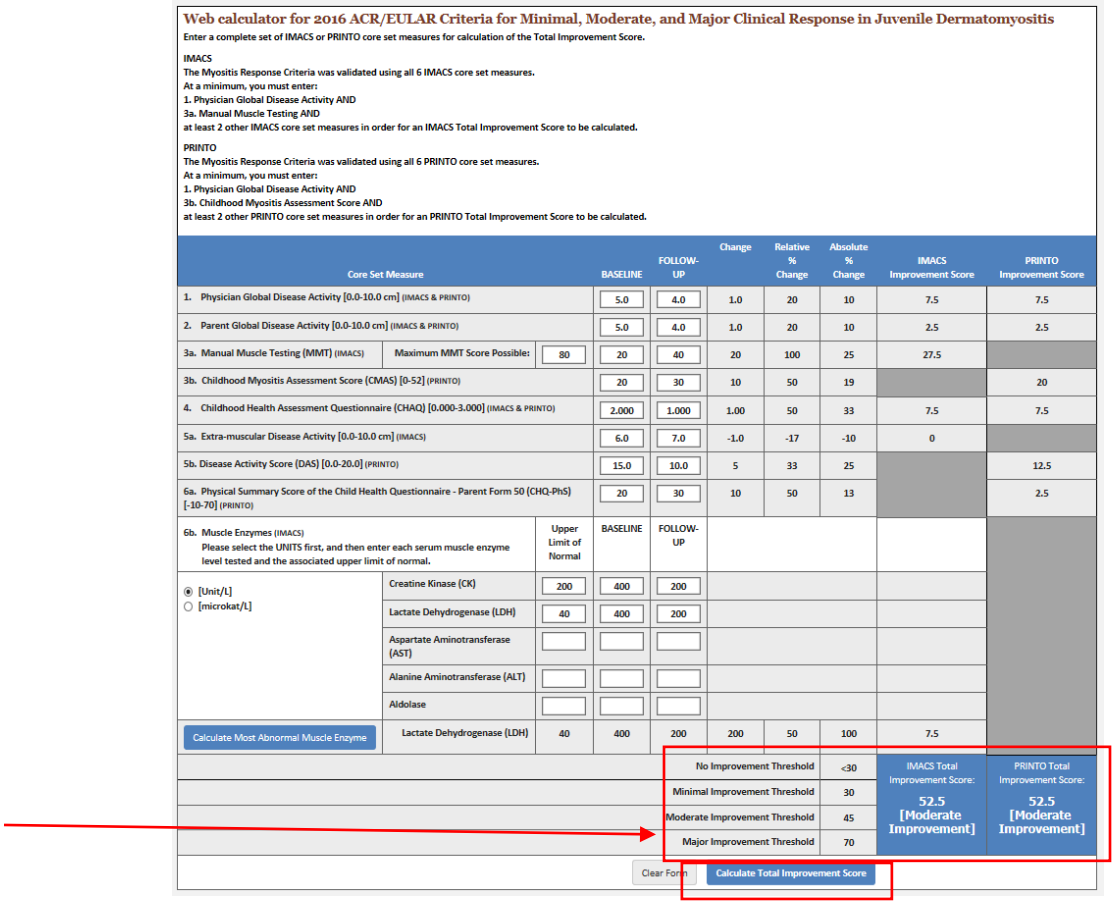
5b. Disease Activity Score (DAS) [0.0-20.0] must be between 0 and 20.

Core Set Measure			BASELINE	FOLLOW-UP
1. Physician Global Disease Activity [0.0-10.0 cm] (IMACS & PRINTO)			5.0	4.0
2. Parent Global Disease Activity [0.0-10.0 cm] (IMACS & PRINTO)			5.0	4.0
3a. Manual Muscle Testing (MMT) (IMACS)	Maximum MMT Score Possible:	80	20	40
3b. Childhood Myositis Assessment Score (CMAS) [0-52] (PRINTO)			20	30
4. Childhood Health Assessment Questionnaire (CHAQ) [0.000-3.000] (IMACS & PRINTO)			2.000	1.000
5a. Extra-muscular Disease Activity [0.0-10.0 cm] (IMACS)			6.0	7.0
5b. Disease Activity Score (DAS) [0.0-20.0] (PRINTO)			15.0	10.0

6a. Physical Summary Score of the Child Health Questionnaire - Parent Form 50 (CHQ-PhS) [-10-70] must be between -10 and 70.

Core Set Measure			BASELINE	FOLLOW-UP
1. Physician Global Disease Activity [0.0-10.0 cm] (IMACS & PRINTO)			5.0	4.0
2. Parent Global Disease Activity [0.0-10.0 cm] (IMACS & PRINTO)			5.0	4.0
3a. Manual Muscle Testing (MMT) (IMACS)	Maximum MMT Score Possible:	80	20	40
3b. Childhood Myositis Assessment Score (CMAS) [0-52] (PRINTO)			20	30
4. Childhood Health Assessment Questionnaire (CHAQ) [0.000-3.000] (IMACS & PRINTO)			2.000	1.000
5a. Extra-muscular Disease Activity [0.0-10.0 cm] (IMACS)			6.0	7.0
5b. Disease Activity Score (DAS) [0.0-20.0] (PRINTO)			15.0	10.0
6a. Physical Summary Score of the Child Health Questionnaire - Parent Form 50 (CHQ-PhS) [-10-70] (PRINTO)			20	30

Finally, click the “Calculate Total Improvement Score” button to calculate the Total Improvement Score. This will produce a Total Improvement Score for this patient for the IMACS and PRINTO core set measures 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 Juvenile Dermatomyositis. 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.



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

Enter a complete set of IMACS or PRINTO core set measures for calculation of the Total Improvement Score.

IMACS
The Myositis Response Criteria was validated using all 6 IMACS core set measures.
At a minimum, you must enter:
1. Physician Global Disease Activity AND
3a. Manual Muscle Testing AND
at least 2 other IMACS core set measures in order for an IMACS Total Improvement Score to be calculated.

PRINTO
The Myositis Response Criteria was validated using all 6 PRINTO core set measures.
At a minimum, you must enter:
1. Physician Global Disease Activity AND
3b. Childhood Myositis Assessment Score AND
at least 2 other PRINTO core set measures in order for an PRINTO Total Improvement Score to be calculated.

Core Set Measure			BASELINE	FOLLOW-UP	Change	Relative % Change	Absolute % Change	IMACS Improvement Score	PRINTO Improvement Score
1. Physician Global Disease Activity [0.0-10.0 cm] (IMACS & PRINTO)			5.0	4.0	1.0	20	10	7.5	7.5
2. Parent Global Disease Activity [0.0-10.0 cm] (IMACS & PRINTO)			5.0	4.0	1.0	20	10	2.5	2.5
3a. Manual Muscle Testing (MMT) (IMACS)	Maximum MMT Score Possible:	80	20	40	20	100	25	27.5	
3b. Childhood Myositis Assessment Score (CMAS) [0-52] (PRINTO)			20	30	10	50	19		20
4. Childhood Health Assessment Questionnaire (CHAQ) [0.000-3.000] (IMACS & PRINTO)			2.000	1.000	1.00	50	33	7.5	7.5
5a. Extra-muscular Disease Activity [0.0-10.0 cm] (IMACS)			6.0	7.0	-1.0	-17	-10	0	
5b. Disease Activity Score (DAS) [0.0-20.0] (PRINTO)			15.0	10.0	5	33	25		12.5
6a. Physical Summary Score of the Child Health Questionnaire - Parent Form 50 (CHQ-PhS) [-10-70] (PRINTO)			20	30	10	50	13		2.5
6b. Muscle Enzymes (IMACS) 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	200					
	Lactate Dehydrogenase (LDH)	40	400	200					
	Aspartate Aminotransferase (AST)								
	Alanine Aminotransferase (ALT)								
	Aldolase								
Calculate Most Abnormal Muscle Enzyme	Lactate Dehydrogenase (LDH)	40	400	200	200	50	100	7.5	

		IMACS Total Improvement Score:	PRINTO Total Improvement Score:
No Improvement Threshold	<30	52.5 [Moderate Improvement]	52.5 [Moderate Improvement]
Minimal Improvement Threshold	30		
Moderate Improvement Threshold	45		
Major Improvement Threshold	70		

Clear Form | Calculate Total Improvement Score

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

Using IMACS Core Set Measures:

At a minimum, you must enter:

1. Physician Global Disease Activity AND

3a. Manual Muscle Testing AND

at least 2 other IMACS core set measures in order for an IMACS Total Improvement Score to be calculated.

Using PRINTO Core Set Measures:

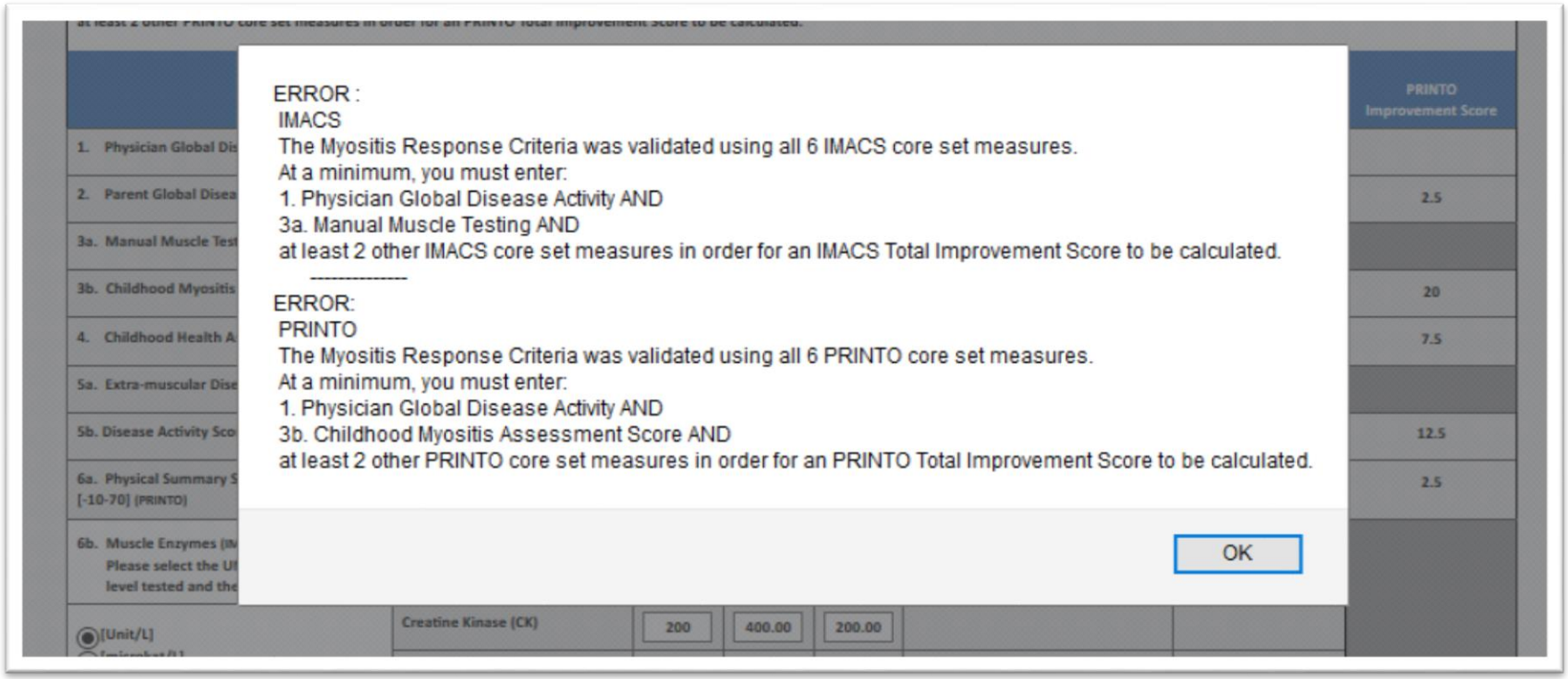
At a minimum, you must enter:

1. Physician Global Disease Activity AND

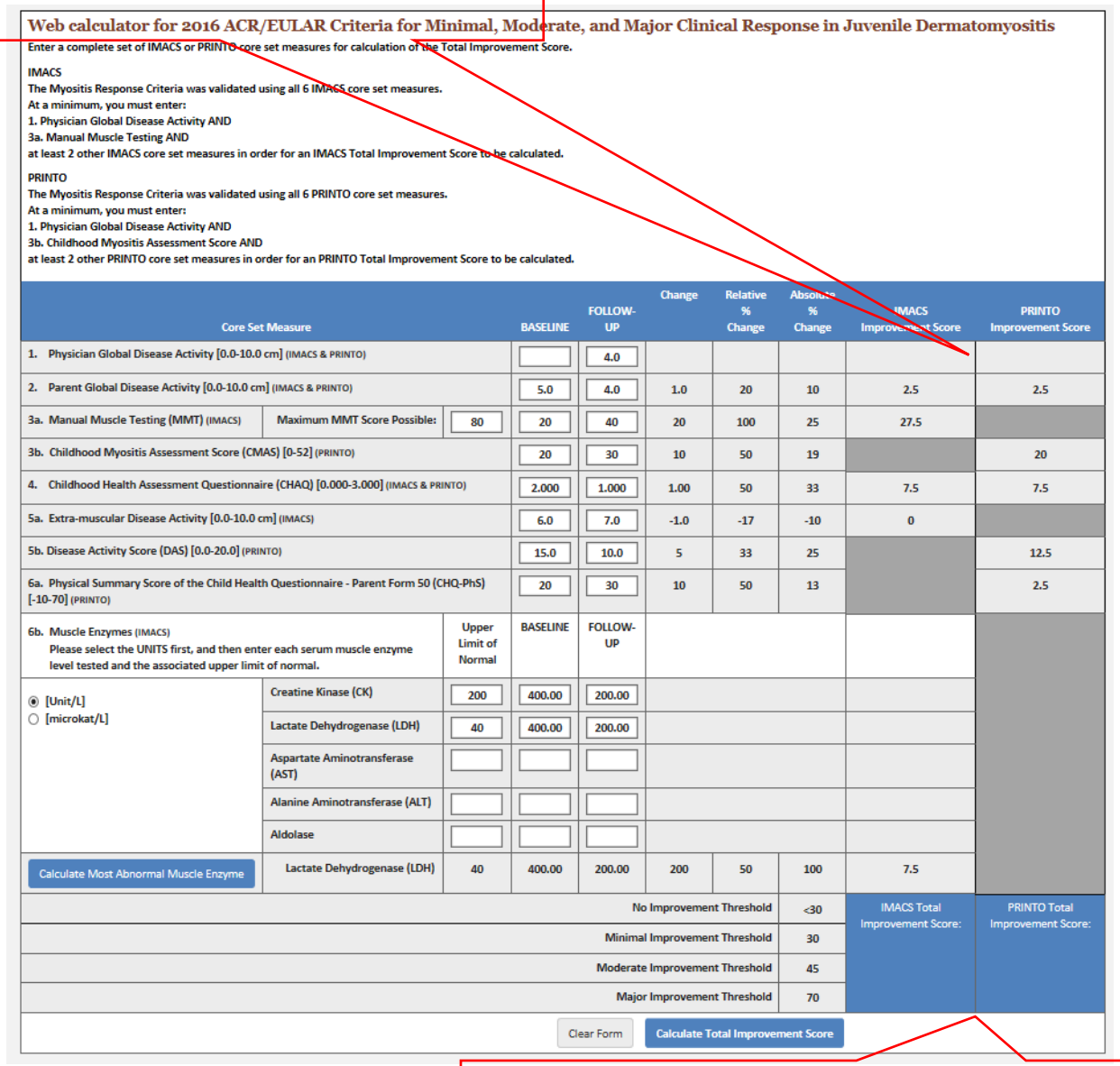
3b. Childhood Myositis Assessment Score AND

at least 2 other PRINTO core set measures in order for a PRINTO 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.



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



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

Enter a complete set of IMACS or PRINTO core set measures for calculation of the Total Improvement Score.

IMACS
The Myositis Response Criteria was validated using all 6 IMACS core set measures.
At a minimum, you must enter:
1. Physician Global Disease Activity AND
3a. Manual Muscle Testing AND
at least 2 other IMACS core set measures in order for an IMACS Total Improvement Score to be calculated.

PRINTO
The Myositis Response Criteria was validated using all 6 PRINTO core set measures.
At a minimum, you must enter:
1. Physician Global Disease Activity AND
3b. Childhood Myositis Assessment Score AND
at least 2 other PRINTO core set measures in order for an PRINTO Total Improvement Score to be calculated.

Core Set Measure			BASELINE	FOLLOW-UP	Change	Relative % Change	Absolute % Change	IMACS Improvement Score	PRINTO Improvement Score
1. Physician Global Disease Activity [0.0-10.0 cm] (IMACS & PRINTO)				4.0					
2. Parent Global Disease Activity [0.0-10.0 cm] (IMACS & PRINTO)			5.0	4.0	1.0	20	10	2.5	2.5
3a. Manual Muscle Testing (MMT) (IMACS)	Maximum MMT Score Possible:	80	20	40	20	100	25	27.5	
3b. Childhood Myositis Assessment Score (CMAS) [0-52] (PRINTO)			20	30	10	50	19		20
4. Childhood Health Assessment Questionnaire (CHAQ) [0.000-3.000] (IMACS & PRINTO)			2.000	1.000	1.00	50	33	7.5	7.5
5a. Extra-muscular Disease Activity [0.0-10.0 cm] (IMACS)			6.0	7.0	-1.0	-17	-10	0	
5b. Disease Activity Score (DAS) [0.0-20.0] (PRINTO)			15.0	10.0	5	33	25		12.5
6a. Physical Summary Score of the Child Health Questionnaire - Parent Form 50 (CHQ-PhS) [-10-70] (PRINTO)			20	30	10	50	13		2.5
6b. Muscle Enzymes (IMACS) 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)	40	400.00	200.00					
	Aspartate Aminotransferase (AST)								
	Alanine Aminotransferase (ALT)								
	Aldolase								
Calculate Most Abnormal Muscle Enzyme	Lactate Dehydrogenase (LDH)	40	400.00	200.00	200	50	100	7.5	

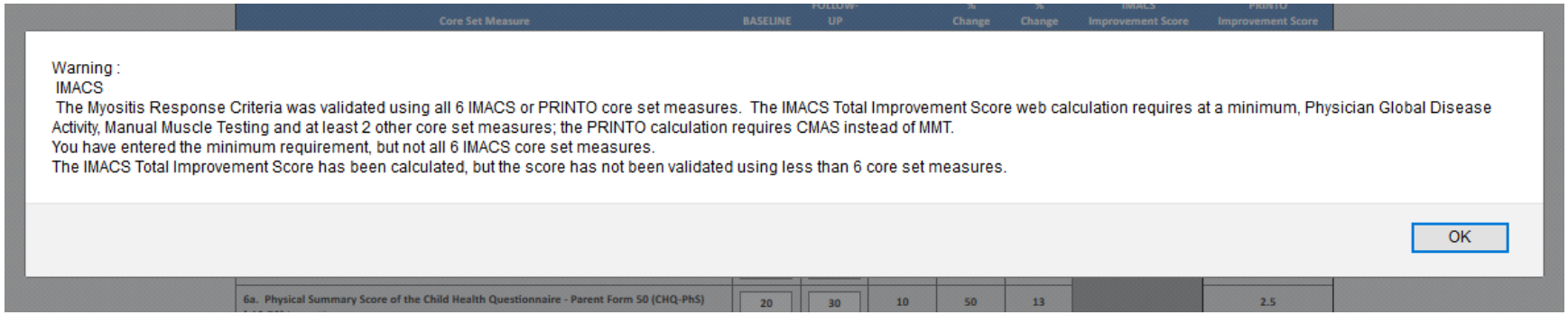
		IMACS Total Improvement Score:	PRINTO Total Improvement Score:
No Improvement Threshold	<30		
Minimal Improvement Threshold	30		
Moderate Improvement Threshold	45		
Major Improvement Threshold	70		

Clear Form | Calculate Total Improvement Score

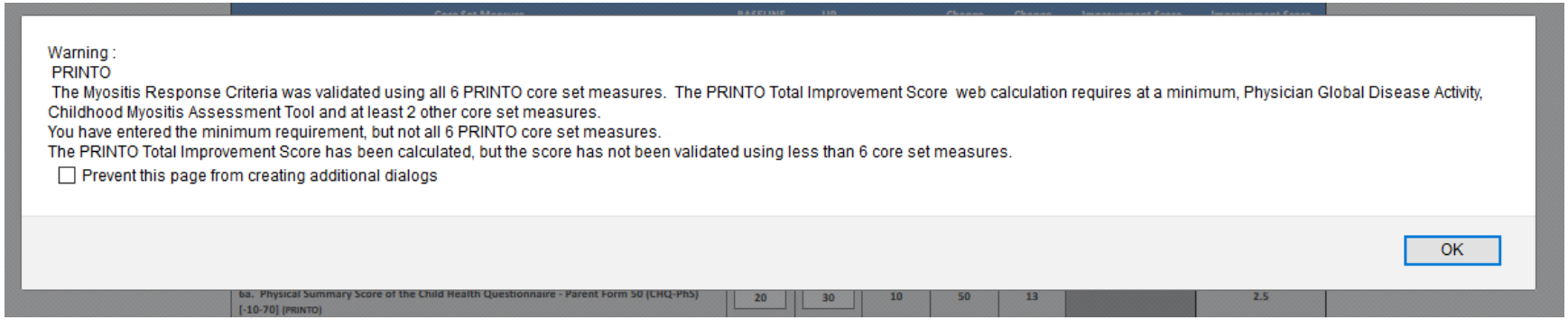
As a result, Total Improvement Score and degree of improvement are not calculated

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.

IMACS:



PRINTO:



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

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

Enter a complete set of IMACS or PRINTO core set measures for calculation of the Total Improvement Score.

IMACS
The Myositis Response Criteria was validated using all 6 IMACS core set measures.
At a minimum, you must enter:
1. Physician Global Disease Activity AND
3a. Manual Muscle Testing AND
at least 2 other IMACS core set measures in order for an IMACS Total Improvement Score to be calculated.

PRINTO
The Myositis Response Criteria was validated using all 6 PRINTO core set measures.
At a minimum, you must enter:
1. Physician Global Disease Activity AND
3b. Childhood Myositis Assessment Score AND
at least 2 other PRINTO core set measures in order for an PRINTO Total Improvement Score to be calculated.

Core Set Measure			BASELINE	FOLLOW-UP	Change	Relative % Change	Absolute % Change	IMACS Improvement Score	PRINTO Improvement Score
1. Physician Global Disease Activity [0.0-10.0 cm] (IMACS & PRINTO)			5.0	4.0	1.0	20	10	7.5	7.5
2. Parent Global Disease Activity [0.0-10.0 cm] (IMACS & PRINTO)			5.0	4.0	1.0	20	10	2.5	2.5
3a. Manual Muscle Testing (MMT) (IMACS)	Maximum MMT Score Possible:	80	20	40	20	100	25	27.5	
3b. Childhood Myositis Assessment Score (CMAS) [0-52] (PRINTO)			20	30	10	50	19		20
4. Childhood Health Assessment Questionnaire (CHAQ) [0.000-3.000] (IMACS & PRINTO)				1.000					
5a. Extra-muscular Disease Activity [0.0-10.0 cm] (IMACS)			6.0	7.0	-1.0	-17	-10	0	
5b. Disease Activity Score (DAS) [0.0-20.0] (PRINTO)			15.0	10.0	5	33	25		12.5
6a. Physical Summary Score of the Child Health Questionnaire - Parent Form 50 (CHQ-PhS) [-10-70] (PRINTO)			20	30	10	50	13		2.5
6b. Muscle Enzymes (IMACS) 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)	40	400.00	200.00					
	Aspartate Aminotransferase (AST)								
	Alanine Aminotransferase (ALT)								
	Aldolase								
Calculate Most Abnormal Muscle Enzyme	Lactate Dehydrogenase (LDH)	40	400	200	200	50	100	7.5	

No Improvement Threshold	<30
Minimal Improvement Threshold	30
Moderate Improvement Threshold	45
Major Improvement Threshold	70

IMACS Total Improvement Score: **45 [Moderate Improvement]**

PRINTO Total Improvement Score: **45 [Moderate Improvement]**

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: Juvenile Dermatomyositis Example:

3a. Manual Muscle Testing (MMT) (IMACS)	Maximum MMT Score Possible: 80	43	36	-7	-16	-9	0	
3b. Childhood Myositis Assessment Score (CMAS) [0-52] (PRINTO)		18	10	-8	-44	-15		0
4. Childhood Health Assessment Questionnaire (CHAQ) [0.000-3.000] (IMACS & PRINTO)		2.710	2.500	0.21	8	7	5	5
5a. Extra-muscular Disease Activity [0.0-10.0 cm] (IMACS)		6.3	8.9	-2.6	-41	-26	0	
5b. Disease Activity Score (DAS) [0.0-20.0] (PRINTO)		16.0	12.0	4	25	20		12.5
6a. Physical Summary Score of the Child Health Questionnaire - Parent Form 50 (CHQ-PhS) [-10-70] (PRINTO)		24	35	11	46	14		2.5

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

Enter a complete set of IMACS or PRINTO core set measures for calculation of the Total Improvement Score.

IMACS
The Myositis Response Criteria was validated using all 6 IMACS core set measures.
At a minimum, you must enter:
1. Physician Global Disease Activity AND
3a. Manual Muscle Testing AND
at least 2 other IMACS core set measures in order for an IMACS Total Improvement Score to be calculated.

PRINTO
The Myositis Response Criteria was validated using all 6 PRINTO core set measures.
At a minimum, you must enter:
1. Physician Global Disease Activity AND
3b. Childhood Myositis Assessment Score AND
at least 2 other PRINTO core set measures in order for an PRINTO Total Improvement Score to be calculated.

Core Set Measure			BASELINE	FOLLOW-UP	Change	Relative % Change	Absolute % Change	IMACS Improvement Score	PRINTO Improvement Score
1. Physician Global Disease Activity [0.0-10.0 cm] (IMACS & PRINTO)			9.0	8.5	0.5	6	5	0	0
2. Parent Global Disease Activity [0.0-10.0 cm] (IMACS & PRINTO)			10.0	4.2	5.8	58	58	10	10
3a. Manual Muscle Testing (MMT) (IMACS)	Maximum MMT Score Possible:	80	43	36	-7	-16	-9	0	
3b. Childhood Myositis Assessment Score (CMAS) [0-52] (PRINTO)			18	10	-8	-44	-15		0
4. Childhood Health Assessment Questionnaire (CHAQ) [0.000-3.000] (IMACS & PRINTO)			2.710	2.500	0.21	8	7	5	5
5a. Extra-muscular Disease Activity [0.0-10.0 cm] (IMACS)			6.3	8.9	-2.6	-41	-26	0	
5b. Disease Activity Score (DAS) [0.0-20.0] (PRINTO)			16.0	12.0	4	25	20		12.5
6a. Physical Summary Score of the Child Health Questionnaire - Parent Form 50 (CHQ-PhS) [-10-70] (PRINTO)			24	35	11	46	14		2.5
6b. Muscle Enzymes (IMACS) 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)	150	2000.00	150.00					
	Lactate Dehydrogenase (LDH)								
	Aspartate Aminotransferase (AST)								
	Alanine Aminotransferase (ALT)								
	Aldolase								
Calculate Most Abnormal Muscle Enzyme	Creatine Kinase (CK)	150	2000	150	1850	92	62	7.5	
							No Improvement Threshold	<30	IMACS Total Improvement Score: 22.5 [No Improvement]
							Minimal Improvement Threshold	30	PRINTO Total Improvement Score: 30 [Minimal Improvement]
							Moderate Improvement Threshold	45	
							Major Improvement Threshold	70	

Clear Form | Calculate Total Improvement Score