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Potential solution for cancer related bone pain

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Saint Louis University researchers have discovered a key molecular pathway that drives cancer-related bone pain while providing a potential solution with a drug that already is on the market.

Metastatic bone pain is the single most common form of cancer pain. Cancer-induced bone pain (CIBP) is reported by 30 to 50 percent of all cancer patients and by 75 to 90 percent of late-stage patients. CIBP is driven by a combination of tumor-associated skeletal, inflammatory and neuropathic mechanisms.

Innovations in the treatment of bone cancer pain primarily have focused on addressing bone loss and vulnerability to painful skeletal-related events. However, no therapies currently target the neuropathic mechanisms of CIBP.

One molecule that the pain pathways are dependent upon is called S1PR1 (sphingosine 1-phosphate receptor subtype 1). By modulating this molecule, scientists were able to block and reverse pain. This finding is particularly encouraging because a drug that modulates S1PR1 already is on the market.

The research team found that targeting S1PR1 mitigates bone pain and neuroinflammation, and identifies S1PR1 as a potential therapeutic target alone or as a secondary therapy to address cancer-induced bone pain.