Model for End-Stage Liver Disease (MELD) Calculator

For ages 12 and older. The Model for Liver Disease (MELD) predicts survival for persons with advanced liver disease.

The United Network for Organ Sharing (UNOS) made a policy change regarding a revision in the MELD scoring system on January 11, 2016 that is related to transplant listing. The new MELD scores are calculated first by determining the traditional MELD score as an initial score ($MELD_{(i)}$); if the initial $MELD_{(i)}$ score is 12 or greater, the score is adjusted by incorporating the serum sodium value.

MELD	Score
Serum Bilirubin (mg/dL):	_____
INR (International Normalized Ratio)	_____
Serum Creatinine (mg/dL):	_____
Did the patient have dialysis at least twice in the past week, or receive 24 hours of CVVHD within the prior week?	☐ No ☐ Yes
Serum Sodium (mmol/L):	_____
$MELD_{(i)}$ scores less than 12 do not require Serum Sodium correction.	
MELD score:	_____

Interpretation

FORMULAS AND NOTES

$MELD_{(i)} = round^{1}[\ 0.378 * \log_e(bilirubin)) + (1.120*\log_e(INR)) + (0.957*\log_e(creatinine)) + 0.643\ ] * 10$

[1] rounded to the tenth decimal place.

$MELD = MELD_{(i)} + 1.32 * (137-Na) - [0.033*MELD(i)*(137-Na)]$

NOTES

- This version of the MELD calculator includes United Network for Organ Sharing (UNOS) modifications of the original model.
- The MELD utilizes log scale calculations and thus any value less than 1 is automatically given a lower limit value of 1 to prevent generating a negative score.
- The lower limit of Serum Sodium (Na) is capped at 125, and the upper limit is capped at 137.
- The upper limit of serum creatinine is capped at 4; in addition, if the patient had dialysis at least twice in the past week, the value for serum creatinine will be automatically adjusted to 4.0.
- The maximum MELD score is 40.

3-Month Mortality Based on MELD Scores

The estimated 3-month mortality is based on the final MELD score from above.

MELD Score	Mortality Probability
40	71.3% mortality
30-39	52.6% mortality
20-29	19.6% mortality
110-19	6.0% mortality
9 or less	1.9% mortality

Source: Kamath PS, Kim WR; Advanced Liver Disease Study Group. The model for end-stage liver disease (MELD). Hepatology. 2007;45:797-805. [PubMed Abstract] https://pubmed.ncbi.nlm.nih.gov/17326206/
Wiesner R, Edwards E, Freeman R, et al. Model for end-stage liver disease (MELD) and allocation of donor livers. Gastroenterology. 2003;124:91-6. [PubMed Abstract] https://pubmed.ncbi.nlm.nih.gov/12512033/

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