



Supplement of

Machine learning in diabetic-foot osteomyelitis: current applications, challenges, and future directions

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Search Strategy

MEDLINE

Ovid MEDLINE(R) and In-Process, In-Data-Review & Other Non-Indexed Citations <1946 to May 15, 2026>

- 1 exp Diabetic Foot/ 13943
- 2 exp Foot Ulcer/ 15421
- 3 exp Diabetes Mellitus/ 568827
- 4 (diabet* adj3 (foot or feet or pedal or plantar or ulcer* or wound* or infection*)).ti,ab.
28604
- 5 ("diabetic foot" or "diabetic feet" or "diabetic foot ulcer*" or "diabetes-related foot" or
"diabetes related foot" or DFU or DFI).ti,ab. 17365
- 6 2 and 3 14219
- 7 1 or 4 or 5 or 6 34136
- 8 exp Osteomyelitis/ 25922
- 9 (osteomyelitis or osteomyelitides or "bone infection*" or "bone involvement" or "pedal
osteomyelitis" or "foot osteomyelitis" or DFO).ti,ab. 36205
- 10 8 or 9 44729

- 11 exp Artificial Intelligence/ 280893
- 12 exp Machine Learning/ 121788
- 13 exp Deep Learning/ 41557
- 14 exp Neural Networks, Computer/ 101122
- 15 exp Algorithms/ 564708
- 16 exp Logistic Models/ 160775
- 17 exp Prognosis/2162196
- 18 exp "Sensitivity and Specificity"/ 713664
- 19 exp ROC Curve/ 86622
- 20 (artificial intelligence or AI or "machine learning" or ML or "deep learning" or "neural network*" or "convolutional neural network*" or CNN or ResNet or XGBoost or "random forest*" or "support vector machine*" or SVM or "decision tree*" or "gradient boosting" or classifier* or classification or algorithm* or "computer-aided" or "computer assisted" or automated).ti,ab. 2391471
- 21 ((predict* or prognos* or diagnos* or detect* or classif* or discriminat* or differentiat* or stratificat*) adj3 (model* or score* or tool* or algorithm* or classifier* or rule* or system* or nomogram*)).ti,ab. 826299
- 22 ("prediction model*" or "predictive model*" or "diagnostic model*" or "prognostic model*" or "risk model*" or "risk score*" or nomogram* or "clinical prediction rule*" or

"clinical prediction model*" or "multivariable model*" or "multivariate model*" or "logistic regression model*" or "Cox regression model*").ti,ab. 374274

23 (AUC or AUROC or "area under the curve" or ROC or "receiver operating characteristic" or calibration or discrimination or "external validation" or "internal validation" or "cross-validation" or "cross validation" or sensitivity or specificity or accuracy or "F1 score" or precision or recall).ti,ab. 2674233

24 ((treatment or antibiotic* or surgical or surgery or amputation or remission or recurrence or reinfection or relapse or healing or failure or outcome*) adj3 (predict* or prognos* or model* or score* or classifier* or algorithm*)).ti,ab. 464614

25 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24
7405853

26 7 and 10 and 25 757

27 limit 26 to english language 720

28 limit 27 to yr="2000 -Current" 647

29 limit 28 to humans 561

30 exp animals/ not humans/ 5450259

31 case reports.pt. 2549107

32 review.pt. 3455559

33 systematic review.pt. 327356

34 meta-analysis.pt. 226407

35 editorial.pt. 752809
36 letter.pt. 1327597
37 30 or 31 or 32 or 33 or 34 or 35 or 3613236375
38 29 not 37 393

Embase <1988 to 2026 Week 20>

1 exp diabetic foot/ 27171
2 exp foot ulcer/ 10278
3 exp diabetes mellitus/ 1463621
4 (diabet* adj3 (foot or feet or pedal or plantar or ulcer* or wound* or infection*)).ti,ab.
40218
5 ("diabetic foot" or "diabetic feet" or "diabetic foot ulcer*" or "diabetes-related foot" or
"diabetes related foot" or DFU or DFI).ti,ab. 25492
6 2 and 3 7680
7 1 or 4 or 5 or 6 52073
8 exp osteomyelitis/ 46625
9 (osteomyelitis or osteomyelitides or "bone infection*" or "bone involvement" or "pedal
osteomyelitis" or "foot osteomyelitis" or DFO).ti,ab. 40858

- 10 8 or 9 62574
- 11 exp artificial intelligence/ 195002
- 12 exp machine learning/ 718939
- 13 exp machine learning/ 718939
- 14 exp deep learning/ 108170
- 15 exp artificial neural network/ 163804
- 16 exp algorithm/ 829701
- 17 exp logistic regression/ 180290
- 18 exp prognosis/ 1011165
- 19 exp receiver operating characteristic/ 321018
- 20 (sensitivity or specificity).ti,ab. 1783476
- 21 (artificial intelligence or AI or machine learning or ML or deep learning or neural network* or convolutional neural network* or CNN or ResNet or XGBoost or random forest* or support vector machine* or SVM or decision tree* or gradient boosting or classifier* or classification or algorithm* or computer-aided or computer assisted or automated).ti,ab.
3225411
- 22 ((predict* or prognos* or diagnos* or detect* or classif* or discriminat* or differentiat* or stratificat*) adj3 (model* or score* or tool* or algorithm* or classifier* or rule* or system* or nomogram*)).ti,ab. 1100018

- 23 (prediction model* or predictive model* or diagnostic model* or prognostic model* or risk model* or risk score* or nomogram* or clinical prediction rule* or clinical prediction model* or multivariable model* or multivariate model* or logistic regression model* or Cox regression model*).ti,ab. 539880
- 24 (AUC or AUROC or area under the curve or ROC or receiver operating characteristic or calibration or discrimination or external validation or internal validation or cross-validation or cross validation or sensitivity or specificity or accuracy or F1 score or precision or recall).ti,ab. 3254277
- 25 ((treatment or antibiotic* or surgical or surgery or amputation or remission or recurrence or reinfection or relapse or healing or failure or outcome*) adj3 (predict* or prognos* or model* or score* or classifier* or algorithm*)).ti,ab. 712711
- 26 ((treatment or antibiotic* or surgical or surgery or amputation or remission or recurrence or reinfection or relapse or healing or failure or outcome*) adj3 (predict* or prognos* or model* or score* or classifier* or algorithm*)).ti,ab. 712711
- 27 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 7691045
- 28 7 and 10 and 27 880
- 29 limit 28 to english language 835
- 30 limit 29 to yr="2000 -Current" 785
- 31 limit 30 to human 764
- 32 review.pt. 3412612

33	editorial.pt.	841703
34	letter.pt.	1289675
35	(case report or case reports).ti.	467745
36	32 or 33 or 34 or 35	5975769
37	31 not 36	626

Scopus 871

TITLE-ABS-KEY (("diabetic foot" OR "diabetic feet" OR "diabetic foot ulcer*" OR "diabetes-related foot" OR "diabetes related foot" OR DFU OR DFI OR ((diabet* OR "diabetes mellitus") W/3 (foot OR feet OR pedal OR plantar OR ulcer* OR wound* OR infection*))) AND (osteomyelitis OR osteomyelitides OR "bone infection*" OR "bone involvement" OR "pedal osteomyelitis" OR "foot osteomyelitis" OR DFO) AND ("artificial intelligence" OR AI OR "machine learning" OR ML OR "deep learning" OR "neural network*" OR "convolutional neural network*" OR CNN OR ResNet OR XGBoost OR "random forest*" OR "support vector machine*" OR SVM OR "decision tree*" OR "gradient boosting" OR classifier* OR classification OR algorithm* OR "computer-aided" OR "computer assisted" OR automated OR ((predict* OR prognos* OR diagnos* OR detect* OR classif* OR discriminat* OR differentiat* OR stratificat*) W/3 (model* OR score* OR tool* OR algorithm* OR classifier* OR rule* OR system* OR nomogram*)) OR "prediction model*" OR "predictive model*" OR "diagnostic model*" OR "prognostic model*" OR "risk model*" OR "risk score*" OR nomogram* OR "clinical prediction rule*" OR "clinical prediction model*" OR "multivariable model*" OR "multivariate model*" OR "logistic regression model*" OR "Cox regression model*" OR AUC OR AUROC OR "area under the curve" OR ROC OR "receiver operating characteristic" OR

calibration OR discrimination OR "external validation" OR "internal validation" OR "cross-validation" OR "cross validation" OR sensitivity OR specificity OR accuracy OR "F1 score" OR precision OR recall OR ((treatment OR antibiotic* OR surgical OR surgery OR amputation OR remission OR recurrence OR reinfection OR relapse OR healing OR failure OR outcome*) W/3 (predict* OR prognos* OR model* OR score* OR classifier* OR algorithm*))) AND PUBYEAR > 1999 AND LANGUAGE (english) AND NOT DOCTYPE (re) AND NOT DOCTYPE (ch) AND NOT DOCTYPE (ed) AND NOT DOCTYPE (le) AND NOT DOCTYPE (no)

Web of Science : 453

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"diabetic foot" OR "diabetic feet" OR "diabetic foot ulcer*" OR "diabetes-related foot" OR "diabetes related foot" OR DFU OR DFI

OR

((diabet* OR "diabetes mellitus") NEAR/3 (foot OR feet OR pedal OR plantar OR ulcer* OR wound* OR infection*))

)

AND

(

osteomyelitis OR osteomyelitides OR "bone infection*" OR "bone involvement" OR "pedal osteomyelitis" OR "foot osteomyelitis" OR DFO

)

AND

(

"artificial intelligence" OR AI OR "machine learning" OR ML OR "deep learning" OR "neural network*" OR "convolutional neural network*" OR CNN OR ResNet OR XGBoost OR "random forest*" OR "support vector machine*" OR SVM OR "decision tree*" OR "gradient boosting" OR classifier* OR classification OR algorithm* OR "computer-aided" OR "computer assisted" OR automated

OR

((predict* OR prognos* OR diagnos* OR detect* OR classif* OR discriminat* OR differentiat* OR stratificat*) NEAR/3 (model* OR score* OR tool* OR algorithm* OR classifier* OR rule* OR system* OR nomogram*))

OR

"prediction model*" OR "predictive model*" OR "diagnostic model*" OR "prognostic model*" OR "risk model*" OR "risk score*" OR nomogram* OR "clinical prediction rule*" OR "clinical prediction model*" OR "multivariable model*" OR "multivariate model*" OR "logistic regression model*" OR "Cox regression model"

OR

AUC OR AUROC OR "area under the curve" OR ROC OR "receiver operating characteristic" OR calibration OR discrimination OR "external validation" OR "internal validation" OR "cross-

validation" OR "cross validation" OR sensitivity OR specificity OR accuracy OR "F1 score" OR precision OR recall

OR

((treatment OR antibiotic* OR surgical OR surgery OR amputation OR remission OR recurrence OR reinfection OR relapse OR healing OR failure OR outcome*) NEAR/3 (predict* OR prognos* OR model* OR score* OR classifier* OR algorithm*))

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)

AND LA=(English)

AND PY=(2000-2026)

NOT DT=(Review OR Editorial Material OR Letter OR Meeting Abstract OR Book Chapter)

Table S1. Independent PROBAST+AI assessments of risk of bias and

applicability for the included studies. Ratings represent the independent pre-consensus

assessments of the two reviewers. PROBAST+AI, Prediction Model Risk of Bias Assessment Tool–Artificial Intelligence.

Study	Reviewer	Participants	Predictors	Outcomes	Analyses	Overall risk of bias	Applicability concern
Yasin 2025	First	Low	Low/Some concerns	Some concerns	High	High	Low/Some concerns
	Second	Low/Some concerns	Low	Low	Some concerns	Some concerns	Low/Some concerns
Abbas 2026	First	Some concerns	Low	Some concerns	High	High	Some concerns
	Second	Some concerns	Low	Some concerns	High	High	Some concerns
Álvaro-Afonso 2025	First	High	Low	Low	High	High	Some concerns
	Second	High	Low	Low	High	High	Some concerns
Cakir 2024	First	High	Low	Some concerns	High	High	Some concerns

	Second	High	Low	Some concerns	High	High	Some concerns
Cuce 2023	First	High	Low	Some concerns	High	High	Some concerns
	Second	High	Low	Some concerns	High	High	Some concerns
Gao 2025	First	Some concerns	High	High	High	High	High
	Second	Some concerns	Some concerns	Low	High	High	High
Nie 2026	First	Low/Some concerns	High	High	High	High	High
	Second	Some concerns	Some concerns	Some concerns	High	High	High
Gudivak a 2025	First	High	High	High	High	High	High
	Second	High	High	High	High	High	High
Kelly 2024	First	High	High	High	High	High	High
	Second	High	High	High	High	High	High
Yogapriya 2022	First	High	High	High	High	High	High
	Second	High	High	High	High	High	High