

Painkiller tapped to become future cancer-killer

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Diclofenac, a common painkiller, has significant anti-cancer properties, according to researchers from the Repurposing Drugs in Oncology project.

The [Repurposing Drugs in Oncology \(ReDO\) project](#), an international collaboration between the Anticancer Fund, Belgium, and US based GlobalCures, finds that existing and widely-used non-cancer drugs may represent a relatively untapped source of novel therapies for cancer.

Their investigation into [diclofenac](#) has been published in the open-access journal *ecancermedalscience*.

Like other drugs examined by the ReDO project, diclofenac is cheap and readily accessible - and as it's already present in many medicine cabinets, it has been carefully tested.

Diclofenac is a well-known and widely used non-steroidal anti-inflammatory drug (NSAID) used to treat pain in conditions such as rheumatoid arthritis, as well as migraine, fever, acute gout and post-operative pain. It is available as a generic medication and is cost-effective.

NSAIDs have shown promise in cancer prevention, but there is now emerging evidence that such drugs may be useful in actually treating cancer. For example, diclofenac taken in combination with other treatments, such as chemotherapy and radiotherapy, may improve their effectiveness.

The ReDO researchers examined the literature and believe that there is enough evidence to start clinical trials on the use of diclofenac in cancer treatment.

"It's still somewhat surprising that there is still so much we don't understand about how many of the standard drugs we use every day, like diclofenac, work," says study author Pan Pantziarka, PhD, member of the ReDO project and the Anticancer

Fund. "But the more we learn, the more we can see that these drugs are multi-targeted agents with interesting and useful effects on multiple pathways of interest in oncology."

Given the multiple mechanisms of action of diclofenac, particularly with relation to angiogenesis and the immune system, it may well be that this is a [drug](#) with huge potential to treat cancer, especially when given in the perioperative period.

Cutting down on the risk of post-surgical distant metastases through the use of drugs like diclofenac may represent a huge win in the fight against [cancer](#), the authors say.

"After all, it's metastatic disease that most often kills patients, not the original primary disease," Pantziarka explains.

"It may also be that diclofenac may have actions which synergise with the latest generation of checkpoint inhibitors - the combination of the latest drugs in the anticancer armoury with some of the oldest is especially exciting."

More information: Pan Pantziarka et al. Repurposing Drugs in Oncology (ReDO)—diclofenac as an anti-cancer agent, *ecancermedalscience* (2016). [DOI: 10.3332/ecancer.2016.610](https://doi.org/10.3332/ecancer.2016.610)

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