

Guided procedures ensure accuracy of therapeutic injections

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When it comes to pain in the hip, knee or shoulder that requires therapeutic injections, be sure to seek a physician who is trained in image-guided procedures to deliver the medication accurately, says a physical medicine and rehabilitation expert at Baylor College of Medicine.

"When we're doing therapeutic injections, in order to ensure the accuracy of the injections and the placement of the needle in the correct location, image guidance is always the ideal option, whether it be ultrasound or X-ray-fluoroscopy guided," said Dr. Paul Paily, assistant professor of [physical medicine](#) and rehabilitation at Baylor.

Patients can suffer hip, knee and [shoulder pain](#) for a variety of reasons, including osteoarthritis. In many instances, these conditions are not immediately operable. Injections of steroids or other medications may be necessary to treat these issues, and using either ultrasound or fluoroscopy to guide these procedures can ensure the accurate placement of the [medication](#) for the most optimal therapeutic outcome.

Guided procedures also can be useful for diagnostic reasons, such as confirming the location and cause of the pain.

Two available methods by which guidance can be performed are ultrasound and fluoroscopy, which is a form of X-ray. The former requires the use of an [ultrasound](#) machine to view the area which is to be injected, while the latter requires the use of an X-ray machine called a C-arm and the injection of a contrast material into the joint to ensure correct placement of the needle and medication. Since the latter requires the use of radiation, though only a minimal dose, it is not recommended for pregnant patients.

There are several risks of not using image guidance to deliver medications accurately, says Paily, including missing the injection site and injury

to surrounding structures. Additionally, the diagnostic value of the injection diminishes if the physician is uncertain of correct placement of the medication.

"The deeper and more complicated the injection, the greater the need for image guidance," said Paily.

Provided by Baylor College of Medicine

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