Study finds 'considerable uncertainty' around effectiveness and safety of analgesics for low back pain

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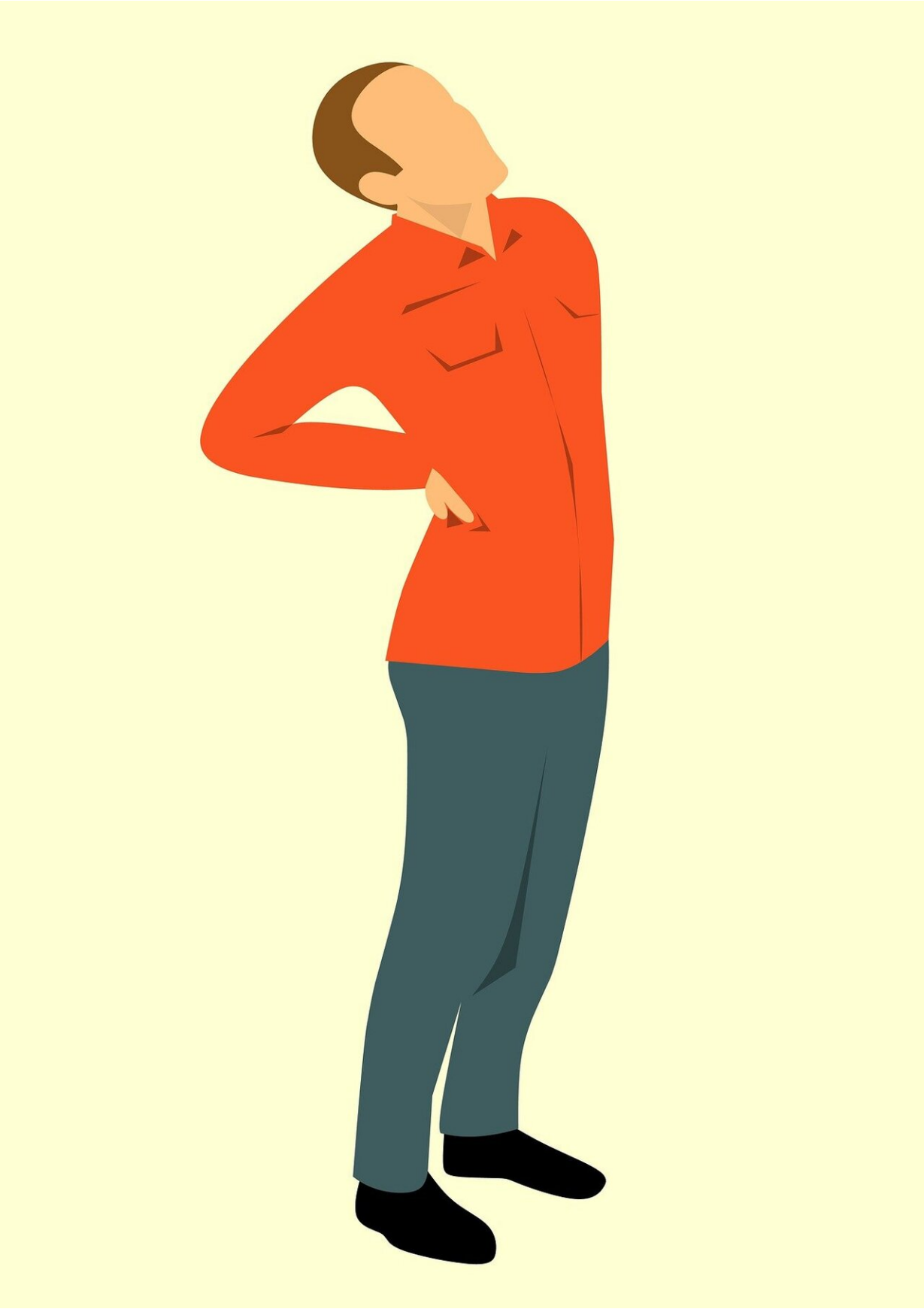

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Despite nearly 60 years of research, there is still a lack of high-certainty evidence on the effectiveness and safety of commonly used painkillers (analgesics) for short bouts of low back pain, finds an analysis of the evidence published by *The BMJ*.

The researchers say that until higher-quality trials comparing analgesics with each other are published, "clinicians and patients are advised to take a cautious approach to manage acute non-specific low back pain with analgesic medicines."

Analgesics such as paracetamol, ibuprofen, and codeine are widely used to treat acute non-specific low back pain, defined as pain lasting less than six weeks. But evidence for their comparative effectiveness is limited.

To fill this knowledge gap, researchers trawled scientific databases for randomized controlled trials comparing analgesic medicines with another analgesic, placebo, or no treatment in patients reporting acute non-specific low back pain.

From an initial 124 relevant trials, they included 98 randomized controlled trials published between 1964 and 2021 in their analysis. These involved 15,134 participants aged 18 and over and 69 different medicines or combinations.

The trials included non-steroidal anti-inflammatory drugs, paracetamol, opioids, anti-convulsant drugs, muscle relaxants and corticosteroids. The

researchers assessed their risk of bias using a validated risk tool.

The main measures of interest were low back pain intensity at the end of treatment (on a 0-100 point scale) and safety (number of participants who reported any adverse event during treatment). Average pain intensity among participants at the start of each trial was 65 out of 100.

The researchers noted low or very low confidence in evidence for reduced pain intensity (around 25 points) after treatment with muscle relaxant tolperisone, anti-inflammatory drug aceclofenac plus muscle relaxant tizanidine, and the anti-convulsant drug pregabalin, compared with placebo.

Very low confidence was also noted in evidence for large reductions in pain intensity (around 20 points) for four medicines, such as the muscle relaxant thiocolchicoside and anti-inflammatory drug ketoprofen; moderate reductions (10-20 points) for seven medicines, including anti-inflammatory drugs aceclofenac, etoricoxib and ketorolac; and small reductions (5-10 points) for three medicines including ibuprofen and paracetamol.

Low or very low confidence evidence suggested no difference among the effects of several of these medications.

The researchers noted moderate to very low confidence evidence for increased adverse events, such as nausea, vomiting, drowsiness, dizziness, and headache, with tramadol, paracetamol plus sustained release tramadol, baclofen, as well as paracetamol plus tramadol compared to placebo. Moderate to low confidence evidence also suggested that these medications could increase the risk of adverse events compared to other medications.

The study also found similar moderate to low confidence evidence for

other secondary outcomes, including serious adverse events and discontinuation from treatment, as well as a secondary analysis of medication classes.

This was a comprehensive review based on a thorough literature search, but the researchers acknowledge that most included studies had concerns related to risk of bias, which alongside other limitations, may have influenced the findings.

"Our review of analgesic medicines for acute non-specific low back pain found considerable uncertainty around effects for pain intensity and safety," they write. As such, they say clinicians and patients "are advised to take a cautious approach to the use of analgesic medicines."

No further reviews are needed until high-quality studies are published, they add.

More information: Comparative effectiveness and safety of analgesic medicines for adults with acute non-specific low back pain: systematic review and network meta-analysis, *The BMJ* (2023). DOI: 10.1136/bmj-2022-072962

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