

## BONE

## Diagnostic blood test for osteoporosis moves a step closer

A panel of five microRNAs (miRNAs) could aid early diagnosis of osteoporosis. “So far, no human study has addressed the identification of miRNAs related to skeletal diseases,” explains corresponding author Claudine Seeliger. “We are the first to report altered serum and bone miRNA signatures among patients with osteoporosis.”

Dual-energy X-ray absorptiometry is the gold standard to diagnose and track progression of osteoporosis. Nevertheless, this technique involves exposure to radiation and requires multiple follow-up tests, underlining the need for novel diagnostic approaches.

Circulating miRNAs have shown value as biomarkers for cancer and cardiovascular disease, and animal studies have hinted at a role for specific miRNAs in bone biology. These data led Seeliger and colleagues to ask whether serum levels of miRNAs could be helpful for the diagnosis of patients with osteoporosis.

Using expression profiling, the investigators found that the levels of nine miRNAs were markedly increased in the serum of patients with osteoporosis; five of these miRNAs were also highly expressed in osteoporotic bone. Further analysis confirmed the sensitivity and specificity of these miRNAs as diagnostic biomarkers.

The investigators plan to use this information to establish a diagnostic kit to guide fracture prevention. “In the long run, innovative approaches might be developed by modulating miRNA expression in these patients,” Seeliger states.

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