BIOFIRE® Joint Infection Panel Targets

GRAM-POSITIVE BACTERIA
Anaerococcus prevotii/vaginalis
Clostridium perfringens
Cutibacterium avidum/granulosum
Enterococcus faecalis
Enterococcus faecium
Finegoldia magna
Parvimonas micra
Peptoniphilus
Peptostreptococcus anaerobius
Staphylococcus aureus
Staphylococcus lugdunensis
Streptococcus spp.
- *Streptococcus agalactiae*
- *Streptococcus pneumoniae*
- *Streptococcus pyogenes*

GRAM-NEGATIVE BACTERIA
Bacteroides fragilis
Citrobacter
Enterobacter cloacae complex
Escherichia coli
Haemophilus influenzae
Kingella kingae
Klebsiella aerogenes
Klebsiella pneumoniae group
Morganella morganii
Neisseria gonorrhoeae
Proteus spp.
Pseudomonas aeruginosa
Salmonella spp.
Serratia marcescens

YEAST
Candida spp.
- *Candida albicans*

ANTIMICROBIAL RESISTANCE GENES
Carbapenemases
IMP
KPC
NDM
OXA-48-like
VIM

ESBL
CTX-M

Methicillin Resistance
*mec*A/C and MREJ

Vancomycin Resistance
*van*A/B

39 TARGETS

~1 hr

FDA cleared | CE 2797

Sample Requirements
0.2mL of synovial fluid

Overall Performance
- 91.7% Sensitivity[20]
- 99.8% Specificity[20]

Guidelines

- European Bone and Joint Infection Society. Guideline for the management of septic arthritis in native joints (SANJO). Ravn C., et al, J. Bone Joint Infect, 8, 29–37
- 2025 International Consensus Meeting: Diagnostic Techniques: Molecular Tests. Martinazzi, Brandon J. *et al*, J Arthroplasty
- American Academy of Orthopaedic Surgeons Evidence-Based Clinical Practice Guideline for Diagnosis and Prevention of Periprosthetic Joint Infections https://www.aaos.org/pjicpg

References

1. Premkumar A, *et al.* (2021) J Arthroplasy. 36(5) 1484-1489.e3
2. Singh JA, Yu S. (2017) PLoS One. 12(8): e0182577
3. Carpenter CR, *et al.* (2011) Acad Emerg Med. 18(8): 781–796
4. Tande JT, Patel R, (2014) Clin Microbiol. 27(2): 302–345
5. Zimmerli W, *et al.* (2004) N Engl J Med. (16):1645-54
6. Parvizi J (2018) J Arthroplasty. 33(5):1309-131
7. Ghirardelli S, *et al.* (2024) J Exp Orthop. 11: e12097
8. Berinson B, *et al.* (2025) Microbiol Spectr. 10.1128/spectrum.01263-25
9. Gaillard T, *et al.* (2024) Clin Microbiol Infect. 7:905-910
10. Pascual S, *et al.* (2024) J. Bone Joint Infect. 9: 87–97
11. Kesavan P, *et al.* (2024) Infect Dis Clin Pract. 32(6)
12. Agosta M, *et al.* (2025) Diagn. 15: 566
13. Copley L, *et al.* (2025) J Clin Microbiol. 63:e00278-25
14. Lin TL, *et al.* (2025) Microbiol Spectr. 13:e00286-25
15. Esteban J, *et al.* (2023) 61(11):e0035723
16. McNally M, *et al.* (2021) Bone Joint J. 103-B(1):18-25
17. Bauer TW, *et al.* (2019) J Arthroplasty. 34:S351–S359
18. Parvizi J, *et al.* J Arthroplasty. 2018; 33(5):1309-1314.e2
19. Osmon DR, *et al.* Clin Infect Dis. 2013 56:e1–e25.
20. Overall performance based on prospective clinical study for the BIOFIRE® Joint Infection Panel, data on file, BIOFIRE Diagnostics.

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Learn more about the BIOFIRE range of commercially-available panels for syndromic infectious disease diagnostics.

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PIONEERING DIAGNOSTICS

BIOMÉRIEUX

Clinical Impact of the BIOFIRE® Joint Infection (JI) Panel

39
TARGETS
~1 hr

PIONEERING DIAGNOSTICS

What's the Problem?

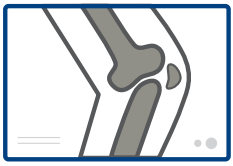
Joint infections cause a tremendous burden for patients and society.[1,2]

Septic arthritis is a medical emergency requiring prompt diagnosis and treatment.
Delayed diagnosis is associated with permanent disability and increased mortality, which can be as high as 15%.[3]

Prosthetic joint infections (PJIs) are costly to treat and on the rise.[1]
The cost to treat a PJI is 3 to 6 times more expensive than the initial arthroplasty.[4] When missed or undertreated, PJIs can lead to unnecessary surgical revisions causing poor function or disability, considerably impacting quality of life.[5]

Diagnosis of Joint Infections is Complicated

- Joint infection diagnostics lack standardization of specimen type and preparation, test media, and methods.[4]
- Culture negative PJIs occur in up to 35% of infections.[6]
- Joint infections are associated with difficult fastidious organisms, anaerobes, biofilm-forming organisms, and polymicrobial specimens.[4]
- Complex society-developed diagnostic criteria vary considerably in diagnostic agreement.[6]



The Right Test, The First Time

BIOFIRE's syndromic approach combines several potential targets into one fast test, helping clinicians identify pathogens that produce non-specific symptoms like red, hot, swollen joint(s) in a clinically actionable timeframe.

Syndromic Testing

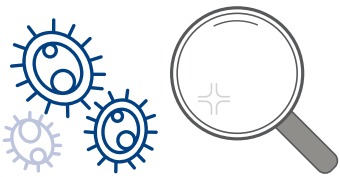
0.2 mL synovial fluid › **One comprehensive test** › **Takes about an hour for results** › **Multiple results in one report** › **May improve patient management**

Faster Than Traditional Methods

Traditional methods require multiple tests and can take up to two weeks to provide a pathogen identification result. The BIOFIRE® Joint Infection (JI) Panel can reduce time to pathogen ID by up to 4.4 days.[7]

Improved Diagnostic Yield

The BIOFIRE JI Panel demonstrated increased diagnostic yield for on-panel targets,[7-13] including difficult-to-grow anaerobes & fastidious organisms,[10-11] and patients with antibiotic exposure.[9,12] The BIOFIRE JI Panel increased diagnostic yield by 16.7% for on-panel targets.[8]



16.7%
Increased diagnostic yield for on-panel targets[8]

Polymicrobial Detections

The BIOFIRE JI Panel prospective clinical trial demonstrated polymicrobial detections. Of the 242 positive specimens detected by the BIOFIRE JI Panel, 16 involved co-detections.[15]

Pathogen Guided-Patient Management

Pathogen identification is a central component of septic arthritis and PJI treatment guidelines.[16-19] The BIOFIRE JI Panel provides clinicians with the results they need to make pathogen-guided decisions for the management of patients with native joint septic arthritis (SA) and prosthetic joint infections (PJI).

Fast, accurate pathogen identification can aid clinicians in antibiotic therapy decisions, including appropriate escalation, de-escalation, and administration route of antibiotics.[8]

Antibiotic therapy was modified in 100% of patients with positive JI Panel results and previous antibiotic exposure.[12,*]

The JI Panel reduced the time on empiric antibiotics by 66.4 hours.[14]

***N=9 patients with previous antibiotic exposure and positive BIOFIRE JI Panel results.**

Informed Surgical Decision Making

With the BIOFIRE JI Panel, 19.2% of PJI patients avoided 2-stage revisions and underwent single-stage or 1.5-stage revisions due to BIOFIRE JI Panel results.[7]