

# Mathematics of Pain Relief

Healthcare providers wrote **>259 MILLION** prescriptions for **OPIOID PAINKILLERS** in 2012.

Rx \_\_\_\_\_



**Drug overdose** – mostly from painkillers – now kill more people than car crashes.

Overdose vs. Auto fatalities



Over the counter or prescription:  
What's most effective?

The most effective pain relief combination:  
**200mg** of ibuprofen + **500mg** of acetaminophen

**Opioid painkillers** may not always be the best way to treat acute pain.

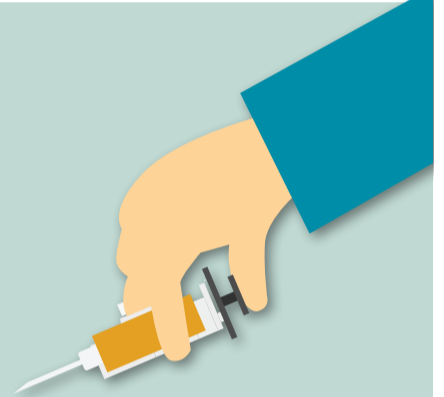


One study **compared** the effectiveness of **over-the-counter and prescription pain meds**.

**You need to add:**

**1000 mg** acetaminophen + **10 mg** oxycodone

**to make oxycodone AS EFFECTIVE AS**







**provides as much pain relief as a 10 mg morphine shot**

## Getting better pain relief

When people get **half their pain reduced**, they start **feeling better** and **can do more**.

We can tell how effective medication is based on how many people taking it feel better. This metric is called **Number Needed to Treat (NNT)**.

A low NNT means the medicine is more effective.

Ibuprofen + acetaminophen	Oxycodone
<b>NNT score of 1.5</b>	<b>NNT score of 4.6</b>
Got Relief 	Got Relief 
Did Not Get Pain Relief 	Did Not Get Pain Relief 

HOW EFFECTIVE IS YOUR PAIN MEDICATION?	NNT SCORE
Ibuprofen 200mg + Acetaminophen 500mg	1.5
Diclofenac 200mg	1.7
Ibuprofen 200mg	2.5
Morphine 10mg IM	2.7
Oxycodone 10mg + Acetaminophen 1000mg	2.7
Acetaminophen 500mg	3.5
Oxycodone 15mg	4.6

## What can you do?



Explore alternatives to opioid painkillers

Use the smallest amount of opioid painkillers for the **fewest number of days**



Download the white paper:  
[nsc.org/painmevidence](http://nsc.org/painmevidence)